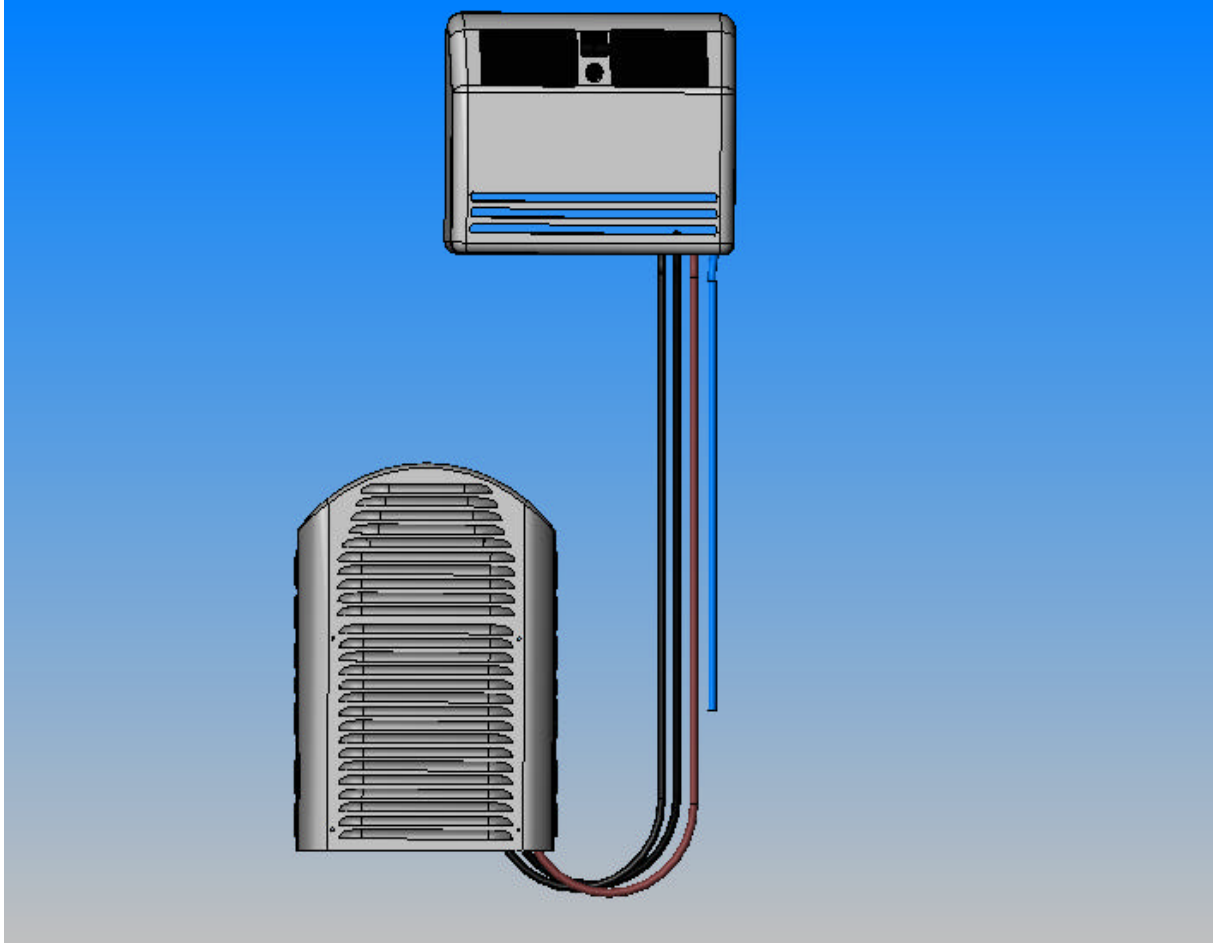


12/24 Volt

DC Airco 8500 Manual

