



B-COOL 9000

B-COOL 9000 is a fully self-contained – one piece - roof mount AC unit, available in 12 and 24 volts with an inside cab air diffuser, ready to connect wire harness / battery cable and fuse block and comes pre-charged with R134a refrigerant.

SAFETY FIRST

You must read and understand this manual before you install or operate the AC unit

B-COOL
GREEN POWER AC



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Introduction

B-C OOL9000 is a fully self-contained – one piece - roof mount AC unit, available in 12 and 24 volts with an inside cab air diffuser, ready to connect wire harness / battery cable and fuse block and comes pre-charged with R134a refrigerant.

In other words – our roof mount air conditioner comes ready to go.

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To ensure the durability of DC Power Solutions products, please follow and understand the instructions within the manuals.

Recycle and dispose of the air conditioning unit properly to help keep the environment healthy.

There are Federal, Provincial and State regulations regarding the disposal of refrigeration /AC machines. Consult a professional and ensure they follow the laws when disposing of the refrigeration/AC unit.

MAILING ADDRESS







P.O. Box 84556
101-12080 Nordel Way
Surrey BC, CANADA
V3W6Y7

SALES

OFFICE: 604-599-9200
MOBILE: 778-233-3905

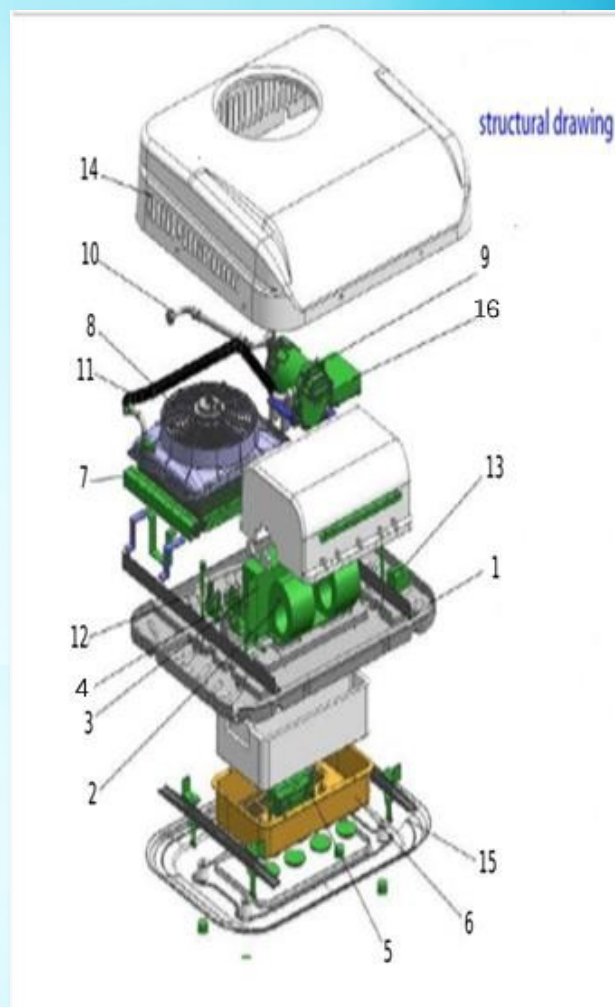
For Sales Information:
sandersen@dcpowersales.com
sales@dcpowersales.com

Recommendations / Safety instructions

	The installation must be performed by a qualified professional.
	Switch off / disconnect the battery before installation and performing maintenance work.
	Wear goggles and gloves for the installation of this product or disassembly an item for repair.
	ATTENTION: The unit must be cooled before any work is performed. Some parts are hot and can cause burns.
	ATTENTION. Do not remove any protection provided on the unit. This could cause serious injury.
	ATTENTION: The unit is heavy. Do not handle or install the unit alone.

Parts List

Item	PART LIST
1	Base frame
2	Blower motor
3	External Motor assembly
4	Expansion valve
5	Evaporator
6	Internal cover
7	Condenser
8	Condenser fan 12V/24V
9	Compressor 12V/24V
10	Piping
11	Hose
12	Dryer
13	Thermostat
14	Top cover
15	Decorative Cover
16	Compressor Controller



