APEX AEROTECH

102" (120cc)

SLICK 360

ARF Assembly

www.apexaerotech.com

Congratulations on your new Apex Aerotech aircraft, and thank you for supporting our brand! We're excited to welcome you to the Apex Aerotech community. Our team is dedicated to creating high-quality, high-performance aircraft, and we can't wait for you to enjoy everything your new model offers.

While each aircraft is built with care and precision, these are advanced machines that must be handled responsibly. As the builder and pilot, you are fully responsible for the assembly, setup, and safe operation of your model. Because we cannot verify how each aircraft is completed or flown, Apex Aerotech cannot accept liability for injury, property damage, or any other loss resulting from the use of this product. By operating this aircraft, you agree to accept full responsibility for its use.

To encourage safe and responsible flying, we recommend joining the Academy of Model Aeronautics (AMA) or the equivalent organization in your home country. These groups offer helpful guidelines, legal protections, insurance coverage, and access to approved flying sites.

For safety, always land your aircraft immediately if any part becomes loose, detaches, or if the model behaves unusually. This helps prevent potential/further damage and unsafe situations.

Thank you again for choosing Apex Aerotech. We appreciate your support and wish you safe flights and many great experiences with your new aircraft!

Apex Aerotech Contact
E-mail: info@apexaerotech.com
Phone: (337)-692-6004
www.apexaerotech.com

The Apex Aerotech 102" Slick 360 stands at the forefront of giant-scale aerobatic innovation and performance. Inspired by the full-scale Slick 360 aerobatic aircraft, this model captures and expands its sharp appearance. Apex has passionately designed the Slick to deliver an exceptionally broad performance range—offering the precision and agility demanded for top-tier freestyle and aerobatic competition, while maintaining the friendly, forgiving characteristics that make it enjoyable for pilots of any style.

Developed with the same aerodynamic philosophy as its 60" counterpart, the 102" Slick 360 refines and scales that successful design into a larger platform. Extensive attention has been given to aerodynamic balance to optimize predictability in every phase of flight. Whether flying high-energy XA routines, IMAC sequences, or relaxed 3D and sport maneuvers, the 102" Slick 360 is up to the task. The Slick's envelope range, from low and slow 3D to high-speed XA, is truly impressive! This is a widely popular size class, known for being the "sweet spot" in freestyle aerobatic competitions.

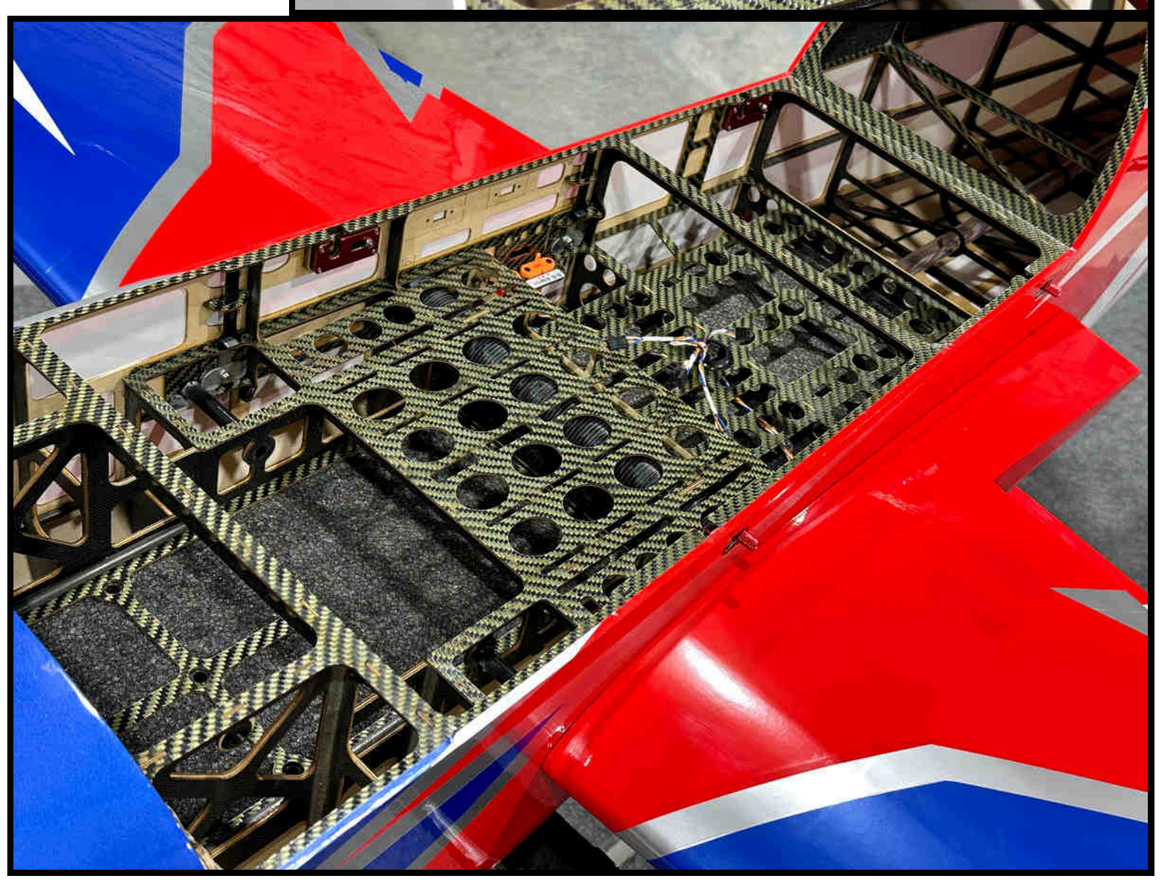
The 102" Slick 360 is offered in two Clint Sweet Design liveries: the striking "Banshee" Orange scheme and the classy "Apex" Blue/Red scheme. The Banshee livery earns its name through its bold, aggressive character—perfectly reflecting the aircraft's maximum capabilities. The Apex livery proudly showcases the brand's signature color palette, introduced with our debut aircraft release.

RECOMMENDED EQUIPMENT:

- 100-120CC GAS ENGINE (DA-120, GP-123, ETC.)
- 25MM STANDOFF (APEX/DUALSKY ALUMINUM ENGINE MOUNT)
- QTY. 7 STANDARD SIZE SERVOS (MINIMUM 600 OZ. IN. TORQUE), QTY. 1 STANDARD SIZE THROTTLE SERVO
- 27-29" CARBON FIBER PROP (28X9.5, 27X11 RECOMMENDED)
- 10-20 CHANNEL RADIO AND RECEIVER SETUP
- QTY. 2 2S 2000-5000MAH RECEIVER BATTERIES

SERVO ARM SETUP:

- QTY. 4 1.5" APEX ALUMINUM CLAMPING STYLE M3 ARMS (AILERONS)
- QTY. 3 2.0" APEX ALUMINUM CLAMPING STYLE M3 ARMS (ELEVATOR AND RUDDER)
- QTY. 1 1.25" APEX ALUMINUM CLAMPING STYLE M3 ARM (THROTTLE)



Unboxing and Prep

Before beginning assembly, it's important to prepare the aircraft's covering. Each model experiences multiple environmental changes during transit from the factory, to our headquarters, and finally to your door. These shifts in temperature and humidity can naturally affect the covering and underlying wood structure.

We highly recommend taking a few minutes to inspect all covering seams and surfaces to ensure they are fully secure. Using a covering iron with its supplied cover or sock, lightly go over any seams or areas that need tightening. A heat setting of approximately 250-270°F is ideal. Avoid excessive heat—overheating can cause unnecessary shrinking or distortion. If you are new to working with film-covered aircraft, start with a lower heat setting and increase gradually as needed.

Some wrinkles are normal on newly manufactured wood aircraft. The amount of visible wrinkling depends largely on the wood's moisture content. Aircraft stored or shipped in higher-humidity environments may show fewer wrinkles due to the wood swelling slightly, while lower-humidity environments may allow the wood to contract, and covering to produce more visible wrinkles.

You may use a heat gun to remove certain wrinkles if you are experienced and comfortable with the technique. However, it is strongly recommended to attempt correction with the iron first, as it offers more control and reduces the risk of overheating or distorting the covering.

Taking the time to properly prep the covering will help ensure a clean finish and long-term durability of your aircraft.

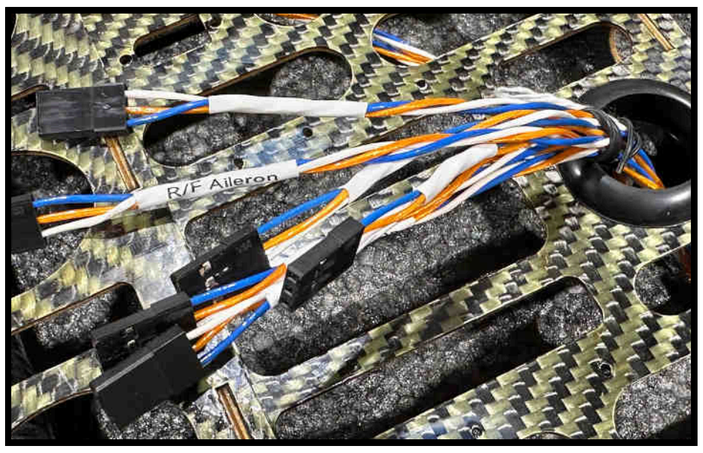
Slick 360 Covering Codes (manufactured by FLFRC)

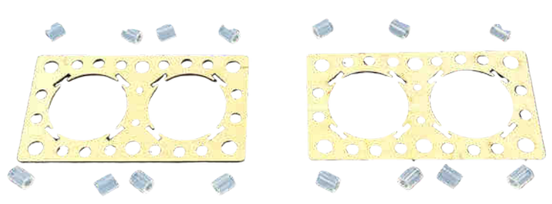
Orange ("Banshee")	Red/Blue ("APEX")
-022-1 Orange	-009-2 Red
-014-1 White	-014-1 White
-016-1 Silver	-030-1 Pearl Blue
-015-1 Black	-016-1 Silver
-027-1 Iron Grey	

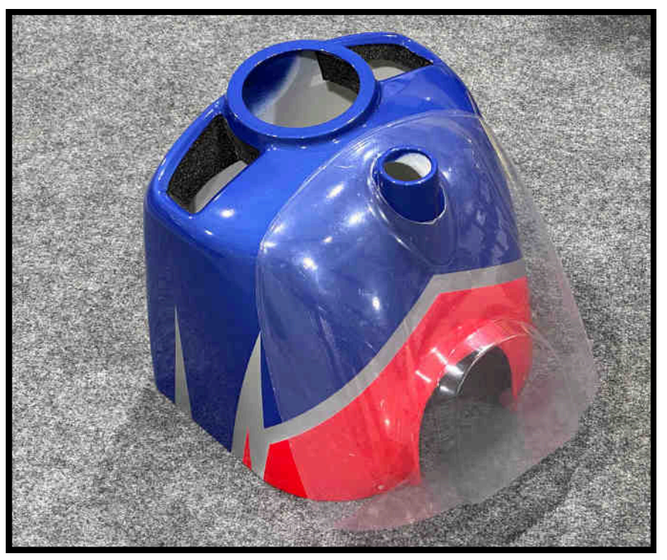
102" Slick Features

The Slick showcases a plethora of features incorporated to speed up the assembly process and cater to several different setup options:

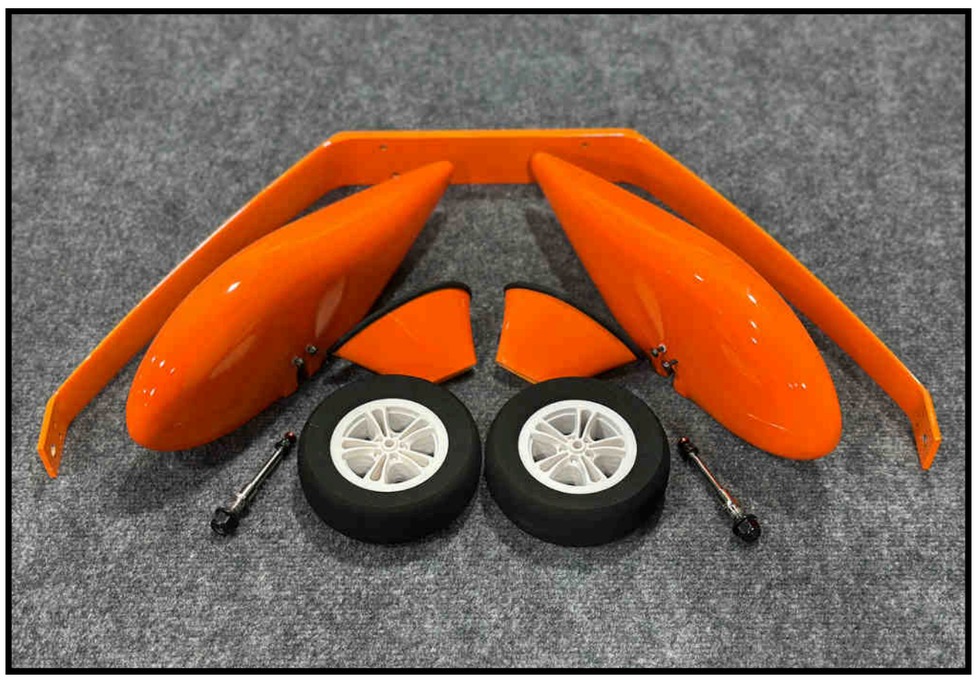
-Pre-hinged and sealed control surfaces
-Pre-installed and painted control horns
-Removable rudder
-Quick attach/release system for wings, canopy, and stabs
-Exhaust cutting template for cowling
-Engine baffling pre-installed
-Pre-installed pilot figure and cockpit set (dashboard inspired by aerobatic legend Rob Holland)
-Livery-matched carbon fiber spinner
-34 oz fuel tank
-Extensions labeled and included (tail servo extensions pre-installed)
-Pre-installed and labeled aileron servo lead connectors (routed to RX)
-Pre-installed elevator servo lead connectors (routed to RX via extension tube)
-Aluminum receptacles for canopy pins
-Wing bags, canopy cover, and stab bags
-Removable hatches for fuselage access
-Foam pipe tunnel
-Carbon fiber/Kevlar-laminated structure throughout
-Painted carbon fiber landing gear
-High-quality decal package
-Blind nuts installed in wingtips for night lights
-Pre-cut cowling pressure lip opening for hot-air exit



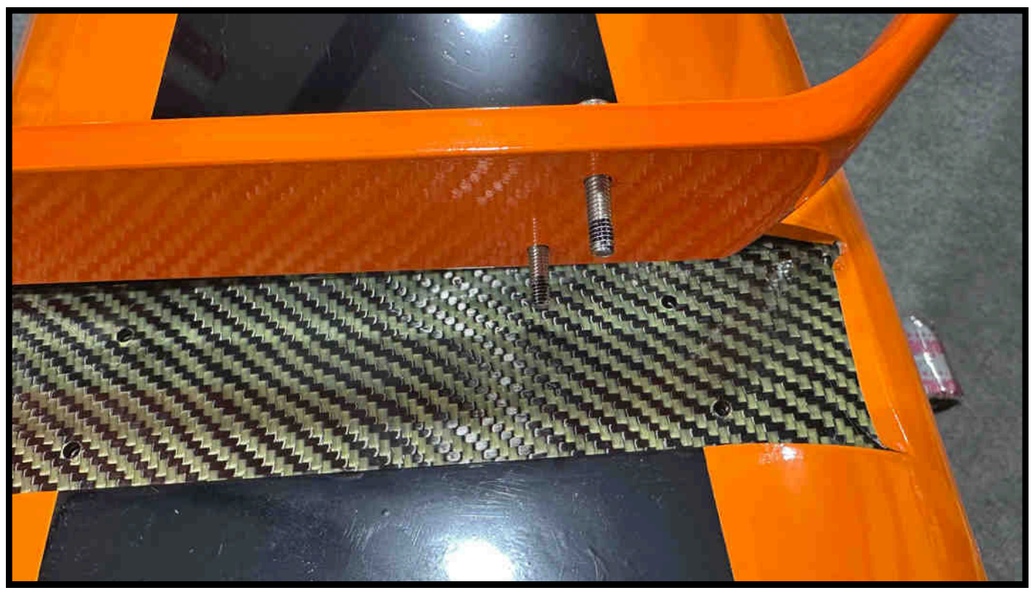




Landing Gear Installation

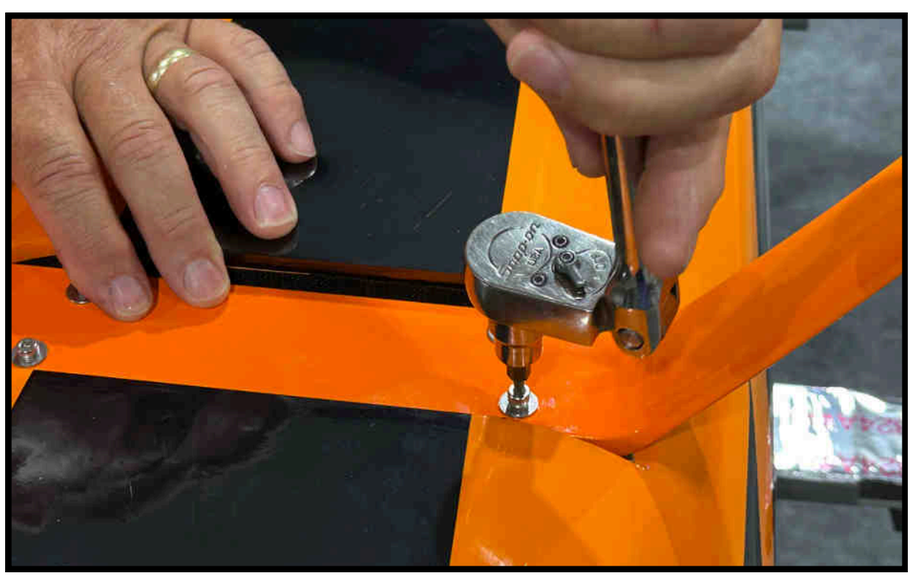


Locate the following items:
-Carbon fiber landing gear
-Wheels
-Axles
-Wheel pants
-Landing gear cuffs (fairings)



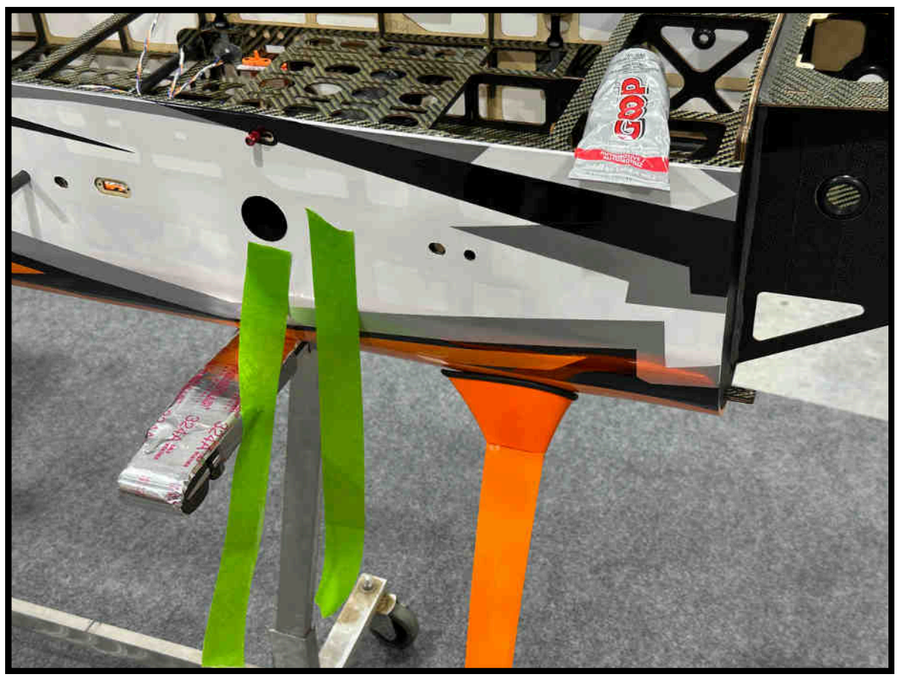
The landing gear installs using four bolts. The mounting pattern is keyed, ensuring the landing gear is positioned at the correct angle during installation and cannot be installed incorrectly.

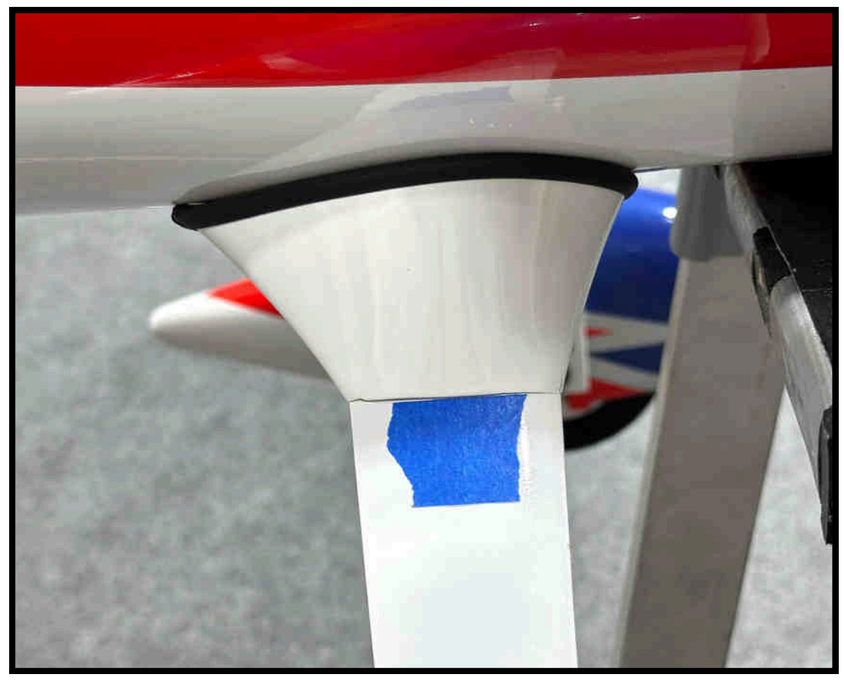
Apply blue Loctite to the landing gear bolts



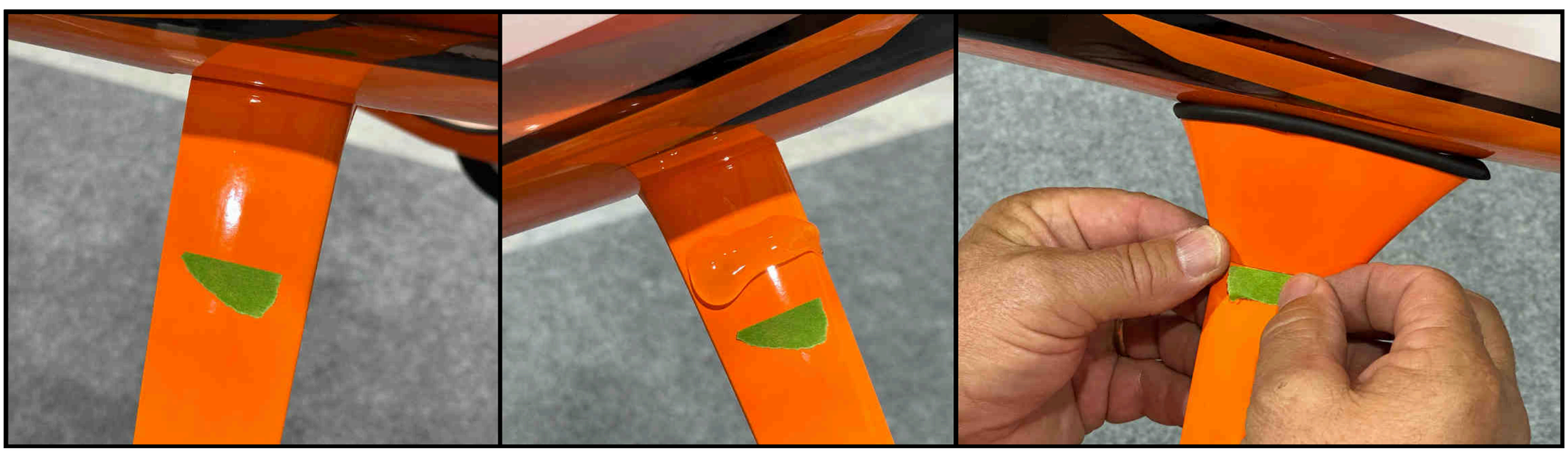
Place the washers underneath the bolt heads, then tighten the bolts using a ratchet wrench or driver.