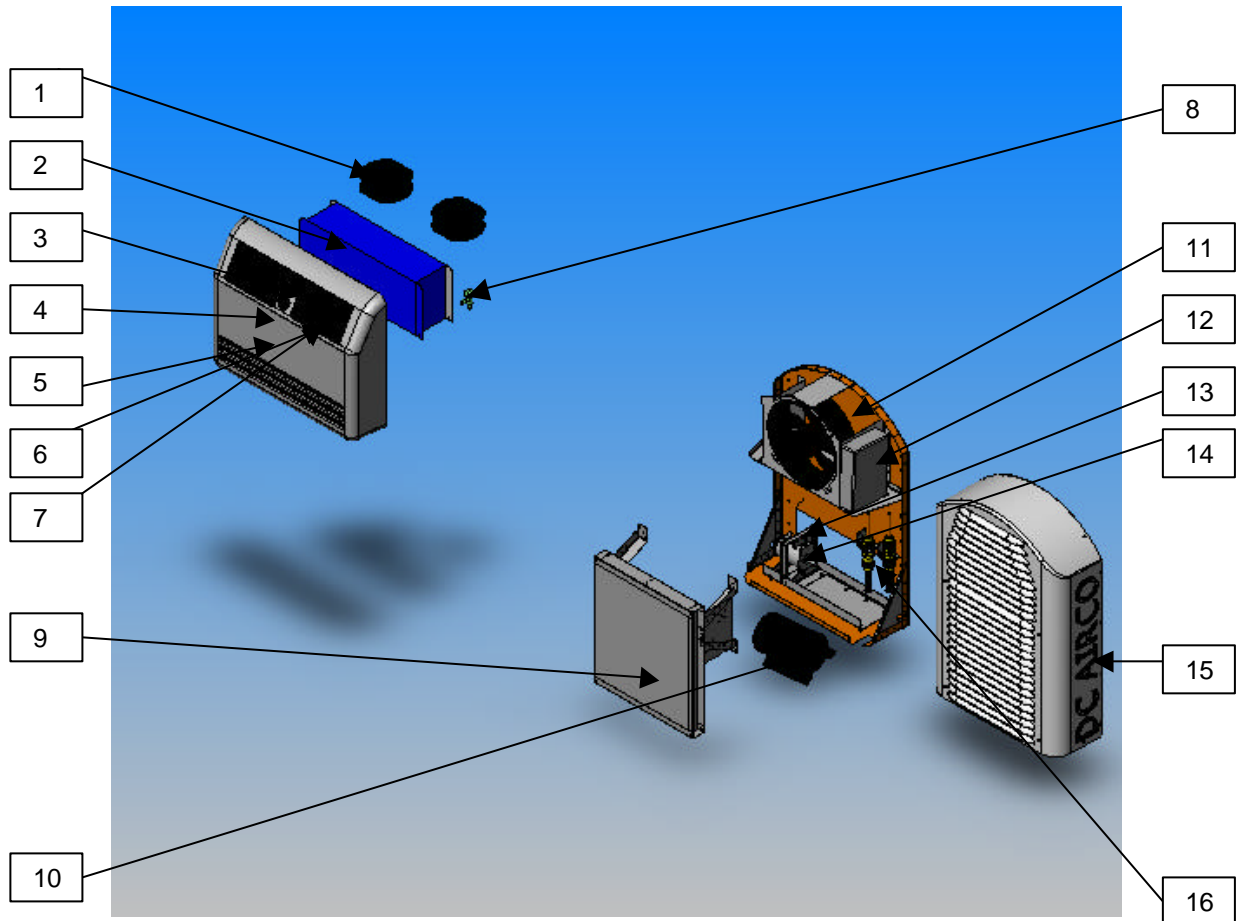
DC 8500



The box Contains the following items:

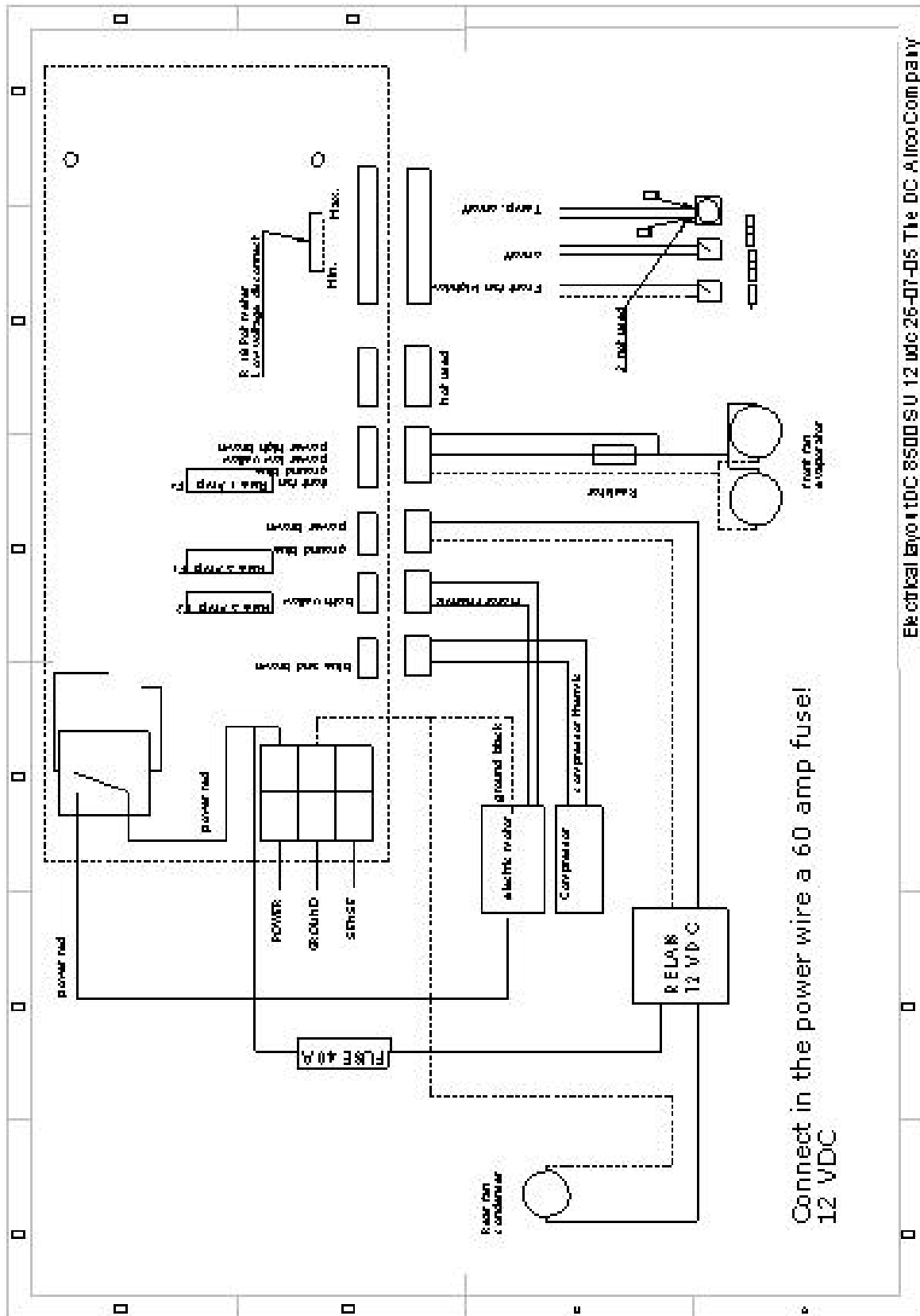
- 1 DC 8500 cooling unit
- 1 DC 8500 condensing unit
- 1 bag with hose clamps
- 1 bag of spare fuses (on circuit board)
- 1 Instruction manual
- 1 Main Fuse Holder + fuse