B-Cool 9000 - Fully Self-Contained - 100% Electric

MODEL #	B-COOL9000RM12V	B-COOL9000RM24V
Voltage	12V	24V
Compressor type	25cc Electric scroll compressor	25cc Electric scroll compressor
Max. current	70amps	40 amps
Working current	50-70 amps	15-40 amps
Freon type	R134a	R134a
Freon amount	650g	650g
Cooling capacity	10,230 BTU/h	10,230 BTU/h
Evaporator air flow	800m ³ /hr (470cfm)	800m ³ /hr (470cfm)
Condenser air flow	2400m ³ /hr (1410cfm)	2400m ³ /hr (1410cfm)
Climate controller	yes	yes
Remote controller	yes	yes
AC roof top dimensions	96cm L x 72cm W x 16.5cm H (37.8 x 28.35 x 6.5 inches)	96cm L x 72cm W x 16.5cm H (37.8 x 28.35 x 6.5 inches)
AC inside cabin dimensions	50cm L x 34cm W x 11.4cm H (19.7 x 13.4 x 4.5 inches)	50cm L x 34cm W x 11.4cm H (19.7 x 13.4 x 4.5 inches)
AC unit net weight	34.5 kg (76 lbs.)	34.5 kg (76 lbs.)
AC unit gross weight	38 kg (83.75 lbs.)	38 kg (83.75 lbs.)
AC shipping box	107.5cm x 84.5cm x 40cm (42.3 x 33.25 x 15.75 inches)	107.5cm x 84.5cm x 40cm (42.3 x 33.25 x 15.75 inches)

Parts List & Numbers

9K-300-01



top cover

9K-300-02



Decorative board

9K-300-03



Internal cover

9K-300-04



fix cross girder X2

9K-300-05



Remote control

9K-300-06



sealing rubber strip

9K-300-07



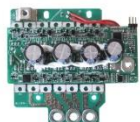
Install screws

9K-200-01



Internal control panel

9K-200-02



External controller

9K-200-03



thermostat

9K-200-05



Power harness

9K-100-01



ventilation motor

9K-100-02



ventilation motor

9K-100-03



Compressor 12V/24V

9K-100-04



Compressor 12V/24V

9K-100-05



condenser fan 12V/24V

9K-100-06



condenser fan 12V/24V

9K-100-06



Expansion valve

9K-100-07



Drier

Installation

Installation Conditions:

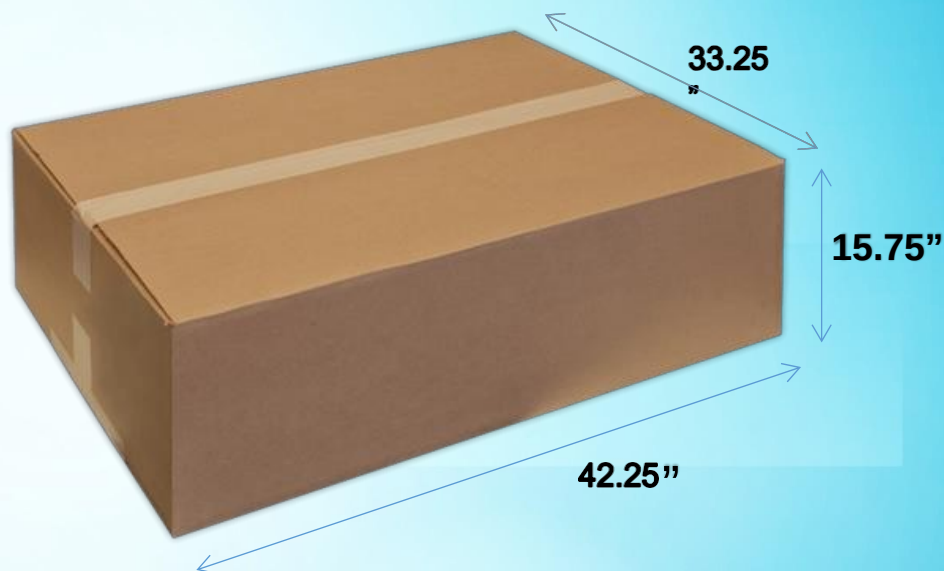
1. Read the Installation section to understand how the unit is mounted and installed before starting.
2. Mounting surfaces must be clean and free of debris.
3. Gather all equipment needed for the installation.
4. Verify roof is strong enough to support the roof mount AC unit and the weight.
5. Please look to technical specifications for weight and space requirements
6. Make sure there is no interference with any OEM electrical wiring, supports, etc. before drilling or cutting into the vehicle.
7. Discuss with customer or consider application, keeping important spaces open and enough clearance at doors / roof for easy use of the system.
8. Prepare additional mounting hardware since there are differences between vehicle types, models, and applications.

Useful tools & equipment

- Tape measure
- Utility knife
- Drill/Impact gun
- Drill bit set
- Angle grinder
- Wrench set
- Pliers
- Wire cutters
- Wire crimpers

Installation (Roof-top Unit)

Main components of One-Piece air conditioner



Installation Instructions For B-COOL9000

MODEL #

B-COOL9000RM12V & B-COOL9000RM24V



Roof top hole - MAXIMUM. cut size

75cm x 50cm (29.5in. x 19.7in.)

Roof top hole - MINIMUM cut size

62cm x 36cm ---OR--- 24.4 x 14.2 inches

Once the cut is made, clean the area around the hole.

