RV-10 310 Carbon Fiber Panel set

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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.

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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.

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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

AN509-8R8 screws

MS24693BB30 screws (6-32 x 3/4")

MS35214-27 screws (6-32 x ½")

K-1000-08 nut plates

K-1000-06 nut plates

AN426AD3-3.5 rivets

AN426AD3-4 rivets

MK319-BS blind rivet

Tools required:

#19 drill bit

#28 drill bit

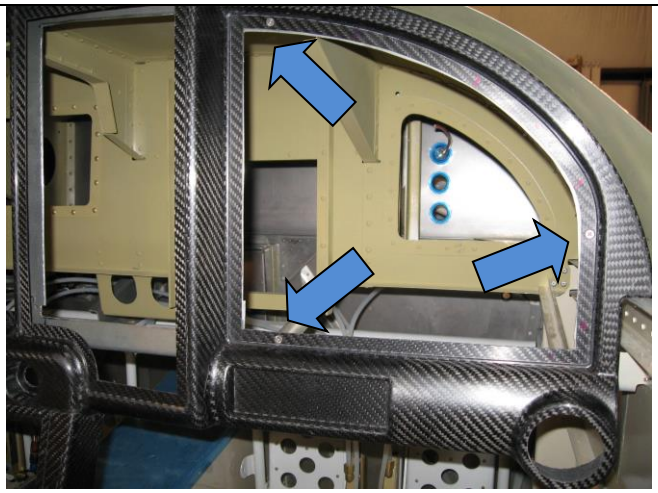
#40 drill bit

Countersinks for # 19 and #28 holes (#6 and # 8 screws)

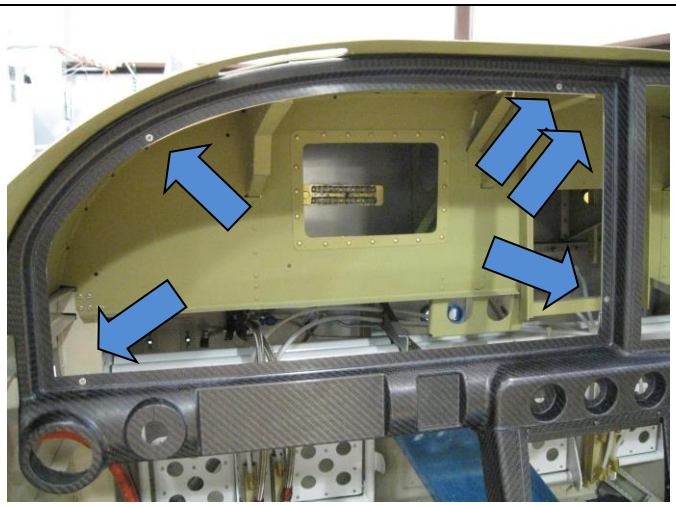
Strap Duplicator for a #8 screw

Installation Instructions

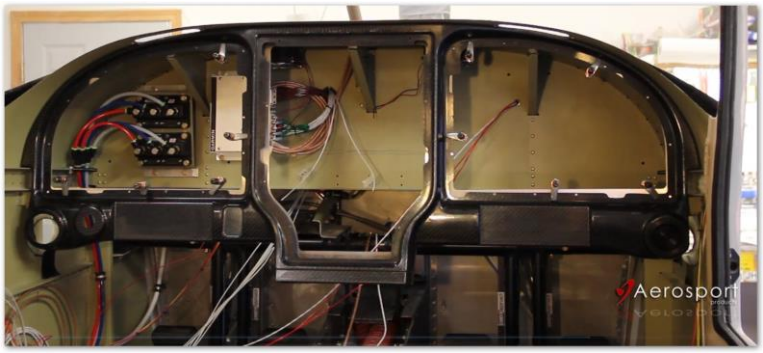
1. Fabricate two mounting brackets from the existing F-1003B Instrument Panel Lower Flange or you can make your own. Make the height of the bracket the same height as the flange that attaches to the Forward Fuselage Side Skin (1”). The length of the two flanges should be 2 7/8” and 3/4” respectively. 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.		

