

SlowBipe Mini II build instructions

Wingspan: 18 Inches	Weight: 7.1 oz	Motor: ~22 to 25 gram motor
Wing Area: 190 square inches	Wing Loading: 5.3 oz per ft	Esc: 10 amp
Suggested Battery: 2-3 cell 450mah to 750mah lipo		

Introduction

Congratulations on your purchase of a SlowBipe Mini radio controlled airplane kit made by SlowBipe Air. Pictured here is the kit contents laid out on the building board. This manual will take you through building and flying this new plane. I will refer to the SlowBipe Mini as SlowBipe though the rest of this manual.



First I will introduce the type of glue used for model building then follow this up with a step by step instruction on building the SlowBipe. Once the build is complete I will document practices in setting up the plane with motor, esc (speed control), battery and radio. Finally there will be first flight instructions to help you have success the first time.

Thank you for buying the SlowBipe Mini and I wish you the best of success.

Michael Tiegs, SlowBipe Air, LLC.

Things you will need for construction

Listed here is most of the things you will need to complete this kit. I have used Heads Up RC (HeadsUpHobby.com) as a supplier of components as well as a reseller and he does a very fair business. There are links below to components that I recommend as good fit parts for the SlowBipe. You can use any electronics that you choose, but I have found that this is the easiest route to go. The motor, esc (speed control) and battery have connectors that make this a plug n play solution. This is very nice for the new flyer.

In addition to these items you will also need some method of charging your flight battery. The charger at [this link](#) is a good solution that I have used and am very happy with. Remember to follow all of the warnings that come with both charger and batteries to prevent any occurrence of fire. These batteries are combustible and can cause fire if treated improperly.

Much of the items below can be found in the [MiniBipe Power Pack](#) from HeadsUpHobby.com. I like this transmitter as a best value due to the comfortably sized transmitter and small receiver. Other Tx/Rx combination would work as well. I like this [charger](#) which allows both AC and DC operation. Other chargers that are capable of between .3 amp and .8 amp charging would work as well.

Epoxy (5 Minute Kind)	Wood Glue (I use Tightbond III)
Small Screw Driver (flat and phillips)	Radio Control Transmitter of your choice
10 Amp Brushless Motor Speed Control	Radio Control Receiver to go with transmitter
Power Up 250 Slowfly Brushless Motor	2 or 3 cell Lipo Battery
2 each 5g Servo's	Dubro Mini E/Z Connectors (2 each)
Additional O-Rings for prop saver	Propeller to go with selected motor

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Introduction to Gluing your SlowBipe

Never use CA glue (Super Glue) on the parts of your SlowBipe. Not even those that are classified as "Foam Safe". They are expensive and will eat the foam of your SlowBipe.

5 Minute Epoxy

Epoxy is a 2 part glue with resin and hardener. It has some great characteristics for gluing foam and wood parts. We use the 5 set time version since the part can be held in place while the glue hardens. We especially like that it has gap filling capabilities as well as it adheres strongly to both foam and wood.

5 minute epoxy can be found at Walmart, Home Depot as well as hobby shops. The picture here shows it in a double squeeze tube that dispenses equal amounts of both resin and hardener. The picture here shows a small amount of glue dispensed onto a foam board before mixing. After dispensing immediately mix the two parts by stirring with a small stick or screw driver. I mix in a circular motion. Once mixing is complete apply quickly to the parts to be bound. Once applied fix the two parts together and hold until dry. With the 5 minute version you have about 4 or 5 minutes to apply and position the part before the glue hardens too much to do so. I always mix more than I think I will need. It is not expensive and it is way better than not mixing enough.

If you need to fill a gap or your parts fit is not as tight as it should be, just apply a little more epoxy. If you have too much and it squeezes out a little, just wipe up with a dry cloth while it is still wet.

Wood Glue (Aliphatic Resin Glues)

Wood Glues are used for many part in model airplane building. You can apply them generously and wipe up the excess with a wet cloth. I use Tightbond III but Elmer's Wood Glue and Tightbond I and II work equally as well. I recommend using wood glue for parts of the SlowBipe due to the simplicity of use and easy cleanup.

