



S6 - VAN CONVERSION KIT MANUAL

© Fresair, LLC. | All Rights Reserved

Dear User

Congratulations on your new purchase! As a Fresair Air Cooling Unit owner, you're about to enjoy the fruits of an innovative, high quality product designed exclusively to provide you with extreme comfort in hot climates.

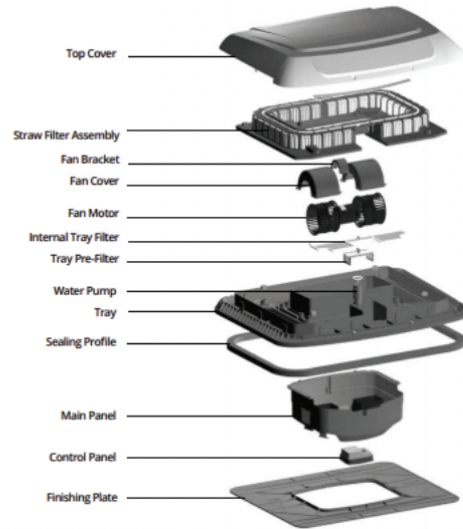
We take pride in our products and want you to feel confident installing and operating the Fresair Air Cooling unit, that's why we prepared this manual.

Here you will find simple instructions for step-by-step installation, optimal performance, and operational procedures so you can get the most out of your Fresair.

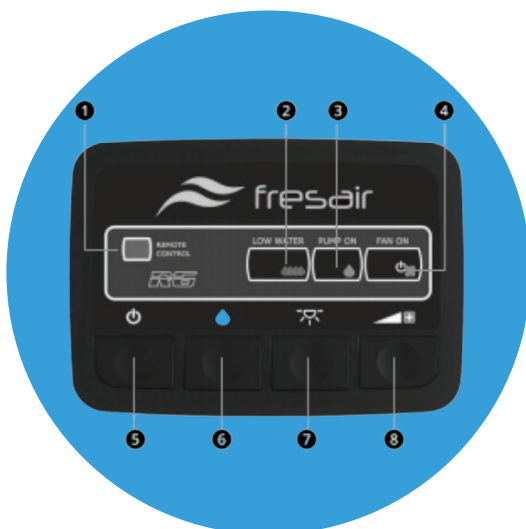
Table of Contents

Main Components	3
Safety Information	4
Technical Data	5
Technical Assistance	8
Operation Information	9
Warranty Information	10
Parts: Maintenance	11
Parts: Installation	13
How to Install	15
Cleaning & Care	24

Main Components



- **Fan On/Off:** Press button **5** to turn the fan on and off
- **Fan Speed:** Press button **8** to cycle through fan power levels (5 fan speeds.)
- **Pump On/Off:** Press button **6** to turn water circulation on and off.
Note: When you turn the fan on the water pump automatically starts (if there is water in the reservoir.)
- **Low Water:** When the water tank level is low the “LOW WATER” LED **2** starts blinking. The light will remain solid when water is completely depleted at which point pumps will shut off. Refill the water tank to resume normal cooling operation.
- **Interior Light:** Press button **7** to turn the interior light on and off.



- 1 Remote Control IR receiver
- 2 Low Water LED
- 3 Water Pump on LED
- 4 Fan on LED
- 5 Fan On/Off
- 6 Water Pump On/Off
- 7 Interior Light On/Off
- 8 Cycle through Fan Speeds (5 Fan speeds)

Safety Information

Explanation of Symbols



CAUTION!

Safety Instruction: Indicates a hazardous situation that, if not avoided, could result in serious, minor or moderate injury.



NOTICE!

Indicates a situation that, if not avoided, can result in property damage.



NOTE

Supplementary information for operating the product.

Safety

The manufacturer accepts no liability for damage in the following cases:

- Damage to the product resulting from mechanical influences and incorrect connection voltage.
- Alterations to the product without express permission from the manufacturer
- Use for purposes other than those described in the operating manual.

Handling the Product



WARNING!

- Only use the Fresair Air Cooling Unit for the purpose specified by the manufacturer and do not make any alterations or structural changes to the device.
- Do not use the Fresair Air Cooling Unit if it is visibly damaged.
- Installation and repairs to the Fresair Air Cooling Unit may only be carried out by qualified personnel who are familiar with the risks involved and the relevant regulations. Inadequate repairs may cause serious hazards.
- People (including children) whose physical, sensory or mental capacities or whose lack of experience or knowledge prevent them from using this product safely should not use it without the supervision or instruction of a responsible person.
- **Electrical devices are not toys.**
- Children must be supervised to ensure that they do not play with the product.
- Do not undo the upper cover of the Fresair Air Cooling Unit in case of a fire. Use approved extinguishing agents instead. Do not use water to extinguish fires.
- Do not reach into air vents or insert any foreign objects in the system.

Safety Information



CAUTION!

Disconnect all power supply lines when working on the unit (cleaning, maintenance, etc.)

Intended Use

The Fresair Air Cooling Unit is used to supply the interior with cool air. The system is designed for stationary use. It can be used while driving.



NOTE

Only install the Fresair Air Cooling Unit using the installation instructions provided in the manual.

The Fresair unit uses minimal 12V power to pull air from the outside of the vehicle, through an anti-bacterial and anti-fungal pine straw filter, delivering strong directional air through the four adjustable air vents. With the cooling mode on, the pine filter is gradually wetted through a drop system, by repetitive injection and return of circulating water from the water reservoir. The pine straw filter is never oversaturated and water usage is conserved by this regular flow of water between the reservoir and the unit. The resultant air flowing into the vehicle is cooled by an evaporative process.

The unit will continue to produce cool air until it is turned off, the connected power source is depleted, or the water reservoir is exhausted.

The unit can be used both with or without water circulation. To use it without, power on the Fresair unit and power off the pump on the control panel. With no water circulating the system acts like a simple directional fan without cooling.

The system is controlled using the control panel or the included remote control.



NOTE

The Fresair Air Cooling unit can lower the temperature within the vehicle to a certain level. The temperature depends on the type of vehicle, the ambient temperature and the cooling capacity of your unit. For the cooling capacity of your unit, see "Technical data" on page 7.

