EXTREME FLIGHT

Muscle Bipe

110in/2.8M

150-200cc

39-43lbs/18-20kg

LEGACY AVIATION

Please read the following paragraphs before beginning assembly of your aircraft!

THIS IS NOT A TOY! Serious injury, destruction of property, or even death may result from the misuse of this product. Extreme Flight RC is providing you, the consumer with a very high quality model aircraft component kit, from which you, the consumer, will assemble a flying model. It is beyond our control to monitor the finished aircraft you produce. Extreme Flight RC will in no way accept or assume responsibility or liability for damages resulting from the use of this user assembled product. This aircraft should be flown in accordance to the AMA safety code. It is highly recommended that you join the Academy of Model Aeronautics in order to be properly insured, and to operate your model at AMA sanctioned flying fields only. If you are not willing to accept ALL liability for the use of this product, please return it to the place of purchase immediately.

Extreme Flight RC guarantees this kit to be free of defects in materials and workmanship for a period of 30 DAYS from the date of purchase. All warranty claims must be accompanied by the original dated receipt. This warranty is extended to the original purchaser of the aircraft kit only.

Extreme Flight RC in no way warranties its aircraft against flutter. We have put these aircraft through the most grueling flight tests imaginable and have not experienced any control surface flutter. Proper servo selection and linkage set-up is absolutely essential. Inadequate servos or improper linkage set up may result in flutter and possibly the complete destruction of your aircraft. If you are not experienced in this type of linkage set-up or have questions regarding servo choices, please contact us at info@extremeflightrc.com or 770-887-1794. It is your responsibility to ensure the airworthiness of your model.

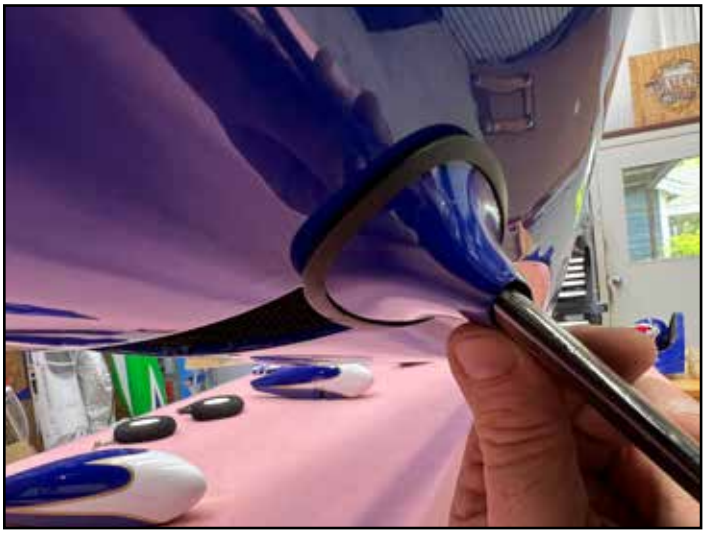
Special notes on the 110" Muscle Bipe aircraft:

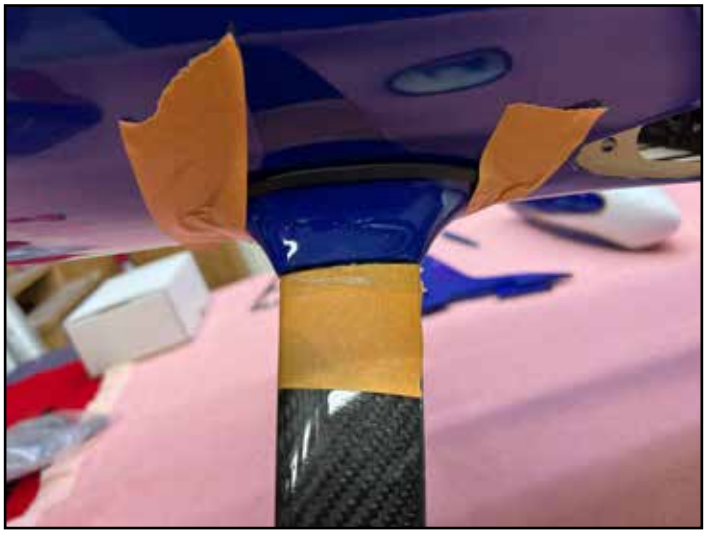
The 110" Muscle Bipe is a super-lightweight, high-performance aircraft. Be sure to use premium servos in the 500 oz in+ class (such as SAVOX SG2290, JR S8911, MKS 599, MKS 380, or equivalent). Use of premium servos and solid, strong metal servo arms will help to prevent control surface flutter. It is also necessary to control airspeed in a commonsense way.

