



INSTRUCTION MANUAL

Please read this manual carefully before operating this plane.

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INTRODUCTION

The DuraFly Carbon Arcus is a sleek and beautiful F3A biplane designed to perform smooth, pattern aerobatics and is the perfect choice for honing your aerobatic skills. It features a durable, lightweight EPO airframe with lots of additional carbon support and an advanced pure 4S motor and prop combination that offers a high power-to-weight ratio for unending verticals and incredible performance.

Flying the Arcus F3A is a dream, the long tail moment, the low wing loading, and the abundance of power give you a stable and very predictable airplane. Take-offs require very little rudder input, rolls are crisp and axial, and loops can be as large as you wish. The large propeller provides ample braking action in the downlines to avoid overspeeding, and if you enjoy flying knife-edge, then the Carbon Arcus performs this with ease. No roll or pitch coupling here, just apply a touch of rudder, control the throttle to hold your line, and the Arcus will knife edge until the cows come home. Finally, when the time comes, throttle back, and the Arcus settles into a nice sink rate for a perfect 3-point landing every time.

This PNF model requires no glue to assemble, the EPO airframe simply bolts and snaps together, and the motor, ESC, and servos come pre-installed. On this model, it's all in the details that set it apart from other foam models. The pushrods feature ball links on the control horns for precise, bind-free movement, and the decals come pre-applied saving you time and trouble. Accessing the receiver and battery is easy thanks to the magnetically secured hatch, and should you need to access the motor, even the molded cowl is secured with magnets. A rugged aluminum landing gear, lightweight foam wheels, and molded wheel pants finish off the Arcus. Due to the low parts count and no glue design, the Arcus can be assembled and ready to fly in around 30 minutes.



SPECIFICATIONS

- | | | |
|--|-------------------------------------|-----------------------|
| • Wingspan: 1000mm (39.7in) | • Wing Loading: 30g ² dm | • ESC: 40A brushless |
| • Length: 1130mm (44.8in) | • All Up Weight: 1050g (37oz) | • Propeller: 11 x 5.5 |
| • Wing Area: 35.4 ² dm (548.7 ² sq in) | • Motor: 3536-900KV brushless | • Servos: 4 x 9g |

REQUIRED (NOT SUPPLIED)

- | | |
|-----------------------------------|--|
| • 4S (14.8V) 2200mAh LiPo battery | • 4ch or more transmitter and receiver |
|-----------------------------------|--|



WARNINGS ON THE USE OF LIPO BATTERIES AND THEIR CHARGERS



WARNING! FIRE HAZARD!

NEVER USE CHARGER UNSUPERVISED!

- Batteries pose a SEVERE risk of fire if not properly handled.
- Read Entire operation manual before using charger.
- This unit may emit heat during use.
- Only operate this device in a cool ventilated area away from flammable objects.
- Failure to observe safety procedures may cause damages to property or injury.

WARNINGS AND SAFETY NOTES

- Keep the charger away from children and pets at all times.
- Never leave the charger unsupervised when charging or discharging.
If you leave, disconnect the battery to prevent any unexpected dangers or damage.
- Ensure the charger program and settings match the battery pack otherwise the battery will be damaged and a dangerous situation may arise, especially for Lithium batteries, which may cause a fire.
- Do not mix batteries of different types, different capacities or from different manufacturers.
- Do not disassemble the charger.
- Do not place the charger or any battery on flammable surface or near a combustible material while in use.
- Do not charge or discharge on a carpet, cluttered workbench, paper, plastic, vinyl, leather or wood, inside an R/C model or inside a full size automobile.
- Never block the air intake holes and never use in a refrigerated or high temperature environment.
If used in such an environment, the internal temperature protection may result in abnormal charging/discharging that could be dangerous.
- Do not allow water, moisture, metal wires or other conductive material into the charger. Never charge or discharge any battery that has evidence of leaking, expansion or swelling, has a damaged outer cover or case, color-change or distortion.
- Do not try to charge "non-rechargeable" dry cells.
- Do not exceed the battery manufacturer's suggested maximum charge rates.
- Carefully follow the battery pack manufacturer's recommendations and safety advice.



