RV-10 Standard Carbon Fiber Panel set

Important Notice: This manual contains important information that may affect the safety of your aircraft. Read the Warranty / Agreement below. There is information in the Warranty / Agreement that may alter your decision to install this product. **If you do not accept the terms of the Warranty / Agreement, do not install this product.** The product may be returned for a refund if you do not accept the terms of the Limited Warranty / Agreement.

Aerosport Products is not liable or responsible for a builder's action or any situation that results in personal injury, property damage, missed commitments, lack of use of an aircraft or any expenses incurred due to: product failure, installation issues (leaks, obstructions, damage to aircraft or components, incorrect installation of any parts, wrong parts, parts that don't fit, etc.) or any other issues related to the installation or operation of this product. All of the above are solely the builder's and/or installer's responsibility. By installing this product, the aircraft owner/pilot and installer agree to hold Aerosport Products harmless and in no way responsible for monetary compensation, including punitive damages for any incident, harm and/or damage associated with this product (including but not limited to the ones listed above). If you do not agree to the above, **DO NOT INSTALL THIS PRODUCT.**

If you do not have the skills, knowledge, tools, equipment or facility, to perform and determine the installation of this product is safe, reliable and accurate and to determine this product is operating properly after installation, **DO NOT INSTALL THIS PRODUCT**. If the owner/pilot and/or installer are unwilling to take the responsibility for the installation and operation of this product, **DO NOT INSTALL THIS PRODUCT**. This product may be returned for a refund by contacting Aerosport Products.

While Carbon Fiber does yield fewer pin holes than traditional fiberglass, your Carbon Fiber Panel may have pin holes. If you don't want to fill the pinholes or you find them objectionable, **DO NOT INSTALL THIS PRODUCT**. If the owner/pilot and/or installer are unwilling to fill the pin holes, **DO NOT INSTALL THIS PRODUCT**. This product may be returned for a refund by contacting Aerosport Products. Shipping charges are not refundable.

Before starting the installation, make sure that your planned installation will not interfere with the proper operation of any controls. The installer should use current aircraft standards and practices to install this product. Refer to AC 43.13-2A, Acceptable Methods, Techniques, and Practices - Aircraft Alterations and AC 43.13-1B, Acceptable Methods, Techniques, and Practices--Aircraft Inspection and Repair. The RV-10 panel is an experimental panel system limited to use in experimental aircraft. Not approved for use in aircraft with FAA or foreign type certificates.

LIMITED WARRANTY / AGREEMENT Aerosport Products warrants its products to be free from defects in materials and workmanship for a period of one year after the retail invoice date. Aerosport Products will repair or replace any components under the terms of this Warranty provided the item is returned to Aerosport Products prepaid. This Warranty shall not apply to any unit or component that has been repaired or altered by any person other than Aerosport Products or that has been subjected to misuse, abuse, accident, , or improper or unprofessional installation by any person. THIS WARRANTY DOES NOT COVER ANY REIMBURSEMENT FOR ANYONE'S TIME FOR INSTALLATION, REMOVAL, ASSEMBLY OR REPAIR. Aerosport Products reserves the right to determine the reason or cause for warranty repair.

1. This Warranty does not extend to any aircraft or any other device to which the Aerosport Products system may be connected, attached, or used with in any way.

2. THE REMEDIES AVAILABLE TO THE PURCHASER ARE LIMITED TO REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE OF THE PRODUCT, AT THE SOLE DISCRETION OF AEROSPORT PRODUCTS. CONSEQUENTIAL

DAMAGES, SUCH AS DAMAGE TO THE AIRCRAFT, ARE NOT COVERED, AND ARE EXCLUDED. DAMAGES FOR PHYSICAL INJURY TO PERSON OR PROPERTY ARE NOT COVERED, AND ARE EXCLUDED.

3. Aerosport Products is not liable for expenses incurred by the purchaser or installer due to Aerosport Products updates, modifications, improvements, upgrades, changes, notices or alterations to the product.