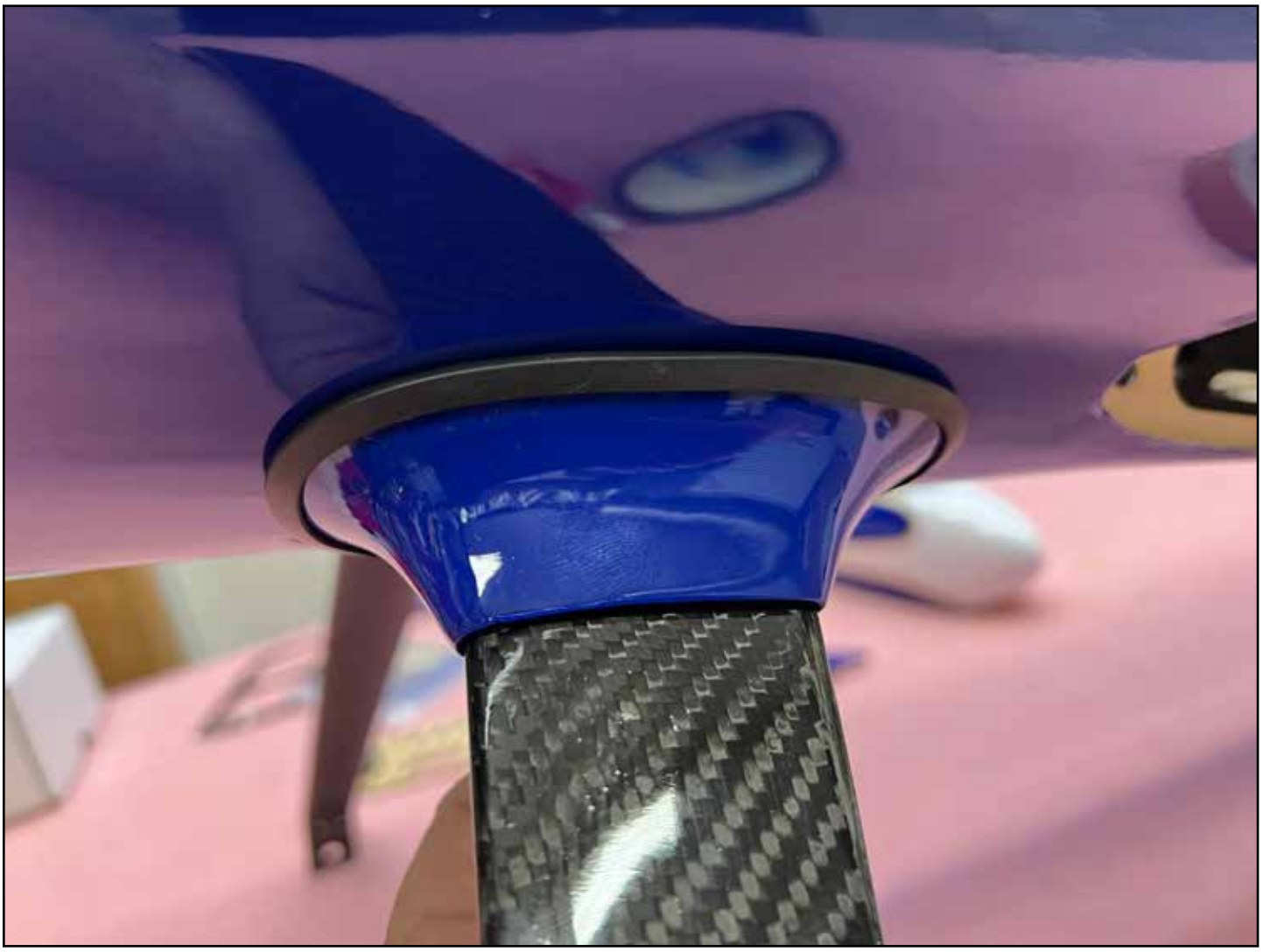
It is assumed that anyone assembling and flying the 110" Muscle Bipe is a very experienced assembler of RC aircraft. For this reason this assembly guide will not teach basic aspects such as how to shrink covering material.

1. The 110” Muscle Bipe is a large aircraft and so we’ll begin assemble by installing the landing gear to get the aircraft up on the gear and make it easier to move and position. Locate the landing gear and attach the fuselage with 4 screws and washers, using blue loctite. The gear sweeps slightly *forward* when installed.

2. Locate the gear fairings and test fit to the gear to find proper orientation and make sure there is no interference. Glue the fairing to the landing gear, not the fuselage. This allows the fairing to move with the gear as it flexes. Use a large dollop of GOOP or similar rubberized adhesive to glue the fairing to the landing gear leg, tape in place and allow to dry fully.