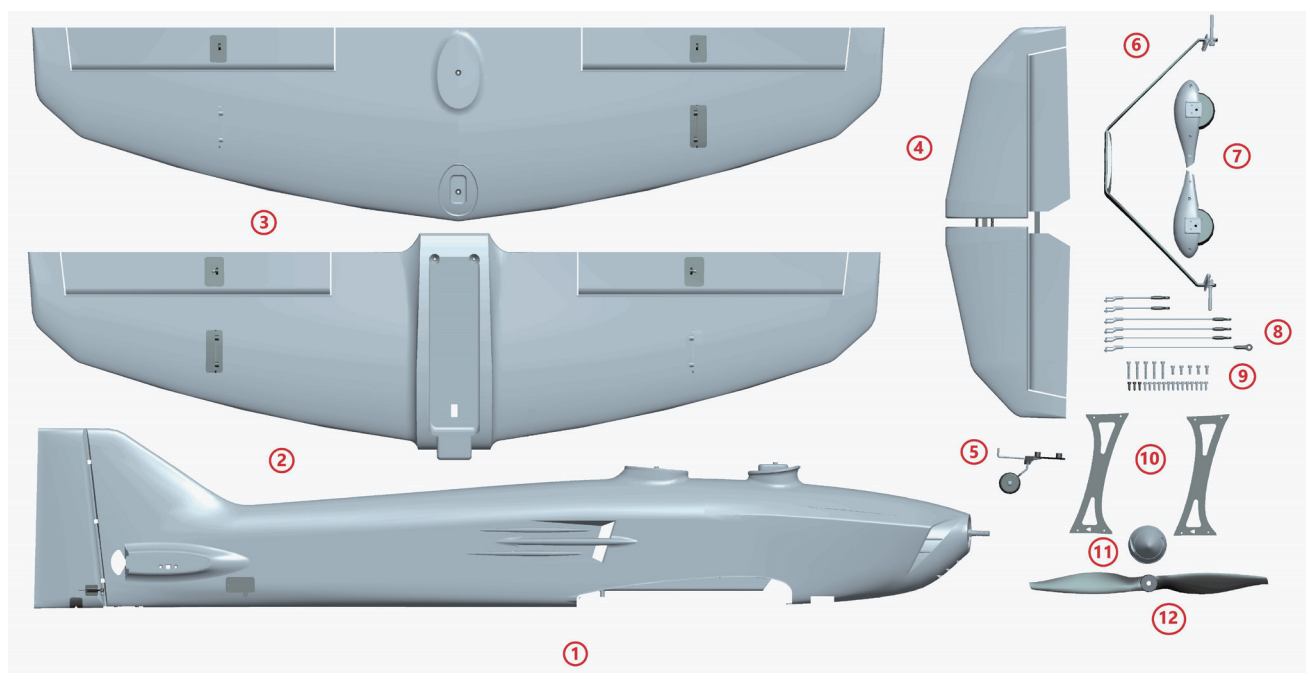
SAFETY INSTRUCTIONS

1. Please read this manual carefully and follow the instructions before you use this product.
2. This airplane is not a toy, due to its advanced flying qualities it is only suitable for pilots with intermediate or higher experience. If you are a novice then please only operate with the assistance of an experienced pilot.
3. Not recommended for children under 14 years old.
4. Please set up this plane according to the instructions and make sure you keep your hands and other parts of your body out of the way of the rotating propeller at all times. Failure to do so will result in damage to yourself and to the airplane.
5. Do not fly in thunderstorms, strong winds or wet weather.
6. Never fly R/C planes where there are overhead power lines, automobiles, airports, railway lines or near a highway.
7. Never fly R/C planes where there are crowds of people or over organised games. This airplane requires a very flat landing and take-off area that is clear of tree's and other obstacles. Remember safety is the responsibility of the pilot.
8. Do not attempt to catch the plane when you are flying it.
9. The operator will bear the full responsibility of flying and the proper operation and usage of this model. We at Hobbyking will not be responsible for any liability or loss due to improper use of this model.





CARBON ARCUS F3A CONTENTS



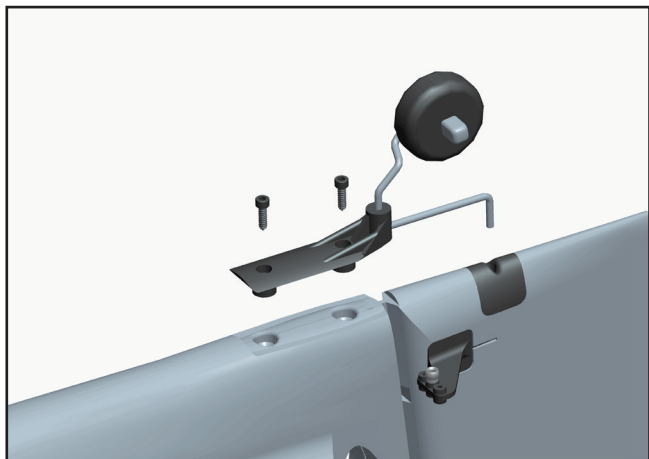
- | | |
|--------------------------|-------------------------|
| 1. Fuselage | 7. Wheels & Wheel Pants |
| 2. Bottom Wing | 8. Pushrod Set |
| 3. Top Wing | 9. Screws & Bolts |
| 4. Horizontal Stabilizer | 10. Interplane Struts |
| 5. Tailwheel Assembly | 11. Spinner |
| 6. Main Landing Gear | 12. 11 x 5.5 Propeller |