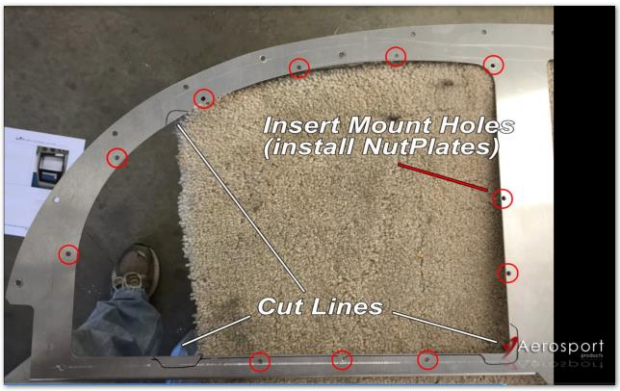
3. Remove the Aluminum Panel Support Frame and machine countersink all #19 screw holes for an AN509-8R8 screw. Using the #19 holes as a guide, install two K1000-8 nut plates on each bracket after drilling the two #40 holes and machine countersinking the holes. Deburr all holes that you drilled. **Note:** Not all holes need to be countersunk. You can omit countersinking those holes that fall under the raised portions of the panel.		
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 #28 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 6-32 screws		

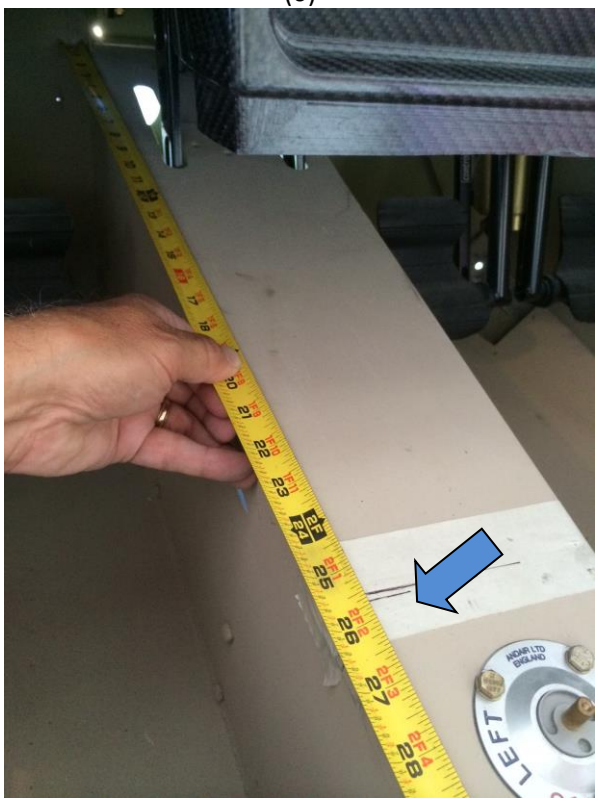
Note[1]: You can see sample locations in illustrations on the right. A properly mounted Carbon Fiber Panel will have a small gap between the panel and the glareshield. This allows for any glareshield covering to be wrapped under the glareshield and tucked behind the panel. NOTE:This is a standard panel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

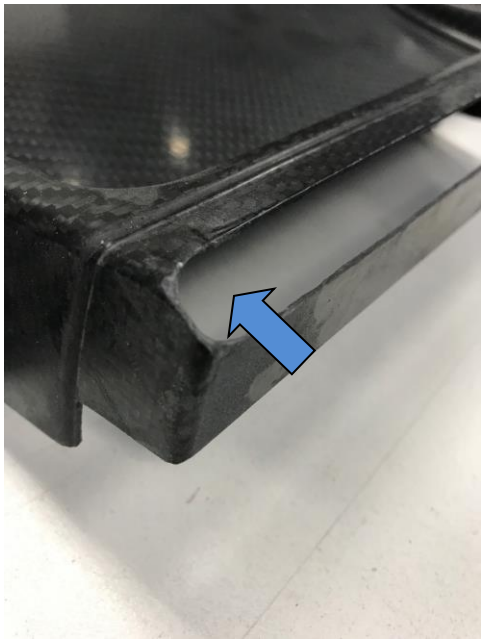
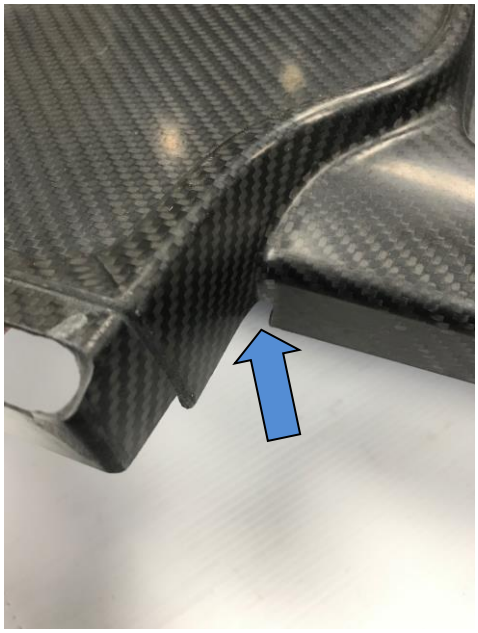


Note[2]: You may choose to perform this step later until after you drill the mounting holes for the Panel Inserts. You need to ensure that there is no conflict between the Carbon Fiber Panel mounting holes and the Panel Insert mounting holes.