Gorilla Glue

I like this glue for many purposes. For simplicity I will not suggest using this on the SlowBipe, but you can substitute it anywhere you like. The great characteristics of this glue are light weight, gap filling and it sticks like a booger. The challenge with this glue is it takes some practice. In particular it likes to expand like a booger as well. When applying this glue you only need a very light film on the surface to be bound. I even go so far as to wipe off any excess so that it is just a surface film. You then apply a mist of water onto the surface to be bound and join together. It works best when the contact can stay tight until dry. Drying takes about 1 hour and during this time the glue may ooze out of the joint to form ugly slag. If it does this just wipe it away multiple time until dry. The first signs of the expansion will be about 10 minutes into the drying.



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Step by Step

We will document step by step how to build your SlowBipe.

Glue in the Fuselage Hatch

Apply **wood glue** around the perimeter where the hatch door will be inserted. A nice bead in the joint where the fuselage is recessed to accept the hatch is all that is required. Excess glue can be removed with a damp cloth after inserting the hatch. Now insert the hatch door as show in the picture.



Glue in 2 carbon fuselage rods

This gives the wood glue traction making a better bond with the carbon. Apply **wood glue** along the inside of each of the two recessed carbon rod slots. There should be enough here so that there is some glue along the entire length of slot. Now insert the two carbon rods into the slots that have glue in them. There should be enough glue in each slot so that glue squeezes out when the rods are pushed all the way down. Be sure that they are inserted all the way to the bottom so that they are not above the surface of the foam. Clean up the excess glue using a soft wet rag. Let dry 3 minutes before continuing.



Glue in plywood control rod guide

The plywood control rod guide has two holes and is glued into the fuselage in vertical slot seen open in the picture to the right. Apply **wood glue** to this part and insert into the slot shown on the fuselage. Let dry.



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Install firewall and nose doublers

We will use 5 minute epoxy for this step. Be sure to mix a generous amount because we do not want to come up short. Please refer to gluing instructions on page 1 for how to use 5 minute epoxy.



1. Test fit firewall components before mixing glue to make sure you understand how the parts go together.
2. Mix up the desired amount of epoxy
3. Apply glue to one side of firewall (basically any place the wood will touch the foam). You do not need much here as the parts should be a tight fit.
4. Slide firewall part into nose from one side and center in fuselage. Glued side should match to foam side.
5. Apply glue to the inside of each nose doubler and install onto fuselage side and connected to the firewall. If you have preassembled these components you will know how these go together. Be sure that you determine the correct side of the doubler to apply the glue to. If you get this wrong you will have to wipe off all glue and apply to the opposite side before the 5 minutes expires.
6. Once all parts are in place wipe any excess glue and hold the nose pieces together until dry. This will be about 8 minutes from when you mixed the glue.

The picture here shows the nose components assembled and glued.

Install Rubber Band Post Mounts

Using **epoxy** glue install the two rubber band post's as show in the picture. These are a tight fit and do not require much glue.

1. Mix up the desire amount of **epoxy glue**.
2. Spread the glue thinly onto the post in the places where contact with the foam will occur.
3. Insert post into fuselage making sure that the post height is as desired.
4. Let dry for 10 minutes.

Install Landing Gear Block

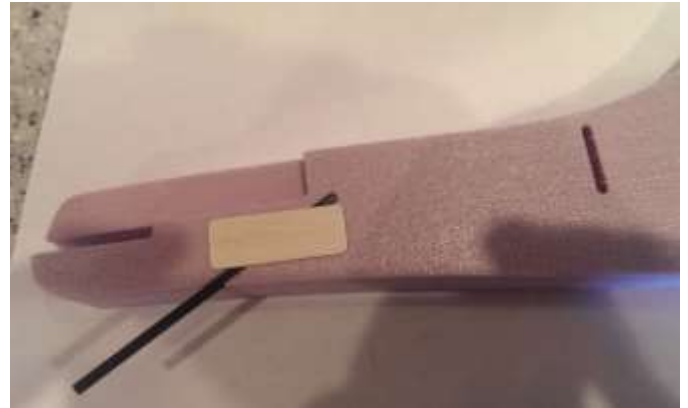
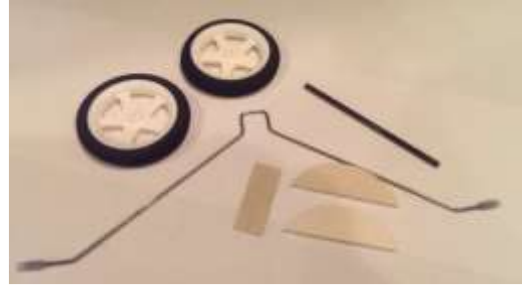
1. Using Epoxy or the glue of your choice glue 1 x 1 x ¼ inch landing gear block into bottom of fuselage.
2. The reference picture shows the direction it should be installed.
3. This is a new change (December 2014) to the kit so your kit may not have this feature.
4. Optional Landing Gear set is now available for the MiniBipe.