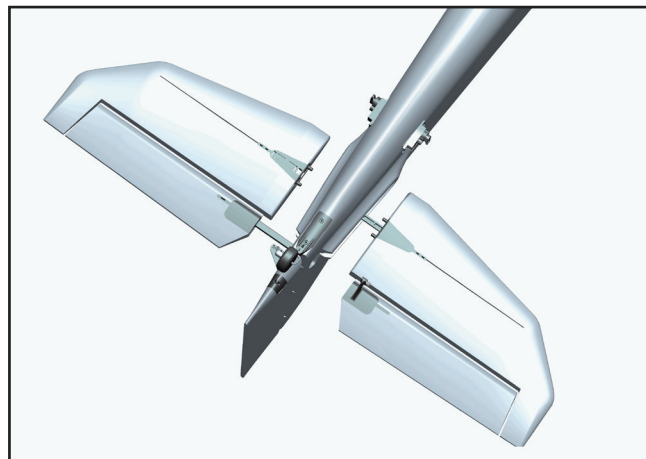


GENERAL ASSEMBLY

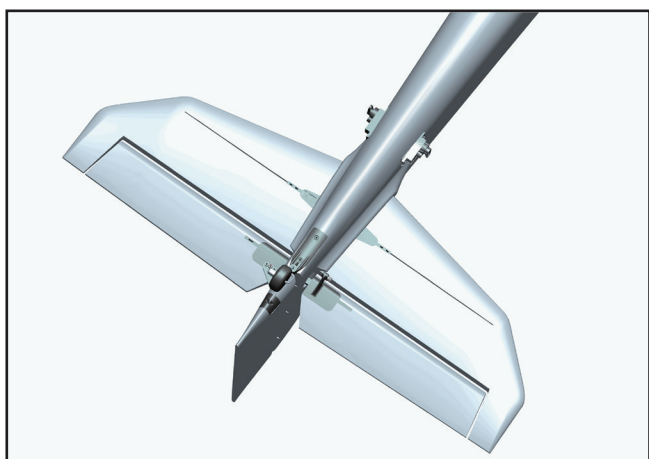
Note: Before starting to build, inspect the parts to make sure they are of acceptable quality. If any parts are missing, or damaged, please contact the HK Product Support Team.



1. Attach the tailwheel assembly to the rear of the fuselage with the screws provided.

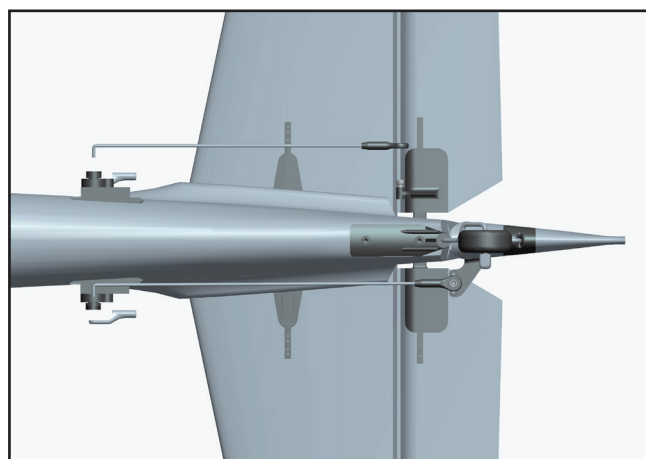


2. Pull apart the 2 horizontal stabilizer halves as they are supplied in the box, then slide them through the rear of the fuselage as shown.

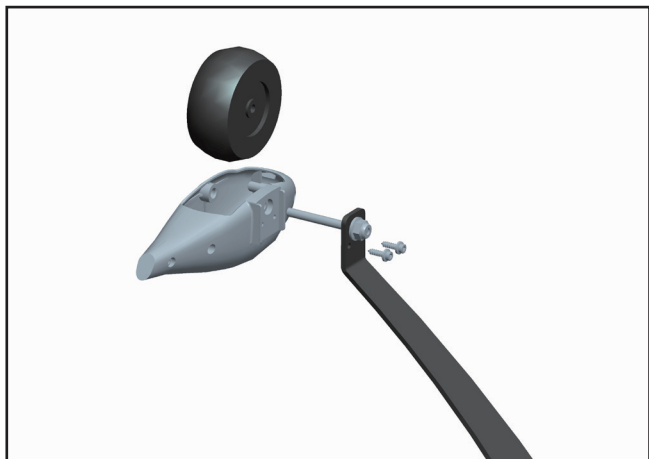


3. Ensure the 2 horizontal stabilizer halves are fully pushed home and are flush with the fuselage sides. As you do this the halves should click neatly into place, no glue or screws are required.

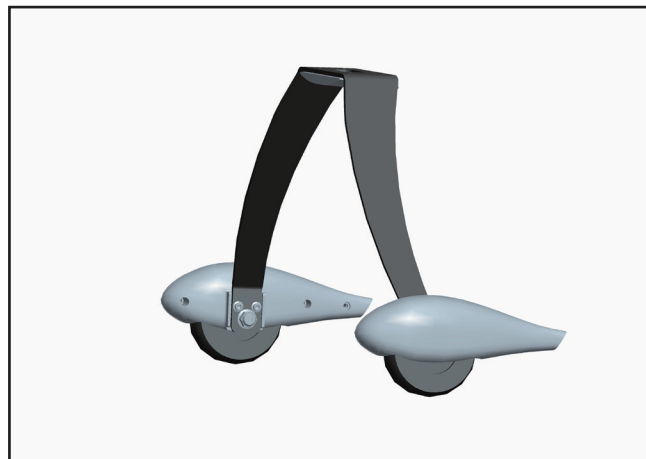
Note: For extra security, you can if you wish glue the stabilizers into place.



