



Camera Shroud Installation Manual

Read all instructions before beginning installation to prevent surprises.

Installation

- *Note: If you are installing the shroud through a coupler and airframe, they should be epoxied together before proceeding. If you purchased pre-routed tubes, care should be taken to ensure the routings and drilled holes line up and any excess epoxy is cleaned out of the routing and mounting holes.*
- **Tube Routing** (Skip this section if you purchased pre-routed tubing)
 1. Print of the appropriate routing template found at: <http://www.LiquidFyre-Rocketry.com/Documentation>. Print the template using the “actual size” or 100% scale printer setting and verify the size of the 1in square on the printout. *Note: The mounting hole spacing changes with thickness of the airframe/coupler the shroud is mounted in.*
 2. Measure the total thickness of the tube where you are mounting the shroud. On your template there are four mounting hole locations indicated by two overlapping circles. The inner circle represents the position you would place the mounting hole if your thickness is 1/16” thick (for example FWFG airframe only), the outer circle represents the location if you have 1/8” thickness (FWFG coupler and airframe together). There is a linear relationship between wall thickness and hole position; if your measured thickness is different you will need to adjust the hole position accordingly.
 3. Cut out the template, making sure the ends of the dashed lines are to the edge of your template cutout.
 4. Mark your tube with a line along the center axis you want to mount the camera.
 5. Align the template to your line and tape it to your tubing making sure it sits flat and smooth.
 6. Use a sharp punch to make an indentation in your tube at the center of each hole to prevent you drill from walking. *Note: The mounting holes at the back of the shroud are only used for sealed carriers.*

7. Drill the holes indicated on your template. Care should be taken to prevent the material from pushing out at the back of the hole. *Note: All holes should be perpendicular to the tube face at the hole location.*
8. Use a Dremel tool with a 1/8" burr bit to carefully shape the shroud opening to the outline shown.
9. Test fit your shroud and carrier with the supplied screws to ensure the screws thread in without excess resistance and the shroud fits flush to the inside of the tube. Adjust the route of mounting holes as needed.

Test fit your all of the pieces before epoxying any pieces.

- **Sealed Carrier**

1. Carefully install the orange seal around the perimeter of the carrier. Care should be taken not to stretch the seal. This is one of the most difficult steps of the installation so take your time. After installation, the soot from laser cutting can be wiped off with water.
2. Install the black foam inside the carrier with the small end tab away from the lens mount. The shoulders of the end tab should be centered and positioned so the main part of the pad is completely on the flat bottom of the carrier pocket.

- **Open Carrier**

1. Trim one side of the white backing of the foam tape flush with the tape.
2. Remove the red backing from the tape and install with the trimmed side of the white backing towards the lens nest. The tape should be centered from side to side and flush with the back end of the carrier. Start in the center and press it down firm so it conforms to the edges of the cavity bottom.

- **808 Camera Installation**

1. Before installing your camera record a short video and verify the video is in focus. The cameras come from the factory preset but occasionally I have received one out of focus. If your camera is out of focus, please contact us for assistance.
2. Using a miniature screwdriver, remove the two screws from the camera case and open the case.
3. Remove the 3 screws securing the camera circuit board to the case. Lift the circuit board to reveal the ribbon cable connector that connects the sensor/lens module to the circuit. Be careful not to lose the screws or buttons.
4. Release the ribbon cable clamp by pulling the black bar toward the front of the camera using the small tabs on either side. Remove the sensor/lens module.

5. Install the flat end of the extension cable into the connector with the metallic contacts face DOWN, you will know it is fully seated when it can't be inserted any farther and it doesn't fall out. Once it is fully seated close the clamp by pushing the black bar back against the white connector body.
6. Reassemble the camera circuit board and case leaving the cable extending out of the lens module opening.
7. Open the ribbon cable clamps on the extension cable circuit board by lifting and flipping up the black bar.
8. Insert the end of the lens module ribbon cables into the cable clamp with the contacts face DOWN. Close the clamps by flipping the black bar back down.
9. Take a test video with the camera to make sure all of your connections are made properly.
10. Clean the lens nest on the carrier and sensor/lens module body with acetone.
11. Mix a small amount of 5 minute epoxy with filler to a consistency a little thicker than honey, and apply a small amount to the lens nest on the carrier. *NOTE: DO NOT USE CONDUCTIVE FILLER LIKE CARBON!*
12. Seat the sensor/lens module completely in the carrier nest with the cable down, and the square base of the module against the carrier wall with the square edge level. Hold in place until the epoxy becomes firm.
13. Clean any excess epoxy from the carrier surfaces and sensor/lens modules with acetone.
14. **Test fit this step to make sure it is clear to you** Mix another small batch of epoxy with filler. Apply the epoxy to the front wall of the carrier cavity and to the top of the black wrap on the extension cable where it enters the cable clamp. Fold the ribbon part of the extension cable against the circuit board and press the circuit board to the front wall of the carrier so the extension cable points up passed the sensor/lens module. *NOTE: DO NOT USE CONDUCTIVE FILLER LIKE CARBON!*
15. For open carriers remove the tape backing and adhere the camera body to the carrier with the buttons facing up. For sealed carriers add piece of scotch tape to the underside of the camera body the camera body and up the sides, fold the end of the tape on itself to create tabs at each end. These will be used to lift the camera out of the carrier to access the USB and SD card. Push camera gently into the carrier cavity, it should fit snugly into the foam.

