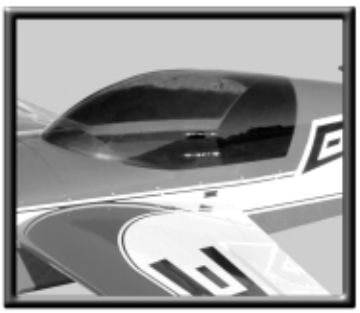
EDGE 540T

ALMOST READY TO FLY

ASSEMBLY MANUAL

KIT NO. SIGRC100ARF



SIG MANUFACTURING COMPANY, INC.

SIG EDGE 540T ARF ASSEMBLY MANUAL

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INTRODUCTION

Congratulations on the purchase of your SIG Edge 540T ARF kit. This aircraft has been carefully designed, tested and refined to offer you incredible performance, coupled with outstanding airframe strength. In terms of control response, the Edge 540T ARF kit is loaded with well-proven innovations. For example, precise control of the elevators has been achieved by using two elevator servos, one in each stabilizer half, keeping the linkage as short as possible. Likewise, very precise and powerful aileron control is achieved by placing two aileron servos into the bottom of each wing panel. The rudder control pull-pull system has also been optimized, by placing the control horn location at the approximate aerodynamic center of the rudder. Every bit of this forethought adds up to one very exciting and very precise airplane in the air!

In terms of construction, the SIG Edge 540T ARF has been expertly hand assembled by highly skilled individuals, each with many years of experience, employing accurate fixtures with very tight tolerances. In addition, all of the Edge 540T structural parts have been laser-cut using extremely accurate CAD-generated programs, ensuring that each airframe is as close to identical as humanly possible. Great care has been taken in the building and covering of this model to produce an exceptionally light, yet very strong airframe. This will all show up soon enough when you begin flying your own Edge 540T. Properly assembled, powered, and flown, the SIG Edge 540T is a *very* capable aircraft! Our Edge prototypes, powered with the F.P.E. 6.8 c.i. twin cylinder engine shown in this manual, easily performs virtually any 3D maneuver you can think of. The SIG Edge is both IMAC and IMAA legal and potentially a great contender in such events. We would urge you to give participation in these events serious consideration in terms of honing and furthering your flying skills.

Your SIG Edge 540T has been skillfully and beautifully covered at the factory, using SIG AeroKote®. This makes the airframe very easy to work with in terms of repair. This also means that your Edge 540T is both very light and very strong and, with reasonable care, it will remain beautiful for a long time to come.

The SIG Edge 540T ARF is highly pre-fabricated, making its completion very straightforward and relatively easy. However, there are the all-important issues of engine and radio selection - and their correct installations - to address. This manual will provide you with information on how we at SIG dealt with and handled these issues. This is valuable information that will make your own custom installations that much easier. To fully take advantage of this model, we urge you to carefully read this manual ***completely***. Doing so should provide you with insights and possible solutions in the installation of your own equipment.

Because this 33% model aircraft is exceptionally large, it is absolutely paramount that your first consideration in *anything* and *everything* to do with this model be safety-oriented. This model airplane was NOT designed and NOT intended as a beginner's model. It should *only* be assembled and flown by experienced R/C pilots, fully familiar with high-performance model aircraft. A model airplane of this size and mass is capable of causing considerable damage to both property and people. It is therefore *your* responsibility to take every step possible in minimizing and/or totally eliminating any possible failures of the airframe, radio equipment, and engine.

Finally, there is the very real issue of transporting this model safely to and from the flying field. Most modelers that we know, who fly giant scale models, use a dedicated trailer for this purpose. Let's face it, the SIG Edge 540T ARF is simply not going to fit in the back seat of your car! Therefore, serious consideration has to be given to the safe transportation of this model, in order to avoid damaging the airframe.

Specifications:	**Imperial**	**Metric**
Wing Span:	100 in.	254 cm
Wing Area:	1881 sq. in.	121.4 sq. dm
Length:	98.25 in.	249.6 cm
Flying Weight (typical):	27 lbs.	12.5 kg
Radio Required:	4 Channel, 8 Servos	
Engine Required:	5.8 - 6.8 cu. in.	95 - 110 cc

Items Required To Complete This Kit

- Engine - 95 to 110 cc, gasoline model aircraft type (see Engine Selection section)
- Radio System with Eight (8) Servos - (see below and Radio Equipment section for reference)
- Servos - The Edge 540T ARF requires a total of eight (8) servos. The rudder, elevator, and aileron servos must all be heavy-duty *metal gear* types with the minimum torque values as described below. *Never* use plastic geared servos in this model - they ***will*** fail. The throttle servo can be a standard system servo, if desired.

  Rudder: 1 each Rated @ 225 in/oz minimum
  Elevator: 2 each Rated @ 160 oz/in minimum
  Ailerons: 4 each Rated @ 160 oz/in minimum
  Throttle: 1 each Standard System Servo @ 38 oz/in (typical)

- Heavy-Duty Aftermarket Servo Output Arms
- Large Capacity Battery Pack (airborne system) - We used 2400maH 7.4volt Li-Ion Packs*
  (***Note** - When using this pack, it is necessary to step down the voltage to 6 volts using a voltage regulator, such as the Maxx Products 6 volt regulator, P/N ACC134)
- Large Capacity Battery Pack (engine ignition) - We used a 2400maH 7.4volt Li-Ion pack*
  (***Note** - When using this pack, it is necessary to step down the voltage to 5.4 volts using a voltage regulator, such as the Maxx Products 5.4 volt regulator, P/N ACC139t)
- Servo Extensions - See *Servo Extensions & Y-Harnesses* information
- Propeller - Sized to match engine of choice
- Spinner - 4" dia. -
  Such as Maxx Products, P/N PS400 (spun aluminum)
  Dave Brown, P/N S240-8240 (cast aluminum)
  Pete Models, P/N 4-EX (carbon fiber)
- Engine Mounting Hardware - To mount our F.P.E. 6.8 Twin engine, we used:
  4 each #10-32 x 1-1/2" Hex Head Hardened Steel Bolts
  4 each #10-32 Lock Nuts
  4 each #10-32 Flat Washers

- Engine Mounting Hardware - To mount our F.P.E. 6.8 Twin
- Fueling System - The J'Tec #F2G EZ Fueler or the Bisson #29011 Fuel Dot recommended
- Nylon Pushrod Set - For throttle servo pushrod - see product suggestions
- Yellow AeroKote®, #SIGSTL330 - Hinge Gap Sealing
- Gas-Compatible Fuel Tubing - Large ID Tygon tubing suggested - Du-Bro #506, about 30"
- 1/2" 2-Sided Velcro Tape - To secure receiver, fuel tank and radio battery packs
- 1/4" Thick Foam Rubber - Receiver and battery pack cushioning
- Small 4" Tie-Wraps - Used to secure and organize wiring
- Thread Locking Compound - Such as Loctite® #242
- 30-Minute Epoxy - SIG 2-Part Epoxy Glue
- 5-Minute Epoxy - SIG Kwik-Set Epoxy Glue
- CA Glue - SIG Thin, Thick, and SIG Accelerator
- Scrap Lite-Ply - Used as needed for custom mounting purposes - battery packs, etc.
- Heat Shrink Tubing – Used to secure connectors
- A selection of appropriate tools and materials, such as:
  Electric Drill
  Dremel® Tool with assorted bits
  A selection of drill bits and/or a drill index set
  Assorted sizes of Phillips screwdrivers
  Assorted hex wrenches & ball drivers (a 3mm ball-driver is required for the hex head wing mounting bolts)
  Hobby knife with #11 blades
  Fine CA Applicator Tips
  Scissors
  Masking Tape

Radio Equipment System Choice

The SIG Edge 540T ARF is a giant scale radio control aircraft that benefits greatly from the use of a sophisticated computer radio system that includes at *least* the following features and capabilities:

- Servo Reversing
- Dual Rates, including rudder movement
- End Point Adjustment (EPA) for all flying surfaces
- Exponential
- Coupling and Mixing Capability
- Differential Mixing

There are a number of excellent computer radio systems on the market that provide the above capabilities and in some cases, even more. It is obviously not possible in this manual to cover every radio system and its installation in the SIG Edge 540T ARF. Instead, we will cover the installation of the radio system that we used in our prototypes, the Hitec Eclipse 7 Q-PCM system. This excellent and affordable 7-channel computer radio system has provided us with virtually every feature required to control, optimize, and enjoy our Edge 540T models.

Receivers & Battery Packs

In the interest of redundancy, we chose to use two separate receivers in our Edge prototypes. These were the Hitec Supreme IIS 8-channel receivers, P/N 23972. In addition we used two separate 2-cell 2400 mAh Lithium Ion battery packs - one pack for each receiver - to power the airborne system. These battery packs have 7.4 volt capacity, which meant that we needed a voltage regulator for each pack to drop the voltage down to 6 volts. This was easily accomplished by using two 6-Volt Regulators, one for each battery pack. The small, lightweight regulator we used was the unit sold by Maxx Products, P/N ACC134.

Servos

As mentioned earlier, the servos you choose for your Edge 540T are extremely important to the success of your model. This is because the servos represent the last link to your flight surfaces. If you are trying to save money, DO NOT try to save money on your choice of servos! As also mentioned, we chose to run our airborne system at 6 volts. A 6-volt system provides considerably faster and more precise servo response. This is very desirable, especially when flying this airplane in 3D maneuvers. Earlier, we provided you with our recommended minimum torque requirements for the flight surface servos used in this airplane. The following is a list of the specific Hitec servos we used in our own Edge prototypes:

Rudder:
#HS5745MG Digital Servo - 249.9 oz/in Torque @ 6 volts
Ailerons & Elevators:
#HS5985MG Digital Servo - 172.2 oz/in Torque @ 6 volts

Servo Output Arms

As mentioned above, the servos are the last link to the flight surfaces, and this is true. However, the servo output arms themselves are likewise of equal importance. On a giant scale high performance R/C aircraft, such as the Edge 540T, plastic servo output arms are to be strictly avoided, with the possible exception of the throttle servo. The flight loads are just too high to risk the use of plastic output arms.

We chose to make our own aluminum servo output arms. Doing this allowed us to make our arms at the exact distances from the servo to maximize mechanical advantage. As the basis for our servo output arms, we used the Air Wild Uni-Hubs, fitted for our Hitec servos. This is a nice system if you want to make your own custom output arms. If you would rather work with commercial aftermarket heavy-duty servo arms, you can purchase good quality arms, such as the SWB products, for your specific servos. See the Referenced Manufacturer Information section at the end of this manual for contact information.

Servo Extensions & Y-Harnesses

Due to the remote elevator and aileron servo locations in the SIG Edge 540T ARF airframe, servo extensions are a must. It is therefore important to minimize electrical resistance by using servo extensions that use heavier wire. We have used and like the new Maxx Products 20g twisted wire servo extensions, without inline chokes. These efficient extensions tend to stay neat within the airframe and are available in eight different lengths, from 3" all the up to 48". These can be ordered from Maxx Products with the connectors of your choice, at reasonable prices. In our Edge 540T prototypes, we used the following servo lead extensions:

Elevator Servos:	2 each	36" Extensions
Aileron Servos (outboard)	2 each	36" Extensions
Aileron Servos (inboard)	2 each	18" Extensions

In addition to the servo extensions, you will also require "Y" harness connections, with heavy-duty wiring, for both the aileron and elevator servo leads, in order to connect them to your receiver. These are also available from Maxx Products, fitted with the connectors of your choice. The extensions and other wiring products that are required will depend upon your own particular radio system.

On/Off Switches

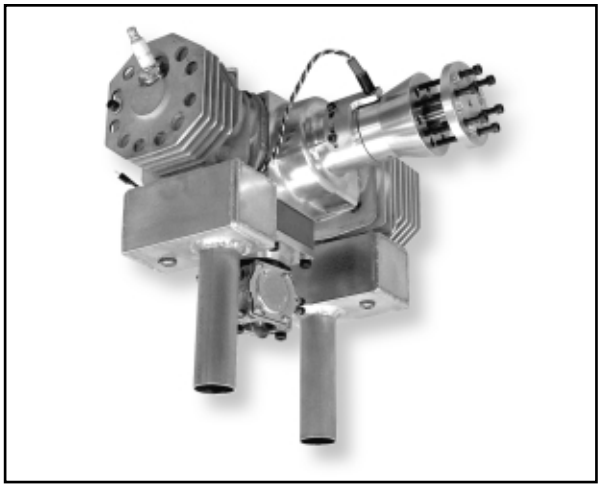
One of the most failure-prone components in any radio system tends to be the simple On/Off switch. This is because these light duty assemblies are subjected to almost constant vibration and contamination from the elements. This can be especially true with large gas-powered models, such as the Edge 540T ARF. To

provide a bit more insurance in our own airborne radio installations, we used heavy-duty aftermarket On/Off switch assemblies in our prototypes. And once again, these are available from Maxx Products. Maxx calls this switch their "Soft Mount One-Piece Charge Switch" - P/N 3470. This well-built switch also allows the airborne battery packs to be charged externally, directly from the covered charge jack in the switch itself. This switch also includes a silicon pad soft-mount - very desirable in large gas-powered models. We used three (3) of these switch assemblies in our Edge 540T models - one for each of the two redundant receivers and their battery packs, and a third switch for the engine ignition battery pack.

(**NOTE:** The manufacturer's part numbers provided in this manual were correct and current as of it's writing. Part numbers and/or products are subject to change.)

Engine Selection

At 33%, the SIG Edge 540T ARF model is obviously very large. Typical flying weights can vary with different engines, airborne equipment, and batteries but in general, fall within 26 to 27-1/2 pounds, ready to fly. We have flown and tested our prototypes using the very powerful and compact F.P.E. 6.8 ci (111.4 cc) twin cylinder gas engine. The F.P.E. 6.8 Twin weighs 116 ounces (3289 grams), including the electronic ignition module and mufflers that come with the engine. This very smooth running engine, turning a Biela 27 x 10 composite propeller, produces about 11.5 hp @ 6000 rpm. This translates to approximately 75 pounds of static thrust! This is precisely the kind of power-to-weight ratio that makes the SIG Edge 540T a very capable 3D aircraft.



The SIG Edge 540T design incorporates a large and spacious fiberglass cowl. This cowl is large enough to fully enclose the F.P.E. 6.8 twin cylinder engine, including the rubber sparkplug boots. This means that with the exception of creating the required clearance holes for the two stock mufflers and opening the bottom rear half-round air dump, there are no other required cowl openings.

If you choose to power your Edge 540T with a different brand of gas engine, then we suggest using engines in the 95 to 110cc range. Again, when choosing an engine for your Edge, other than the F.P.E. 6.8 twin, you should carefully consider the weight of the engine and the overall mounting dimensions. To assist you, the following dimensions are provided:

1) Firewall to front spinner opening surface of cowl: 7-7/32" (this can be adjusted fore or aft by about 1/8")
2) Maximum (non-contact) internal cowl width: 13-1/16"

We urge you to carefully consider the engine you choose for your Edge 540T ARF model. Reliability, power, weight, and dimensions are all very important in obtaining maximum performance and a long life for your model. Finally, *under no circumstances do we recommend any engine for this model in excess of 111.4cc displacement.*

Covering

The SIG Edge 540T ARF model has been professionally covered with SIG AeroKote® covering film. This high quality polyester covering film has been expertly applied, using a beautiful and unique trim scheme, designed specifically to provide maximum contrast between the top and bottom of the model. This feature offers excellent attitude reference during 3D or IMAC maneuvers.