Up next is installation of the landing gear cuffs



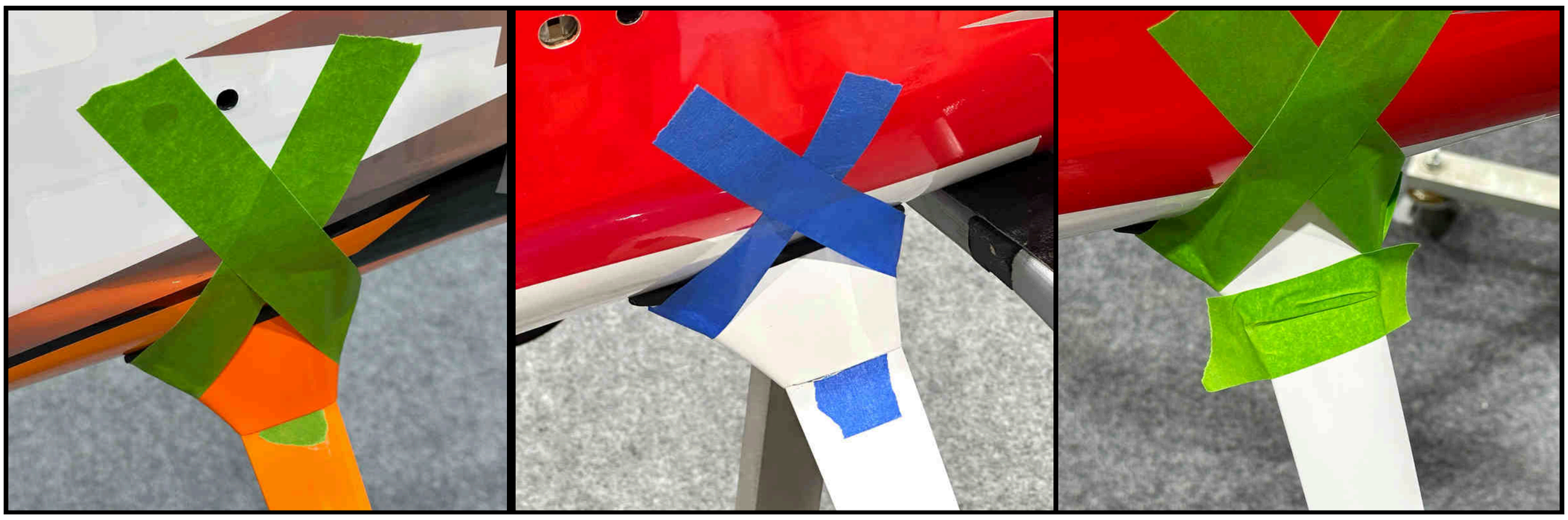


Landing gear cuff installation requires GOOP (or a similar rubberized adhesive) along with masking tape to hold the cuffs in position while the adhesive cures. The gear cuff is glued to the landing gear only, not the fuselage. This allows the landing gear to be removed later if needed.



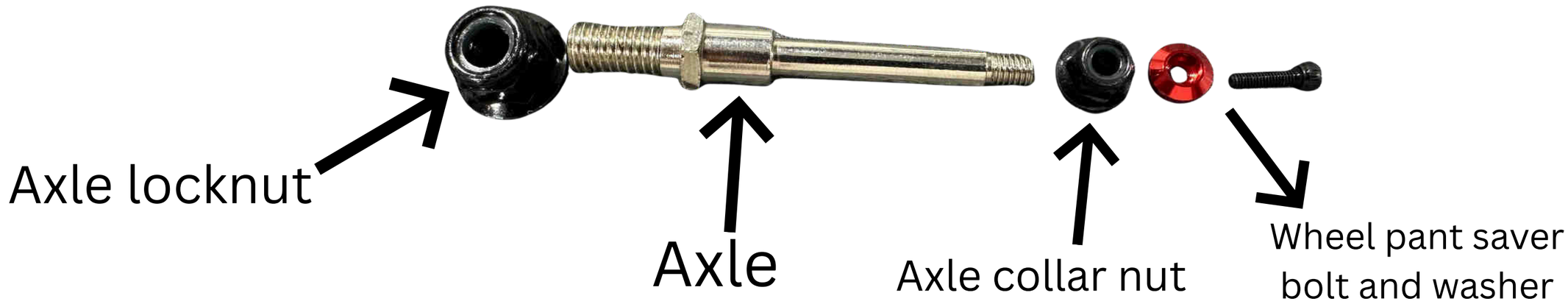
Slide the landing gear cuff up against the fuselage until it is properly positioned. Use a piece of masking tape to mark the location of the gear cuff for reference.

Slide the cuff back down the gear leg. Apply a bead of GOOP to both sides of the landing gear leg, just above the reference mark, then slide the cuff back up into position against the fuselage.

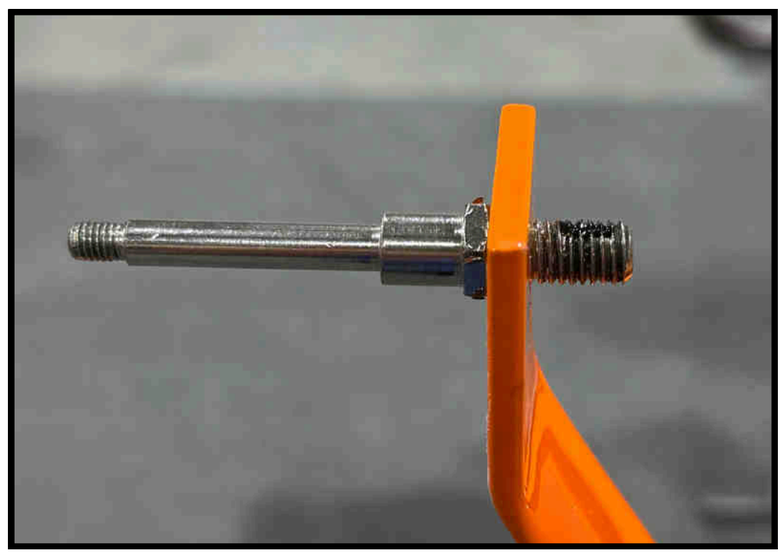


Use masking tape to hold the gear cuff in place up against the fuselage. If desired, place a piece of tape and crease it along the joint between the bottom of the gear cuff and the gear leg to help prevent excess GOOP from spreading.

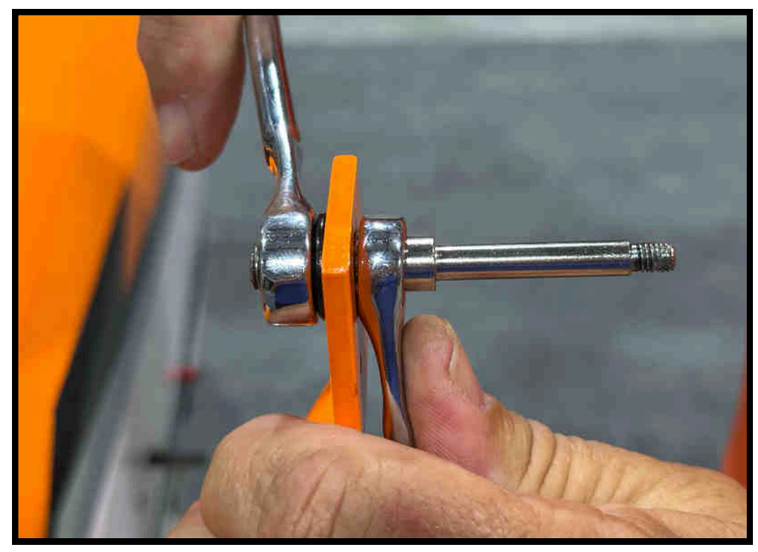
**Keep the aircraft in an upright position while the adhesive cures to prevent any adhesive from dripping onto the fuselage.*



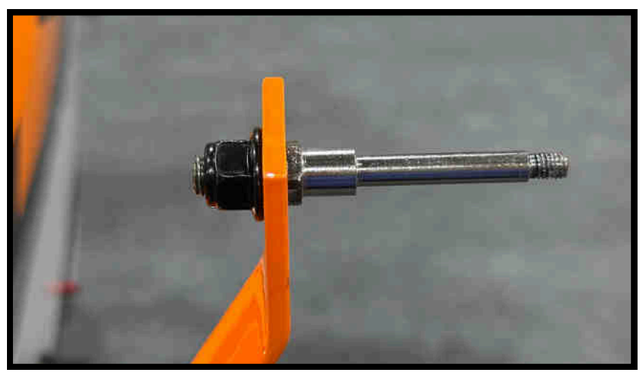
Align the axle so that the hex portion is vertical. This orientation ensures the wheel pant can be installed correctly.



Apply Loctite to the axle threads.



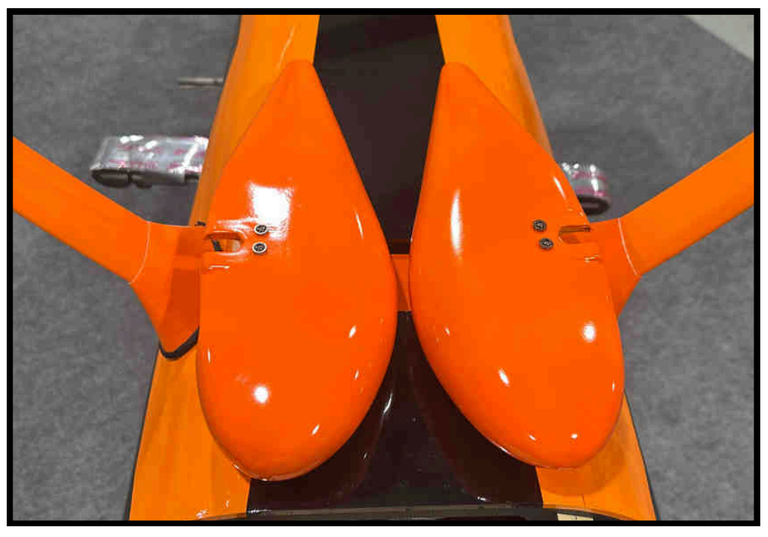
Tighten the axle locknut using two wrenches: one on the locknut and the other on the hex portion of the axle to prevent the axle from turning.



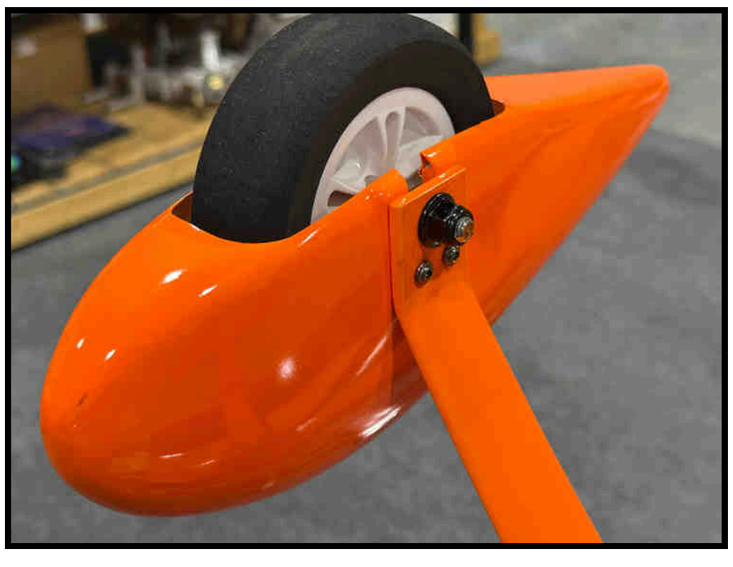
Thread the collar nut onto the axle and tighten it securely, taking care not to overtighten.

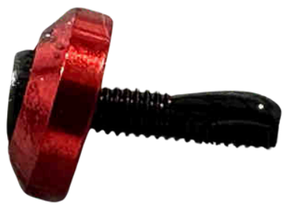
Locate the wheel and tire assembly and slide it onto the axle.

Apply blue Loctite to the threaded end of the axle before installing the collar nut.



The wheel pants are installed using two M3 bolts. Apply blue Loctite to the bolts before installation.

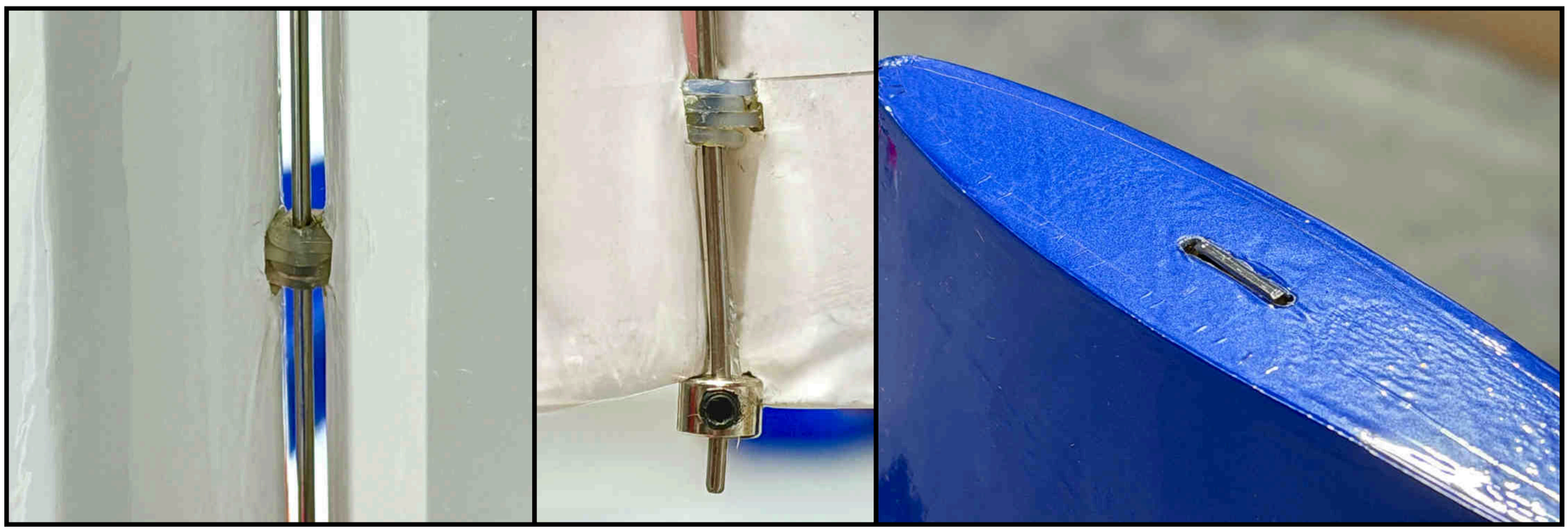




Apply blue Loctite

The Slick features a built-in wheel pant saver system. Thread the wheel pant saver bolt and washer into the end of the axle. Make sure the hole on the wheel pant is aligned with the threaded axle opening.

Rudder and Tailwheel Installation

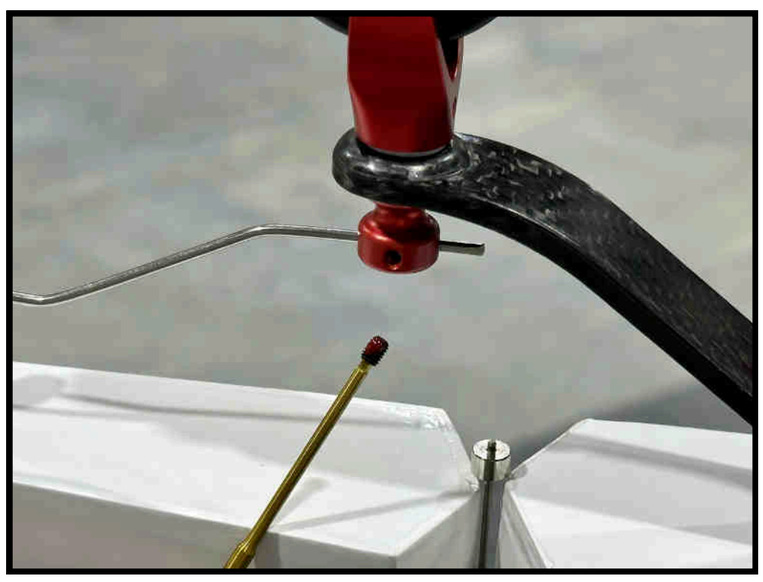


The Slick features a removable rudder. To install:

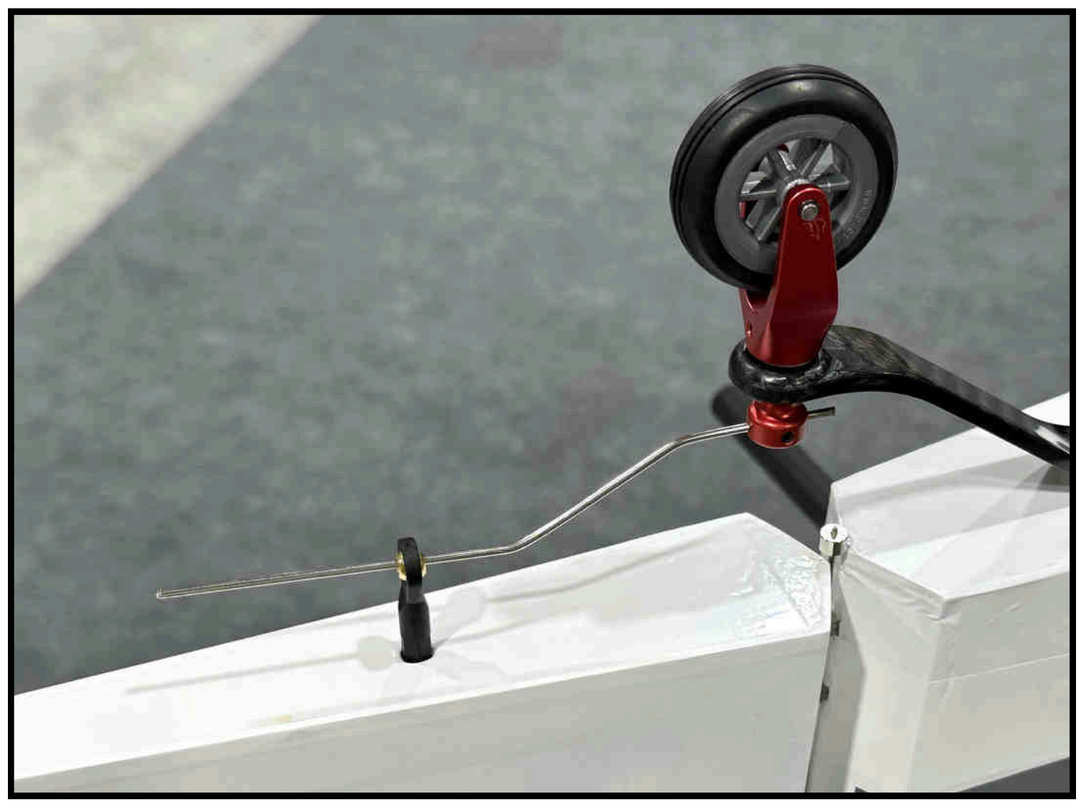
1. Align the rudder hinges.
2. Slide the hinge pin through the opening at the top of the rudder and down through the hinge holes.
3. The 90-degree bend at the top of the wire will sit in the provision at the top of the rudder.
4. At the bottom, secure the hinge wire with the collar and set screw. Apply blue Loctite to the set screw.

The blind nut at the bottom of the rudder is for the tailwheel tiller wire ball link. Apply blue Loctite to the threads, then insert the threaded tiller wire ball link into the provisional blind nut.

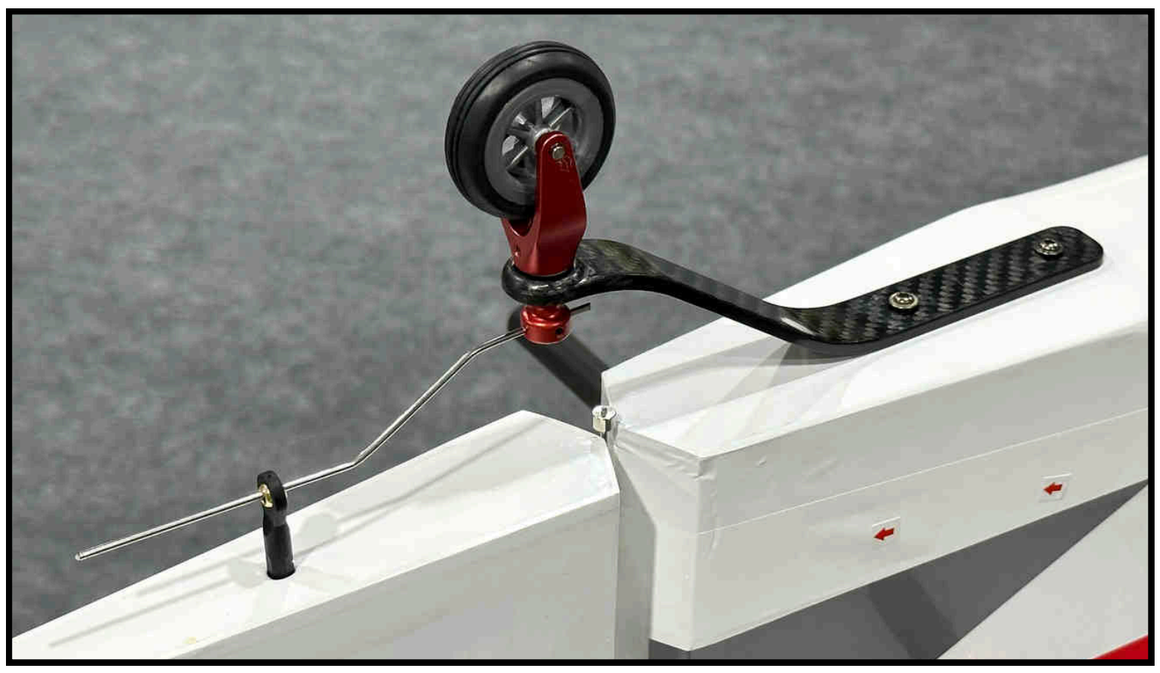
Be sure to install the flat portion of the tiller wire into the tailwheel swivel mount. Apply Loctite to the set screw before tightening.



The tailwheel is installed using two bolts. Apply blue Loctite to the bolts before tightening.

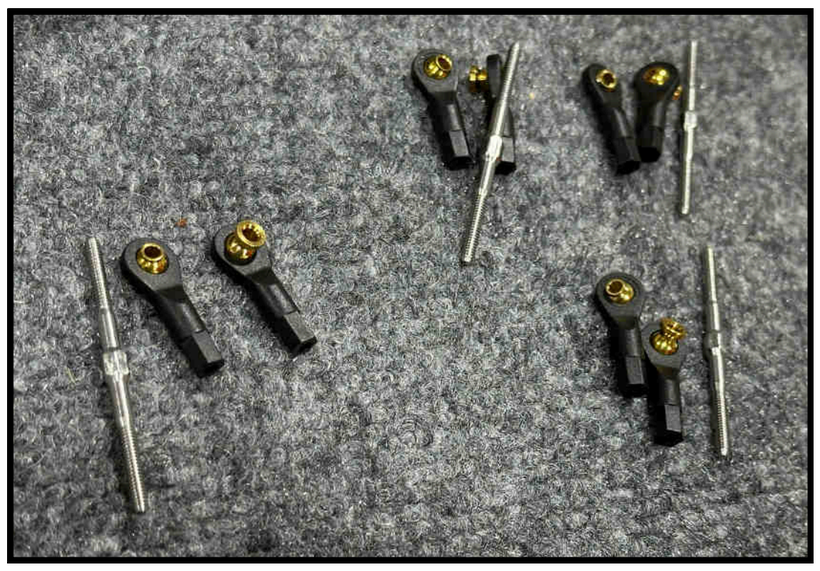


Bend the tiller wire so it aligns with the opening of the ball link. Applying heat while the wire is off and away from the aircraft is a simple and effective method to achieve the correct bend.