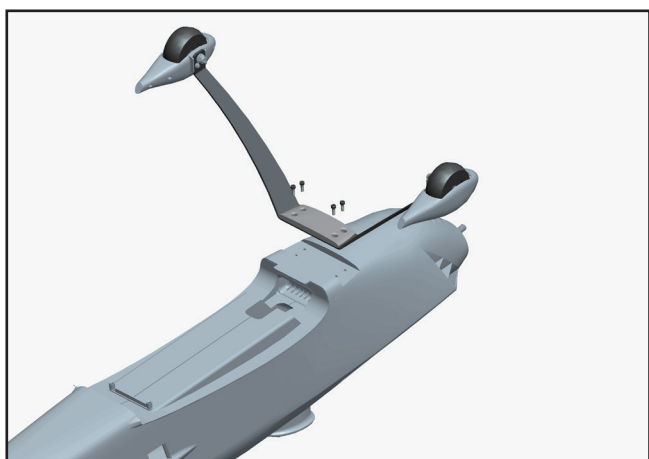
4. Center the rudder, and elevator servos using your radio, then attached the supplied pushrods. The ball links attach to the control horns, and the servo end is secured by a quick-keeper. Adjust the length of the pushrod by adjusting the ball link so that the control surface is neutral.



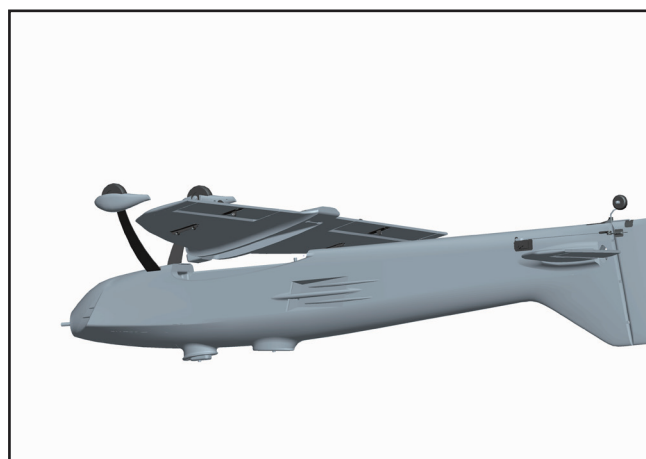
5. Attach a wheel and a wheel pant to the main landing gear. To do this, slide the wheel down into the wheel pant, then fit the wheel axle through the inner side of the wheel pant and through the center of the wheel. Secure the wheel pant in place with the 2 screws provided.



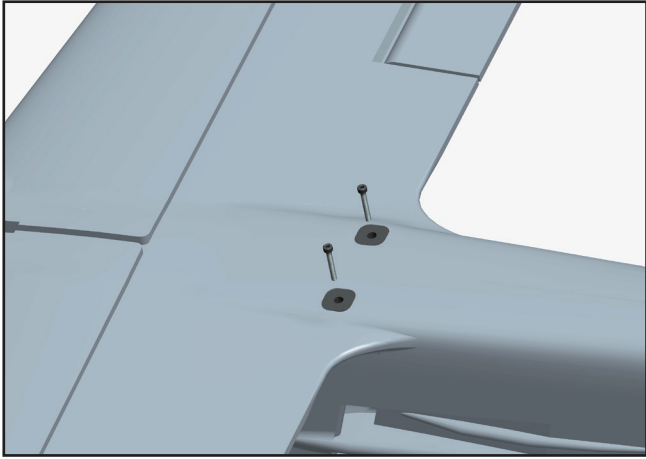
6. Repeat this process for the other wheel, and wheel pant.



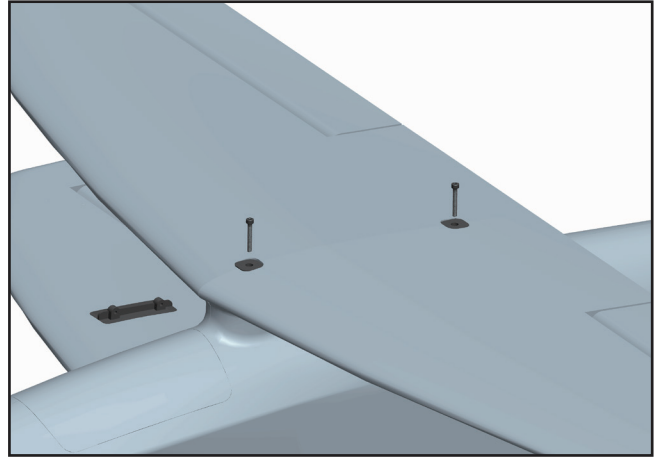
7. Attach the main landing gear assembly to the underside of the fuselage as shown using the 4 screws provided.



