

# ARCTIC AIR

## INFORMATION AND INSTALLATION GUIDE

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**It is the owner's responsibility and expense to install this unit and to have it installed by a qualified aircraft mechanic.**

### **Condensation Removal**

Arctic Air provides a condensation dispersal hose on the unit. This method allows the customer to provide the type and size of condensation collection reservoir of their choosing. By placing the reservoir on the outside of the unit, the amount of condensation can be monitored. When the aircraft is parked, the reservoir can be manually removed and the condensation can be emptied outside of the aircraft.

Another option would be to route the condensation dispersal hose thru a small drain hole placed in the bottom of the aircraft. This will allow the condensation to be removed continuously during flight.

### **Exhaust Air Removal**

**IT IS CRITICAL THAT THE EXHAUST AIR BE REMOVED FROM THE AIRCRAFT IN ORDER FOR THE UNIT TO OPERATE EFFECTIVELY.** We suggest the exhaust air be routed through the rear cabin bulkhead and released into the rear fuselage via a flexible hose ( we provide ) that will be attached to the exhaust outlets(s) on the back of the unit. We will provide the same type plate that covers the exhaust outlet(s) on the unit to attach to the opening on the rear cabin bulkhead. At that point, this released exhaust air should escape the aircraft through small openings that already exist in the rear fuselage of any non-pressurized aircraft. If your aircraft has batteries or electronic gear in the rear fuselage, you may want to run this flexible exhaust air duct all the way to the tail section for disposal of the exhaust air. We have found that the **cabin air vents need to be open** to replace the air the unit is removing from the cabin. This will also create a venting effect that will **aid in the free flow of the exhaust air out of the aircraft**, but will have very little effect on the cool air the unit is releasing back into the cabin.

Your unit may include a Condenser Plenum (optional) that allows for air to be routed from outside the aircraft through the condenser of the unit and back out of the aircraft. The unit will include the hardware necessary to make this possible. The customer must provide 4" duct for a single fan unit, or 6" duct for the double fan unit.

### **Installation Cost and Wiring Data**

It is our understanding, that if the main power connector plug at the unit is labeled "**FOR GROUND USE ONLY**", the installation of the wiring is considered a "**MINOR ALTERNATION**".

The aircraft mechanic should do an electrical load analysis for the airplane to make sure that the alternator can handle an additional 40-45 amps at initial start-up (depending on

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the temperature in the aircraft cabin). The amp draw should level off at around 25-28 amps once the cabin has cooled off. Remember to factor in the 80% maximum alternator amp load in determining the size alternator necessary to operate the Arctic Air A/C unit plus the other electrical demands of the aircraft. The mechanic may also want to label the main power wiring harness connector plug “NOT TO BE USED WITH PILOT HEAT, LANDING LIGHTS, STROBES, OR LANDING GEAR”.

### **Portable Device**

The Air Conditioner is a “Portable Device” and it should be well secured in the aircraft as any luggage or portable device should be secured. The unit comes with heavy duty handles for easy placement and removal of the unit. To remove the unit from the aircraft, you need only to disconnect the main power quick disconnect plug, un-plug the control box wiring assembly at the unit, and detach the exhaust air duct. Then grip the handles and remove the unit.

The unit will come completely assembled. We will provide a 15 foot control box wiring harness with cockpit control box. This wiring harness will plug into a female outlet installed on the outside of the unit. The other end of this wiring harness is the switch box that will be placed convenient to the pilot.

The unit will also have a 3 feet main wiring pigtail consisting of a positive and negative # 6 gauge wire on the side of the unit. **From this “pig tail” to the power source of the aircraft will be the customer’s expense.**

You would supply a quick disconnect connector plug of your choosing of which the male portion of the plug will be attached to the “pig tail” on the unit. We use a cannon type plug made by Amphenol. You would then provide the additional positive and negative #6 gauge wire that will be attached to the female portion of this quick disconnect connector plug. Locating this connector plug in close proximity to the unit allows for quick and simple removal of the unit from the aircraft. This quick disconnect capability and easy removal of the unit from the aircraft, allows the unit to be classified as a “Portable Device”. The #6 positive (hot) wire leading from the female portion of this plug may be routed through the fire wall via a second connector plug and connected to the battery(s). If your battery(s) is not located behind the firewall, this second connector plug may not be necessary in routing this positive wire to the battery(s). The negative wire (ground) will be grounded to the aircraft at a location determined by your mechanic.

**After installation of the unit, it then becomes the responsibility of the “PILOT IN COMMAND”, at his/her discretion, to determine when and where to operate the unit.**

We are recommending you purchase a 60 amp inline breaker or fusible link at the battery. We have a 60 amp breaker in the unit. You would then have protection at both ends of the wiring harness. Depending on the size of your aircraft alternator, you may need to

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install a larger alternator in order to provide the necessary amps needed to run the unit plus the other electrical demands you have in the aircraft and stay within the 80% load of the alternator. Your mechanic can advise you on this. We would estimate that the cost ( not including a larger alternator ) of the connector plug(s), additional positive and negative # 6 wire, 60 amp breaker, and labor should be **about \$ 500.**

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