Tailwheel assembly complete. Verify that the rudder moves freely and achieves full deflection in both directions.

Aileron Servo Installation

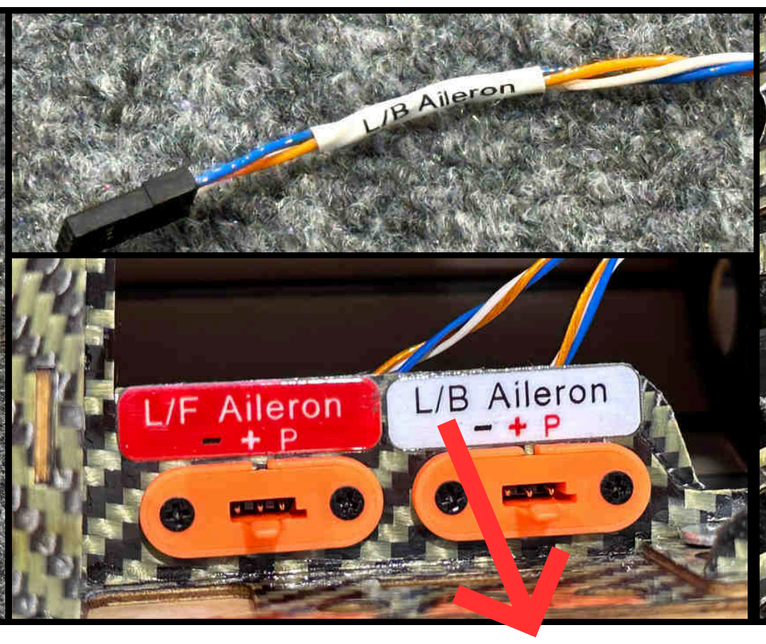


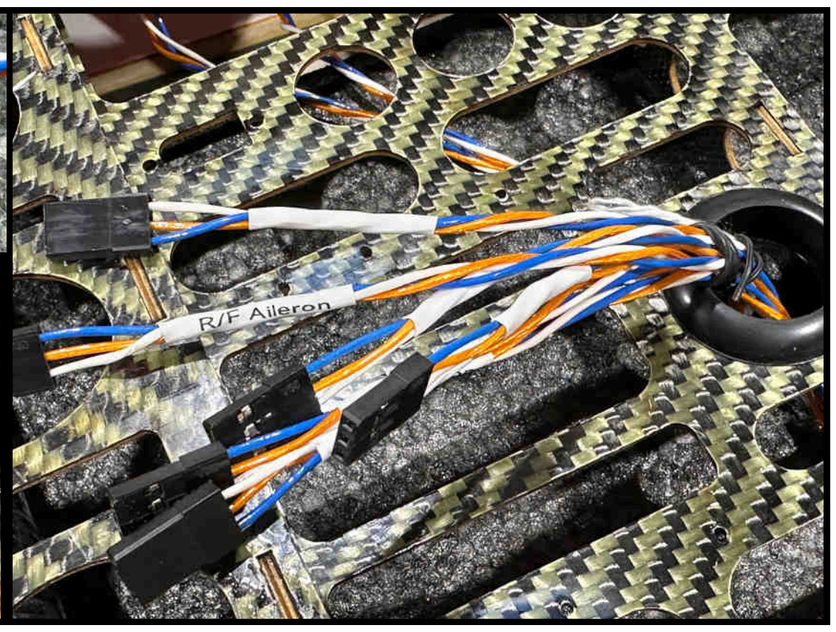
Turnbuckles and ball links

Control linkage items:
-Turnbuckle
-Ball Link
-Bolt
-Locknut

Turnbuckle wrench

Assembled control linkage. The flanged ball link will be positioned against the servo arm.





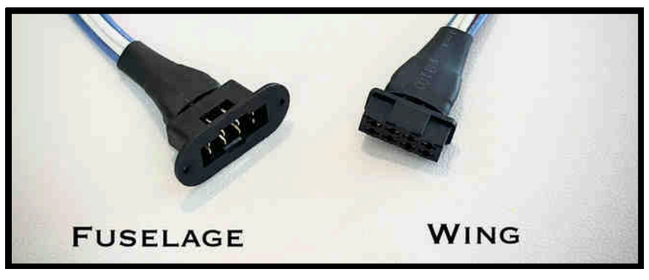
The Slick includes servo extensions and pre-installed aileron servo lead connectors. Each extension and connector is clearly labeled for easy identification:

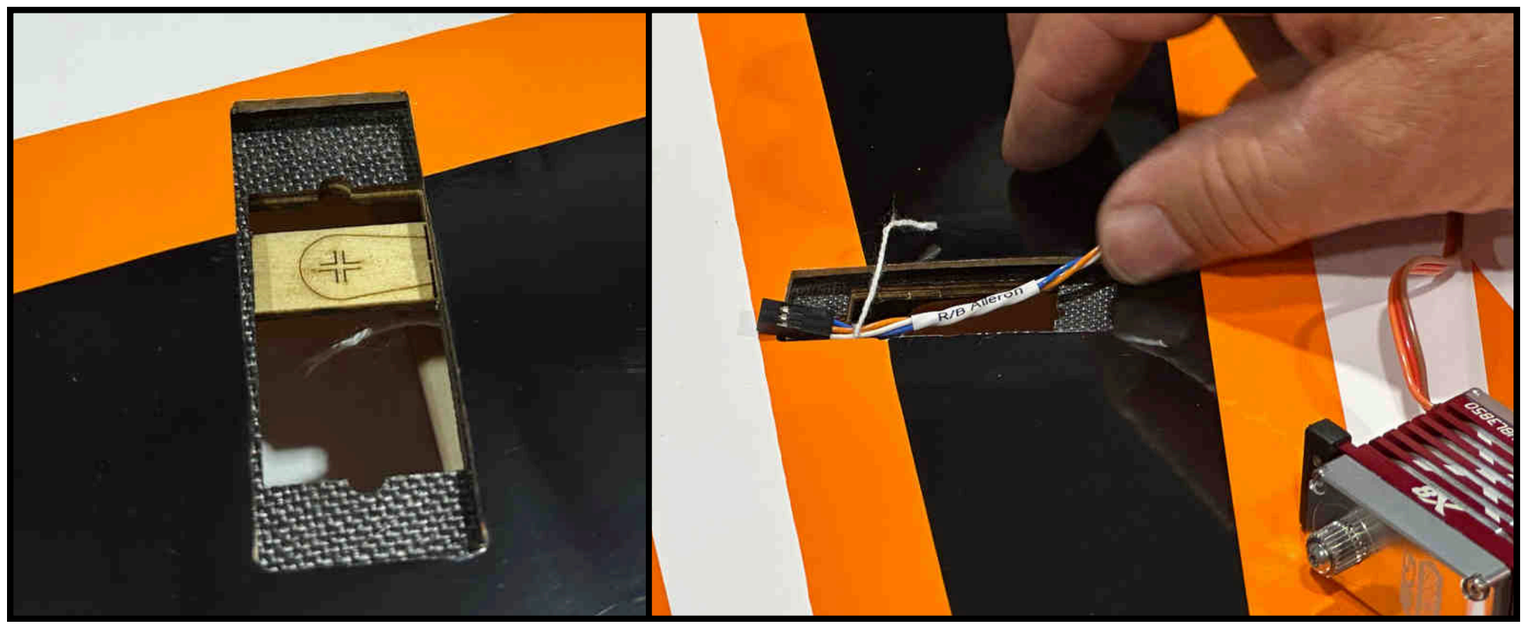
- “L” / “R” indicate left and right wing
- “F” indicates front (inboard)
- “B” indicates back (outboard)

For example, “L/B” identifies the left outboard aileron connection.

Only the outboard aileron servo requires an extension (provided in the bag)

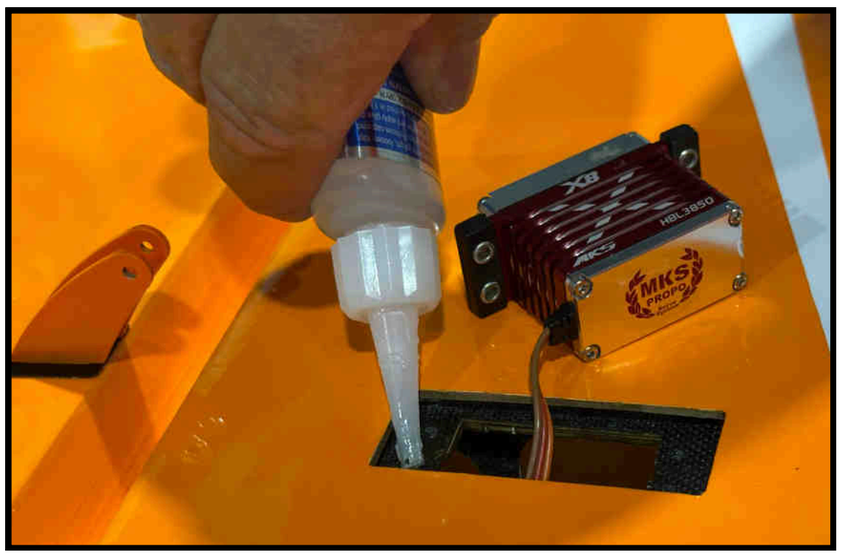
The Slick also includes provisions in the fuselage for mounting a 2-in-1 MPX connector, if desired.



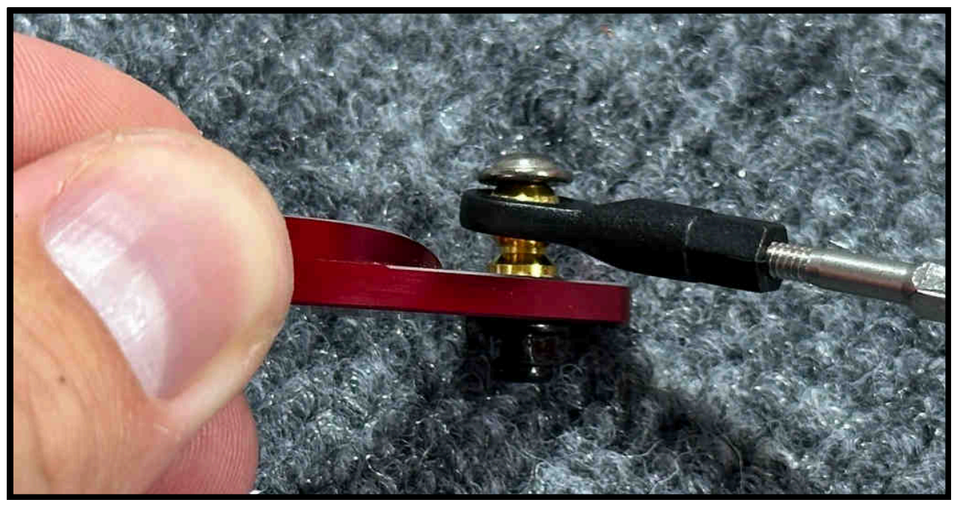


Each servo pocket includes a wooden insert that indicates the correct servo arm orientation. Remove this piece before installing the servos.

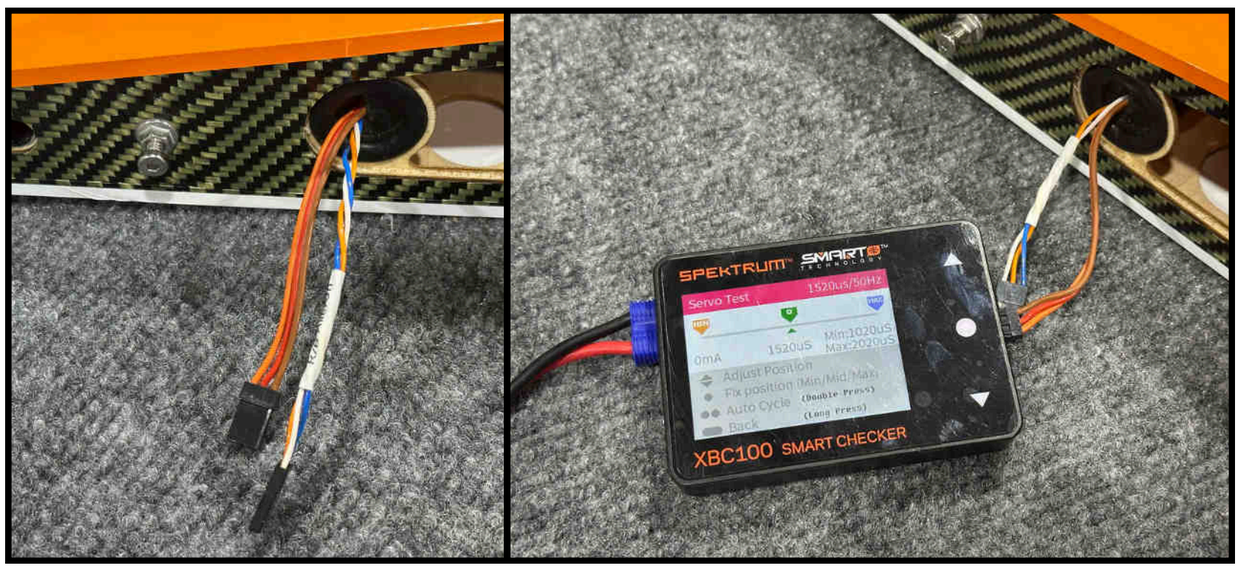
For the outboard servo, connect the servo extension first. A string is provided inside the wing to help guide the extension through the wing during installation.



To install the servos, first run the servo screws into the mounts to create the threaded holes. Remove the screws, then apply thin CA into the holes to harden the threads and help prevent stripping. Once the glue has cured, reinstall the servos.

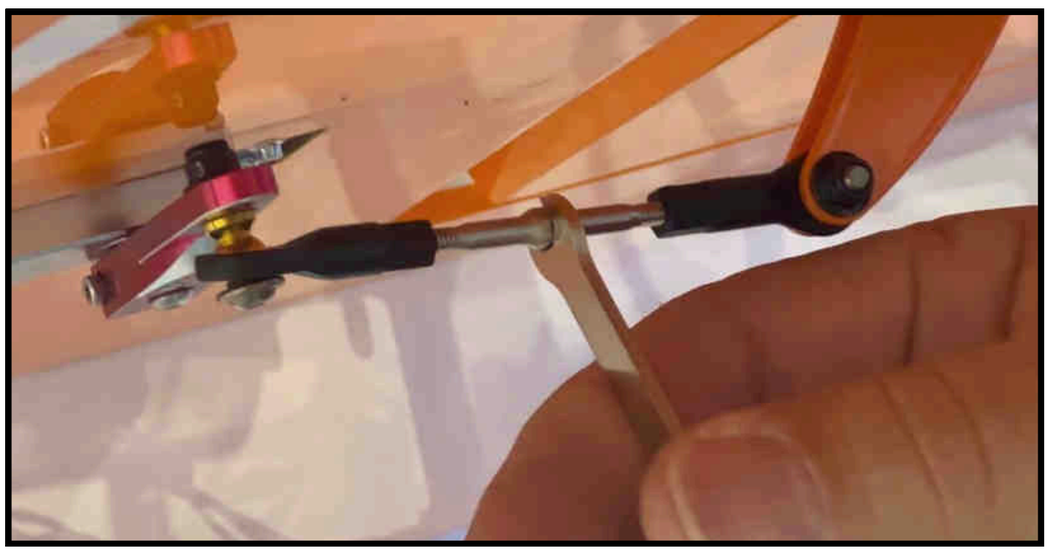


Note that the flanged ball link is installed against the servo arm. Apex hardware features built-in flanges, eliminating the need for additional washers.



Guide both servo leads through the pre-installed rubber grommet. For convenience, you may use a servo centering tool (such as the Spektrum Smart Checker) to center the servos before installing the servo arms. Mount the servo arm as close to 90 degrees to the servo casing as possible.

For best performance and optimal resolution, install the control linkage at the 1.25-inch hole on the servo arm.



For setup, start with the inboard servo. First, adjust the turnbuckle mechanically to roughly center the control surfaces. Then, use your radio to fine-tune sub-trim for precise alignment.

To match the outboard servo to the inboard servo, align in three phases:

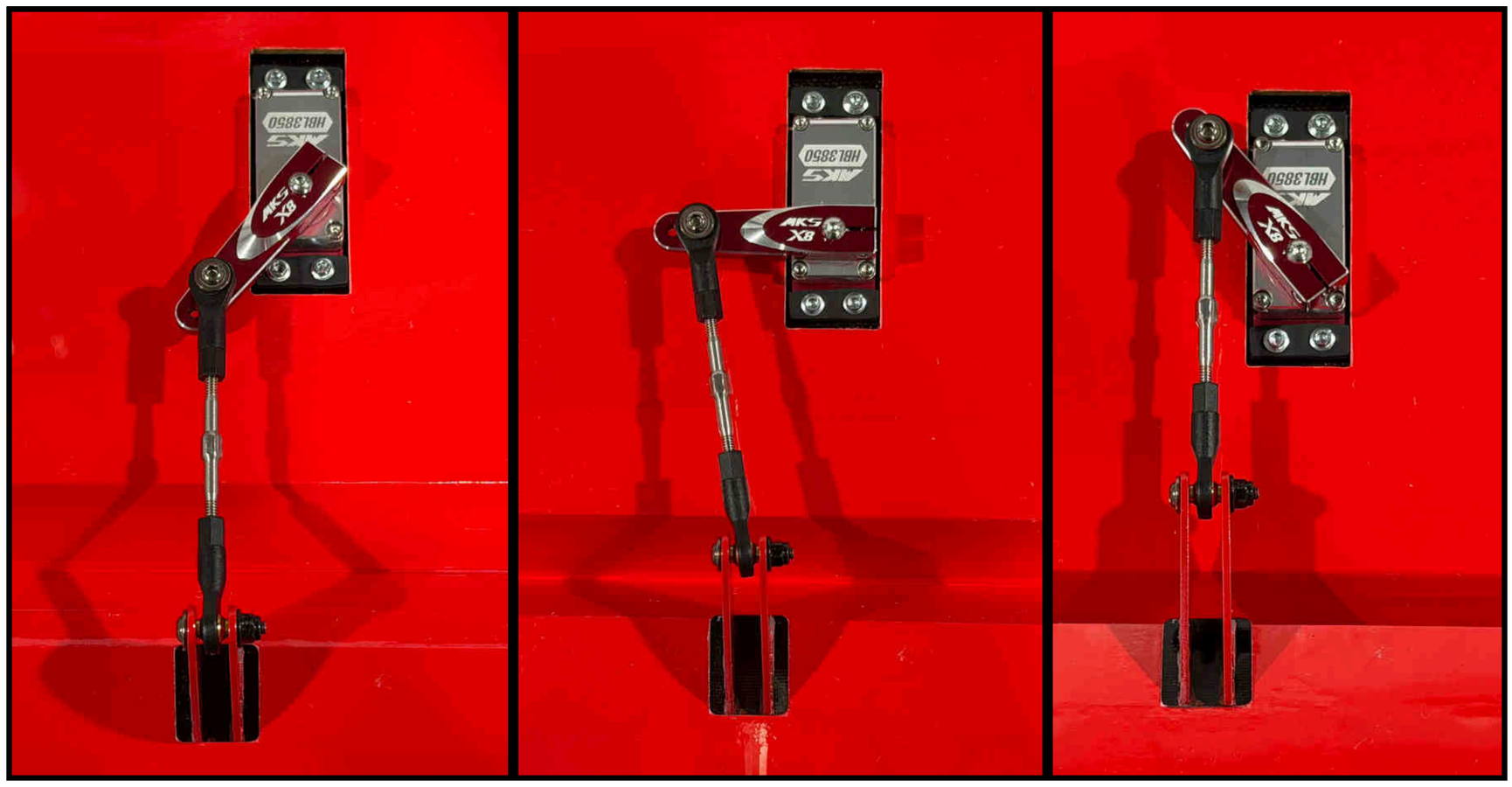
1. Neutral – use sub-trim to center the control surface.
2. Left endpoint – adjust travel so the surface matches the inboard servo.
3. Right endpoint – adjust travel similarly.

You can use the control horn bolt to ensure proper alignment with the ball link at each phase.

Always apply blue Loctite to all servo arm bolts.

It is highly recommended to use an aluminum clamping-style servo arm on all surfaces (for example, the Apex Standard aluminum servo arm).

PROPER AILERON LINKAGE GEOMETRY



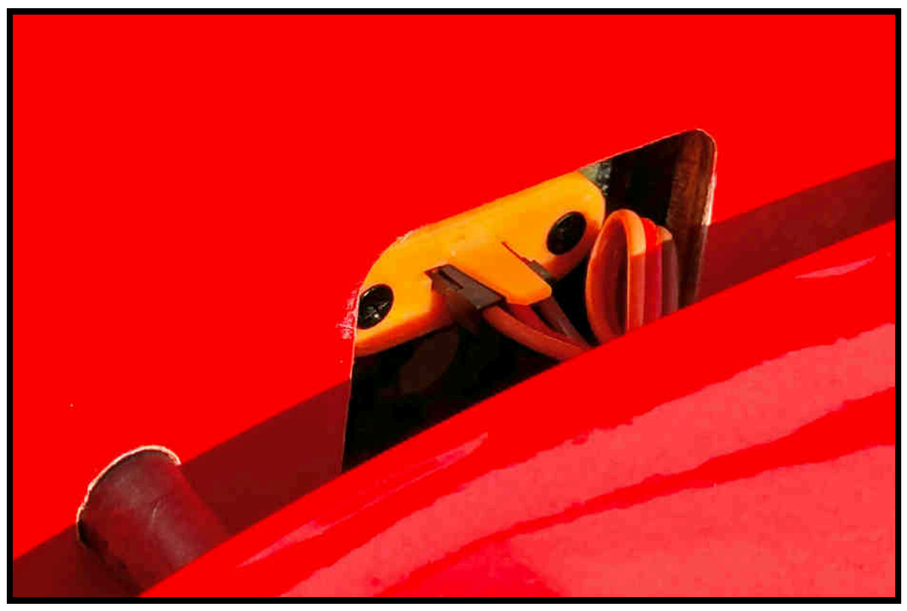
UP ***NEUTRAL*** ***DOWN***

Elevator Servo Installation

Mount the elevator servo using the same method as the aileron servo. Feed the servo lead back through the root of the horizontal stabilizer. As before, a servo centering tool may be used to center the servo prior to installing the servo arm.