The SIG Edge 540T ARF model was manufactured and covered in a part of the world that is typically humid. When the individual covered parts are removed from their plastic bags, some wrinkling of the covering may occur after a day or so. This is especially possible if you live in a drier climate. This phenomenon is perfectly normal and DOES NOT mean that your model has a defect. These wrinkles are caused by wood losing moisture and dimensionally shrinking in the process. This is the nature of wood, especially softer types.

Some modelers may feel that the covering on their ARF model should be perfect and that they should not be expected to re-shrink wrinkles. This is not realistic, because any covering material - regardless of brand - that has been hand applied over wood, is indeed subject to the possibility of wrinkling.

The requirement is to therefore re-shrink the covering, as needed. This is not difficult to do and can be done using normal hobby-type covering tools, such as a heat iron, a trim seal tool, and a heat gun. Carefully note that we do not recommend the use a heat gun around any areas where two pieces of covering material have been seamed together. The heat gun generates a great deal of broadcast type heat that in turn, can loosen seamed covering material, causing these seams to "creep". If you must use a heat gun around or near such seams, we urge you to protect them first. To do this, simply soak some paper towels in cool tap water and arrange them directly onto the seams. You can then use your heat gun to carefully shrink areas close to the seam.

When using a hobby-type heat iron, we always suggest that the surface of the shoe be covered with a soft cloth. This will help to prevent scratching or hazing the surface of the covering material. For years we have used old cotton T-shirt cloth for this purpose and it works very well. There are also commercially available "covering socks" that fit onto most covering iron shoes. These can vary in quality, so choose one that feels the softest. Also note that the temperatures required to shrink and seal AeroKote® (275° - 325° F) are definitely high enough to melt or distort plastic parts. Use common sense when working around the plastic parts on your model!

Also be aware that the aft top turtledeck on the Edge 540T ARF model is a composite of shaped white foam, sheeted with balsawood. This makes for a very light structure, eliminating the need for stringers. However, we do suggest that you only use a heat iron on this area for re-shrinking purposes, and then, only lightly.

For reference, the SIG Edge 540T ARF model was covered using the following AeroKote® colors and SIG part numbers:

Blue Opaque .....#SIGSTL250
Bright Yellow Opaque .....#SIGSTL330
Black Opaque (Striping) .....#SIGSTL201
Yellow/Black Checkerboard (1" sq.) Fin/Rudder .....#SIGSTL432

Red/White Checkerboard (2" sq.) Stab/Elev Bottom ..#SIGSTL413
Red/White Checkerboard (4" sq.) Wing Bottom .....#SIGSTL414

Kit Contents

The following is a full and complete list and description of each of the parts contained in the two kit boxes that make-up the complete Edge 540T ARF kit. We strongly suggest that you now take the time to carefully and completely inventory each of the parts listed below, using the boxes (❑) on the left hand side to check off each part. If you are missing any of these parts, make a note of the missing part or parts and contact the location where you originally purchased the model for replacement.

IMPORTANT NOTE: Each Edge 540T ARF kit has been carefully and completely inspected and inventoried on three different occasions. Therefore, you can be assured that your kit has been checked and was shipped with all of the listed parts included. Missing part claims made *after* the assembly of the model begins cannot be honored.

Box 1 of 2:

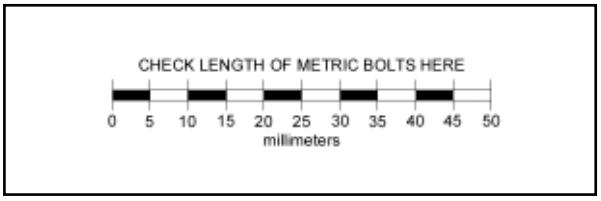
- ❑ 1 each Fuselage - Covered, with vertical fin in place - Hinge Holes Drilled
  - Main Landing Gear Hatch in place with 2 each T3 x 16mm Hatch Mount Screws (taped to inside of hatch)
- ❑ 1 each Fiberglass Cowl - Painted, with cowl mounting hardware bag:
  - ❑ 6 each M3 Blind Mounting Nuts
  - ❑ 6 each M3 x 10mm PWA Bolts
- ❑ 1 Bag Fiberglass Wheel Pants, 1 left, 1 right, pre-drilled for mounting with M3 Blind Mounting Nuts Installed
- ❑ 1 Bag Main Landing Gear - Painted White, pre-drilled for axle and wheel pant mounting
- ❑ 1 Bag Main Wing Mounting Tube - 40mm dia. x 973mm, Black Anodized Aluminum
  Fwd Stabilizer Mounting Tube - 12.5mm dia. x 198mm, Black Anodized Aluminum
  Rear Stabilizer Mounting Tube - 12.5mm dia. x 478mm, Black Anodized Aluminum
- ❑ 1 Bag Large SIG Tail Wheel Assembly:
  35mm dia. Tail Wheel - Mounted
  Steel Tail Wheel Yoke, Axle, Nylon Bellcrank - Mounted
  - ❑ 3 each Graduated Aluminum Leaf Springs
  - ❑ 2 each Centering Springs
  - ❑ 1 each Rudder Mounted Aluminum "T" Bracket
  - ❑ 3 each T3 x 16mm PWA Screws - Tail Wheel Mounting Screws
  - ❑ 2 each T2 x 12mm PWA "T" Bracket Mounting Screws
- ❑ 1 Bag Main Wheel Bag:
  - ❑ 2 each 110mm (4.3") dia. Main Wheels* (**see note below**)
  - ❑ 2 each Main Wheel Axles - 4.75mm dia. x 50mm
  - ❑ 2 each 5/16-24 Axle Lock Nuts
  - ❑ 4 each 5mm I.D. Wheel Collars with Set Screws
  - ❑ 4 each M3 x 15mm PWA Bolts - Wheel Pant Mounting
  - ❑ 4 each M3 Split Washers
  - ❑ 4 each M4 x 20mm PWA Bolts - Main Landing Gear/Fuselage
  - ❑ 4 each M4 Split Washers
- ❑ 1 Bag
  - ❑ 1 each Throttle Servo Mounting Tray - 2.75mm Plywood
  - ❑ 2 each M4 x 20mm Hex Head Bolts - Rear Wing Attachment Bolts
- ❑ 1 Bag
  - ❑ 1 each Throttle Servo Mounting Tray - 2.75mm Plywood
  - ❑ 2 each M4 x 20mm Hex Head Bolts - Rear Wing Attachment Bolts
  - ❑ 2 each M4 x 25mm Hex Head Bolts - Forward Wing Attachment Bolts
  - ❑ 4 each M4 Washers
  - ❑ 4 each T2.6 x 16mm PWA Screws - Stabilizer Mounting Screws
- ❑ 1 Bag
  - ❑ 8 each Heavy Duty Control Horns w/Nylon Inserts (4 Left, 4 Right)
  - ❑ 32 each T2.6 x 16mm Phillip Head Screws - Control Horn Mounting Screws
  - ❑ 2 each .08mm x 1200mm (47") Nylon Coated Steel Cables
  - ❑ 4 each Steel Clevises with 2mm Threaded Rigging Couplers and Lock Nuts - Rudder Pull-Pull Connectors
  - ❑ 4 each Copper Rigging Swages - 3.5mm x 4mm
- ❑ 1 Bag
  - ❑ 6 each Aileron and Elevator Control Linkages: 4-40 Threaded Steel Rod with 4-40 Clevises at each end with 4-40 Lock Nuts and Spring Clevis Retainers
  - ❑ 1 each Throttle Pushrod - 1.8mm x 300mm with Clevis at one end
- ❑ 1 Bag
  - ❑ 1 each Fuel Tank Body - 800cc Capacity (27.05 ounces)
  - ❑ 1 each Gasoline-Compatible Rubber Tank Stopper
  - ❑ 3 each Aluminum Fuel Tubes
  - ❑ 1 each Gasoline-Compatible Fuel Tubing Piece
  - ❑ 1 each Fuel Pick-up Clunk Weight
- ❑ 1 each Edge 540T Graphics Sheet - 11-1/4" x 59-1/4"
- ❑ 1 each Edge 540T Assembly Manual

Box 2 of 2:

- ❑ 1 each Rudder Assembly - Covered, with Control Horn Hardpoint and five (5) heavy-duty Super Hinge Point hinges in place - NOT glued
- ❑ 1 each Left Horizontal Stabilizer Half - Covered with Control Horn Hardpoint and four (4) heavy-duty Super Hinge Point hinges in place - NOT glued, with servo cut-out made and ready
- ❑ 1 each Right Horizontal Stabilizer Half, Covered with Control Horn Hardpoint and four (4) heavy-duty Super Hinge Point hinges in place - NOT glued, with servo cut-out made and ready
- ❑ 1 each Left Main Wing Panel - Covered, with Aileron in place with five (5) Super Hinge Point hinges in place - NOT glued, with:
  - Two (2) aileron wiring strings in place for each aileron servo bay
  - 12.5mm O.D. aluminum tubing rear wing locator tube in place
  - 40mm I.D. fiberglass wing tube receiver in place
  - Two (2) M4 blind mounting nuts installed for wing mounting
- ❑ 1 each Right Main Wing Panel - Covered, with Aileron in place with five (5) Super Hinge Point hinges in place - NOT glued, with (see Left Wing Panel above)

***WHEEL NOTE:** The two 4.3" dia. main wheels provided with the Edge 540T ARF kit are of high quality, designed to be as light as possible, with a weight of only 44.5 grams per wheel! Our reason for using these wheels has everything to do with weight. Saving every

last gram of weight wherever possible is very important. We understand fully that this type of wheel has a tendency to develop a flat spot when the model is stored on its wheels over time. We therefore suggest that the weight of the fuselage be taken off of the wheels when airplane is being stored or is sitting on the flight line for prolonged periods of time. For us, this bit of effort is worth it in the long run. If you wish, you can replace the kit wheels with aftermarket wheels of approximately the same diameter and hub width.



Individual Part Inspection:
Although your Edge 540T ARF airframe was carefully and expertly constructed, we still suggest that you conduct a full and complete airframe inspection. Finding and correcting any structural issues now will greatly enhance and prolong the life of your model. Inspect each joint to make sure these are all secure. If necessary, use a good quality 15 or 30-minute epoxy to re-glue or reinforce any suspect joint.

Incidence & Thrust Angle Information:
Incidence and thrust have been built into the model at the factory. However, some people may still wish to know these values:

Incidence:	Wing	0°
	Stabilizer	0°
Engine Thrust:	Right Thrust	2° (Built into engine mount)
	Down Thrust	0°

Pre-Assembly:
The Edge 540T ARF is a very large model airplane that obviously requires a large enough space to assemble it and work on it, in order to avoid damage. We strongly suggest that your workbench area be protected with sheet rubber foam or some similar padding material in order to minimize the possibility of scratching or denting the covered airframe parts.

With the exception of the hinging procedure for the flight surfaces, and the use of CA to harden various threaded holes in wood, there will not be much further need to use epoxy or CA glues in or around the outer surfaces of the various airframe parts. However, if you should accidentally drip or spill these adhesives onto the covering of your model, they can usually be totally removed. In the case of epoxy, use denatured alcohol and a soft cloth to remove it as quickly as possible, *before* it cures. In the case of CA glues, when this stuff dries, it can be difficult to remove. We suggest using a soft cloth and CA debonder to first soften the glue and then carefully wiping it away.

The canopy hatch on the top of the fuselage should be removed and set aside until the model is fully assembled. The canopy hatch is held in place with four M3 x 10mm PWA bolts - two on each side of the fuselage. Remove these bolts and remove the canopy hatch. Keep the bolts with the hatch so as not to lose them.

It is always best to have all of the equipment that you plan to use in your model - engine, radio system, various accessories, etc. - available to you before you start assembly.

Graphics Application:
We have found that it is much more convenient to apply the graphics to the wing panels, fuselage, and rudder of the Edge 540T model before the assembly process. However, you can use the following instructions to apply your graphics either now or after you have completed the assembly steps.

Your Edge 540T ARF kit includes a beautiful and very large graphics sheet. These graphics are of high quality and include a unique light-tack clear carrier sheet that allows you to precisely position each separate graphic onto the surface of the model. There are six (6) basic graphics contained on this sheet - 2 each large "EDGE 540" graphics, tapered to fit onto the wings, 2 each smaller "EDGE 540" graphics, tapered to fit onto the fuselage sides, behind the canopy, and 2 each "N540SG" graphics for the rudder. Use the box label for locations of each graphic.

Begin by using a pair of scissors to cut each of the six graphics from the overall sheet. The following technique is the easiest way to locate and then adhere these very large graphics. Use a good quality cleaning solution, such as SIG Pure Magic Model Airplane Cleaner, Windex®, or Fantastic® to first liberally spray the area that will receive the graphic. Next, carefully and slowly remove the white paper backing from the graphic, leaving it in place on the clear carrier film. Now spray the adhesive side of the graphic liberally.

Lightly place the graphic and clear film carrier sheet - adhesive side down - in place onto the model, in the area where it will be permanently mounted. The cleaning liquid will keep the adhesive from actually sticking. Do not press down on the graphic; just position it approximately in place. You can now shift the graphic into its final location on the model. Once the graphic is exactly where you want it, hold it in place at one end with your fingers and use a paper towel to lightly begin smoothing it in place with light pressure. This will begin to remove some of the liquid beneath the graphic, allowing it to begin to adhere.

The graphic is now adhered permanently in place. To do this, we suggest using a plastic squeegee. The SIG 4" plastic Epoxy Spreader squeegee - P/N SH678 - is perfect for this purpose. Smoothly and firmly use the squeegee to completely remove all of the liquid and air bubbles from beneath the graphic. Use paper towels to clean up the excess liquid. Once you're satisfied that all of the liquid has been removed, allow the graphic to dry overnight. When the graphic has dried, pick up one of the edges of the clear plastic carrier film and remove it by pulling the film back against itself. The graphic that is left in place on the model is now all but permanently in place.

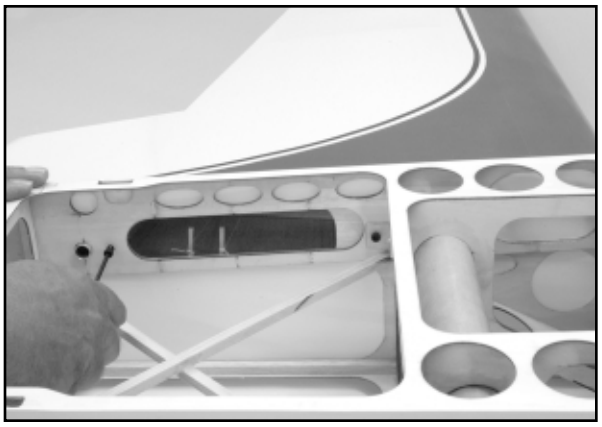
Assembly:

Mounting The Wing Panels:
The two main wing panels are attached to the fuselage using the 40mm dia. x 973mm black anodized wing tube. It is important that you pre-fit the wings and wing tube, making sure that everything fits. The first thing to do is to make sure that the fiberglass receptacle tubes in both the fuselage and the wing panels are clear of obstructions, allowing the tube to fit fully in place. We used high-pressure air to first blow out any dust or debris from these tubes.