4. Aerosport Products is not responsible for shipping charges or damages incurred during Shipment, except for situations where the system fails away from the aircraft's home base and the pilot is unable to safely fly the aircraft, at which time Aerosport Products shall, at Aerosport Products' sole discretion, pay only one-way shipping charges to the purchaser (US 48 states only).

5. No one is authorized to assume any other or additional liability for Aerosport Products in connection with the sale of Aerosport Products units.

6. By purchasing these products from Aerosport Products, the Purchaser agrees that he/she will not copy, reverse engineer, modify use to make molds or otherwise attempt to use the purchased products design / functionality to develop a competing product

7. IF YOU DO NOT AGREE TO ACCEPT THE TERMS OF THIS AGREEMENT, YOU MAY RETURN THE PRODUCT FOR A FULL REFUND. IF YOU DO NOT AGREE TO ACCEPT THE TERMS OF THIS WARRANTY, **DO NOT INSTALL THE PRODUCT**.

8. This warranty is made only to the original purchaser and is not transferable. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES OR OBLIGATIONS, EXPRESS OR IMPLIED, ORAL OR WRITTEN. AEROSPORT PRODUCTS EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER AGREES THAT IN NO EVENT SHALL AEROSPORT PRODUCTS BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING DAMAGES TO THE ENGINE OR AIRCRAFT, LOST PROFITS, LOSS OF USE, OR OTHER ECONOMIC LOSS. EXCEPT AS EXPRESSLY PROVIDED HEREIN, AEROSPORT PRODUCTS DISCLAIMS ALL OTHER LIABILITY TO THE PURCHASER OR ANY OTHER PERSON IN CONNECTION WITH THE USE OR PERFORMANCE OF AEROSPORT PRODUCTS UNITS, INCLUDING BUT NOT LIMITED TO STRICT PRODUCTS LIABILITY IN TORT.

What's included:

Carbon Fiber Panel

Carbon Fiber Lower Center Console

Carbon Fiber Side Panels (2)

Aluminum Panel Support Frame

What you need to supply:

Quantities are omitted because of variations in the install process. These parts are only recommendations. The builder/installer may substitute parts at their discretion.

F-1003B Instrument Panel Lower Flange from Van's fuselage kit or aluminum to make your own mounting flanges

AN526C832RB screws from Van's fuselage kit

Nutplates, screws, and rivets are not included because they may vary with each builder's installation and preferences. We will provide suggestions in the instructions, but each builder will need to determine the appropriate hardware for their installation per AC 43.13.

Tools required:

#19 drill bit

#27 drill bit

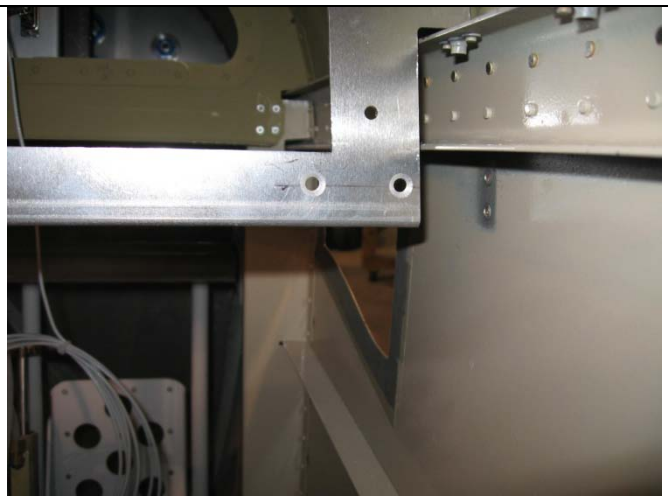
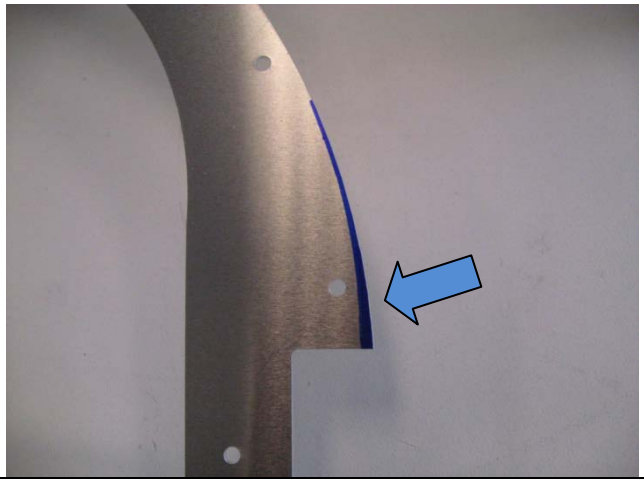
#40 drill bit