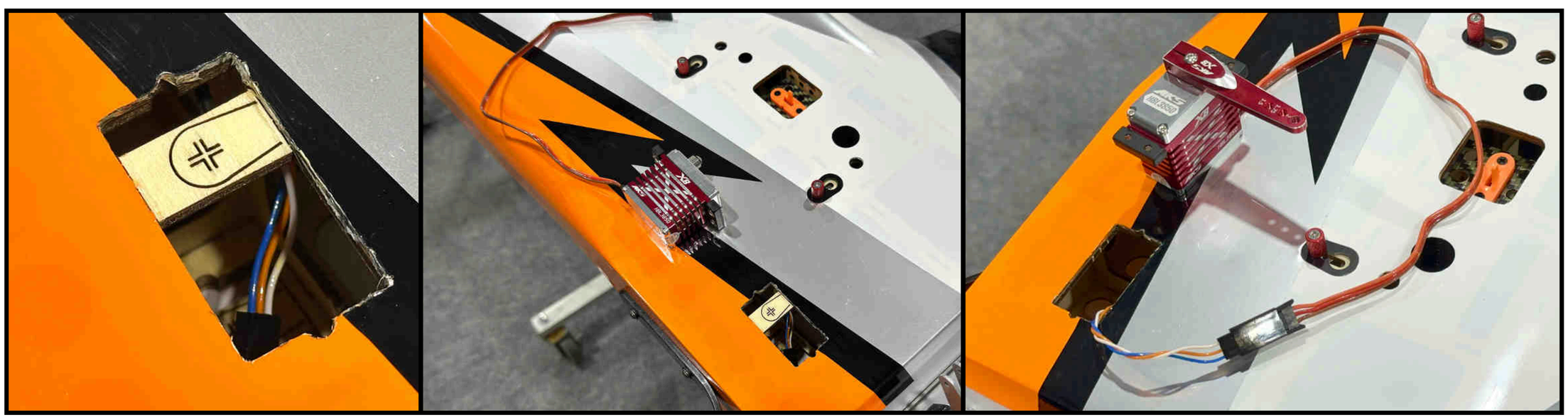
Install the linkage at the 1.75" position on the servo arm.

Position the flanged ball link against the servo arm.

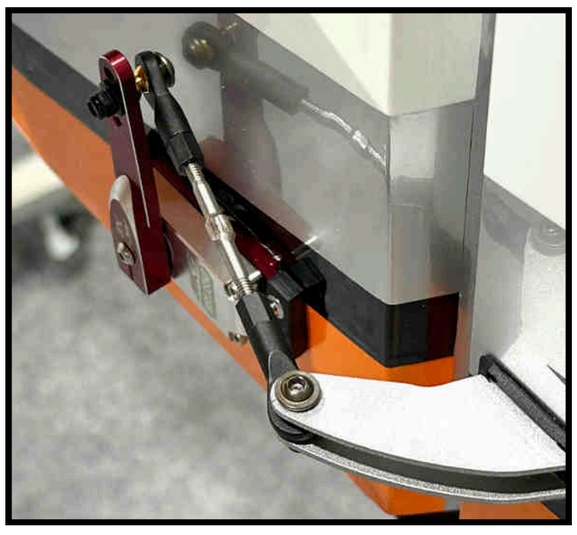


The Slick features a pre-installed elevator servo connector mounted in the fuselage.

Rudder Servo Installation



We recommend using a single rudder servo installed in the tail of the 102" Slick. Refer to the servo arm orientation indicator during installation. The pre-installed rudder servo extension features built-in clips on the plug for added security. A string is attached to the servo extension inside the fuselage and can be pulled through the guide tube after the servo is installed.



Notice the angle when viewing the linkage at neutral from behind (tail view). The linkage will straighten as it is deflected in either direction.

Install the linkage at the 1.75" location on the servo arm.

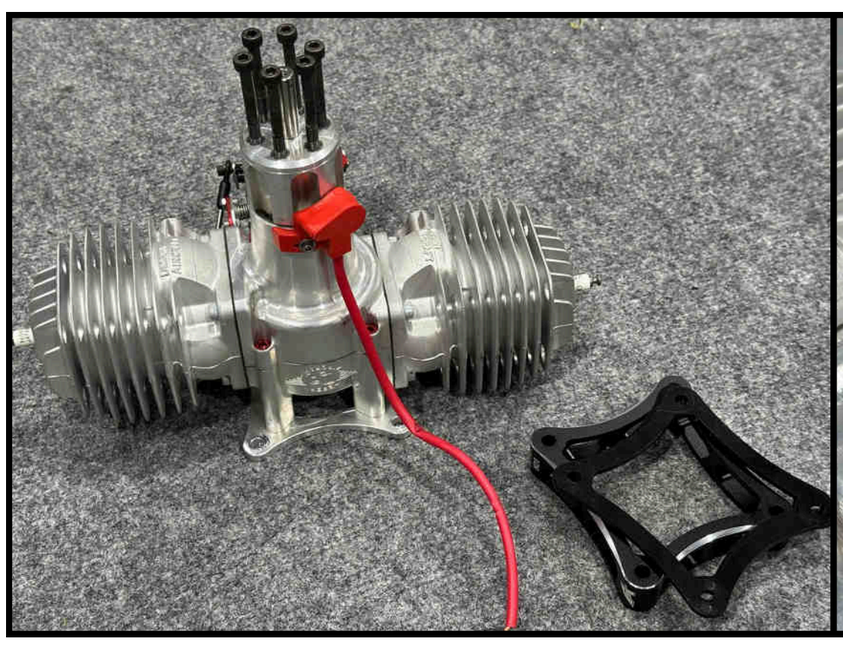
Rudder Servo Linkage Installation and Geometry

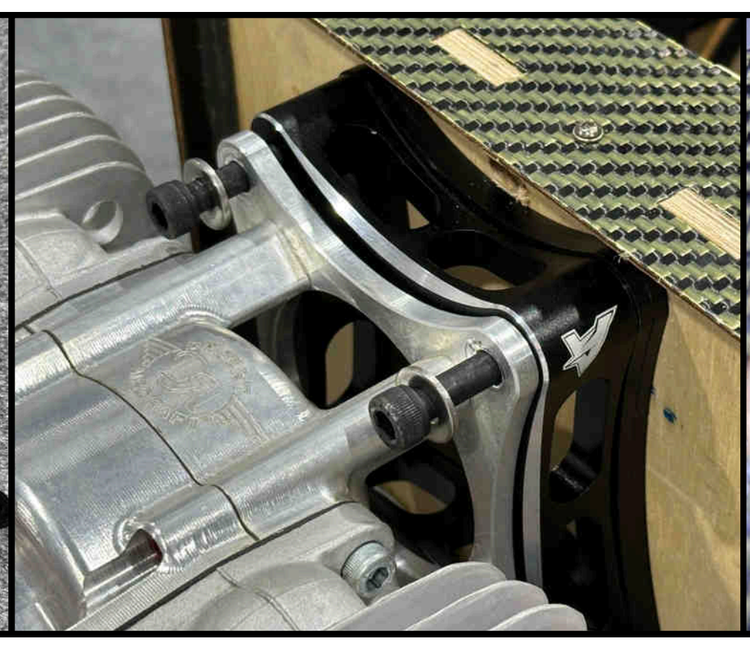
Left Neutral Right

Engine Installation

The Slick features pre-drilled mounting holes for the most popular engine options in the 120cc class. The Desert Aircraft 120cc engine will be shown for reference.

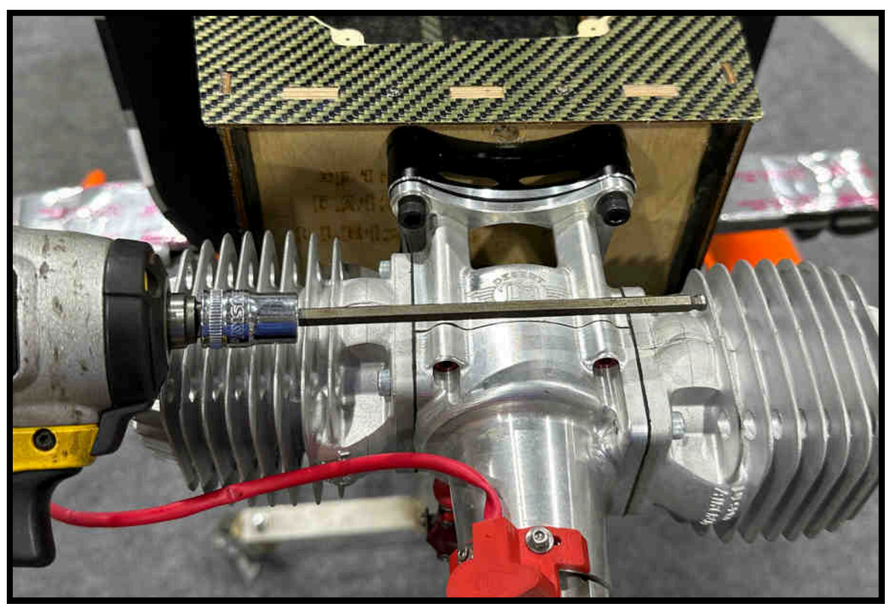
If you plan to install the throttle servo inside the motor box, drill a hole for the linkage as shown.





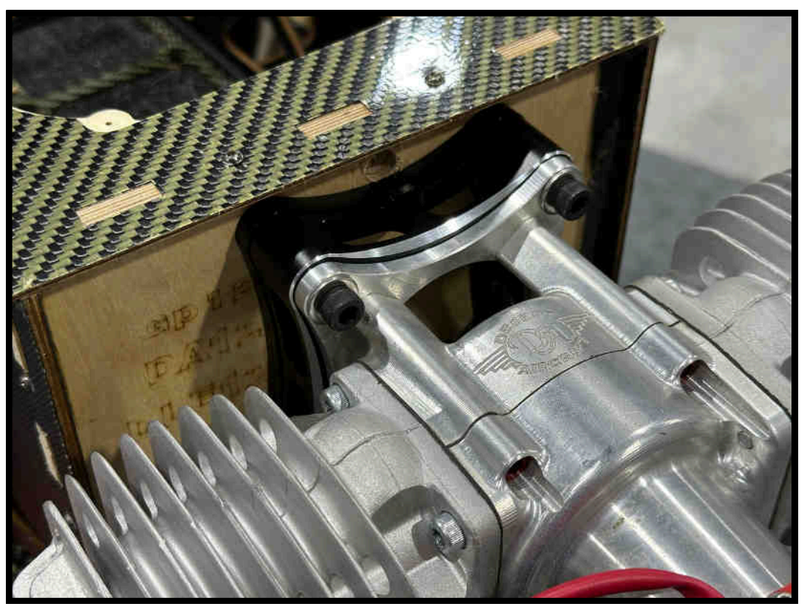
The Slick requires a 25 mm standoff. We recommend the Apex/Dualsky engine mount, as it is designed to evenly distribute engine mounting loads and includes hardware.

Install fender washers behind the firewall, between the firewall and the locknuts.



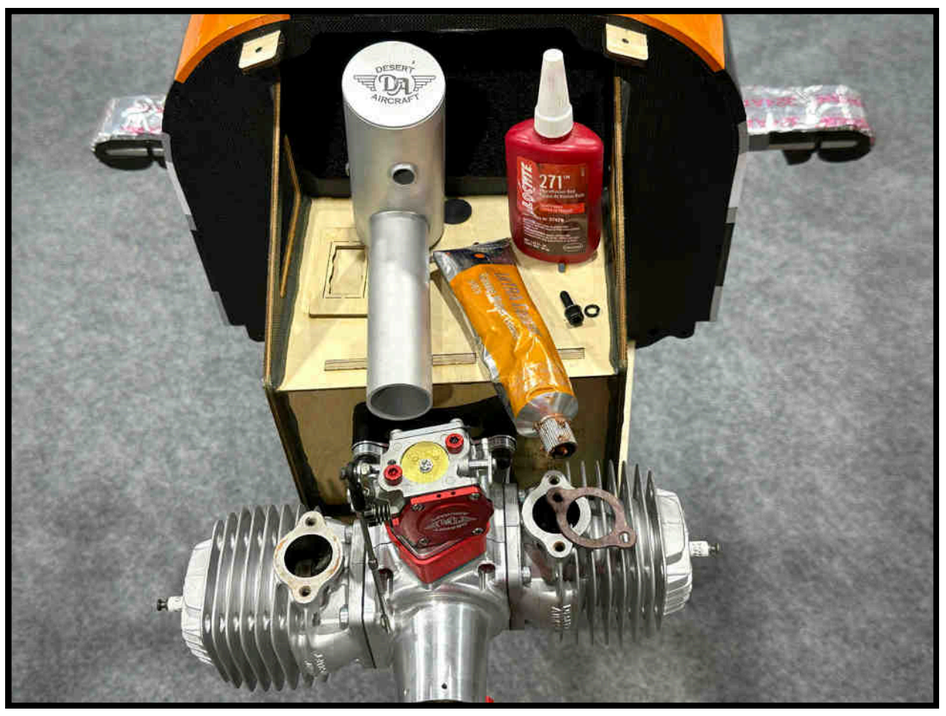
You may use an impact driver for engine installation. This is safe as long as an extension is used.

Apply red Loctite to the engine mounting bolts

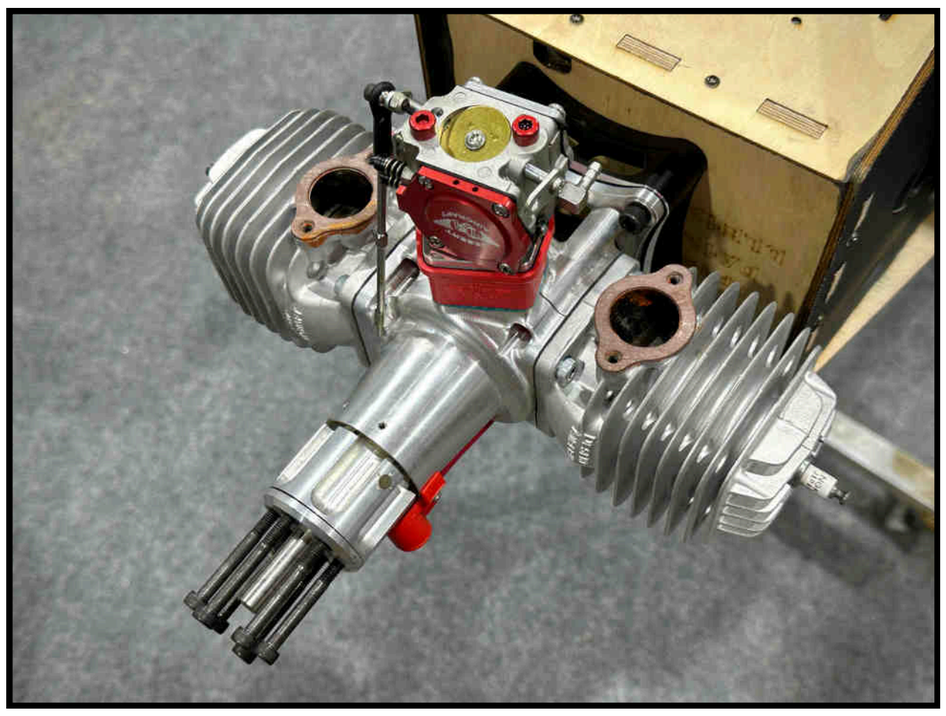


DA-120 mounted with the Apex/Dualsky engine mount

Exhaust Installation



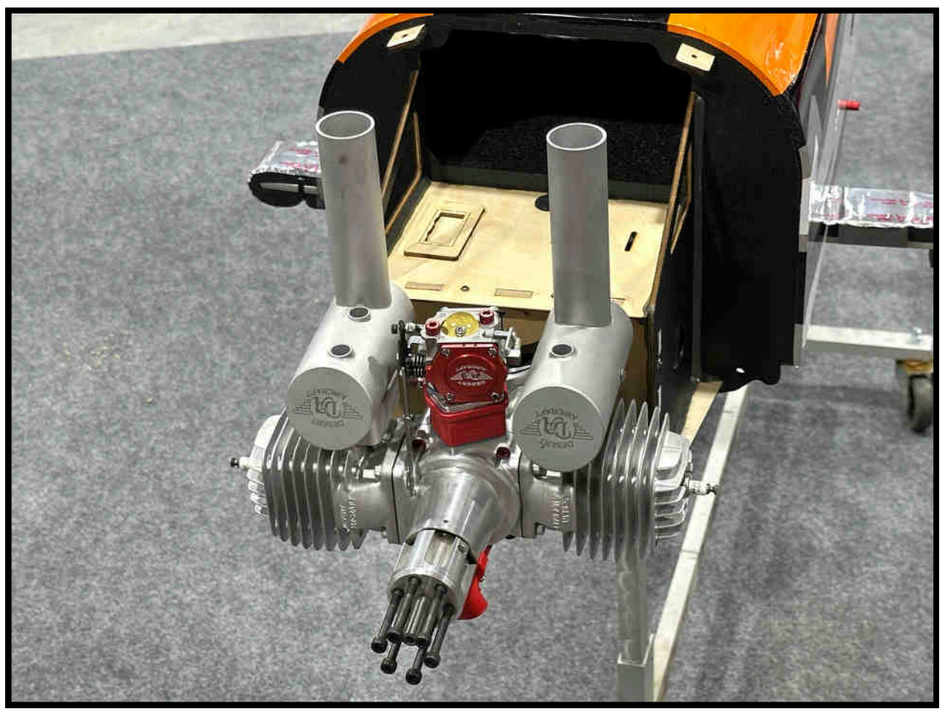
Shown will be the installation of the stock exhaust mufflers for the DA-120. Required items include two mufflers with mounting hardware, gaskets, RTV, and red Loctite.

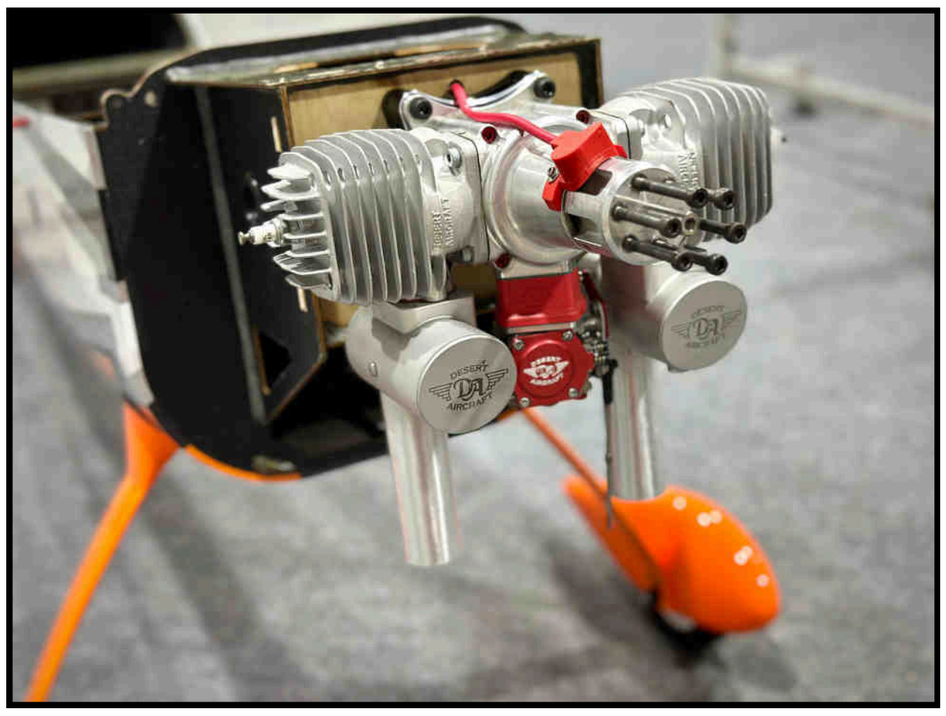


Apply a thin layer of RTV around the engine exhaust port. Do not apply excess RTV, as this may allow material to enter the exhaust port. Place the gaskets over the exhaust ports.

Red Loctite will be used for the muffler bolts

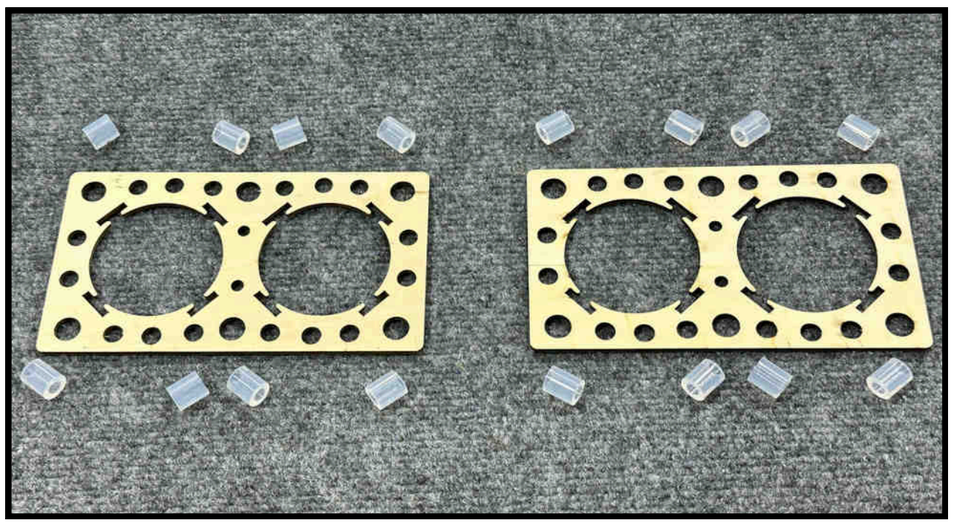
Ultra Copper RTV by Permatex is used for gasket application





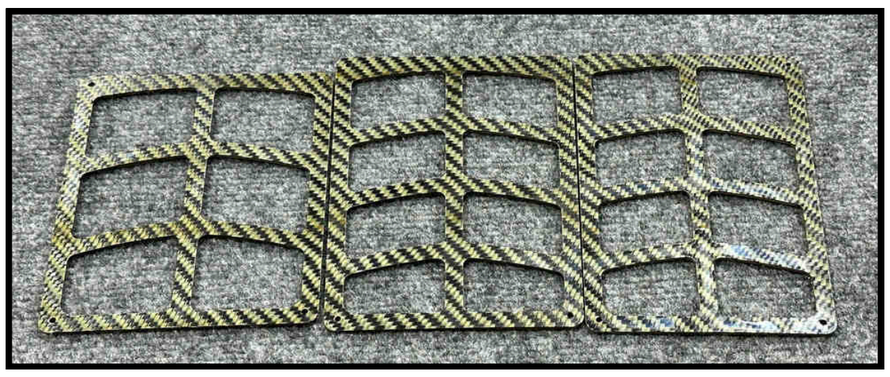
Install the mufflers using the provided hardware (bolts and lock washers). Apply red Loctite to the threads. If experienced, an impact driver with an extension may be used. Due to bolt positioning, it may be easiest to insert the bolts through the muffler before placing the muffler on the engine.

To simplify cowling installation and allow for tighter exhaust openings in the cowling, you may choose to trim approximately 3/4 in. from the muffler length. A pipe cutter may be used to accomplish this.

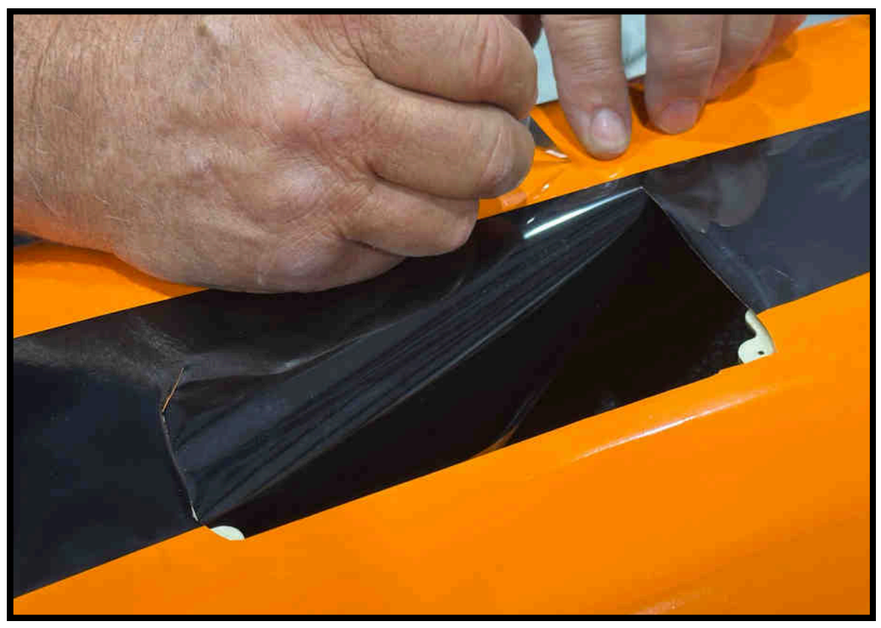


The Slick includes mounts for both canister and tuned pipe installations. It also features a foam tunnel designed to isolate the exhaust system and keep it away from onboard electronics. To install the mounts, align them with the carbon-laminated brackets in the tunnel and secure them with wood screws. Apply CA to harden the screw threads. For access through the bottom of the fuselage, use the hatches as described in the next section.