Technical Data




Height	3.7 inches
Width	33 inches
Depth	25 inches
Weight	25 pounds
Average Water Consumption	500 to 1500 ml/h depending on the external moisture and temperature
Capacity	18L water tank
Autonomy	15-22 hours
Fan	Double fan with ohmic resistance
Voltage	12V
Maximum Nominal Current	12V/10A
Fan Speed	4000 rpm
Weight Maximum Air Flow	400 m ³ /h
Insulation Class	1Ω

Technical Data

AMBIENT TEMPERATURE °F

% RELATIVE HUMIDITY

	2	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
125	83	86	90	93	96	99	104	108	113	114	116	117	118	119	121	122	123	124	125
120	81	83	86	90	93	95	99	101	105	107	109	111	113	114	115	117	118	119	120
115	78	80	83	86	89	91	94	97	101	103	105	106	107	109	110	111	112	113	114
110	75	77	80	83	85	87	90	92	95	97	99	100	101	103	104	105	106	107	108
105	72	74	77	79	81	84	86	88	89	91	93	95	96	98	99	100	101	102	103
100	69	71	73	76	78	80	82	83	85	87	88	90	91	92	93	94	95	96	97
95	67	68	70	72	74	76	78	79	81	82	84	85	87	88	90	91	93	93	94
90	64	65	67	69	70	72	74	76	77	78	79	81	82	83	84	86	87	88	90
85	61	62	63	65	67	68	70	71	72	73	74	75	76	77	79	81	82	84	84
80	57	58	60	62	63	64	66	67	68	69	71	72	73	74	75	76	77	78	79
75	54	55	57	58	59	61	62	63	64	65	66	67	68	69	70	71	72	73	74

-  Comfort
-  Cool with air flow (ceiling fan or window.) Use directional air from vents on the body.
-  Daytime cooling only. For enclosed RV/VAN/Trailer sleeping you will need traditional AC.



NOTE

These figures are estimates based upon aggregated data. Fresair is not responsible for exact achievable temperatures or comfort zones as installations differ.

Technical Assistance

Fresair is committed to providing guidance to ensure optimal performance, understanding routine maintenance and preventative care.

Should you need any assistance or guidance on performance, preventative care, maintenance or general questions please contact an authorized dealer or reach out to us directly at support@fresair.com.

Additionally, we have outlined some of our go to resources for questions and/or troubleshooting remedies that can help to answer your questions.

Support: <https://www.fresair.com/support/>

Installation Videos: <https://www.fresair.com/videos/>

Installation Guide: <https://fresair.com/installation-guide-s6/>

Operation Information



NOTICE!





The manufacturer assumes no liability for non-observance of this operating manual, in particular for any consequential damage(s), especially consequential damage(s) caused by failure of the Fresair Air Cooling unit. Do not insert foreign objects into the system.

Observe the following instructions to ensure your Fresair Air Cooling Unit is used properly and efficiently.

It is recommended that you:

- Park your vehicle in the shade when possible.
- If you leave your vehicle and your unit is in off mode and the vehicle is not ventilated, make sure to open a window, door, or vent when you return in order to release hot air and more quickly introduce cool air.
- Select a suitable fan speed by increasing or decreasing the speed until the desired speed is achieved.
- Use the any or all of the 4 directional vents to point the airflow to the desired areas.
- Ensure water reservoir is full.
- The water pump automatically turns on when the unit is turned on provided there is water present in the reservoir.
- Keep the water pump on for maximum cooling performance.
- The best cooling capacity is achieved when the fan is at maximum speed, the pump is on and the directional vents are directed toward you.

Operation

- ✓ With the system switched off, press the  button.
- ✓ The Power LED and Water Pump LED light up.
- ✓ The fan and water pump starts.
- ✓ If you wish for the unit to operate without the water press the  button to turn the water pump off.
- ✓ To increase or decrease the airflow press the  button.
- ✓ To turn the interior light on or off press the  button.

Warranty Information

The warranty period begins on the purchase date and ends 12 months from the purchase date with exceptions to certain replacement parts as outlined in the manual.

If the product is defective, please contact the dealer you purchased from or contact Fresair directly by emailing support@fresair.com. For repair and warranty processing, please include a copy of the receipt with purchase date and a reason for the claim and/or description of the fault.

In no case will Fresair exchange the product for a replacement solely due to a defective component.

- A. Damages caused by accidents;
- B. Plastic items: superior cover in ABS plastic, main panel, finishing frame and base;
- C. Electric harness or hoses cut or damaged;
- D. Control panel with any sign of modification or use with other brand;
- E. Fan with broken or damaged airscrew or with normal brush wear and tear;
- F. Air filter obstructed by dirt or dust;
- G. Any component in which the label with the date of manufacture is removed or not legible;
- H. Use of unauthorized parts, unauthorized modifications, or unauthorized repairs made by technicians or individuals who are not licensed or not qualified to modify or repair Fresair units;
- I. Off road application;
- J. Unsatisfactory product performance due to improper installation;
- K. Damage caused by unexpected circumstances (ex: accident, fall, wear and tear, violent weather conditions, use of chemical abrasive products inside and outside the product, etc.);
- L. If the product is switched on at a different voltage than it was intended for;
- M. Removal of and/or modification of the serial number or the product identification label.



NOTICE!

If kept in off mode for an extended period of time, there may be an odor when turning it on again as a result of the absence of water cycling through the straw filter. You may remedy this by running a few cycles and the odor will naturally subside.



NOTICE!

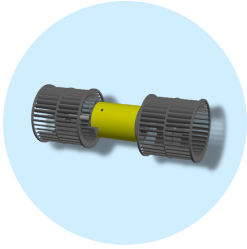
This model has exclusive application for on road uses. We do not recommend extreme off road uses at this time.



NOTICE!

Never add anti-freeze, softener, perfume, fragrance or any other substance than pure water in the reservoir. Adding substances could create foam or potentially cause leaks.

