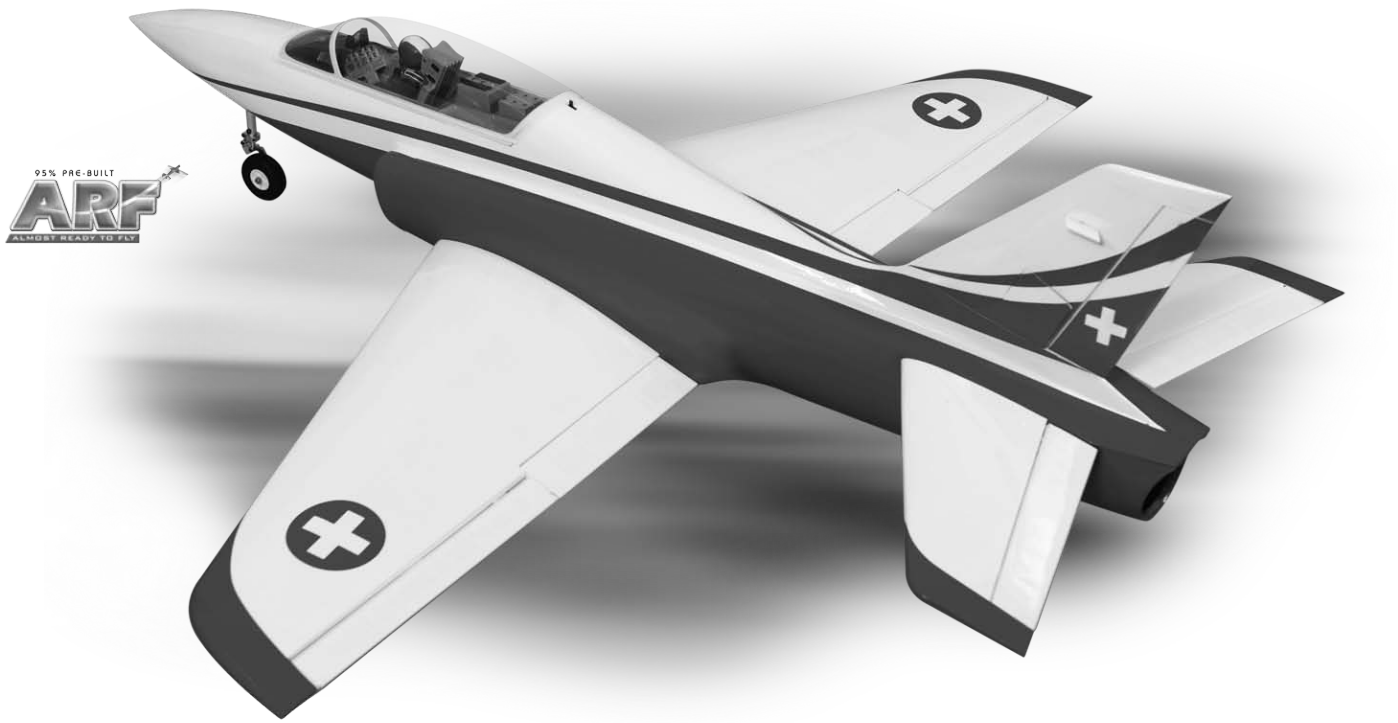
Instruction Manual

PHOENIX MODEL®



PRECEPTOR

EDF 90MM ARF SCALE 1:7

SPECIFICATION

- **Wingspan:** 1400mm (55.1 in)
- **Length:** 1540mm (60.6 in)
- **Flying weight:** 4.8-5.2 kg
- **Wing area:** 40dm2
- **Wing loading:** 125g/dm2
- **Wing type:** Naca airfoils
- **Covering type:** Genuine ORACOVER®
- **Retract gear type:** Electric retract gear (not included); CNC Suspension Metal Struts (included)
- **Radio:** 6 - 9 channel .8 mini hi-torque servo: 2 aileron; 2 flap; 2 elevator; 1 rudder; 1 steering nose; (not included)
- **Servo mount :** 12mm x 24mm
- **Engine:** edf 90mm with minimum thrust up 4 kg ; 8-12 cells (not included)
- **Gravity CG:** 165-170 mm (6.5-6.7 in) Back from the leading edge of the wing, at the fuselage
- **Control throw Ailerons:** Low: 12mm up/down, 10% expo; High: 15mm up/down, 10% expo
- **Control throw Elevators:** Low: 12mm up/down, 12% expo; High: 15mm up/down, 12% expo
- **Control throw Rudder:** Low: 20mm right/left, 15% expo; High: 30mm right/left, 15% expo
- **Control throw Flaps:** Mid: 15mm down; Landing: 20mm down
- **Experience level:** advanced

RECOMMENDED EDF AND BATTERY SET UP

- **EDF:** 90mm, Minimum thrust 4 kg. Midi-Fan evo/ HET 650-68-1130 WeMoTec (not included)
- **Lipo cell:** 8-12 cells / 4000mAh 60C (not included)
- **Esc** 120-160 A Phoenix Castle (not included)

TOOLS AND SUPPLIES NEEDED

- Medium C/A glue
- 30 minute epoxy
- 6 minute epoxy
- Hand or electric drill
- Assorted drill bits
- Modeling knife
- Straight edge ruler
- 2 bender plier
- Wire cutters
- Masking tape
- Thread lock
- Paper towels
- Rubbing alcohol

SUGGESTION

To avoid scratching your new airplane, do not unwrap the pieces until they are needed for assembly. Cover your workbench with an old towel or brown paper, both to protect the aircraft and to protect the table. Keep a couple of jars or bowls handy to hold the small parts after you open the bag.

NOTE:

1. Please trial fit all the parts. Make sure you have the correct parts and that they fit and are aligned properly before gluing! This will assure proper assembly. The PRECEPTOR EDF 90MM ARF SCALE 1:7 is hand made from natural materials, every plane is unique and minor adjustments may have to be made. However, you should find the fit superior and assembly simple.
2. The painted and plastic parts used in this kit are fuel proof. However, they are not tolerant of many harsh chemicals including the following: paint thinner, C/A glue accelerator, C/A glue debonder and acetone. Do not let these chemicals come in contact with the colors on the covering and the plastic parts.

SAFETY PRECAUTION:

- This is not a toy.
- Be sure that no other flyers are using your radio frequency.
- Do not smoke near fuel.
- Store fuel in a cool, dry place, away from children and pets.
- Wear safety glasses.
- The glow plug clip must be securely attached to the glow plug.
- Do not flip the propeller with your fingers.
- Keep loose clothing and wires away from the propeller.
- Do not start the engine if people are near. Do not stand in line with the side of the propeller.
- Make engine adjustments from behind the propeller only. Do not reach around the spinning propeller.

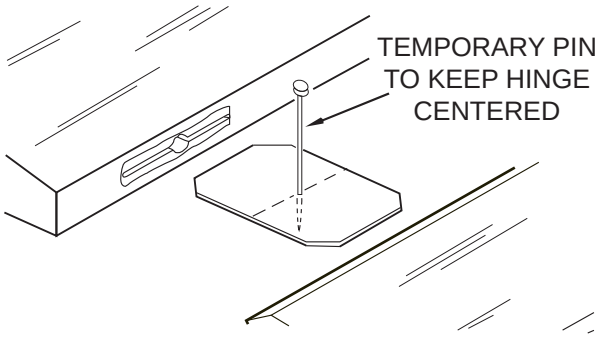
PREPARATIONS

Remove the tape and separate the ailerons from the wing and the elevators from the stab. Use a covering iron with a covering sock on high heat to tighten the covering if necessary. Apply pressure over sheeted areas to thoroughly bond the covering to the wood.

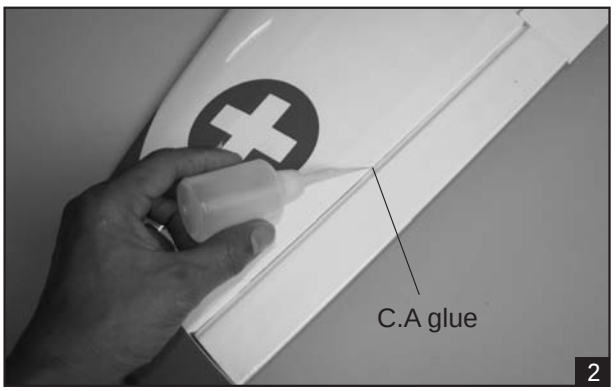

1

INSTALLING THE AILERONS

1. Test fit the ailerons to the wing with the hinges. If the hinges don't remain centered, stick a pin through the middle of the hinge to hold it in position.



2. Apply six drops of thin CA to the top and bottom of each hinge. Do not use CA accelerator. After the CA has fully hardened, test the hinges by pulling on the aileron.

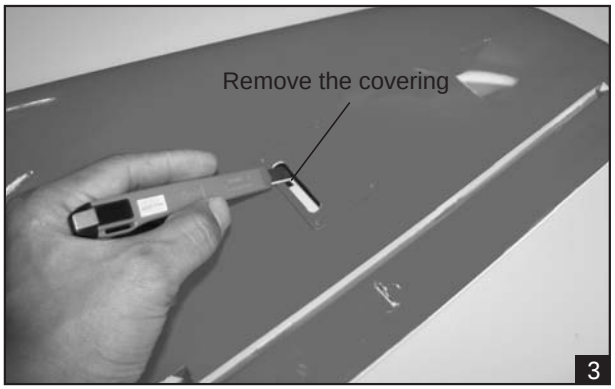


2

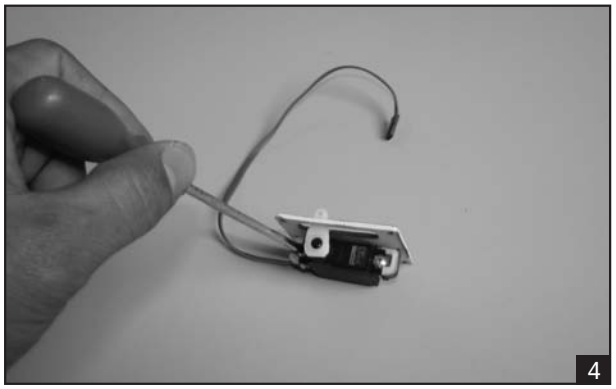
INSTALLING THE AILERON SERVOS

1. Install the rubber grommets and brass eyelets onto the aileron servo.

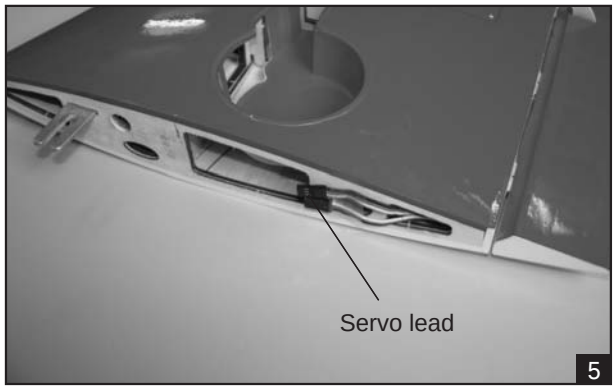
2. Using a modeling knife, remove the covering from over the pre-cut servo arm exit hole on the aileron servo tray / hatch. This hole will allow the servo arm to pass through when installing the aileron pushrods.