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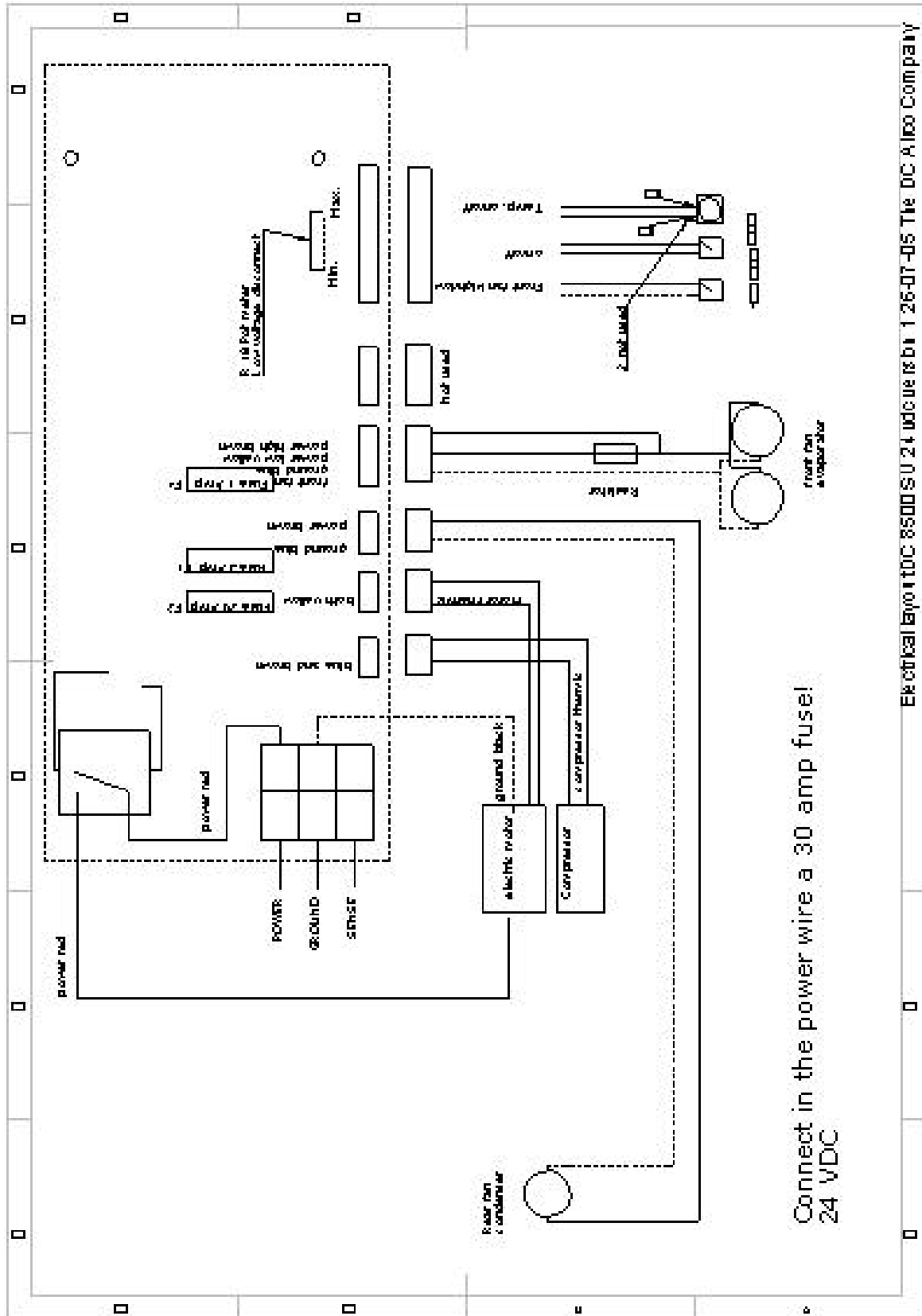
	Description	Part number
1	fans 12 /24 volt	2x DC 8500SU01/12 2x DC 8500SU01/24
2	evaporator	DC 8500SU02
3	adjustable air grill	DC 8500SU03
4	thermostat	DC8500SU04
5	housing	DC 8500SU05
6	on/off switch	DC 8500SU06
7	high/low switch	DC 8500SU07
8	expansion valve	DC 8500SU08
9	condenser	DC 8500SU09
10	Electric motor 12/24 V	DC 8500SU10/12 DC 8500SU10/24
11	Condenser fan 12/24 V	DC 8500SU11/12 DC 8500SU11/24
12	Circuitboard 12/24 V	DC 8500SU12/12 DC 8500SU12/24
13	compressor	DC 8500SU13
14	coupling	DC 8500SU14
15	housing	DC 8500SU15
16	Quick connectors	DC8500SU16
17	Filter(blue)	DC8500SU17
18	Filter (grey)	DC 8500SU18