Parts: Maintenance

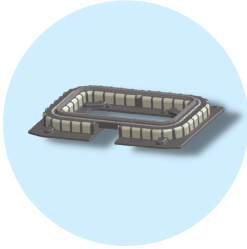


- **Fan:** Located in the center of the tray, the fan draws in external air and blows internal air through the 4 directional vents.



NOTE

The fan contains carbon brushes that can degrade over time. We recommend replacing every 4 years.

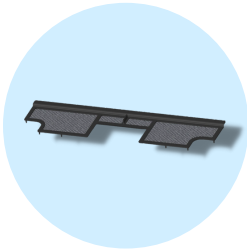


- **Evaporative Straw Filter:** Located in the tray, external air is pulled through the moistened straw causing evaporation over a large surface area resulting in the cooling of the passing air which is delivered to the internal vents. It also filters out dust, insects, and acts as a humidifier in very low humidity environments.



NOTE

We recommend inspecting the filter and washing with a hose every 3-6 months to remove dirt and debris. Depending on usage we recommend replacing the filter every 12 months.

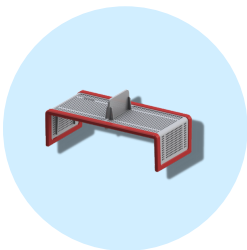


- **Tray Internal Filter:** An internal filter located in the tray which is responsible for filtering the excess water descending from the straw filter. The water is then recycled and returned to the water reservoir.



NOTE

We recommend inspecting and gently washing the filter every 6 months. Excess amounts of dirt could prevent water from cycling through, possibly cause water leakage.



- **Tray Pre-Filter:** Also located in the tray and is responsible for a second filtering process, avoiding the entry of dirt into the pump, protecting the pump from clogging and breaking down.



NOTE

We recommend inspecting and gently washing the filter every 6 months. Dirt can gradually accumulate which overtime lowers the equipment's performance and can cause eventual water leakage.

Water Pumps



- **INJECTION:** The injection pump is located on the outside of the water reservoir and sends water to the Fresair unit.
- **RETURN:** The return pump is located in the tray and returns excess water to the reservoir.



NOTE

We recommend removing the pumps every 6 months and cleaning them with an air blast. Additionally, we recommend changing the pumps every 12 months.

Parts: Maintenance



- **Float Sensor:** The sensor buoy is attached to the water tank and monitors the water level. If the tank is full and the low water warning light remains on, check that the sensor is inserted correctly in the reservoir with the green dot facing up. If the sensor is inserted correctly and the light remains on it should be replaced.



- **Control Panel:** The control panel controls all the product functions. The panel is equipped with an internal safety circuit against motor and pump short-circuits. Should your unit stop working, always check the fan motor and pumps first. The control panel may turn off, protecting itself against some other electrical defects. If the control panel is completely dead, check the main fuse to the battery.



NOTICE!

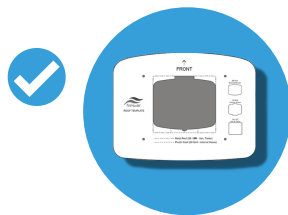
Periodical maintenance is essential for optimal performance and prolonging the life of your Fresair Air Cooling unit. We recommend preventative maintenance and replacing of wearable parts annually or as outlined in the manual, coinciding with your yearly vehicle maintenance.

Parts: Installation

Loose Components



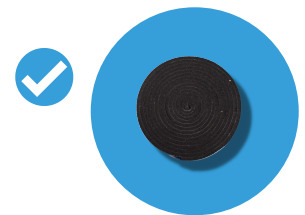
Fresair Unit



Cardboard Mounting Template

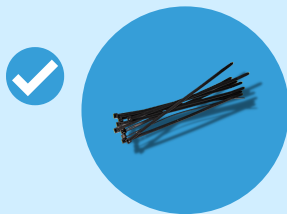


Self-Sticking Sealing Foam (Inner Edge Use)

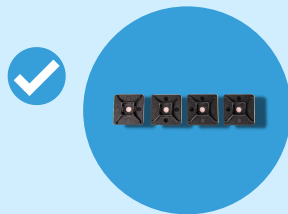


Self-Sticking Sealing Foam (Outer Edge Use)

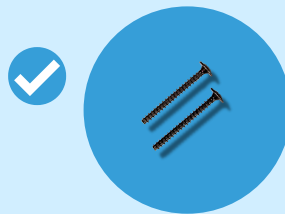
Bag #1



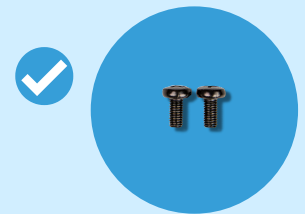
(10) Zip Ties



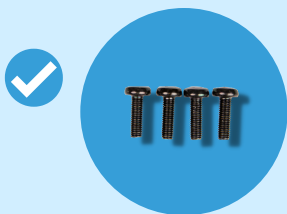
(5) Tie Mounting Pads



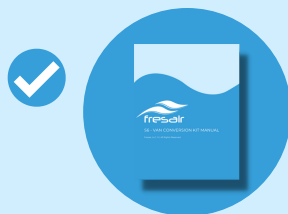
(2) 4mm x 50mm Washer Head Screws



(2) M5 x 10mm Screws



(4) M5 x 15mm Screws



Fresair Owner's Manual

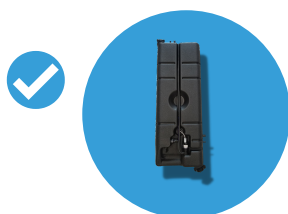


(2) Fresair Decals



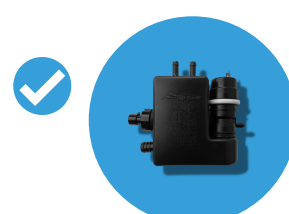
(1) Remote Control

Water Reservoir



18L Water Reservoir

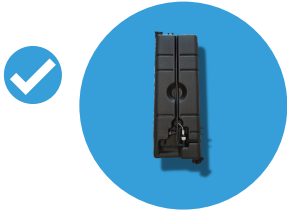
—OR—



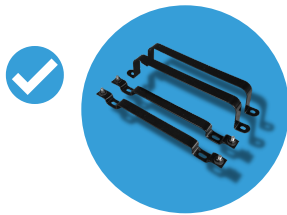
Mini Reservoir

Parts: Installation

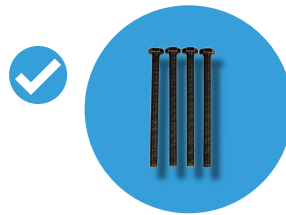
Bubble Wrapped Brackets (18L)