Insert the wing tube fully into one of the wing panels, until it bottoms out against the plywood stop inside the female receptacle tube. The fit should be firm, not sloppy. Remove the tube and repeat this process on the other wing panel. Remove the tube.

Slide the main wing tube in place through the fuselage, roughly centering it. Hold the tube and slide one of the wing panels in place onto the tube, sliding it inwards towards the fuselage side. As the wing root gets close to the fuselage side, the permanently mounted aluminum tube stub at the rear of the wing root must now engage into the hole in the fuselage side. With the rear tube now engaged into the hole, the wing panel can be firmly pressed against the fuselage side. Repeat this mounting procedure with the remaining wing panel.

There are four M4 Hex Head Bolts provided in the kit. Two of these are 20mm long and are the rear attachment bolts. The other two are 25mm long and are the forward wing attachment bolts. Using these four M4 bolts and four 4mm flat washers, the two wing panels are now secured to the fuselage. Slide a washer onto one of the 25mm bolts and from the inside of the fuselage insert the bolt into the forward bolthole through the aluminum L-bracket. With the wing against the fuselage, use a 4mm ball-driver to tighten the bolt into the blind mounting nut already in place in the wing root. Move back to the rear bolthole and insert a 20mm bolt and washer in place and use the ball-driver to secure the bolt. Repeat this process with the opposite wing panel.



With everything now pre-fitted, disassemble the wing panels from the fuselage and remove the main wing tube. Set the tube aside for now. The best way to keep the wing mounting bolts in a place where they can always be found is to thread them into the two bolt holes in each wing panel.

Mounting The Horizontal Stabilizer Halves:
The two horizontal stabilizer/elevator halves on the Edge 540T ARF kit are made to be removable. This feature can be useful in transportation and/or storage situations. Both stabilizer halves mount onto anodized aluminum tubes that fit through the rear of the fuselage. From the kit contents, locate the front 12.5mm dia. x 198mm stab tube, the rear 12.5mm dia. x 478mm stab tube and four T2.6 x 16mm PWA screws. (Note that the stabilizer mounting tubes have hardwood inserts in place at each end.) For fitting purposes, it's convenient to first remove the rudder from the fin and the elevators from their stabilizer halves.

1) Use high-pressure air to blow out each female tube receptacle holes in both stab halves. Slide the shorter forward tube into the forward receptacle in one of the stab halves. Note that there are plywood tubing "stops" built-in to the inner ends of these receptacle tubes. Be sure the inserted tube bottoms out against this stop. The fit may be stiff, so while the tube is in place, firmly grasp it and rotate it a few times until it's a bit freer. Remove the tube and slide the opposite end into the other stab half. If the fit feels tight, rotate the tube a few times until it too feels a bit freer. Repeat this with the longer rear stab tube in the rear stab receptacle holes.

2) The stab halves are now trial-fitted to the fuselage. Insert the front and rear tubes into one of the stab halves until both tubes bottom out at their stops. Insert the exposed ends of the tubes all the way through the front and rear stab mounting holes at the rear of the fuselage, until the root rib of the stab contacts the fuselage. Slide the opposite stab half in place onto the exposed tube ends and press it firmly all the way in place until it too contacts the side of the fuselage. This is the fit you're trying to achieve.

In the unlikely event that one of these two tubes may be a little too long, preventing the stab halves to fit against the fuselage sides, it will have to be slightly trimmed in length. If this is the case, you have to determine which tube needs to be shortened. Remove both stab halves and either the front or rear tube from one of the halves. Reinsert the one tube into its correct receptacle and slide it in place through the appropriate fuselage stab hole. Slide the other stab half in place onto the tube end and press it up against the fuselage. If the two stab halves now fit against the fuselage sides, you now know it is the remaining tube that needs to be trimmed. Likewise, if the tube currently in place does not allow the stab halves to fit against the fuselage sides, then it is this tube causing the problem. Visually determine how much of the end of the tube needs to be trimmed. Use a bench grinder or vertical sander, to lightly trim the offending tube. Lightly chamfer the trimmed end of the tube at a 30° angle or so. Finally, remount the two stab halves in place to the fuselage and check the fit. It should now be fine. Remove the stab halves and tubes from the fuselage.

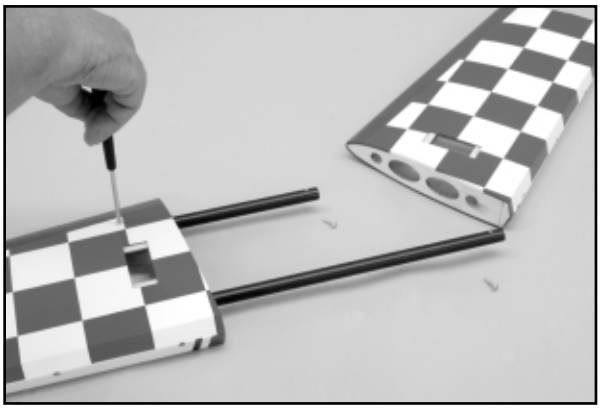
3) The mounting tubes must now be secured in place in the stab halves, using four T2.6 x 16mm PWA screws. On the bottom surface of each stab half you will see two small pre-drilled holes. These are hole locations for the stab tube retaining screws. In order to use these screws, the stab mounting tubes need to be accurately marked and then drilled with guide holes. To easily mark the ends of the tubes, we used a short length of 3/32" dia. music wire with a sharpened point at one end.

Insert the front and rear mounting tubes in place into the stab, making sure they both bottom out against their stops. Insert the pointed end of the music wire into one of the pre-drilled holes on the bottom of the stab. Press the music wire against the aluminum tube and rotate the tube inside the stab. This will scribe a mark on the tube. Repeat this process with the remaining stab tube. Remove the tubes from the stab half.

4) Use an electric drill and a .081 dia. drill bit (#46 index size), to drill a hole through the aluminum tube and into the hardwood insert at the scribed location on the tube, at 90° to the length of the tube. Do not drill all the way through the tube. In the interest of accuracy, we used a drill press for this step. Repeat this process with the other tube end. Clean up any debris on the tubes where the holes were drilled, using sandpaper to smooth it.

Using one of the T2.6 x 16mm PWA screws and a Phillips Head screwdriver, tap the hole just drilled in the tube, running the screw about 3/4 of the way into the tube. To do this correctly, make just a 1/2 turn or so with the screw, back it out a bit and then screw it in another 1/2 turn or so. Repeat this tapping process - a little in, a little out - until the hole is tapped. Now do the same thing with the remaining tube. Remove any debris on the surface of the mounting tubes with sandpaper. Install the two now drilled and tapped tubes back into the stab half. Install the two retaining screws into the stab and tube ends, bringing the heads of both screws down to the surface of the stab - there is no need to over-tighten these screws.

5) With the front and rear mounting tubes and the retaining screws now accurately in place in one of the stab halves, the same thing has to be done with remaining stab half. Slide the opposite stab half onto the mounting tubes, all the way to the internal stops. Chuck the .081 dia. drill bit into an electric hand-held drill. Using the two hole locations on the bottom surface of the stab, insert the bit into each hole and use a little pressure to mark the hole locations onto the ends of both tubes. Remove the stab half from the tubes and remove the retaining screws from the opposite stab half and then remove both tubes. Drill the now marked tube ends at 90° with the .081 dia. drill bit, again about 3/4 of the way through the tubes. Tap the two holes with a T2.6 x 16mm screw, using the technique described earlier. Remove any debris from the surface of the two tubes with sandpaper.



Insert the mounting tubes into one of the stab halves and install the retaining screws. Install the exposed tube ends through the fuselage holes. Slide the remaining stab half in place onto the tubes, all the way up to the fuselage side. Install the two retaining screws. This completes the stab mounting and retaining screw installation. Remove the stab halves and tubes from the fuselage.

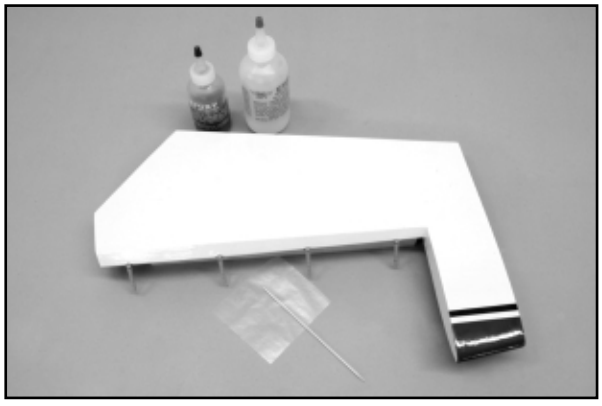
Hinging Flight Surfaces:

The proper hinging of the flight surfaces for any model is very important. This is even more so with giant-scale models. Improperly installed hinges can and will have a detrimental effect on how the model flies in terms of precise control response. Further, it is imperative that each hinge be securely glued in place. The Edge 540T ARF kit includes excellent Super Hinge Point hinges. These are high quality, very strong, and easy to install. Also note that all of the required hinge mounting holes have been pre-drilled for your convenience. The correct mounting of these hinges requires the use of 30-minute epoxy - never use 5 or 15-minute epoxy types for gluing these hinges in place. It's most efficient to mix 1/2-ounce batches of glue at a time for hinge installation. If during the hinging process the glue begins to feel "thick", mix a fresh batch and continue on.

Note that this section is generic to hinging all of the flight surfaces. The same techniques and materials should be used. All five of the flight surfaces - 2 ailerons, 2 elevators, and the rudder - can be hinged at this time. To illustrate this instruction, we are using the left stabilizer and elevator half. We always suggest installing the hinges into the flight surface (elevator, in this case) first, followed by then mounting the flight surface to its corresponding part.

1) We suggest wiping down each hinge with alcohol before it is installed. This removes all oils, etc. from the hinge, allowing the best bonding surface for the epoxy.

2) Mix a fresh batch of 30-minute epoxy in a cup. Use a thin stick (we like using bamboo skewers for this purpose) to apply glue into one of the hinge holes in the elevator. Also apply glue to the ribbed surface of one half of one of the hinges. Insert the hinge into the hole in the elevator until it is fully in place. The center hinge pin should be aligned in parallel with the hinge line of the elevator. Quickly wipe off any oozing glue with a paper towel and alcohol. Orient the hinge at 90° to the hinge line, allowing full movement up and down. Repeat this process, installing the remaining hinges.

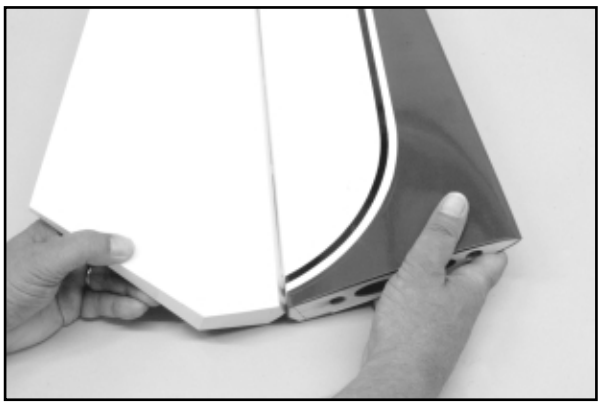


3) With the hinges in place and properly oriented, allow the epoxy to cure for at least 4 hours to ensure the best bond. After the glue has cured, work each hinge repeatedly through the full range of movement. This will break up any glue that may have gotten into the hinge area. Continue doing this until each hinges moves absolutely freely with no binding at all.

4) Mix a fresh batch of 30-minute epoxy. Use a thin stick or bamboo skewer to apply glue into each hinge hole in the stabilizer. Apply glue to the exposed ribbed ends of each hinge half. Carefully installed each hinge half into their corresponding holes in the stabilizer. Press the elevator half uniformly into place against the stabilizer hinge line. You want to leave the minimum possible gap. Use alcohol and paper towels to carefully remove any visible signs of glue at each hinge location.

Again, check the hinge gap for the closest possible fit, while maintaining full movement ability. Allow the glue to cure for at least 6 hours. Before the glue fully cures, we suggest checking the fit and movement of the surface, adjusting it as needed.

5) When the glue has fully cured, carefully check the movement of the control surface, moving it back and forth completely through its full range of movement.



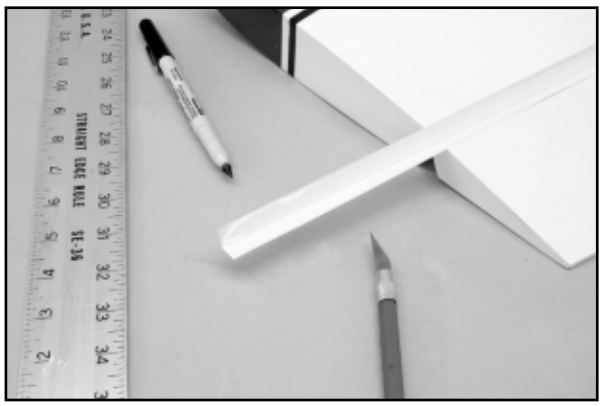
Hinge Gap Sealing:

It is mandatory to seal the aileron and elevator hinge gaps, making them airtight to prevent flutter. Sealing these gaps also serves to make these flight controls much more precise as well as making them much more efficient and easier to trim. Failure to seal the aileron and elevator hinge gaps may well lead to control surface flutter, potentially causing the model to crash. Hinge gap sealing is really not all that difficult and could save your model. In the interest of maintaining the color scheme, we used AeroKote® Bright Yellow #SIGSTL330 (not included) for sealing our aileron and elevator hinge gaps.

Sealing the hinge gaps need only be done on one side or the other of the surface. Our suggestion is this; if you are proficient in working with iron-on films, seal the hinge gaps from the top. If you're not very good at working with such films, then seal the bottoms of the hinge gaps, where they are less conspicuous. This instruction sequence assumes you are sealing the hinge gaps on the tops.

1) For the ailerons, cut a piece of AeroKote® about 4" x 36". On a flat surface, fold and crease this strip lengthwise, color to color, at the 2" center. Make the crease sharp at this fold.

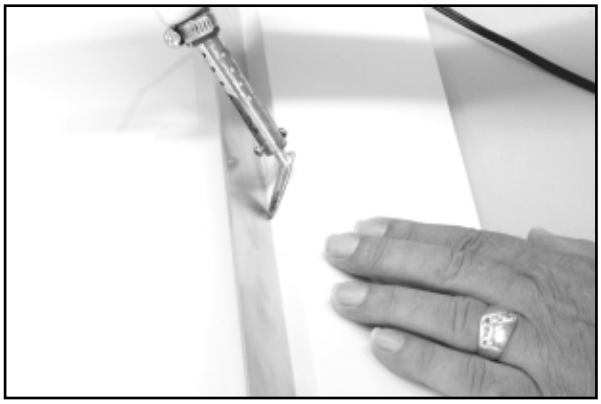
2) At each end of the strip, use a ruler and a marker pen to measure and mark a point that is 1/2" from the crease fold. Lay the strip on a flat cutting surface and use a straight edge and a hobby knife with a sharp #11 blade to cut the strip lengthwise at the two marks just made.