3. Place the servo into the servo tray. Center the servo within the tray and drill 1,6mm pilot holes through the block of wood for each of the four mounting screws provided with the servo.

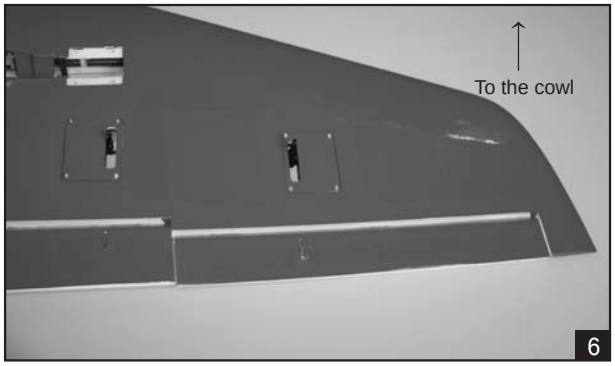


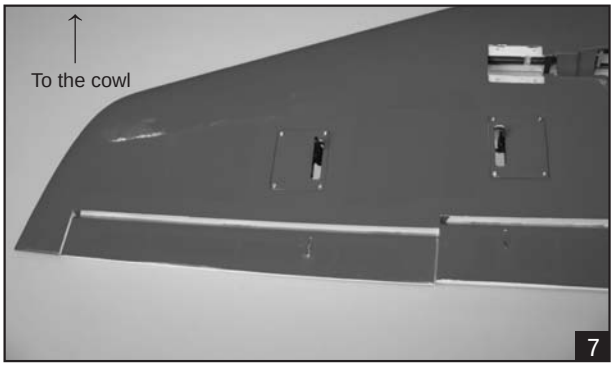
4. Using the thread as a guide and using masking tape, tape the servo lead to the end of the thread: carefully pull the thread out. When you have pulled the servo lead out, remove the masking tape and the servo lead from the thread.



5. Place the aileron servo tray / hatch into the servo box on the bottom of the wing and drill pilot holes through the tray and the servo box for each of the four mounting screws. Secure the servo tray in place using the mounting screws provided (2mm x 12mm).

6. Repeat step # 2 - # 5 to install the second aileron servo in the opposite wing half.

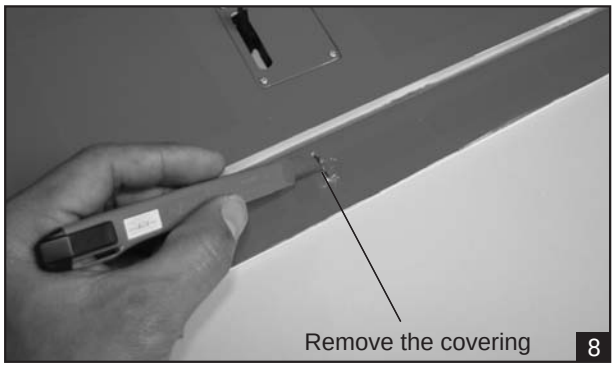


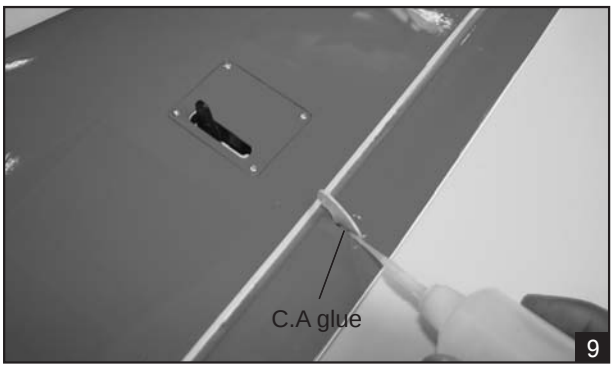


INSTALLING THE CONTROL HORNS

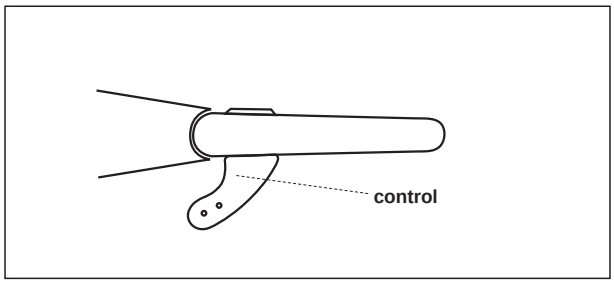
1. Remove the covering from the slot on the bottom of the aileron.

2. Insert the control horn into the slot and secure it by using C.A glue.



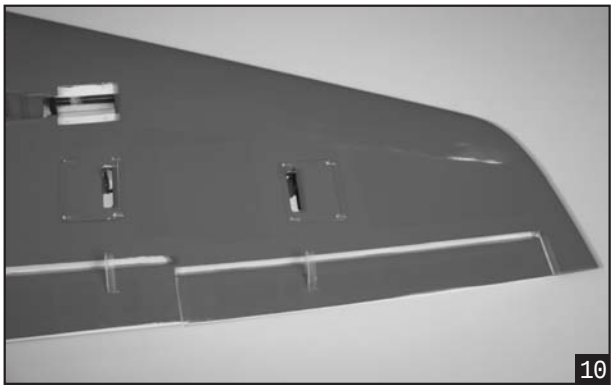


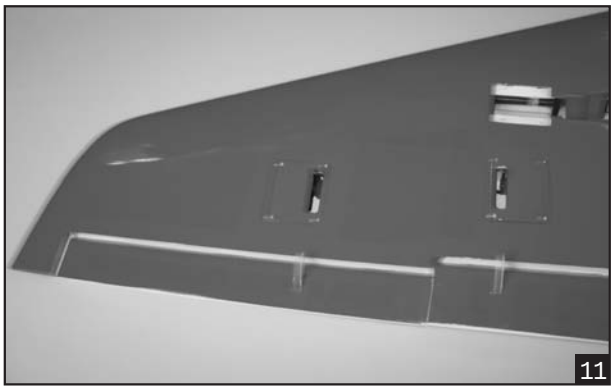
3. Repeat step # 1 - # 2 to install the control horn on the opposite aileron.



INSTALLING THE CONTROL HORNS FOR FLAP

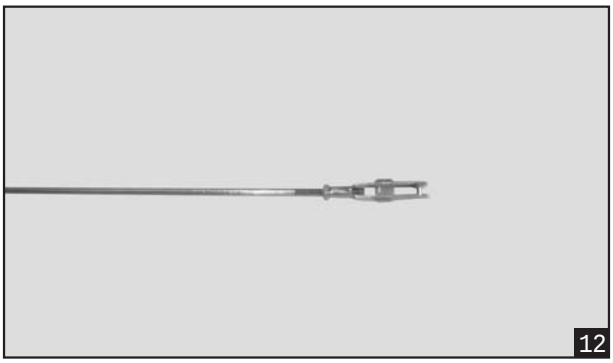
Repeat step #1 - #3 from installing the control horn for aileron to install the control horn for flap.



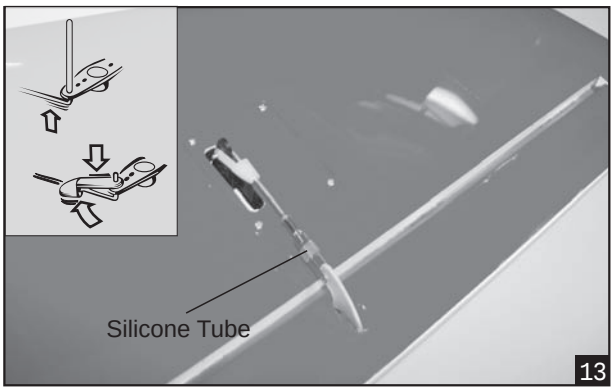


INSTALLING THE AILERON LINKAGES

1. Working with the aileron linkage for now, thread one clevis at least 14 turns onto one of the threaded wires.



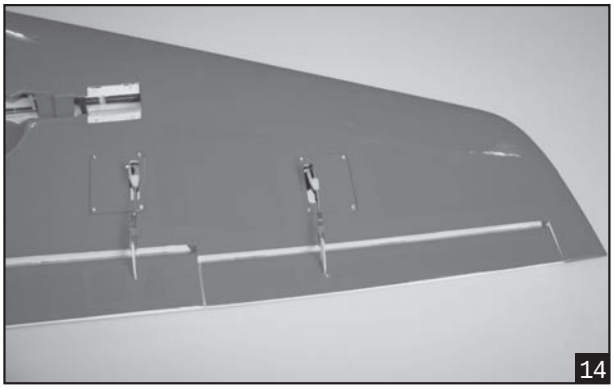
2. Attach the clevis to the outer hole in the control horn. Install a silicone tube on the clevis.
3. Locate one nylon servo arm, and using wire cutters, remove all but one of the arms. Using a 2mm drill bit, enlarge the third hole out from the center of the arm to accommodate the aileron pushrod wire.
4. Plug the aileron servo into the receiver and center the servo. Install the servo arm onto the servo. The servo arm should be perpendicular to the servo and point toward the middle of the wing.
5. Center the aileron and hold it in place using a couple of pieces of masking tape.
6. With the aileron and aileron servo centered, carefully place a mark on the aileron pushrod wire where it crosses the hole in the servo arm.
7. Using pliers, carefully make a 90 degree bend down at the mark made. Cut off the excess wire, leaving about 4mm beyond the bend.