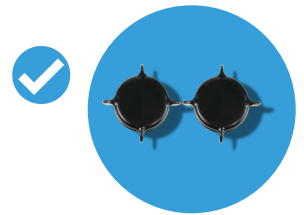
18L Water Reservoir



(2) Mounting Brackets



(4) Bolts

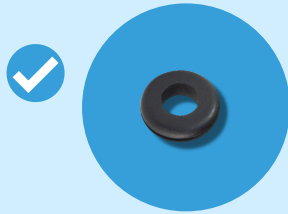


(2) Water Reservoir End Caps

Bag #2

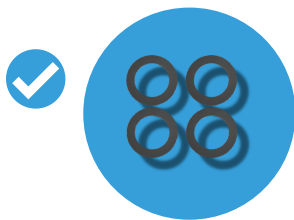


(2) VDO Water Pumps

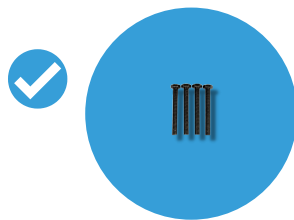


(1) Rubber Grommet for Water Pump

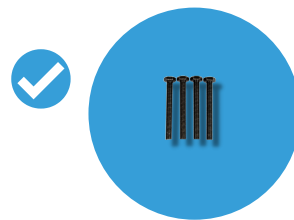
Bag #3



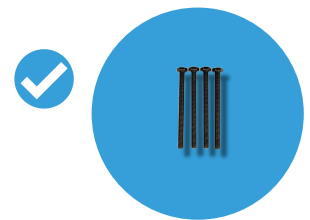
(4) Rubber O Rings



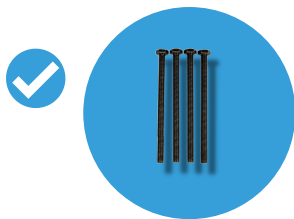
(4) M8 x 40mm Bolts



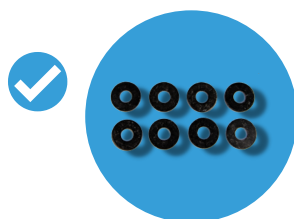
(4) M8 x 60mm Bolts



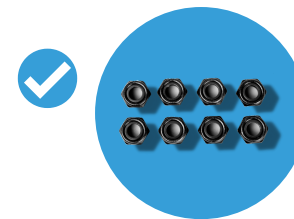
(4) M8 x 80mm Bolts



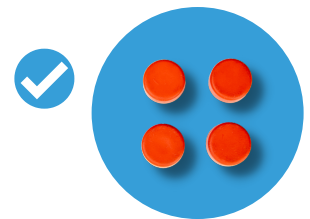
(4) M8 x 100mm Bolts



(8) M8 Flat Washers



(8) M8 Self Locking Nylon Nuts



(4) Red End Caps

How to Install

Please read the instructions thoroughly prior to installing the Fresair unit. We are not responsible for damages and/or improper installation due to user error.

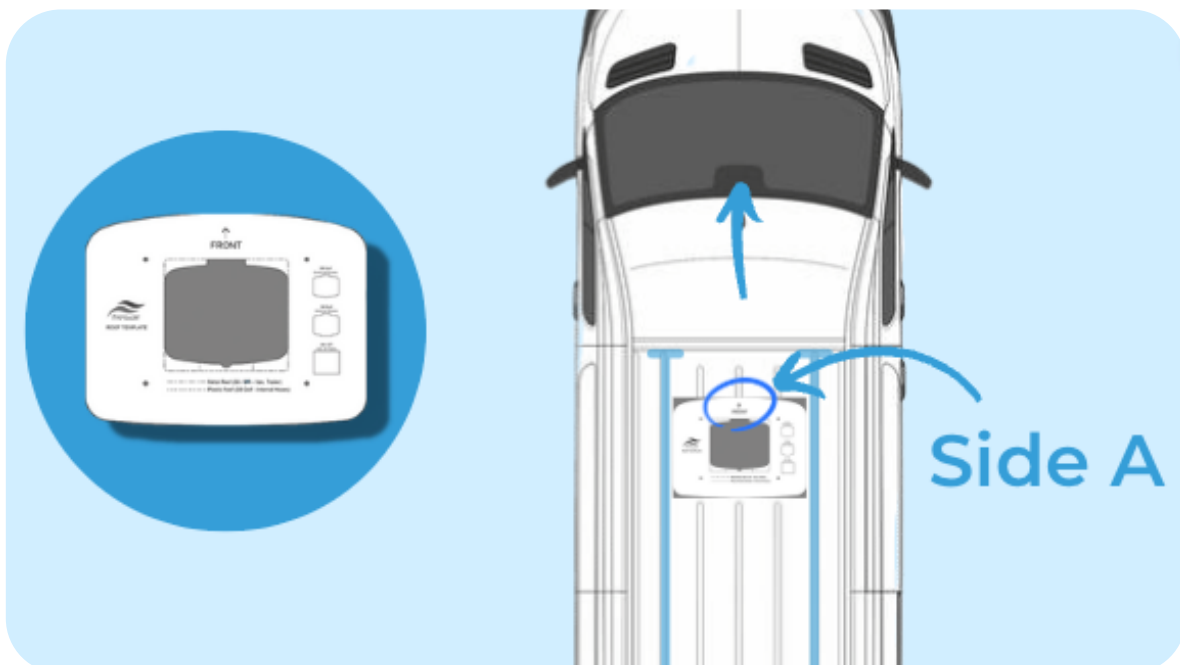
Step 1 - Tracing the Mounting Template

Prep Tip: It is very important that the roof surface is clean to ensure a weather-tight seal between the base of the Fresair unit and your roof. Take time to determine where you wish to install your Fresair. Ensure that the unit is placed between roof support bars so you don't compromise roof integrity. Plan how the internal harness will run to power and reservoir.

