



Technical Bulletin

Refrigerant Circuit with Sanden SDV 710 Compressor

Condenser	20 cc (0.7 fl oz)
Evaporator	30 cc (1.0 fl oz)
Receiver Drier	20 cc (0.7 fl oz)
High Pressure Hose	10 cc (0.3 fl oz)
Low Pressure Hose	10 cc (0.3 fl oz)

Total System Oil Capacity 120 cc (4.0 fl oz)

Refrigerant Circuit with Sanden SD 709 Compressor (only passenger vehicles)

Condenser	15 cc (0.5 fl oz)
Evaporator	20 cc (0.7 fl oz)
Receiver Drier	10 cc (0.3 fl oz)
High Pressure Hose	10 cc (0.3 fl oz)
Low Pressure Hose	10 cc (0.3 fl oz)

Total System Oil Capacity 135 cc (4.5 fl oz)

Refrigerant Circuit with Sanden SD 709 Compressor (only Vanagon)

Condenser	0 cc
Evaporator	60 cc (2.0 fl oz)
Receiver Drier	10 cc (0.3 fl oz)
High Pressure Hose	10 cc (0.3 fl oz)
Low Pressure Hose	10 cc (0.3 fl oz)

Total System Oil Capacity 240 cc (8.0 fl oz)

Refrigerant Circuit with Sanden SD 709 Compressor (only for EuroVan with one evaporator)

Total System Oil Capacity 135 cc (4.5 fl oz)



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R-134a Retrofit, Refrigerant Oil Distribution

If replacement of defective components is necessary before retrofitting to R-134a, identify refrigerant circuit by compressor type and add PAG refrigerant oil directly to component according to following application charts.

Caution!

The following total system oil capacities are the maximum allowed for each compressor and refrigerant circuit combination.

Do not exceed the total system oil capacity. Compressor damage and a decrease in cooling performance will result.

Refrigerant Circuit with York Compressor

Condenser	10 cc (0.3 fl oz)
Evaporator	50 cc (1.7 fl oz)
Receiver Drier	20 cc (0.7 fl oz)
High Pressure Hose	15 cc (0.5 fl oz)
Low Pressure Hose	15 cc (0.5 fl oz)

Total System Oil Capacity 300 cc (10.0 fl oz)

Refrigerant Circuit with Sanden SD 508 Compressor

Condenser	20 cc (0.7 fl oz)
Evaporator	30 cc (1.0 fl oz)
Receiver Drier	20 cc (0.7 fl oz)
High Pressure Hose	15 cc (0.5 fl oz)
Low Pressure Hose	15 cc (0.5 fl oz)

Total System Oil Capacity 175 cc (5.8 fl oz)



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Capacity Tables

PAG Refrigerant Oil

- ◆ Passenger cars:
Part No. G 052 154 A2
- ◆ Vanagon/EuroVan:
Part No. G 052 100 A2

Compressor	Capacity
York	100 cc (3.3 fl oz)
Sankyo, Sanden SD 508	100 cc (3.3 fl oz)
Sanden SD 510	100 cc (3.3 fl oz)
Sanden SD 709	135 cc (4.5 fl oz) (passenger cars incl. EuroVan) 240 cc (8 fl oz) (Vanagon)

Refrigerant R-134a

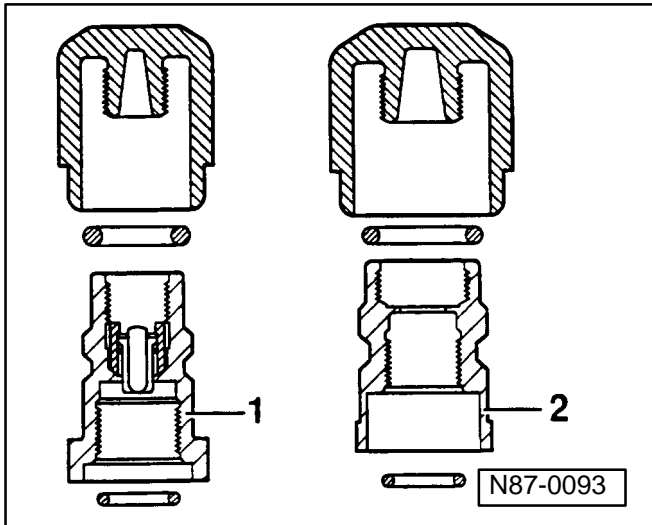
Model	m.y.	Capacity
Golf Cabriolet	1985 – 1992	800 g (28.2 oz)
Golf/Jetta/Vento	1985 – 1992	800 g (28.2 oz)
Scirocco	1985 – 1989	800 g (28.2 oz)
Corrado	1989 – 1992	800 g (28.2 oz)
Passat	1990 – 1992	1050 g (37 oz)
Quantum	1985 – 1988	1200 g (42.3 oz)
Vanagon	1985 – 1991	1350 g (47.6 oz)
EuroVan (Canada only)	1992	950 g (33.5 oz)



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Retrofit Procedure

- Discharge and capture refrigerant R-12 using Kent Moore ACR³ or equivalent.
- Evacuate system to remove any R-12 contaminants
- Remove refrigerant oil from compressor; depending on accessibility, use one of the following methods:
 - ◆ Use refrigerant oil evacuation feature of Kent Moore ACR³, ACR⁴ or equivalent.
 - ◆ Remove compressor, unscrew oil drain plug and drain refrigerant oil.
- Identify compressor type and fill with quantity of PAG refrigerant oil specified in table on page 6.
- Reinstall compressor (if removed).
- Install new O-rings on compressor suction and discharge hose fittings.
- Replace receiver drier. Use new O-rings
- Identify and install correct R-134a adapters (from Kit Part No. 357 820 794) to high pressure and low pressure service valves.
 - ◀ Low pressure valve -1-, 7/16" connection
Part No. 357 820 797 A
 - ◀ High pressure valve -2-, 3/8" connection
Part No. 357 820 797
or high pressure valve -2-, 7/16"
connection Part No. 357 820 797B
- Evacuate system for a minimum of 30 minutes using Kent Moore ACR⁴ or equivalent.
- Charge system with refrigerant R-134a,
⇒ Refrigerant capacity table, page 6.
- Perform A/C system quality check and leak test
⇒ Repair Manual, Air Conditioning, Repair Group 87.
- Install new R-134a adhesive label over original R-12 label on radiator support.