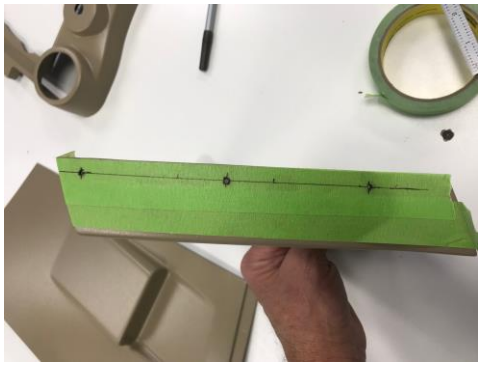
6. Measure distance from firewall along tunnel 25.5” and mark. This is close to where your lower console will sit on the tunnel. This may vary 25.5”-26.125” is potential variations in your build.	(6) 	

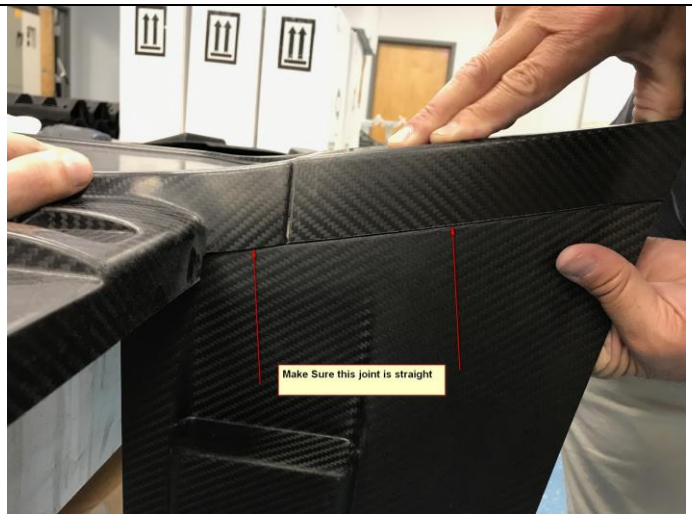
7. Relieve the inside corners of the main dash as shown and cut relieve as shown for lower console to ensure a flush fit between dash and lower center console. You may need to relieve the lower outside corners of the dash as well. It is suggested to do this step prior to paint, but additional adjustment may be required before final assembly due to paint thickness. You might also need to relieve this corner area for the lower console side walls to fit	 	

Make sure the joint lines are all straight. Then drill holes

8. Next you will need to drill the holes to fit the Main Dash, Lower console and the lower console sidewalls together. See the measurements as suggested. These can vary slightly to your liking but we have found these location to work well

   See Photo below for reference we recommend putting masking tape for easier marking on the raw Carbon, so it is easier to see or if already painted you won't scratch the paint.