Countersinks for # 19 and #27 holes (#6 and #8 screws)

Strap Duplicator for a #8 screw

Note: The throttle, mixture, and prop cables as supplied by Van's will most likely be too short when used with our Carbon Fiber Instrument Panel. You should consider getting cable about three inches longer. We strongly encourage you to determine the exact length for you installation prior to ordering new cables.

Installation Instructions

1. Fabricate two mounting brackets from the existing F-1003B Instrument Panel Lower Flange or you can make your own. Make the height of the bracket the same height as the flange that attaches to the Forward Fuselage Side Skin (1”). The length of the two flanges should be 2 7/8” and 3/4” respectively. Cleco the brackets to the Forward Fuselage Side skin.	
2. Attach the Aluminum Panel Support Frame to the Instrument Panel Attach Panel Flanges using AN526C832RB screws supplied in your Van’s kit. Clamp the Aluminum Panel Support Frame to the brackets made in Step 1. Drill two #19 holes through the Aluminum Panel Support Frame and the brackets from Step 1. Deburr all holes that you drilled. **Note:** You may have to adjust the area of the Aluminum Panel Support Frame that goes over the Upper Fuselage Channels with a file to accommodate potential variations in your build. See the area marked on the picture to the right. **Note:** You will want to place the inboard hole as far inboard as possible. The corner hole for the instrument panel insert will be just under the inboard vertical edge of the support panel. This will make placement of the three nut plates very crowded.	 

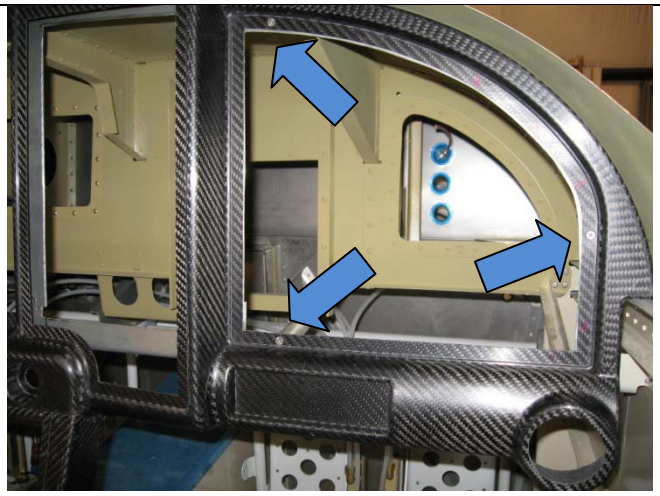
3. Remove the Aluminum Panel Support Frame. Machine countersink the three #19 screw holes that match the three instrumental panel ribs for an AN509-8R8 screw. Using the #19 holes as a guide, install two K1000-8 nut plates on each bracket after drilling the two #40 holes and machine countersinking the holes. Deburr all holes that you drilled. **Note:** The photo shows a bracket that doesn't have the insert panel hole drilled yet. As you can see, it will be tough to place another nut plate in between these two nut plates.	
4. The Carbon Fiber Panel must be trimmed before installing. Trim the insert areas to produce a 7/16" to 1/2" flange around the entire insert area. **Note:** The insert areas should be trimmed. Aerosport doesn't recommend in only using the carbon fiber in the insert area as the primary support for your instruments.	 