8. Insert the 90 degree bend down through the hole in the servo arm. Install one nylon snap keeper over the wire to secure it to the arm. Install the servo arm retaining screw and remove the masking tape from the aileron.
9. Repeat step # 4 - # 8 to install the second aileron linkage. After both linkages are completed, connect both of the aileron servo leads using a Y-harness you have purchased separately.

INSTALLING THE FLAP LINKAGE

Repeat step #1 - #9 from installing the aileron linkage to install the flap linkage.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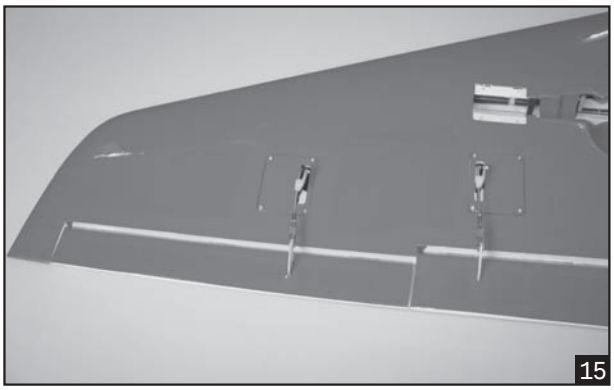
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INSTALLING THE LANDING GEAR

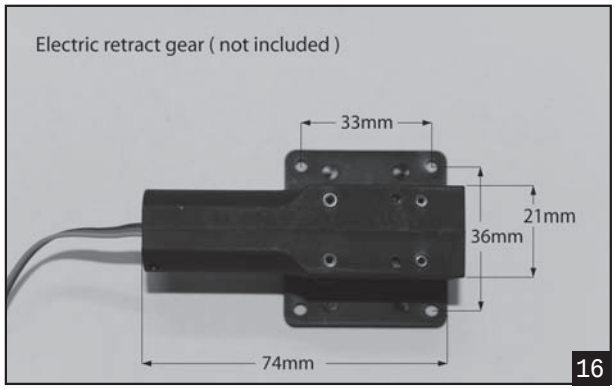
- In case you want to use with the electric retract (not included with the kit), please pay attention with the dimension as picture below.

- We would like provide you some link for electric retract suit with Preceptor

Link electric nose gear Preceptor http://hobbyking.com/hobbyking/store/__56195__Servoless_Steerable_Nose_Retract_with_Metal_Trunion_44mm_x_41mm_Mount_EU_Warehouse_.html

Link electric main gear Preceptor

http://hobbyking.com/hobbyking/store/__28976__Servoless_Retract_with_Metal_Trunion_44mm_x_41mm_Mount_2pcs_.html



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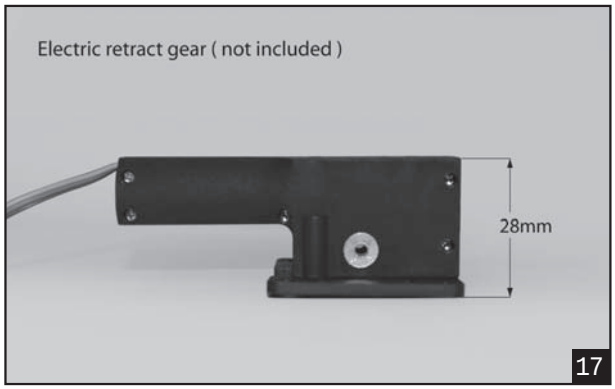

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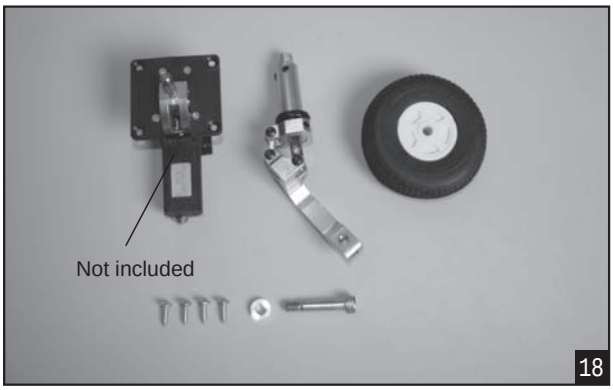
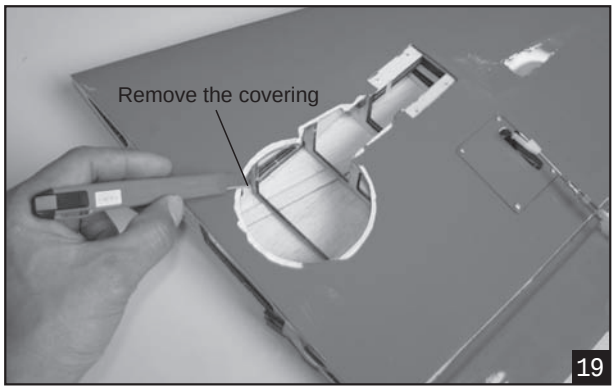
1. The retract set (Electric retract not included with the kit).



18

2. Remove the covering.



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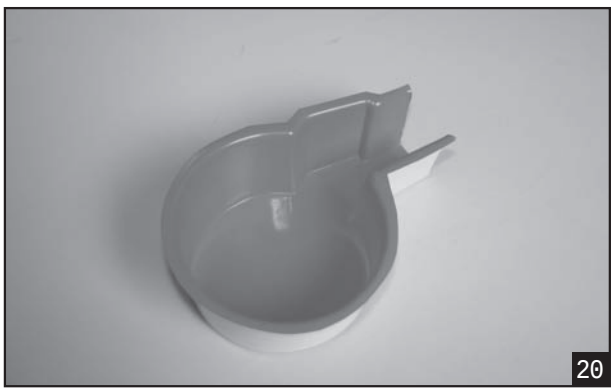
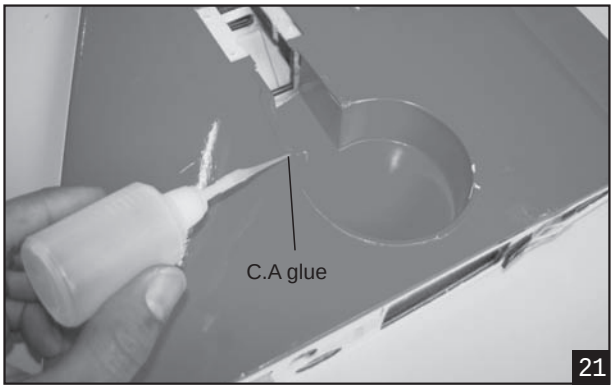
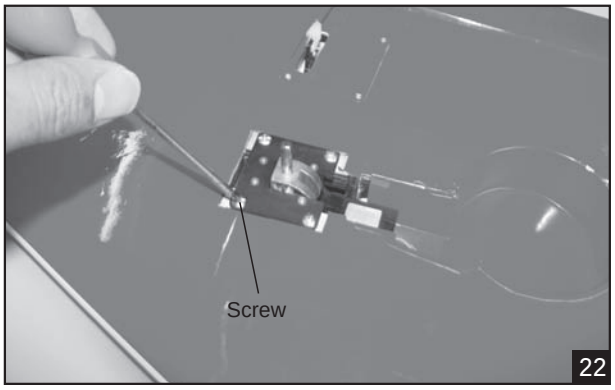
3. Trim the plastic cover.


20

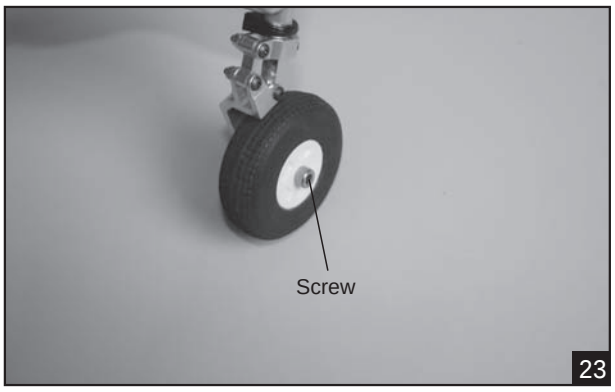
4. Glue the plastic cover.



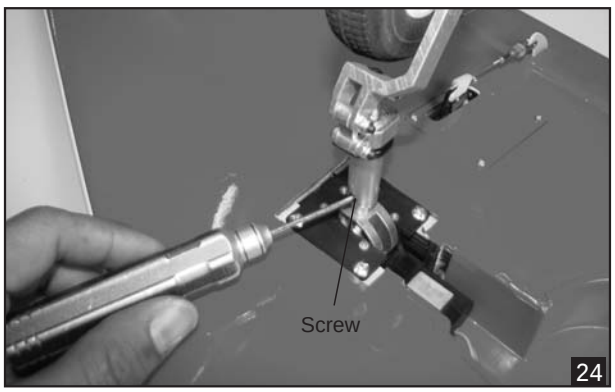
5. Secure the retract to the wing.



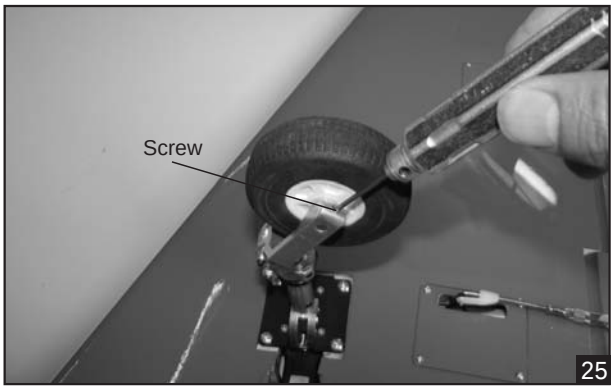
6. Install and secure the wheel.



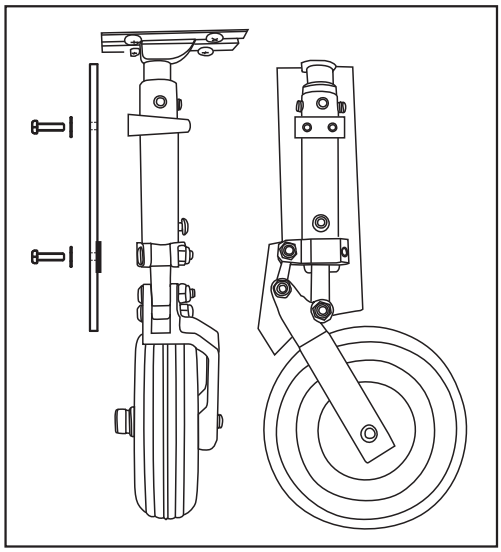
7. Secure the strut to the retract.

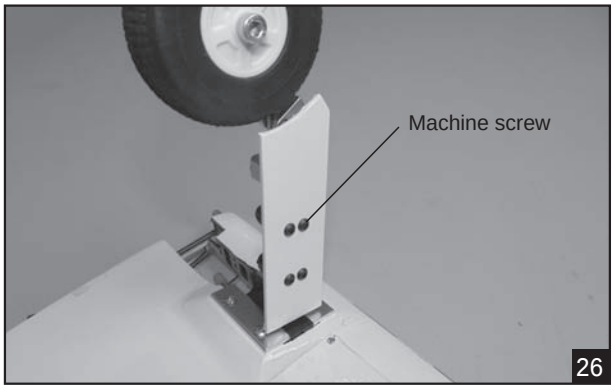


8. Lock-up the axle.



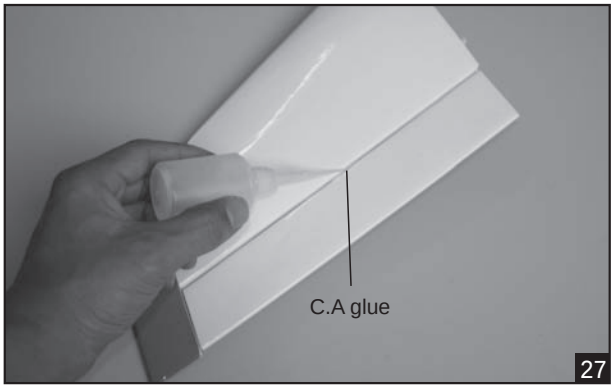
9. Secure the wooden plate.



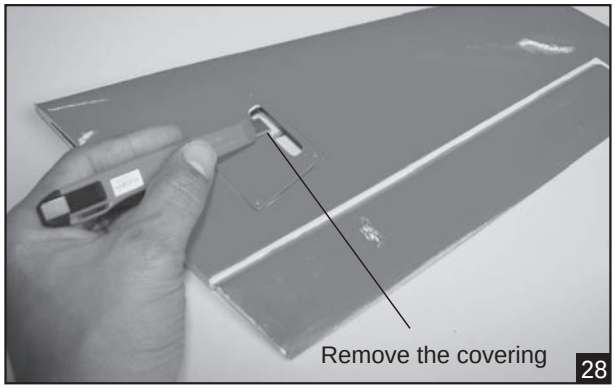


INSTALLING THE HORIZONTAL STABILIZER

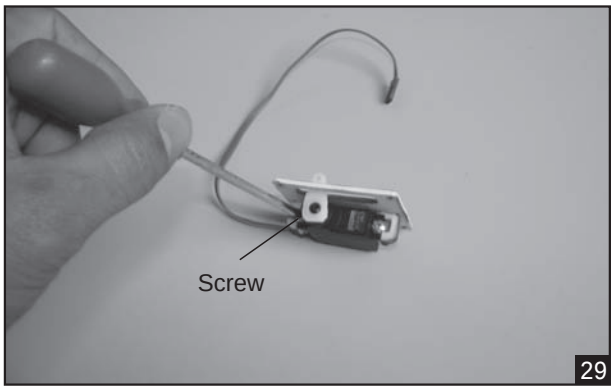
1. Repeat these step from the installing aileron for the installing elevator.



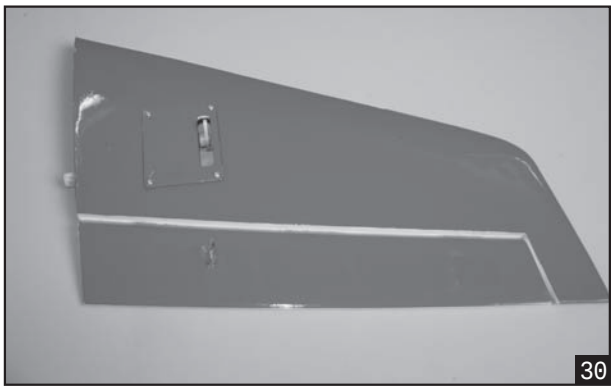
2. Remove the covering.



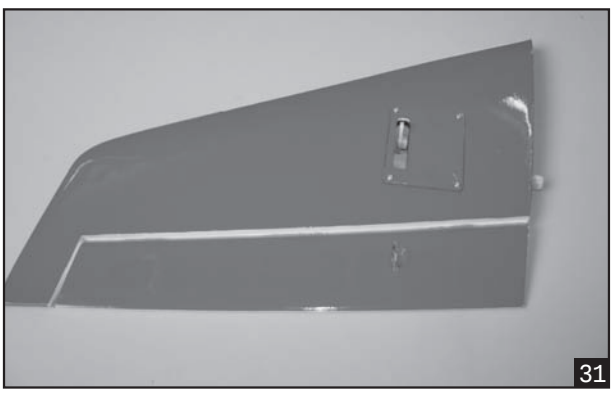
3. Install the servo.



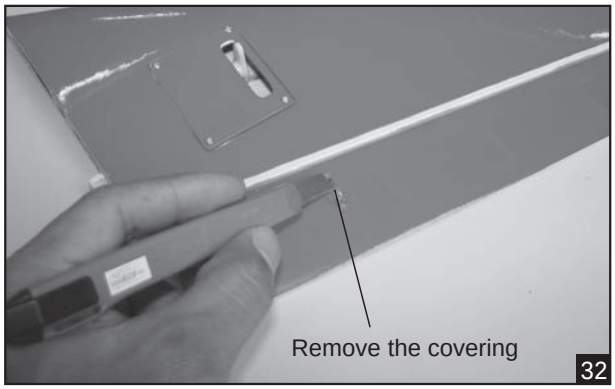
4. Secure the servo plate.



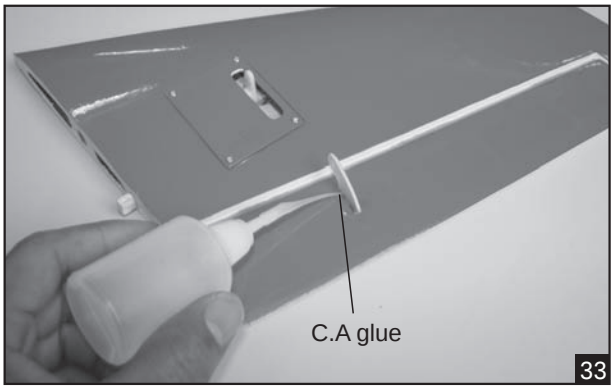
5. Make the same way for the second stabilizer.



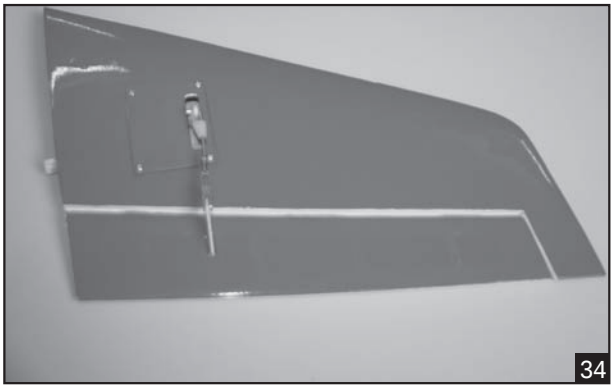
6. Remove the covering.

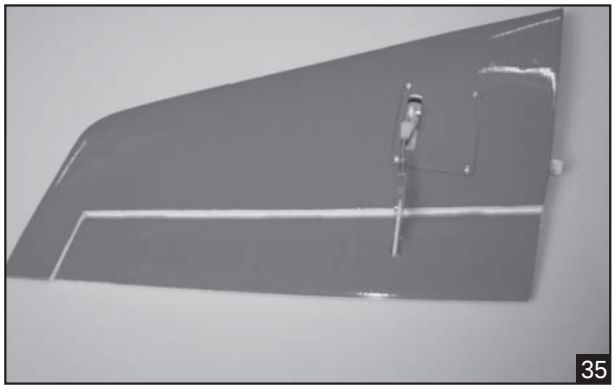


7. Install and glue the elevator control horn.

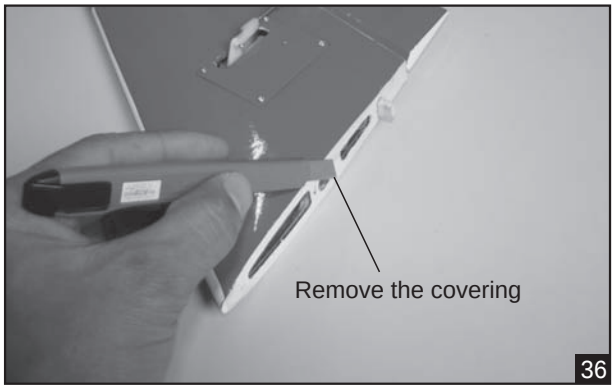


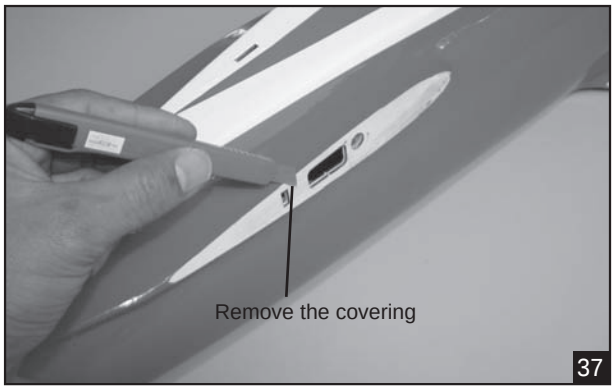
8. Repeat these step from installing the aileron linkages to install the elevator linkages.



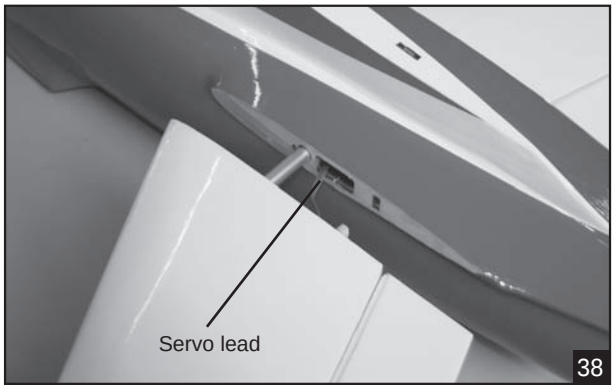


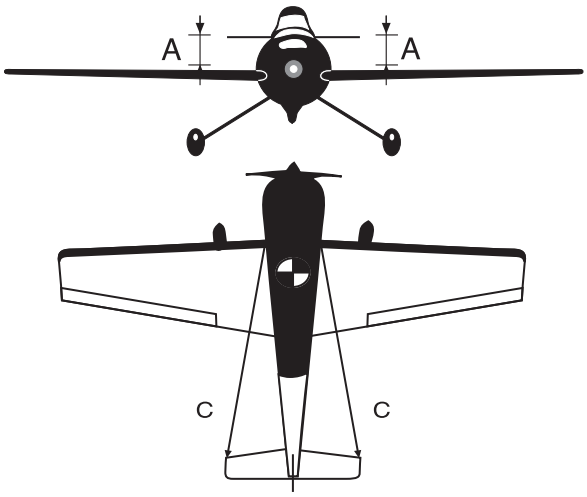
9. Remove the rear of the covering.

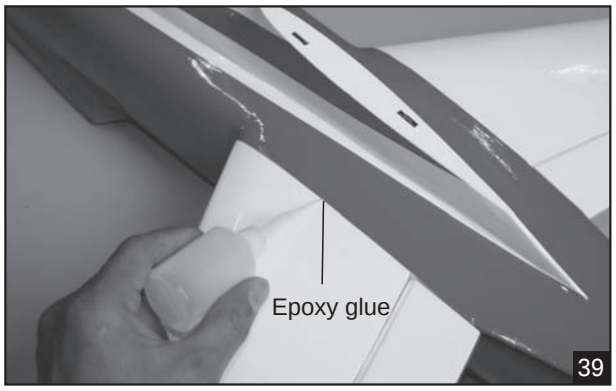




10. Install the horizontal stabilizer and glue it using epoxy glue.

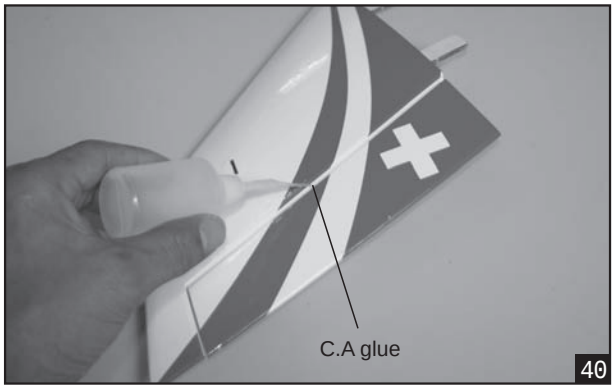




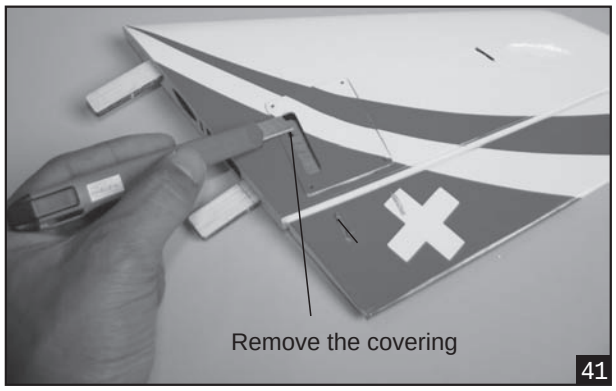


INSTALLING THE VERTICAL STABILIZER

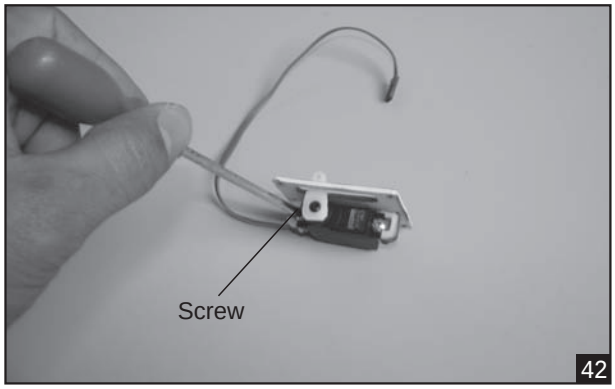
1. Repeat these step from the installing aileron for the installing rudder.



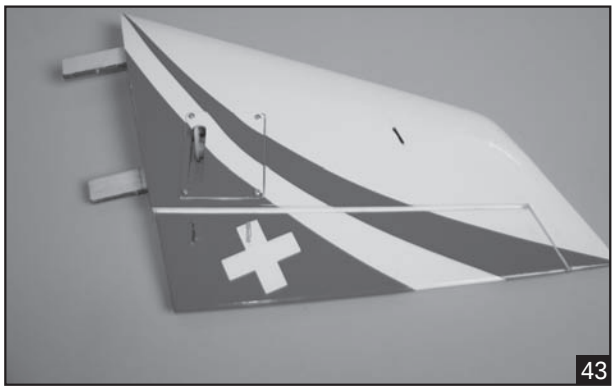
2. Remove the covering.



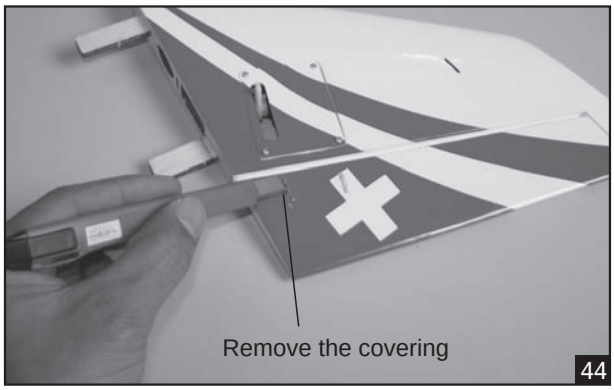
3. Install the rudder servo.



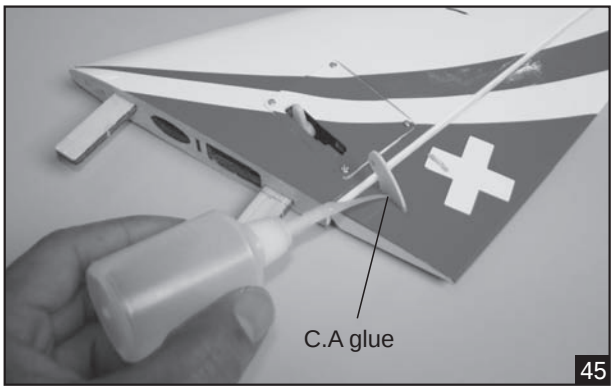
4. Secure the servo plate.



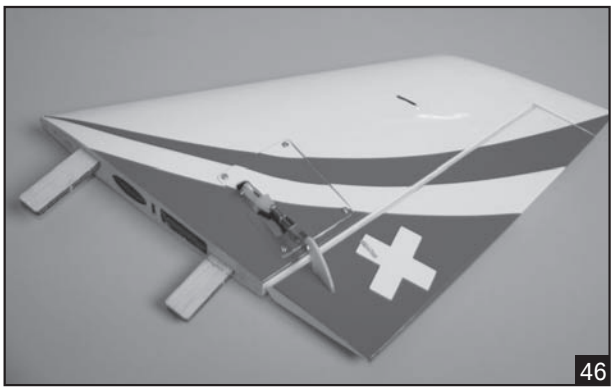
5. Remove the covering.



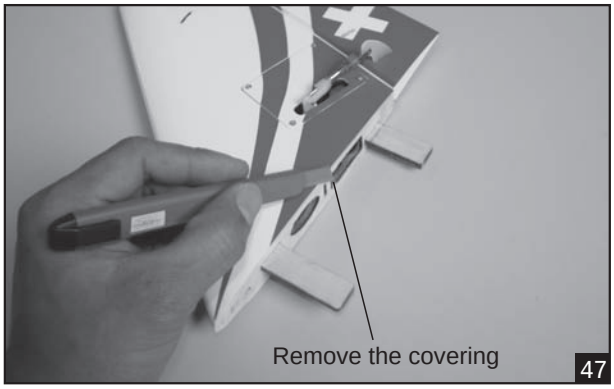
6. Install and glue the rudder control horn.

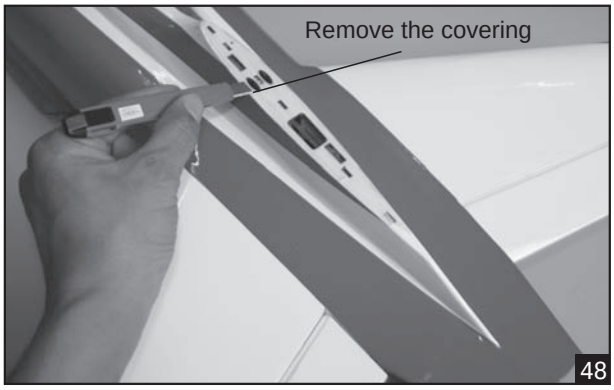


7. Repeat these step from installing the aileron linkages to install the rudder linkages.

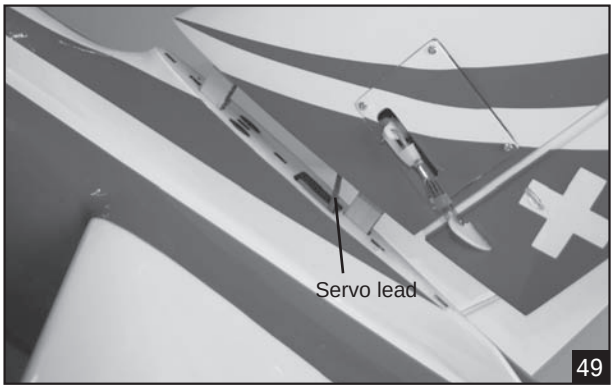


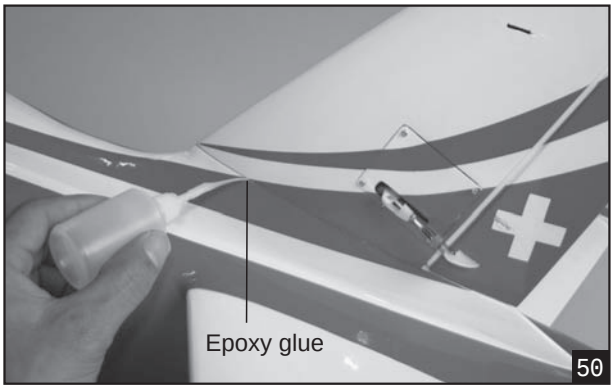
8. Remove the covering.

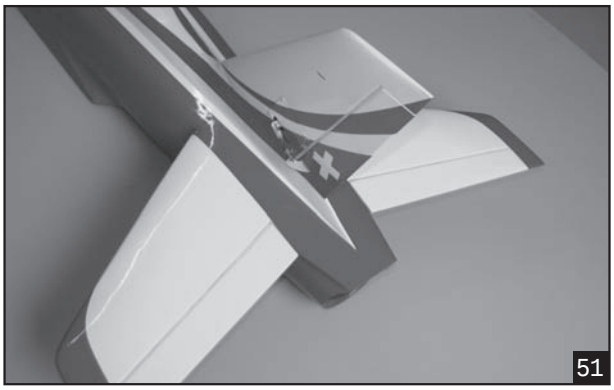




9. Install the vertical stabilizer and glue it using epoxy glue.



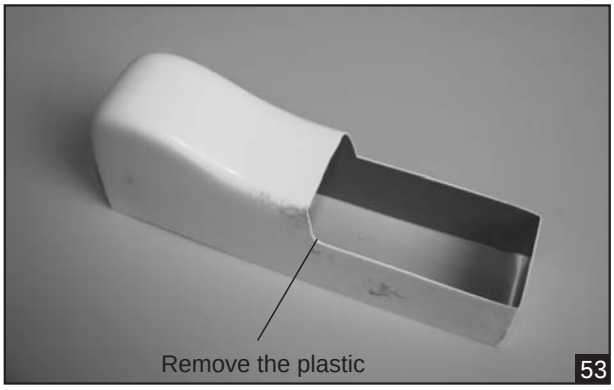




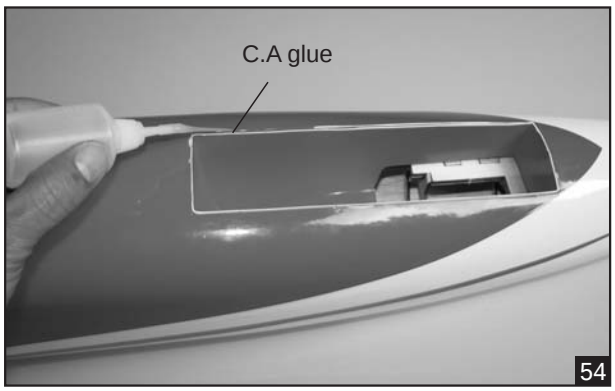
INSTALLING THE STEERING NOSE GEAR

1. Install the steering nose servo into the servo tray in the fuselase.

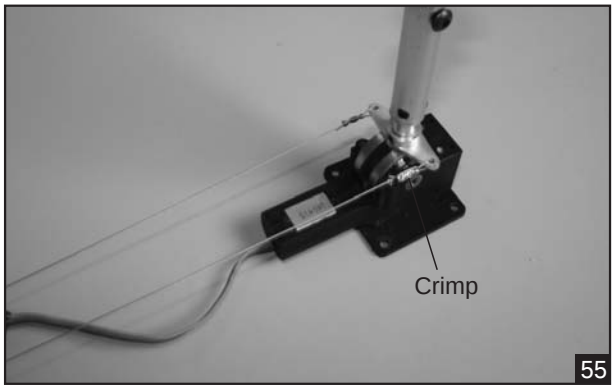
2. Remove the plastic.



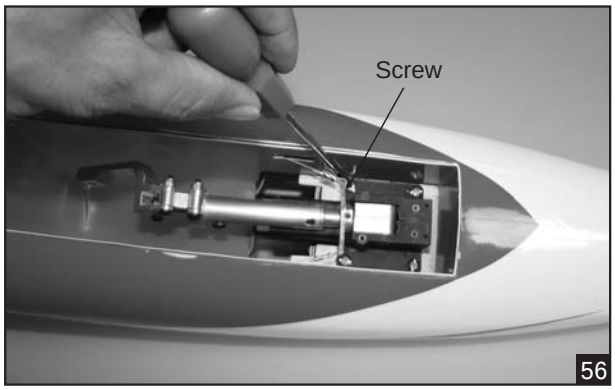
3. C.A glue plastic.



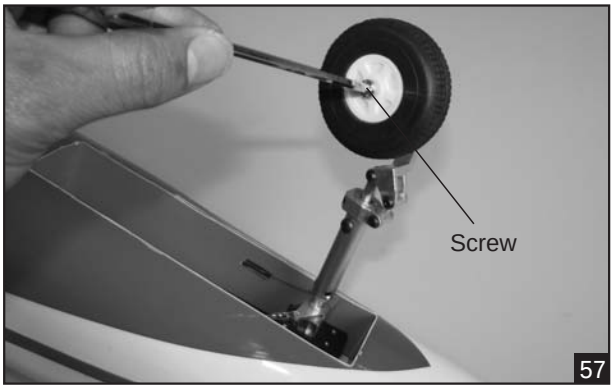
4. Secure the strut to the electric retract and slide the two cable to the steering plate.



5. Install the nose retract.

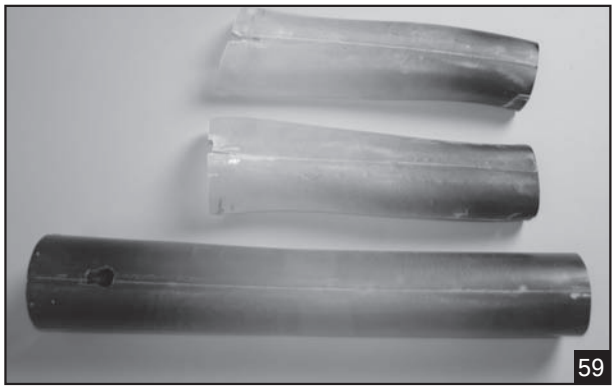


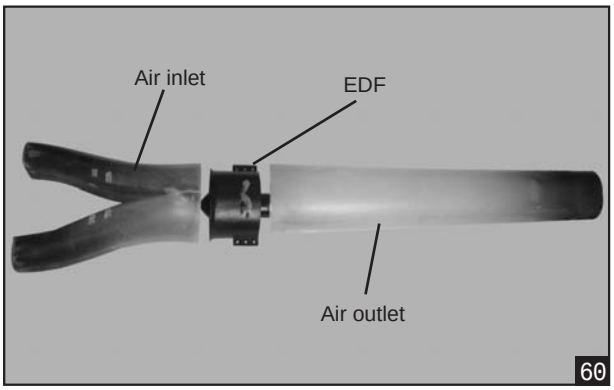
6. Secure the alxe.



7. Slide and install the two cable steering nose to the servo.

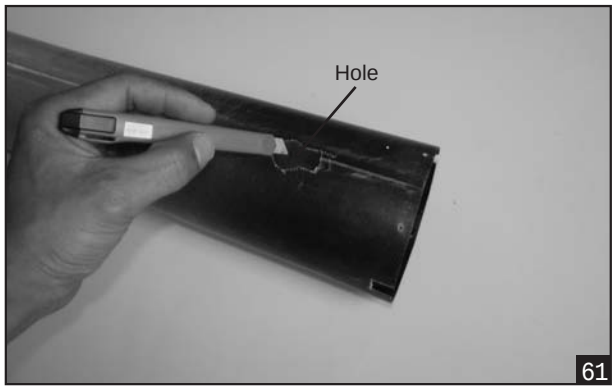
INSTALLING THE EDF (ELECTRIC DUCTED FAN) SYSTEM


59



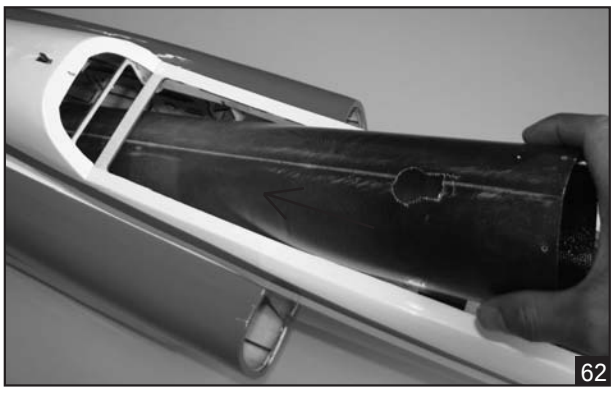
60

1. Trim 1 hole from the air outlet for the wires of EDF.

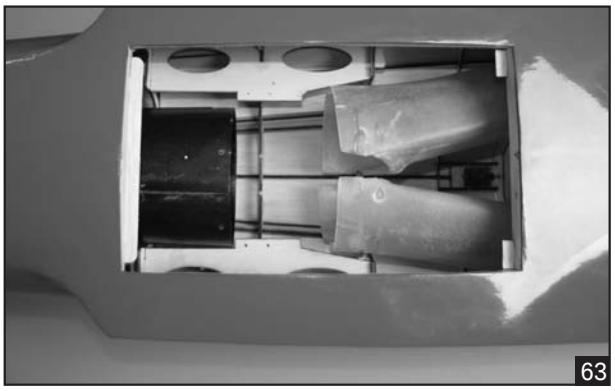


61

2. Slide the air outlet to the fuselage.


62

3. Slide the air inlet to the fuselage.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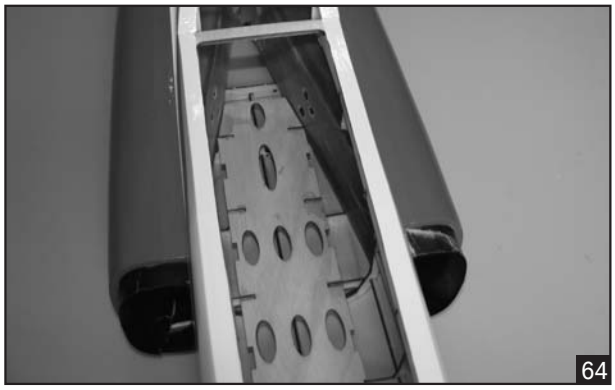
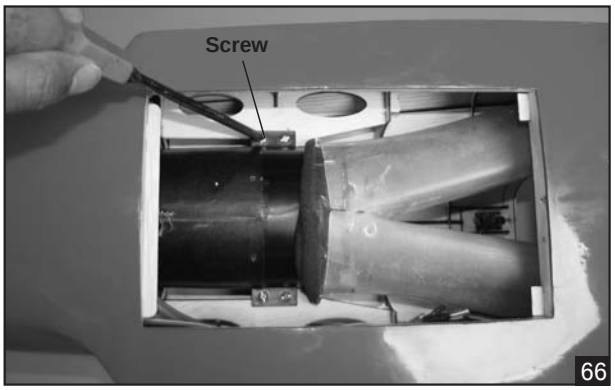

64

4. Tie down the sponge (included with the kit) to the EDF,(Must fit with the air inlet) and fix it with the tape.

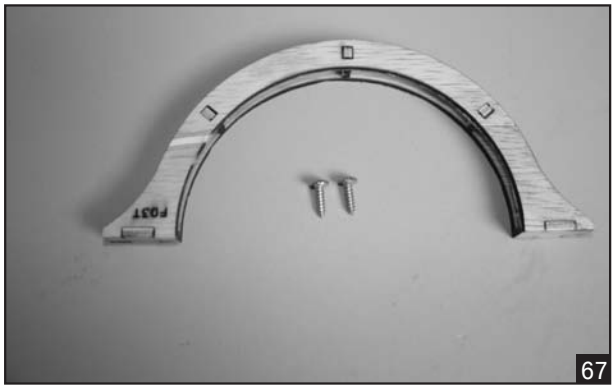

65

5. Secure the EDF.

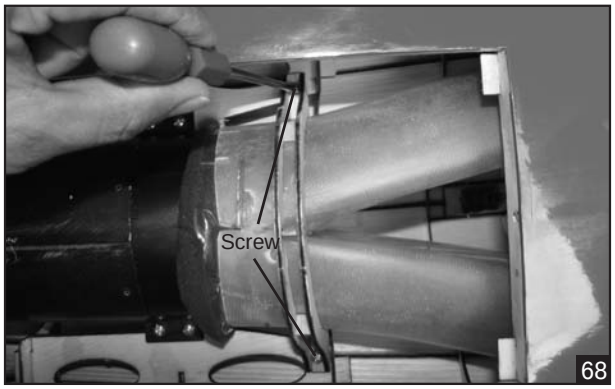


66

6. Wooden belt for EDF (Included with the kit).

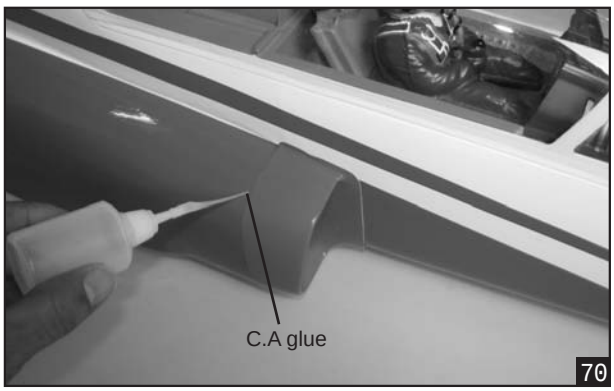


7. Secure the belt to the fuselage.

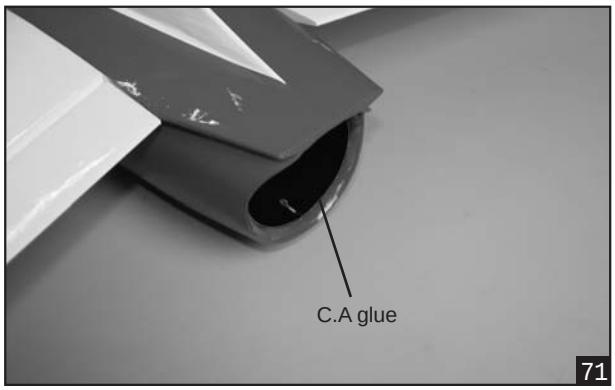


8. Trim the plastic cover.

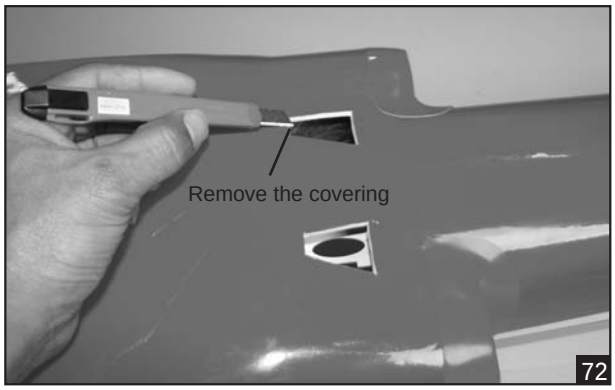
9. Glue the plastic cover.



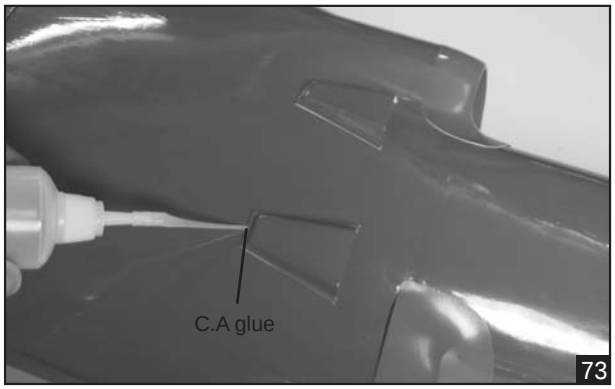
10. Fix the air outlet.



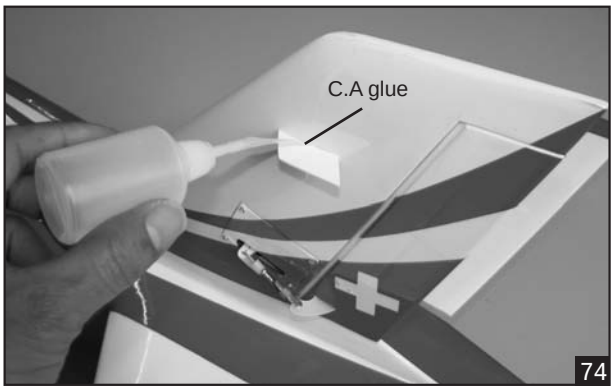
11. Cut the hole on the fuselage for air inlet.



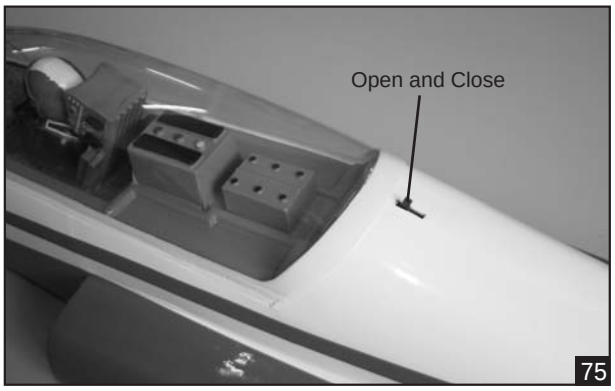
12. Glue the plastic cover.



13. Glue the wooden plate onto the vertical stabilizer.



OPEN AND CLOSE THE CANOPY



BALANCING

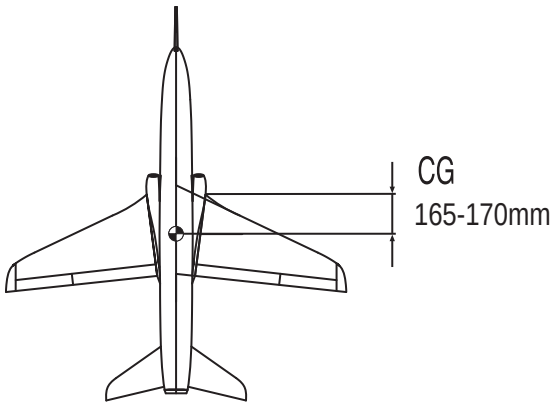
1. It is critical that your airplane be balanced correctly. Improper balance will cause your plane to lose control and crash.

   THE CENTER OF GRAVITY IS LOCATED 165-170mm BACK FROM THE LEADING EDGE OF THE WING, AT THE FUSELAGE. BALANCE A PLANE UPSIDE DOWN WITH THE FUEL TANK EMPTY.

2. Mount the wing to the fuselage. Using a couple of pieces of masking tape, place them on the top side of the wing 165-170mm back from the leading edge, at the fuselage sides.

3. Turn the airplane upside down. Place your fingers on the masking tape and carefully lift the plane.

4. If the nose of the plane falls, the plane is nose heavy. To correct this first move the battery pack further back in the fuselage. If this is not possible or does not correct it, stick small amounts of lead weight on the fuselage under the horizontal stabilizer. If the tail of the plane falls, the plane is tail heavy. To correct this, move the battery and receiver forward or if this is not possible, stick weight into the firewall. When balanced correctly, the airplane should sit level or slightly nose down when you lift it up with your fingers.



LATERAL BALANCE

After you have balanced a plane on the C.G. You should laterally balance it. Doing this will help the airplane track straighter.

5. Turn the airplane upside down. Attach one loop of heavy string to the engine crankshaft and one to the tail wheel wire. With the wings level, carefully lift the airplane by the string. This may require two people to make it easier.

6. If one side of the wing fall, that side is heavier than the opposite. Add small amounts of lead weight to the bottom side of the lighter wing half's wing tip. Follow this procedure until the wing stays level when you lift the airplane.

CONTROL THROWS

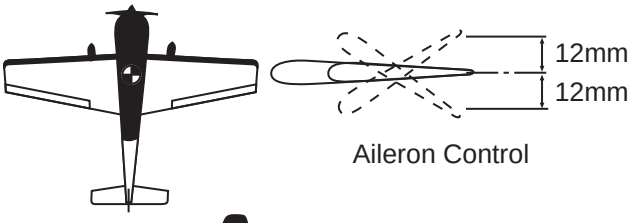
1. We highly recommend setting up a plane using the control throws listed.

2. The control throws should be measured at the widest point of each control surface.

3. Check to be sure the control surfaces move in the correct directions.

- **LOW RATE**

Ailerons :	12mm up	12mm down
Elevator :	12mm up	12mm down
Rudder :	20mm right	20mm left
Flap T/O:	15mm - Landing	20mm



Aileron Control

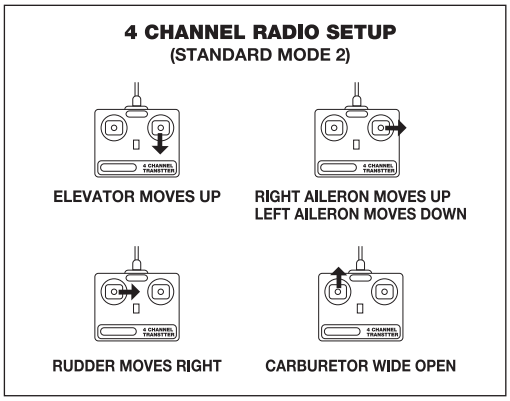
Elevator Control

Rudder Control

Flap Control

- **Hi RATE**

Ailerons :	10mm up	10mm down
Elevator :	10mm up	10mm down
Rudder :	20mm right	20mm left

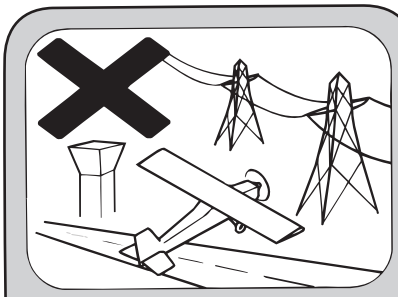


FLIGHT PREPARATION PRE FLIGHT CHECK

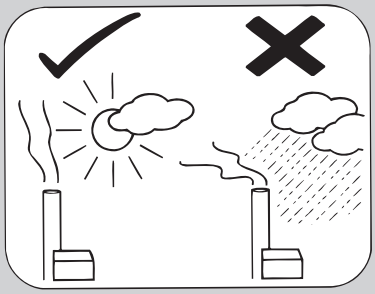
1. Completely charge your transmitter and receiver batteries before your first day of flying.
2. Check every bolt and every glue joint in your plane to ensure that everything is tight and well bonded.
3. Double check the balance of the airplane
4. Check the control surface
5. Check the receiver antenna. It should be fully extended and not coiled up inside the fuselage.
6. Properly balance the propeller.

I/C FLIGHT WARNINGS

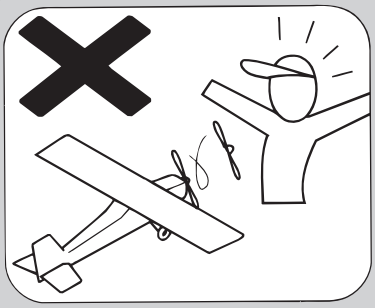
Always operate in open areas, away from factories, hospitals, schools, buildings and houses etc. **NEVER** fly your aircraft close to people or built up areas.



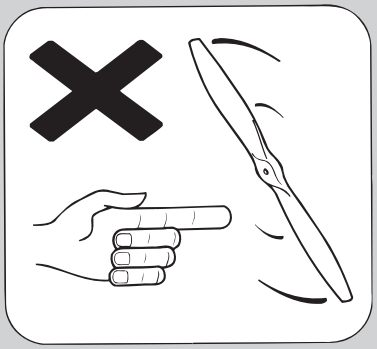
NEVER fly near power lines, aerials or other dangerous areas including airports, motorways etc.



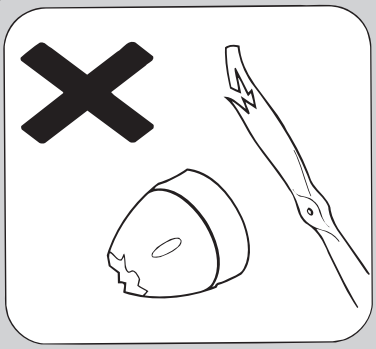
NEVER fly in wet conditions or on windy or stormy days.



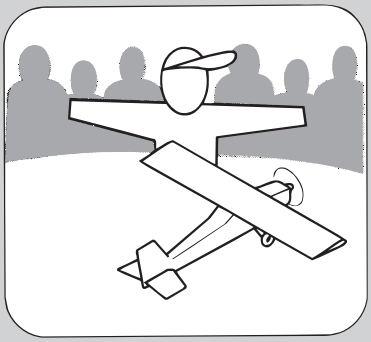
ALWAYS adjust the engine from behind the propeller, and do not allow any part of your body to be in line with the propeller.



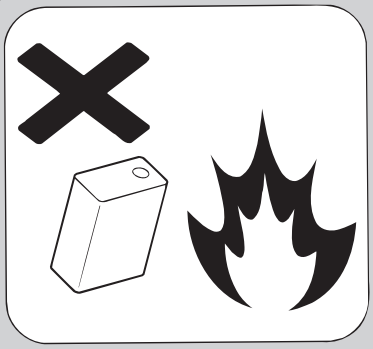
THE PROPELLER IS DANGEROUS
Keep fingers, clothing (ties, shirt sleeves, scarves) or any other loose objects that could be caught or drawn in, away from the propeller. Take care at **ALL** times.



NEVER use damaged or deformed propellers or spinners.

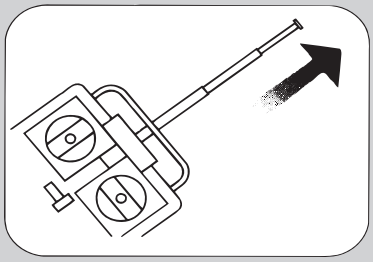


Keep all onlookers (especially small children and animals) well back from the area of operation. This is a flying aircraft, which will cause serious injury in case of impact with a person or animal.

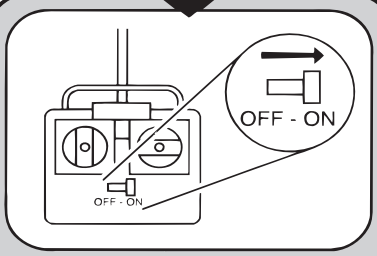


DO NOT dispose of empty fuel containers on a fire, this can lead to an explosion.

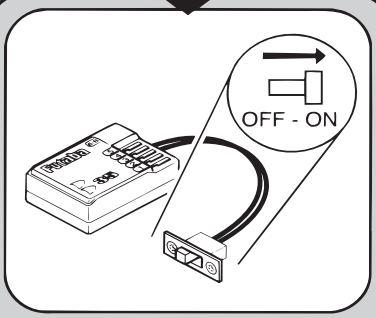
I/C FLIGHT GUIDELINES



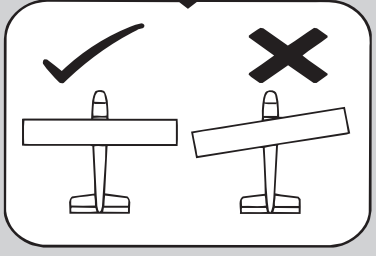
When ready to fly, first extend the transmitter aerial.



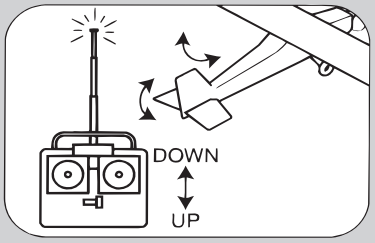
Switch on the transmitter.



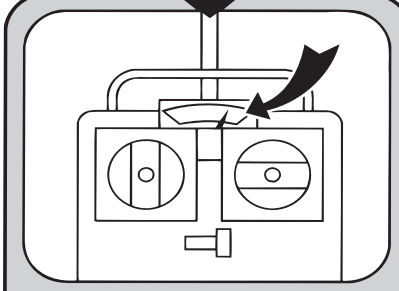
Switch on the receiver.



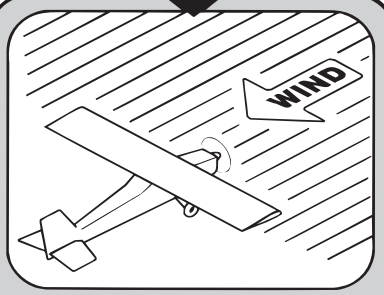
Check that the wings are correctly fitted to the fuselage.



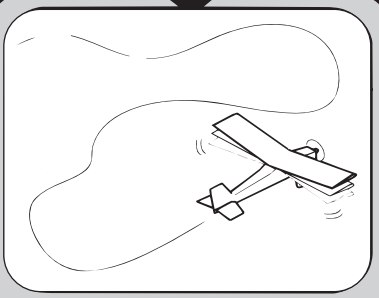
Operate the control sticks on the transmitter and check that the control surfaces move freely and in the CORRECT directions.



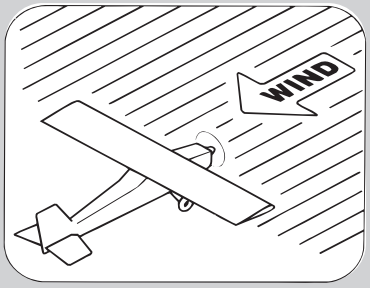
Check that the transmitter batteries have adequate power.



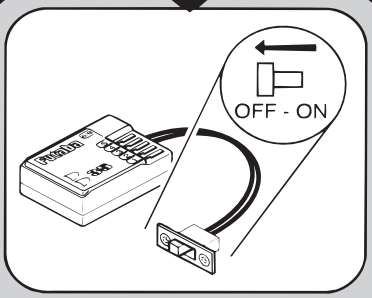
ALWAYS take off into the wind.



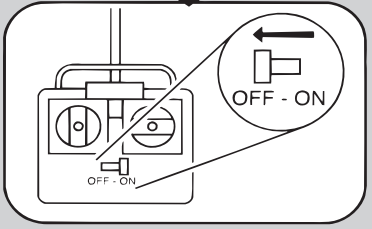
If the model does not respond correctly to the controls, land it as soon as possible and correct the fault.



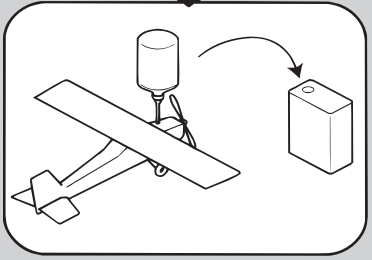
ALWAYS land the model INTO the wind, this ensures that the model lands at the slowest possible speed.



Switch off the receiver.



Switch off the transmitter.



Empty the fuel tank after flying, fuel left in the tank can cause corrosion and lead to engine problems.

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