3) The strip is now cut to the correct length for the aileron hinge line. This should be 35-3/4". The completed strip will now be placed into the aileron/wing panel hinge line and ironed in place.

4) Remove the clear backing from the AeroKote® strip and place it into the hinge line bevels, with the crease directly over the aileron/wing panel gap. With the wing panel on a flat surface, place a straight edge into the hinge gap with its edge directly over the crease. This serves to hold the AeroKote® strip firmly in place against either the wing or aileron bevel.

5) Use a smaller trim seal tool, set to "High", to now iron one side of the strip to its bevel. Work from one end to the other, moving slowly to make sure the strip is completely ironed in place. Remove the straight edge when you're finished.

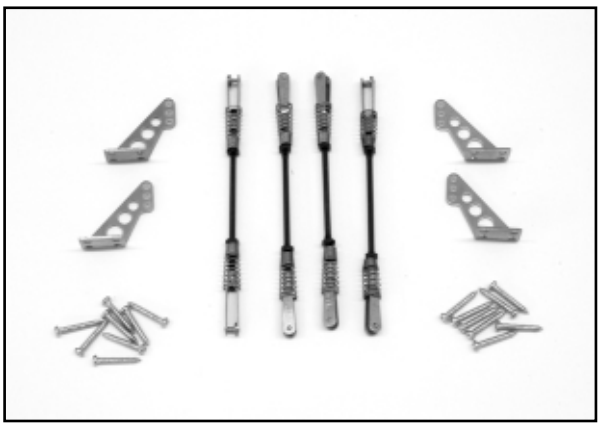


6) Flex the aileron to its maximum full down position and use a piece of masking tape to hold it in place. The opposite side of the AeroKote® strip is now ironed in place to its beveled side. Again, we prefer using our trim seal tool for this step, making sure the material is completely ironed in place. Remove the tape holding the aileron.

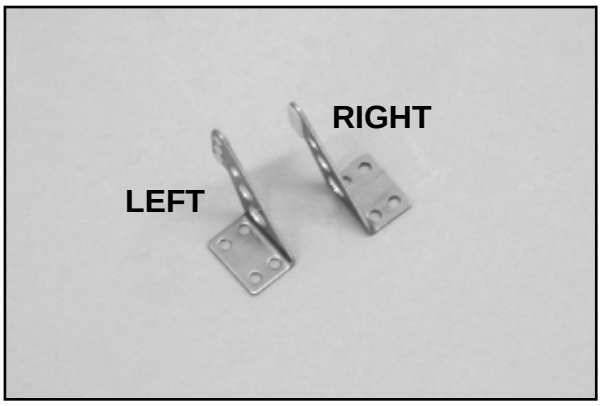
The hinge gaps in both the stabilizer/elevator assemblies can now be sealed in the same manner described above. For these assemblies, you need to cut two 7/8" x 13" AeroKote® strips, creased at the lengthwise center.

Aileron Servo Installation:

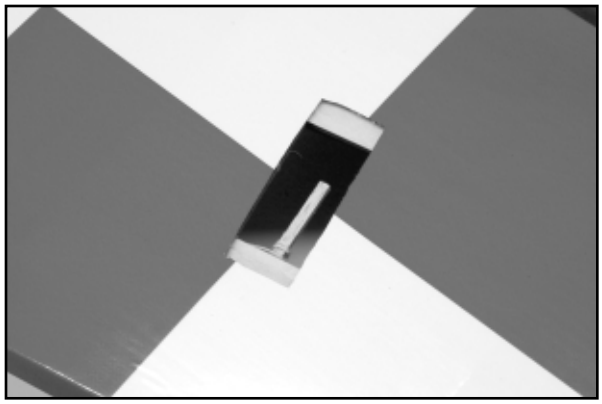
For the aileron servo installation, you will need four aileron servos and the appropriate servo extensions for both wing panels. You will also need the servo mounting screws and eyelets that came with your radio system. From the kit contents, locate the bag containing the heavy-duty control horns and the small bag containing the T2.6 x 16mm Phillips head screws. You will need four control horns - 2 left and 2 right horns. You will need a total of 16 control horn mounting screws.

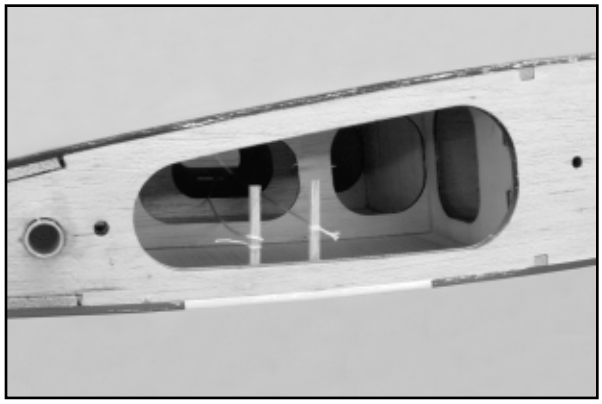


Note: For clarification purposes in this manual, we define a left and a right control horn by simply looking straight down on the horn, as shown. If the mounting pad (4 screw holes in each pad) is facing left, it is a *left* control horn. If the pad is facing to the right, it is of course a *right* control horn. Use this identification method when following any instruction where control horns are being mounted to the flight surfaces.



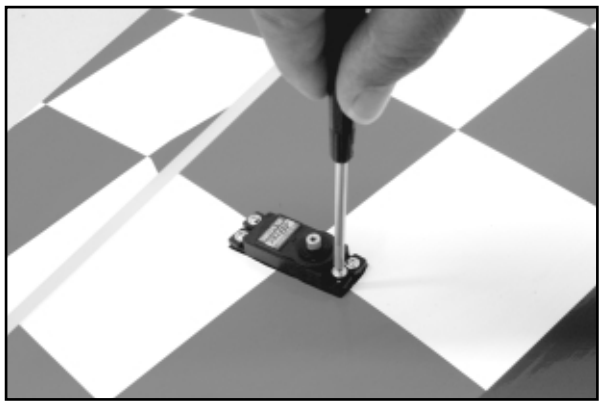
1) Each wing panel has two servo extension strings - one for each servo - in place for your convenience. These strings are temporarily attached in each aileron servo bay and to the inside of the root rib.





2) Working with the outboard aileron servo first, break away the piece of balsa holding the servo extension string and pull out enough string to attach the connector of your longest servo extension (as previously mentioned, we used a 36" non-choked heavy-duty servo extension in our models). Install the four rubber grommets and eyelets that came with your radio system into the servo mounting tabs. From the wing root rib, pull the extension lead through the wing and out of the wing root rib. Note that we suggest using a 1" or so piece of heat shrink tubing over the extension and servo connectors to secure them. Plug the servo connector into the servo extension and shrink the heat tubing.

The servo is now positioned into the servo bay, with its output spline forward, toward the leading edge of the wing panel. Using the mounting screws supplied with your radio system and secure the servo to the mounting rails in the servo bay.

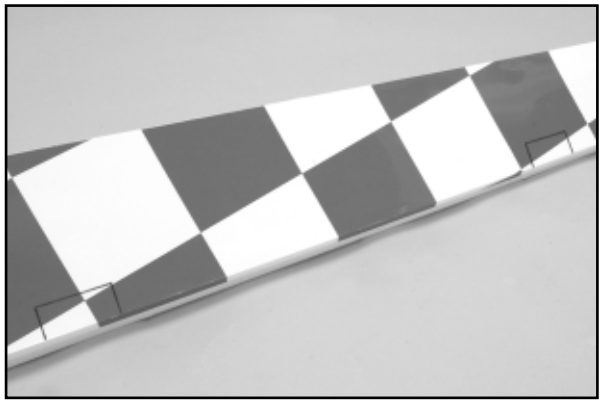


3) The inboard aileron servo is now mounted in place into the inboard servo bay opening in exactly the same way as described above. As mentioned earlier, we used 18" servo extensions.

4) Using the same instructions above, mount the remaining two aileron servos in the opposite wing panel.

5) If you are using a single receiver, you now need plug the two servo extensions from each wing panel into a Y-harness - one harness for each wing panel. The Y-harness connectors are now plugged into the appropriate aileron servo receptacles in your receiver (with our Hitec receiver, these are Channel 1 for right aileron and Channel 6 for left aileron - consult your radio system manual for this information). Connect a switch and a charged battery pack to your receiver. Turn on the transmitter and then the receiver. Using the instructions that came with your radio system, make sure the servos are moving in the correct directions and that the aileron trim is in neutral. When the servos are properly set-up, turn off the receiver and the transmitter and disconnect the aileron servos from the receiver.

6) The two required aileron control horns are now mounted at the bottom bevel leading edge locations of the aileron. Note that there are two thick hardwood pads built into the bottom of each aileron for control horn mounting. The outline of these pads can usually be seen, by holding the aileron at an oblique angle to the light. These hardwood pads measure about 7/8" x 2", offering plenty of hardened area for mounting the control horns. In the photo below, we have outlined one of these aileron mounting pads.

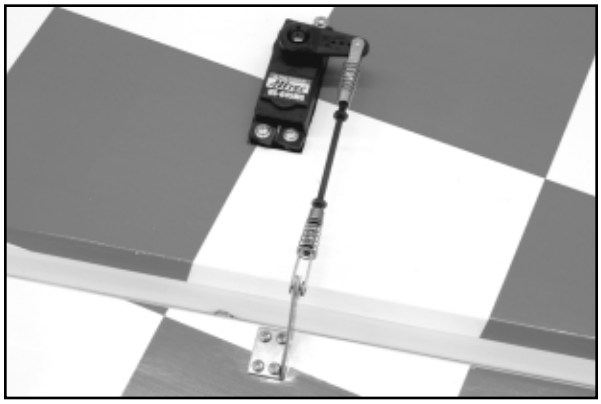


a) Starting with one of the wing panels, use a piece of masking tape to lock its aileron in the neutral position. Install an aileron servo output arm onto each aileron servo, with the arms both pointed outboard toward the wing tip. The servo arms should both

be aligned to the servo at 90° and should both be in line and parallel with each other. Select two of the pre-assembled aileron linkages. On both pushrods, thread the two lock nuts all the way in toward each other, leaving the maximum amount of threads exposed. Connect one of the R/C links to the servo arm on both servos. In the photos we show the left wing panel, so we selected two left control horns. Connect the two control horns to the R/C links on each pushrod.

b) Place the control horn mounting pad onto the surface of the aileron. Turn the threaded metal control rod to adjust the distance of the control horn from the leading edge bevel of the aileron. The correct position for the control horn on the aileron is with its forward mounting pad edge up to the bevel edge of the aileron. The upright arm of the control horn should be directly facing the output arm and the control rod should be parallel with the servo body. Hold the control horn in this position and mark the hole locations onto the aileron with a marker pen or sharpened pencil.

c) Swing the pushrod and horn out of the way. Use an electric drill and a .043" (#57 index drill) to drill four holes at the marks just made. Use four T2.6 x 16mm Phillips head screws to mount the control horn, just enough to establish threads in the mounting pad. Remove the screws and apply a drop of thin CA glue with a fine-tipped applicator, into each screw hole to harden the threads. Remount the control horn with the screws and tighten them firmly. Repeat this process with the remaining control horn and the opposite wing panel. Remove the pieces of tape holding the ailerons in neutral.



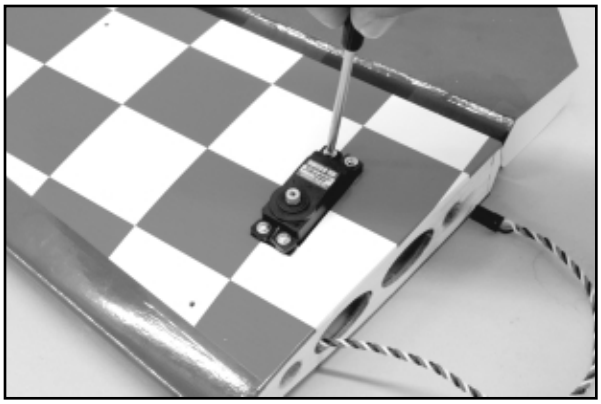
7) Use your transmitter and receiver to now test the ailerons. Make any linkage and/or servo arm adjustments necessary to achieve smooth, non-binding aileron movement. The pushrod locking nuts and clevis safety springs do not need to be tightened or in place until after you have set the final surface movements, later in this manual.

Elevator Servo Installation:

The elevator servos are mounted into each stabilizer half in much the same way as the aileron servos were mounted in the wing panels. Because the left stabilizer half is shown in the following instructions, we will mount a left control horn to the elevator. For the following steps you will need four T2.6 x 16mm Phillips head screws and one left and one right heavy-duty control horns. You will also need two of the #4-40 pushrod and clevis assemblies. You will need your two elevator servos, with the rubber grommets and eyelets installed, and the mounting screws that came with the radio system.

1) Feed the servo lead through the servo bay opening and out of the root rib. Position the servo into the servo bay with its output arm spline forward toward the leading edge of the stab. Hold the servo in this position and mark the four mounting screw locations onto the hardwood mounting rails. Remove the servo from the stab.

2) Pre-drill small guide holes for the servo. Re-install the servo and mount it in place into stab servo bay. Use a piece of masking tape to hold the elevator in the neutral position to the stab.

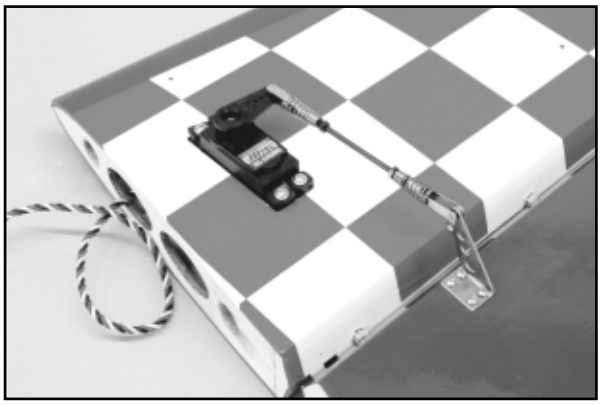


3) Attach a clevis to the servo output arm and on the other end, attach one of the control horns. Press the servo output arm in place onto the splined servo output shaft, with its arm pointed outwards towards the stab tip and at 90° to the servo body.

4) Like the ailerons, the two elevator halves have been built with thick hardwood control horn mounting pad. Holding the bottom of the elevator at an oblique angle to a light source usually allows you to see its location.

a) Turn the threaded metal control rod to adjust the distance of the control horn from the leading edge of the elevator bevel. The correct position for the elevator control horn is with its forward mounting pad edge up to the bevel edge of the elevator. The upright arm of the control horn should be directly facing the output arm and the control rod should be parallel with the servo body. Hold the control horn in this position and mark the mounting hole locations onto the elevator with a marker pen or sharpened pencil.