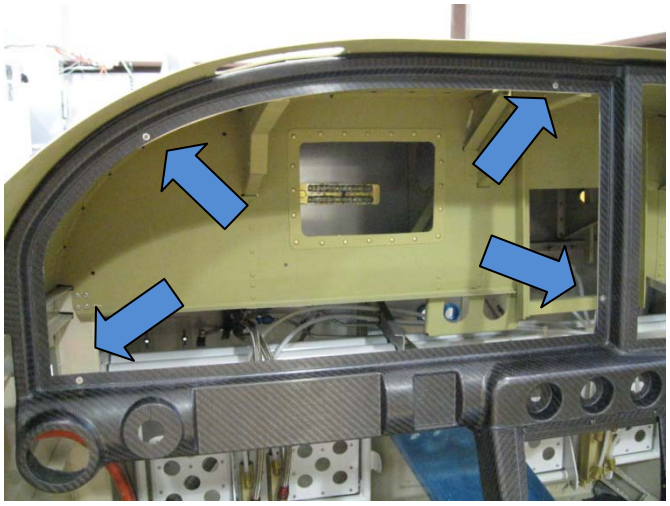
5. Clamp the Carbon Fiber Panel to the Aluminum Panel Support Frame. You will want to drill some #27 holes on each side of the panel along the panel insert flange to secure the Carbon Fiber Panel to the Aluminum Panel Support Frame. Machine countersink these holes. Remove the Carbon Fiber Panel and install K1000-06 nut plates for each hole. Drill two #40 holes for each nut plate. Deburr all holes that you drilled. This would be a good time to prime the aluminum parts if so desired. Install the Carbon Fiber Panel with MS24693BB30 screws.

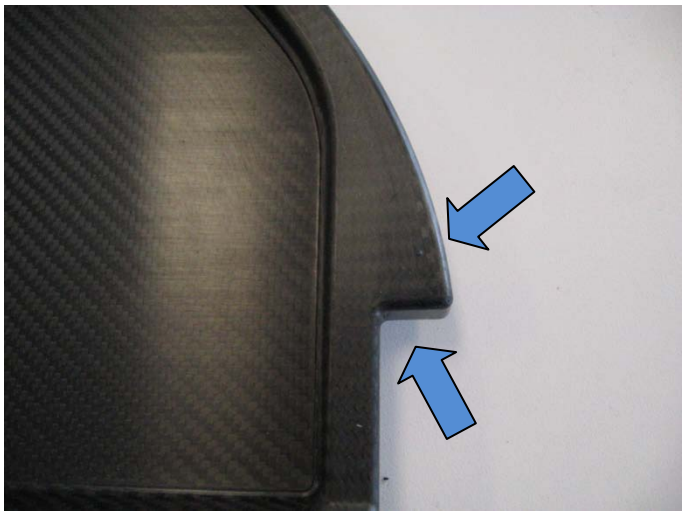
   Note[1]: You can see sample locations in illustrations on the right. A properly mounted Carbon Fiber Panel will have a small gap between the panel and the glareshield. This allows for any glareshield covering to be wrapped under the glareshield and tucked behind the panel.

   Note[2]: You may choose to perform step #10 now. This will ensure that there is no conflict between the Carbon Fiber Panel mounting holes and the Panel Insert mounting holes. Drill the panel holes first, then drill the holes to mount the instrument. This will allow you to see the insert holes and you place the mounting holes appropriately.

   Note[3]: You may have to adjust the area of the Carbon Fiber Panel that goes over the Upper Fuselage Channels with a file or sandpaper to accommodate potential variations in your build. See the areas marked by the arrows.