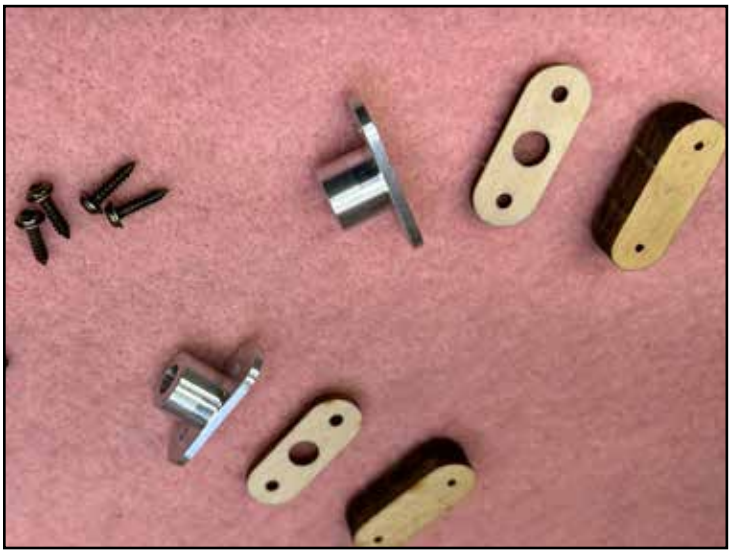


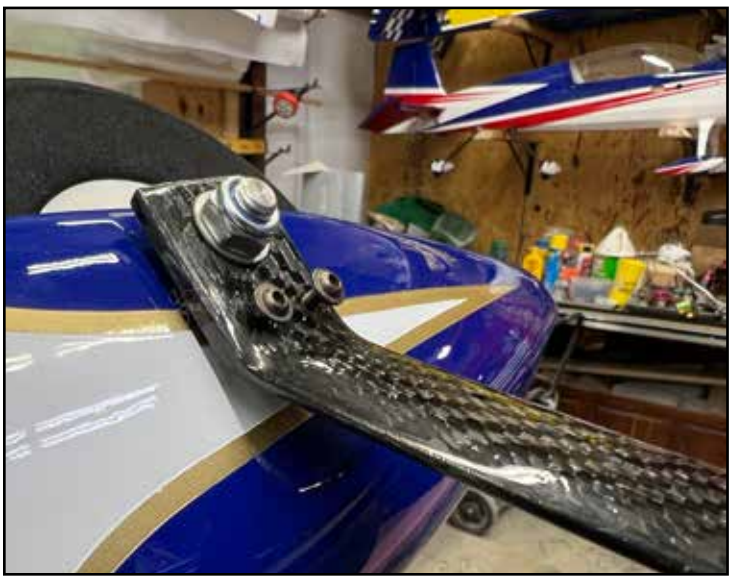




3.

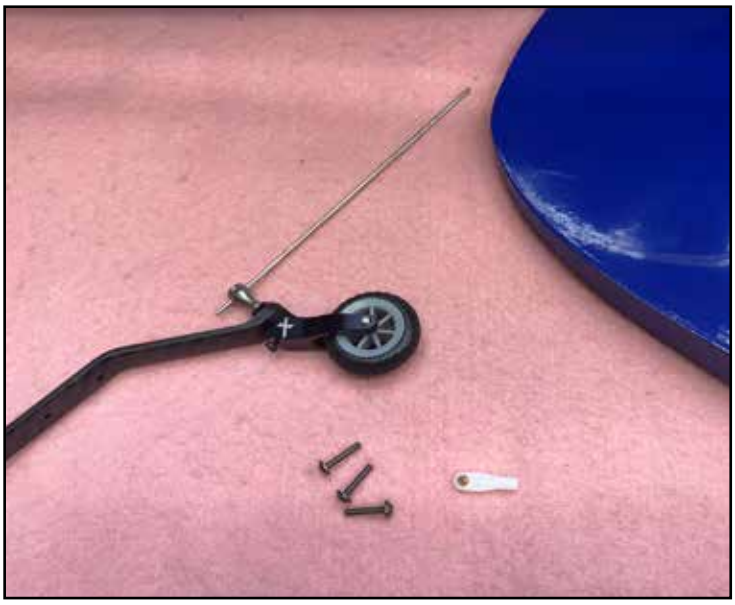
Install the wheel axle into the carbon gear withthe flat spot pointing down at the runway. Assemble the wheel pant support as shown. Install the wheel, then the wheel collar, then the pant support as shown. Install the pant with two 3mm screws and loctite. Apply a dab of epoxy glue in-between the interior surface of the wheel pant and the wooden pad of the pant support, allow to dry.





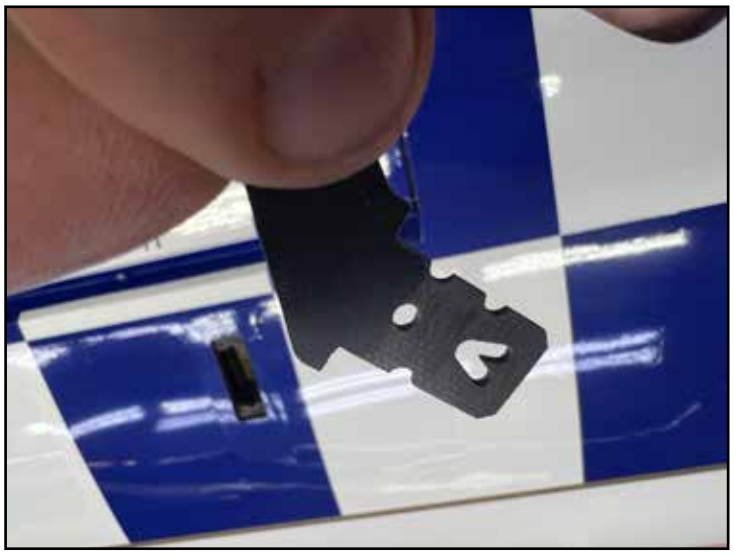
4.