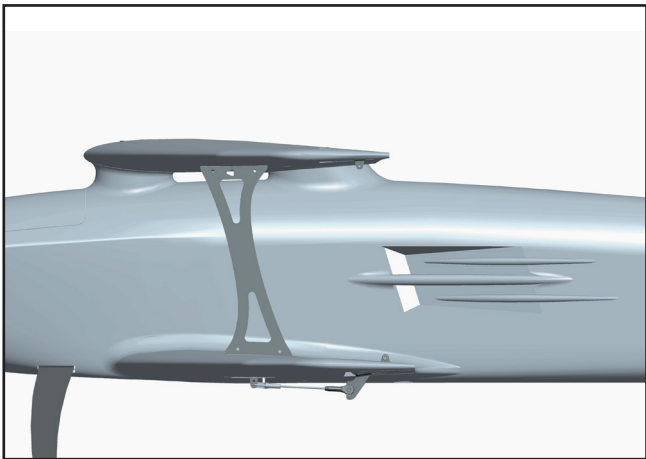
8. Fit the bottom wing to the lower wing seat of the fuselage.



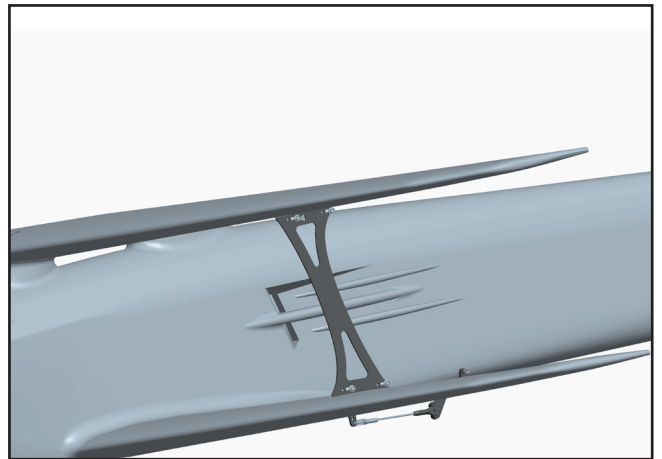
9. Secure the lower wing to the fuselage using the 2 wing screws provided.



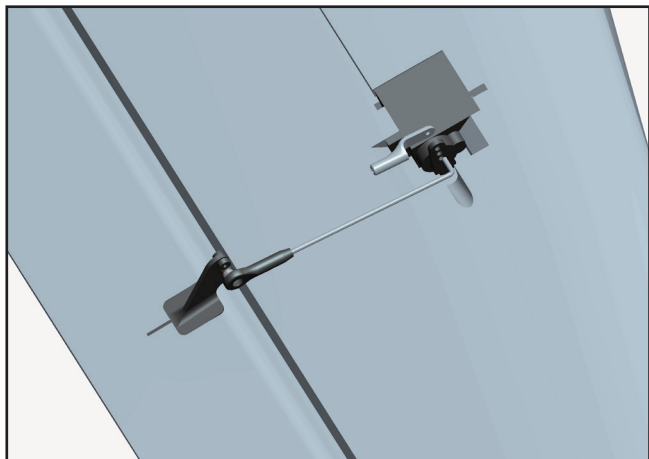
10. Attach the top wing with the screws provided.



11. Clip the inter-plane wing struts into position.



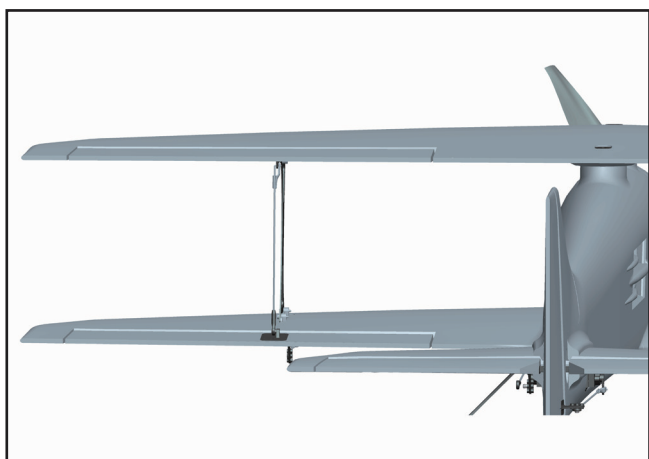
12. Secure the struts with the screws provided.