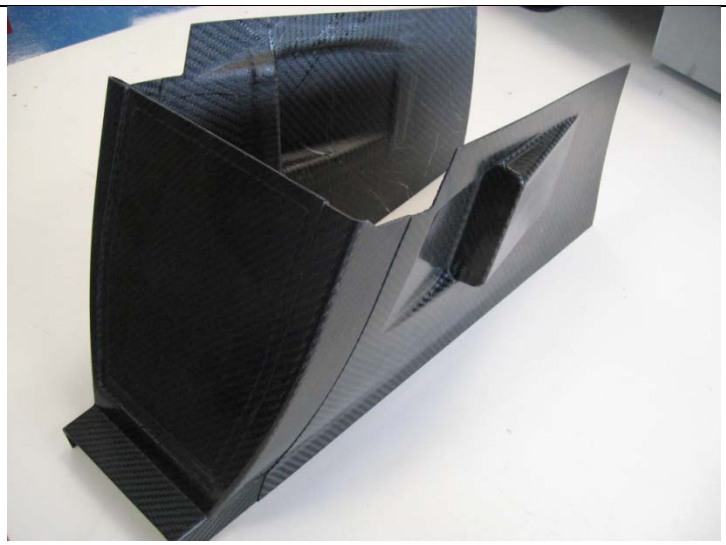




6. Assemble the three pieces of the Carbon Fiber Lower Console. On each side of the Lower Center Carbon Fiber Console, drill four #27 holes on each side through both the Center Console and each side panel. Place a hole near the top and bottom and evenly space the other two holes. You will also need to install one nut plate on the side of the center console of the Carbon Fiber Panel, see the picture to the right. Follow the same procedures as you did for the previous nut plates. Install a K1000-06 nut plate at each location where a hole was drilled in the Side Panel and common to the Lower Center Console. Drill two #40 holes for each and machine countersink for an AN426AD3-3.5 rivet. Assemble the three pieces by screwing them together with MS35214-27 screws.

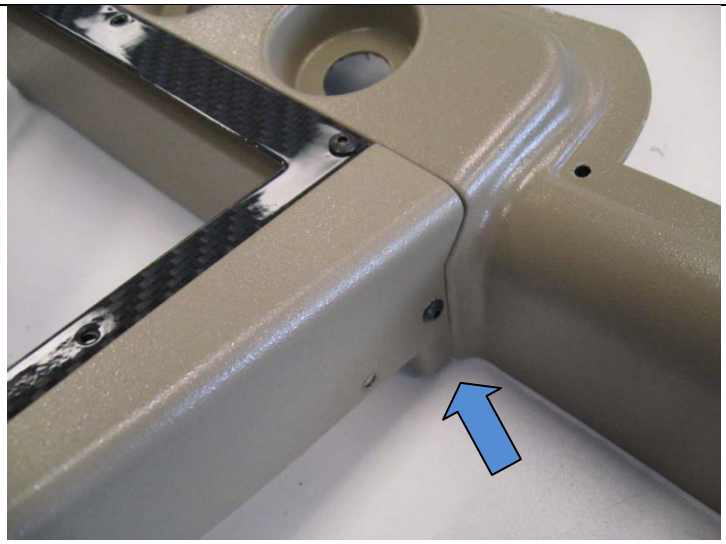
   You will drill three #27 holes on the Upper Insert Flange of the Lower Center Console that is common with the Carbon Fiber Panel. Place one hole centered on the Left and Right Insert Flange and the last hole in the center. Install three K1000-06 nut plates on the Carbon Fiber Panel by drilling two #40 holes for each nut plate. Machine countersink the #40 holes. Machine countersink the #27 hole for a #6 screw. Be careful with this countersink. The carbon fiber is thin and it is easy to countersink the hole too much.

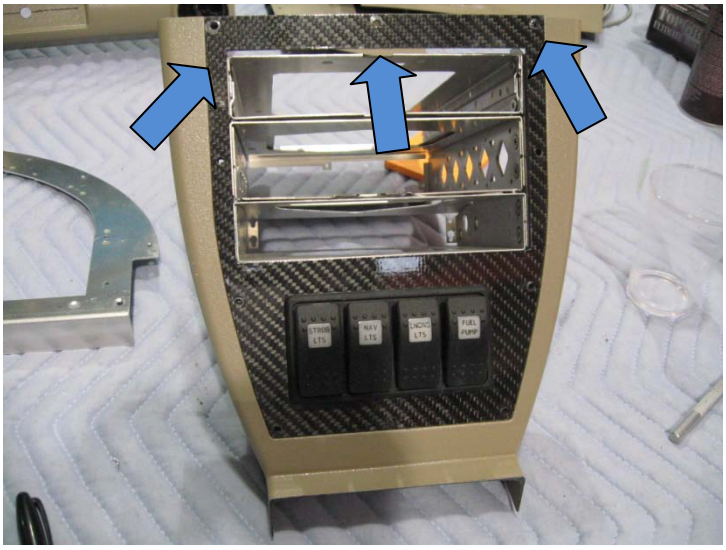
   Note: You may want to use MK319-BS blind rivets instead of the AN426AD3-3.5 rivets. The panel thickness is thin at these places and it may be easier to