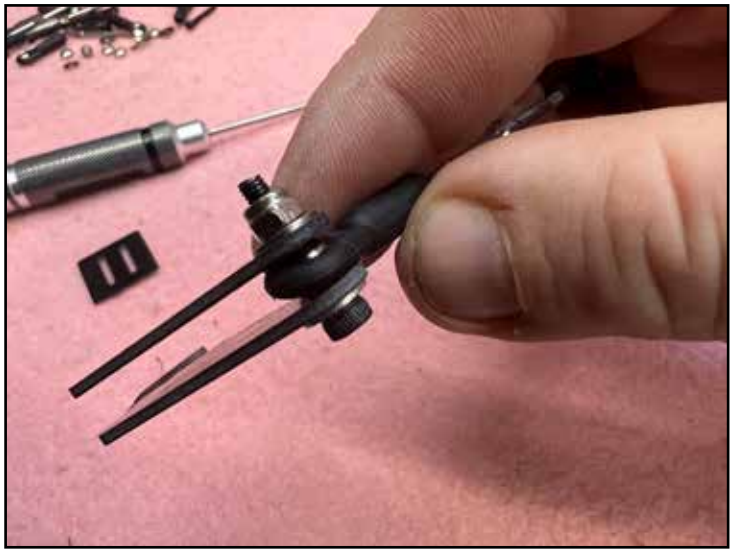
Locate the tailwheel, screws, and tiller keepter (nylon ball link). Glue the keeper into the hole in the bottom of the rudder with epoxy. Install the tailwheel onto the fuse using the screws and blue loctite. Put the plane up on its landing gear. Apply epoxy to the hinge holes in the fin and install the rudder, feeding the tailwheel tiller wire into the keeper. Clean up any excess epoxy quickly and ensure the rudder has a tight gap and swings easily.

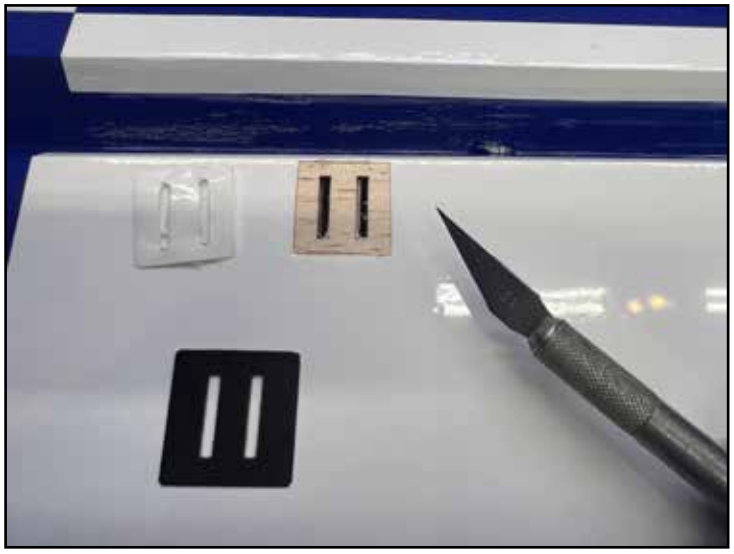


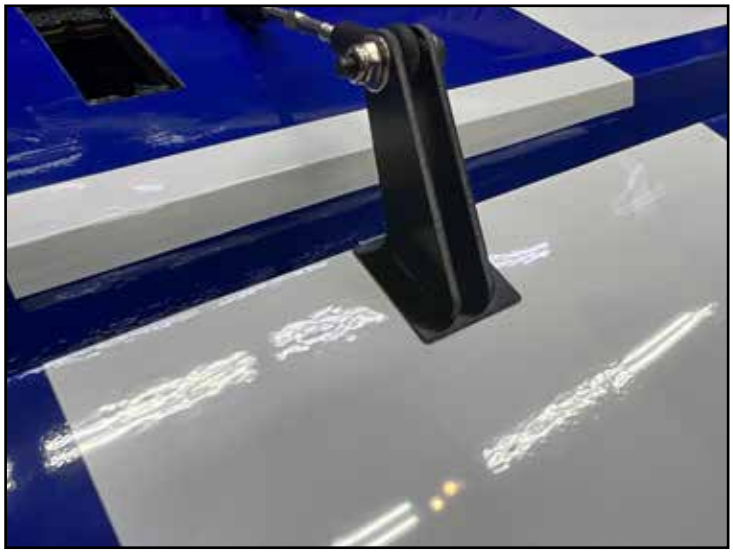
5.

All the control horns on the aircraft install in the same way. Scuff the gluing surface of the horns using 80-240 grit sandpaper. Assemble the horns with their ball link as shown. Remove the covering over the slots under the cover plate as shown. Assemble the cover plate onto the horns and test fit without glue, make sure the horn slides all the way into the surface. Remove the horn, apply epoxy into the slot and onto the horn, then install the horn and clean up any excess epoxy. Allow to cure.