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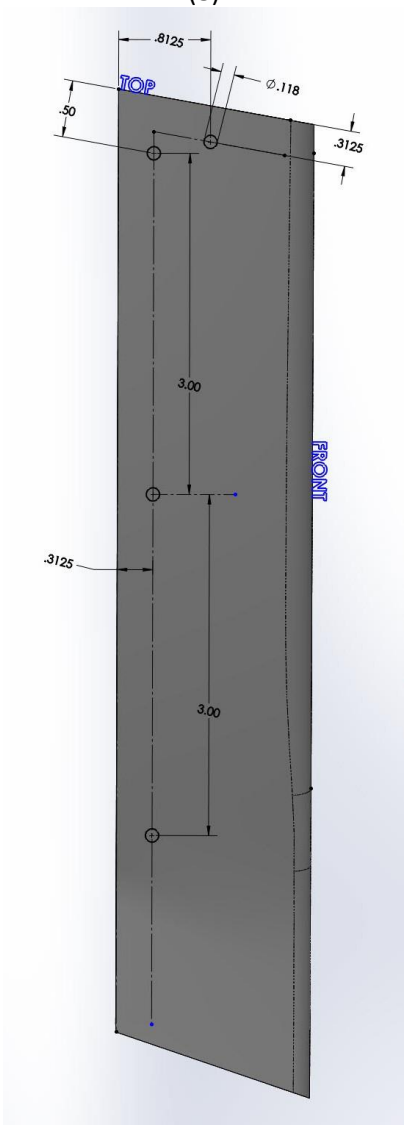
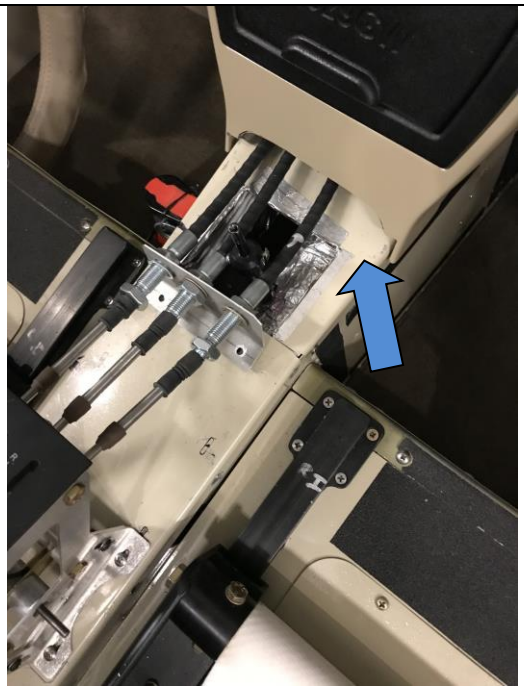
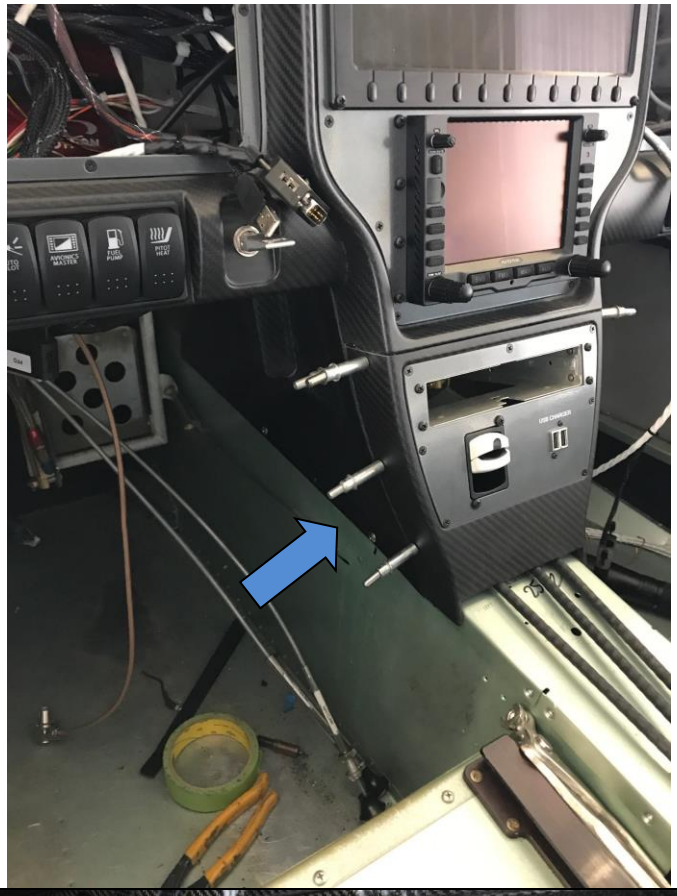
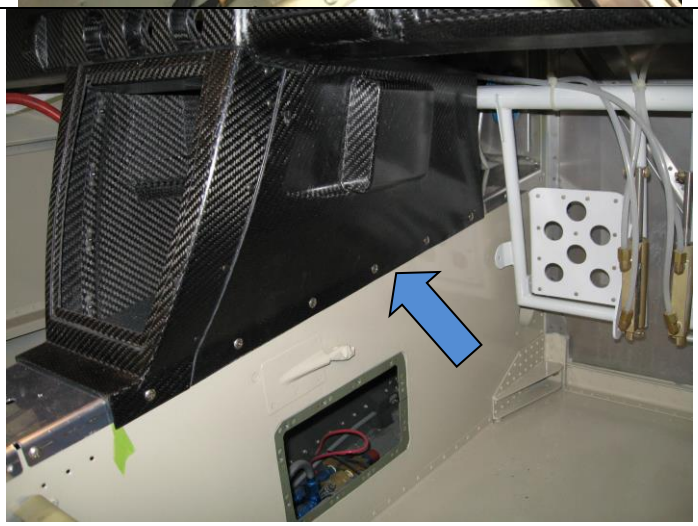