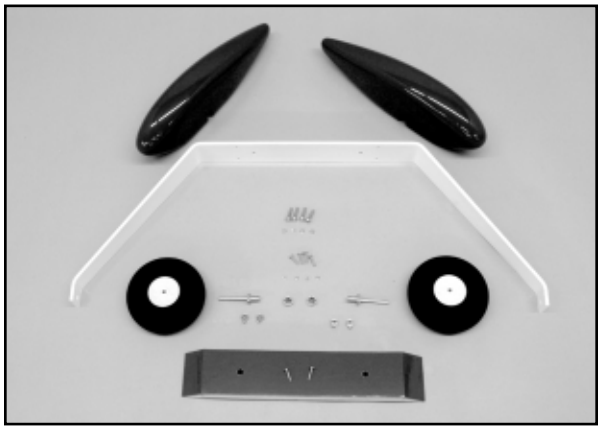
b) Move the pushrod and control horn out of the way. Use an electric drill and a .043" (#57 index drill) to drill four guide holes at the marks just made. Use four T2.6 x 16mm Phillips head screws to mount the control horn, just enough to establish threads in the mounting pad. Remove the screws and apply a drop of thin CA glue with a fine-tipped applicator, into each screw hole to harden the threads. Remount the control horn with the screws and tighten them firmly. Repeat the above steps with the opposite stab and elevator assembly. Remove the pieces of tape holding the elevator in neutral.



5) Use your transmitter and receiver to now check and adjust the proper movement of the elevator halves. The pushrod clevis locking nuts and clevis safety springs do not need to be tightened or slipped into place until after the final control movements are established later in this manual.

Landing Gear & Wheel Pant Assembly:

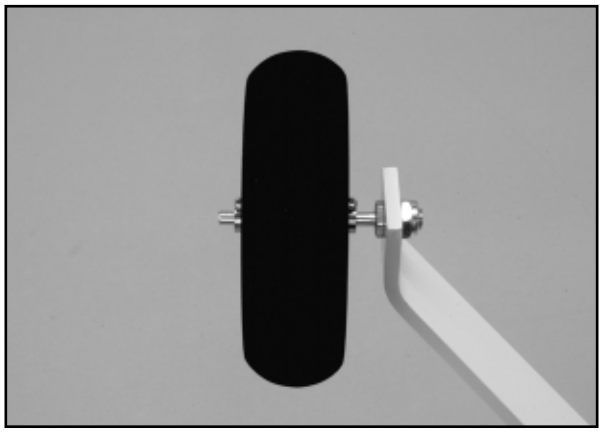
From the kit contents locate the Fiberglass Wheel Pants bag, the Main Wheel bag (also contains wheel and pant hardware bag) and the Main Landing Gear bag. In addition you will need to remove the two pieces of tape holding the Main Landing Gear Hatch in place to the bottom front of the fuselage. Taped to the Inside of this hatch you will find a small bag containing two (2) T3 x 16mm Hatch Mounting Screws. Also note that in side view there is a front and rear edge to the main landing gear. In side view the leading edge (or front) is straight and the trailing edge (or rear) is slightly angled. Be sure to mount the wheel pants to the landing gear in this alignment.



a) Temporarily mount the wheel/axle assemblies to the landing gear legs. Insert the threaded end of the axle through the hole in the landing gear leg and thread the 5/16-24 lock nut in place. Use an open-end 7/16" wrench at the outer axle hex nut fitting and an adjustable wrench or a 1/2" socket wrench to snug the lock nut in place - do not permanently mount it yet. Note that the outer axle hex flange has to be aligned vertically to the landing gear legs to provide mounting clearance for the wheel pant slot, including the alignment of the two pant mounting bolts. Use the wrenches to make this alignment and check it by placing the correct wheel pant in place against the landing gear.

b) Slide one of the 5mm wheel collars in place onto each axle. Rotate the collar to position the setscrew pointing straight down and about 1/4" away from the axle hex fitting. Use a Phillips head screwdriver to lightly tighten the setscrews in this position. Slide a main wheel onto each axle, against the wheel collar. Slide the outer wheel collars in place, just loosely against the wheel hub with the setscrew point straight down. Use a screwdriver to lightly tighten the setscrews to hold the collar in place. Now position the appropriate wheel pant in place over the wheel and up against the landing gear. Insert one of the M3 x 15mm mounting bolts through the inside face of the landing gear, into the wheel pant bolt hole to engage the blind mounting nut threads. Use as screwdriver to run the bolt all the way into the pant but do not tighten the bolt yet. Install the remaining bolt in the same way. Repeat this process with the remaining wheel pant.

c) View the relationship of the wheel to the wheel opening in each wheel pant. What you want is the wheel approximately centered within this opening. Use a screwdriver to adjust the two wheel collars as needed to provide the correct centering of the wheel. Re-tighten the collar setscrews to hold them in place and repeat this process with the remaining wheel and wheel pant. Once you are satisfied, remove the M3 x 15mm pant mounting bolts and the wheel pants. Then remove the axle assemblies - with the wheels and collars still in place - from the landing gear.



d) With the wheels and collars now in the correct positions on their axles, you now want to file or grind small "flats" onto each axle for the wheel collar setscrews. Loosen and remove one of the outer wheel collars. Use a marker pen to mark the axle at the approximate location of the setscrew. Use a file or a Dremel® Tool with a carbide cut-off wheel to now create a small "flat" in the surface of the axle. Remember, you want the setscrew pointing straight down. Repeat this process on the remaining wheel axle.

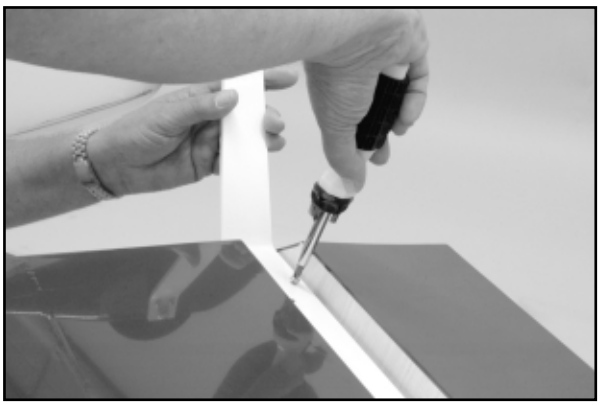
Slide the wheel back in place on the axle and slide the wheel collar back in place. Use a screwdriver to lightly tighten the setscrew over the "flat". You will be able to feel this "flat" by rotating the collar a bit. If the flat is insufficient, remove the collar and adjust it a bit with a file. Repeat this on the remaining wheel axle.

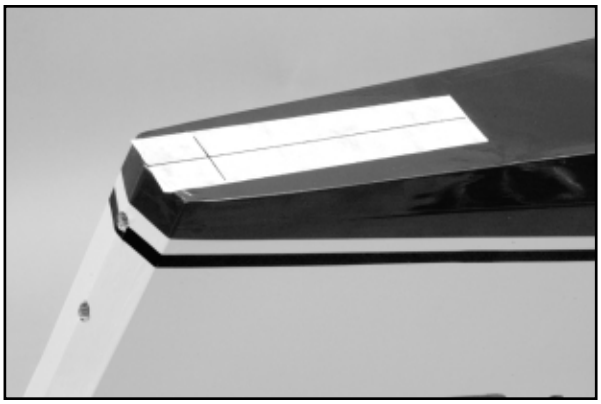
With the two outer wheel collars now located and lightly tightened in place against the outer wheel hubs, loosen the setscrew on one of the inner wheel collars and slide it back to the hex fitting. Use a small file to create a "flat" on the axle, at the setscrew position. Check the "flat" positioning by sliding the collar back in place and lightly tightening the setscrew. Adjust the "flat" until the collar can be positioned correctly. Repeat this process on the remaining wheel axle and inner wheel collar.

Working with one wheel collar at time, remove the setscrew, coat the threads with thread locking compound and reinstall it into the collar. Use a screwdriver to now firmly tighten it to the axle, over its axle "flat". Repeat this process with the remaining wheel collars and setscrews.

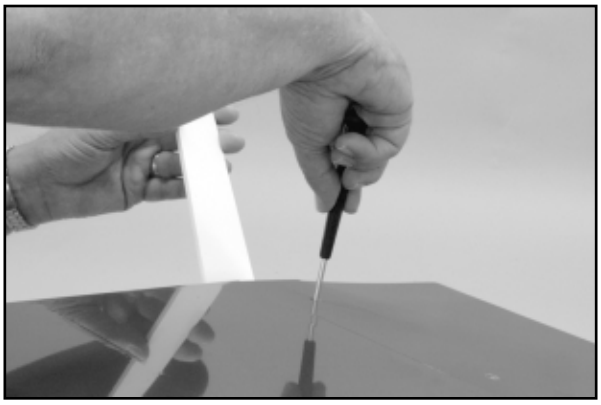
e) Remount both wheel/axle assemblies to the main landing gear. As before, use a couple of wrenches to firmly and permanently install the 5/16-24 axle lock nuts in place. Coat the threads on the four M3 x 15mm PWA pant mounting bolts with thread locking compound. Position a wheel pant of the over its wheel, and against the landing gear, and bolt it firmly in place. Mount and secure the remaining wheel pant.

f) The completed landing gear and wheel pant assembly can now be mounted to the bottom of the fuselage, using four M4 x 20mm PWA bolts and four 4mm split ring washers. Again, we suggest using thread-locking compound on the bolt threads before installation. Tighten each bolt securely.



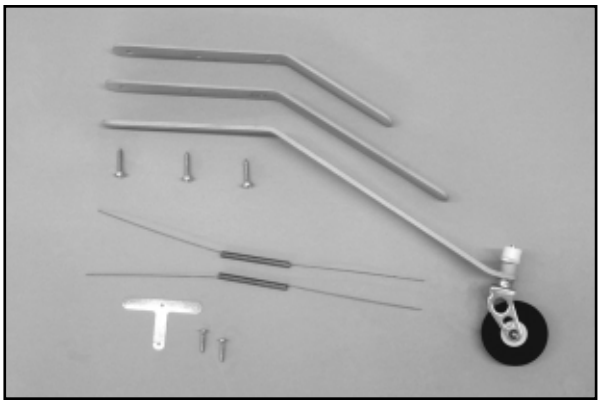


g) The Landing Gear Hatch Cover is now installed over the mounted landing gear using two T3 x 16mm PWA screws. Note that both the access and clearance holes are already provided in this hatch for the mounting screws. Likewise, the landing gear also has corresponding clearance holes for the two mounting screws. With a 1/16" dia. bit and a hand drill, drill two holes through the plywood landing gear base, at the centers of the clearance holes in the landing gear. The landing gear hatch can now be mounted in place.



Mounting The Tail Wheel:

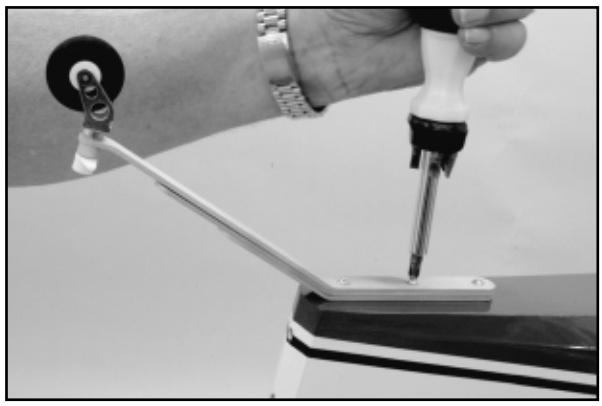
From the kit contents, locate the Tail Wheel Assembly bag. Note that the both the fuselage and the bottom forward surface of the rudder have built-in plywood hard points for mounting this assembly.



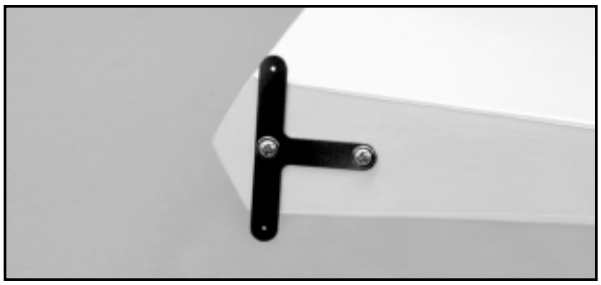
a) Use a 5" length of masking tape, centered over the bottom rear of the fuselage, in place from the pointed tip of the fin hinge line forward. Use a fine tip marker to now measure the width of the fuselage at the forward most end of the tape. Divide this number in two to find the center of the fuselage at this point and mark it on the tape. With a small straight edge, draw a line on the tape from the center mark just made, back to the tip of the fin hinge line. Measure forward 7/8" from the tip of the fin hinge line, mark this location on the centerline. This point is the location for the rearmost T3 x 16mm PWA tail wheel assembly mounting screw. Use an electric drill and a 1/16" dia. bit to drill a perpendicular guide hole through the fuselage bottom at this point.

b) Using the shortest leaf spring, place it onto the fuselage with its rearmost screw hole over the drilled guide hole. Use one of the T3 x 16mm screws and a Phillips screwdriver to install the screw into the hole - just "snug" it in place. Line-up the forward screw hole in the spring with the centerline drawn on the tape. Again use an electric drill and a 1/16" dia. bit to make a guide hole through the fuselage bottom, centered in the hole. Install another T3 x 16mm screw in place. Repeat this process with the remaining center hole in the spring. Remove all three screws, the spring and the tape. As always, we suggest using a drop or two of thin CA glue into each of the screw holes to harden the threads.

c) The complete tail wheel leaf spring assembly can now be mounted to the fuselage using the three T3 x 16mm screws. The shortest spring on top, the medium length spring in the middle and the longest spring on the bottom. Tighten the three mounting screws securely.

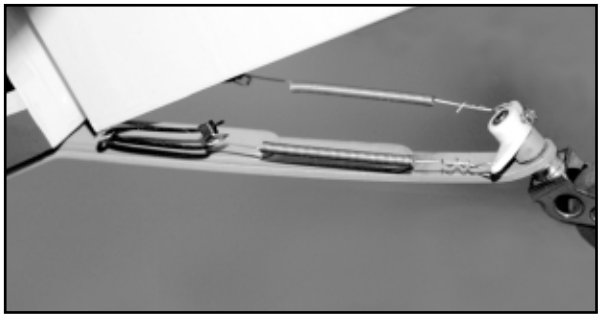


d) The flat metal "T" bracket is now mounted to the bottom forward surface of the rudder. This bracket is used to connect the two centering springs with the tail wheel tiller arm and the rudder. As



shown, center the bracket onto the bottom of the rudder, with the left and right arms spaced equally on each side. Mark the locations of the two mounting holes onto the rudder with a marking pen. Use a .042" dia. bit (#58 index drill) to drill two screw guide holes at the marks just made. Mount the bracket in place with the two T2 x 12mm PWA screws.