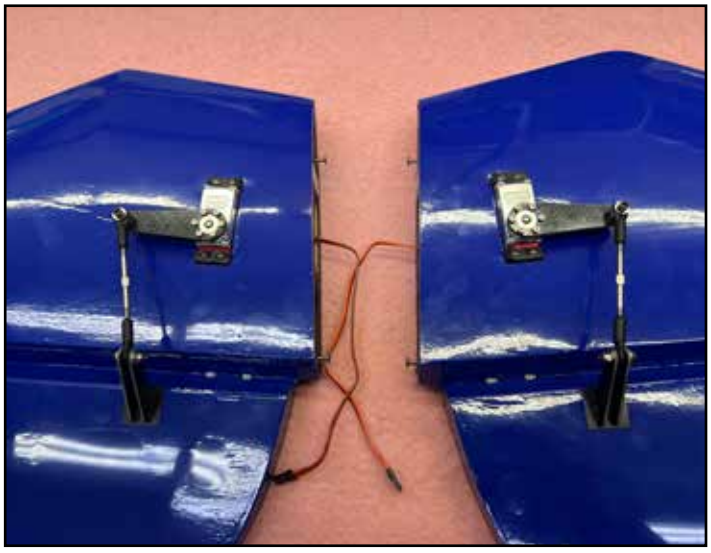






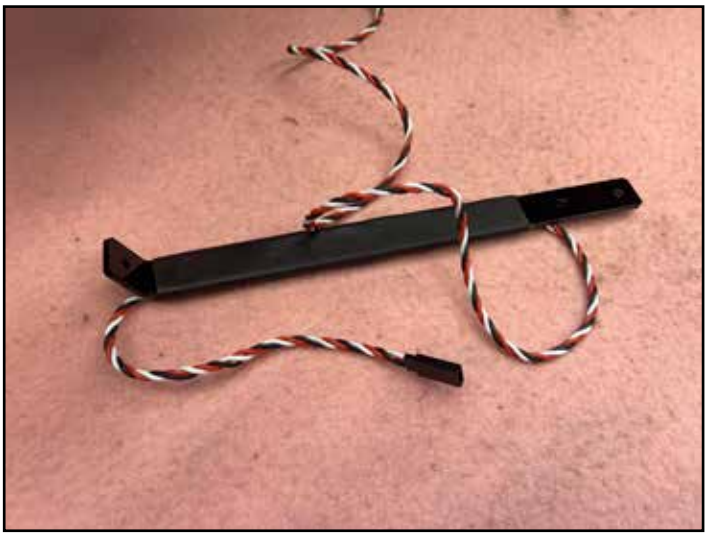
6.

Servo installation: You MUST use a top-quality, high-performance metal-gear digital servo on every location on this aircraft. Pictured are the MKS HBL-3850. Other good choices include the Savox 2290 and JR8911. Failure to use adequate servos can result in flutter and the loss of your aircraft. Use top-quality servo arms, do not use plastic arms! When installing servos, thread the servo screws in, then remove the screws and servo and harden the holes with thin CA glue. Pictured are the finished intallations for ailerons, elevators and rudder. If you elect to use pulll-pull cable-actuated ruder, the components are included in your kit.



7.

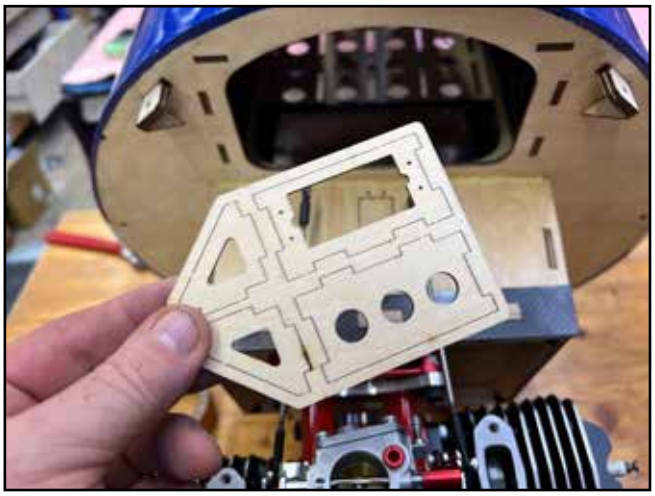
The upper wing center section is attached to the fuselage with four aluminum cabane struts. These struts attach to the fuse and the center section with screws and washers. USE LOCTITE on these screws! The wires for your upper wing aileron servos will follow the rear cabane struts up into the center section. We recommend heat-shrink tubing to hold the wires to the cabane struts as shown.



8. Drill the firewall as appropriate for your engine. The Desert Aircraft 80x90mm pattern is marked on the firewall. If using a DA-200, you will need the Blazing Star DA-170 mount from Extreme Flight. Use large washers and locking nuts on your engine mounting screws. If using the spacer syustem for twins, use loctite on all bolts.

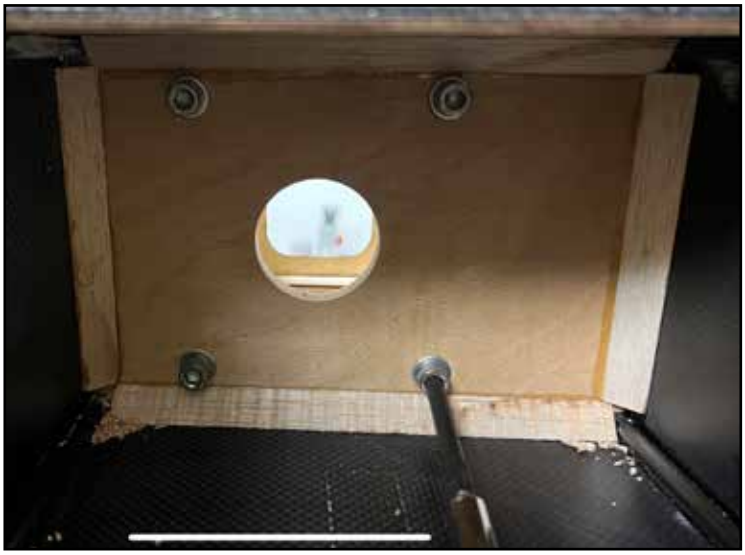
9.