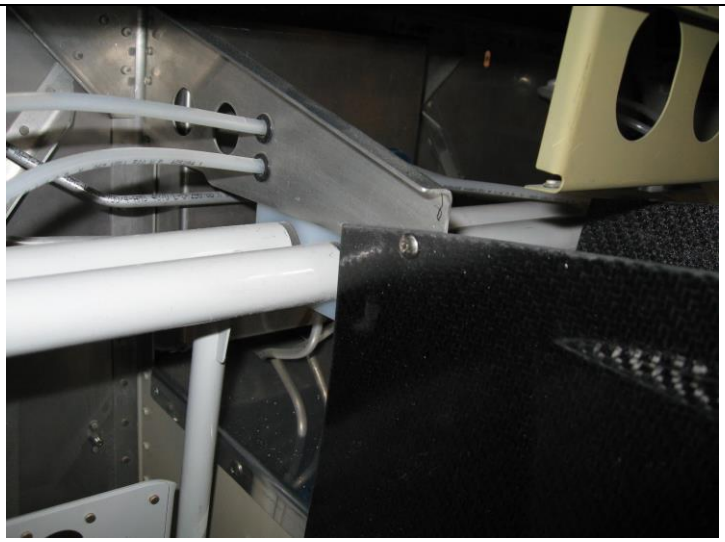
9. If using a throttle quadrant, you will want to add clearance for your cables at this stage. If you are also using the armrest, you will want to fit it at this stage, keeping in mind to only cut enough clearance for your cables as needed so that your armrest will cover this hole. note: keep in mind your fuel selector clearance at this stage for both your cables and armrest.		
10. Assemble the three pieces of the Carbon Fiber Lower Console. On each side of the Lower Center Carbon Fiber Console, drill Three #28 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 #28 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 #28 hole for a #6 screw.

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.

11. Assemble the Carbon Fiber Panel and the Lower Console together. Test fit with the Main panel and make sure the bottom of the side panels are flush with the bottom of the Tunnel cover.		
12. 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. Drill each one of these holes for a #8 screw. A 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.		

13. On the top forward corner of the left side panel, drill a #28 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.
    This step is not necessary but recommended.

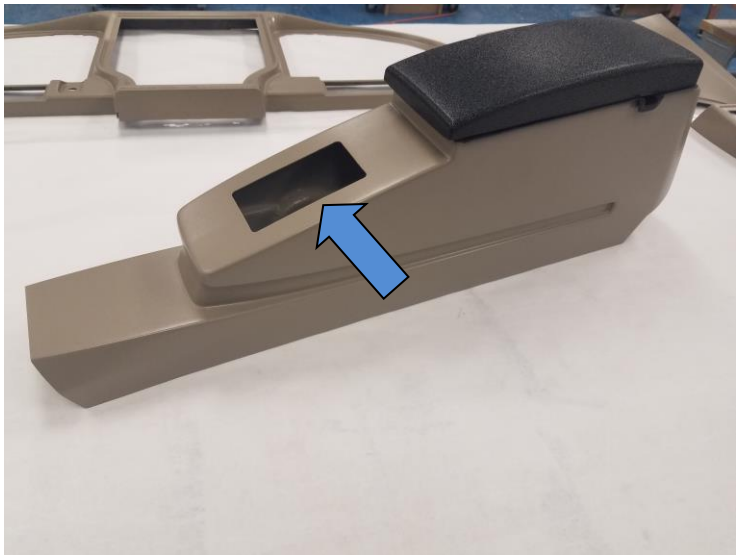


14. Drill #28 holes through each Insert Panel and the Insert Flange of the Carbon Fiber Panel at approximately 3.5” intervals. Be sure to space accordingly so that you miss the screws holding the Carbon Fiber Panel to the Aluminum Panel Support Frame.

15. Drill #28 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.
    Or if you are installing the lower glove box no nut plates are required.

16.INSTALLING CENTER ARM REST AND THROTTLE QUADRANT

The first step is to cut the hole in the carbon fiber for the throttle quadrant. This is be marked. Cut just to the scribe line and no further.



Next cut the hole required for the tension adjustment for the Throttle quadrant. This hole should be centered in the recess and then a ½" hole followed by a ¼" wide slot straight down about 1.25" from center. See Photo

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.