What you'll need: Cardboard Mounting Template, *Masking Tape, *Permanent Marker

- Place the Cardboard Mounting Template over the exact roof area where you plan to mount your Fresair Unit.
- Ensure the larger notch (side A) is positioned toward the front of the vehicle and the Cardboard Mounting Template is placed between roof supports.
- *We recommend taping the Cardboard Mounting Template to the roof to eliminate movement while tracing the outline and hole cutouts for bolt placement.
- Simply trace the open area of the Cardboard Mounting Template.
- *We recommend using a permanent marker so the outline is clearly visible.
- Once the outline has been drawn, remove the template (and tape.)

IMPORTANT: For Van Conversion you do not need to cut the exact template shape. For ease you should just cut an opening of 14.5" wide (side to side of roof) and 13" tall (front to back of roof).



How to Install

Step 2 - Cutting the Opening for the Fresair Unit

Prep Tip: In order to keep the vehicle free from debris, we recommend temporarily securing a plastic drop cloth around the cutout area inside the vehicle so that debris will land inside of the drop cloth and not in your vehicle.

What you'll need: Angle Grinder/Jigsaw (Cordless tools are strongly recommended), File, Sealant/Anti-Rust Paint, *Plastic Drop Cloth, *Safety Glasses

- Make sure to wear appropriate safety gear to protect yourself from sparks, metal ricochet, etc. such as safety glasses, gloves, long sleeves, etc.
- Cut the opening of 14.5" wide (side to side of roof) by 13" tall (front to back of roof) along the outline as closely as possible.
- File any newly cut edges and ensure edges are smooth to the touch.
- Seal the newly cut edges with anti-rust paint or sealant and allow to dry for the recommended time.
- Clean away any remaining debris from the roof to prevent rust.

Step 3 - Testing the Fit

What you'll need: Fresair Unit

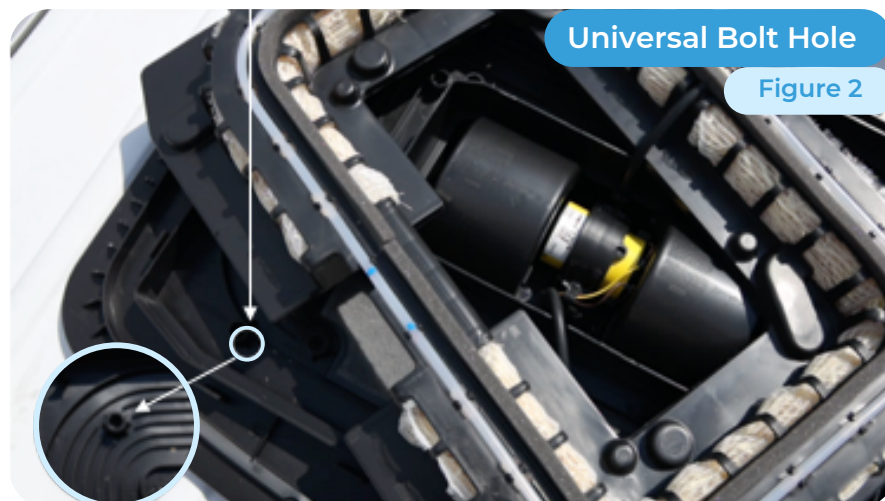
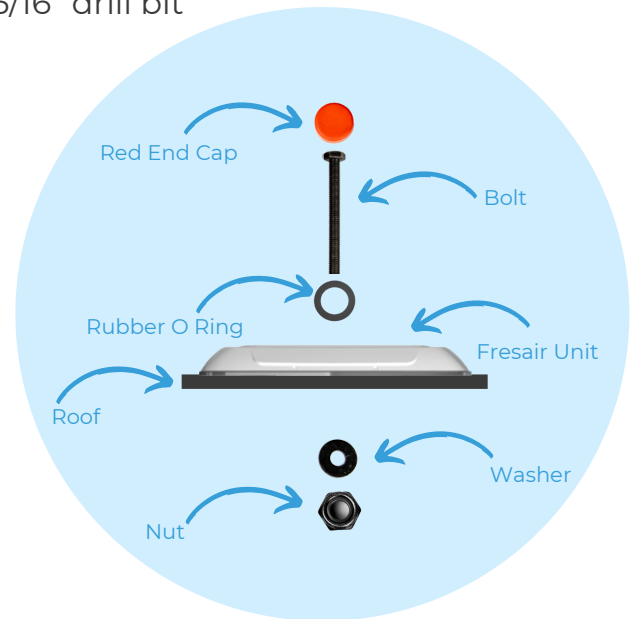
- Test the fit of the Fresair Unit by lowering it in the area you've just cut out and make any necessary adjustments accordingly. Be careful not to crimp or damage the water hoses.

How to Install

Step 4 - Drop in the Bolts

What you'll need: Fresair Unit, Screwdriver, 8MM/5/16" drill bit

- Remove the cover of the Fresair unit and locate the black push tabs that release the pine filter (note how the filter slots into the front channel of the base.) (See figure 1)
- Next, rotate the pine filter gently to reveal the "Universal" mounting holes. (See figure 2)
- With the unit in place and secure, drill through the plastic base and roof using an 8MM/5/16" drill bit in the first "Universal" hole.
- Drop a bolt into the newly drilled hole to hold the unit in place.
- Then drill the second, third and fourth holes in a similar fashion.