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Electrical layout DC 8500 SU 12 Vdc 26-07-05 The DC Airco Company

DC Airco 8500 Manual



Electrical layout DC 8500 SU 24 VDC USE REF: 1 26-07-DS The DC AIRCO Company

DC Airco 8500 Manual

Incorrect installation and/or misuse of the product can result in permanent damage and possible injury. To avoid this happening please read this instruction manual thoroughly.

The manual describes examples as they are found in installation and trouble shooting. We reserve the right to make changes without prior warning.

Congratulations, the purchase of the DC Airco is a wise choice. The main features of the DC Airco are, low power consumption, easy installation, the ability to operate while on the move and with engine off, and environmentally friendly coolant (R134A).

The DC 8500 is designed to be mounted on suspended cabs on-highway applications such as truck sleeper cabs, RV's and other vehicle bodies that are suspended.

The DC Airco DC 8500 is not designed for very vibrating vehicles such as not limited to : earth moving equipment, cranes, forklift trucks, off-road a.o.

Mounting Instructions

The DC 8500 is factory precharged with R134A and PAG 46 oil and fully tested.

Hoses

The hose length is 3 meter/ 9 ft. Changing of hose length voids warranty!! If the hoses are too long you can store the excess hose in the condensing unit. Make sure the hoses are supported with the hose clamps delivered with the DC8500

Cooling unit - size 575 mm high x 670 mm wide x 150 mm deep 14 kg / 31 lbs

The cooling/evaporator unit needs to be installed as seen in the pictures in this manual. Turning it in any other position will cause condensation water leakage. Use the 4 mounting holes in the rearplate to mount the unit on the wall.

Lead the hoses and cabling down behind the bed and go out through the floor using the rubber protectors around the holes.

Clamp the hoses and cabling on the wall so that the weight of the hoses is supported. Clamps are supplied with the unit.

Condensing unit - size 850 mm high x 600 mm wide x 230 mm deep 42 kg / 93 lbs

Place the drilling template on the backwall keeping in mind the following:

- The hose length is 3 meters/ 9ft
- The unit must be placed behind the cab, in one of the corners as low as possible to prevent damage caused by the trailer.
- The condensing unit can only be mounted in vertical position as shown in this manual
- The condensing unit is designed to be mounted on suspended cabs only.
- Do not mount the condensing unit on the rail (frame)
- During testrun of the DC 8500 the plastic cover must be placed on the condensing unit !!

If the area where the vehicle is used has bad road conditions, it is best to have a support frame with vibration dampers between the cab and the condensing unit.



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Connecting both units.

Connect the refrigerant hoses with the condensing unit. First the liquid line (thin hose)
Make sure the nuts are thightened well. Check for refrigerant leaks with a electronic leak detector or if not available with water and soap.

The electrical connectors can be connected on the circuitboard in the grey electrical box.
Connect the 3 studs on the circuitboard with the battery poles. The ground is the middle stud.
Power the stud next to the relay. (also in a 24 volt unit the relay is 12 volt!)
Power and ground cable should be minimum AWG 7 / 10mm² or thicker for a 12 volt unit and half that size for a 24 volt unit.