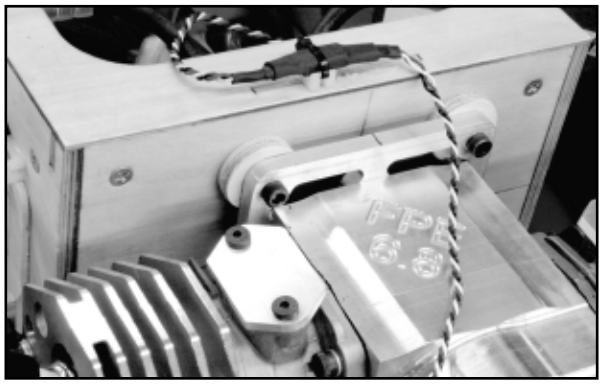
***MODELER'S TIP*:** The connection between the two centering springs and the "T" bracket on the bottom of the rudder can be made using two small cable ties. Doing this allows easy and accurate centering of the tail wheel to the rudder and also avoids metal-to-metal contact between the spring ends and the "T" bracket. The only requirement needed to do this is to drill oversize holes in the "T" bracket arms to allow clearance for the cable ties. We used a 7/64" drill bit to drill out these two holes in the bracket. The centering springs are each attached to the tail wheel tiller arms as usual. The opposite ends of each spring were bent with round-nose pliers to create a couple of small loops in the wire. The connection between the springs and "T" bracket arms were then made with 4" cable ties at each spring.



Mounting The Engine:

As mentioned earlier in this manual, the distance between the firewall and the outside surface of the cowl, at the spinner location is 7-7/32". As also mentioned, this distance is adjustable aft about 1/8" or can be moved forward as much as a 1/2" or so. Therefore, you need to now measure the length of the engine that you plan to install in your Edge. The measurement you need is the overall length of the engine, from the back surface of the mounting plate forward to the back surface of the spinner backplate when it's in place. This measurement will tell you how far forward your particular engine needs to be spaced from the firewall to fit within the cowl, leaving about 1/8" - 3/16" clearance between the back surface of the spinner backplate and the cowl itself.

For example, to mount our F.P.E. 6.8 twin cylinder engine in place with the correct relationship to the firewall and the spinner backplate, we needed to space it's mount 1/4" forward from the firewall. We did this by using 1/4" plywood to make four 1" diameter disks. These four disks were then center-drilled with a .193" dia. bit (#10 index drill) to provide clearance holes for the four #10-32 mounting bolts. The photo shows the firewall, spacers, and the bolts already in place.



The firewall on the Edge 540T ARF has been factory-built with 2° of right thrust. The firewall has also been accurately marked with vertical and horizontal centerlines. These two lines, at their intersection, represent the centered position of the engine when it is mounted to the firewall, taking into account the built-in 2° of right thrust and the 7-7/32" distance to the cowl's spinner ring opening.

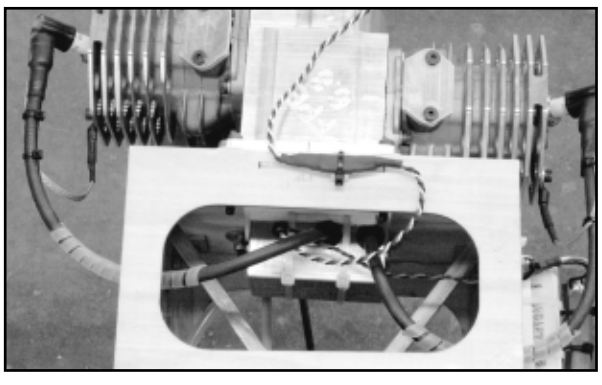
Using the vertical and horizontal centerlines, you can now accurately measure the motor mount plate location against the firewall and its bolt hole mounting locations. If required, you must also now make the firewall mounting spacers for your particular engine, to move it forward enough to clear the cowl by 1/8" to 3/16" when the spinner backplate is in place on the engine.

When the mounting bolt hole locations have been accurately marked on the face of the firewall, use an electric drill and the appropriate bit to make the required clearance holes for the bolts. As also mentioned earlier, you will need to provide your own mounting hardware. We used four #10-32 x 1-1/2" hardened steel hex head bolts with #10-32 lock nuts and flat washers to mount our F.P.E. 6.8 engine. The engine and spacers can now be mounted in place to the firewall. Check the cowl fit by sliding it in place over the engine (with the mufflers removed) and onto the front of the fuselage. Make any adjustments necessary.

Mounting The Ignition Module:

We mounted the electronic ignition module for our F.P.E. 6.8 engine to a simple lite-ply tray that was made from scrap 1/8" lite-ply, sized for our specific module. We glued a couple of pieces of 1/4" sq. balsa on each end of the tray to keep the module from shifting and then glued two more pieces of 1/4" sq. balsa to the opposite side of the tray to stand it off from the back face of the firewall. We cut a piece of 1/4" foam rubber to fit between the tray and the module. The module was then secured to the tray with a pair of cable ties.

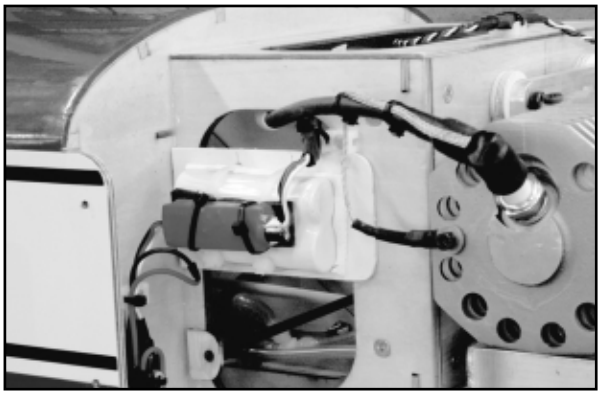
We used epoxy glue to then glue the module tray to the back face of the firewall, directly behind the engine. In our F.P.E. 6.8 installation, this module mount location was perfect for routing the



sparkplug wires to each cylinder head and in providing good wiring proximity for the power and timing extension leads.

We mounted our 2400 mAh ignition battery pack (a 2-cell 7.4 volt Li-Ion pack) and its 5.4 volt voltage regulator together, on a simple tray made from 1/8" lite-ply. To keep the battery pack from shifting, we cut and glued a perimeter of 1/4" balsa triangular stock to the lite-ply base. A 1/4" foam rubber pad was cut to fit into this perimeter opening and the battery pack and voltage regulator were mounted to the tray using two cable ties. The tray was then glued to the outer side face of the right firewall support structure. This mounting location provides easy wiring connector access to both the ignition module and the ignition On/Off switch.

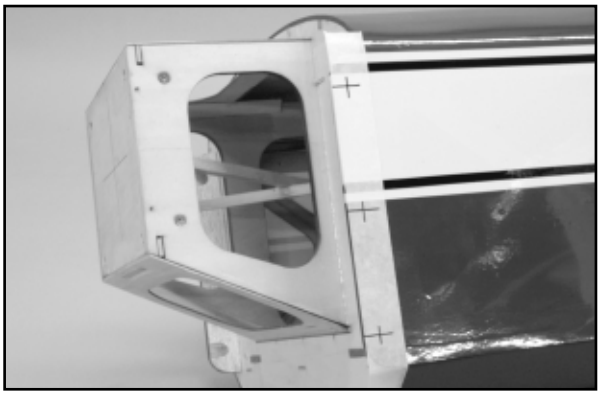
Last, to turn the ignition system on and off, as well as having the ability to easily charge the ignition battery pack externally, we used a Maxx Products "Soft Mount One-Piece Charge Switch", P/N 3470. We located this switch on the bottom right front side of the fuselage, just behind the cowl.



Mounting The Cowl:

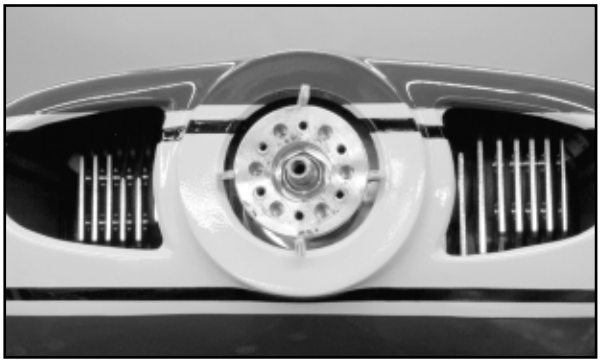
With the engine accurately mounted in place to the firewall, the fiberglass cowl can now be positioned and mounted to the fuselage. From the kit contents, locate the cowl and the small bag containing the mounting hardware - 6 each M3 x 10mm PWA Bolts and 6 each Blind Mounting Nuts. The forward fuselage sides, just ahead of the secondary firewall, have been reinforced with large triangular balsa stock. Note that the triangular stock has been relieved in three locations - top, middle, and bottom - on each side. These circular openings are the locations for the M3 Blind Mounting Nuts - three on each fuselage side - used to receive the M3 cowl mounting bolts.

a) Place a piece of masking tape vertically onto the side of the fuselage with its forward edge aligned with the front edge of the fuselage side. In front view, use a marker pen to mark the approximate centers of each blind nut cutout onto the front edge of the tape. Use a small triangle to strike a line 90° back from the front edge of the fuselage side, at each of these marks. At the bottom line, measure back 1/2" from the front edge of the tape and make a mark. On the top line, again measure back 1/2" and make a mark. Use a straightedge to connect these two marks with short vertical lines at each horizontal line. These are the drilling locations for the blind mounting nuts. Repeat this process on the other side of the fuselage.



b) Without the mufflers installed on the engine, slide the cowl over the engine pushing it back toward the fuselage. With our F.P.E. 6.8 twin, we found that in order to properly fit the cowl in place, we had to first relieve the cowl at the choke location at the bottom of the carburetor. We did this neatly, using a Dremel® Tool and a small sanding bit (see **Cowl Modification** section). With this small clearance opening made, the cowl fit easily in place.

c) The engine prop support should now be centered in the cowl opening in front view. To do this, we used a few pieces of scrap balsa, cut to wedge shape. These were then placed between the cowl and the engine prop support at the positions shown, adjusting them as needed to center the engine to the cowl.

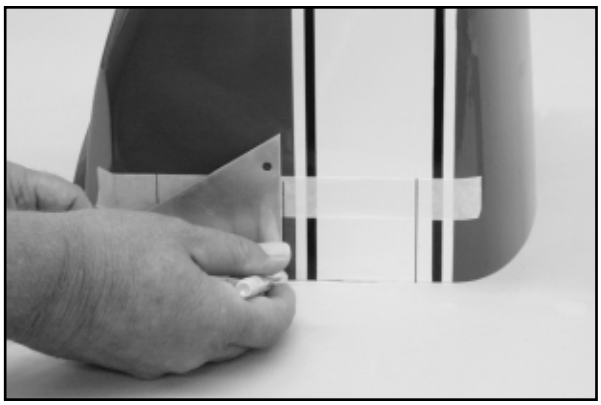


d) In side view, the cowl must now be positioned with clearance for the spinner backplate - about 1/8" to 3/16" or so. Put the spinner backplate on the engine and position the cowl with this clearance. Once this position is established, use pieces of masking tape on the top and bottom of the cowl to hold it in place to the fuselage. Again using masking tape, place a piece of tape vertically on the fuselage side with its forward edge aligned with the rear edge of the cowl. Add a second piece of tape in the same position on the opposite fuselage side. Remove the cowl.

e) Use a small triangle aligned with the forward edge of the fuselage side, to transfer the forward hole location marks back to the rear cowl edge pieces of tape. What you now have is the locating information for the three required mounting holes for each side of the fuselage. This information now needs to be transferred to the exterior surface of the cowl for drilling purposes.

f) Place the cowl back onto the fuselage and align it with the two rear pieces of tape. Use a non-permanent marker pen to transfer the marks on the tape to the rear edge of the cowl on both sides of the fuselage. Remove the cowl. On the fuselage, use a ruler to now measure the distance between one of the rear marks just made, forward to the cross-hair mark on the forward piece of tape. Note and save this measurement.

g) Place the cowl on a flat work surface, resting on its rear edge. With a small triangle and a marker pen, make three 90° lines on the cowl surface, at the mark locations just made. Use a ruler to measure forward from the rear edge of the cowl and mark the distance that you noted earlier in the last step. Repeat this procedure for each of the three lines on both sides of the cowl. You should now have the accurate location marks on the cowl sides for drilling the mounting holes. Place the cowl back onto the fuselage and use masking tape to hold it firmly and accurately in to the fuselage.



h) Use a 1/8" dia. (.125") bit to drill clearance holes for the M3 mounting bolts through the cowl and fuselage sides, at each of the six mounting hole location marks on the cowl. Remove the cowl from the fuselage and set it aside for now.

Use a 9/64" dia. (.140") bit to re-drill the six holes in the fuselage sides. The M3 blind mounting nuts are now installed. Use a small amount of 5-minute epoxy and apply it around the seating surface of the blind nut. From the inside of the fuselage, install the blind nut into one of the drilled holes, being careful to keep glue out of the threads inside the nut. Use one of the M3 bolts and a screwdriver to draw the nut fully into its hole and wipe off any excess glue with alcohol. Install the remaining blind nuts in the same manner.

The cowl is now ready to mount to the fuselage with the six M3 x 10mm PWA bolts. We suggest using small sections of fuel tubing between the head of the bolts and the cowl to provide cushioning. Now that the cowl is accurately mounted to the fuselage, it must now be relieved to accept the engine and muffler system for your particular engine.

Fitting The Cowl:

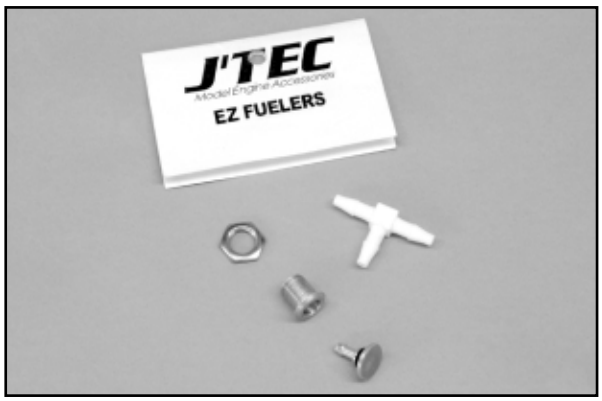
The fiberglass cowl included with the Edge 540T ARF kit has been factory painted and clear coated. It must be opened up in certain specific areas to fit your particular engine and muffler system. It also needs to be opened up at the bottom rear half-round surface to provide good airflow over the engine. To do this, we used a Dremel® Tool and a reinforced carbide cut-off wheel to first remove most of the open section in this area. We then used a drum-sanding bit to clean up the edges and make this opening neat in appearance. We then final sanded the opened edge to make it as smooth as possible. Important - *Always wear a respirator mask and use eye protection whenever you are grinding fiberglass.*

The same tools and techniques described above are also used when creating any other required openings in the cowl. Always start with a small roughly centered hole and work out as needed. Continually trial-fit the cowl in place, noting any further opening adjustments with a marker pen. Remove the cowl, make the opening a little larger as needed and re-fit the cowl. As shown, our Edge cowl was modified to fit neatly over the F.P.E. 6.8 twin cylinder engine that we used in our prototypes. Our rule of thumb for openings in fiberglass cowls is to always make the required openings about 1/8" to 3/16" oversize, eliminating any possibility of engine parts touching the cowl.