How to Install

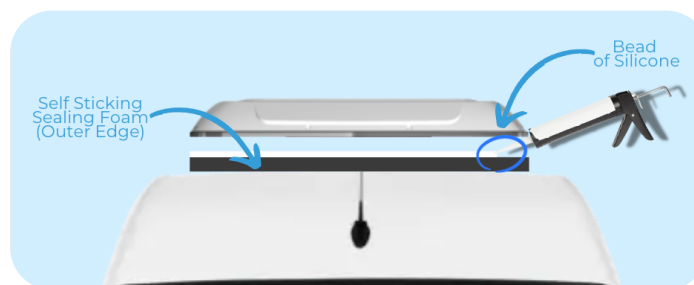
Step 5 - Adhering the Sealing Foam Tape

What you'll need: Fresair Unit, Sealing Foam Tape

- With the unit still in place and secure, use a permanent marker to draw an outline around the outside base of the unit on the roof.
- Remove the unit from the roof and turn the unit over.
- Stick the thicker sealing foam tape around the airbox up to the honeycomb plastic line. Cut the sealing foam tape to the correct length ensuring there are no gaps where the sealing foam tape ends meet. (See figure 3)
- Stick the thinner foam on the roof along where you traced the outside of the base. Overlap the outline slightly to ensure a conservative amount of foam sticks out from the base of the unit. Again, cut the foam to length ensuring there are no gaps where the ends meet.



- Apply a single bead of silicone along the middle of **both** the foam on the unit and the foam on the roof.
- Carefully lower the unit back onto the roof being careful to align the bolt holes first so the foam and silicone form a weathertight seal.
- At the same time, make sure to bring wiring and tubing through the opening on the predetermined side the wiring and tubing will run to meet their connections.



How to Install

Step 6 - Mounting the Fresair Unit

What you'll need: Fresair Unit, 4 Bolts, 4 Washers, 4 Nuts, 4 Waterproof Bolt Caps, 6 Cover Screws, 2 Finishing Frame Screws, *Screwdriver, *Crescent Wrench(es), *Self-leveling lap sealant/Silicone

- Choose the ideal bolt length for your installation and roof finish. (Excess bolt length can always be removed with an angle-grinder later.) The bolts you choose will need to be long enough to secure the unit to the roof and have enough thread for the washer and nut to be secured to the end of the bolt of the roof's interior.
- Place a small rubber washer onto the bolt and drop in each of the four bolts into the universal bolt holes.
- Place the provided red rubber caps over each universal hole in the base to further weatherproof the bolt holes.
- Inside the vehicle, place a metal washer onto each bolt, followed by a nut.
- Tighten each of the 4 bolts gradually and evenly until the sealing foam tape compresses evenly over the roof lines or ridges.



NOTE

Be careful not to over tighten the bolts as this can warp or crack the base.

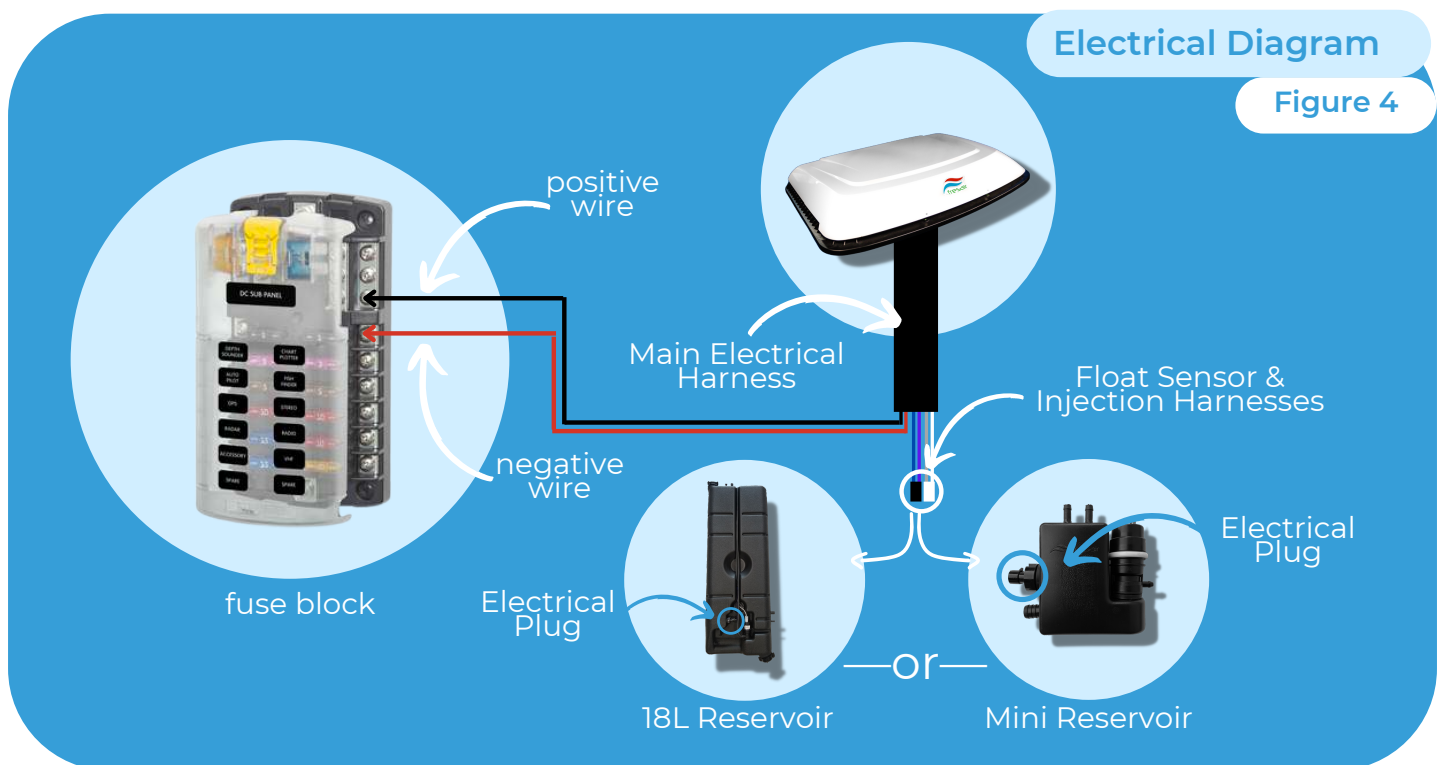
- Inspect how well the foam has compressed over roof ridge lines. If there are any gaps you need to run self leveling lap-sealant around the outside of the base and outer edge of the sealing foam tape and onto the roof for a better weatherproof seal. Please allow for drying time so as not to remove any of the seal.
- On the roof, twist and latch the pine filter back into place (ensure the front of the filter is slotted below the channel at the front of the base.)
- Attach the top cover using the 4 longer cover screws on the back and sides and the two shorter cover screws at the front of the unit. Attaching the cover makes it easier starting at the front first.
- Attach the finishing frame inside the vehicle using the two finishing frame screws (This step can be skipped if you are building custom trim to match your vehicle's interior.)