The thirth (small) stud is to be connected with a AWG 15 / 1,5 mm² wire to the battery plus pole.
Do not bypass it to the power wire as it will cause the unit to run only a few hours on the battery.
This third wire is the voltage sensing of the low voltage cut-out. For a 12 volt unit the cut out is 10,5 volt. For a 24 volt system it is 21 volt. If GEL batteries are used, potmeter R18 on the circuitboard must be turned counterclockwise to minimum.

Mount the maxi fuse holder in the powerwire close to the batteries. The maxi fuse is 60 A for a 12 volt unit and 30A for a 24 volt unit.

Put the plastic cover on the condensing unit first before starting the unit!

Put the maxifuse in the holder.

Turn the unit on with the snowflake switch. Turn thermostat to 1. The high low switch only changes the inside fan speed not the compressor.

Do not run the unit without the plastic cover on the condensing unit – it cannot reject the heat without the cover!

In case of working of repair always take the fuse out.

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3. Operation & Maintenance

With the DC Airco you have bought a normal operating air-conditioning system which is virtually maintenance free. However we would like to give some details that will guarantee trouble free operating.

3.1. Limitations

The DC 8500 is designed to cool truck sleeper cabs, and can be used also while driving to save fuel.

In applications in larger areas the cooling effect could reduce strongly.

3.2. Power consumption & battery capacity

The 8500 consumes 40 A/h maximum on 12 volts.(20A/24V) Normally the air conditioner is running 50% of the time, therefore the average consumption is half of the maximum consumption. We advise therefore a battery capacity of no less than 400 Amp hours 12 volt or 200 AH 24 volt

3.3. Energy saving

The DC Airco uses much less power than a conventional 230/115 volt mains air conditioner. But you can still make the power consumption lower by following these procedures.

- Overcome too much radiation of the sun. Less sun means a lower temperature inside and thus a lower energy consumption.
Keep window and door blinds down and doors closed. Also keep the roof lights closed.
- If possible improve insulation of the vehicle. The DC Airco should be **the only air supplier** in the vehicle

3.3 power supply information

When driving the alternator will keep the battery charged. The capacity of the alternator is however important. For the DC 8500 we advise an alternator of at least 80A/12V(40A/24V)

3.5. The control panel

- With the switch marked with a snowflake you can switch the Airco off/on.
- With the switch marked with high/low you can increase the air speed inside the vehicle.

3.6. Troubleshooting

3.6.1. Insufficient cooling

- Too much direct sunlight – pull down blinds – close doors – close roof light.
- Poor insulation.
- Too many people in the vehicle. Each person produces 200 Watts/1618BTU of body heat.
- The vehicle is too large.
- Check that outside rear fans are turning and not blocked by debris like leaves.

3.6.2. DC Airco is not operating at all

- The fuse of the circuit board is blown (F4). Use the reserve fuse .
- The automatic battery protection cut in. This will automatically be reset when the battery tension is more than 12,6 volt. With 24 volts this happens at 25,2 volts. Start engine, the air conditioner will restart itself after a few minutes.
- The main fuse near the battery is blown.
- With Gel batteries the potmeter R 18 on the circuit board needs to be turned to minimum (right).
- After mounting it might take 10-20 minutes before the Airco starts to cool.

3.6.3. DC Airco is switching on and off continuously

- The cables between the battery and the DC Airco are too thin. The red LED's in the DC Airco are also switching on and off continuously.
- The battery is low. Perhaps the alternator is not capable of giving a sufficient charge. Turn the airco off to allow the battery to be recharged.
- The tension wire is not connected straight to the battery plus pole.

3.6.4. The DC Airco is not cooling, while the ventilators are running

- The overheat fuse of the motor has tripped; the DC Airco will turn itself on after circa 10 minutes.
- The cooling agent is too less. The temperature difference between the air inlet grid and the air outlet grid must be 10°C, when the ventilators are in the „high“ position. If the temperature difference is significant less, get in touch with your supplier. The system is easy to refill by a refrigerant expert.