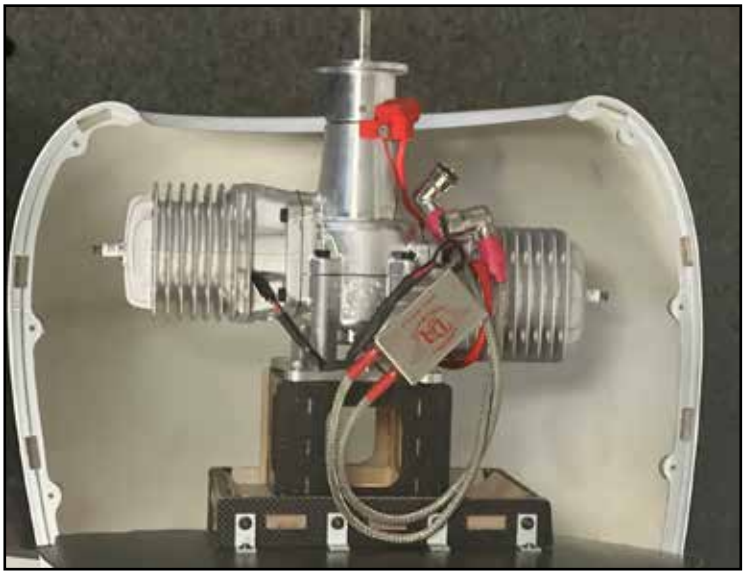
For our installation of the DA200 engine, we used throttle and choke servos arranged as shown. We used the DA brand ignition kill switch to control the ignitions, and we used a single 50oz Flowmaster tank from Extreme Flight with a simple brass Y-connector to split the fuel flow to the twin carburetors.



10.

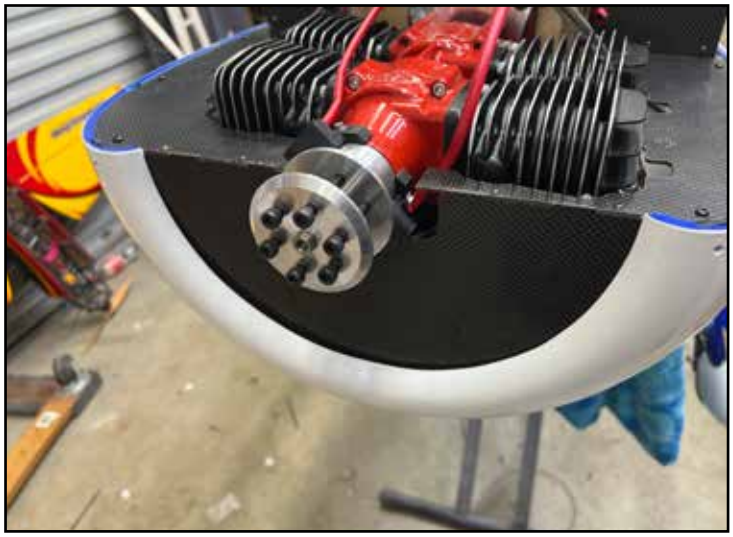
For the installation of a DA170 or GP178 twin-cylinder engine, a box-style spacer is included with your kit. We recommend the use of red loctite or high-temp RTV sealant for thread-locking of these fasteners.





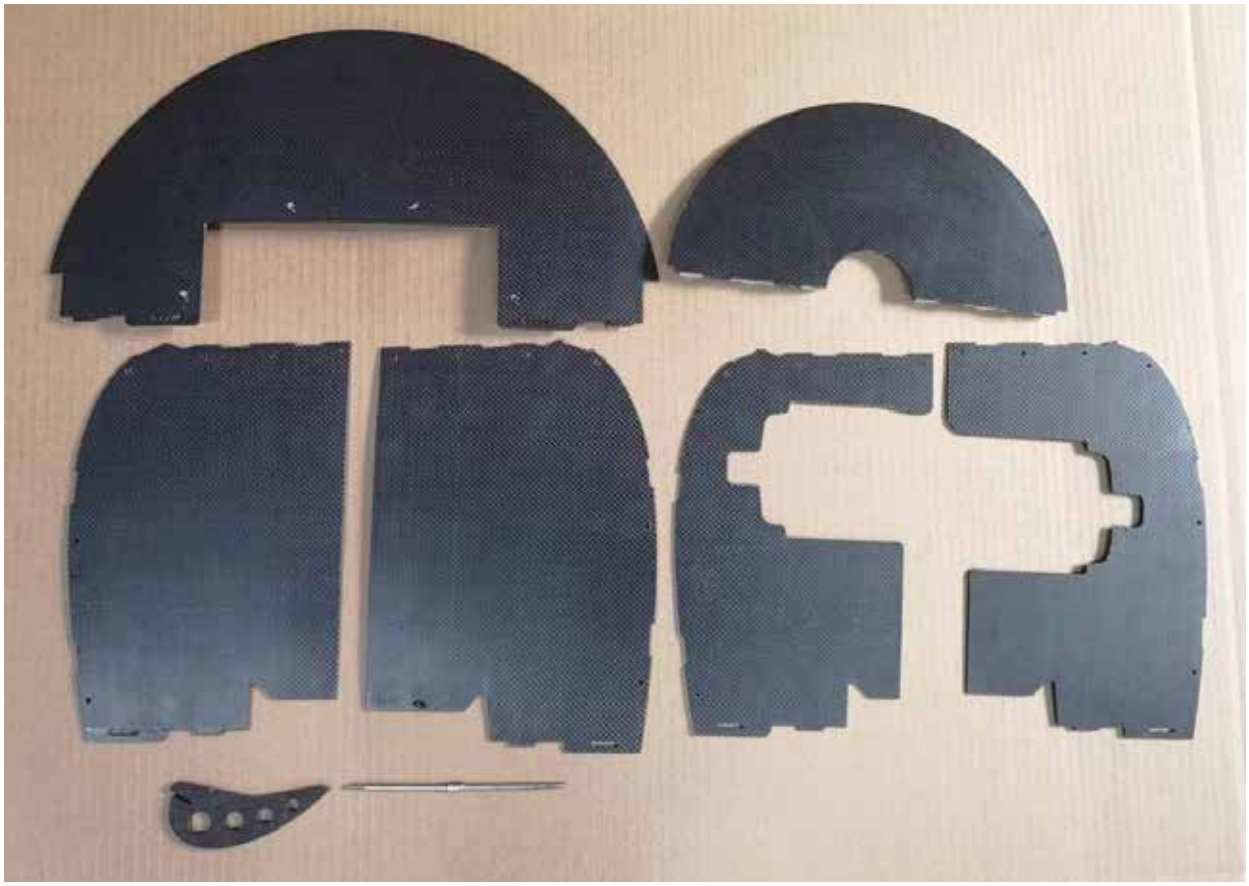
11.