How to Install

Step 7 - Electrical

What you'll need: Supplied Electrical Wiring, *Screwdriver

- Please remember to take any safety precautions when working with electrical wire. We recommend disconnecting the main power supply until the wires are connected for safety purposes.
- Run the electrical wiring from the unit to the 12V DC fuse block ensuring it is completely concealed so that the wire is not exposed to elements or incidental damage.
- Connect the positive wire (red) to the positive terminal of your fuse block.
- Connect the negative wire (black) to the negative terminal of your fuse block.
- Ensure both wire connections are tightened properly and completely secured to the fuse block.
- Next, test the power (using the Fresair power button on the unit) to ensure your unit turns on.



How to Install

Step 8 - Plumbing

What you'll need: Supplied Water Lines/Tubes, Water Reservoir, Zip Ties, Water, *Plumbing tape

- Out of the box the reservoir is set up for horizontal mounting but can also be mounted vertically by moving the float sensor and injection pump.
- Choose an orientation that supports easy access so that you can connect the water lines, easily fill the water reservoir, easily change the float sensor and pump when needed and drain the reservoir if/when necessary.

Important: None of the barbs on the reservoir are pre-drilled. You must drill out the return barb depending upon whether you are mounting horizontally or vertically.

- Using the provided mounting brackets, mount the reservoir in the desired area.
- Run water lines/tubes to the reservoir according to the figure 5/6. The return water line is marked with a small red dot at the end.
- Pre-drill the Water Return barb on the reservoir. Slide the water return hose onto the barb. The water return hose has a little red dot on the end.
- Attach the Water Injection hose to the barb on the pump.



NOTE

Optionally you can use plumbers tape and a hose clamp or zip-tie to secure the hoses to the barbs.

- Test the connections by lightly pulling them to ensure the connection is secured.
- Make sure to seal rubber grommets for the unused float sensor and injection pump holes on the 18L reservoir with silicone sealant to further prevent possible leaks.
- Connect the electrical connectors to the float sensor and injection pump.
- Once you're ready, fill your reservoir with water and seal with the provided cap.
- Finally, power on your Fresair and ensure there are no leaks.
- Additionally, test all functions to ensure your Fresair is working properly



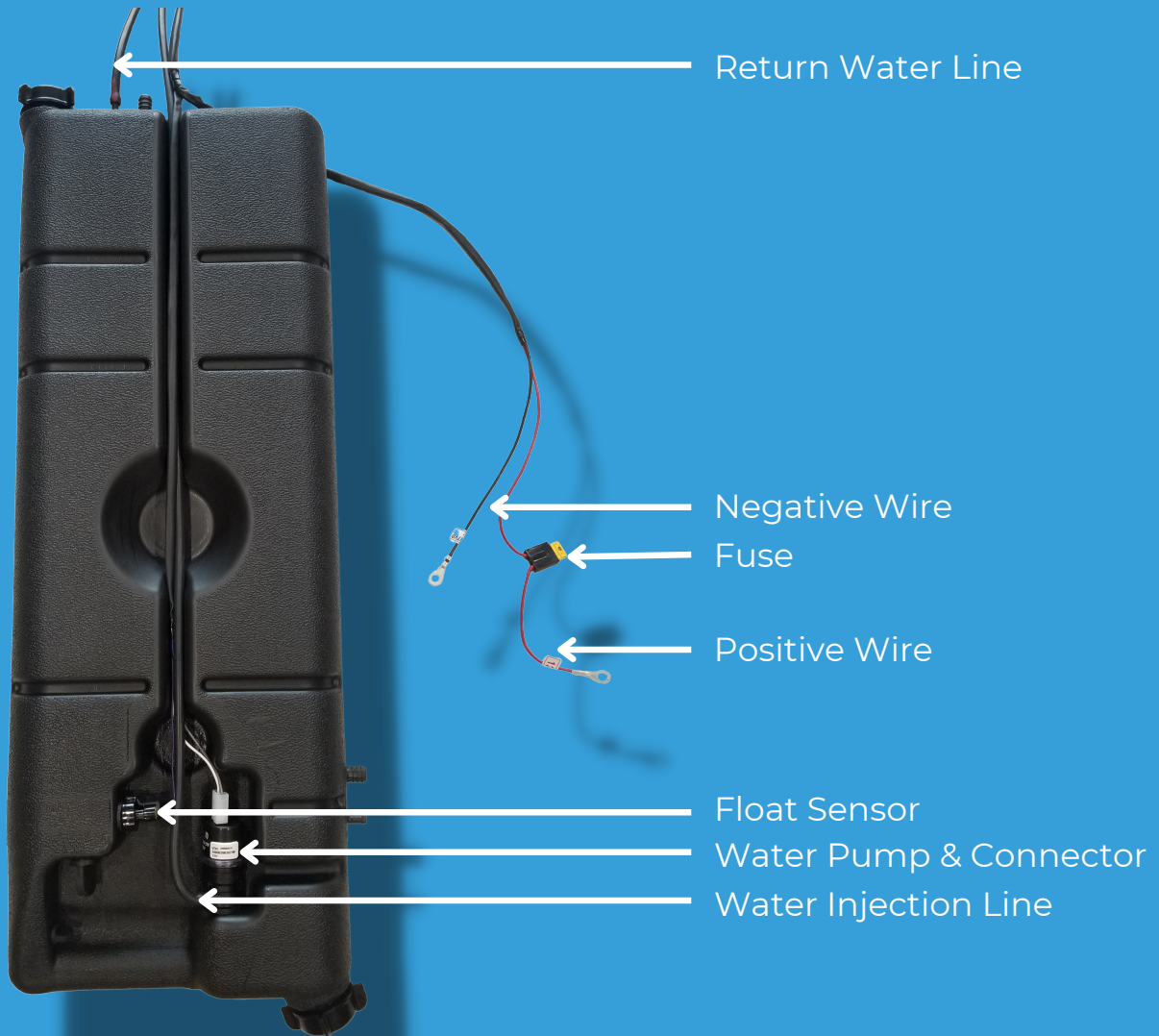
NOTE

There are many ways that you could plumb up the reservoir to be filled from the main freshwater tank which is beyond the scope of this manual. The simplest installation described here assumes that you can access the filling cap with a hose.