Remove all dust & dirt.

Apply sealant tape around the cut hole

Make sure there are no wrinkles or twist in the sealant tape

Before Installation

Place the air conditioner on the roof.

Keep in mind - the unit weighs 34.5kg or 76lbs. Get someone to help you.

Fit the air conditioner over the cut-out area.

Attach the air conditioner with the 2 cross bars provided.

Last, install the decorative cover with the parts provided.

Connect the power wire to the automotive battery.

Run the power cables from the main or auxiliary batteries.

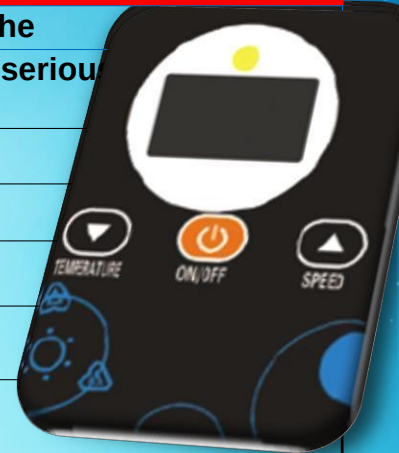
Check the polarity before installing the cables

Use the provided 100A Maxi type fuse between the vehicle battery and the positive main wire

ERROR Codes displayed on the controller

If, while the air conditioner is running, any of the following codes appear on the controller screen, please take the following steps as the code may indicate a serious problem

- 1: STOP THE AIR CONDITIONER & POWER OFF.
- 2: AFTER 10 MINUTES POWER ON & START A/C
- 3: IF THE CODE PERSISTS - STOP A/C & POWER OFF
- 4: CONTACT REPAIR CENTER.



E01 - Voltage is too low - Charge the battery or Start the Engine

E02 - Evaporator blower is not operating. Check wiring and voltage of the supply wiring and repair. Also check blower and replace if defective.

H22 / H23 - Check evaporator inlet sensor by powering down the air conditioner and restart the air conditioner. If the code reappears it means that the sensor is defective or has become dislodged from the evaporator coil.

E04 - Temperature sensor of the plenum

E05 - Compressor over temperature indicator. This will power off the unit until the compressor cools down so as not to damage the unit. This may happen if the ambient temperature is very high. Once the compressor cools the unit will restart again.

E06 / E07 - Condenser fan is not operating. Check the wiring and voltage. Also check fan as it may be defective and needs to be replaced

E09 - Condenser fan control board is defective and should be replaced.

E10 - Condenser fan failure - Replace the condensing fan motor

E11 - The condenser fan is not operating. Check the wiring for damage.

NOTE: If the number flashing on the indicator is not shown in this table, please replace the compressor control panel

OPERATING INSTRUCTIONS

Functions of the Control panel & the Remote Control



Turn on A/C: Press On / Off button to turn on A/C (long press)

Check High/Low Pressure

Normal range: H/P 1.2 - 1.4 L/P 0.2 - 0.25

Temperature setting:

A) Click the Temp. button (Arrow down) to set the temperature after starting the Air Conditioner

B) After clicking the down button, click the DOWN button or the UP button to set desired temperature (18°C [66°F] – or higher)

Speed setting:

A) Click the Speed button (Arrow up) to set speed after starting the Air Conditioner

B) After clicking the up button, click the DOWN button or the UP button to adjust the speed

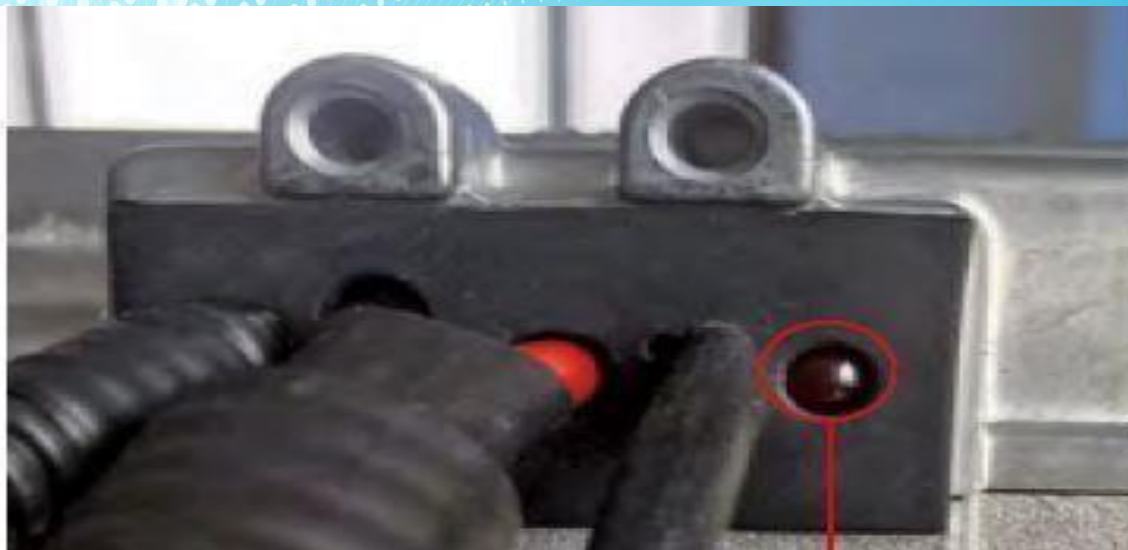
Voltage setting:

A) After starting the Air Conditioner, click the ON / OFF button 3 times to enter the voltage setting

B) Click the DOWN button or the UP button to set the voltage

NOTE: Swing Flap, Timed off , Timed on – **NO FUNCTION**





Compressor Troubleshooting

Flash 1x	Standby
5x	Compressor Case temperature is too high- Lack of refrigerant or dirty condenser
6x	Open circuit of cooling fan - Bad contact of electromagnetic fan plug
7x	Short circuit of cooling fan - Short circuit in the motor or short circuit in the connection line.
9x	Condenser fan controller failure
10x	Condenser fan failure
11x	Condenser fan lost contact

Troubleshooting - Air conditioners

If any of the following situations occur during the use of air conditioners, please find out a solution by following the index

If it's a fault, Please contact the tech. / repair center.

Condition	Solution
If the cooling effect is not good	Select the right mode and set proper temperature and speed.
	Check if there is any obstruction at the air inlet and outlet
	Check if the surface of the condenser is too dirty
	Check if it is short of refrigerant and if the high and low voltage is within the normal range
There is water on the surface of indoor unit	When running in an environment with high humidity, water drops may form on at the air outlet and core surface, which is a normal physical phenomenon
The indoor unit displays voltage fault	Check battery for low voltage and verify the power source is either DC 12V or 24V
	Check if the low voltage protection value is too high
The indoor unit displays sensor fault	Check if the sensor at air inlet / outlet is plugged in correctly
	Check if the display temperature is higher than normal ambient temperature. If it is, change the sensor.
The indoor unit displays fan fault	Check if the fan is correctly plugged in. Connect the fan with a separate 12V or 24V DC power source. If the fan doesn't work, replace fan.
Installation and User Manual for vehicle Electric Air – Conditioners	
The indoor unit displays outdoor unit fault	Check if it is short of refrigerant.
	Check if the high and low voltage is within the normal range.
	Check if the condenser is too dirty - so that heat dissipation is adversely affected.

The B-COOL9000 unit comes pre-charged. However, should a leak or an Incident occur during shipping, the following steps must be taken.

Leak Testing

- 1 - Refrigerant volume (check with level glass)
- 2 - If volume is low or is lower than the previous check, investigate possible leak by looking for traces of oil.
- 3 - Attach the nitrogen tank to the low side port.
- 4 - Perform a leak test by pressuring the system to 200 psi and then check for leaks at each fitting and connection and throughout the evaporator and condenser coils.
- 5 - The system should hold pressure for at least 15 minutes.
- 6 - Sometimes, but rarely, the unit could be damaged during shipping.
- 7 - If there are no leaks, evacuate the system.

Evacuate System

Evacuate the entire system while meeting local refrigerant handling standards. We recommend at least 30-45 minutes vacuum before charging. After the unit is empty, move to charging the system and charge it with 650g of R134a refrigerant.

Charge the System

The system should be charged by a qualified A/C technician and follow the guidelines for R134a Freon.

Maintenance:

Before beginning cleaning, make sure the air conditioner is turned off, powered off

1) Surface Cleaning of inside unit:

Wipe with a clean damp cloth.

The cloth can be dipped in a mild cleaning solution if the unit is very dirty.

2) The core of evaporation chamber is too dirty.

Check for dirt and debris in the evaporator, clean with compressed air if necessary.

3) Outdoor unit cleaning:

Remove the top cover and clean the condenser with compressed air.

Pay attention not to damage the condenser coil.

4) Long time not in use:

Unplug the air conditioner and wrap the outdoor unit to avoid any physical damage

5) Using after long time not in use:

Clean the unit body condenser and evaporation unit. Check for signs of any foreign matter at the air inlet or outlet of the unit. Check if the drain is clear; Install remote controller, make inspection and power it on.

Tips:

Maintain the AC unit frequently - at least once every 2 months, If you operate the AC in a dusty - dirty environment more frequent cleaning will be required.

Check for blockage on top and bottom of the condenser fan, the condenser coil and air flow before and after the evaporator blower.