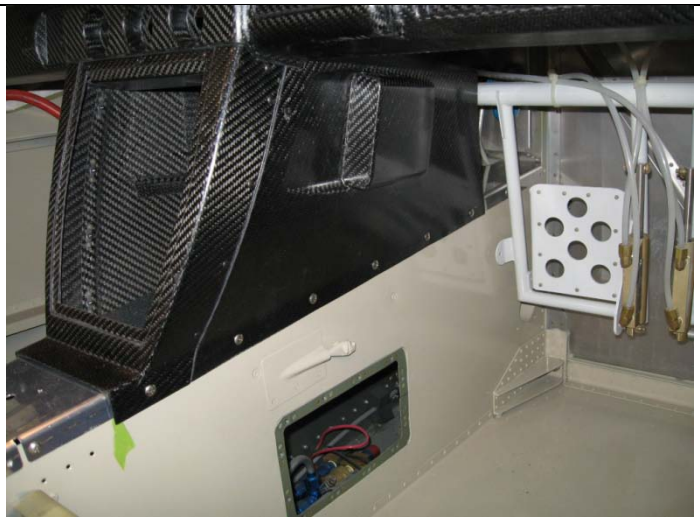


install blind rivets. You may have to enlarge the holes of the nut plates to accommodate the blind rivets.

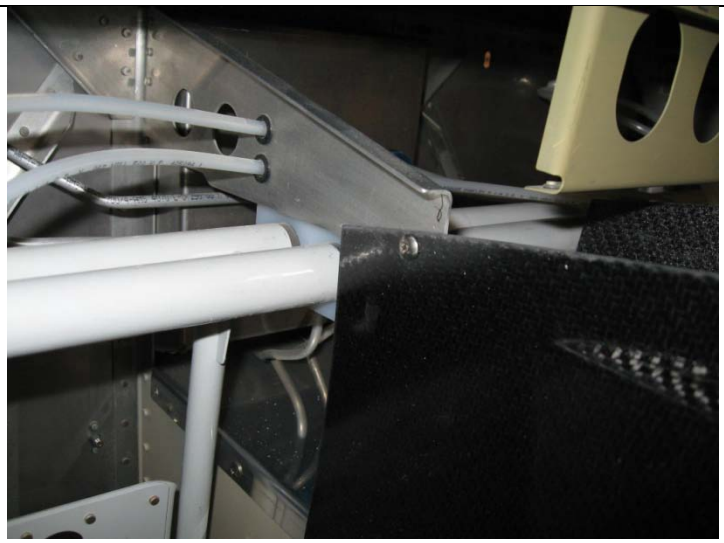
Note: You may want to use MS24693BB28 or MS35214-27 brass screws. You can use either pan or flat head screws.