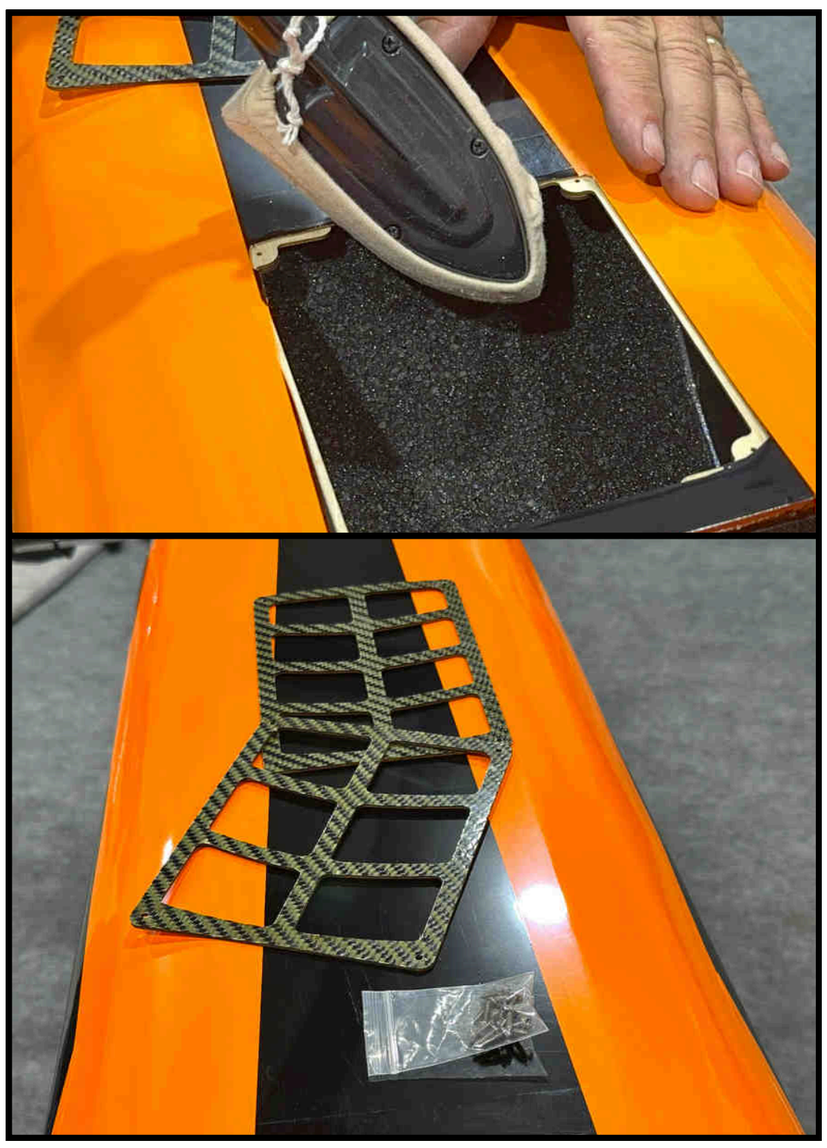
Hatch Installation



Fuselage hatches are multi-purpose. The Slick offers several options for hatch placement. As noted, they are required for canister or tuned pipe installation and can also assist with hot air exit when using stock exhaust mufflers. In all cases, we recommend installing them to ensure optimal engine performance and longevity.

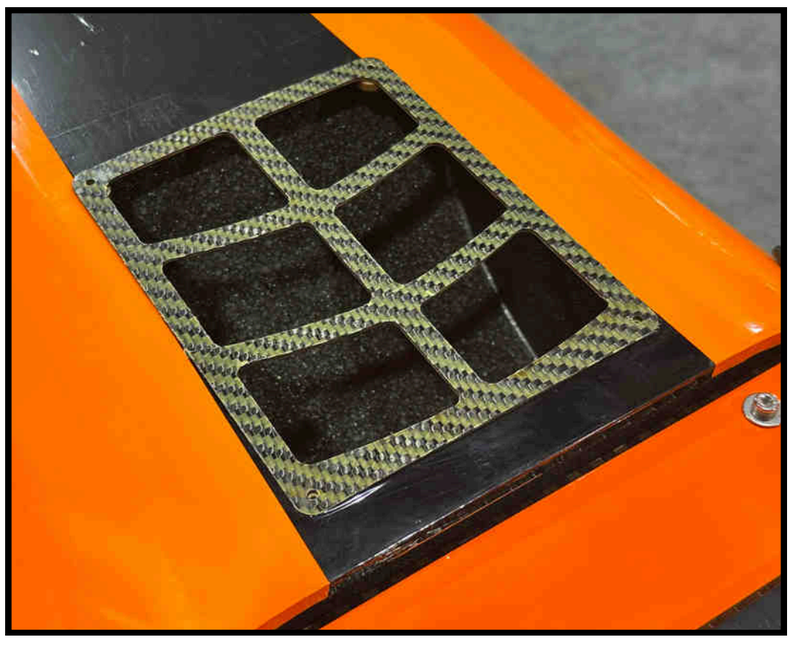


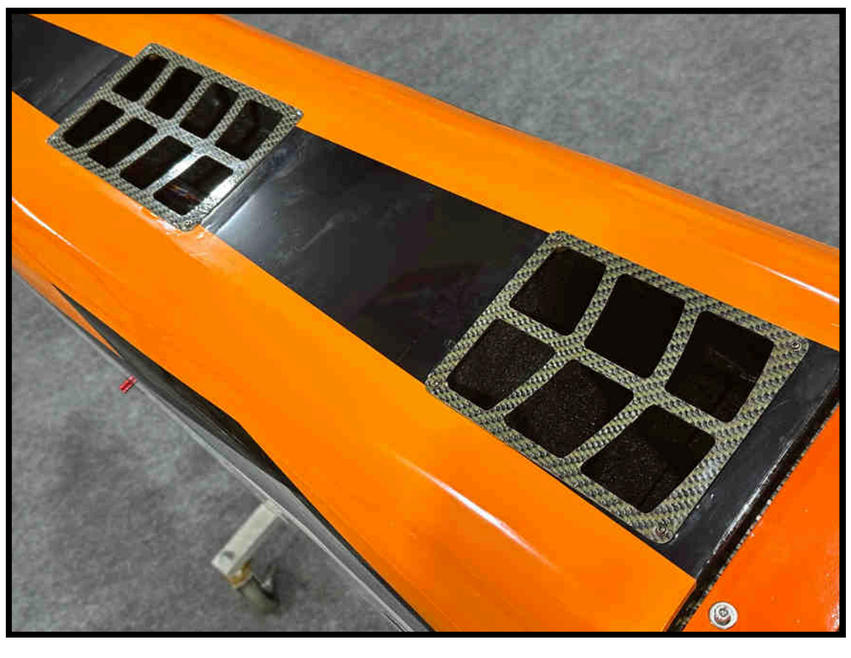
Once you locate the provisional opening, carefully cut out the covering that encloses the hatch opening.



Seal the edges with a covering iron.

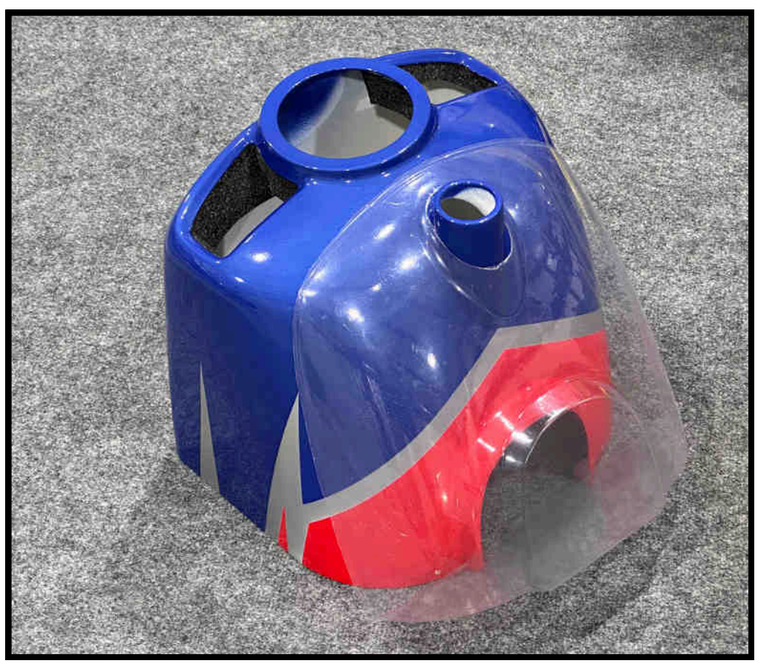
The hatches are installed using the provided wood screws. First, thread the screws into the provisional tabs with the hatch in place. Remove the screws and apply a thin layer of CA to the threads. Finally, reinstall the hatch securely.



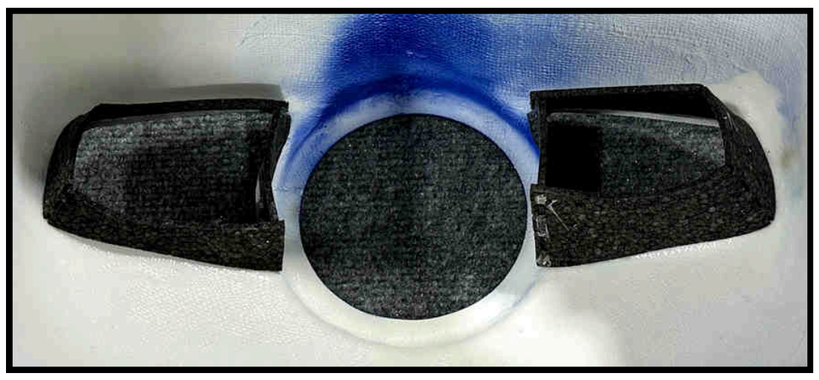


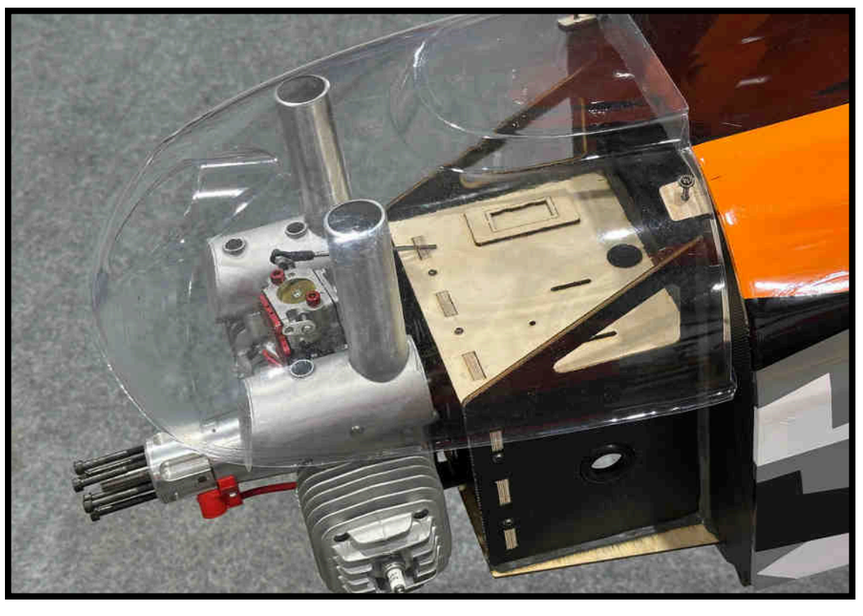
This setup uses stock mufflers. Two hatches were installed as shown: one just behind the landing gear, and one further aft.

Cowling Installation

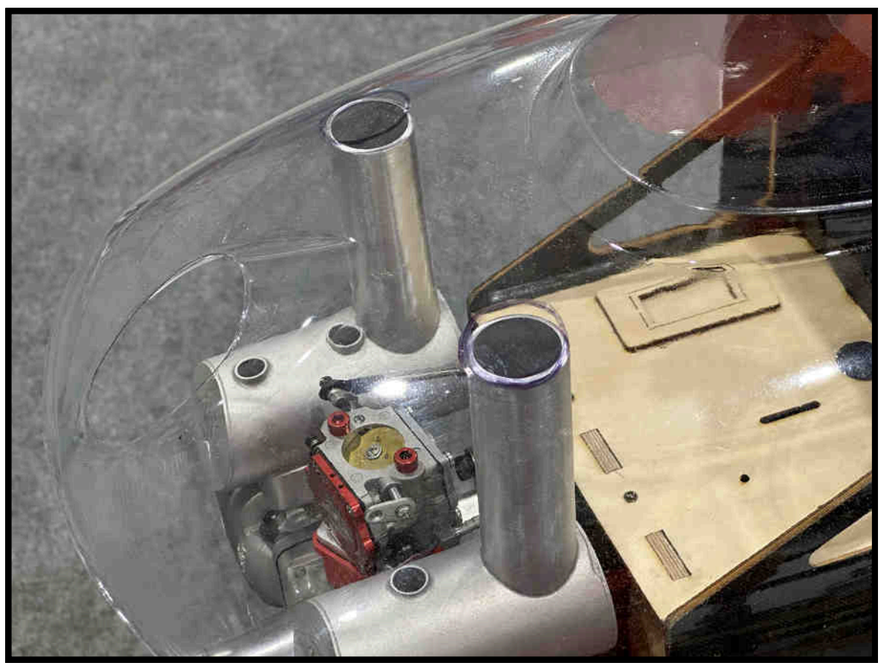


The Slick 360 cowling is designed for simple installation and optimal performance. It features a pre-cut, molded pressure lip for hot air exit, pre-installed baffles, a clear cutting template for exhaust openings, and easy access to the bolts for installation and removal.





Align the clear template with the cowling bolt holes. Mark the locations and drill holes in the template. This will allow the template to be mounted in the correct position.

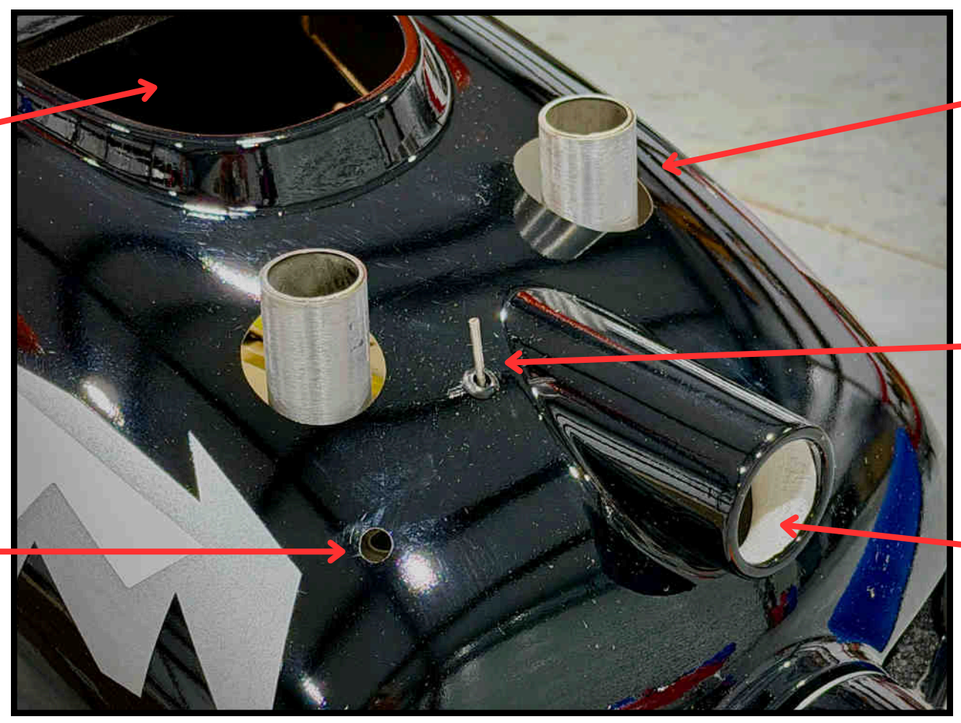


- Mark the exhaust openings on the clear template.
- Cut the openings from the template.
- Reinstall the template onto the cowling and use it to mark the cut locations on the cowling.
- Fit and adjust as needed to ensure smooth cowling installation and removal.

Use a Dremel tool to cut the fiberglass cowling. Be aware that this will generate significant fiberglass dust.

102" Slick 360 Cowling Diagram

Pre-cut pressure lip opening for hot air exit.

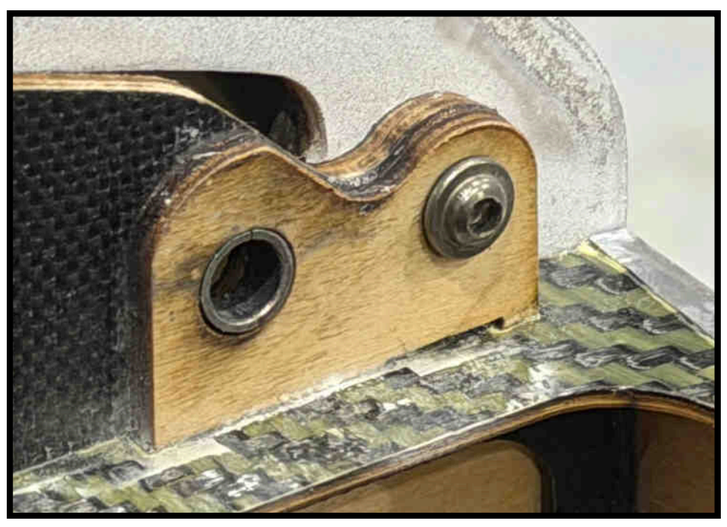


Muffler exhaust opening.

Carburetor choke lever: rod with ball link attached.

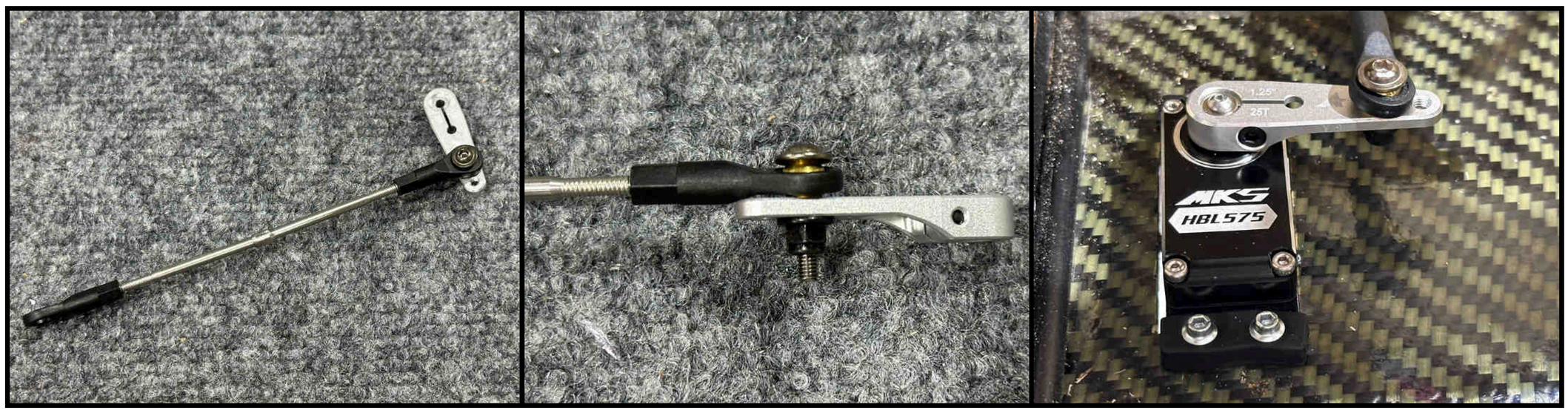
Opening for carburetor needle access.

Carburetor inlet opening: it is optional whether to keep this open or closed, based on personal preference.



The cowling is secured with four bolts. Two are accessible from inside the fuselage along the top former, and the other two are located on the bottom outside. Apply blue Loctite to all bolts during installation.

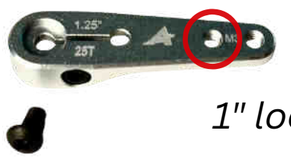
Throttle Servo Installation



For this reference, the throttle servo will be installed inside the motor box. Recall that a hole was drilled in the firewall for the turnbuckle to pass through. Set up the turnbuckle as shown. We recommend installing the ball link at the 1" mark on the servo arm to ensure optimal resolution and geometry.

The throttle servo can also be installed on the bottom of the motor box. Additionally, the DA-120 is shown here for reference; other engine manufacturers may require the servo to be positioned in a different orientation.

Servo torque is not critical for a throttle servo. Ideally, select a servo with fast speed and use the 1" servo arm location to achieve the best possible resolution while maintaining necessary travel.

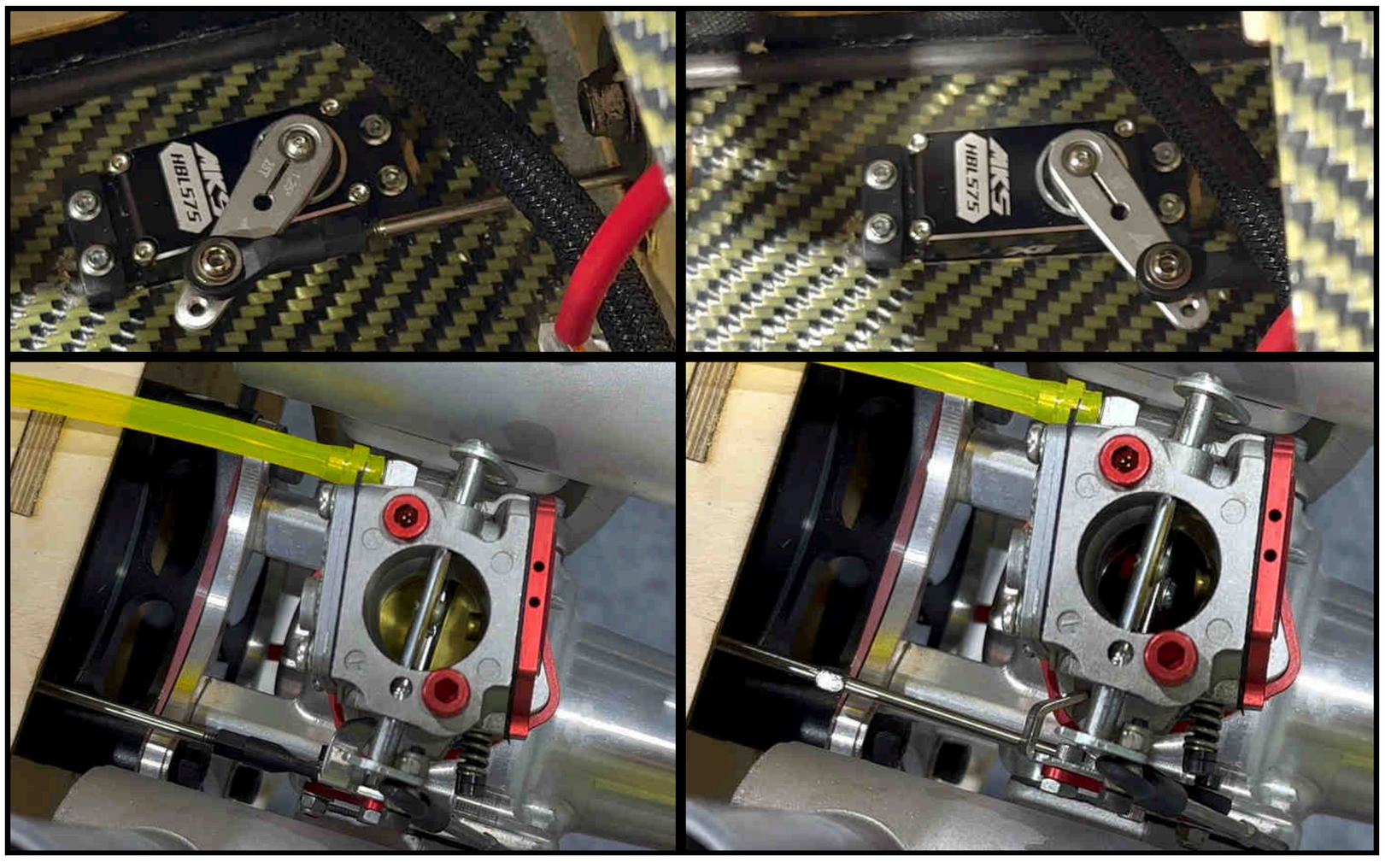


1" location on a 1.25" Apex clamping style servo arm

Based on personal preference and feel, you may choose to use a throttle curve in your radio setup, along with a high idle for flight and a low idle for landing and taxiing.

