

WMParkFlyers Quasar XL Build Instructions.

Kit Contents:

CARBON SPARS

4MM CARBON FIBER Tube

1pc) 30-1/2 in Long

1pc) 26-3/8 in Long

1pc) 15-3/4 in Long

3mm X .8 Flat Carbon

2pcs) 11-1/2 in long (Aileron stiffener)

2pcs) 26-1/4 in long (Leading edge Stiffener)

2pcs) 4 in long (Fuse Nose)

TRUSSING: 1.5MM SOLID CARBON FIBER AS FOLLOWS

4pcs) 6-1/4 in long (Bottom trussing)

2 pcs) 9-1/2 in long (Vertical Stabilizer brace)

CONTROL RODS: 1.5MM SOLID CARBON FIBER

2pcs) 14-1/8 IN. (Ailerons)

1pc) 20 in long (Rudder)

3pc) Dubro E-Z connects

Piano Wire

3pcs) Z-Bends

3pcs) Straights

Heat Shrink

6 pcs

Wood

Quasar XL Wood Control horn set.

Now that you Identified all the parts, LETS BUILD THIS PUPPY!

Start upside down... the plane not yourself!

Main Wing and Fuse

Glue the right and left wing half together. Be sure to put some wax paper down under the seam so you don't glue your plane to the table.

- Glue in the spars
- Glue in the flat carbon in the leading edge slots and ailerons.

- You can also glue in the flat carbon in the nose of the fuse at this time as well.
- Add some weights on top of the parts to keep them all flat while they dry. Again wax paper is your friend. Add it in between your weights and the plane so we don't glue anything to the plane that we don't need to!

Let all that sit a bit and grab the servos, motor and speed control.

Servos

- Center all 3 servos using your radio or a servo checker.
- Mount your servo arms on, you are going to need 2 servos setup with arms pointing to the right and one to the left. Your servos will be mounted with the output spline post towards the front of the airframe.
- Drill out the end holes in the servo horns to 1/16 dia to accept the dubro EZ-connects. Insert the post of the EZ-connect and snap on the black connector. I like to turn the servo upside down on a hard surface. Then use the concave end of the back of a miniature screwdriver to seat the black keeper on the post. Flip them back over and insert the small screws into the post.

Esc (speed control)

- Solder on your female 3.5mm bullet connectors to the 3 wires of your ESC.
- Slide on 3 pieces of heat shrink even to the ends of the bullet connectors and shrink down in place
- Battery Connector: Cut yourself some short pieces of heat shrink for the wires.
- **DON'T FORGET** to slide the heat shrink over the wires before you solder on the connector. Solder on the connector and heat shrink the covering down over the connection.

Motor

- Locate your X mount and 4 screws then mount the X mount to the the back of the motor. I recommend using removable loctite on the screws so they do not come loose from the motor during flight.
- Solder on your Male 3.5mm bullet connectors

Set your electronics aside and let's get back to the plane.

Gluing on Bottom Fuse

- Run a bead of glue down the center of the wing from the nose all the way back to the tail. Insert the bottom fuse into the slots ensuring that the bottom fuse is flush with the nose of the wing. Use something to block the Fuse square 90 degrees to the wing. I like to use Pop cans as the corners are rounded and stay out of any glue that may ooze out from under the fuse when you press it down. Press down on the fuse from time to time to make sure it does not lift up while the glue is curing.
- **Do Not** glue the vertical stabilizer braces in at this time. This is done in a later step)

- You can also glue on one of the inboard side force generator halves to the bottom of the wing at this time as well. Just separate one of them, the top and bottom are both the same shape.

Let this dry for a couple hours then we can get on with the top of the fuse and wing.

Control Horns And Top Fuse

- Flip the wing over and glue in your wooden control horns to the ailerons and rudder. Be sure to glue them in so the holes in the control horn are at the hinge line. Use those pop cans as risers to lift the wing off the table while you complete the build.
- You can now glue on the top fuse. Run a bead of glue down the centerline of the wing from tip to tail as well as in the cutouts for the tabs. Insert the top fuse and block up square again with more cans.

Servo Installation

- You can now carefully glue in your servos for the ailerons and the rudder. They can be glued in with either foam tac or hot glue. Glue them so the output post of the servo is towards the front of the plane. (Press down on that top fuse again to make sure it is seated.) Note: there is a small slot in the right wing panel to run the rudder servo wire down thru. Do this at this time.
- Do Not glue the Vertical Stabilizer brace on now. This will come at a later step.

Check that everything is still square and straight as well as seated and take a break for a bit while the glue dries.