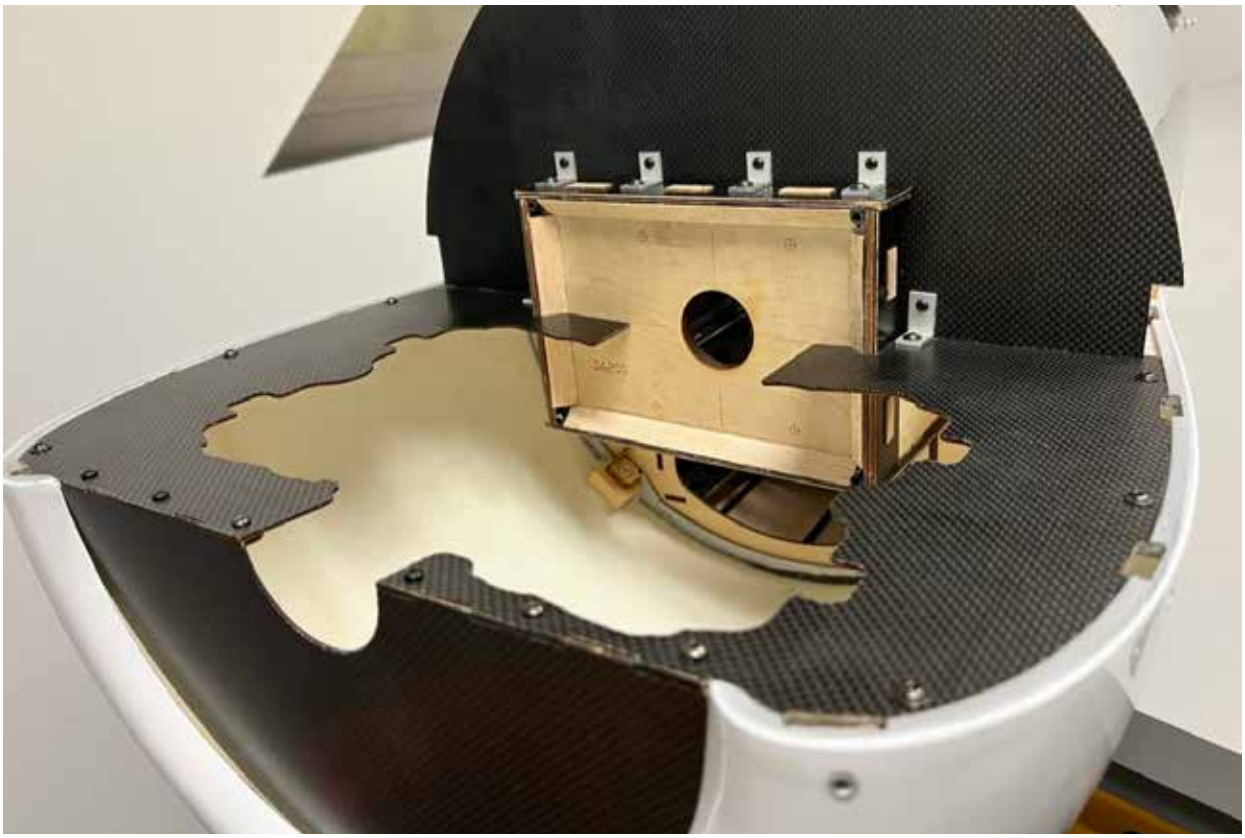
The 110” Muscle Bipe kit includes a top-to-bottom flow style baffle. Airflow is taken in on top of the engine, and passes through the cylinder head cooling fins to the bottom half of the cowling and is expelled out of a cooling hole at the bottom of the cowling. Pictured here is the DA200 installation using the 4-cyllinder horizontal baffle plate. Note that we chose to trim the rear baffle plate to provide a location for our ignitions in this instance.