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Landing Gear Installation (With Optional Landing Gear Pack)

1. We now sell an optional landing gear package for the MiniBipe Kit. The kit contents are:
 - a. 2 – 2.3 inch main wheels
 - b. 2 – Landing Gear Doublers
 - c. 4 – Fuel tubing wheel retainer
 - d. 1 – 1/16" bent music wire gear
 - e. 1 – Carbon fiber tail skid
 - f. 1 – Tail skid doubler
2. Glue 1/8 inch plywood landing gear doublers to the sides of the landing gear block using 5 minute epoxy. See picture for reference. These are shaped like a half moon.
3. Using 5 minute Epoxy Glue carbon fiber tail skid into fuselage slot at rear and then glue 1/32 inch thick plywood doubler over the top of this rod. Refer to picture for questions.
4. Apply fuel tubing piece to both inside and outside of wheels on landing gear wire. This acts to retain the wheels on the shaft.
5. Insert wire landing gear into landing gear block at base of fuselage. If it's snug just squeeze the wheels together as they are inserted.



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Install Rudder and Elevator Plywood Control Horns

1. Using the provided piece of sandpaper sand off the flashing from the 2 plywood control horns. Determine the correct side to glue the horns into each surface. As shown in the picture the elevator horn goes on the side of the elevator with the V-Cut. The rudder horn goes into the side of the rudder with the hinge tape. If you get these wrong the plane will not assemble correctly.
2. Mix up the required amount of **5 minute epoxy** to glue two control horns.
3. Dab a small amount of epoxy on the parts of the control horn that will be touching the foam and insert into the elevator and rudder.
4. Make sure the horns are straight and let dry.



Assemble Rudder to the Fuselage

Before gluing rudder and elevator into fuselage flex the hinge back and forth a bit so that it moves freely. I move it back and forth to 45 degrees several times to loosen it up.

1. Mix up required amount of 5 minute Epoxy to glue Rudder to Fuselage (see photo)
2. Apply thin film of epoxy glue to contact point between rudder and fuselage.
3. Glue rudder to fuselage making sure that the bottom of rudder is flush with the elevator cutout so that the elevator can be assembled straight in the next step.
4. (Important) Wipe any excess glue from the elevator slot at the tail of the fuselage. Once dry any excess glue here can cause problems.



Gluing Elevator to Fuselage (Optional)

You can choose to glue or not to glue this step of the operation. Gluing means that future damage to the elevator would not be easily replaced by another. Gluing means there is less chance of the elevator assembly wobbling out and becoming loose. It also means that you could remove the elevator for transport. You could always glue in the elevator at a later date if you choose.

1. Mix up required amount of 5 minute Epoxy to glue elevator to Fuselage (see photo above)
2. Apply thin film of epoxy glue to contact points between elevator and fuselage.
3. Press elevator into slot at tail until it is fully seated.
4. Wipe any excess glue from the assembly

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Installing the Electronics

Servo Installation

Install Servo's on right side of plane when referenced from behind.