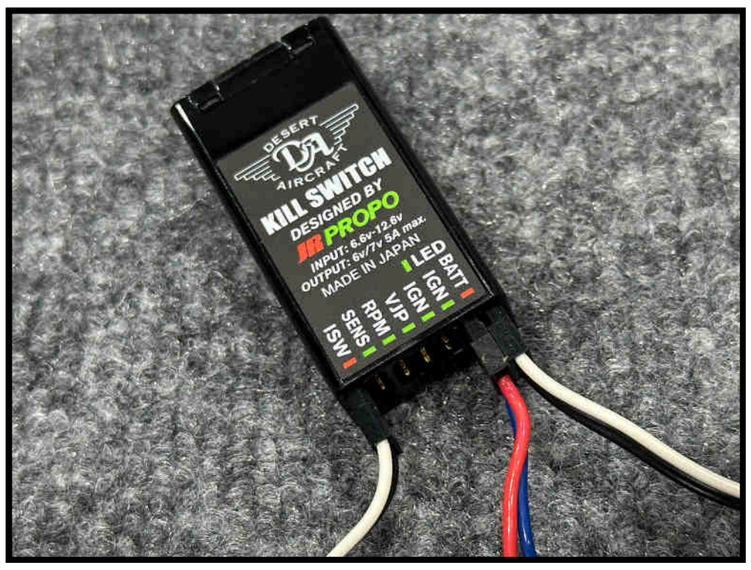
Connection of the ball link to the carburetor arm.

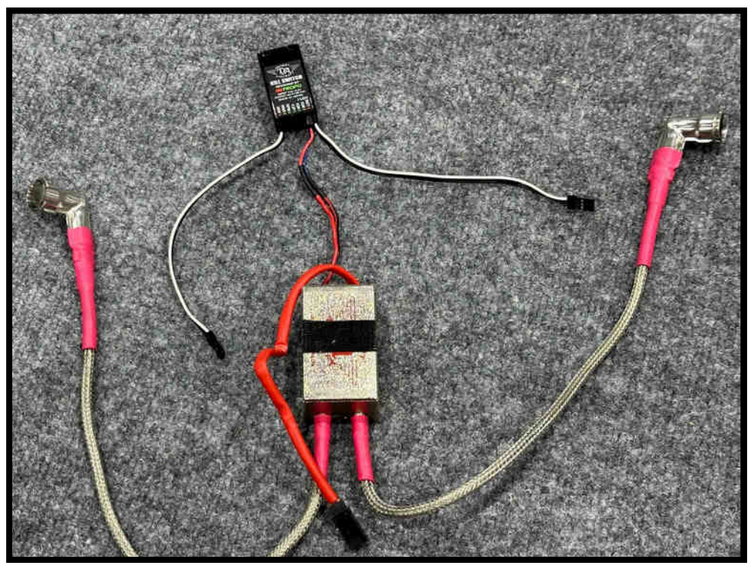
Idle **Full Throttle**



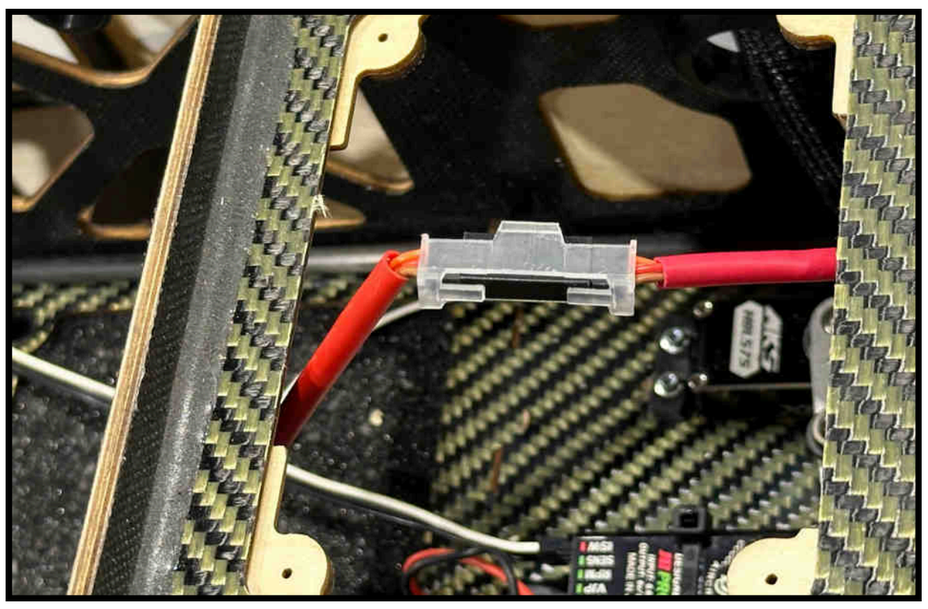
The goal of the throttle servo setup is to achieve similar values for both the positive and negative endpoints. At half throttle, the servo arm should be approximately 90° to the servo case. The turnbuckle can be adjusted mechanically to help achieve this alignment. Observe the position of the carburetor butterfly at each throttle setting to verify proper movement.

Ignition Installation

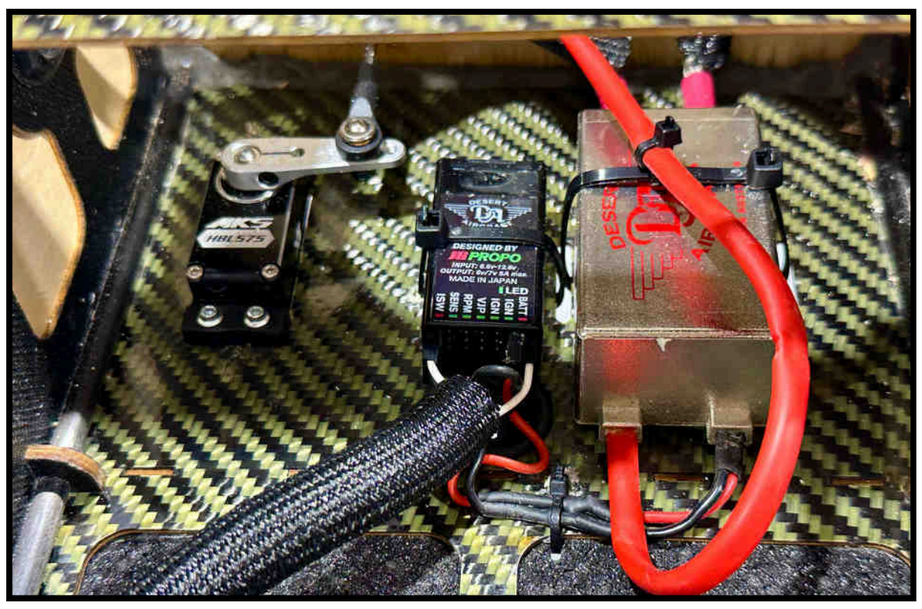




It is recommended to use an ignition switch, such as an iBEC or a JR/DA kill switch. These units eliminate the need for a separate ignition battery (powered by the receiver). The layout shown illustrates the use of the JR/DA ignition switch.



Use a servo safety clip to connect the ignition wires from the ignition module to the engine.

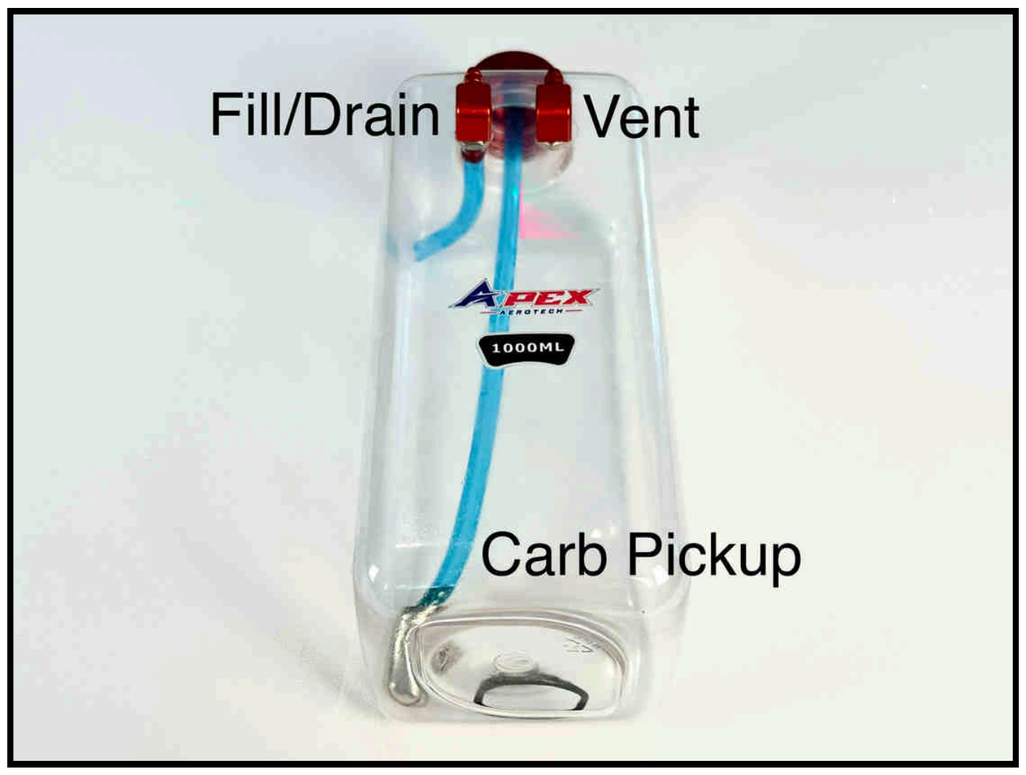


Use adhesive-backed Velcro to secure both the ignition switch and the ignition module. Additionally, use cable ties to further secure both components.

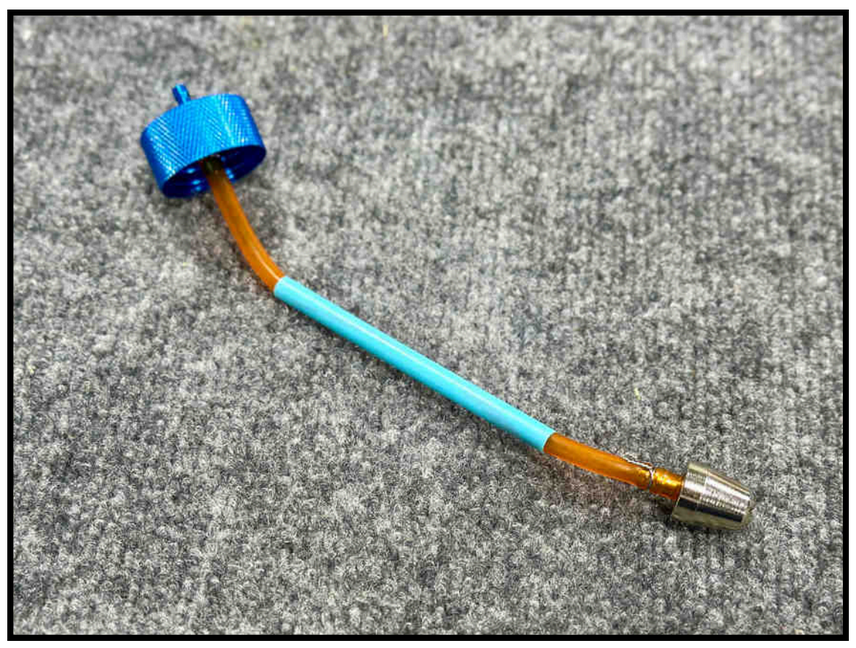
Route the ignition plug wires through the pre-installed holes on each side of the motor box, which are lined with rubber grommets.

These ignition switches feature an LED light that can be mounted anywhere on the aircraft. The LED indicates whether the ignition is on or off. We typically recommend mounting it on the side of the fuselage near the front, within easy view of the person starting the engine.

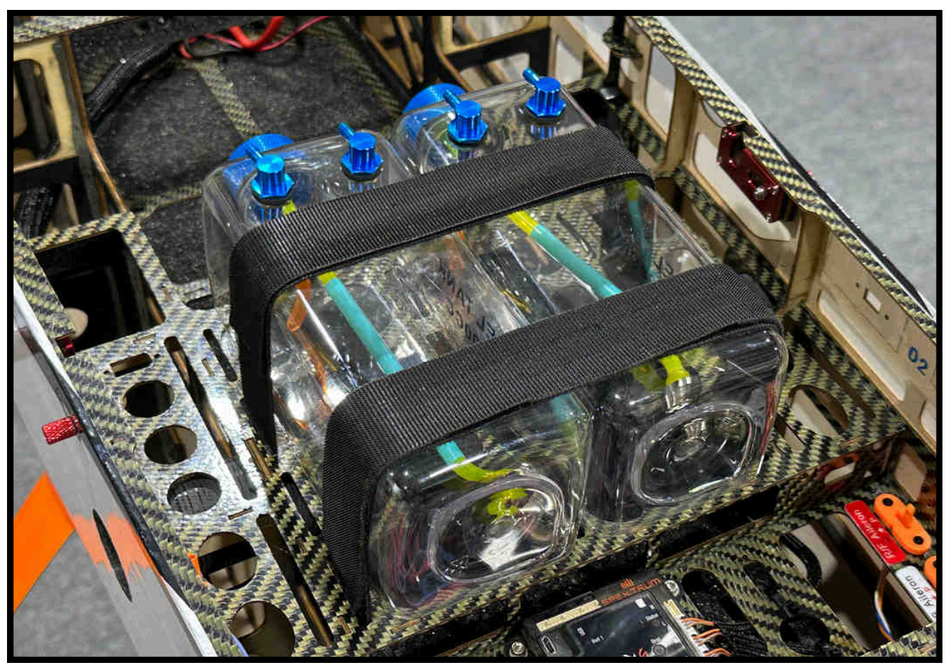
Fuel System Installation



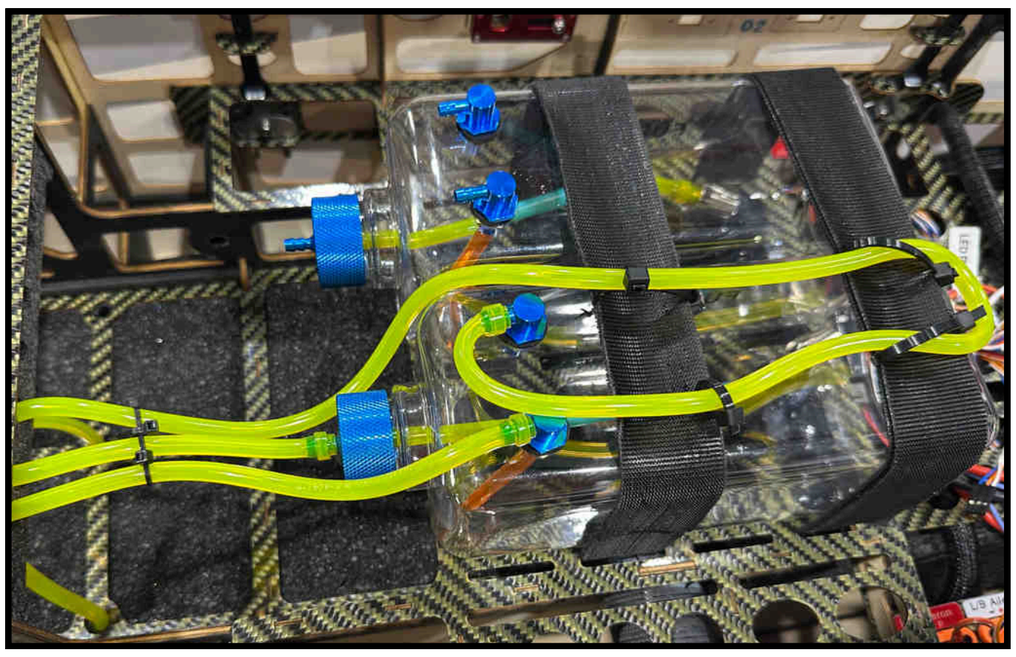
The Slick features an included 34 oz (1000 ml) fuel tank. The diagram to the left illustrates the purpose of each fitting and fuel line.



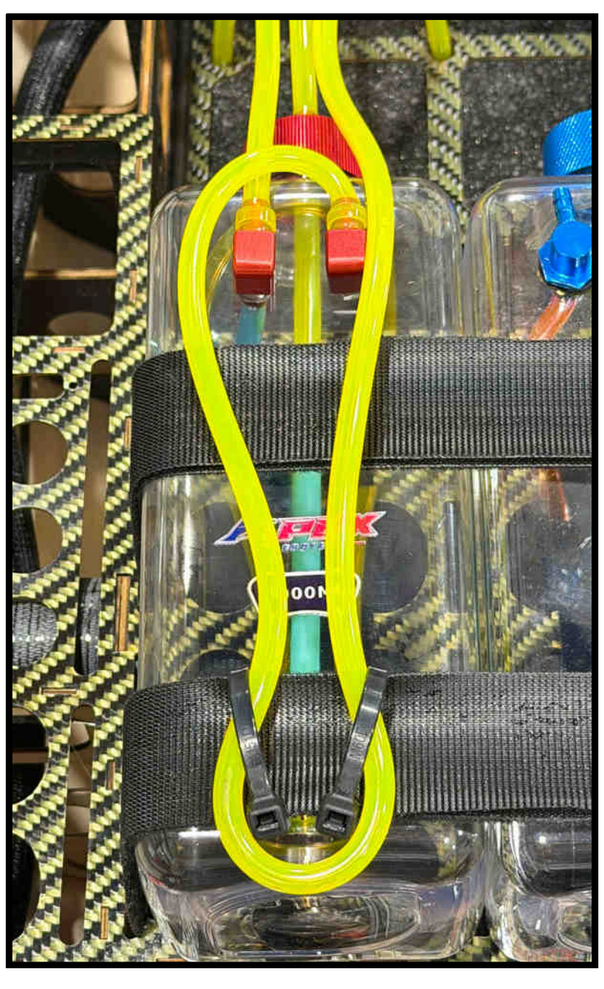
It is recommended to install a plastic straw over the pickup line inside the tank to prevent it from wrapping around itself. Additionally, use safety wire or a small piece of fuel line to secure the fuel line to the tank cap and clunk.

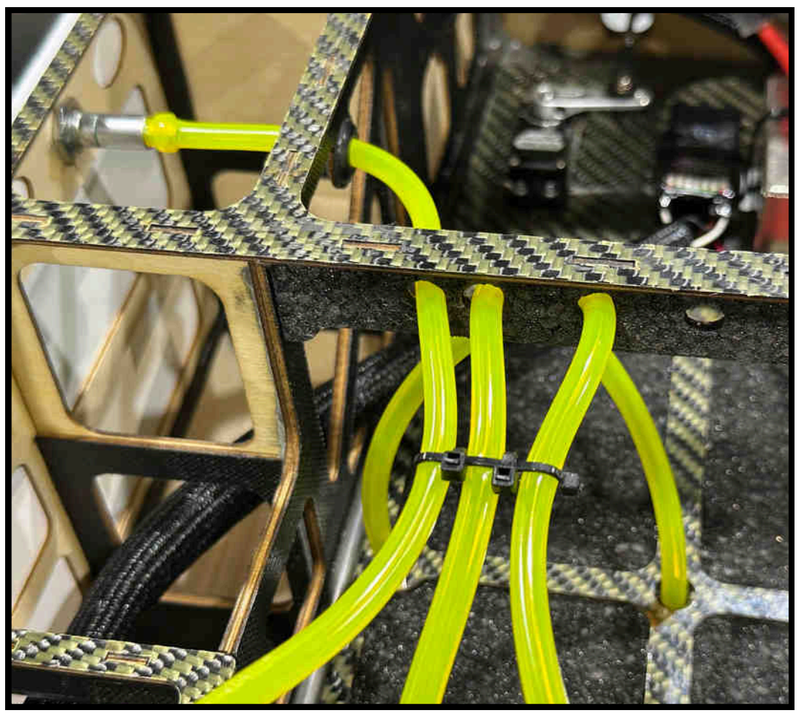


Install the fuel tank on the tank tray located at the center of gravity (CG). The photo shows two tanks installed (one for smoke). If installing a single fuel tank, it may be placed in the center of the tray. Use adhesive-backed Velcro to attach the tank to the tray (one hook strip and one loop strip). Then use Velcro straps to firmly secure the tank to the tray. The tray includes provisions for routing the straps through.

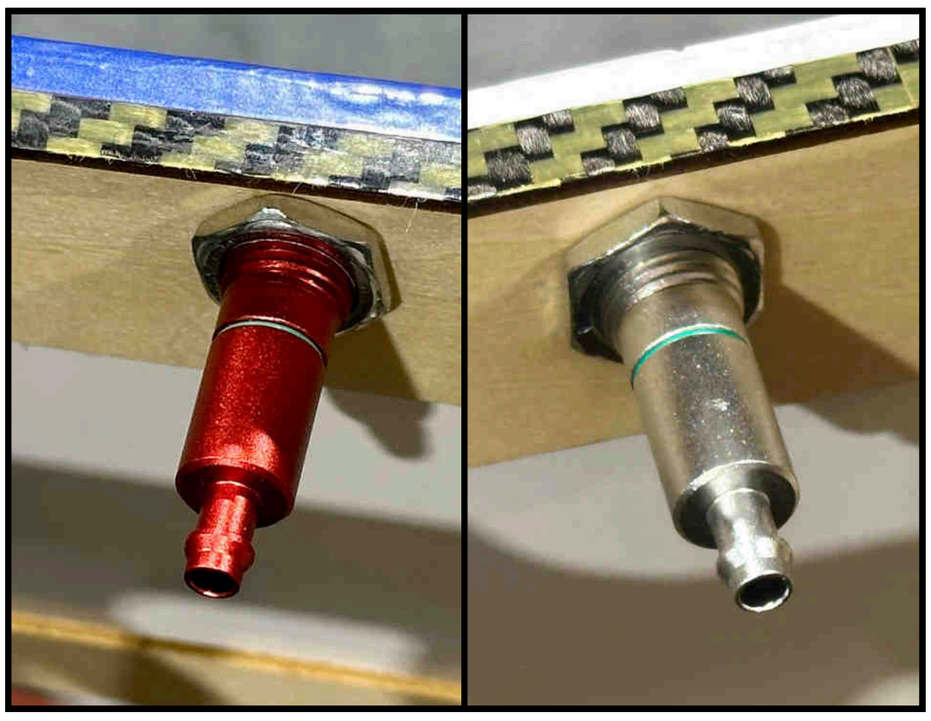


When routing the fuel lines, wrap the vent line around the top of the tank as shown. This helps prevent siphoning during flight. Be sure that all fuel line connections at the fittings, carburetor, and other components are secured with safety wire or a small piece of fuel line used as a clamp.

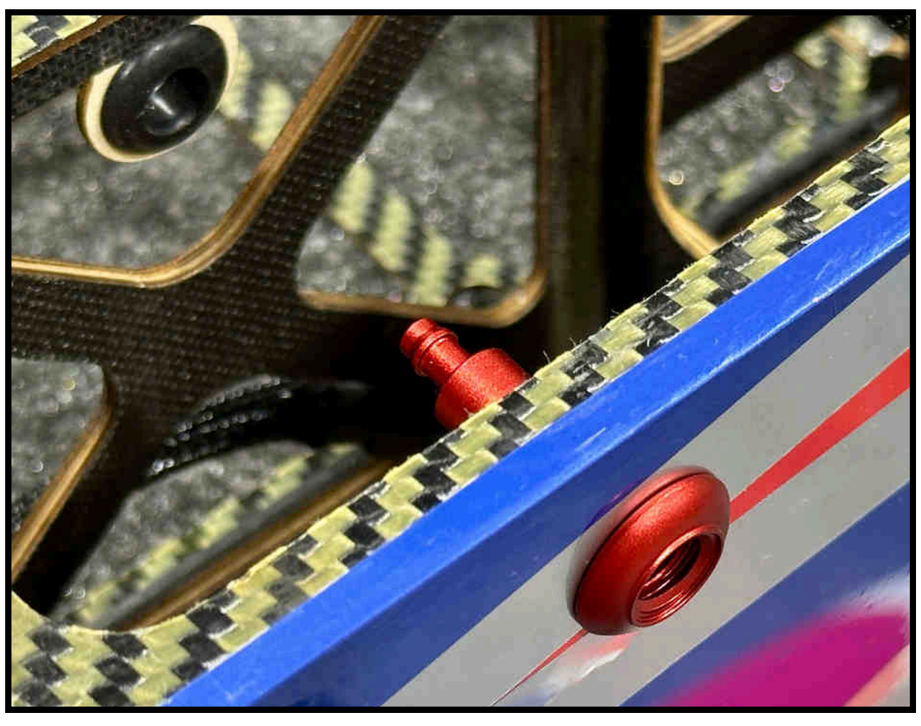




The Slick features several holes in the former located in front of the fuel tank for routing the fuel lines. Rubber grommets are also provided for routing the fill line to the fuel dot.



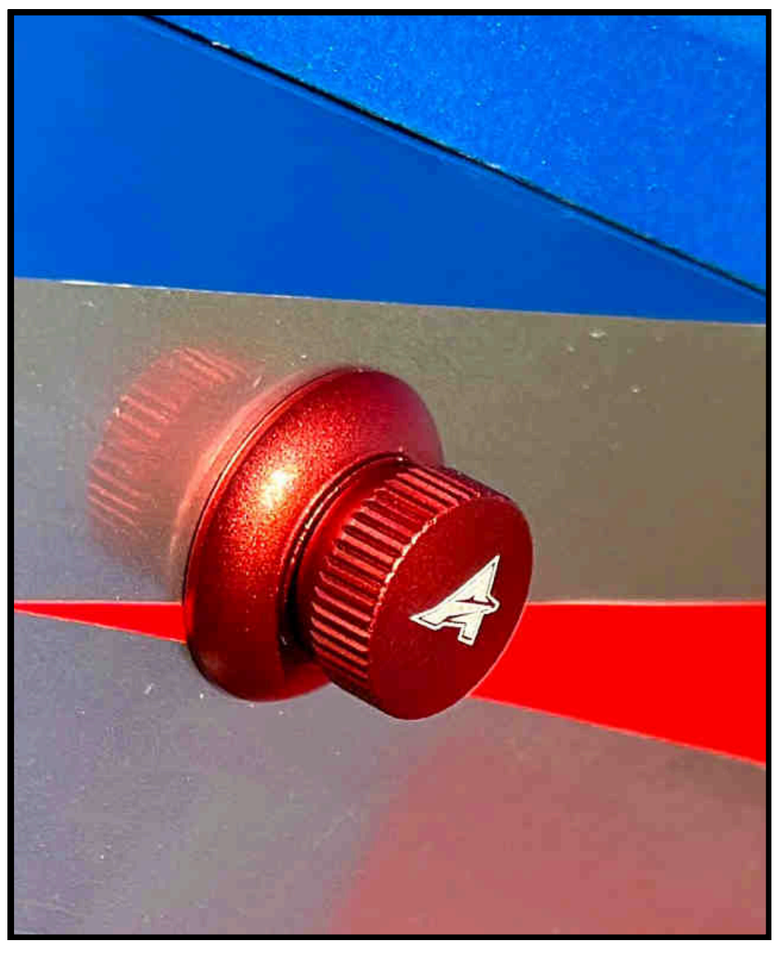
The Slick includes proper provisions for installing the fuel dot. Remove the covering and place the fuel dot into position. From inside the fuselage, tighten the nut against the fuselage to secure it in place.

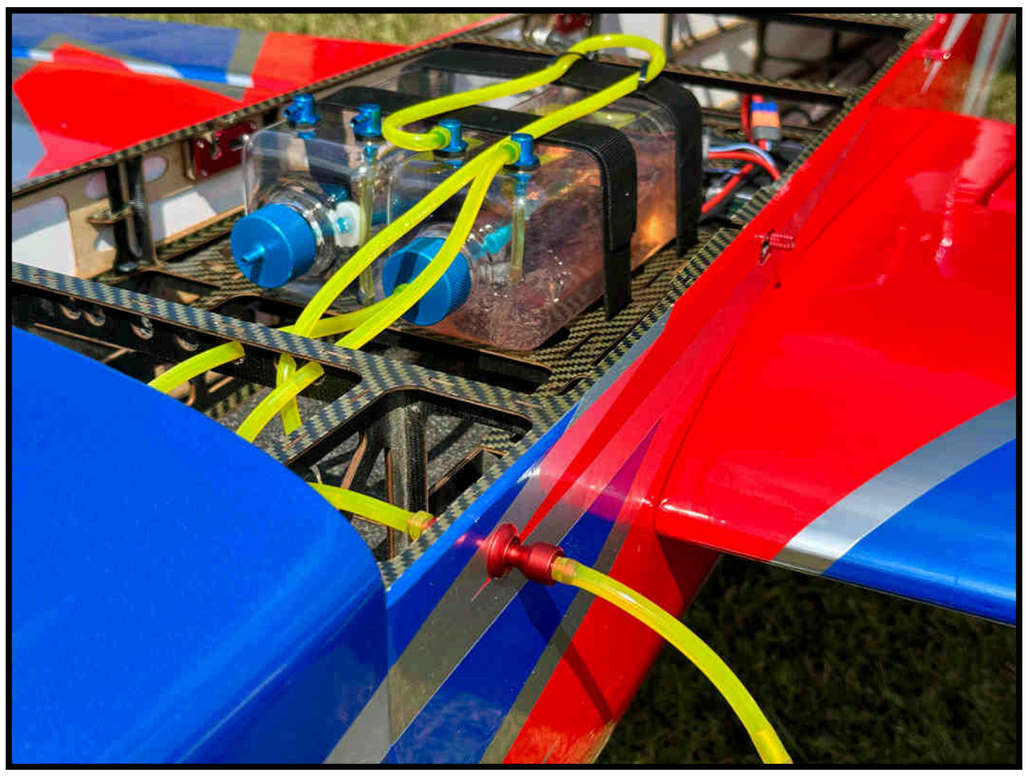


It is recommended to leave the cap off the fuel dot (the logo portion) during flight, as vibration may cause it to come off.

The Apex fuel dots are extremely beneficial for fast fueling and defueling. They allow the aircraft to be fueled without disconnecting any fuel lines. Simply insert the fueler into the receptacle and turn to tighten.

For aesthetics, ensure that the logo is vertically aligned.



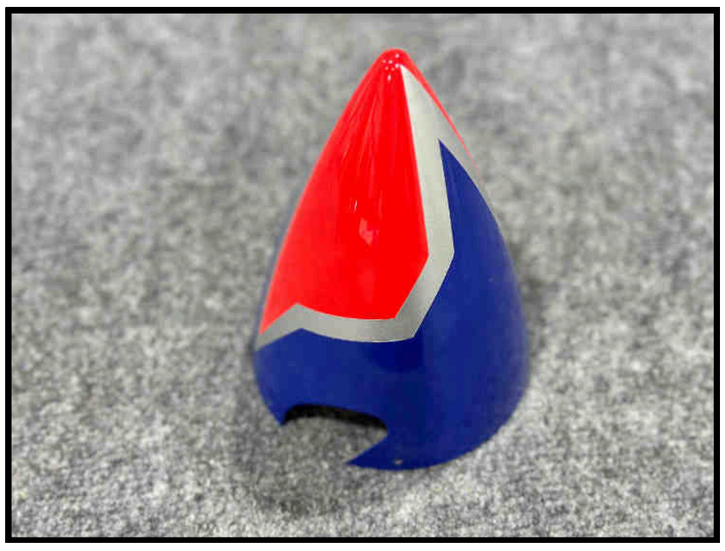


Connect the fueler portion of the fuel dot assembly to the fuel line that will attach to your fuel jug. Ensure the fueler is securely threaded into the fuel dot receptacle before turning on the fuel supply.

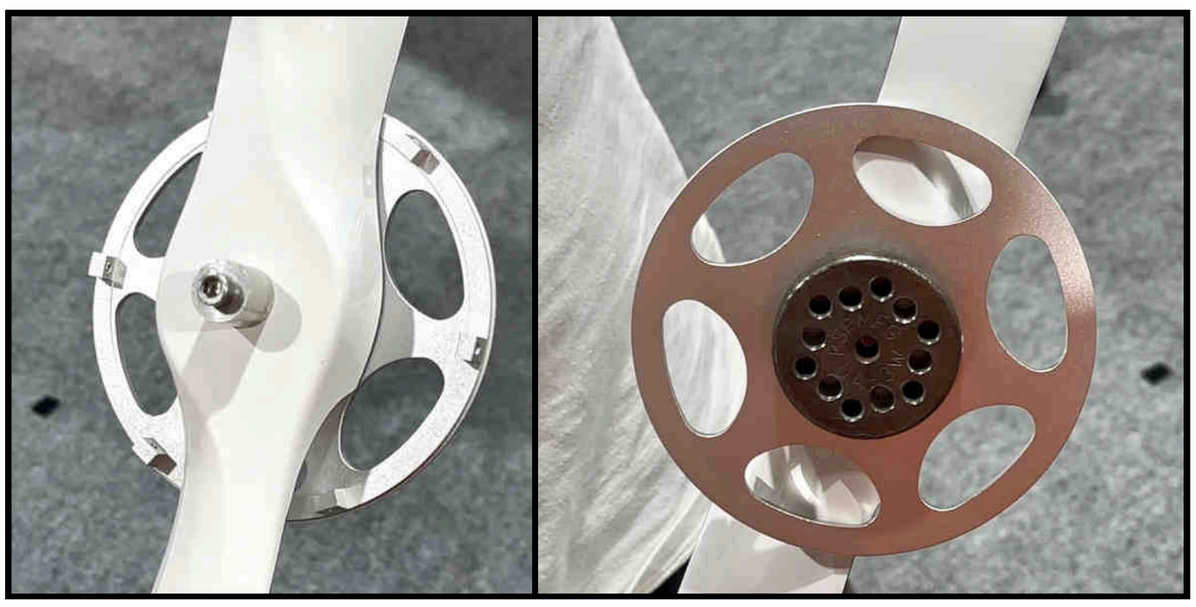
Fuel vent dots are also available from Apex. These install on the bottom of the aircraft using the three provided wood screws. The Slick includes mounting provisions along the bottom of the fuselage, just in front of the landing gear. There are also hole provisions for routing your vent line to these locations.

The vent dots come with a plug cap. Remove the cap before flight.

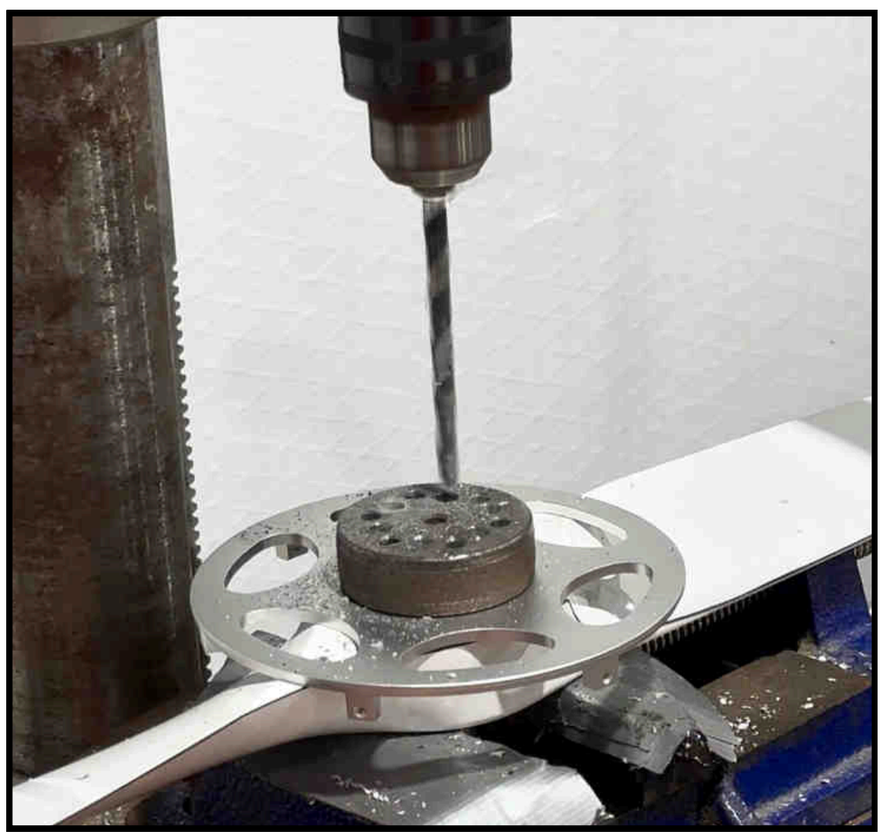
Propeller and Spinner Installation



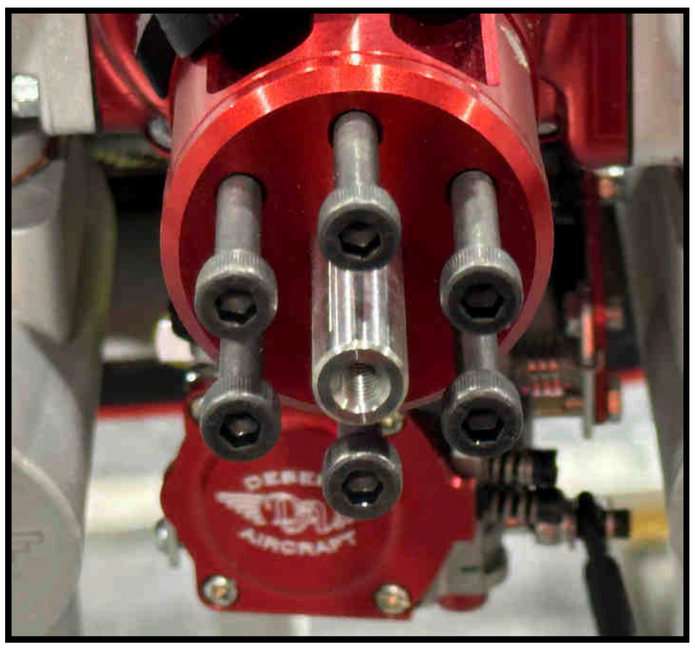
The Slick features an included painted, livery matched carbon fiber spinner. Locate the backplate and the propeller.



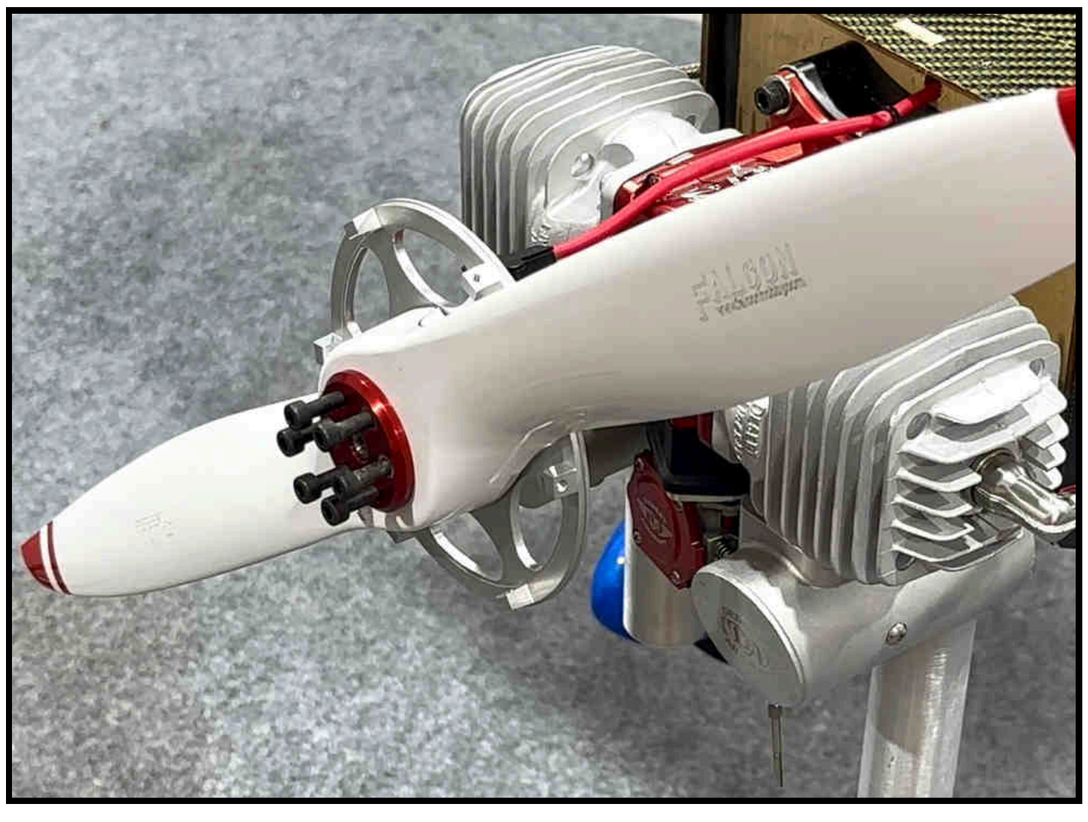
Join the spinner backplate and propeller using the correct drill jig for your engine. Ensure the spinner cone is properly aligned by test-fitting it once the jig is bolted to the propeller and backplate.



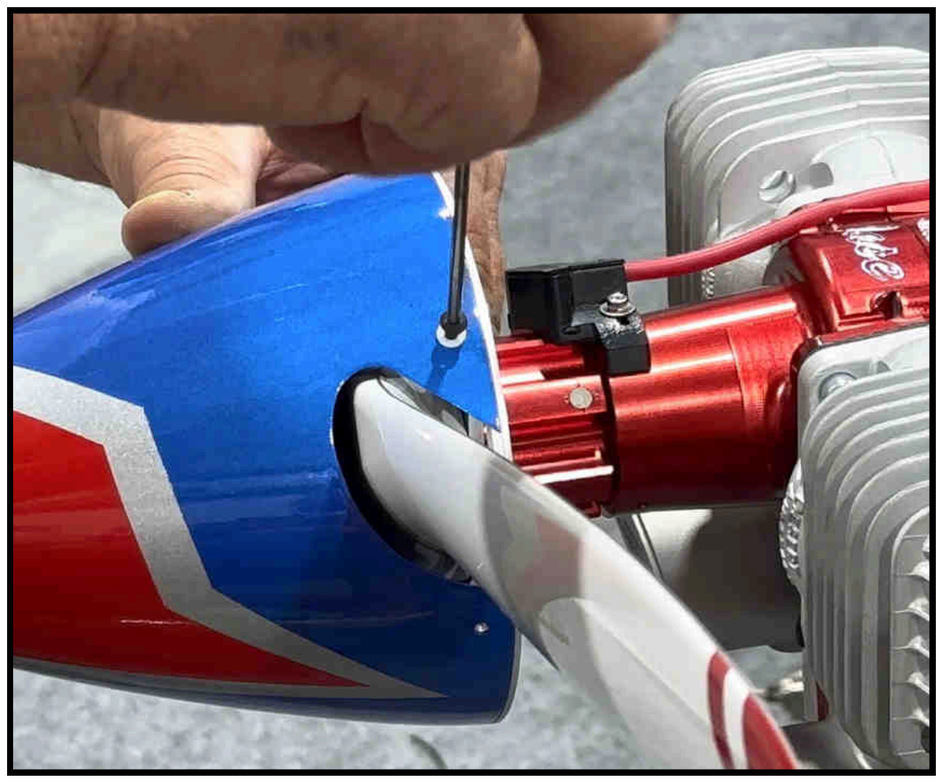
Using a drill press is recommended to achieve the cleanest and most accurately aligned holes.



Install the backplate first, followed by the propeller, and then the prop nut. Use the propeller mounting hardware supplied with your engine.

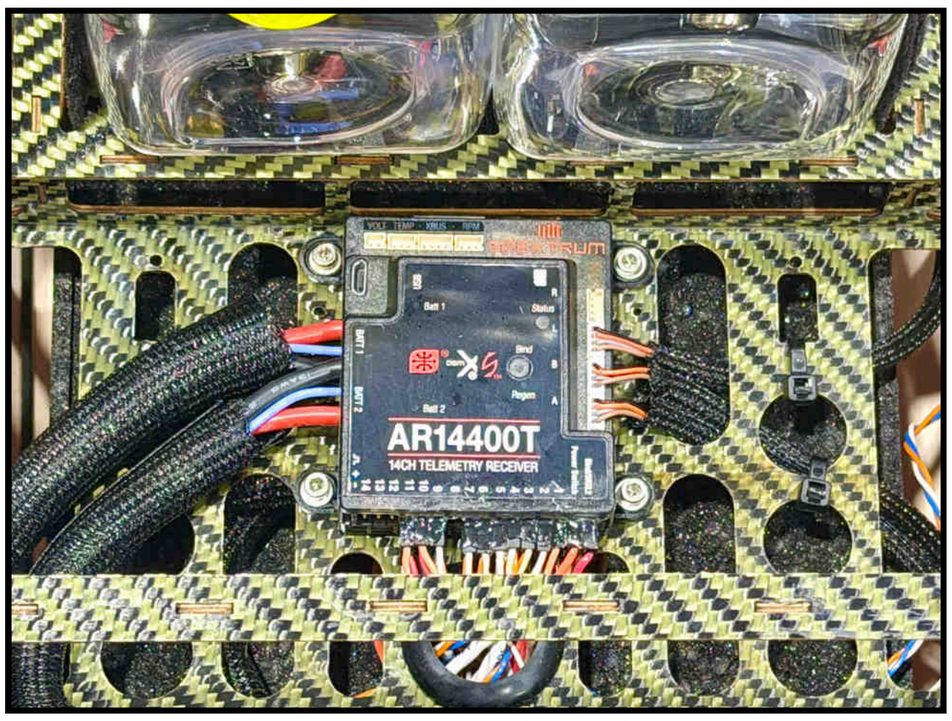


Use a torque wrench to evenly and correctly tighten the propeller bolts. Torque to approximately 95 in-lbs.