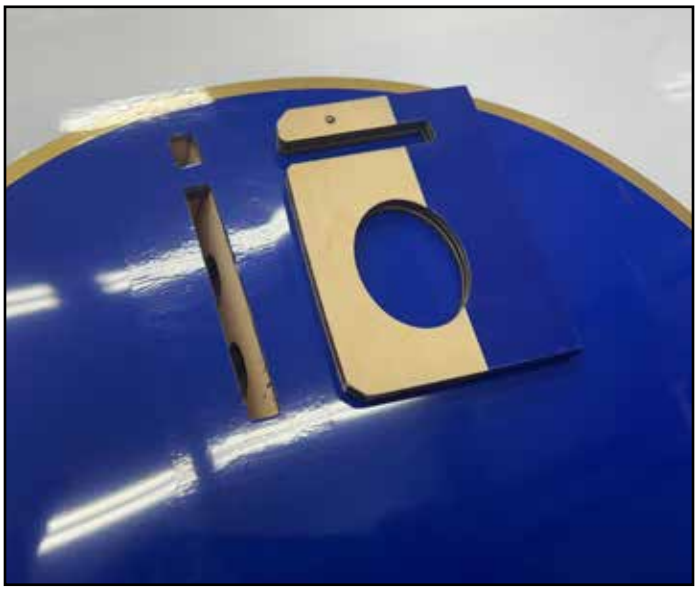
12.

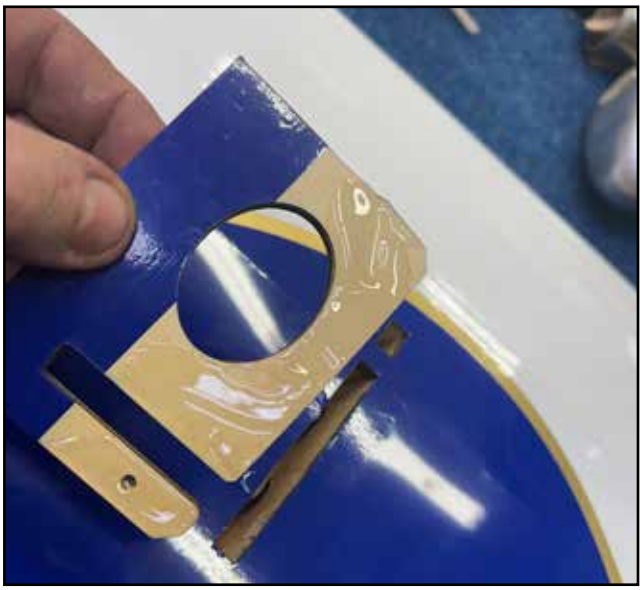
Shown here are the alternate horizontal plates to fit twin-cylinder engines and the uncut plate for other applications requiring a custom shape. When cutting or trimming on these plates for your installation, wear eye and lung protection, as the reinforcement is carbon fiber. The bottom photo shows the installation hardware for the baffles in-place.

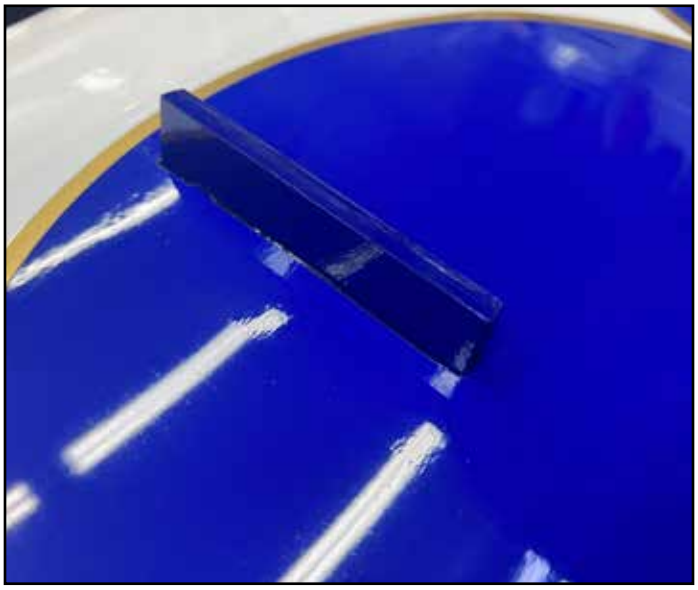




13. The upper wings are attached to the lower wings through two interplane struts. Each wing receives an interplane strut mount. Dry-fit these mounts without glue and make sure the fit is good, then install with epoxy. The interplane struts mount for flight with wire pins pressed in to the strut and mount as shown. Press the wires all the way in and they will lie flush against the strut.







14. With the DA200 engine installed, the 110" Muscle Bipe comes out slightly nose-heavy, and we enjoy its flight performance like this. Our prototypes with our setup balanced level hanging by the UPPER main wing tube. We placed our batteries (3x 2s 5000mah lipo) at the rear of the hatch under the cockpit and used no other ballast. This an excellent sport/precision CG location.

A twin-cylinder application is lighter and naturally comes in a bit less nose-heavy with a more 3D-appropirate CG. Our team pilots place their batteries at the rear of the cockpit opening for 3D performance with a twin.

Inspect your aircraft frequently, and tighten all fasteners.

If covering repair is needed, the covering colors are:

Oracover colors	Ultracote colors
Red/White/Gold color scheme:	
Ferrari Red #23	True Red-#HANU866
White #10	White-# HANU870
Gold #92	Gold-#HANU879
Yellow/Black/Silver color scheme:	
Cadmium Yellow #33	Bright Yellow-#HANU872
Silver # 91	Silver-#HANU881
Black #71	Black-#HANU874
Blue/White/Gold color scheme:	
#52 dark blue	Midnight blue #HANU 885
White #10	White-# HANU870