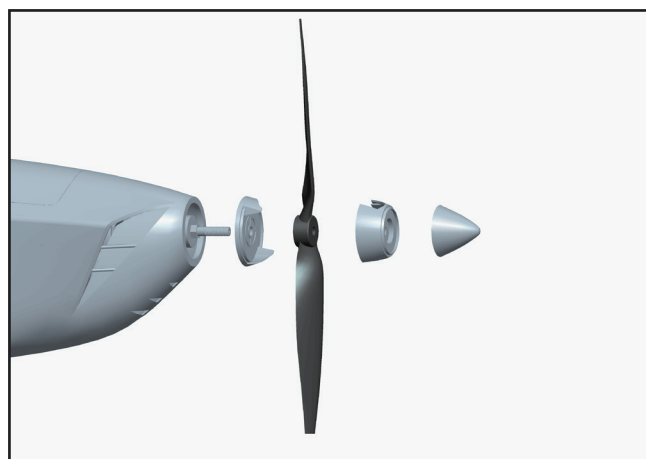
- 13.** Center the aileron servos using your radio, then attach the supplied pushrods. The ball links attach to the control horns, and the servo end is secured by a quick-keeper. Adjust the length of the pushrod by adjusting the ball link so that the aileron control surfaces are neutral



- 14.** Next step is to fit the pushrods between the bottom wing, and the top wing ailerons. Attach the ball link end to the horn on the top of the lower ailerons, and connect the top of the pushrod to the control horn on the lower surface of the top aileron using the supplied quick-link.



- 15.** Adjust the length of the inter-aileron pushrods so that when the bottom aileron is neutral, the top aileron is also neutral.



- 16.** Assemble the prop and spinner in the sequence shown above. Spinner backplate first, then the prop, then the spinner middle section and secure with the prop-nut and washer. Then finally the spinner cone itself and secure with the supplied screw. Only fit the prop and spinner after you have tested and setup your radio.

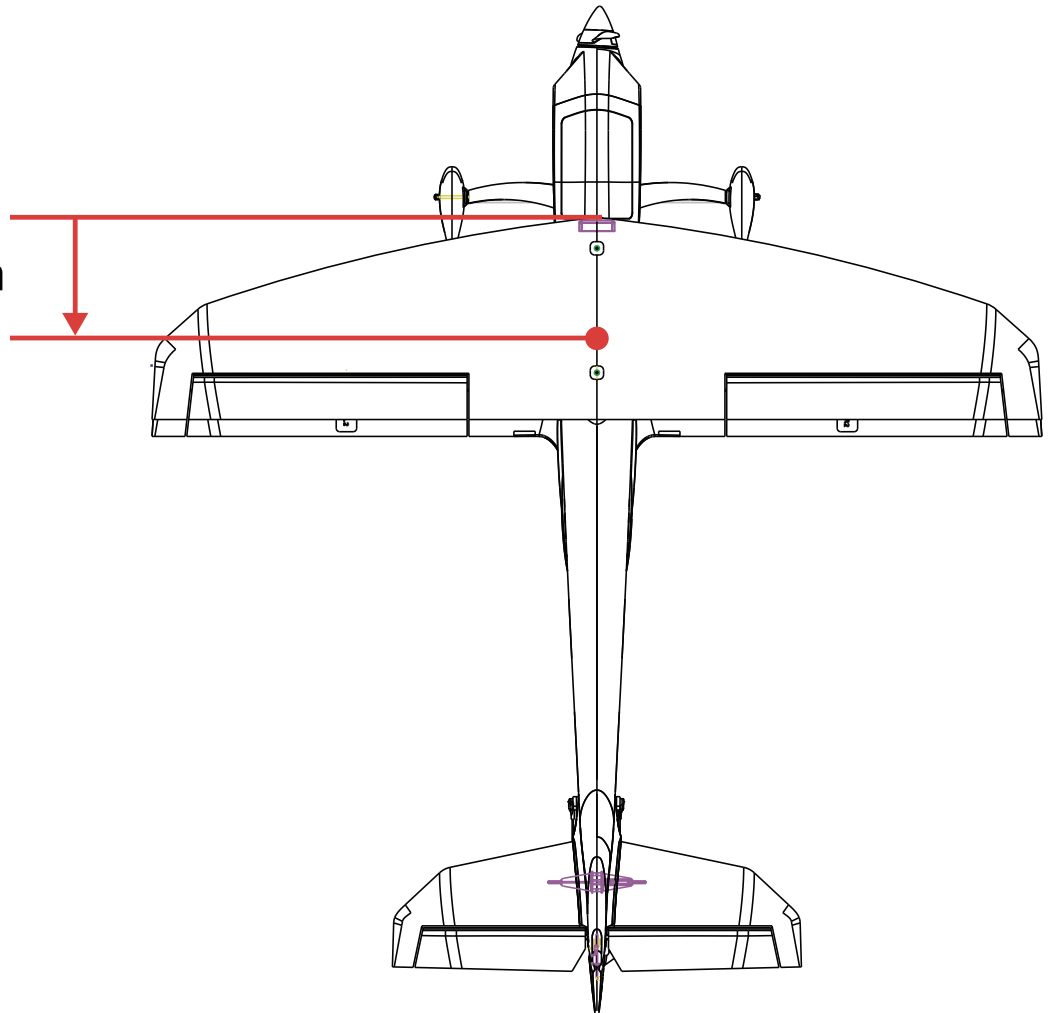
The basic assembly of your Carbon Arcus F3A is now complete.