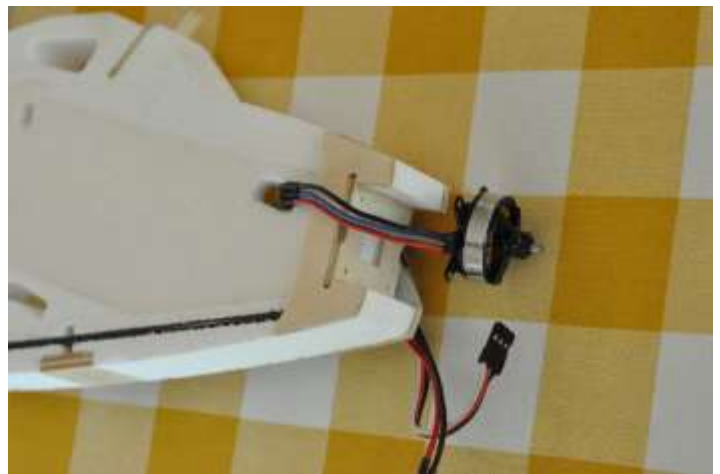
1. Guide servo lead wire through slot and into radio compartment. Pull wire through from opposite side.
2. Carefully press servo into pocket by keeping it straight until all the way seated.
3. Drill out servo control horns using 1/16th drill bit. I like to use the third hole from the end of the single sided arm for beginners as this allows for slower reaction time.
4. Install recommended Du-Bro EZ Connectors in arms.
5. After centering servo with radio press control horns onto servo's as shown and attach screw.



Motor Installation

The firewall is drilled to fit the recommended motor on page one. However you can install any motor that you like. The SlowBipe balances and flies well using a 24g motor with a 7 to 8 inch propeller.

1. Attach using 4 screws supplied with this motor. Be sure to not over tighten.
2. Route wires down right side of plane when viewed from the back and through the slot as shown.



Esc (Electronic Speed Control) Installation

Install the ESC along the top of the fuselage radio area as shown. I cut a small piece of the Velcro and attach ESC with this.

Receiver Installation

Install receiver as far back in the radio compartment as possible and connect the 3 wires. You will want the space in front of the receiver for flexibility in battery placement.



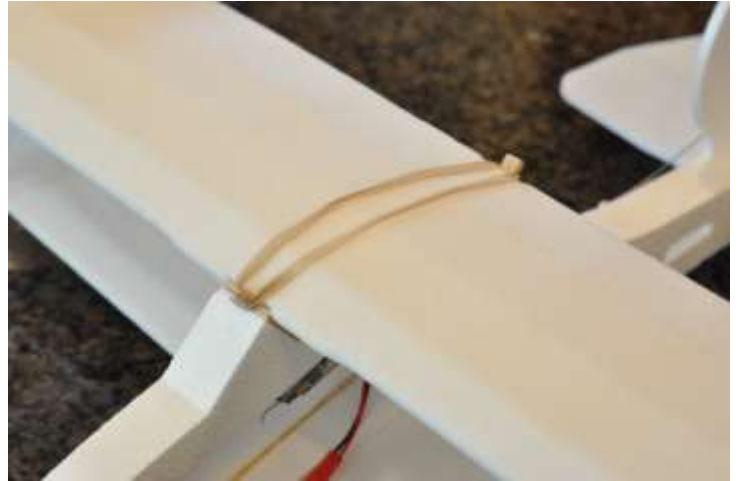
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Wing Assembly

Installing the Top Wing

The wings are segmented to form a contour when attached to the fuselage and struts.

1. Position the top wing over fuselage so that it is centered.
2. Attach two to three of the rubber bands over the two rubber band posts to retain wing. Keep the bands as low on the posts as possible for best fit.



Installing the Bottom Wing

1. Carefully press each bottom wing into the fuselage until seated.
2. Once both wings are inserted the magnets will keep wing in place.



Wing Strut Installation

1. Install left and right wing struts onto ends of top and bottom wing as shown.
2. They will be a tight fit and should be installed carefully.

Balancing the MiniBipe

1. It is important that you balance the plane properly before flying.
2. Suspend the plane upside down by placing a rod through the small 1/8th inch hold about 1 inch behind the leading edge of the bottom wing. This can be seen in the picture below.
3. Move the battery forward or backward until you achieve balance. You will know you are there when the horizontal stab is level with the horizon (surface like a table or counter).



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