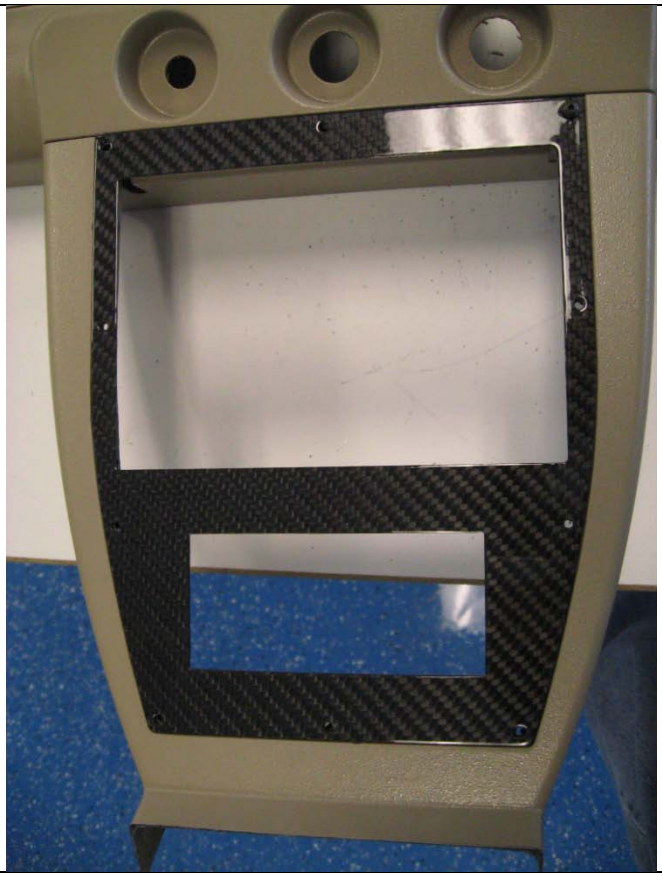
7. Assemble the Carbon Fiber Panel and the Lower Console together. You will slide the assembled unit into the aircraft in the next step.	
8. Install the F1051A Forward Fuselage Tunnel Cover. Slide in the Carbon Fiber Assembly (w/ center console) on top of the Forward Fuselage Tunnel Cover. Using clamps and the previously installed panel screws, secure the assembly to the Aluminum Panel Support Frame. Using a strap duplicator locate each of the holes that are common to the tunnel and Center Console Side Panel. Drill a #19 hole at each of these locations. A #8 Pan head screw should be used instead of a countersunk screw.. **Note[1]:** The side panels are flexible to allow for carpeting to fit between the tunnel and each side panel.	

9. On the top forward corner of the left side panel, drill a #27 hole common to the side panel and the F-1039D Rudder Pedal Brace. Drill two #40 holes for a K1000-06 nut plate. Drill and deburr the drilled holes. Rivet the K1000-06 nut plate in place with an AN426AD3-4 rivet.



10. Drill #27 holes through each Insert Panel and the Insert Flange of the Carbon Fiber Panel at approximately 3.5" intervals. Be sure to space accordingly so that you miss the screws holding the Carbon Fiber Panel to the Aluminum Panel Support Frame.

	
11. Drill #27 holes through each Insert Panel and the Insert Flange of the Lower Center Console at approximately 3.5” intervals. Be sure to space accordingly so that you miss the screws holding the Lower Center Console to the Carbon Fiber Panel.	

Panel Planning

Plan your Panel and Lower Console Panel inserts to your specifications. You will need to take into consideration the depth of each of your panel components and the location of the three panel ribs. Some builders have modified the panel ribs to make room for the depth of their EFIS or other avionics. There are several popular websites that have details on this modification.

Avionics Stack, Trays, and Rails

You will also need to plan the construction of the rails for the center radio stack and the Lower Console stack. Since each RV-10 installation will be different, we can't give specific directions for your installation. Please refer to the popular builder websites for tips on construction.

The pictures in Steps 10 and 11 are samples of how the panels could be laid out.

Pin Holes

Carbon fiber, while better than standard fiberglass, is not pin hole free. Aerosport recommends using Loehle Wonder–Fil to fill pin holes prior to painting.

Control Sticks

Aerosport recommends that you wait until your panel is fully installed before installing your Control Sticks. Modifications may be required dependent on your implementation to ensure stick movement yields full control surface movement.

Items to consider are:

Does the control stick hit any buttons or switches that could have an adverse effect?

Do the control surfaces travel to their design limits per Van's Aircraft?

You may want to consider control surface stops to ensure the control stick doesn't travel further than required.

Since each RV-10 installation will be different, we can't give specific directions for your installation. Please refer to the popular builder websites for tips on control stick modifications.

If you have any questions about your installation, please give us a call or send an email.