Fuel Tank Assembly:

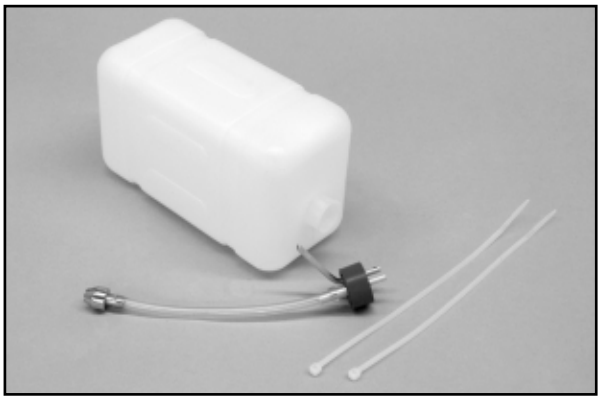
The fuel tank supplied with the Edge 540T ARF kit has an 800cc (27.05 oz.) capacity and includes a gasoline-compatible fuel stopper. If you wish, commercially available fuel tanks of larger capacities may also be used. The fuel tank area within the Edge 540T fuselage has been purposely designed to accept commercial Du-Bro fuel tanks up to and including the #691 40 oz. (1200cc) tank. In fact, the fuselage tank compartment is large enough to accept two of these tanks, side by side. This is good information should you choose to install a smoke system and need to locate a smoke fluid tank.

We mounted our tank in the fuselage on the left fuselage side, just beneath and ahead of the fiberglass wing tube receptacle. We used a simple two-line system with one fuel line to the carburetor and the second fuel line used as a vent/overflow line. We interrupted the carburetor fuel line, ahead of the tank, with a "T" fitting. The line from this "T" fitting was used to connect a Bisson #29011 large Fuel Dot, for fueling and de-fueling purposes. Another similar fueling hardware choice might be the J'Tec P/N #F2G "EZ Fueler product (shown below). This gas-compatible fuel dot system also works well and includes a large "T" fitting. These ultra-simple and lightweight fueling systems have each worked flawlessly in our Edge prototypes and are highly recommended. As mentioned, we used and recommend Du-Bro #506 Large Tygon fuel tubing for the tank and fuel line installation in this model.



The kit fuel tank also includes two small nylon cable ties. We used one of these over the rubber stopper, pulling it tight to secure the stopper firmly in place to the tank. The remaining cable tie can be used to hold the carb and overflow lines together, as they route forward to the front of the fuselage (if you are like us, you will want to use more of these cable ties to organize the fuel tubing and servo extensions.

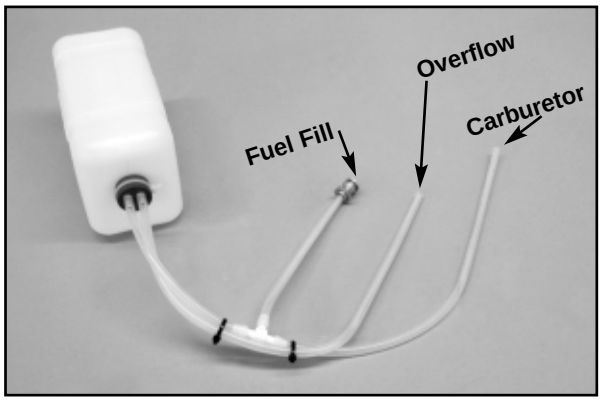
Use a tubing bender to make the appropriate 75° - 80° bend in the aluminum tubing overflow line, allowing it to reach the inside top of the tank body. We suggest chamfering the top of this tubing to keep it from touching and possibly closing off on the inside of the tank. Use a second piece of aluminum tubing, straight through the rubber stopper, for the carburetor and tank "clunk" line connections. Attach the provided Tygon fuel pick-up line with the weighted "clunk" in place. Slide the end of the tubing onto the straight piece of aluminum tubing on the backside of the stopper.



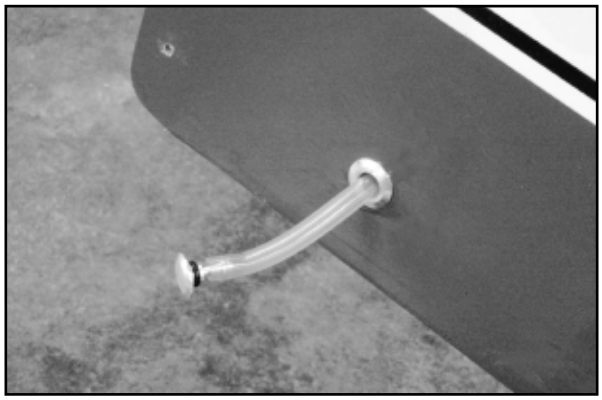
Insert this assembly into the tank neck and firmly press the stopper over the molded tank neck rib. Use a flashlight to make sure the angled aluminum overflow tube is centered at the top of the tank. Once the tank is complete, use one of the included nylon cable ties around the rubber stopper to lock it firmly in place to the tank neck. The fuel tank is now complete and ready for installation.

Fuel Tank Installation:

The fuel tank is now installed in the fuselage. Start by first arranging the required "plumbing". If you are using a simple 2-line fuel system, as we did, then this becomes relatively easy. From the fuel tank aluminum carburetor/clunk line, you will need a length of Tygon fuel tubing to route forward to the "T" fitting for the fuel dot filler system. From the other side of the "T" fitting, attach a fuel line that will go directly to the carburetor. From the third nipple on the "T" fitting, a length of fuel line is attached to go to the fuel dot filler system (the J'Tec #F2 Gas EZ Fueler is shown). Be sure to leave enough fuel line from the "T" fitting to the fuel cap to allow about 5" or so of tubing to be pulled out of the fuselage for fueling and de-fueling. Note the use of 4" cable ties used to organize the fuel lines.

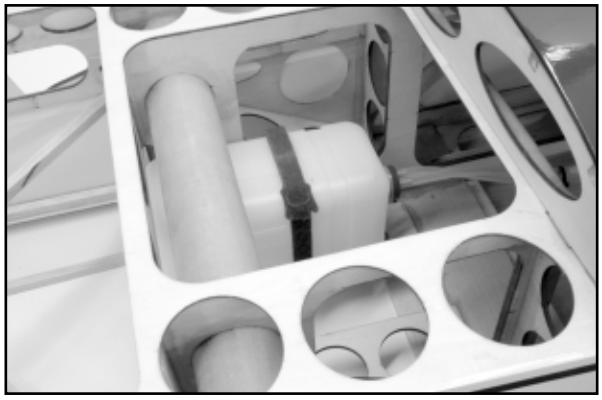


We mounted our fuel dot filler to the left front of the fuselage. For a fueler mount, we cut and scabbed in a small piece of 1/8" lite-ply. This was drilled to accept the threaded aluminum fuel filler receptacle and held in place with the nut that came with the filler system.



The Tygon overflow fuel line was routed forward and out of the bottom of the secondary firewall. We used a small plastic clamp, screwed in place to the secondary firewall to hold the overflow line, pointed straight down.

We mounted our fuel tank on the left tank mount platform. We cut a piece of 1/4" foam rubber to fit onto the plywood mounting pad and then secured the tank firmly in place using a single piece of 1/2" wide two-sided Velcro.

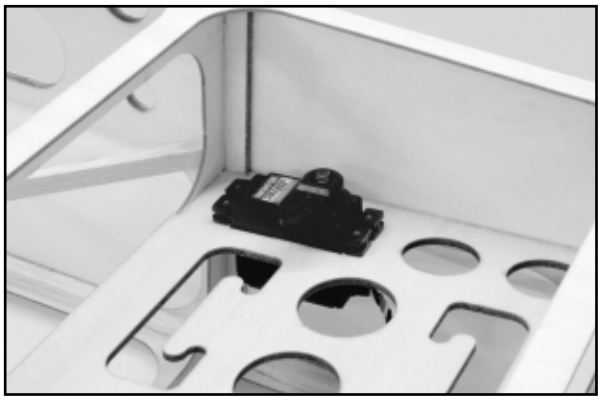


Throttle Servo Installation:

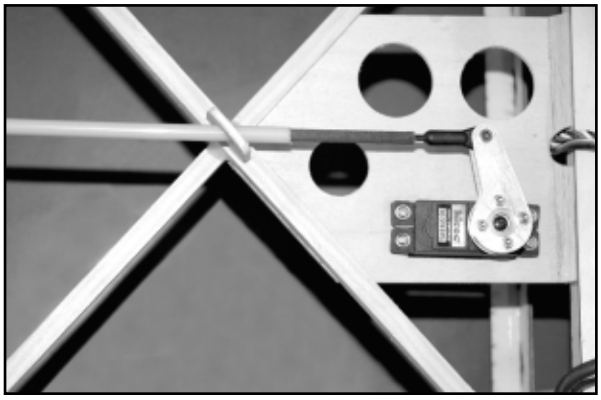
Now that the engine and fuel tank are installed, the throttle servo can be installed into the fuselage. Because of the very large amount of area within the fuselage, the throttle servo can realistically be mounted just about anywhere. However, we always prefer to keep all radio equipment, including the servos well away from the forward mounted ignition module, ignition battery pack and related wiring. For this reason, we like to mount our throttle

servos aft, back with the receiver(s), rudder servo and the airborne radio system battery pack(s).

There are two servo cut-outs located on each side of the center mounted rudder servo tray in the fuselage. Locating the throttle servo into one of these openings is ideal. Since the fuel tank is already mounted and plumbed on the left side of the fuselage, the right side servo opening is likely the better choice. The servo can be mounted into the servo tray opening using the mounting screws provided with your radio system. The Edge kit also includes a separate plywood laser-cut throttle servo tray. This can be used if you wish to mount the throttle servo in different location.



Once you have chosen a location for the throttle servo and have it mounted, the servo can be connected to the carburetor throttle arm using either a commercial 2-56 or 4-40 nylon pushrod system (not included). Note that the kit also includes a single 1.8 x 300mm metal pushrod and clevis. This can be used, if desired, when hooking up your throttle linkage. Below is a photo of our own custom throttle servo set-up, showing a lite-ply mounting tray that we made to fit between the forward fuselage cross braces, just ahead of the rudder servo. As you can see, we used the Sullivan #517 gold/black 4-40 pushrod system. This set-up gave us a straight shot forward to the carburetor throttle arm.



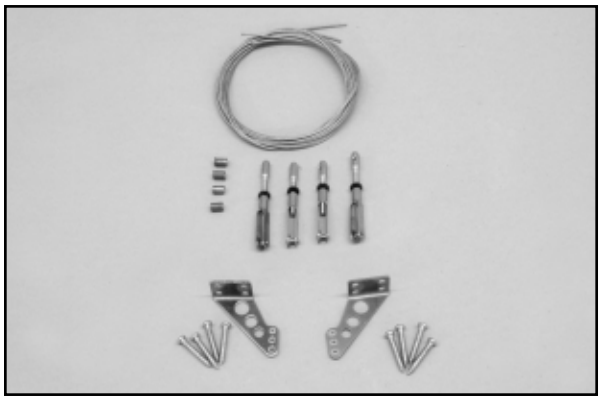
For throttle pushrods, we suggest the Sullivan Gold-N-Rod #517 Black/Gold 4-40 semi-flexible system, or the Sullivan Gold-N-Rod #575 Blue/Grey 2mm semi-flexible system or the Sullivan Precision Rod #580 White/Black 2-56 semi-flexible system. These are great set-ups for use in the Edge and include 36" of inner and outer tubing, as well as all the required hardware for hook-up. Just be sure to support the outer tube every 8" to 10" forward to the carburetor, using scrap pieces of lite-ply.

Rudder Servo & Pull-Pull Installation:

The rudder servo and the pull-pull connections will be made in the following steps. You will need the following parts from the kit:

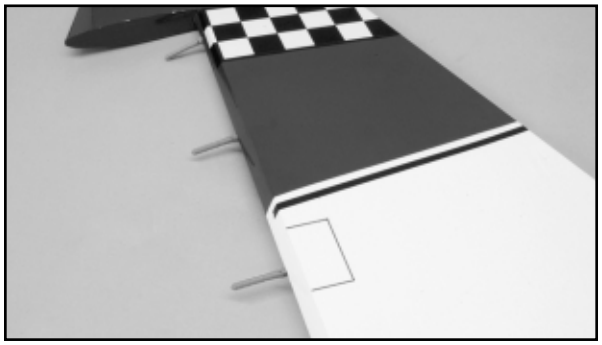
2 Control Horns - 1 Left, 1 Right
8 T2.6 x 16mm Phillips head screws
4 Rigging Coupler Assemblies (R/C link, Rigging Coupler & Lock Nut)
4 Copper Swage Tubes
2 1200mm (47") lengths of nylon coated steel pull cables

In addition, you will also need your rudder servo and output arm.



A pull-pull rudder control system is all about geometry. Ideally the distance between the opposing pull-pull control horn connections at the rudder is the same distance between the pull-pull connections on either side of the servo output arm. If these two separate connection distances vary too much, excess strain can be placed on the servo or the rudder at extreme movements. This information is useful if you should decide to make your own custom rudder servo output arm, as we did.

The Edge 540T was designed with control horn mounting locations that approximates the mean aerodynamic cord of rudder itself. The rudder was built with thick hardwood control horn mounts at its leading edge, on both sides. These mounts can usually be seen if you hold the rudder at an oblique angle to the light. For reference, the photo below shows the outlined mounting pad location.

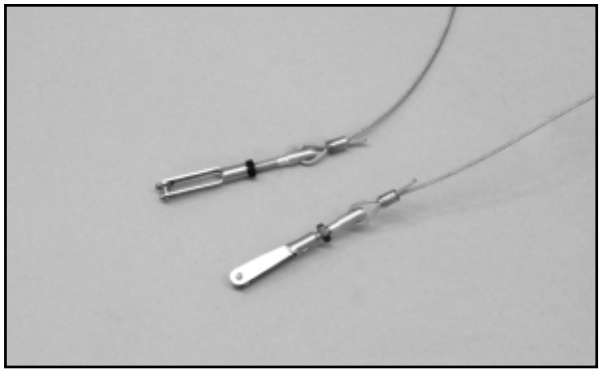


1) The rudder must first be hinged to the vertical fin, using the hinging instructions provided earlier.

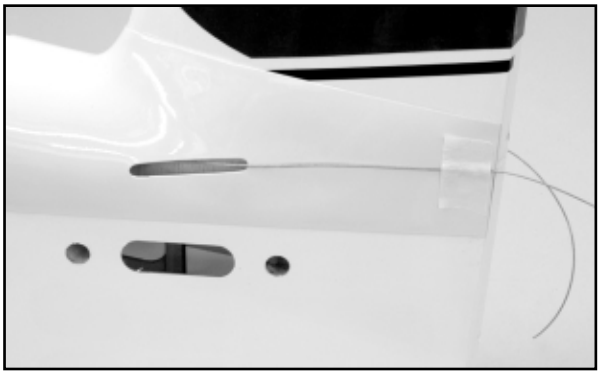
2) The rudder servo is now mounted into the large center opening on the plywood tray in the fuselage. As always, it should be mounted using the hardware provided with you particular radio system. We positioned our rudder servo with its output spline forward. Note that the plywood mounting tray has been built in with a slight upward angle to better line-up the servo and pull-pull cables with the two cable exit slots at the rear fin/fuselage fairing.