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Parts Requirement

All models require the following parts:

- Adapter/label kit:
Part No. 357 820 794
- PAG refrigerant oil:
Part No. G 052 154 A2 (passenger cars)
Part No. G 052 100 A2 (Vanagon/EuroVan)
- Receiver drier*
- Receiver drier O-rings*
- Compressor O-rings*

*Refer to the chart below for applicable part numbers.

Model/m.y.	Receiver Drier	Receiver Drier O-rings	Compressor O-rings
Golf Cabriolet 85-92	171 820 191 B	803 260 749	803 260 749 A 803 260 749 B
Golf/Jetta 85-92	191 820 191 A	803 260 749	803 260 749 A 803 260 749 B
Scirocco 85-89	171 820 191 B	803 260 749	803 260 749 A 803 260 749 B
Corrado 89-92	191 820 191 A	803 820 749 A	1H0 820 749
Passat 90-92	357 820 191 D	803 260 749	803 260 749 A 803 260 749 B
Quantum 85-88	323 820 193 A	803 260 749	171 820 749
Vanagon 85-91	up to 24 G 075000: 253 260 633 D from 24 G 075001: 253 260 633E	803 260 749	253 260 749
EuroVan 92 (Canada only)	701 260 191 E	803 260 749 803 820 749 A	803 260 749 B

Caution!

**Part numbers are for reference only.
Always check with your Parts Dept.
for the latest parts information.**



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R-134a Retrofit, Preparation, continued

- If a component is replaced prior to retrofitting the system to R-134a, an appropriate amount of PAG refrigerant oil must be added to the circuit. For oil quantities per component, refer to Oil Distribution charts starting on page 8.
- Replacement compressors are factory filled with R-12 compatible compressor oil. If compressor replacement is necessary, the factory filled compressor oil must be drained and replaced with appropriate quantity of PAG refrigerant oil;

Identify compressor type and fill according to table on page 7.



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R-134a Retrofit, System Preparation

- Review all Cautions, Warnings and A/C refrigerant system safety measures stated in appropriate model repair information, ⇒ Repair Manual, Air Conditioning, Repair Group 87.
- Always use Underwriter's Laboratory (UL) approved refrigerant service equipment such as Kent Moore ACR³, ACR⁴ or equivalent.
- Before proceeding with retrofit, perform a visual inspection and functional test of complete A/C system; including instrument panel outlet temperature, air distribution, refrigerant system components, system pressure and leak test. ⇒ Repair Manual, Air Conditioning, Repair Group 87. Repair/replace parts as necessary .
- Always refer to the most recent parts information for affected models when replacing damaged or defective R-12 refrigerant system parts (including the routine replacement of O-rings).
- If replacement of damaged or leaking refrigerant hoses, compressors, evaporators and condensers is necessary, blow compressed air (followed by nitrogen) through all remaining, disconnected, free flowing system components before assembly in order to remove moisture, impurities and remaining refrigerant oil.



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Caution!

Always use separate refrigerant recovery, recycling and recharging service equipment for R-12 and R-134a systems. If the same piece of equipment is used for both R-12 and R-134a systems, residual traces of refrigerant will contaminate and damage the equipment.

Service equipment includes recovery, recycling, recharging station, vacuum pump, manifold gauges, etc.

Caution!

Do Not blow compressed air and nitrogen through the compressor or expansion valve. Refrigerant circuits retrofitted to use R-134a must not be rinsed with agent R11.

Replacement compressors are filled with nitrogen. If gas does not escape when removing protective caps on suction and discharge ports, assume leakage and do not install compressor.

When replacing damaged compressors, ensure existing mineral based refrigerant oil is drained and replaced with PAG oil.

Always replace receiver drier if refrigerant circuit is left open.

Due to residual amounts of mineral based refrigerant oil in systems retrofitted to use refrigerant R-134a, the newly installed PAG refrigerant oil will discolor immediately after use. This is normal and does not indicate a refrigerant related fault.



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Subject: **A/C System, Retrofitting R-12 to R-134a**

Group: **87**

Number: **95-03**

Model(s): **All (except Fox) m.y. 1985 to m.y. 1992**

Date: **May 31, 1995**

Please read all sections of this Bulletin thoroughly before proceeding with retrofit!

At customers request and expense, A/C systems on the following models may be retrofitted to use refrigerant R-134a.

Golf Cabriolet	1985 – 1992
Golf/Jetta	1985 – 1992
Scirocco	1985 – 1989
Corrado	1989 – 1992
Passat	1990 – 1992
Quantum	1985 – 1988
Vanagon	1985 – 1991
EuroVan (Canada only)	1992

Note:

- ***Retrofitting to refrigerant R-134a is not reimbursable under warranty.***

Index:

- **Cautions Page 2**
- **Preparation Page 3**
- **Parts Requirement Page 5**
- **Retrofit Procedure Page 6**

Caution!

***Part numbers are for reference only.
Always check with your Parts Dept.
for the latest parts information.***