How to Install

Vertical Orientation

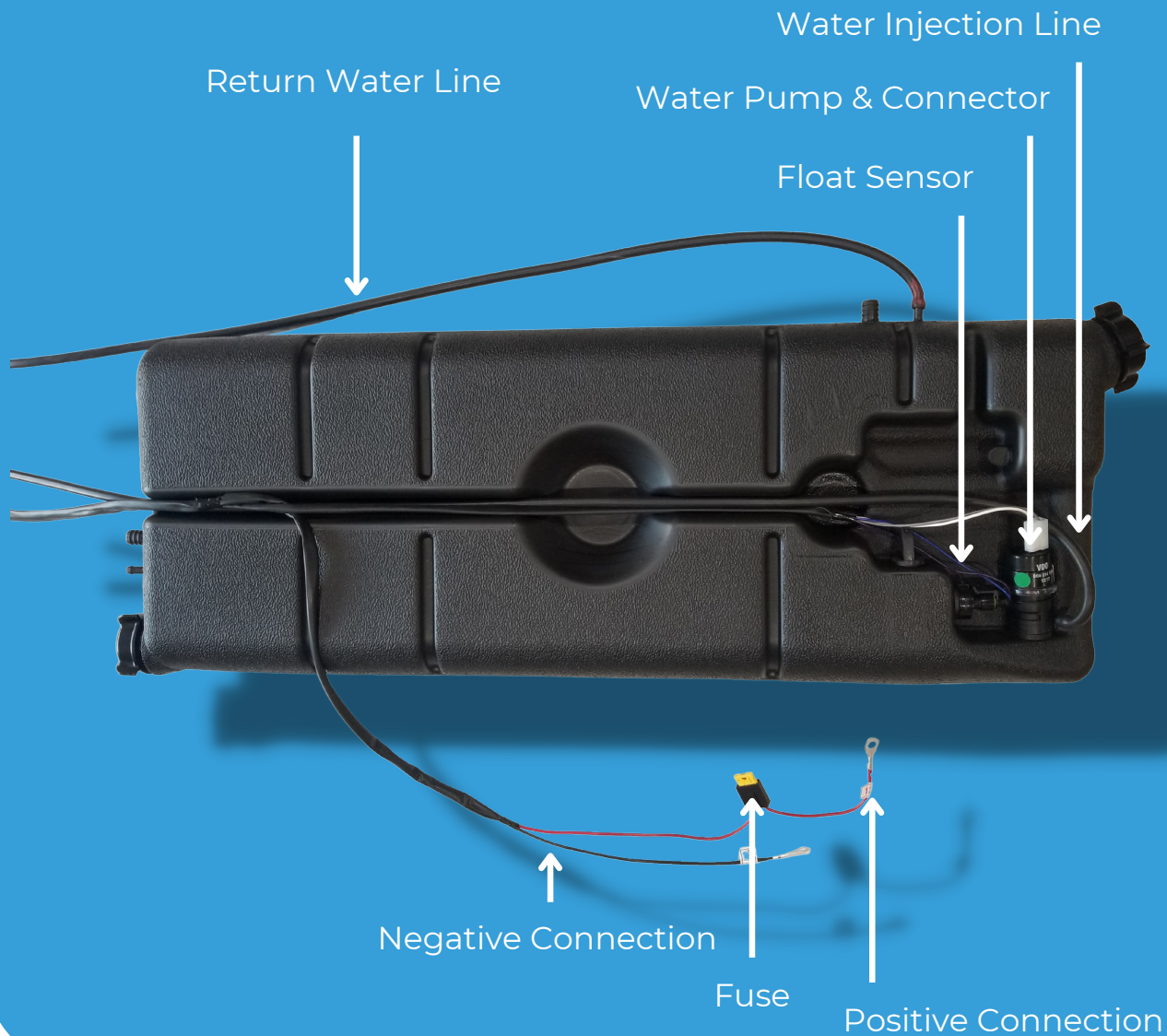
Figure 5



How to Install

Horizontal Orientation

Figure 6



Cleaning & Care

Please observe the following tips for the cleaning and care of your Fresair Air Cooling Unit.



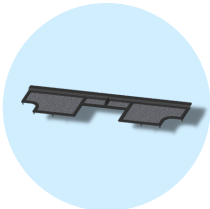
- Clean the external cover of the unit removing dirt and debris on and around the unit as often as you wash your vehicle.



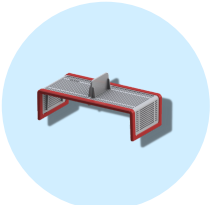
- Check regularly that all the internal and external elements are fastening and tighten when necessary. Be careful not to over tighten as you could warp or crack the base.
- Check regularly that the connection lines are undamaged and secure.



- Check the filter every 6 months and replace every 12 months.



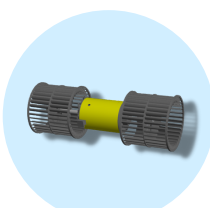
- Gently wash the tray internal filter every 6 months.



- Gently wash the tray pre-filter every 6 months.



- Remove the pumps every 6 months and clean them with an air blast. Change the pumps every 12 months.



- Check the fan as it contains carbon brushes which we recommend inspecting every 12 months and replaced every 4 years.



**Your Local
Dealer**

fresair.com/dealer

**Your Local
Support**

fresair.com/contact