

Mini FuntanaX



Assembly Manual

Available from: www.modelflight.com.au

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Introduction

Thank you for purchasing the Mini FuntanaX. To create the Mini Funtana X, E-flite started with the proven 3D benefits of the original Mini Funtana design then increased the wing area by 26%, added filets, added a tapered thickness airfoil and optional side force generators. The result is a plane that excels in high-alpha maneuverability, especially when outfitted with E-flite's phenomenal Park 480 Brushless Outrunner motor.

Specifications

Wingspan:	43 in (1092mm)
Length:	40.5 in (1028mm)
Wing Area:	447 sq in (28.8 sq dm)
Weight w/o Battery:	23–24 oz (652–680 g)
Weight w/ Battery:	27–29 oz (765–822 g)

Using the Manual

This manual is divided into sections to help make assembly easier to understand, and to provide breaks between each major section. In addition, check boxes have been placed next to each step to keep track of each step completed. Steps with a single circle () are performed once, while steps with two circles () indicate that the step will require repeating, such as for a right or left wing panel, two servos, etc.

Remember to take your time and follow the directions.

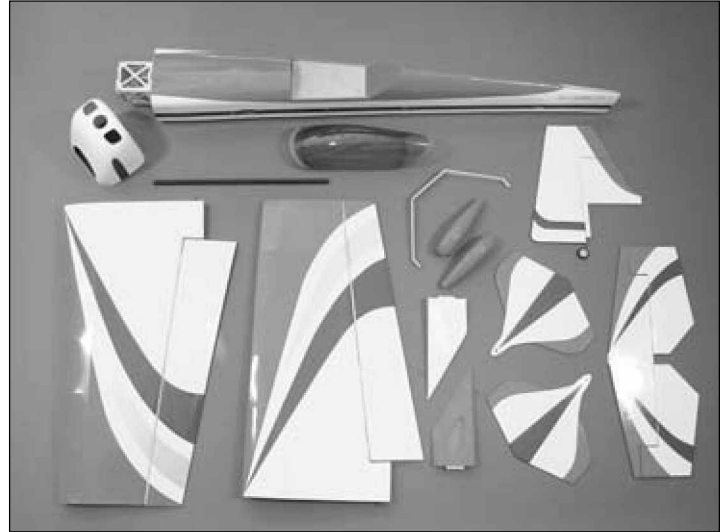
Contents of Kit/Parts Layout

Large Replacement Parts:

EFL2426	Wing w/Ailerons
EFL2427	Fuselage w/Hatch
EFL2428	Tail Set
EFL2429	Pushrod Set
EFL2430	Main Landing Gear
EFL2431	Fuselage Hatch
EFL2432	Canopy
EFL2433	Cowling
EFL2434	Wheel Pants
EFL2435	Wing Tube
EFL2436	Side Force Generators

Small Replacement Parts:

EFLA200	Micro Control Horns
EFLA203	Micro Control Connectors
EFLA219	Steerable Tailwheel Assembly
EFLA222	Foam Park Wheels, 1 3/4"
EFLA213	E-flite/JR/Horizon Decals



Required Radio Equipment

You will need a minimum 6-channel transmitter, crystals, micro receiver, and four sub-micro servos. You can choose to purchase a complete radio system that includes all of these items or, if you are using an existing transmitter, just purchase the other required equipment separately.

Complete Radio System

SPM2460 DX6 DSM 6CH Park Flyer w/4-S75 Servos

Note: We recommend the crystal-free, interference-free Spektrum® DX6.2.4GHz DSM® 6-Channel System, which includes a micro receiver and 4 sub-micro servos.

Or

JSP30610

6-Channel UltraLite Rx w/o Crystal, Positive Shift JR/AIR (72MHz)

Or

JSP30615

6-Channel UltraLite Rx w/o Crystal, Negative Shift FUT/HRC (72MHz)

JRPXFR**

FM Receiver Crystal

JSP98110

6" Servo Extension (2)

JSP98120

18" Servo Extension (2)

JSP98020

Y-Harness, Standard 6"

EFLRS75

7.5-Gram Sub-Micro Servo (4)

Or Purchase Separately

SPM6000 AR6000 DSM DualLink™ 6-Channel Park Flyer Rx

Important Information About Motor Selection

We recommend the E-flite® Park 480 Brushless Outrunner, 1020Kv (EFLM1505) to provide you with excellent sport and aerobatic power and a worry-free outrunner motor. The Mini FuntanaX does not include a propeller.

High Power Outrunner Setup

EFLM1505	Park 480 Brushless Outrunner Motor, 1020Kv
EFLA312B	40-Amp Brushless ESC
THP21003SPL	2100mAh 3-Cell 11.1V Li-Po, 16GA
APC12060E	12 x 6 Electric Prop
EFLAEC302	EC3 Battery Connector, Female (2)
EFLC3005	Clectra 1- to 3-cell Li-Po Charger

This is a high power performance setup for strong 3D flights.

Optional Accessories

EFLA110	Power Meter
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Required Tools and Adhesives

Tools & Equipment

EFLA250 Park Flyer Tool Assortment, 5-piece

Or Purchase Separately

EFLA257 Screwdriver, #0 Phillips (or included with EFLA250)

EFLA251 Hex Wrench: 3/32" (or included with EFLA250)

Nut driver: 1/4"

Drill

Drill bit: 1/16" (1.5mm), 5/64" (2mm)

Masking tape

Card stock

Felt-tipped pen

Needle-nose pliers

Canopy glue

Medium grit sandpaper

T-pins

Thin CA

Paper towels

Hobby knife

6-minute epoxy

Ruler

Square

Available from: www.modelflight.com.au

Note on Lithium Polymer Batteries



Lithium Polymer batteries are significantly more volatile than alkaline or Ni-Cd/Ni-MH batteries used in RC applications. All manufacturer's instructions and warnings must be followed closely. Mishandling of Li-Po batteries can result in fire. Always follow the manufacturer's instructions when disposing of Lithium Polymer batteries.

Warning

An RC aircraft is not a toy! If misused, it can cause serious bodily harm and damage to property. Fly only in open areas, preferably at AMA (Academy of Model Aeronautics) approved flying sites, following all instructions included with your radio.

Keep loose items that can get entangled in the propeller away from the prop, including loose clothing, or other objects such as pencils and screwdrivers. Especially keep your hands away from the propeller.

Date of Purchase Warranty Period

Horizon Hobby, Inc., (Horizon) warrants that the Products purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase by the Purchaser.

Limited Warranty

(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.

(b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

(c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Horizon. Return of any goods by Purchaser must be approved in writing by Horizon before shipment.

Damage Limits

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.

If you as the Purchaser or user are not prepared to accept the liability associated with the use of this Product, you are advised to return this Product immediately in new and unused condition to the place of purchase.

Law: These Terms are governed by Illinois law (without regard to conflict of law principals).

Safety Precautions

This is a sophisticated hobby Product and not a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the Product or other property. This Product is not intended for use by children without direct adult supervision. The Product manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or injury.

Questions, Assistance, and Repairs

Your local hobby store and/or place of purchase _____ cannot provide warranty support or repair. Once assembly, setup or use of the Product has been started, you must contact Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please direct your email to productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to a service technician.

Inspection or Repairs

If this Product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as *Horizon is not responsible for merchandise until it arrives and is accepted at our facility*. A Service Repair Request is available at www.horizonhobby.com on the “Support” tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

Non-Warranty Repairs

Should your repair not be covered by warranty the repair will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly. *Please note: non-warranty repair is only available on electronics and model engines.*

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822

All other Products requiring warranty inspection or repair should be shipped to the following address:

Horizon Product Support
4105 Fieldstone Road
Champaign, Illinois 61822

Please call 877-504-0233 with any questions or concerns regarding this product or warranty.

Safety, Precautions, and Warnings

As the user of this product, you are solely responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

Carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.) that you use.

This model is controlled by a radio signal that is subject to interference from many sources outside your control. This interference can cause momentary loss of control so it is necessary to always keep a safe distance in all directions around your model, as this margin will help to avoid collisions or injury.

- Always operate your model in an open area away from cars, traffic, or people.

- Avoid operating your model in the street where injury or damage can occur.
- Never operate the model out into the street or populated areas for any reason.
- Never operate your model with low transmitter batteries.
- Carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.) that you use.
- Keep all chemicals, small parts and anything electrical out of the reach of children.
- Moisture causes damage to electronics. Avoid water exposure to all equipment not specifically designed and protected for this purpose.

Landing Gear Installation

Required Parts

Fuselage

Main landing gear

Wheel pant (L&R)

1 $\frac{3}{4}$ " (45mm) wheel (2)

4-40 x $\frac{3}{8}$ " machine screws (2)

#4 black washers (2)

4-40 nut (2)

4-40 locknut (2)

4-40 x 1" machine screw (2)

#4 steel washers (4)

2mm x 6mm wood screws (2)

Required Tools and Adhesives

Phillips screwdriver (small)

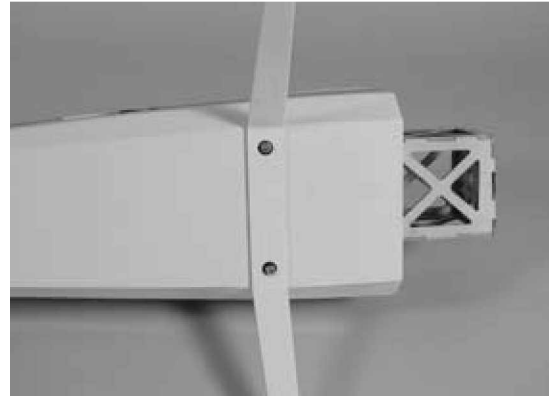
Needle-nose pliers

Nut driver: $\frac{1}{4}$ "

Hex wrench: $\frac{3}{32}$ "

Note: You may consider using a larger diameter wheel, such as $2\frac{1}{4}$ " (58mm) (EFLA224), if your flying site has rough terrain. By using a larger wheel, you will not be able to use the included wheel pants.

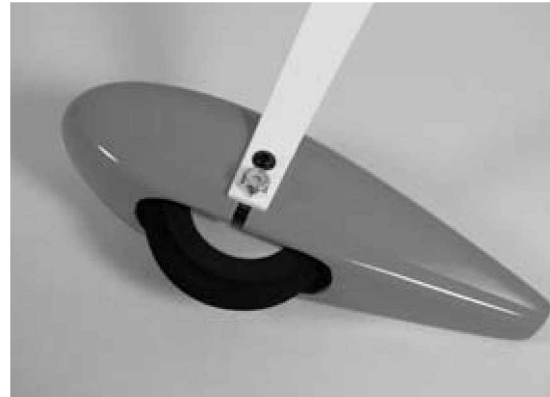
1. Place the landing gear onto the bottom of the fuselage. They will angle forward when installed in the correct direction. Attach with two 4-40 x $\frac{3}{8}$ " machine screws and two #4 black washers.



2. Slide the 4-40 x 1" machine screw through one of the 1³/₄" wheels. Slide a #4 steel washer so it fits against the wheel. Next secure a 4-40 nut against the washer. Make sure the wheel still spins freely. Slide a second #4 steel washer onto the bolt. This washer will fit inside the wheel pant.



3. Fit the assembly in Step 2 into the wheel pant and insert the bolt into the landing gear. With the fuselage level to the work surface, rotate the wheel pant so it is also level to your work surface and secure the pant to the landing gear with a 2mm x 6mm wood screw. Secure the bolt with a 4-40 locknut while using needle-nose pliers to hold the head of the bolt inside the pant.



4. Repeat Steps 2 and 3 for the remaining wheel and wheel pant.

Outrunner Motor Installation

Required Parts

Fuselage

Brushless motor

4-40 x 3/8" machine screw (4)

Required Tools and Adhesives

Hex wrench: 3/32"

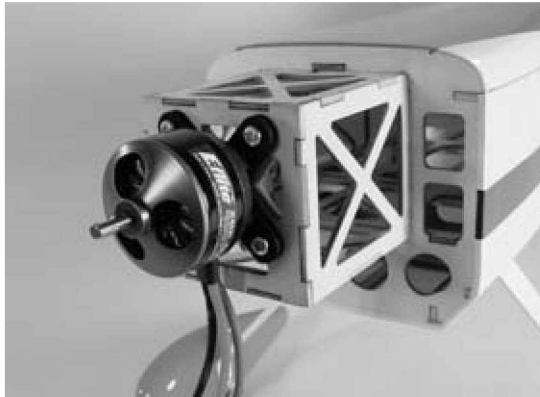
Screwdriver (Phillips #0)

Note: This section covers the installation of the recommended Park 480 Outrunner motor. The holes in the firewall match the mounting pattern of the X-mount.

1. Attach the supplied aluminum motor X-mount to the motor using the screws provided with the motor. The wider section of the mount will be positioned toward the motor wires.



2. Attach the Outrunner motor to the front of the firewall using four 4-40 x 3/8" machine screws.



Cowling Installation

Required Parts

Fuselage w/motor installed
Cowling
2mm x 8mm wood screw (4)
Propeller
Spinner
Prop adapter (for outrunner motor)
Electronic speed control

Required Tools and Adhesives

Screwdriver (Phillips #0)
Cardstock
Masking tape
Hook and loop material
Drill
Drill bit; 1/16" (1.5mm), 5/64" (2mm)

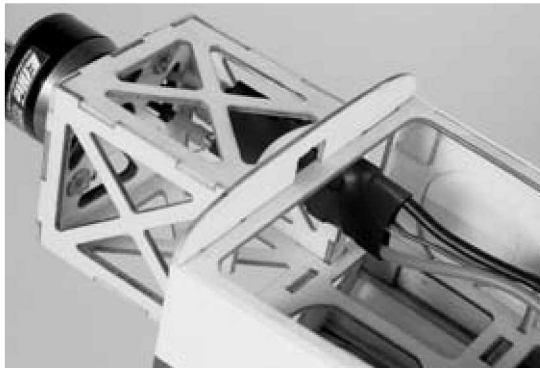
Important Information About Your Brushless ESC

Make sure your ESC brake is programmed to Off.
Also, be sure to use an ESC with the proper 9V cutoff when using 3-cell Li-Po packs, or 6V cutoff when using 2-cell Li-Po packs.

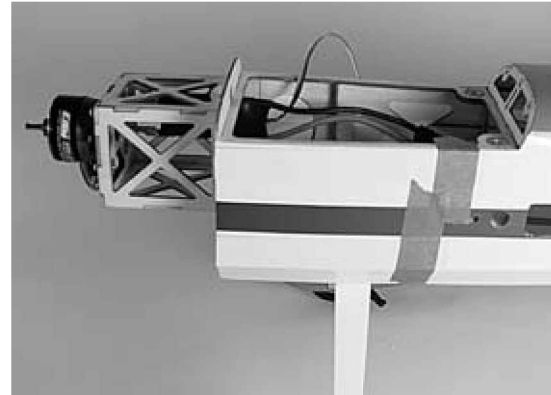
Important Information About Your Propeller

It is also very important to check to be sure the propeller is balanced before installing onto the shaft. An unbalanced propeller may strip the gears or cause poor flight characteristics.

1. Solder any connectors to the speed control to connect to the motor battery and motor if necessary. Connect the ESC to the motor and secure it to the inside of the fuselage using hook and loop material. Actual ESC location may vary but proper air flow and cooling is important.



2. Connect the speed control to the radio system and motor battery. Check that the motor is rotating in the correct direction. It will rotate counterclockwise when viewed from the front of the aircraft. Use the instructions with your speed control to correct a motor that is operating in the wrong direction.
3. Tape small pieces of cardstock to the fuselage to indicate the locations of the cowl mounting tabs at the front of the fuselage.

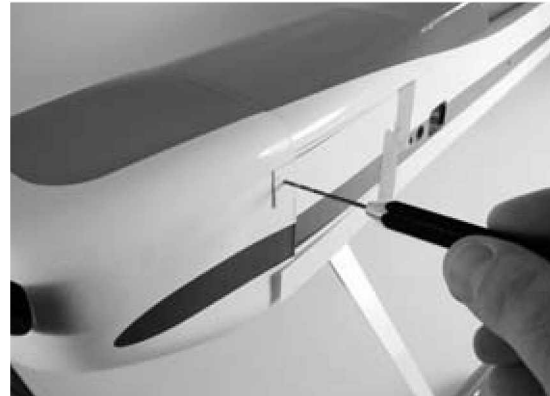


- Slide the cowling onto the fuselage. Install the propeller adapter onto the Outrunner shaft. You may need to ream out the hole on your prop hub to fit the prop adapter shaft at this point. Slide the propeller onto the prop adapter shaft. The spinner backplate and spacers may need to be enlarged as well to fit the prop adapter. Slide the spinner backplate and any needed spacers onto the prop adapter shaft. Secure the propeller using the prop adapter spinner and be sure it is secure and tight.

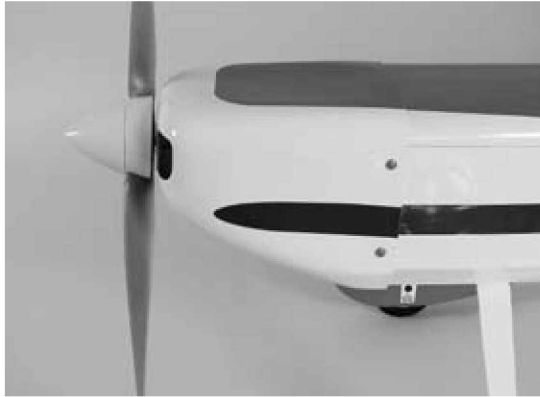


Note: Make sure to check the balance of the propeller after enlarging the hole in the propeller.

- Position the cowl so it is around 1/16"–1/8" (1.5mm–3mm) from the spinner backplate. Use the cardstock to drill four 1/16" (1.5mm) holes through the cowl into the cowl mounting tabs in the fuselage.



6. Enlarge the holes in the cowl using a 5/64" (2mm) drill bit. Secure the cowl using four 2mm x 8mm sheet metal screws. Snap the spinner cone onto the spinner backplate once the cowl is secure.



Hint. Use thin CA to harden the holes drilled into the cowl mounting tabs. This will help to prevent the screws from vibrating loose in flight.

Aileron Hinging

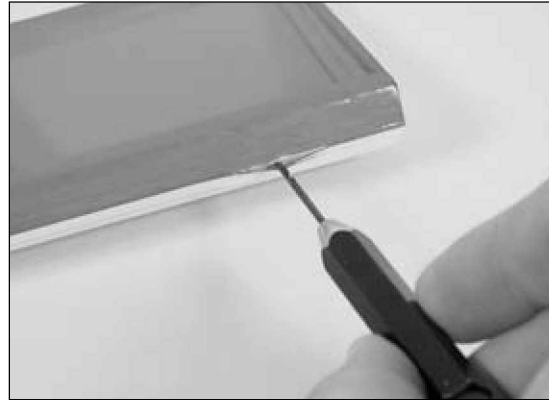
Required Parts

Wing (left and right)
Aileron (left and right)
CA hinges (8)

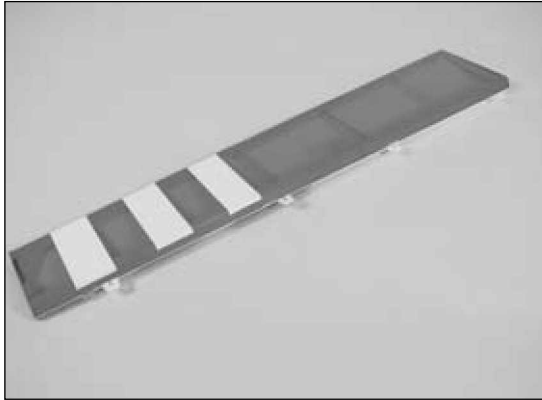
Required Tools and Adhesives

T-pins Thin CA
Drill Paper towel
Drill bit: 1/16" (1.5mm)

1. Locate the positions for the hinges. Drill a 1/16" (2mm) hole in the center of each slot of both the wing and aileron. This creates a tunnel for the CA, allowing the CA to penetrate into the hinge better, bonding the hinges more securely.



2. Slide three hinges into the slits in the aileron. Center the slot in the hinge with the hole drilled in Step 1. Place a T-pin in each hinge to prevent it from being pushed into the wing when installing the aileron.



Note: Do not use CA accelerator during the hinging process. The CA must be allowed to soak into the hinge to provide the best bond. Using accelerator will not provide enough time for this process.

3. Slide the aileron into position. Check to make sure it can move without interference at the wing root and wing tip. Remove the T-pins and apply Thin CA to each hinge. Make sure the hinge is fully saturated with CA. Use a paper towel to clean up any excess CA from the wing and aileron. Make sure to apply CA to both sides of the hinge.