C OF G SETTING

The C of G range for the Carbon Arcus F3A is 95-105mm measured from the leading edge of the upper wing.

CG 95-105mm

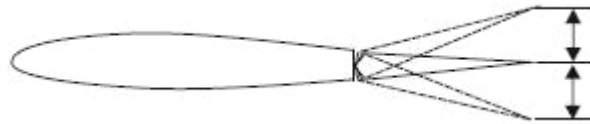


The correct center of gravity setting is very important and essential for successful flying. When balancing your model, support the plane on the relative point underneath the top wing with your fingers, or use a commercially available balancing stand. Adjust the battery position as necessary to achieve a slight nose-down attitude. We recommend for initial flights to have the C of G nearer the forward 95mm mark, then as you get used to the flying characteristics the C of G can be moved rearwards.



CONTROL THROWS: HIGH-LOW

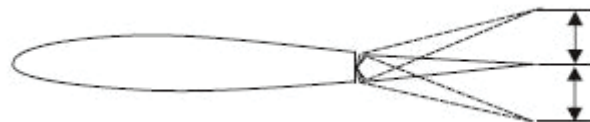
Elevator: 10mm each way (Expo: 30%)



10mm (30% Expo)

10mm (30% Expo)

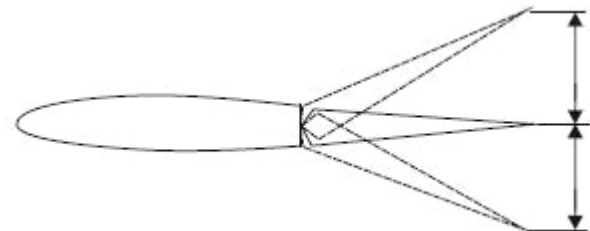
Ailerons: 10mm each way (Expo: 30%)



10mm (30% Expo)

10mm (30% Expo)

Rudder: 40mm each way (Expo: 60%)



40mm (60% Expo)

40mm (60% Expo)

For snap-rolls we recommend you use a flight-mode switch and set the control throws to the following (each way): Ailerons 22mm (Expo 30%), Elevator 6mm (Expo 30%), Rudder 20mm (Expo 60%).



FLYING TIPS

Before you fly, please check your controls and linkages, and make sure you check the following.

1. Aileron stick left, left ailerons should go up, aileron stick right, right ailerons should go up.
2. Elevator stick down, the elevator should go up, elevator stick up, elevator should go down.
3. Rudder stick left, rudder should move to the left, rudder stick right, rudder should move to the right.

Now double-check that the Arcus balances correctly on the recommended C of G.

With a new model and set up, we highly recommend that you carry out a proper range check as per your manufacturer's instructions.

Once all the above is done and you are ready for your first flight, line the Arcus up on your take-off strip and into wind. Ideally, the take-off strip should be a smooth hard surface or a smooth patch of short grass. Once ready and you have double-checked the flight controls and their directions, smoothly open the throttle up to just over halfway while holding in a small amount of up elevator. Correct any swing on take-off by using the rudder, and as the model accelerates, ease off the elevator so that the Arcus is running on the main wheels only. Once you have sufficient flying speed, ease in a small amount of up elevator and perform a not-too-steep climb-out to a safe height before turning.

With its pure 4S set up, the Arcus has loads of power, so for normal flying something around half-throttle is more than enough, with full power only being needed for vertical climb-outs, big looping maneuvers, and those fast, exhilarating, low passes over the flying patch.

As mentioned in the introduction, flying the Carbon Arcus F3A is a dream, the long tail moment, the low wing loading, and the abundance of power give you a stable and very predictable airplane. Take-offs require very little rudder input, rolls are crisp and axial, and loops can be as large as you wish. The large propeller provides ample braking action in the downlines to avoid overspeeding, and if you enjoy flying knife-edge, then the Arcus performs this with ease. No roll or pitch coupling here, just apply a touch of rudder, control the throttle to hold your line, and the Arcus will knife edge all day long.

The Arcus is also a dream to land, once you are ready, throttle back to about quarter throttle and fly a nice square circuit. Once you are lined up on the final approach, throttle back some more and the Arcus will settle into a nice sink rate for a perfect 3-point landing every time. Your maiden flight is now over, check the model's linkages, etc, in case anything has vibrated loose, if all ok, recharge the battery and enjoy another flight.

Thank you for buying yet another amazing plane from Duraflly, if you have enjoyed the Carbon Arcus F3A biplane please tell your friends, if not, please tell us. Please regularly visit hobbyking.com as we have loads more exciting planes and products coming out soon.



RECOMMENDED ACCESSORIES



RADIOMASTER TX12 MKII ELRS
FCC 2.4GHz Compact 12ch
Transmitter w/Open-Source Edge TX
Firmware

SKU: 1022720009



RADIOMASTER (Transparent) Pocket
CC2500 FCC 2.4GHz Compact 16ch
Transmitter w/Open-Source Edge TX
Firmware

SKU: 1022720067



Turnigy TGY-i6 AFHDS Transmitter and
6CH Receiver (Mode 2)

SKU: 9114000020-0



OrangeRx Tx10i Mode 2 EU
Version 10ch 2.4GHz DSMX
Compatible Radio System

SKU: 9171001399-0



**Turnigy Heavy Duty 2200mAh 3S
60C LiPo w/XT60**

SKU: 9067000200-0



**Turnigy 2200mAh 3S 40C LiPo
Pack w/XT60**

SKU: T2200.3S.40



**Turnigy Nano-Tech 2200mAh 3S
25C LiPo Pack w/XT60**

SKU: 9210000271-0



**Turnigy Nano-Tech 2200mAh 3S
45~90C LiPo Pack w/XT60**

SKU: N2200.3S.45



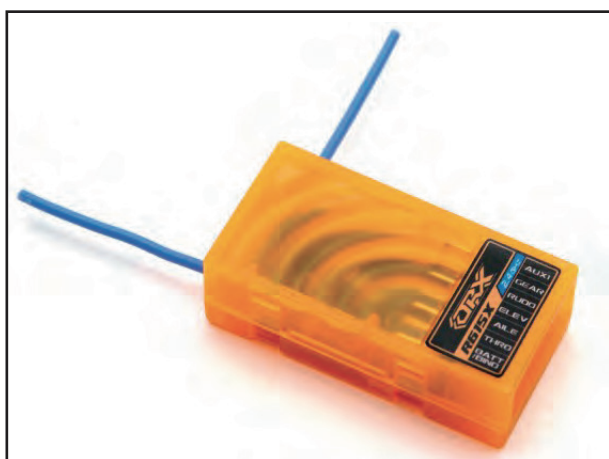
**HOTA H6 Pro AC/DC 200W AC/700W
DC 1~6S Smart Charger**

SKU: 9466000020-3



**ISDT Q8 Max Touch Screen1~ 8S
1000W 30A DC Smart Balance
Charger/Discharger**

SKU: 9818000024-0



**OrangeRx R615X DSM2/DSMX
Compatible 6ch 2.4GHz Receiver**

SKU: 9101800001-0



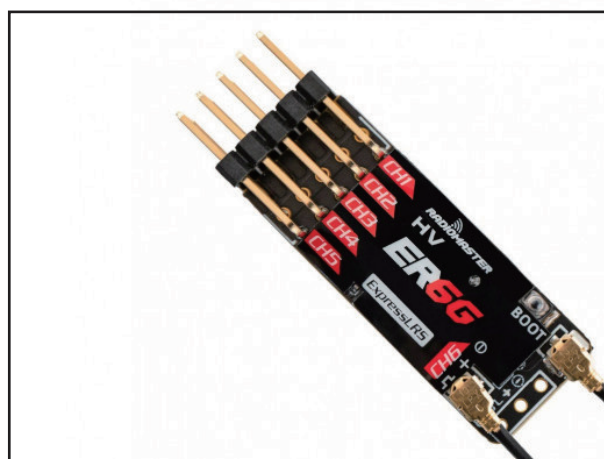
**RADIOMASTER ER6 FCC 2.4GHz 6ch
ELRS PWM Receiver w/Dual Antenna**

SKU: 1022720041



**FrSky Archer Plus SR8 2.4GHz Receiver
w/Gyro, ACCESS & ACCST D16 Modes**

SKU: 9236720206



**RADIOMASTER ER6G FCC 2.4GHz 6ch
ELRS PWM Receiver w/Dual Antenna**

SKU: 1022720043



**ToolkitRC MC8 1~8S Advanced
Multifunction Battery Checker**

SKU: 9914000078-0



**Turnigy 180A Watt Meter and Power
Analyzer**

SKU: 9598000004-0



SPARE PARTS



Fuselage

SKU: 9499790556



Wing Set

SKU: 9499790557



Horizontal Stabilizer w/Spar

SKU: 9499790558



Battery Hatch

SKU: 9499790559



Spinner w/Backplate

SKU: 9499790560



Motor Cowl

SKU: 9499790561



Interplane Struts

SKU: 9499790562



**Main Landing Gear Set
w/Wheels**

SKU: 9499790563



Main Landing Wheels

SKU: 9499790564



Tailwheel Assembly

SKU: 9499790565



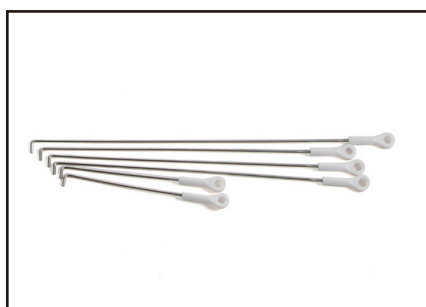
**3719-770KV Motor w/Mount
& Adapter**

SKU: 9499790566



Propeller Adapter

SKU: 9499790567



Linkage Set

SKU: 9499790568



11 x 5.5 Propeller

SKU: 9499790569



Decal Set

SKU: 9499790570