3.6.5. The DC Airco is not cooling very well , but is thumping intensively

- Check whether the rear fan is running. If this is not running the fuse (F2) of the rear fans is blown. Remove the cover of the condensing unit and replace fuse. (reserve fuse present on the circuit board)
- In winter the DC Airco could make some noise, as the TEV is still blocking through the cold.

3.6.6. Water leakage

- Check that the condensation drainage hole is clear.



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The Airco has a 12 month warranty taken the following conditions into account:

- Guarantee card must be filled in completely with a copy of the invoice.
- A description of the complaint must be added.

The serial number on the invoice must correspond to the serial number in the Airco. When the serial number has been removed the guarantee is automatically expired. You can find the serial number on you manual and under the Airco if you remove the inlet grid and the fan assembly.

DC Airco limited Warranty

DC AIRCO COMPANY warrants the DC AIRCO air conditioners to be free from defects in materials and workmanship under normal applications, use and services conditions for (1) year from date of delivery or (1,5) year after date of production whatever comes first.

Should any part prove defective within the warranty period, the customer may choose to return the defective product that is under warranty to The DC Airco Company or their representatives for repair at no charge or the customer has the option to repair the defective product at his own expense and The DC Airco Company or their representative will supply repair parts at no charge providing the defective part is returned or a photo sent though e-mail, and found to have failed under warranty. Parts supplied as warranty replacement parts will assume the balance of warranty on the part returned for warranty consideration.

What This Warranty Does Not Cover.

This warranty does not apply to any of the DC Airco's which have been subject to misuse, neglect or accident, or which have been damaged through abuse, alteration, improper installation, or negligence in use, prolonged operation with dirty filters, storage, transportation or handling, or which as been repaired/refilled with other refrigerant than R134A +PAG 46 oil

Warranty Limitations

There is no other expressed warranty on these products. The DC Airco Company and their representatives are not responsible for any incidental or consequential damages arising from the use or loss of use of the product. The DC Airco Company and their representatives maximum liability under any warranty, expressed, implied, or statutory, is limited to the purchasers price of the product. The purchasers exclusive remedy shall only be as stated herein.

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CHECKLIST DC AIRCO

Concerns the DC AIRCO 8500 : 12 volt
 24 volt

The Airco does not work at all.		See also chapter 3.6.2.	
	Yes	Now	Action
Is the tension wire direct connected with battery plus pole.	<input type="radio"/>	<input type="radio"/>	Connect according the manual.
The Airco stops working		See 3.6.2. and 3.6.3.	
If the Airco stops due to low battery voltage 2 red led's will illuminate on the circuit board.	<input type="radio"/>	<input type="radio"/>	Battery voltage to low Start engine to test this.
By Gel batteries R18 turn to minimum .(right)	<input type="radio"/>	<input type="radio"/>	Look 3.6.2.
The Airco turn but does not cool down		3.6.4. and /or 3.6.5.	
Do the inside (evaporator) fans turn.	<input type="radio"/>	<input type="radio"/>	Change fuse F1
Do the rear fans (condensing unit) turn.	<input type="radio"/>	<input type="radio"/>	Change fuse F2
There is green oil in the airco	<input type="radio"/>	<input type="radio"/>	Contact service point
The Airco is working but is not cooling enough		3.6.1.	
Start the airco for 15 minutes with the cover closed removed screws already. Turn the Airco off and check if the indoor cooling unit heat exchanger is cold for more than 75%.	<input type="radio"/>	<input type="radio"/>	If not cold for 75% Short on refrigerant

Cable thickness of the +cable min AWG 7/10mm²
 Cable thickness of the -cable min AWG 7/10mm²
 Cable thickness of the tension cable min AWG15/1,5mm²

Battery capacity if used for sleeper cab cooling: min 400 Ah 12 volt / 200 Ah 24 volt

Serialnumber
 Puchase date

Name
 Adress
 Place
 Tel:
 Fax:
 Email:

