

# DECATHLON 52

**Sport-Scale Almost Ready-to-Fly Classic**

Another Quality Airplane  
Brought To You By:



## INSTRUCTIONS FOR FINAL ASSEMBLY

The Global Decathlon 52 ARF is distributed exclusively by Global Hobby Distributors 18480 Bandilier Circle, Fountain Valley, CA 92708



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**Kit Product Number 126515**

### Specifications:

- **Wing Span:** 63 Inches
- **Wing Area:** 641 Square Inches
- **Wing Loading:** 20 - 22 Ounces Per Square Foot
- **Length:** 45.5 Inches
- **Weight RTF:** 5.75 - 6.25 Pounds
- **Functions:** Ailerons, Elevator, Rudder & Throttle
- **Power:** .52 - .61 2-Stroke or .70 - .91 Four Stroke
- **Radio:** 4 Channel w/5 Standard Ball Bearing Servos

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## SAFETY WARNING

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This R/C airplane is not a toy! If misused or abused, it can cause serious bodily injury and/or damage to property. Fly only in open areas and preferably at a dedicated R/C flying site. We suggest having a qualified instructor carefully inspect your airplane before its first flight. Please carefully read and follow all instructions included with this airplane, your radio control system and any other components purchased separately.

### FOR YOUR INFORMATION

To make your modeling experience totally enjoyable, we recommend that you get experienced, knowledgeable help with assembly and during your first flights. Your local hobby shop has information about flying clubs in your area whose membership includes qualified instructors. If there is no hobby shop in your area, we recommend that you contact the AMA at the address below. They will be able to help you locate a flying field near you.

Academy of Model Aeronautics  
5151 East Memorial Drive  
Muncie IN 47302-9252  
(800) 435-9262  
[www.modelaircraft.org](http://www.modelaircraft.org)

### OUR GUARANTEE

Global guarantees this kit to be free from defects in both material and workmanship, at the date of purchase. This does not cover any component parts damaged by use, misuse or modification. **In no case shall Global's liability exceed the original cost of the purchased kit.**

In that Global has no control over the final assembly or material used for final assembly, no liability shall be assumed for any damage resulting from the use by the user of the final user-assembled product. By the act of using the final user-assembled product, the user accepts all resulting liability.

## INTRODUCTION


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Thank you for purchasing the new **Global Decathlon 52 ARF**. Before completing the final assembly of your new airplane, please carefully read through this instruction manual in its entirety. Doing so will ensure your success the first time around!

### Global Decathlon 52 ARF Features:

- Semi-Symmetrical Wing with Barn-Door Ailerons
- Stable and Predictable Flight Characteristics - Aerobatic, Too
- Real Iron-On Covering Material
- Durable Aluminum Main Landing Gear
- Prepainted Molded Fiberglass Cowling and Wheel Pants
- Molded Clear Windshield and Side Windows
- Complete Hardware Set - Wheels, Fuel Tank, Pushrods, Aluminum Wing Struts and More
- Fast & Easy Assembly - Over 50 High-Resolution Digital Photos & Drawings Guide You

This instruction manual is designed to guide you through the entire final assembly process of your new airplane in the least amount of time possible. Along the way you'll learn how to properly assemble your new airplane and also learn tips that will help you in the future. We have listed some of our recommendations below. Please read through them before beginning assembly.

- Please read through each step before beginning assembly. You should find the layout very complete and straightforward. Our goal is to guide you through assembly without any of the headaches and hassles that you might expect.
- There are check boxes next to each step. After you complete a step, check off the box. This will help prevent you from losing your place.
- Cover your work table with brown paper or a soft cloth, both to protect the table and to protect the parts.
- Keep a couple of small bowls or jars handy to put the small parts in after you open the accessory bags.
- We're all excited to get a new airplane in the air, but take your time. This will ensure you build a straight, strong and great flying airplane.
- If you come across this symbol , it means that this is an important point or an assembly hint.

### Visit Our Website

<http://globalservices.globalhobby.com>

If you should find a part missing or damaged, or have any questions about assembly, please contact us at the address below:



**Global Services**  
**18480 Bandilier Circle**  
**Fountain Valley CA 92708**

**Phone: (714) 963-0329**

**Fax: (714) 964-6236**

**E-mail: [service@globalhobby.net](mailto:service@globalhobby.net)**

To serve your needs better, please include your email address with any correspondence you send to us. Your email address will be added to our Customer Service Database so you will automatically receive free updates and tech notices for your particular product. You will also receive repair status updates (if applicable) and other important information about your product as it becomes available.

### IMPORTANT INFORMATION ABOUT YOUR EMAIL ADDRESS

Global Hobby Distributors will not disclose the information it collects to outside parties. Global Hobby Distributors does not sell, trade, or rent your personal information to others. Your privacy is important to us.

## SECTION 1: OUR RECOMMENDATIONS

This section describes our recommendations to help you in deciding which types of accessories to purchase for your new Global Decathlon 52 ARF. These suggestions are not set in stone, but they should provide you with a good starting point.

### What Engine Should I Use?

The Decathlon 52 ARF will fly well using a number of different engines. If you decide to use a two stroke engine, a .52 - .61 size engine would be a perfect choice. This size range of engine would allow scale flight speeds at about 1/2 throttle, and at full throttle, the airplane would easily be able to handle most aerobatic maneuvers. A two stroke engine also offers the advantage of lighter weight and affordability. If you would like to use a four stroke engine, a .70 - .91 size engine would work well. Engines in this size range will have more than enough power to fly the airplane with authority. Using a four stroke engine in the Decathlon is ideal because of its scale sound.

Whether you choose a two stroke engine or a four stroke engine, the engine will be mounted sideways on the firewall. If you're using a two stroke engine, you will need to purchase and install an aftermarket Pitt's style muffler to direct the engine's exhaust out the bottom of the cowling. If you're using a four stroke engine, no aftermarket muffler will be required. The engine's stock muffler pipe can simply be rotated toward the bottom of the cowling.

### What Radio System & Servos Should I Use?

A standard 4 channel radio system with 5 standard ball bearing servos will be more than adequate. Since the ailerons use separate aileron servos, you will need to use two 12" long servo extensions and a servo Y-harness to join them.

### What Else Do I Need?

In addition to the two 12" long servo extensions and servo Y-harness, you will need to purchase separately a spinner, an in-cowl fueling valve and some basic building materials, such as adhesives, protective foam rubber for your radio equipment, and fuel tubing. We've provided a list below of the items we used on the airplane shown in this instruction manual.

#### Here's a List of What We Used to Finish Our Decathlon 52 ARF:

QTY. 1	210760	Magnum XLS .52A Two Stroke Engine	QTY. 2	444713	Cirrus 12" Servo Extensions
QTY. 1		Magnum Pitt's Style Muffler	QTY. 1	444728	Cirrus Servo Y-Harness
QTY. 1	237151	Magnum 1-3/4" Chrome Spinner*	QTY. 1	115923	Global XX Silicon Fuel Tubing
QTY. 1	608560	APC 11 x 6 Composite Propeller	QTY. 1	237500	Magnum In-Cowl Fueling Valve
QTY. 1	115559	Thunderbolt # 3 Glow Plug	QTY. 1	868638	Dubro 1/4" Protective Foam Rubber
QTY. 5		Cirrus Standard Ball Bearing Servos			

#### These are Optional Items:

QTY. 1	223730	Ernst Charge Receptacle
QTY. 1	444762	Cirrus On-Board Battery Indicator

### IMPORTANT

The part numbers listed for the Cirrus accessories are compatible with Hitec and JR radio control systems. These items are also available with connectors that are compatible with Futaba(J) and Airtronics(Z) radio control systems.

\*Includes 1/4 - 28 shaft adapter with M3 Socket-Cap Retaining Screw

## SECTION 2: TOOLS AND SUPPLIES REQUIRED

The tools and supplies listed below will be necessary to finish the assembly of your Global Decathlon 52 ARF. We suggest having these items on hand before beginning assembly.

- Kwik Bond Thin C/A # 887500
- Kwik Bond Thick C/A # 887510
- Kwik Bond 5 Minute Epoxy # 887560
- Kwik Bond 30 Minute Epoxy # 887565
- Kwik Bond C/A Debonder # 887545
- Pacer Formula 560 Canopy Glue # 339176
- Wilhold Silicone Sealant # 335407
- # 0, # 1 and # 2 Phillips Head Screwdrivers
- 2.5mm and 3mm Hex Wrenches
- Adjustable Wrench(2)
- Wire Cutters
- Needle Nose Pliers
- Excel Modeling Knife # 692801
- Promax Canopy Scissors # 361120
- Electric Drill
- Assorted Drill Bits
- Dubro T-Pins # 567685
- Ernst Airplane Stand # 223977
- Rotary Tool w/Cutting Disc & Sanding Drum
- Ruler
- Pencil
- Builder's Triangle
- 220 Grit Sandpaper w/Sanding Block
- Masking Tape
- Paper Towels
- Rubbing Alcohol
- NHP Epoxy Mixing Sticks # 864204
- NHP Epoxy Mixing Cups # 864205
- Global Heat Gun # 360920 (Optional)

## SECTION 3: KIT CONTENTS

We have organized the parts as they come out of the box for easier identification during assembly. Before you begin assembly, group the parts as we list them below. This will ensure that you have all of the parts before you begin assembly and it will also help you become familiar with each part. If you find any parts missing or damaged, please contact us below:



**Global Services**  
18480 Bandilier Circle  
Fountain Valley CA 92708

**On the Web**  
<http://globalservices.globalhobby.com>

**Phone: (714) 963-0329**

**Fax: (714) 964-6236**

**E-mail: [service@globalhobby.net](mailto:service@globalhobby.net)**

### AIRFRAME ASSEMBLIES

- (1) Fuselage
- (1) Right Wing Panel w/Aileron
- (1) Left Wing Panel w/Aileron
- (1) Horizontal Stabilizer w/Elevator Halves
- (1) Rudder

### THROTTLE CONTROL SYSTEM

- (1) 17-1/2" Pushrod Wire w/Z-Bend
- (1) 10" Nylon Pushrod Housing
- (1) Servo Connector w/Grub Screw & C-Clip

### ENGINE MOUNT ASSEMBLY

- (2) Engine Mounting Beams
- (4) M4 x 20 Socket-Cap Screws
- (4) M3 x 30 Socket-Cap Screws
- (4) M4 Flat Washers
- (8) M3 Flat Washers
- (4) M3 Lock Nuts

**Continued On Next Page**

### LANDING GEAR ASSEMBLY

- (1) Prebent Aluminum Main Gear Strut
- (2) Fiberglass Wheel Pants
- (2) Main Gear Wheels
- (4) M3 x 8 Machine Screws
- (2) M5 x 35 Threaded Axles
- (2) M5 Hex Nuts
- (2) Wheel Collars w/Grub Screws

### AILERON CONTROL SYSTEM

- (2) 4" Threaded Wires
- (4) Hardwood Servo Mounting Blocks
- (2) Nylon Control Horns
- (2) Nylon Control Horn Backplates
- (4) M2 x 22 Machine Screws
- (2) Nylon Clevises w/Removable Pins
- (2) Nylon Snap Links
- (6) C/A Style Hinges

### ELEVATOR & RUDDER CONTROL SYSTEMS

- (2) 11" Balsa Dowels
- (2) 6-3/4" Plain Wires
- (3) 6-3/4" Threaded Wires
- (3) Nylon Control Horns
- (3) Nylon Control Horn Backplates
- (6) M2 x 12 Machine Screws
- (3) Nylon Clevises w/Removable Pins
- (2) Nylon Snap Links
- (1) Heat-Shrink Tubing (Large Diameter)
- (9) C/A Style Hinges

### TAIL WHEEL ASSEMBLY

- (1) Tail Wheel Wire w/Tail Wheel
- (1) Aluminum Tail Wheel Bracket
- (2) M2 x 8 Wood Screws

### WING STRUT ASSEMBLY

- (2) Aluminum Wing Struts (Long)
- (2) Aluminum Wing Struts (Short)
- (1) Aluminum Wing Strut Mounting Strap
- (6) M3 x 10 Wood Screws
- (2) M3 x 8 Machine Screws
- (2) M3 Flat Washers
- (2) M3 Hex Nuts

### FUEL TANK ASSEMBLY

- (1) 260cc Fuel Tank
- (1) Large Diameter Metal Plate
- (1) Small Diameter Metal Plate
- (1) Rubber Stopper
- (1) Fuel Pick-Up "Clunk"
- (1) M3 x 18 Machine Screw
- (1) Silicone Fuel Tubing
- (3) Aluminum Tubing

### MISCELLANEOUS FUSELAGE PARTS

- (1) Fiberglass Cowling
- (1) Clear Windshield
- (4) Clear Side Windows
- (1) Plywood Servo Tray
- (4) M2 x 8 Wood Screws
- (1) Decal Set

### MISCELLANEOUS WING PARTS

- (1) Hardwood Wing Joiner
- (2) M4 x 30 Socket-Cap Screws
- (2) M4 Flat Washers
- (8) M2 x 8 Wood Screws

## SECTION 4: METRIC CONVERSION CHART

To convert inches into millimeters: Inches x 25.4 = mm

To convert millimeters into inches: Millimeters / 25.4 = in

1/64"	=	.4mm	3/16"	=	4.8mm	1"	=	25.4mm	21"	=	533.4mm
1/32"	=	.8mm	1/4"	=	6.4mm	2"	=	50.8mm	24"	=	609.6mm
1/16"	=	1.6mm	3/8"	=	9.5mm	3"	=	76.2mm	30"	=	762.0mm
3/32"	=	2.4mm	1/2"	=	12.7mm	6"	=	152.4mm	36"	=	914.4mm
1/8"	=	3.2mm	5/8"	=	15.9mm	12"	=	304.8mm			
5/32"	=	4.0mm	3/4"	=	19.0mm	18"	=	457.2mm			

## SECTION 5: REPLACEMENT PARTS

Global stocks a complete line of replacement parts for your Global Decathlon 52 ARF. Listed below are the replacement parts that are available along with their respective part numbers for easy ordering convenience. We suggest ordering directly from your local dealer. If your dealer does not stock Modeltech products, you can order directly from us at the address shown below:



**Global Services**  
18480 Bandilier Circle  
Fountain Valley CA 92708

**On the Web**  
<http://globalservices.globalhobby.com>


**Phone: (714) 963-0329      Fax: (714) 964-6236**

Global Decathlon 52 ARF - Complete .....	126515	Windshield & Side Windows .....	170294
Instruction Manual .....	170288	Fiberglass Wheel Pants .....	170295
Wing Set .....	170289	Pushrod Set w/Control Horns & Clevises .....	170296
Wing Strut Set .....	170290	Hardware Bag .....	170297
Fuselage Set .....	170291	Aluminum Landing Gear Strut .....	170298
Stabilizer Set w/Rudder .....	170292	Tail Wheel Assembly .....	170299
Fiberglass Cowling .....	170293	Decal Set .....	170300

## SECTION 6: A NOTE ABOUT COVERING

The covering material used on the Global Decathlon 52 ARF is real iron-on, heat-shrink covering material, not cheap "shelf paper." Because of this, it is possible with heat and humidity changes that the covering on your airplane may wrinkle or sag. This trait is inherent in all types of heat-shrink material. To remove any wrinkles that might be visible you will need to purchase, or borrow from a fellow modeler, a heat iron. If you need to purchase one, the **Global Heat Sealing Iron # 360900** is recommended.

**Follow this simple procedure to remove the wrinkles:**

- Plug in and turn on the sealing iron to the medium-high temperature setting. Allow the iron to heat up for approximately 5 - 7 minutes.
- After the iron has reached temperature, lightly apply the iron to the wrinkled section of the covering. Move the iron slowly over the wrinkled section until the covering tightens and the wrinkles disappear. You will notice that the color of the covering will darken when it is heated. When the covering cools back down, it will return to its normal color.
-  If the color layer smears from any of the seams the temperature of the iron is too hot. Turn the temperature dial down and wait about 5 minutes for the iron to adjust to the lower temperature. You can remove any excess color streaks using a paper towel soaked with a small quantity of Acetone.

### WARNING

**We do not suggest storing your airplane in an extremely hot environment (like the back of your car in direct sunlight) for any length of time. The extreme heat could cause the covering material to wrinkle or sag and possibly damage the windshield, side windows and the fragile components of the radio system.**

## SECTION 7: WING ASSEMBLY

### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

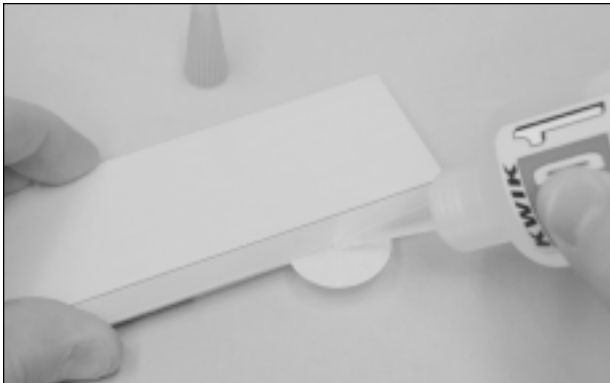
- (1) Right Wing Panel w/Aileron
- (1) Left Wing Panel w/Aileron
- (4) Hardwood Servo Mounting Blocks
- (6) C/A Style Hinges
- (1) Hardwood Wing Joiner
- (8) M2 x 8 Wood Screws


### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- Kwik Bond Thin C/A
- Kwik Bond 5 Minute Epoxy
- Kwik Bond 30 Minute Epoxy
- Kwik Bond C/A Debonder
- # 1 Phillips Head Screwdriver
- Excel Modeling Knife
- Electric Drill
- 1/16" Drill Bit
- Ruler
- Pencil
- 220 Grit Sandpaper w/Sanding Block
- Masking Tape
- Paper Towels
- Rubbing Alcohol
- NHP Epoxy Mixing Sticks
- NHP Epoxy Mixing Cups

### Step 1: Hinging the Ailerons


For flutter-free control surfaces it is imperative that the hinges be glued in properly. This includes both having a tight hinge gap and using plenty of thin C/A glue. **The hinges are NOT glued into place from the factory.**



- Center each of the hinges within its precut slot in both ailerons (three in each aileron). If you can't push the hinge in halfway, carefully cut the slot deeper using a modeling knife.
- Carefully glue each hinge into place using 5-6 drops of thin C/A on each side of the hinge. **Do not use thick C/A or epoxy. Use only thin C/A for proper adhesion.**
-  If any C/A gets onto the aileron, it can be removed promptly using a paper towel soaked with a small quantity of C/A Debonder.

- Working with one aileron and wing panel for now, slide the aileron and its hinges into the precut hinge slots in the trailing edge of the wing panel, making sure that the leading edge of the aileron is pushed up firmly against the trailing edge of the wing panel, and that the ends of the aileron don't rub against the wing.



- While holding the aileron tight against the wing panel, pivot the aileron down about 45° and apply 5-6 drops of thin C/A to the exposed area of each hinge. Turn the wing panel over and repeat for the other side of the hinges.
-  Remove any C/A that may run down the hinge line using C/A Debonder.
- Allow the C/A to dry for about 15 minutes, then pivot the aileron up and down to free up the hinges.

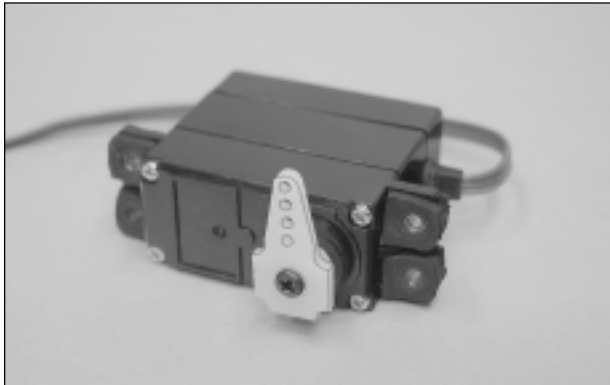
- Repeat the previous procedures to hinge the second aileron.



**IMPORTANT** After the C/A has fully cured, gently grasp each aileron and pull on it like you are trying to pull out the hinges. The hinges should hold securely. If one or more hinges feels loose, apply more C/A to the hinge(s) and allow it to completely cure.

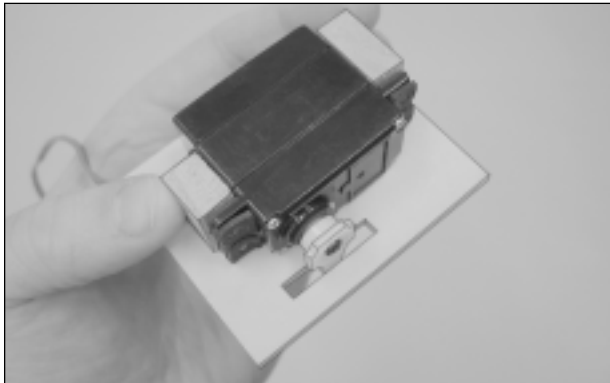
## Step 2: Installing the Aileron Servos

- ❑ Install the rubber grommets and brass collets onto one aileron servo, making sure to install the collets with the flanges toward the bottom of the servo.
- ❑ Connect your radio system and plug the aileron servo into the receiver. Center the servo by double-checking that the aileron trim lever on your transmitter is centered.



- ❑ Using a modeling knife, cut away all but one arm from a large "4-point" servo horn.
- ❑ Install the servo horn to the servo, making sure that it's centered, as shown.
- ❑ Install the servo horn retaining screw to secure the servo horn to the servo.

- ❑ Remove the servo hatch cover from the bottom of one wing panel and use a modeling knife to cut away and remove the covering material from over the precut slot in the hatch cover.

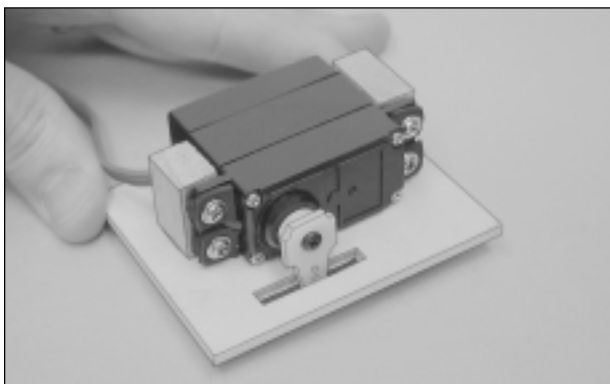


- ❑ Temporarily place the aileron servo, along with two hardwood servo mounting blocks, onto the bottom of the servo hatch cover. The servo arm should be inserted through, and centered within, the precut slot, as shown.

**IMPORTANT** You will need to cut a notch in one of the blocks so that the block doesn't interfere with the servo wire.

- ❑ When satisfied with the alignment, mark the locations of the servo mounting blocks onto the servo hatch cover.

- ❑ Remove the servo and glue the two hardwood blocks into place using a generous amount of 5 minute epoxy. Remove any excess epoxy using a paper towel and rubbing alcohol, and allow the epoxy to completely set up before proceeding.



- ❑ After the epoxy has completely set up, mount the servo securely into place.

**IMPORTANT** To prevent the mounting blocks from splitting, drill 1/16" diameter pilot holes for the mounting screws.

- ❑ Repeat the previous procedures to install your second aileron servo onto the other servo hatch cover.

### Step 3: Installing the Servo Hatch Cover Assemblies

- ❑ Using a modeling knife, cut away and remove the covering material from over the precut servo extension exit hole in the bottom of each wing panel. Each hole is located 1-1/8" out from the root rib and 5-1/4" in front of the trailing edge.
- ❑ Install one 12" servo extension lead onto each of the two aileron servo leads.

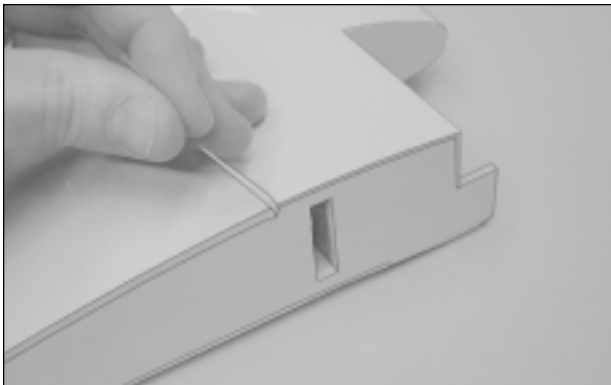
**IMPORTANT** To prevent the servo leads from pulling apart during assembly, or worse, during flight, wrap the joint where the two connectors are plugged together using a strip of masking tape.

- ❑ Working with one servo assembly and wing panel for now, run the servo extension lead through the wing using the factory-installed length of string; run it through the wing from the servo hatch to the servo extension exit hole.
- ❑ Set the servo hatch cover assembly into place, making sure that the servo arm is positioned toward the root edge and leading edge of the wing panel.



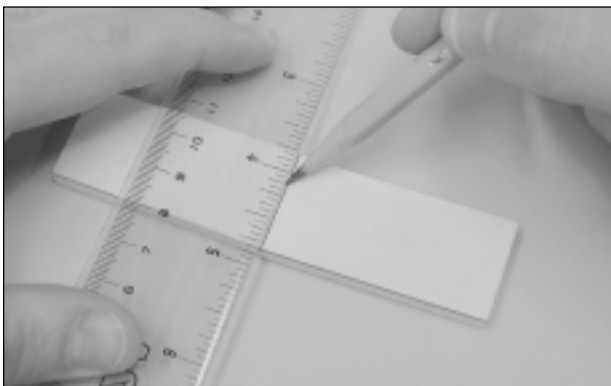
- ❑ While holding the servo hatch cover firmly in place and aligned, carefully drill four 1/16" diameter pilot holes into the servo hatch cover and through the wing, 1/8" in from each corner of the servo hatch cover.
- ❑ Secure the servo hatch cover assembly to the wing using four M2 x 8 wood screws.
- ❑ Repeat the previous procedures to install the second servo hatch cover assembly onto the other wing panel.

### Step 4: Joining the Wing Panels

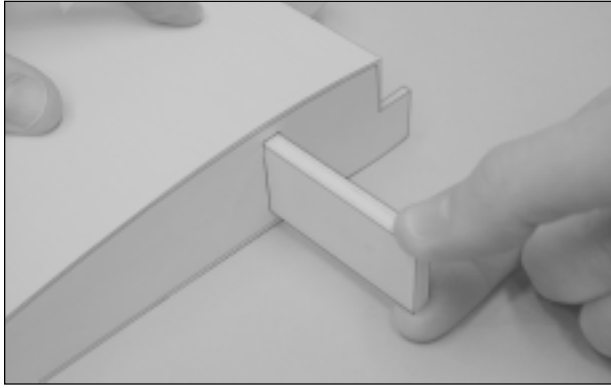


- ❑ Using a modeling knife, cut away and remove the excess covering material that overlaps onto the root ribs of each wing panel, leaving about 1/16" overlapped so it does not pull away.

**IMPORTANT** It's very important to the integrity of the wing center section joint that you remove as much covering material from the root ribs as possible.



- ❑ Use a ruler and a pencil to locate and draw a vertical centerline on each side of the hardwood wing joiner.



❑ Test-fit the wing joiner into each wing panel. It should slide easily into each wing panel up to the centerline you drew.

👉 If it does not fit properly, use 220 grit sandpaper with a sanding block to lightly sand the edges and tips of the joiner, until you are satisfied with the fit.

**IMPORTANT** The wing joiner is cut in the shape of a shallow "V." Make sure that this "V" shape is toward the **top** of the wing. This will ensure that the wing panels fit together with the proper amount of dihedral.

❑ Slide both wing panels together with the wing joiner temporarily installed (without using glue).

❑ Look carefully at the center section joint: the wing panels should fit together tightly with few or no gaps in the joint.

👉 If the wing panels do not fit together properly, remove the wing joiner and use 220 grit sandpaper with a sanding block to lightly sand the edges and tips of the joiner, until you are satisfied with the fit.

❑ When satisfied with the fit, pull the wing panels apart and remove the wing joiner.



❑ Apply a long strip of masking tape to the top and bottom edges of the root rib on each wing panel.

👉 The masking tape will prevent excess epoxy from getting onto the wing panels when you join them.

❑ Mix a generous amount of 30 minute epoxy. Working with only one wing panel for now, apply a thin layer of epoxy inside the wing joiner box and to only half of the wing joiner. Make sure to cover the top and bottom, as well as the sides, and use enough epoxy to fill any gaps.

**IMPORTANT** Do not use 5 minute epoxy to join the wing panels. It is not strong enough. Use only 30 minute epoxy.

❑ Slide the wing joiner into the wing panel up to its centerline. Quickly remove any excess epoxy using a paper towel and rubbing alcohol, and allow the epoxy to set up before proceeding.

❑ After the epoxy has set up, test-fit both wing panels together again to double-check that they still fit together properly. Check the leading and trailing edges, too. It's important that they be even with each other.

❑ Mix a generous amount of 30 minute epoxy and apply a thin layer to the exposed half of the wing joiner, the inside of the wing joiner box in the second wing panel, and the **entire surface of BOTH root ribs**. Make sure to use enough epoxy to fill any gaps.

❑ Slide the two wing panels together and realign them. Quickly wipe away any excess epoxy using a paper towel and rubbing alcohol, and use pieces of masking tape to hold the two wing panels aligned until the epoxy fully cures.

❑ Once the epoxy has fully cured, remove the masking tape and double-check the center section joint. If any gaps are present, mix a small quantity of 30 minute epoxy and carefully fill any remaining gaps. Quickly remove any excess epoxy using a paper towel and rubbing alcohol, and allow the epoxy to thoroughly cure.

## SECTION 8: STABILIZER INSTALLATION

### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- (1) Fuselage
- (1) Horizontal Stabilizer w/Elevator Halves
- (6) C/A Style Hinges
- (2) M4 x 30 Socket-Cap Screws
- (2) M4 Flat Washers

### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- Kwik Bond Thin C/A
- Kwik Bond 5 Minute Epoxy
- Kwik Bond 30 Minute Epoxy
- Kwik Bond C/A Debonder
- 3mm Hex Wrench
- Excel Modeling Knife
- Dubro T-Pins
- Ernst Airplane Stand
- Ruler
- Pencil
- 220 Grit Sandpaper w/Sanding Block
- Masking Tape
- Paper Towels
- Rubbing Alcohol
- NHP Epoxy Mixing Sticks
- NHP Epoxy Mixing Cups

### Step 1: Hinging the Elevator Halves

- Hinge the elevator halves using the same technique as hinging the ailerons. Each elevator half is hinged using three hinges. Remember, after allowing the C/A to fully cure, pull on the elevator halves to check the integrity of the hinges.

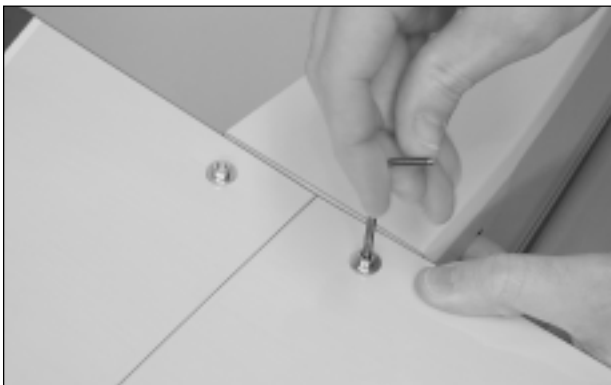
### Step 2: Aligning the Horizontal Stabilizer



- Using a modeling knife, cut away and remove the covering material from over both sides of the stabilizer mounting slot in the fuselage.
- Using a modeling knife and a ruler, carefully cut out the section of the fuselage directly behind the horizontal stabilizer mounting slot.

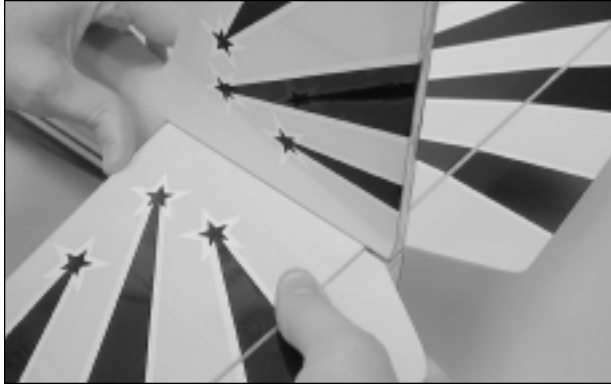
**IMPORTANT** Save the piece that you cut out. It will be glued back into place after installing the stabilizer.

- Using a modeling knife, cut away and remove the covering material from over the top and bottom of the two predrilled wing screw holes in the wing. One hole is located in each wing panel, 1-3/8" out from the centerline and 5/8" in front of the trailing edge.



- Drip several drops of thin C/A into the wing screw holes in the wing and allow the C/A to fully cure. The C/A will harden the surrounding balsa, making the mounting area stronger.
- Place the wing into the wing saddle and secure it into place using two M4 x 30 Socket-Cap Screws and two M4 flat washers.

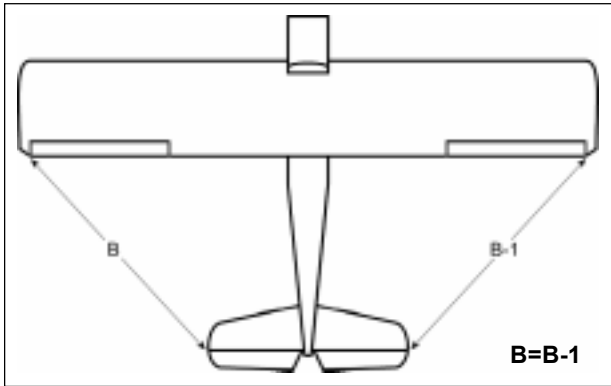
**IMPORTANT** Don't overtighten the screws or you'll crush the wing. They only need to be tightened lightly.



☐ Slide the stabilizer into the mounting slot and temporarily align it. The stabilizer should be pushed forward completely and the inside edge of the elevator halves should be centered from side to side with the back of the fuselage.

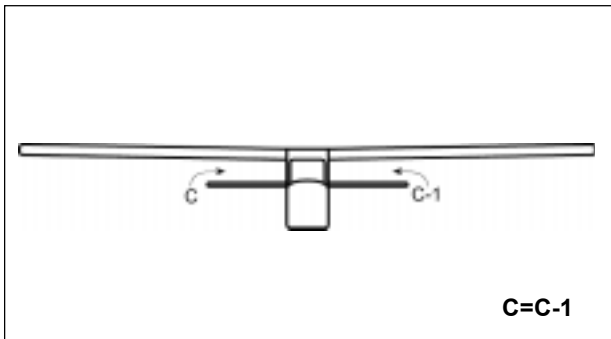
☐ When satisfied with the alignment, hold **only** the trailing edge of the stabilizer in position using a T-Pin.

☞ The front of the stabilizer should be able to pivot from side to side and the back should stay firmly in place and aligned.



☐ Use a ruler to carefully measure the distance between the tips of the stabilizer and the tips of the wing. Pivot the front of the stabilizer until both of these measurements are equal. When both measurements are equal, the stabilizer is square to the wing.

☐ When you are satisfied that the stabilizer is square to the wing, use a pencil to draw a couple of marks on each side of the front of the stabilizer where it and the fuselage sides meet, then use a couple of pieces of masking tape to hold the stabilizer firmly in place and aligned.



☐ With the stabilizer held firmly in place, look from the front of the airplane at both the wing and the stabilizer. When aligned properly, the stabilizer should be parallel to the wing.

☞ If the stabilizer is out of alignment, remove it and use 220 grit sandpaper with a sanding block to sand down the higher side of the stabilizer mounting slot, then reinstall the stabilizer and check the alignment once more. Repeat this procedure until you are satisfied with the alignment.

### Step 3: Mounting the Horizontal Stabilizer



☐ When satisfied with the fit and alignment, use a pencil to draw a line on each side of the stabilizer where it meets the fuselage sides. Do this on both the top and the bottom.



- ❑ Remove the stabilizer. Using a modeling knife, carefully cut away and remove the covering material from between the lines you drew. Do this on both the top and the bottom.

**WARNING** When cutting through the covering to remove it, cut with only enough pressure to cut through only the covering itself. Cutting down into the balsa structure could weaken the stabilizer and cause it to fail during flight.

- ❑ Mix a generous amount of 30 minute epoxy and carefully apply a thin layer to the top and bottom of the gluing surfaces of the stabilizer, and to the gluing surfaces of the stabilizer mounting slot.
- ❑ Slide the stabilizer back into place and realign it, double-checking all of your measurements once more before the epoxy sets up. Remember to remove any excess epoxy before it sets up using a paper towel and rubbing alcohol.
- ❑ After the epoxy sets up, use 5 minute epoxy to glue the piece that you cut out previously back into the fuselage.

## SECTION 9: TAIL WHEEL INSTALLATION

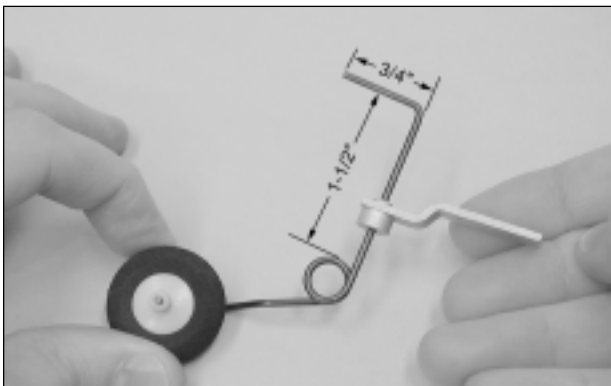
### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>❑ (1) Rudder</li> <li>❑ (3) C/A Style Hinges</li> <li>❑ (1) Tail Wheel Wire w/Tail Wheel</li> </ul> | <ul style="list-style-type: none"> <li>❑ (1) Aluminum Tail Wheel Bracket</li> <li>❑ (2) M2 x 8 Wood Screws</li> </ul> |
|--|---|

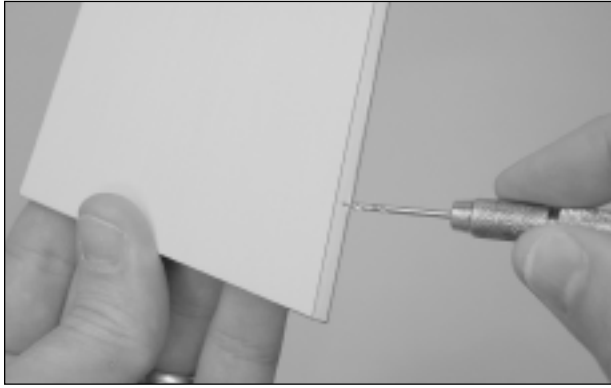
### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>❑ Kwik Bond Thin C/A</li> <li>❑ Kwik Bond 5 Minute Epoxy</li> <li>❑ Kwik Bond C/A Debonder</li> <li>❑ # 1 Phillips Head Screwdriver</li> <li>❑ Wire Cutters</li> <li>❑ Needle Nose Pliers</li> <li>❑ Excel Modeling Knife</li> <li>❑ Electric Drill</li> <li>❑ 1/16" &amp; 5/64" Drill Bits</li> </ul> | <ul style="list-style-type: none"> <li>❑ Ernst Airplane Stand</li> <li>❑ Ruler</li> <li>❑ Pencil</li> <li>❑ 220 Grit Sandpaper w/Sanding Block</li> <li>❑ Masking Tape</li> <li>❑ Paper Towels</li> <li>❑ Rubbing Alcohol</li> <li>❑ NHP Epoxy Mixing Sticks</li> <li>❑ NHP Epoxy Mixing Cups</li> </ul> |
|---|--|

### Step 1: Installing the Tail Wheel Wire

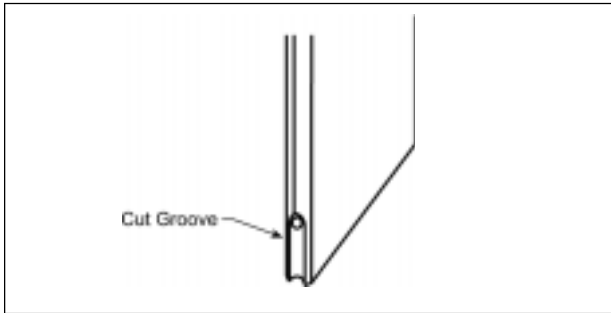


- ❑ Slide the aluminum mounting bracket onto the tail wheel wire, making sure that the bushing is down toward the coil in the tail wheel wire, as shown.
- ❑ Using needle nose pliers, carefully make a 90° bend in the tail wheel wire, 1-1/2" up from the top of the coil.
- ❑ Using wire cutters, cut off the excess wire, leaving 3/4" of wire beyond the bend.

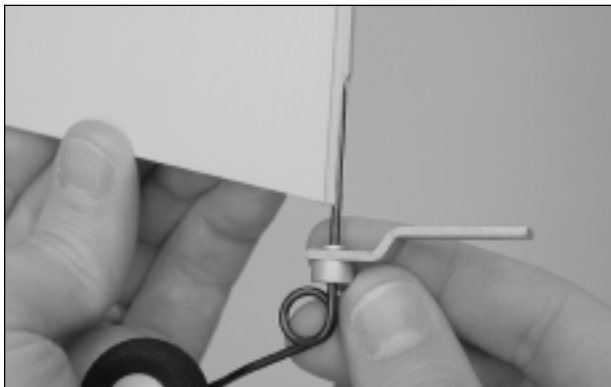


- ❑ Using a ruler and a pencil, measure up 1" from the bottom of the rudder (at the leading edge) and draw a mark.
- ❑ Using a drill with a 5/64" diameter drill bit, carefully drill a 7/8" deep hole into the leading edge of the rudder, at the mark you drew.

**IMPORTANT** Make sure that you drill the hole perpendicular to the leading edge and be careful not to drill out through the side of the rudder.



- ❑ Using a modeling knife, carefully cut a shallow groove in the leading edge of the rudder from the base of the hole down to the bottom of the rudder.



- ❑ Test-fit the tail wheel wire into the hole you drilled. When properly aligned, the wire should rest within the groove and the front edge of the wire should be flush with the leading edge of the rudder.

- ❑ With the tail wheel wire temporarily in place, use a pencil to draw a mark on the wire, at the bottom of the rudder.



- ❑ Remove the tail wheel wire and carefully make a shallow bend in the tail wheel wire, at the mark you drew, so that when you reinstall the tail wheel wire, the aluminum bracket is parallel with the bottom of the rudder, as shown.

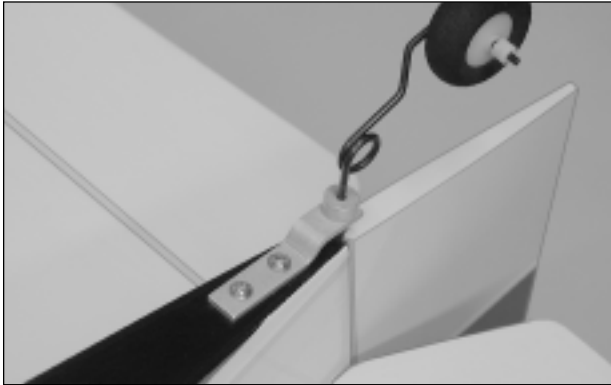
**IMPORTANT** This shallow bend is necessary so that the mounting bracket will fit against the bottom of the fuselage when the rudder is hinged into place. **Make the bend above the bracket, as shown.**

- ❑ When satisfied with the fit and alignment, remove the tail wheel wire and use 220 grit sandpaper to roughen **only** the gluing surfaces of the wire.
- ❑ Glue the tail wheel wire into place using 5 minute epoxy. Remove any excess epoxy using a paper towel and rubbing alcohol, and allow the epoxy to set up before proceeding.

## Step 2: Hinging the Rudder

❑ Hinge the rudder using the same technique as hinging the elevator halves. The rudder is hinged using a total of three hinges - two in the vertical stabilizer and one in the fuselage. Remember, after allowing the C/A to fully cure, pull on the rudder to check the integrity of the hinges.

👉 When hinging the rudder, double-check that the rudder counterbalance does not touch the top of the stabilizer. There should be a 1/16" gap between the two.



❑ After the C/A fully cures, mount the aluminum tail wheel bracket to the bottom of the fuselage using two M2 x 8 wood screws.

## SECTION 10: MAIN LANDING GEAR INSTALLATION

### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- |  |                                   |
|--|-----------------------------------|
| ❑ (1) Prebent Aluminum Main Gear Strut | ❑ (2) M5 x 35 Threaded Axles      |
| ❑ (2) Fiberglass Wheel Pants           | ❑ (2) M5 Hex Nuts                 |
| ❑ (2) Main Gear Wheels                 | ❑ (2) Wheel Collars w/Grub Screws |
| ❑ (4) M3 x 8 Machine Screws            |                                   |

### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

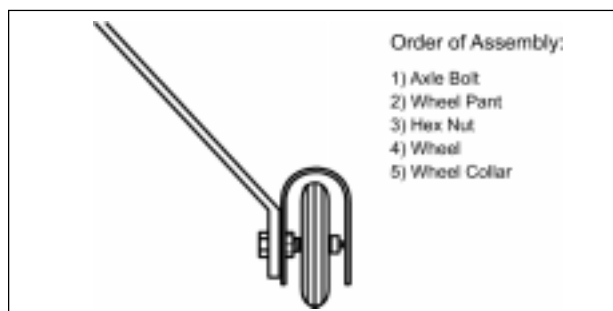
- |                                 |                        |
|---------------------------------|------------------------|
| ❑ # 1 Phillips Head Screwdriver | ❑ Ernst Airplane Stand |
| ❑ Adjustable Wrench(2)          |                        |

## Step 1: Installing the Main Gear Strut

❑ Install the main gear strut to the bottom of the fuselage, using four M3 x 8 machine screws.

👉 Blind nuts have been preinstalled into the landing gear mounting plate to thread the screws into.

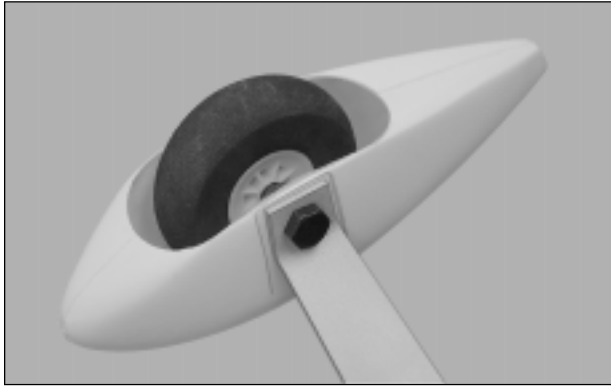
## Step 2: Installing the Wheels & Wheel Pants



❑ Slide one M5 x 35 threaded axle through the predrilled hole in the landing gear strut.

❑ Partially slide the wheel pant, followed by the M5 hex nut, main gear wheel and wheel collar onto the threaded axle.





- ❑ While holding the wheel pant in position (the molded recess in the side of the wheel pant should be parallel with the front and back edges of the landing gear strut), use two adjustable wrenches to firmly tighten the threaded axle and hex nut.

**IMPORTANT** Tighten the assembly firmly so that the wheel pant cannot rotate under pressure.

- ❑ Install the grub screw into the wheel collar and tighten it firmly, using the hex wrench included, to hold the wheel in place.
- ❑ Repeat the previous procedures to install the second wheel and wheel pant assembly. After both assemblies are in place, double-check that both wheel pants are lined up with each other when viewed from the side. With the fuselage sitting on a level surface, the back, bottom portion of each wheel pant should be parallel to the ground.

## SECTION 11: ENGINE INSTALLATION

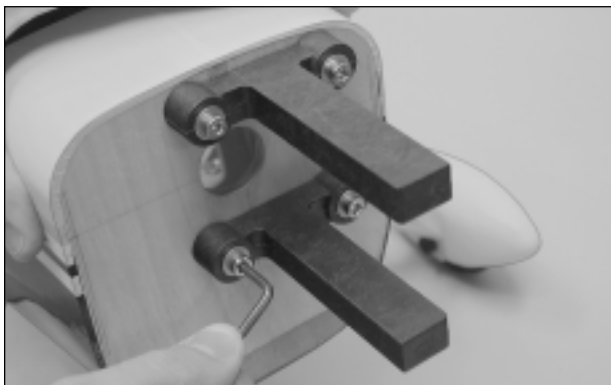
### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- |                                 |                       |
|---------------------------------|-----------------------|
| ❑ (2) Engine Mounting Beams     | ❑ (4) M4 Flat Washers |
| ❑ (4) M4 x 20 Socket-Cap Screws | ❑ (8) M3 Flat Washers |
| ❑ (4) M3 x 30 Socket-Cap Screws | ❑ (4) M3 Lock Nuts    |

### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- |                            |                        |
|----------------------------|------------------------|
| ❑ 2.5mm & 3mm Hex Wrenches | ❑ Ernst Airplane Stand |
| ❑ Adjustable Wrench        | ❑ Ruler                |
| ❑ Electric Drill           | ❑ Pencil               |
| ❑ 5/64" & 1/8" Drill Bits  |                        |

### Step 1: Installing the Engine Mounting Beams



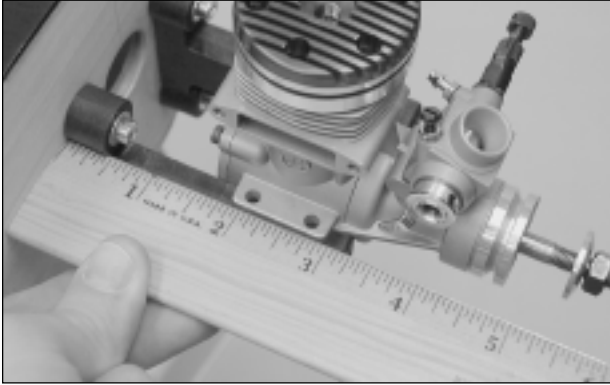
- ❑ Install the two engine mounting beams using four M4 x 20 socket-cap screws and four M4 flat washers. Tighten the screws firmly to hold the beams securely in place.


👉 Blind nuts have been preinstalled into the back of the firewall to thread the screws into.

**IMPORTANT** The engine mounting beams provided are adjustable. When you line up your engine in the next step, you may have to loosen the screws and readjust the width of the beams to suit your particular engine.


**IMPORTANT** Even though the engine mounting beams are adjustable, if the width of the engine you use is not within the adjustable range of the beams, you will have to modify the spacing of the beams. This can be done by removing the blind nuts and gluing pieces of hardwood dowel into the existing holes in the firewall. You can then redrill the holes to fit your engine's width and reinstall the blind nuts.

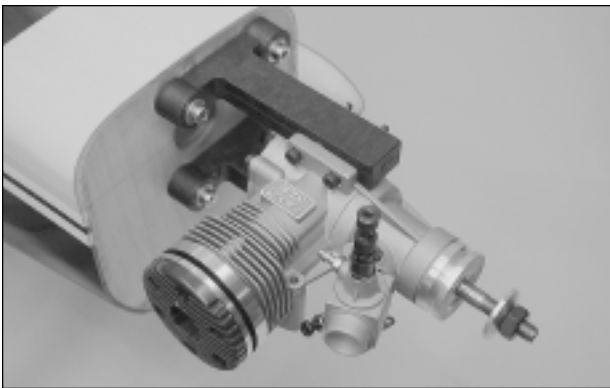
## Step 2: Aligning & Installing the Engine




- Set your engine onto the engine mounting beams.
- Using a ruler, measure the distance from the firewall to the front of the engine's thrust washer. Adjust the depth of the engine so that the measurement is 4-3/4".
-  You may have to loosen the screws and readjust the width of the beams to suit your particular engine.

- Carefully mark the locations of the engine mounting holes onto the mounting beams. Remove the engine and drill 5/64" diameter pilot holes through the mounting beams at the marks you drew.

 Be careful that you drill the holes straight down and not at an angle.



- Enlarge the pilot holes using a 1/8" diameter drill bit.
- Install your engine using four M3 x 30 socket-cap screws, eight M3 flat washers and four M3 lock nuts.
-  Tighten the screws and nuts firmly to hold the engine securely in place.

## SECTION 12: SERVO INSTALLATION

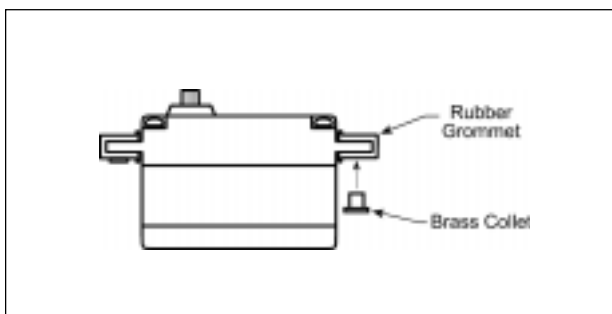
### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- (1) Plywood Servo Tray

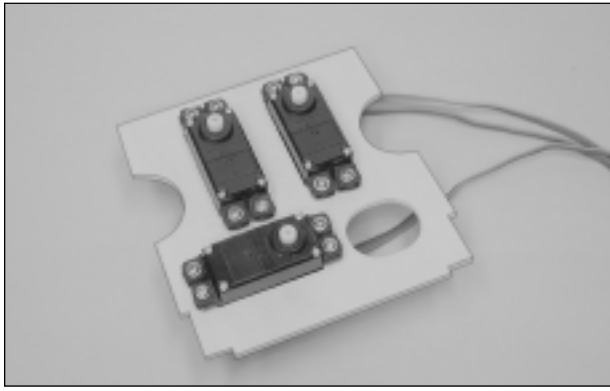
### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- Kwik Bond Thick C/A
- # 1 Phillips Head Screwdriver
- Electric Drill
- 1/16" Drill Bit

## Step 1: Installing the Servos and Servo Tray



- Install the rubber grommets and brass collets onto your elevator, rudder and throttle servos, making sure to install the collets with the flanges toward the bottom of the servo.



- ❑ Install your servos into the servo tray, making sure that the servo output shafts are orientated as shown.

**IMPORTANT** We recommend installing your servos into the servo tray first because it is much easier to do it now, before installing the servo tray into the fuselage.



- ❑ Test-fit the servo tray assembly into the fuselage. Notice that the front of the servo tray is notched to fit around the center bulkhead.

- ❑ When satisfied with the fit, glue the servo tray assembly into place using a generous amount of thick C/A.

## SECTION 13: THROTTLE CONTROL SYSTEM INSTALLATION

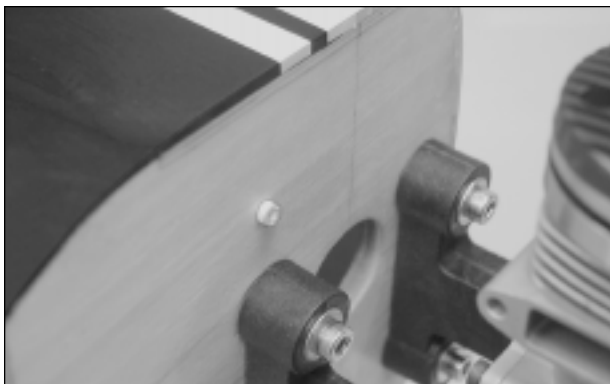
### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- ❑ (1) 17-1/2" Pushrod Wire w/Z-Bend
- ❑ (1) 10" Nylon Pushrod Housing
- ❑ (1) Servo Connector w/Grub Screw & C-Clip

### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- ❑ Kwik Bond Thin C/A
- ❑ # 1 Phillips Head Screwdriver
- ❑ Wire Cutters
- ❑ Needle Nose Pliers
- ❑ Excel Modeling Knife
- ❑ Electric Drill
- ❑ 5/64" & 5/32" Drill Bits
- ❑ Ruler
- ❑ Pencil

### Step 1: Installing the Throttle Pushrod Wire

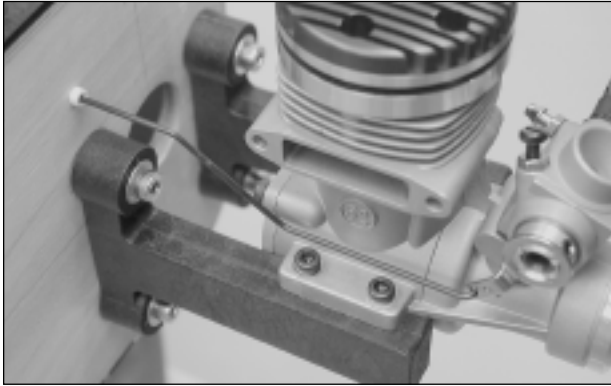


- ❑ Using a 5/32" diameter drill bit, drill a hole through the firewall for the throttle pushrod housing. The hole should be located the same height from the bottom of the fuselage as your engine's throttle arm, but far enough out from the center of the firewall so that the pushrod housing doesn't interfere with the fuel tank when it's installed later. We drilled the hole 1" in from the fuselage side to be safe.

- ❑ Slide the nylon pushrod housing through the hole so that the end is flush with the firewall, and glue the housing into place using thin C/A.

- ❑ Remove the throttle arm from your engine and install the Z-Bend in the pushrod wire into the outermost hole in the throttle arm.

☞ You may need to enlarge the hole in your engine's throttle arm using a 5/64" diameter drill bit so that the wire will fit.

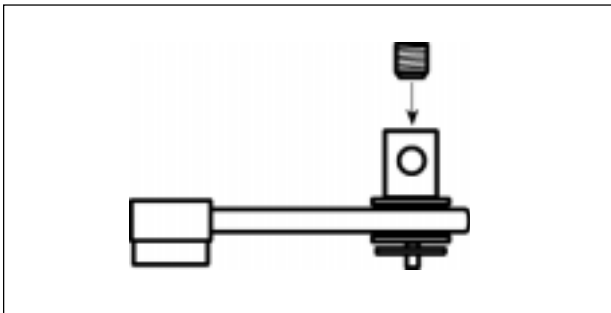


- ❑ Slide the pushrod wire into the pushrod housing and install the throttle arm onto your engine.

**IMPORTANT** So that the pushrod wire doesn't bind and/or interfere with your muffler assembly when it's installed later, you may need to make a bend in the pushrod wire so that it lines up better with your engine's throttle arm.

## Step 2: Installing the Servo Connector

- ❑ Using a modeling knife, cut away all but one arm from a large "4-point" servo horn.



- ❑ Enlarge the outermost hole in the servo arm using a 5/64" diameter drill bit.

- ❑ Install the servo connector onto the servo arm using two flat washers (one on top of the arm and one on the bottom) and the C-clip provided.

☞ Depending on the thickness of your servo arm, you may need to only use one flat washer.

- ❑ Connect your radio system and plug the throttle servo into the receiver. Check to ensure that the throttle servo output shaft is rotating in the correct direction. When the throttle control stick is moved forward, from the idle to the full throttle position, the servo output shaft should rotate counterclockwise. If it doesn't, flip the servo reversing switch on your transmitter.

- ❑ Position the throttle control stick and the throttle trim lever on your transmitter to their lowest positions. Slide the servo connector/servo horn assembly over the plain end of the throttle pushrod wire.



- ❑ After making sure that the carburetor is in the fully closed position, angle the servo horn back about 45° from center and attach it to the servo output shaft. The servo connector should be facing the side of the fuselage, as shown.

- ❑ While holding the carburetor barrel fully closed, install and tighten the grub screw in the top of the adjustable servo connector, using the hex wrench provided.

- ❑ Use wire cutters to cut away and remove the excess pushrod wire, and install and tighten the servo horn retaining screw to hold the servo horn securely to the servo.

## SECTION 14: ELEVATOR & RUDDER CONTROL SYSTEMS INSTALLATION

### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

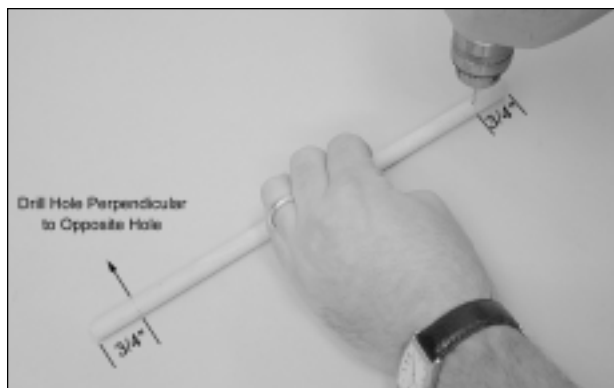
- (2) 11" Balsa Dowels
- (2) 6-3/4" Plain Wires
- (3) 6-3/4" Threaded Wires
- (3) Nylon Control Horns
- (3) Nylon Control Horn Backplates
- (6) M2 x 12 Machine Screws
- (3) Nylon Clevises w/Removable Pins
- (2) Nylon Snap Links
- (1) Heat-Shrink Tubing (Large Diameter)

### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- Kwik Bond Thin C/A
- Kwik Bond 5 Minute Epoxy
- # 1 Phillips Head Screwdriver
- Wire Cutters
- Needle Nose Pliers
- Excel Modeling Knife
- Electric Drill
- 5/64" Drill Bit
- Ernst Airplane Stand
- Ruler
- Pencil
- 220 Grit Sandpaper w/Sanding Block
- Masking Tape
- Paper Towels
- Rubbing Alcohol
- NHP Epoxy Mixing Sticks
- NHP Epoxy Mixing Cups
- Global Heat Gun (Optional)

### Step 1: Assembling the Elevator Pushrod

- Using a modeling knife, cut the piece of large diameter heat-shrink tubing into four equal lengths.



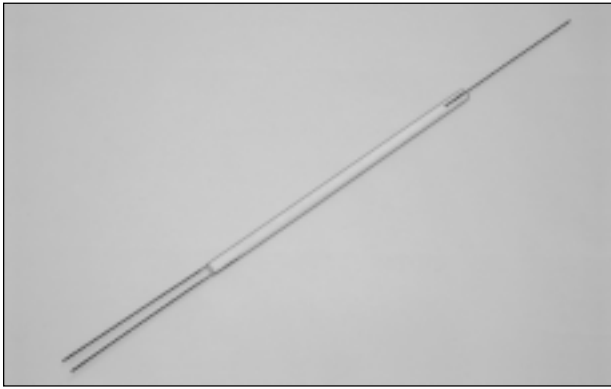
- Using a 5/64" diameter drill bit, carefully drill one hole through each end of one balsa dowel, 3/4" in from the ends.

**IMPORTANT** Drill the holes perpendicular to each other.

- Using a modeling knife, cut a shallow groove from the base of each hole to the end of the dowel. The grooves should be just large enough for the pushrod wires to fit firmly into them when they are installed later.



- Using a pair of pliers, carefully make a 1/8" long 90° bend in the plain end of two threaded wires and one 1/8" long 90° bend in one end of one plain wire.

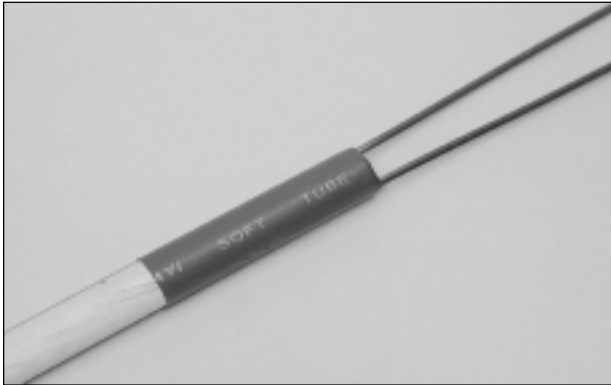


❑ Test-fit the three pushrod wires to the balsa dowel. The plain wire is installed in one side of the hole in one end of the dowel and the two threaded wires are installed in each side of the hole in the other end of the dowel. When positioned properly, the 90° bends should fit firmly in the holes and the outer edge of the wires should be even with the surface of the dowel.

☞ When the two threaded pushrod wires are installed, they will form a "Y" shape, as shown.

❑ When satisfied with the fit and alignment, remove the pushrod wires and use 220 grit sandpaper to roughen **only** the gluing surfaces of the wires.

❑ Glue the pushrod wires into place using 5 minute epoxy. Remove any excess epoxy using a paper towel and rubbing alcohol, and allow the epoxy to set up before proceeding.



❑ Slide one piece of heat-shrink tubing over each end of the dowel and use a heat gun to shrink the tubing.

☞ If you don't have a heat gun, you can use a lighter or a hair dryer to shrink the tubing.

**IMPORTANT** Do not omit this procedure. The heat-shrink tubing holds the wires firmly to the dowel.

## Step 2: Installing the Control Horns

❑ Using a modeling knife, cut away and remove the covering material from over the elevator pushrod exit slots in each side of the fuselage. The slots are located 3-1/4" in front of the rudder hinge line and 7/8" below the horizontal stabilizer.

❑ Carefully slide the elevator pushrod assembly into the fuselage and guide the two threaded wires out through the pushrod exit slots.

**IMPORTANT** To make guiding the threaded wires through the exit slots easier, first spread the two pushrod wires apart into a shallow "Y" shape. Also make sure to install the pushrod assembly below the cross braces in the rear bulkheads.



❑ Position one nylon control horn onto the bottom of one elevator half. When aligned properly, the centerline of the control horn should be 5/8" out from the inside edge of the elevator half and the control horn should be angled 1/16" toward the fuselage side so it will line up better with the pushrod wire

❑ When satisfied with the alignment, mark and drill 5/64" diameter pilot holes through the elevator for the screws.

**IMPORTANT** Before installing the control horn, drip several drops of thin C/A into the holes and allow the C/A to fully cure. The C/A will harden the surrounding balsa, making the mounting area stronger.

- ❑ Install the control horn and backplate using two M2 x 12 machine screws, being careful not to overtighten them.
- ❑ Repeat the previous procedures to install the second control horn and backplate onto the other elevator half.

### Step 3: Connecting the Pushrod Assembly



- ❑ Carefully snap two clevis pins into two clevises and thread one clevis onto each pushrod wire. For security, thread the clevises on completely.
- ❑ Carefully snap each clevis into the **fourth hole** out from the base of each control horn.

❑ Using a modeling knife, cut away all but one arm from a large "4-point" servo horn, and enlarge the **fourth hole** out from the center of the servo arm using a 5/64" diameter drill bit.

❑ Connect your radio system and plug the elevator servo (left-side servo, looking from the back of the airplane) into the receiver. Center the servo by double-checking that the elevator trim lever on your transmitter is centered.



- ❑ Attach the servo horn to the servo, making sure that it's centered and points toward the middle of the fuselage.
- ❑ With the elevator halves and the servo horn centered, draw a mark on the elevator pushrod wire where it crosses the **fourth hole** out from the center of the servo horn.



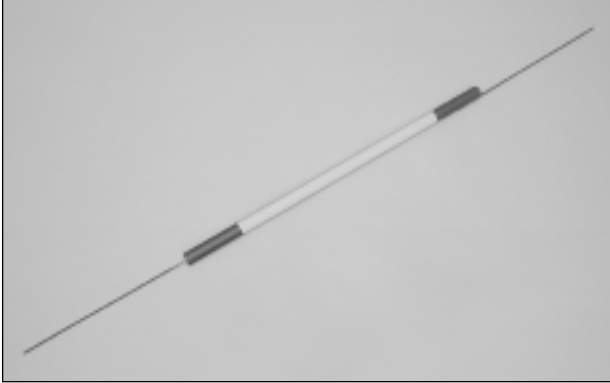
❑ Using a pair of pliers, carefully bend the pushrod wire down at a 90° angle and cut off the excess, leaving 5/16" of wire beyond the bend.

**IMPORTANT** To make it easier (and more accurate) to make the 90° bend, we suggest removing the pushrod assembly from the fuselage.

❑ Reinstall the pushrod assembly and secure the pushrod wire to the servo arm using the snap link, as shown.

- ❑ Install and tighten the servo horn retaining screw so that the servo horn doesn't pop off the servo.
- ❑ With the servo horn still centered, adjust each of the two clevises to center both elevator halves.

#### Step 4: Assembling the Rudder Pushrod



- ❑ Assemble the rudder pushrod using the same techniques as the elevator pushrod. The only difference is that there is only one threaded pushrod wire instead of two.

#### Step 5: Installing the Control Horn

- ❑ Using a modeling knife, cut away and remove the covering material from over the rudder pushrod exit slot in the left side of the fuselage. The slot is located 3-1/4" in front of the rudder hinge line and 1-1/4" below the horizontal stabilizer.
- ❑ Carefully slide the rudder pushrod assembly into the fuselage and guide the threaded wire out through the pushrod exit slot.

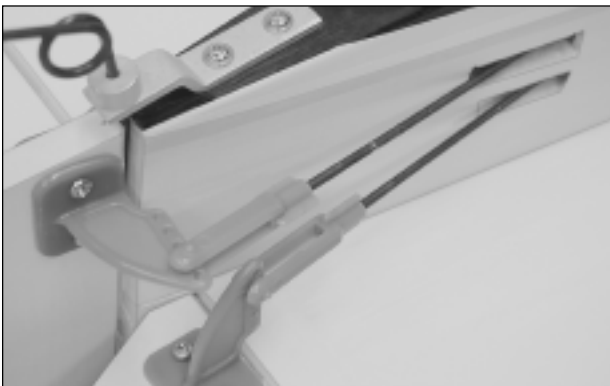
**IMPORTANT** As you did with the elevator pushrod assembly, make sure to install the rudder pushrod assembly below the cross braces in the rear bulkheads.



- ❑ Install one control horn onto the left side of the rudder, making sure that the centerline of the control horn is 1/2" up from the bottom of the rudder (at the hinge line), and that the front edge of the control horn is perpendicular to the rudder hinge line.

**IMPORTANT** Remember to apply a couple of drops of thin C/A into the mounting holes to reinforce the surrounding balsa.

#### Step 6: Connecting the Pushrod Assembly



- ❑ Carefully snap one clevis pin into one clevis and thread the clevis onto the pushrod wire. For security, thread the clevis on completely.
- ❑ Carefully snap the clevis into the **fourth hole** out from the base of the control horn.

- ❑ Using a modeling knife, cut away all but one arm from a large "4-point" servo horn, and enlarge the **fourth hole** out from the center of the servo arm using a 5/64" diameter drill bit.



- Connect your radio system and plug the rudder servo into the receiver. Center the servo by double-checking that the rudder trim lever on your transmitter is centered.
- Attach the servo horn to the servo, making sure that it's centered and points toward the fuselage side.
- With the rudder and the servo horn centered, draw a mark on the rudder pushrod wire where it crosses the **fourth hole** out from the center of the servo horn.



- Using a pair of pliers, carefully bend the pushrod wire down at a 90° angle and cut off the excess, leaving 5/16" of wire beyond the bend.

**IMPORTANT** To make it easier (and more accurate) to make the 90° bend, we suggest removing the pushrod assembly from the fuselage.

- Reinstall the pushrod assembly and secure the pushrod wire to the servo arm using the snap link, as shown.

- Install and tighten the servo horn retaining screw so that the servo horn doesn't pop off the servo.
- With the servo horn still centered, adjust the clevis to center the rudder.

## SECTION 15: AILERON CONTROL SYSTEM INSTALLATION

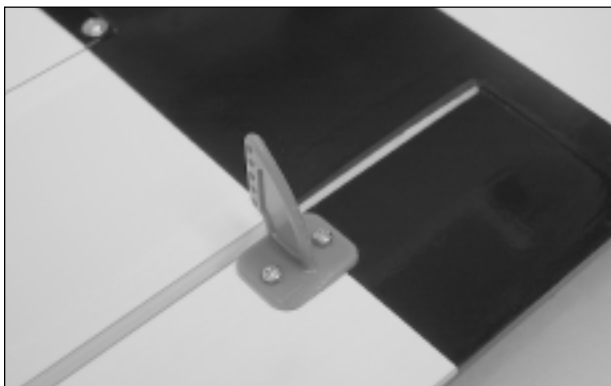
### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- |  |  |
|--|--|
| <input type="checkbox"/> (2) 4" Threaded Wires             | <input type="checkbox"/> (4) M2 x 22 Machine Screws          |
| <input type="checkbox"/> (2) Nylon Control Horns           | <input type="checkbox"/> (2) Nylon Clevises w/Removable Pins |
| <input type="checkbox"/> (2) Nylon Control Horn Backplates | <input type="checkbox"/> (2) Nylon Snap Links                |

### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- |  |  |
|--|--|
| <input type="checkbox"/> Kwik Bond Thin C/A            | <input type="checkbox"/> Electric Drill  |
| <input type="checkbox"/> # 1 Phillips Head Screwdriver | <input type="checkbox"/> 5/64" Drill Bit |
| <input type="checkbox"/> Wire Cutters                  | <input type="checkbox"/> Ruler           |
| <input type="checkbox"/> Needle Nose Pliers            | <input type="checkbox"/> Pencil          |
| <input type="checkbox"/> Excel Modeling Knife          | <input type="checkbox"/> Masking Tape    |

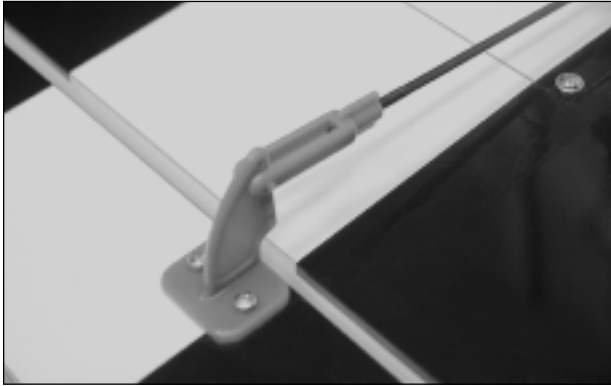
### Step 1: Installing the Control Horn



- Install one control horn onto the bottom of one aileron, making sure that the centerline of the control horn is 2-1/4" out from the inside edge of the aileron, and that the base of the control horn is perpendicular to the aileron hinge line.

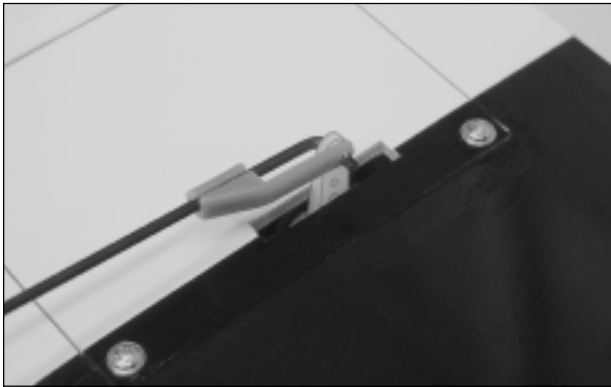
**IMPORTANT** Remember to apply a couple of drops of thin C/A into the mounting holes to reinforce the surrounding balsa.

## Step 2: Connecting the Pushrod Assembly



- ❑ Carefully snap one clevis pin into one clevis and thread the clevis onto one pushrod wire. For security, thread the clevis on completely.
- ❑ Carefully snap the clevis into the **fourth hole** out from the base of the control horn.
- ❑ Using a 5/64" diameter drill bit, enlarge the outermost hole in the aileron servo arm.

- ❑ Connect your radio system and plug the aileron servo into the receiver. Center the servo by double-checking that the aileron trim lever on your transmitter is centered.
- ❑ With the aileron and the servo horn centered, draw a mark on the aileron pushrod wire where it crosses the **outermost hole** in the servo horn.



- ❑ Using a pair of pliers, carefully bend the pushrod wire at a 90° angle and cut off the excess, leaving 5/16" of wire beyond the bend.
- ❑ Secure the pushrod wire to the servo arm using the snap link, as shown.

- ❑ With the servo horn still centered, adjust the clevis to center the aileron, then repeat the previous steps to install the second aileron pushrod assembly.

## SECTION 16: FUEL TANK ASSEMBLY & INSTALLATION

### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- |                                  |                             |
|----------------------------------|-----------------------------|
| ❑ (1) 260cc Fuel Tank            | ❑ (1) Fuel Pick-Up "Clunk"  |
| ❑ (1) Large Diameter Metal Plate | ❑ (1) M3 x 18 Machine Screw |
| ❑ (1) Small Diameter Metal Plate | ❑ (1) Silicone Fuel Tubing  |
| ❑ (1) Rubber Stopper             | ❑ (3) Aluminum Tubing       |

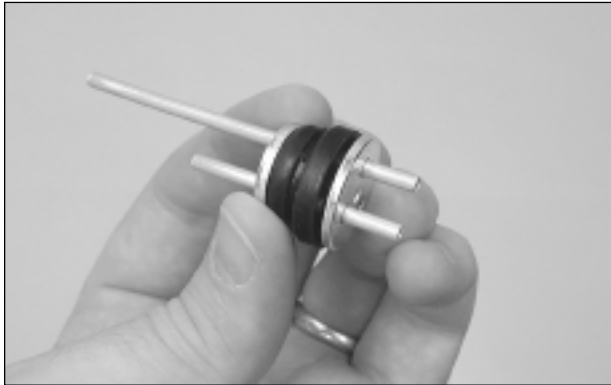
### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- |                                 |                                      |
|---------------------------------|--------------------------------------|
| ❑ Wilhold Silicone Sealant      | ❑ Ruler                              |
| ❑ # 2 Phillips Head Screwdriver | ❑ Pencil                             |
| ❑ Excel Modeling Knife          | ❑ 220 Grit Sandpaper w/Sanding Block |

## Step 1: Assembling the Rubber Stopper

**IMPORTANT** Discard one of the two longer aluminum tubes. It will not be used for our style of fuel tank setup.

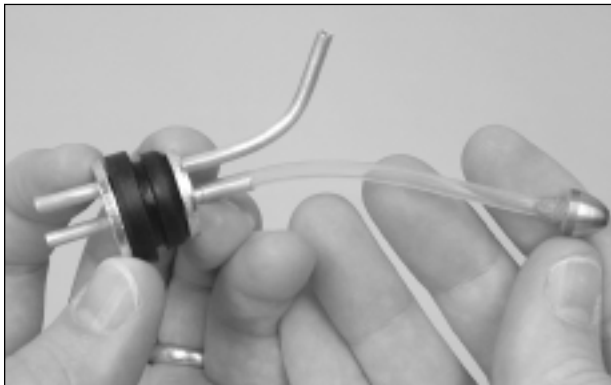
- ❑ Using 220 grit sandpaper, carefully smooth and deburr each end of the two aluminum tubes. This will prevent the fuel tubing from being accidentally cut when it is installed later.



- ❑ Push the two aluminum tubes through the rubber stopper. Slide the large diameter metal plate over the tubes at the front of the stopper and slide the small diameter metal plate over the tubes at the rear of the stopper.
- ❑ Using a ruler, measure the distance that the two aluminum tubes protrude from the front of the stopper assembly. This distance should be 3/8". If it is not, adjust the tubes by pushing them forward or backward until you are satisfied with the alignment.

- ❑ Carefully bend the longer of the two aluminum tubes up at a 45° angle, being careful not to "kink" the tubing as you bend it.

☞ When the stopper assembly is installed in the fuel tank, the top of the vent tube (the tube you just bent) should rest just below the top of the fuel tank. You can tell the top of the fuel tank from the bottom because the top is a shorter distance from the center of the hole.



- ❑ Secure one end of the silicon fuel tubing onto the end of the fuel pick-up "clunk."
- ❑ Slide the silicon fuel tubing, with the fuel pick-up attached, onto the end of the aluminum fuel pick-up tube (straight tube). While holding the aluminum tube in place, adjust the length of the silicon tubing until the fuel pick-up is 4" back from the rear of the stopper assembly.

- ❑ Push the M3 x 18 machine screw through the stopper assembly, from the front, and partially thread it into the small diameter metal backplate.

## Step 2: Installing the Stopper Assembly

- ❑ Carefully push the stopper assembly into the molded hole in the front of the fuel tank and rotate the stopper assembly until the aluminum vent tube rests just below the top of the fuel tank.

☞ If you have trouble seeing the vent tube, hold the fuel tank assembly up to a bright light. This will illuminate the inside of the tank, making it easy to see the tubing inside.



- ❑ When satisfied with the alignment, tighten the machine screw until the rubber stopper expands and seals the fuel tank opening.

**IMPORTANT** Do not overtighten the screw. This could cause the front of the fuel tank to split.

- ❑ With the stopper assembly in place, double-check to make sure that the fuel pick-up can move freely inside the tank. Ideally, the fuel pick-up should be about 1/4" in front of the back of the tank.

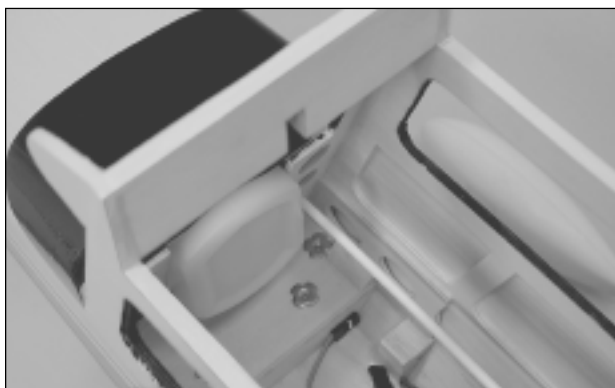
### Step 3: Installing the Fuel Tank Assembly

- ❑ Cut two pieces of silicone fuel tubing to a length of 8" and install them to the aluminum tubes at the front of the tank.

👉 For your convenience, we suggest marking the ends of the tubing "vent" and "pick-up" so you don't confuse them when it comes time to connect them to the engine later on.

- ❑ Feed the ends of the fuel tubing through the predrilled hole in the firewall and slide the fuel tank into position, making sure that the stopper assembly lines up with, and is pushed into, the predrilled hole in the firewall. When aligned properly, the tank should be pushed forward as far as possible and the back of the tank should fit firmly within the forward bulkhead.

**IMPORTANT** Make sure that the top of the fuel tank is toward the top of the fuselage.



- ❑ To secure the fuel tank into position, apply a bead of silicone sealant around the joint between the back of the fuel tank and the forward bulkhead.

## SECTION 17: COWLING INSTALLATION

### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- ❑ (1) Fiberglass Cowling
- ❑ (4) M2 x 8 Wood Screws

### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- ❑ Kwik Bond Thin C/A
- ❑ # 1 Phillips Head Screwdriver
- ❑ Adjustable Wrench
- ❑ Excel Modeling Knife
- ❑ Electric Drill
- ❑ 1/16" & 5/64" Drill Bits
- ❑ Rotary Tool w/Cutting Disc & Sanding Drum
- ❑ Ruler
- ❑ Pencil
- ❑ 220 Grit Sandpaper w/Sanding Block
- ❑ Masking Tape

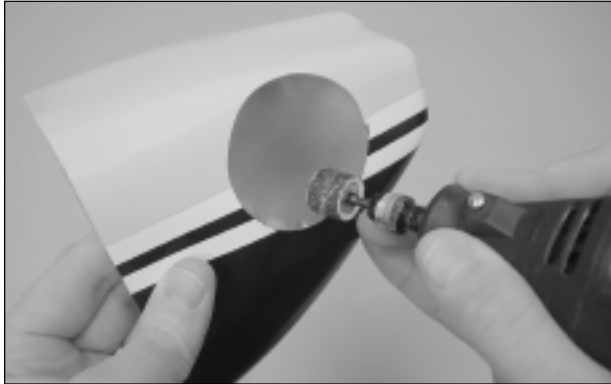
### Step 1: Aligning the Cowling

- ❑ Remove the needle valve assembly and muffler from your engine and set them aside.

**IMPORTANT** To prevent dust and debris from entering your engine during the fitting and aligning of the cowling, we strongly suggest covering the engine exhaust port, carburetor opening and needle valve inlet with small pieces of paper towel.

- ❑ Using a rotary tool with a cutting disc, carefully cut out the three air-intake holes that are molded in the front of the cowling.

☞ Work slowly, removing small amounts of material at a time, so you don't damage the cowling.



- ❑ When installed, the cowling will overlap the front of the fuselage approximately 3/8". Carefully measure and mark the side of the cowling that must be removed to clear your engine's cylinder head.

- ❑ Carefully make the cutout using a rotary tool with first a cutting disc and then a sanding drum. Work slowly, checking the fit often so you don't remove too much of the cowling or damage it.

- ❑ Slide the cowling over the engine and onto the fuselage.

**IMPORTANT** Depending on the width of your engine, the top of the cowling may hit the front of the upper engine mounting beam, preventing the cowling from lining up properly. If this is the case, carefully sand down the top front portion of the mounting beam using a rotary tool with a sanding drum.

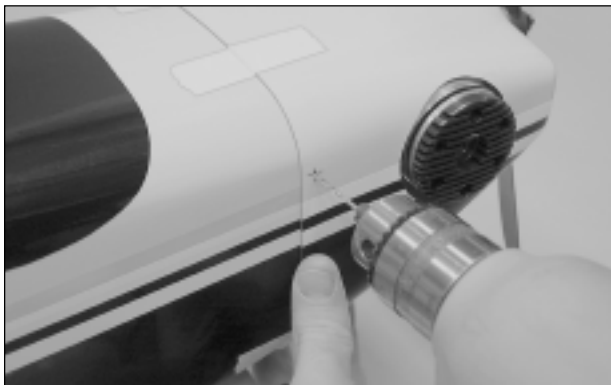


- ❑ With the cowling temporarily in place, secure your spinner backplate onto your engine's crankshaft.

- ❑ Line up the front of the cowling, using the spinner backplate as your guide. When aligned properly, the cowling should be centered with the spinner backplate and there should be about a 1/16" - 3/32" gap between the two. The stripes on the sides of the cowling should also be lined up with the stripes on the sides of the fuselage.

- ❑ When satisfied with the alignment, use pieces of masking tape to hold the cowling securely in place and aligned.

## Step 2: Installing the Cowling



- ❑ With the cowling held firmly in alignment, drill 1/16" diameter pilot holes into the cowling and through the fuselage for the four wood screws. Locate two holes on each side of the cowling, 1/8" in front of the back edge of the cowling. One hole should be located 3/8" above the top of the upper white stripe and the other hole should be located 3/4" below the bottom of the lower white stripe.

☞ If you drill the holes farther forward than 1/8", they may miss the side of the fuselage.

- ❑ Remove the cowling and enlarge **only** the holes in the cowling using a 5/64" drill bit.

**IMPORTANT** Enlarging the holes will prevent the fiberglass from being cracked when you install the wood screws.

- ❑ To strengthen the holes in the fuselage that the wood screws will thread into, carefully apply a couple of drops of thin C/A into the holes and let it dry completely before installing the cowling.
- ❑ At this time you should make the rest of the cutouts in the cowling for your engine. These include cutouts for the high and low speed needle valves, muffler assembly and in-cowl fueling valve.

**IMPORTANT** For proper engine cooling, it may be necessary to cut an air-exit hole (or series of slots) in the bottom of the cowling. Ideally, you want approximately 25 - 30% more air-exit area than air-intake area.

- ❑ After you've made all the necessary cutouts in the cowling, install your in-cowl fueling valve. Slide the cowling partially into place and connect the fuel lines from the fuel tank to the fueling valve, carburetor and muffler pressure tap.
- ❑ Slide the cowling into position and realign it. Install and tighten the four M2 x 8 wood screws to hold the cowling firmly in place. Install your high speed needle valve, propeller and spinner assembly to finish off the assembly.

## SECTION 18: WINDSHIELD & SIDE WINDOWS INSTALLATION

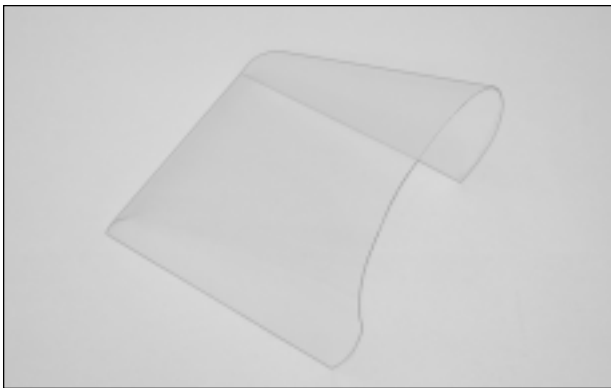
### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- ❑ (1) Clear Windshield
- ❑ (4) Clear Side Windows

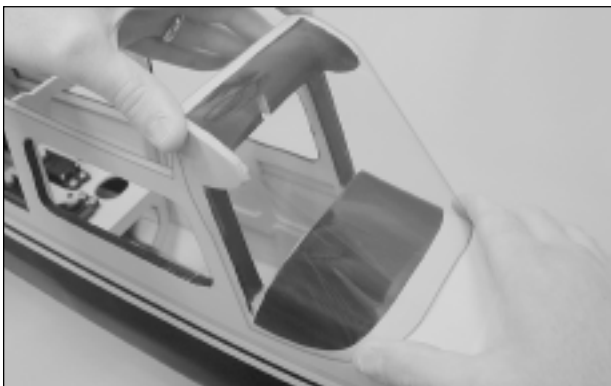
### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- ❑ Pacer Formula 560 Canopy Glue
- ❑ Promax Canopy Scissors
- ❑ 220 Grit Sandpaper w/Sanding Block
- ❑ Masking Tape
- ❑ Paper Towels

### Step 1: Installing the Windshield



- ❑ Using a pair of scissors, carefully cut out the windshield along the top and side molded radius, and along the scribe line around the base of the windshield.



- ❑ Position the windshield into place. The top edge of the windshield should be even with the back edge of the top of the fuselage, and the sides and base of the windshield should fit flush against the sides and front of the fuselage. The sides of the windshield should also overlap the window posts approximately 1/8" or more.

**IMPORTANT** When initially cut out, the windshield will be oversized. This allows you to custom-fit the windshield. Remove small amounts of material at a time until you are satisfied with the fit.

- When satisfied with the fit, sand the edges of the windshield smooth and straight.
- Carefully glue the windshield into place using Pacer Formula 560 Canopy Glue. Remove any excess glue before it dries, using a paper towel soaked with **water**, and use pieces of masking tape to hold the windshield in place until the glue fully cures.

## Step 2: Installing the Side Windows

- Test-fit each of the side windows into place. If they don't fit perfectly within the window frames, sand the edges of the windows to fit.
- When satisfied with the fit, carefully glue the windows into place using Pacer Formula 560 Canopy Glue. Remove any excess glue before it dries, using a paper towel soaked with **water**, and use pieces of masking tape to hold the windows in place until the glue fully cures.

## SECTION 19: WING STRUT INSTALLATION

### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

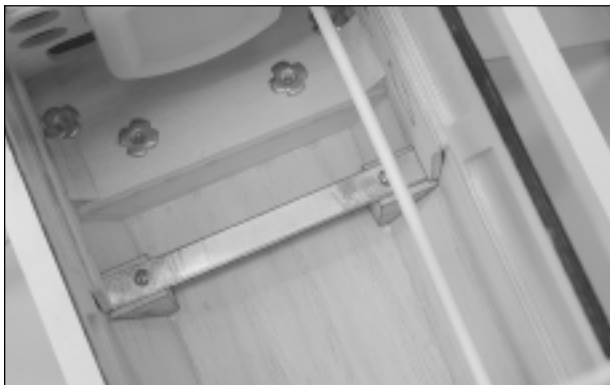
- |   |  |
|---|--|
| <input type="checkbox"/> (2) Aluminum Wing Struts (Long)        | <input type="checkbox"/> (2) M3 x 8 Machine Screws |
| <input type="checkbox"/> (2) Aluminum Wing Struts (Short)       | <input type="checkbox"/> (2) M3 Flat Washers       |
| <input type="checkbox"/> (1) Aluminum Wing Strut Mounting Strap | <input type="checkbox"/> (2) M3 Hex Nuts           |
| <input type="checkbox"/> (6) M3 x 10 Wood Screws                |  |

### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- |  |   |
|--|---|
| <input type="checkbox"/> Kwik Bond Thin C/A            | <input type="checkbox"/> 1/16" Drill Bit      |
| <input type="checkbox"/> # 1 Phillips Head Screwdriver | <input type="checkbox"/> Ernst Airplane Stand |
| <input type="checkbox"/> Adjustable Wrench             | <input type="checkbox"/> Ruler                |
| <input type="checkbox"/> Needle Nose Pliers            | <input type="checkbox"/> Pencil               |
| <input type="checkbox"/> Electric Drill                |   |


## Step 1: Installing the Strut Mounting Strap

- Slide the aluminum wing strut mounting strap through the precut slot in the sides of the fuselage. One slot is precut in each side of the fuselage approximately 1-3/8" behind the back edge of the landing gear strut and 1/2" up from the bottom of the fuselage.



- Center the strap from side to side, then mark and drill two 1/16" diameter pilot holes into the hardwood mounting blocks inside the fuselage, using the predrilled holes in the mounting strap as a guide.

**IMPORTANT** Be careful not to drill through the bottom of the fuselage.

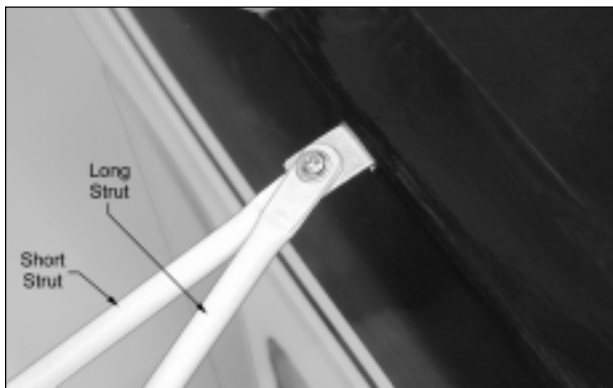
-  Because this is a tight area to work in, it's easier to drill the pilot holes using a long drill bit or a hand drill.

- To strengthen the holes for the wood screws, carefully apply a couple of drops of thin C/A into the holes and let it dry completely.
- Secure the mounting strap into place using two M3 x 10 wood screws.

## Step 2: Installing the Wing Struts

- ❑ Secure the wing to the fuselage and turn the airplane upside down in your airplane stand.

**IMPORTANT** There are two long struts and two short struts provided. The long struts are installed toward the trailing edge of the wing and the short struts are installed toward the leading edge of the wing.



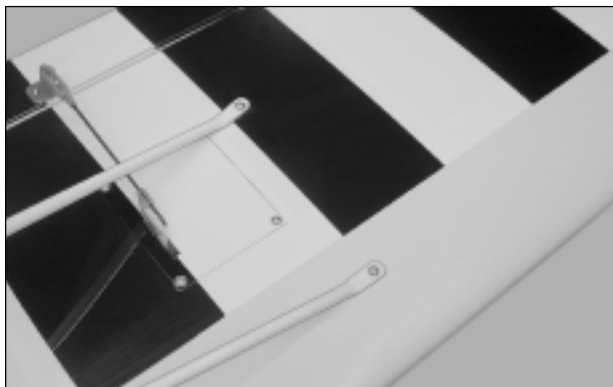
- ❑ Install one long strut and one short strut to one side of the mounting strap, using one M3 x 8 machine screw, one M3 flat washer and one M3 hex nut.

☞ Don't tighten the assembly yet. Leave it slightly loose.

**IMPORTANT** So that the struts line up properly, the longer strut should be installed on the bottom of the strap and the shorter strut should be installed on the top of the strap.

- ❑ Gently bend the mounting strap down slightly so that the end of the struts is touching the surface of the wing.
- ❑ Position the end of the rear strut 2-1/2" in front of the aileron hinge line. You'll notice through the covering material at this location that there is a hardwood mounting block in the wing. Using a pair of pliers, carefully bend the end of the strut up at a slight angle so that the end of the strut fits flush against the wing.
- ❑ Using the same technique as above, bend the end of the forward strut up at an angle so that it is flush with the wing. The end of the forward strut should be located 6-13/16" in front of the aileron hinge line.

☞ You can't see it, but a hardwood block has been preinstalled under the wing sheeting for the forward wing strut.



- ❑ When satisfied with the alignment, mark the locations of the strut mounting screws and drill 1/16" diameter pilot holes into the wing for the screws.

☞ Be careful not to drill through the top of the wing.

- ❑ To strengthen the holes for the screws, apply a couple of drops of thin C/A into the holes and allow it to fully cure.

- ❑ Secure the wing struts into place using two M3 x 10 wood screws.

- ❑ Tighten the machine screw and hex nut to lock the wing struts into place, then repeat the previous procedures to install the wing struts on the other half of the wing.

**IMPORTANT** When you remove the wing, we suggest removing the wing struts from the mounting strap only. Leaving the struts secured to the wing will make it easier to take the wing on and off the fuselage, and it will prevent the holes in the wing from eventually stripping out.



## SECTION 20: FINAL ASSEMBLY

### YOU'LL NEED THE FOLLOWING PARTS FROM THE KIT:

- (1) Decal Set

### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- # 1 Phillips Head Screwdriver
- Excel Modeling Knife
- Promax Canopy Scissors
- Electric Drill
- 5/64" Drill Bit
- Masking Tape

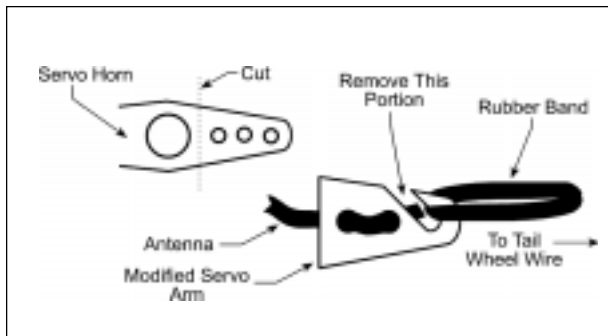
### Step 1: Installing the Receiver and Battery

**IMPORTANT** We don't suggest permanently installing the receiver and battery until you have balanced the airplane. How the airplane initially balances will determine where you need to mount the receiver and battery.

- Wrap the receiver and battery in foam rubber to protect them from vibration. Use masking tape or rubber bands to hold the foam in place.

☞ Do not wrap the foam rubber too tightly or the vibration dampening quality will be reduced.

- After you've found the final location of the receiver and battery, mount them into the fuselage using your favorite method. Strips of Velcro® work well, or sandwich them in place using a couple of scraps of balsa wood glued between the fuselage sides. If it's required to balance the airplane, a flat battery pack can be mounted underneath the fuel tank.



- After installing the receiver, drill a 5/64" hole through the fuselage for the antenna to exit. Unwrap the receiver antenna and feed it out through the hole.
- Using a modeling knife, carefully make an antenna mount out of an extra servo horn. Remove one of the arms and cut it into the shape shown.
- Use the modified servo arm and a rubber band to secure the end of the antenna to the tail wheel wire.

- Mount the switch to the fuselage side and connect the battery lead to the switch, and the switch and servo leads to the receiver.

### Step 2: Applying the Decals

- Using a clean cloth, wipe the airframe down completely to remove dust, debris and oil.
- Working with one decal at a time, use a pair of scissors and carefully cut out the decal along its outer edges.
- Remove the protective backing from the decal and stick the decal to the airplane. (Use the box cover photos to position the decals.) Lightly rub the decal with a soft cloth to remove any trapped air from beneath it.

☞ If any air bubbles form under the decal you can "prick" the bubbles with a straight pin to release the air.

- Repeat the procedures above to install the remaining decals. Rub each decal down thoroughly to adhere it into place.

## SECTION 21: BALANCING THE DECATHLON 52 ARF

### YOU'LL NEED THE FOLLOWING TOOLS AND SUPPLIES:

- Ruler
- Masking Tape

**IMPORTANT** It is critical that your airplane be balanced correctly. Improper balance will cause your airplane to lose control and crash!

### Center of Gravity Location:

**2-1/2" to 3-1/4" back from the leading edge of the wing, measured at the fuselage sides.**

**WARNING** This is the recommended C/G range. For test-flying we suggest you start with the C/G in the middle of the range (2-7/8"), then move it farther back as you become familiar with the flying characteristics of the airplane. It is not recommended that the C/G be located any farther back than 3-1/4".

☞ Always balance the airplane with the fuel tank **empty**.

Install the wing and the wing struts onto the fuselage. Apply two short pieces of masking tape onto the **bottom** of the wing, **2-7/8" back from the leading edge, measured at the fuselage sides.**

Place your fingers on the masking tape and carefully lift the airplane. If the nose of the airplane falls, the airplane is nose heavy. To correct this, move the battery pack and/or receiver back far enough to bring the airplane into balance. If the tail of the airplane falls, the airplane is tail heavy. To correct this, move the battery pack and/or receiver forward far enough to bring the airplane into balance. When balanced correctly, the airplane should sit level or slightly nose down when you lift it up with your fingers at the C/G location.

☞ Once you have flown and become familiar with the flight characteristics of the airplane, the C/G can be moved fore or aft within the C/G range to change the flight performance. Moving the C/G back will cause the airplane to be more responsive, but less stable. Moving the C/G forward will cause the airplane to be more stable, but less responsive.

**IMPORTANT** Do not fly the airplane beyond the recommended balance range or an uncontrollable crash could result!

## SECTION 22: CONTROL THROWS

We recommend setting up the Decathlon 52 ARF using the control throws listed below. These control throws are suggested for initial test-flying because they will allow the airplane to fly smoother and make it easier to control.

### TEST-FLYING

<b>Ailerons:</b>	<b>3/8" Up</b>	<b>3/8" Down</b>
<b>Elevator:</b>	<b>3/8" Up</b>	<b>3/8" Down</b>
<b>Rudder:</b>	<b>3/4" Right</b>	<b>3/4" Left</b>

☞ Measure the control surface throws from the widest point of the control surfaces.

**VERY IMPORTANT** After you are finished adjusting the pushrods and control throws, we strongly suggest cutting 1/4" lengths of silicone fuel tubing and sliding one piece over each clevis. The tubing will prevent the clevises from popping open during flight.

## CONTROL THROWS CONTINUED....

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Once you're familiar with the flight characteristics of the airplane, you might want to increase the control throws to the aerobatic-flying settings listed below. These control throws will make the airplane more responsive and allow you to do most aerobatics with ease.

### AEROBATIC-FLYING

<b>Ailerons:</b>	<b>5/8" Up</b>	<b>5/8" Down</b>
<b>Elevator:</b>	<b>3/4" Up</b>	<b>3/4" Down</b>
<b>Rudder:</b>	<b>1-1/4" Right</b>	<b>1-1/4" Left</b>

☞ Again, measure the control surface throws from the widest point of the control surfaces.

**IMPORTANT** We do not suggest increasing the control throws beyond the recommended aerobatic-flying settings unless you are a very proficient flyer. Higher control throws will cause the airplane to be extremely control-sensitive and result in a possible crash if you are not careful.

## SECTION 23: PREFLIGHT CHECK & SAFETY

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- Completely charge the transmitter and receiver batteries before your first day of flying.
- Check every bolt and every glue joint in the airplane to ensure that everything is tight and well-bonded. This should include all of the control surface hinges as well.
- Double-check that you've installed and tightened all of the servo horn retaining screws.
- Double-check that the receiver and battery are properly secured in the fuselage. There's nothing worse than the battery pack coming loose during an aerobatic maneuver.
- Double-check the balance of the airplane. **Do this with the fuel tank empty.**
- Check the control surfaces. They should all move in the correct direction and not bind.
- Make sure that you've installed 1/4" long pieces of silicone fuel tubing over the clevises to prevent them from opening during flight.
- If your radio transmitter is equipped with dual rate switches, double-check that they are on the low-rate setting for your first few flights.
- Check to ensure that all of the control surfaces are moving the proper amount in both low and high rate settings.
- Check the receiver antenna. It should be fully extended and not coiled up inside the fuselage.
- Properly balance the propeller. A propeller that is out of balance will cause excessive vibration, which could lead to engine and/or airframe failure, and it will reduce engine efficiency and power.

## SECTION 24: FLYING THE DECATHLON 52 ARF

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The Global Decathlon 52 ARF is designed for those pilots who are experienced at flying sport models. It is not a trainer. If you do not feel comfortable that you are able to test-fly the airplane, don't hesitate to ask someone for some help test-flying and trimming it.

When set up for test-flying, the Decathlon 52 ARF is like flying any other sport-aerobatic airplane, and because it has a relatively low wing loading, the airplane is predictable during low-speed flight and landing. You should find your first few test flights very enjoyable.

When set up for aerobatic flying, the Decathlon 52 ARF really shines. The airplane is a smooth and stable flyer and at full power will fly most scale maneuvers with ease and then some. Rolls, knife edge flight, stall turns, inverted loops, snap rolls and many other maneuvers can be flown with your Decathlon 52 ARF. You can also throttle back to 1/2 throttle and cruise at a graceful, scale-like speed. Whatever you choose, the Decathlon 52 ARF will deliver.

### Take-Off

Even though the Decathlon 52 ARF has lots of wing area and a low wing loading, it's still important to let the airplane get up to flying speed before lifting off. Lifting the airplane off the ground too fast could cause the airplane to stall and crash. You should allow the airplane to roll out until the tail is completely off the ground and flying, and then gently pull the airplane off the ground and into a shallow climb. Be careful not to climb too steeply after take-off.

Because of the torque of the engine, the airplane will have a natural tendency to pull to the left when it is accelerating down the runway. You will need to compensate for this by applying and holding right rudder during the take-off roll. Once the airplane lifts off the ground, you can release the right rudder.

### In the Air

In the air the Decathlon 52 ARF is smooth and predictable. It doesn't have any bad characteristics. If you are accomplished at flying sport airplanes, you should have no trouble putting the airplane through its paces. The airplane flies very scale-like and is capable of doing all the same aerobatics as its full-size counterpart.

### Landing

The Decathlon 52 ARF has a lot of wing area and a low wing loading. This results in an airplane that is predictable during approach and landing. On your initial upwind leg, reduce power and allow the airplane to begin slowing down. Follow your normal landing procedure, allowing the airplane to gradually lose altitude and speed. When turning onto final approach the airplane should have a slightly nose-down attitude and you should be carrying a small amount of power.

Just before touch-down, reduce power to idle and let the airplane settle onto the main gear. If you flair too much or try for a three point landing, the airplane will have a tendency to balloon up and possibly stall if it's too slow. It's easier, and more to scale, to fly the airplane in and do a wheel landing. As always, when landing be careful not to over-control. Over-controlling leads to excessive oscillations which don't make for good landings.





# PRODUCT EVALUATION SHEET

Telling us what you like and don't like determines what model kits we make and how we make them. We would appreciate it if you would take a few minutes of your time to answer the following questions about this kit and your modeling interests. Simply fold this form on the dotted lines, seal with tape and mail it to us. *Do not use staples and make sure our address faces out.*

Global Hobby Distributors will not disclose the information it collects to outside parties. Global Hobby Distributors does not sell, trade, or rent your personal information to others. Your privacy is important to us.

1) Kit: **Global Decathlon 52 ARF # 126515**

2) Where did you learn about this kit?

- Magazine Ads                       Friend  
 Hobby Shop                         Other  
 Internet

3) What influenced you the most to buy this kit?

- Magazine Ads                       Price  
 Type of Model                       Box Art  
 Recommendation                     Other  
 Internet

4) Did you have any trouble understanding the written instructions? If yes, please explain.

- Yes                                       No

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5) Did you have any trouble understanding any of the photographs? If yes, please explain.

- Yes                                       No

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6) Were any of the kit parts:

- Damaged                               Wrong Size  
 Missing                                 Wrong Shape

If you checked any of the boxes above, did you contact our Customer Service Department to resolve the problem?

- Yes                                       No

7) Was any of the assembly difficult for you? If yes, please explain.

- Yes                                       No

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8) What did you like most about this kit?

- Assembly Manual                       Parts Fit  
 Hardware Supplied                     Price  
 Other

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9) What did you like least about this kit?

- Assembly Manual                       Parts Fit  
 Hardware Supplied                     Price  
 Other

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10) Are you satisfied with the finished model? If no, please explain.

- Yes                                       No

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11) How does this kit compare to similar kits by other manufacturers?

- Better                                       As Good

What is Your Age Group:

- 10 & Under     11 - 20     21 - 30     31 - 40     41 - 50     51 - 60     61 - 70     71 +

How Many Years Have You Been in the Hobby?

- Less than 1     2 - 4     5 - 7     8 - 10     11 - 15     16 - 20     20 or More

How Many Models Have You Purchased In the Last Year?

- 0 - 1             2 - 4             5 - 7             8 - 10             10 or More

Please List any Other Modeling Interests or any Additional Information about This Product: \_\_\_\_\_

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