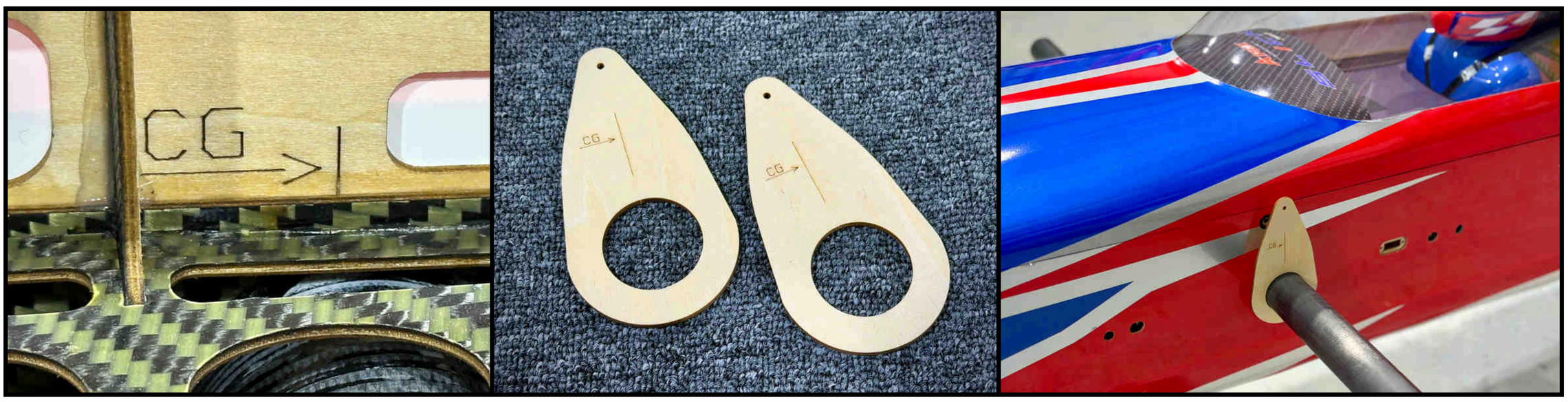


To install the spinner, use the supplied bolts and washers, and apply blue Loctite. Be careful not to overtighten the spinner bolts.

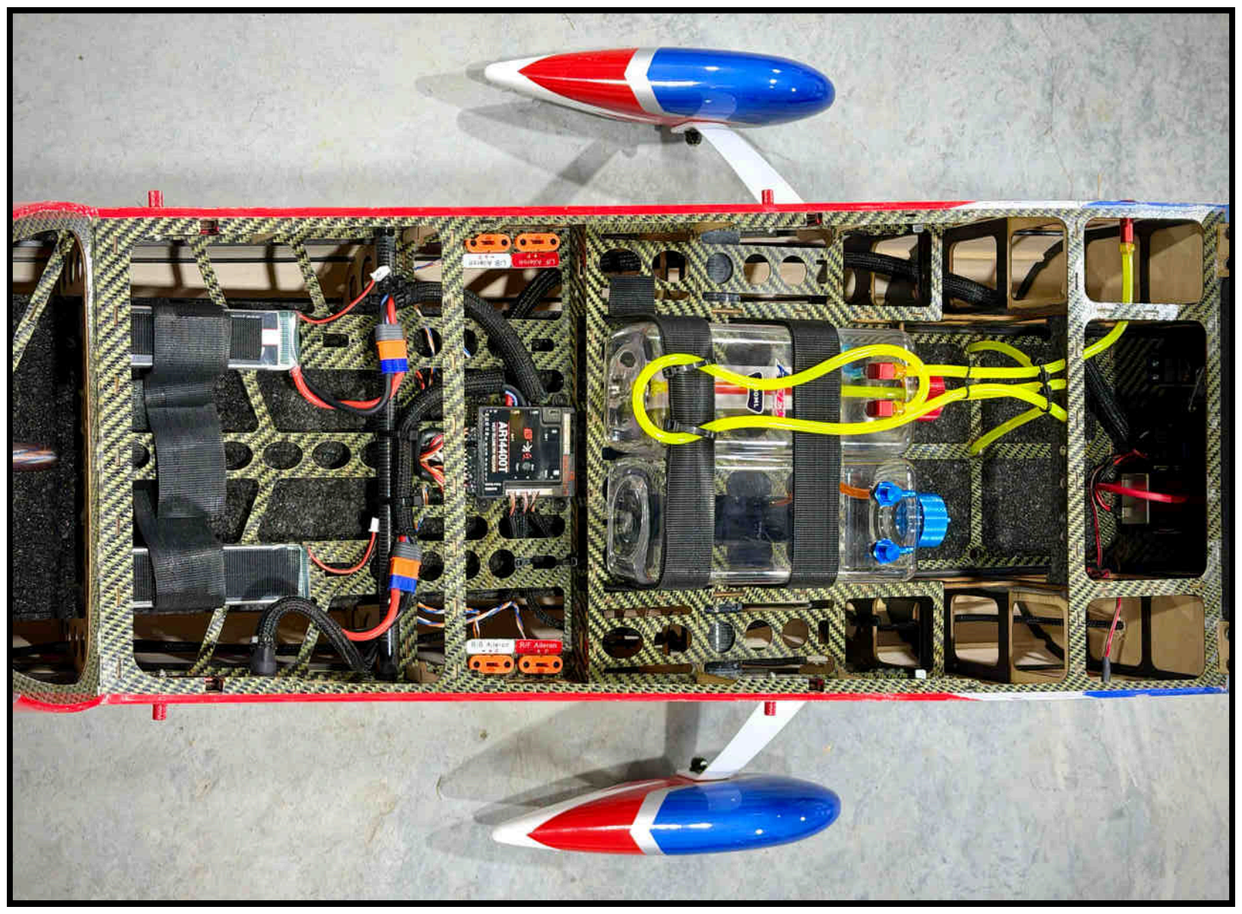
Radio and Receiver Setup



Mounting location of the receiver and switch (Spektrum PowerSafe 14-channel receiver shown).



The recommended starting point for the Slick’s CG is at the center of the wing tube. The Slick includes CG measuring tools that fit around the wing tube. Thread string through the small holes on top and lift from the center to perform a static CG measurement. Be sure to do this with the canopy installed.



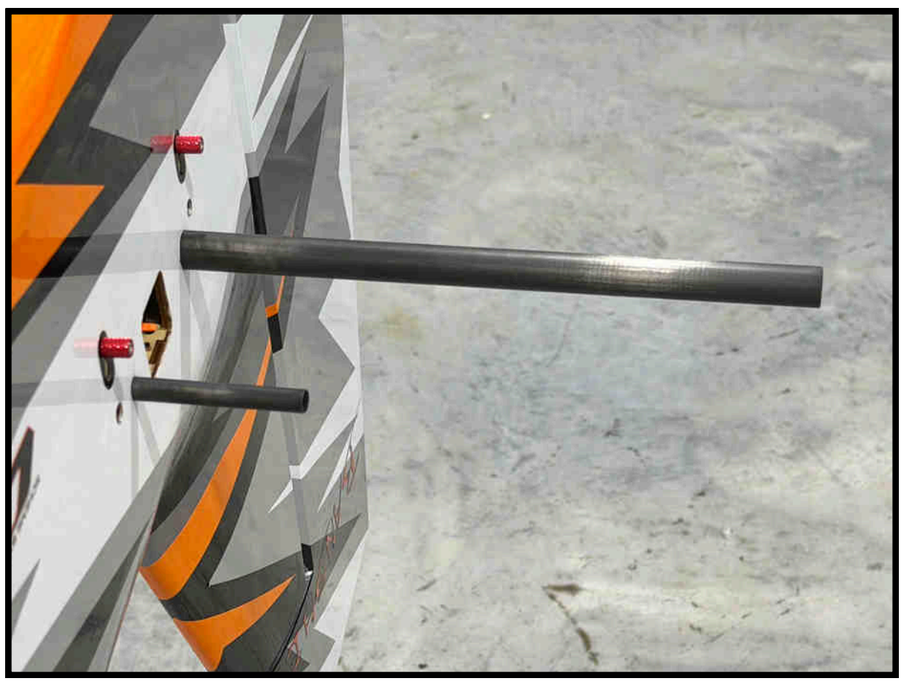
The above photo shows the placement of the two 2S receiver batteries (2600 mAh each). Apex Aerotech aircraft have a wide and forgiving CG range. This placement is a solid starting point, and you can adjust the batteries to fine-tune the CG to your preference. We recommend using two receiver batteries for redundancy, with each battery sized between 2000–5000 mAh.

CONTROL SURFACE SETUP:

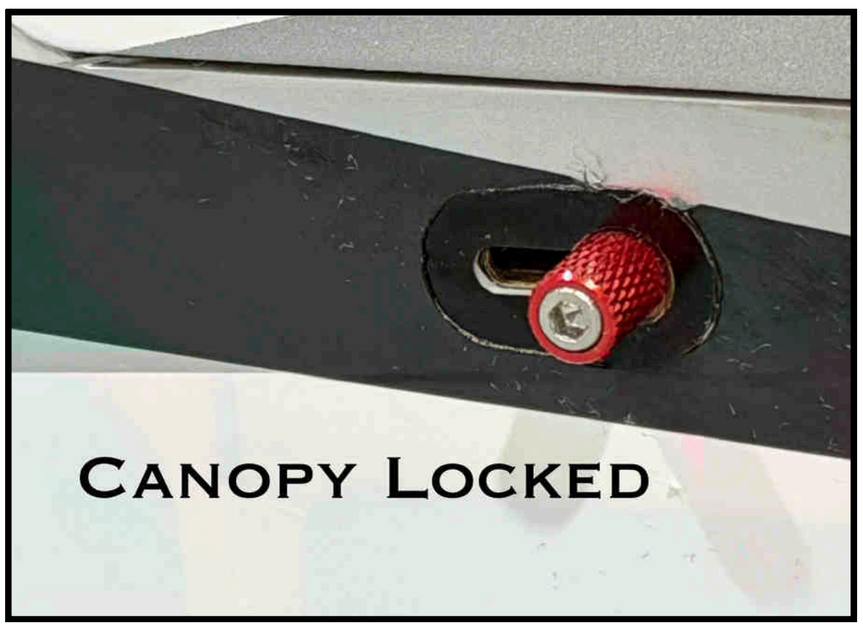
SURFACE	HIGH RATES	LOW RATES
AILERON	38 DEG. UP, 37 DEG. DOWN 50-55% EXPO	20 DEGREES
ELEVATOR	55-60 DEGREES 50-55% EXPO	15 DEGREES
RUDDER	MAX WITHOUT BINDING 45-55% EXPO	20 DEGREES

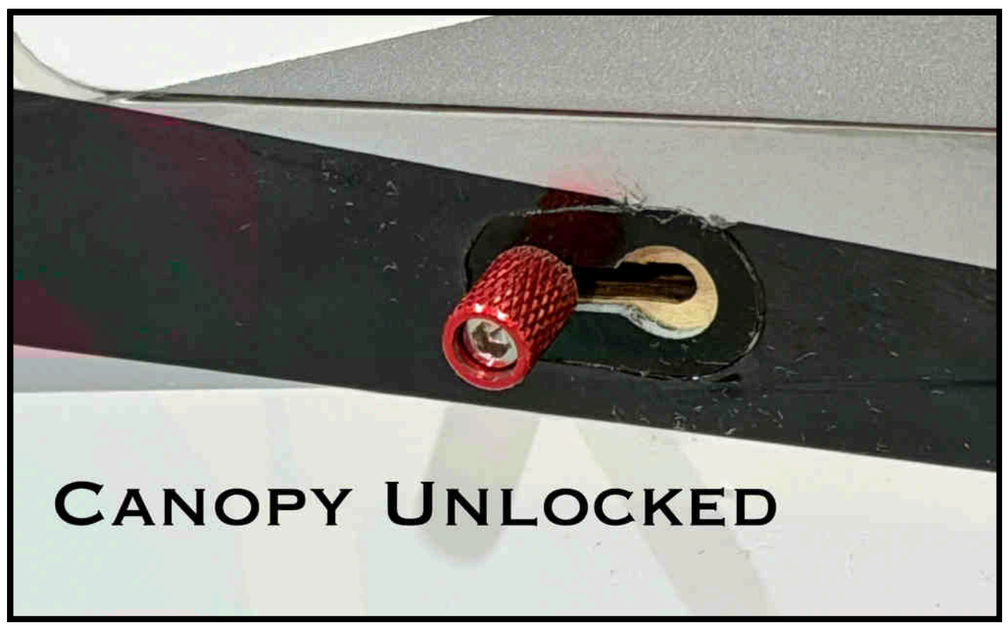
If you have an iPhone, you can easily set up control surface throws using the **Measure** app. Open the app and select the **Level** option. Make sure the value reads zero when the control surface is at neutral and your device is placed on it.

Field Assembly

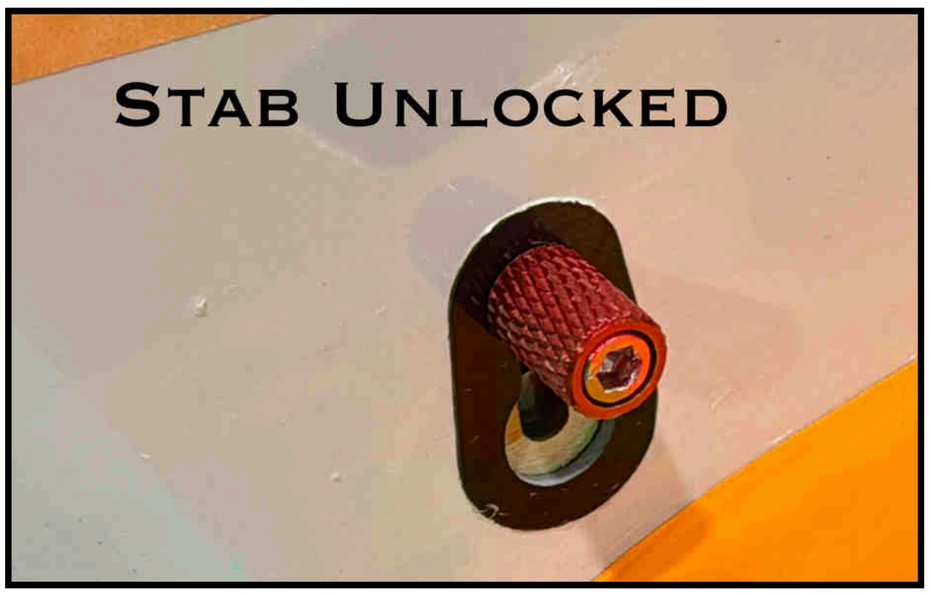


Both the wings and horizontal stabilizers feature a double-tube anti-rotation system.



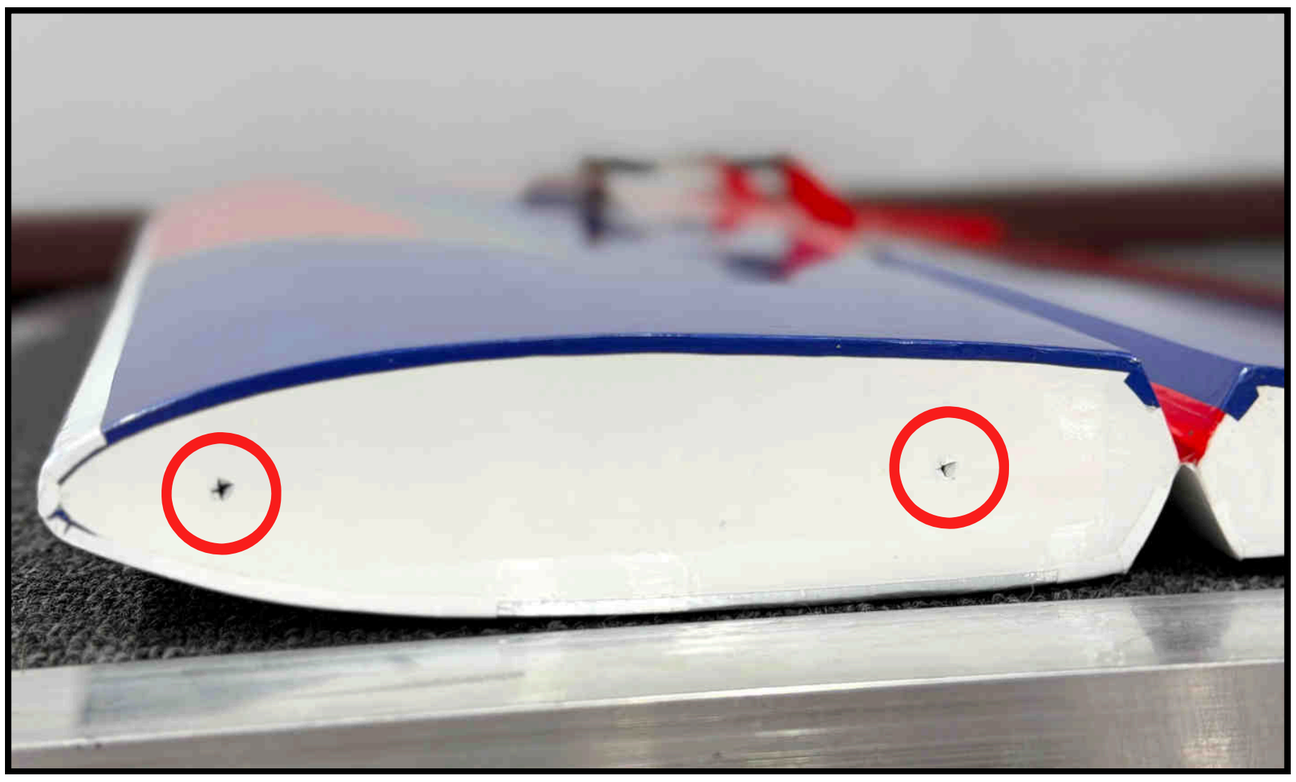


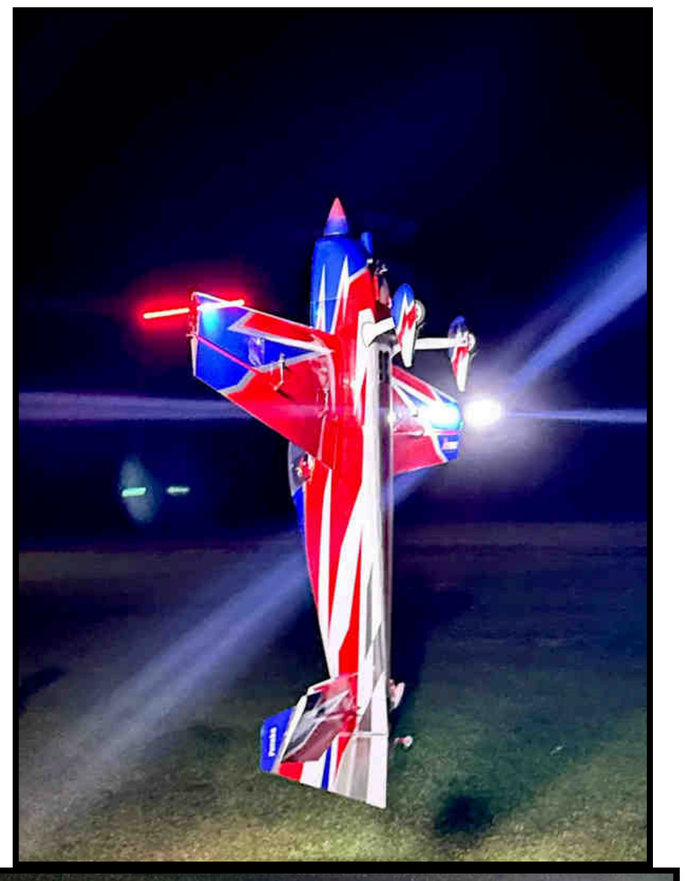
The Slick features a quick-attach/detach system for the canopy, wings, and horizontal stabilizers. Ensure that each mechanism is fully engaged.



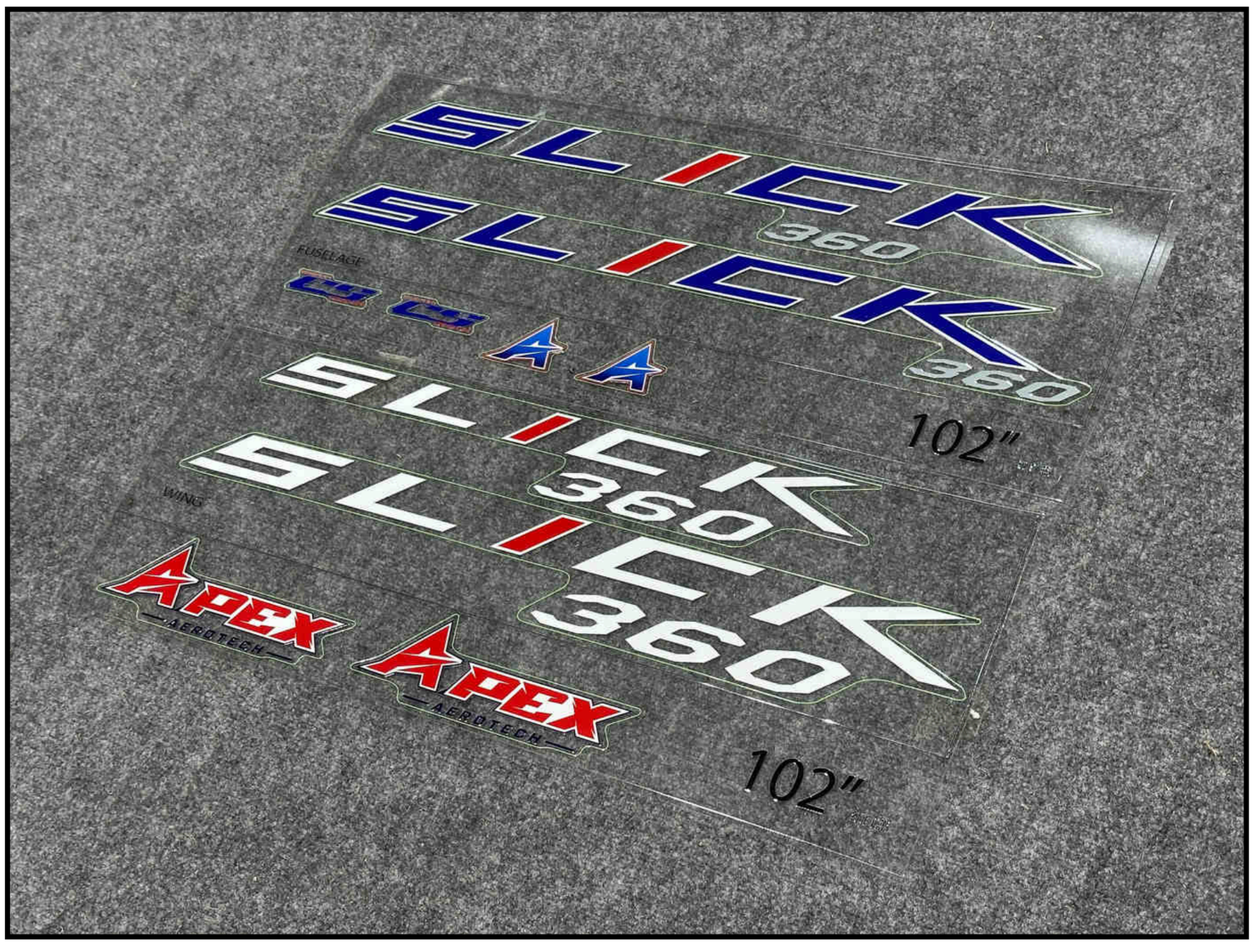
The wing latches feature a black tab that prevents the canopy from being installed unless the wing is latched. To secure, use the metal handle and push it all the way down until the black tab is seated flush against the fuselage.

The Slick features blind nuts in the wingtips for installing night flying lights. Simply locate the blind nuts and cut a small hole in the covering large enough for the bolts to pass through.





Decal Installation



The Slick includes a high-quality decal sheet that matches your color livery. Each decal is pre-cut for easy use. Simply peel the decal from the sheet, leaving the protective cover in place. After applying the decal, carefully remove the clear cover.

Make sure the surface where the decal will be applied is clean before installation.

CLEANING

It is recommended to take the time to clean your aircraft after use. This is also a good opportunity to inspect the aircraft, ensuring everything is tight and the covering is secure. For basic cleaning, use glass cleaner and paper towels. Spray wax can be applied for a more detailed shine.

Thank you and congratulations on your 102" Slick 360! We wish you the most successful and enjoyable experience with the Slick. It is the most advanced aircraft of its size, thanks to its exceptional flight performance, innovative features, and striking appearance!