Wood Firewall

- Locate your wooden firewall and glue on to the nose of the plane. Ensure that it is centered top to bottom left and right. Use straight pins to pin it in place while the glue dries. There are small holes cut thru the firewall.
- Glue the triangle wedges behind the firewall and the quarter circle foam pieces under the wing tight against the firewall. This extra foam is used to give a better grip between the firewall and the front of the airframe.
- Glue on your wing tip side force generators. Making sure to not glue them to your ailerons. Pin them in place temporarily while the glue dries.

Set the plane aside and start on the control rods.

Control Rods

- Locate the aileron and Rudder control rods and begin by gluing on the Z Bends. Lay the Z bend alongside the carbon fiber leaving $\frac{1}{4}$ inch from the Z bend and the end of the carbon fiber. Run a small bead of foam tac between the piano wire and carbon and slide the heat shrink over the connection. Shrink down the heat shrink using a heat gun or suitable heating device. You should see glue coming out both ends of the heatshrink. Wipe off the excess glue. **(Caution Foam Tac is flammable)** if it flames up be ready to blow it out. Locate the Control Rod stand offs and slide them over the control rods. **(DON'T Forget this step)** Now continue on with the 3 straight pieces of piano wire

leaving $\frac{3}{4}$ inch length of the wire extending beyond the carbon. Run your bead of glue and heat shrink the shrink tubing down to finish the connection.

- Open up the control horn holes by either using the straight end of the piano wire on the control rod or a 1/32 drill bit in a pin vice. I like to use the control rod as it achieves a perfect fit. Spin the control rod while gently pushing it thru the control horn to size the hole. I recommend using the top hole furthest away from the control surface. Gently insert the Z bend end thru the hole in the control horn rolling it as you bring it around and inline with the servo. **Do not force it.** Too much force will damage or break the control horn. Insert the other end of the control rod thru the EZ connect. Insert control rod guides into the slits on the foam then center the control surface and tighten down the screw in the ez connect securing the control rod. Add a drop of glue to the control rod guides and ensure the rods are straight between the servo and control horn on both aileron and rudder.
- Locate your Vertical Stabilizer braces and glue them in place. Make sure to check that the Rudder and Vertical Stabilizer is perpendicular and square to the wing.

Mounting the Motor

- Using pointed servo screws or suitable screws mount the motor to the front of the firewall.
- Mount the Prop and prop saver if using one to the front of the plane.

Securing the electronics

- All the wires and speed control should be on the left side of the bottom fuse (pilots left as he would sit in the plane) The only thing on the right side of the bottom fuse will be the battery.
- The rudder servo at this point should be pushed thru to the bottom of the right wing. Now push it thru the slot in the bottom fuse along with the aileron servo wire to the left side of the bottom fuse.
- Push the battery connector thru the slot to the right side of the bottom fuse.
- Secure the ESC inplace with velcro. (Note. The adhesive on velcro is not enough to secure it to the foam. The velcro will need to be glued to the foam with foam tac.

Setting the CG

- **CG is 13- $\frac{1}{4}$ back from the firewall.**
- Make a mark on the bottom of the wing 13- $\frac{1}{4}$ back from the firewall. I like to insert some thumb tacks in the wing so you can feel them with your fingertips when adjusting the battery location.
- To find the correct battery placement set the battery on top of the wing towards the front (temporarily) and slide it back a little at a time until it balances on your fingertips when your fingertips are located on the CG marks. Make note of the approximate battery location. Glue on a 3 inch strip of velcro to the right side of the bottom fuse directly below where the battery was resting.

For Your Safety we recommend removing the prop before proceeding to the next steps.

Receiver and controls.

- Hook up the servos to the receiver and secure the receiver to the left side of the fuse with velcro. Again the velcro will have to be glued to the foam with foam tac.

Motor Rotation

- After binding to your receiver check for proper motor rotation. The motor should be spinning clockwise as you would be sitting in the pilots seat. If the motor is spinning the wrong direction swap any two of the three wires going between your motor and esc to change the rotation.

Check for proper control throws and direction

- aileron and rudder and elevator. Move the rudder stick left. The rudder should move to the left. Aileron left, the right aileron should go down and the left aileron should go up. Elevator up and both elevons should go up. Down they should both go down.

Remount prop and double check CG

- Remount the prop and double check the CG. Adjust the battery placement on the velcro until the plane balances on the CG.

Preflight and radio check.

- We recommend setting some lower rates and some expo in your radio for your maiden flight.
- Rudder 1-½ right and left
- Aileron & Elevator 1 inch up and one inch down.
- Expo 30%

This should give you a gentle maiden flight. You then can adjust your throws to match your 3D skills and abilities.

Congratulations you have completed your build. Now let's go fly!