- **Mobius ActionCam Installation**

1. Before installing your camera record a short video and verify the video is in focus. The cameras come from the factory preset but occasionally I have

received one out of focus. If your camera is out of focus please contact us for assistance.

2. Using a miniature screwdriver remove the two screws from the camera case and open the case.
3. Release the ribbon cable clamp on the back of the sensor/lens module by flipping away the black bar. Remove the sensor/lens module.
4. Open the ribbon cable clamps on the extension cable circuit board.
5. Insert the end of the ribbon cable into the cable clamps with the contacts face UP. Close the clamps by flipping the black bar back down.
6. Tuck the extension cable circuit board into the space left by the sensor/lens module
7. Reassemble the camera case leaving the cable extending out of the lens module opening.
8. Install the flat end of the extension cable into the sensor/lens module connector with the metallic contacts face UP. Once it is fully seated close the clamp by pushing the black bar back down.
9. Take a test video with the camera to make sure all of your connections are made properly.
10. Clean the lens nest on the carrier and sensor/lens module body with acetone.
11. Mix a small amount of 5 minute epoxy with filler to a consistency a little thicker than honey, and apply a small amount to the lens nest on the carrier.
12. Seat the sensor/lens module in the carrier nest with the set screw protrusion down into the relief on the lens nest, the edge of the lens flush with the front of the carrier, and the screw tabs horizontal. *Note: It is very important that the screw tabs are level.*
13. Apply a small amount of epoxy to the sensor/ module connector and fold the ribbon cable to epoxy the ribbon cable flat against the connector.
14. Clean any excess epoxy from the carrier surfaces and sensor/lens modules with acetone.
15. For open carriers remove the tape backing and adhere the camera body to the carrier with the buttons facing up. For sealed carriers add piece of scotch tape to the underside of the camera body the camera body and up the sides, fold the end of the tape on itself to create tabs at each end. These will be used to lift the camera out of the carrier to access the USB and SD card. Push camera gently into the carrier cavity, it should fit snugly into the foam.

- **Shroud Installation**

1. Dry fit your shroud, carrier, and tube. Verify that the screws thread in fully without excessive resistance and that the shroud and carrier mount flush against the tube
 2. Prep the surfaces to be epoxied. Clean the shroud with acetone or denatured alcohol. Lightly sand the top of the shroud tabs with medium/fine grit sand paper and clean again. Prep the mating interior tube surfaces in a manner appropriate to your tube material.
 3. Cut a 3 inch square piece of plastic from the bag your shroud came in.
 4. Wax the screws to prevent epoxy from adhering to them during installation (I recommend chap stick for this as it is easy to apply). Using a cotton swab apply a tiny amount of wax inside the screw holes in the carrier.
 5. Mix a small quantity of epoxy and apply it in a very thin layer to the shroud wings, clean any excess epoxy from the screw holes in the shroud.
 6. Sandwich the plastic square in between the shroud and carrier assembly, and poke 2 holes in the plastic to allow the screws to be installed through.
 7. Install the shroud through the tube cutout and secure tightly with the two mounting screws.
 8. Allow sufficient time for your epoxy to cure and then remove the screws and unmount the camera carrier.
 9. Using a 5/64" drill, drill out the button and LED access holes through the carbon fiber shroud.
 10. Use your preferred method to fill any gaps between the shroud and tube cutout and add a fillet between the outside of the tube and shroud to complete the installation.
- **Camera Setup**
 1. Download your camera setup software from: <https://www.liquidfyre-rocketry.com/Documentation>
 2. Make sure your camera is set with:
 - Recording Indicator: On
 - (Power On -) Auto Record: On

Note: The LiquidFyre shrouds do not have a hole to access the shutter button. Without the Auto Record setting being on you will not be able to record video. Auto record on will begin recording as soon as the camera is powered up.