3) Two of the rigging coupler assemblies are now fitted to one end of each of the two pull-pull cables. Slide a copper swage tube onto the cable and thread the cable end through the hole in the rigging coupler and back through the swage tube, leaving about 1/2" of so of excess cable. Use a pair of thin nose pliers or a crimping tool to squeeze the copper swage tube tightly over the cable, locking it

in place. Bend the excess cable end up at a 90° angle to the swage tube.

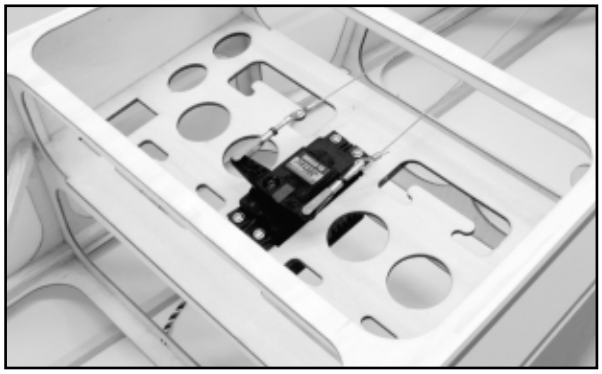


4) Feed one of the cable ends, rigging coupler end first, through one of the exit slots at the rear of the fuselage. Use a piece of tape at the rear of the fuselage exit slot to hold the loose end of the cable in place. Reach back into the fuselage and get your hand on the rigging coupler and pull it forward toward the cable. Use another piece of tape to hold the rigging coupler temporarily in place to the servo tray. Feed the second pull-pull cable through the opposite fuselage exit slot in the same manner, temporarily taping both ends.



Carefully note that these two cables will cross each other when they are installed to the servo output arm. This means that the left cable will exit the right slot at the rear of the fuselage and the right cable will exit the left rear fuselage slot. With the cables crossing, they are better positioned to exit the fuselage cleanly.

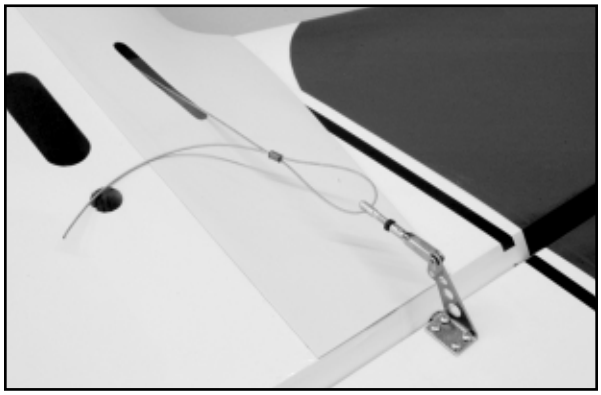
5) Maintaining the crossed cables relationship, attach the clevis ends of the rigging couplers to each end of the rudder output arm. Put the output arm in place on the servo, with its arms at 90° to the servo body.



6) Use a piece of masking tape to secure the rudder in neutral position with the fin. The rudder control horns are now mounted in place. We will start by working on the left side of the fuselage and rudder.

a) As before, slip a copper swage tube onto the loose cable end at the rear of the fuselage, followed by one of the rigging couplers. Route the loose cable end back through the copper swage. Connect the R/C link to the outermost hole in a left control horn. With the fuselage laying on its right side, hold the base of the control horn against the rudder with just a little tension on the cable. Move the control horn base up or down on the side of the rudder to center the cable within its exit slot. With the base of the control horn aligned with the leading edge bevel of the rudder, use a marking pen to mark its four mounting hole locations.

b) Use an electric drill and a .043" (#57 index drill) to drill four guide holes for the control horn mounting screws. Use four T2.6 x 16mm Phillips head screws to mount the control horn in place to the rudder. As before, remove the screws and reinforce the threads in each hole with a small drop of thin CA, using a fine applicator tip. Remount the horn and firmly tighten the four screws.



c) Turn the fuselage over on its left side. Repeat the coupler rigging attachment instruction in a) above. Locate and mark the right control horn mounting screw locations onto the rudder. Drill the required four guide holes, as described above and mount the control horn in place to the rudder.

7) With the two rigging coupler assemblies still in place on the rudder control horns and the rudder still taped in neutral to the fin, the cables are now tensioned and locked in place with the copper swaging tubes. It is important that a sufficient amount of tension is placed equally on each cable - not tight, not loose. Small adjustments in tension can be made with the R/C links.

8) Use the transmitter and receiver to test the action of the rudder servo and pull-pull set-up. Make sure the transmitter trims are in neutral. Adjust the output arm on the servo as needed and then adjust the clevises on the rigging coupler connections to completely center everything.

Receiver & Battery Pack Installation:

The receiver(s) and battery pack(s) were mounted on the built in radio tray in the fuselage of our Edge 540T models. We made simple mounting platforms for our battery packs, using lite-ply. We did not mount these pack mounts until after we had conducted our Center of Gravity routine, described later in this manual.

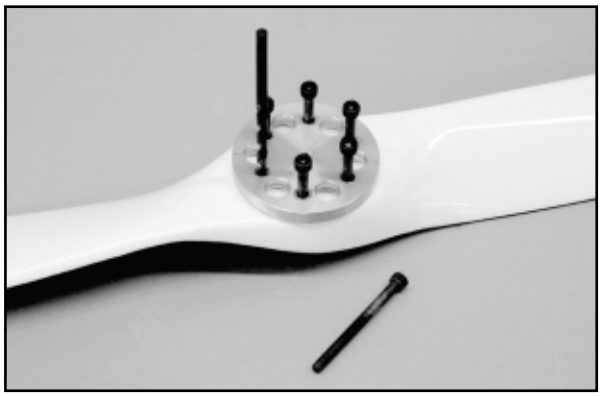
We mounted our On/Off switch - the Maxx Products units mentioned earlier - assemblies for the airborne radio system on the fuselage side, just below the canopy hatch.

We routed our elevator servo extensions along the fuselage sides - through the laser-cut holes on each side of the formers under the foam turtle deck - to the receiver. All of our cables were organized and held in place using 4" cable ties.

We routed the receiver antenna out of the fuselage and up to the top of the fin. This positioning takes the antenna out of parallel with the pull-pull cables and the servo extensions, providing a better radio signal/link.

Mounting The Propeller & Spinner:
The F.P.E. 6.8 twin cylinder engine uses a six-bolt mount for the propeller. The six bolts provided with the engine for prop mounting are #8-32. The engine also includes a front bolt mounting plate with the bolt pattern already drilled and with a prop hub-centering stand-off. This means that the front bolt mount can also serve as a drill guide for the required six holes in the hub of the propeller - very convenient!

We used a .166" dia. drill (this is a #19 drill index bit) and a drill press to make the six required bolt clearance holes in the hub of our Biela 27 x 10 props. Just press the bolt hub in place and drill one of the holes all the way through the prop. Temporarily install a bolt through the prop hub and the prop, in the hole just drilled, and move to the next hole. Continue in this manner until all six holes are accurately drilled. The prop is now ready for mounting to the engine.



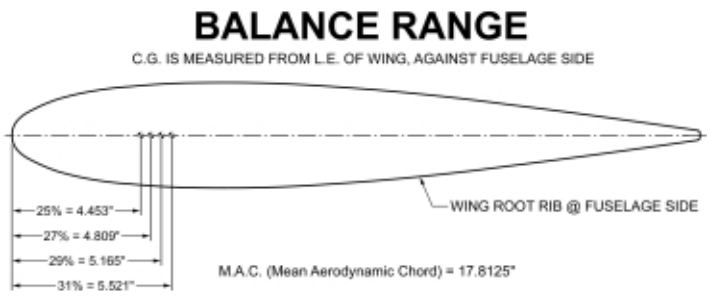
Earlier in this manual we made some specific 4" diameter spinner recommendations. Choose the spinner assembly that you wish to use on your Edge and install it according to the manufacturer's instructions.

Center of Gravity (CG):
Establishing the correct Center of Gravity (CG) on your Edge 540T ARF is an *extremely* important issue. The fore and aft Center of Gravity dictates how your model will react to pitch (elevator) inputs, as well as having a direct effect on how the model flies in less than normal attitudes, such as knife edge flight, flat spins, etc. Obviously, the further aft the CG location, the more sensitive the airplane becomes to elevator inputs. Moving the CG too far aft can literally make the airplane all but unflyable and prone to every kind stall condition imaginable.

The CG locations provided in this section are based on the Mean Aerodynamic Cord (MAC) of the wing. In the case of the Edge 540T ARF wing, the Mean Aerodynamic Cord measures 17.8125". This MAC measurement is the base number used for calculating the CG locations shown in the diagram below. Because the Edge 540T planform configuration has a straight leading edge, the CG measurements shown can be measured and used at either the wing root location or at the wingtip location. Because of the model's size and weight, it may be more convenient to establish and mark the CG at both wingtips, using another person to lift the model at the opposite wingtip.

In terms of *where* you want to establish your own CG location for your Edge, we can offer some information that will help you. First, we strongly suggest that for initial test flights, the model be balanced within the 25% to 27% CG range. At low rates, this CG location should provide a manageable flight envelope and, depending upon your flying abilities, might turn out to be where you want to the fly the airplane, at least for awhile until you're comfortable with it. As you gain experience and confidence, you can then begin moving the CG location back, in *small* increments. However, be careful when doing this. Moving the CG back can make the airplane behave totally different in the air, so do not be tempted to make large adjustments all at once - just sneak up on it.

As said earlier, the further back the CG location, the more sensitive the elevator inputs will become. Experienced R/C pilots, used to flying high-performance giant scale aerobatic aircraft, know that using exponential inputs to the flying surfaces (ailerons, elevators, and rudder) of their models "dampens" these control inputs in and around their neutral positions, producing a much more manageable airplane when not performing the more wilder flight maneuvers. In our opinion, exponential inputs for both the suggested low and high rates, are virtually mandatory on the Edge 540T. As the CG is moved aft, exponential input becomes even more critical. The use of exponential becomes even more important when using a 6-volt airborne battery system! This is because a 6-volt system produces substantially quicker servo response and without exponential, a less than experienced pilot stands a real chance of "getting behind the curve" in terms of control inputs.



For reference, we have been flying our own Edge 540T ARF models with a 29% Center of Gravity. This CG location allows us to perform virtually any maneuver imaginable, including Waterfalls, Torque Rolls, beautiful Flat Spins, Knife Edge - normal and high alpha types - and awesome Blenders. So for us, the 29% CG location, along with the programmed exponential inputs we've used, has worked very well. Whatever CG location you finally arrive at as your own personnel optimum, will depend upon your piloting abilities.

When establishing the CG, the airplane should be complete with everything installed, as it would be for flight, with the fuel tank empty. Start the process by deciding which CG location you want to begin with. For example, let's say you want to start with a 25% CG. As shown, this translates to 4.453", measured back from the very front of the leading edge of either the wingtips or the wing root ribs, next to the fuselage. Use small strips of light tack tape to mark this measurement directly onto the two wing panels. With another person to help, pick the airplane up off its wheels at the wingtips with your finger directly at the tape strip. What you want to see is the fuselage suspended perfectly level - not nose down, not tail down - level. If it's obvious that the airplane is not level, then the balance of the airplane, at the desired 25% CG location, must be adjusted to achieve a level fuselage. There are a variety of things that can be done to do this.

Nose-Heavy Condition:
In this case, we like to start by suspending the model at the desired CG location, allowing the fuselage to seek its attitude. We then place weights directly on top of the stabilizer until the fuselage becomes acceptably level. After weighing the amount of weight needed to do this, we then have a good idea of what it's going to take to balance the model at our desired CG location. If the weight required for balance is small, then simply shifting the battery pack further back in the fuselage may solve the problem.

If you've used a heavier spinner assembly, (and some of them are), then consider a lighter after-market spinner. For example, we used a carbon fiber spinner from Pete Models on our Edge and this unit weighs only 2.9 ounces! Spinners can make a big difference in CG adjustments.

If the shifting of airborne components is just not practical, then adding weight to the furthest possible point at the rear of the fuselage may be necessary. Like all modelers, we hate adding weight to any model but it is sometimes unavoidable. External stick-on weights can be used to bring the model into balance for test flights. If the added weight needs to be adjusted, it's easy to do. Once the airplane is flying the way you want it to, the weights can be removed and permanently reinstalled inside the rear-most part of the fuselage, using the access openings for the stabilizer servo leads.

Tail-Heavy Condition:
A tail-heavy condition is somewhat more serious. No airplane should ever be flown in a tail-heavy condition. As described above, suspend the model off the ground and use weights at the nose to determine about how much weight will be needed to bring the fuselage back to level. Once you know this, you will have a better idea of what has to be done.

As described earlier, try shifting your airborne battery pack further forward in the fuselage. If that doesn't work, consider a larger, therefore heavier battery pack. Would a heavier aftermarket spinner help solve the problem? If so, give it a try. Working back, would heavier aftermarket main wheels help to shift the CG forward? If so, consider giving this a try. Would a larger and heavier ignition battery pack help the problem? This is a good idea because the ignition battery pack is almost always located far forward the fuselage nose area. Are you using a light wood propeller on you engine? Consider using a more efficient and quieter composite prop. These are typically somewhat heavier than their wood counterparts, and again, they are located at the very front of the airplane, where the weight will do the most good.

If you have performed every "fix" you can and still have a tail heavy airplane, then the only thing left is to add weight to the front of the fuselage - as far forward as possible - until the airplane suspends level at the desired CG location.

Flight Surface Movements & Exponential Inputs:
The information below provides you with our suggested high and low rate flying surface movements, along with the exponential values we used with our Hitec Eclipse Q-PCM transmitter. Please carefully note that the exponential values shown (-25% and -90%) are minus values. If you are using a different radio system brand, refer to its set-up instructions to arrive at the same values. This information is meant to give you starting points. With time and experience, you will be able to dial-in your own high and low rates, as well as your own preferred exponential rates, to best suit your personal flying style. Note - the following surface movement measurements are taken from the widest point of the flying surface.

Low Rate Movements:

Elevators	1-1/4" Up, 1-1/4" Down (10° Up, 10° Down)	with -25% Expo
Ailerons	1-9/16" Up, 1-9/16" Down (15° Up, 15° Down)	with -25% Expo
Rudder	4-7/16" Left, 4-7/16 Right (25° Left, 25° Right)	with -25% Expo

High Rate Movements:

Elevators	5-1/8" Up, 5-1/8" Down (45° Up, 45° Down)	with -90% Expo
Ailerons	2-1/2" Up, 2-1/2" Down (25° Up, 25° Down)	with -90% Expo
Rudder	Full Movement	with -90% Expo

IMPORTANT: After your flying surfaces have been adjusted and set for the proper movements, firmly tighten the clevis lock nuts on each pushrod against each clevis and then slide the keeper springs in place over all of the clevises.

Pre-Flight:
We know many very good R/C pilots that use a standard pre-flight checklist that they have developed over the years. We also use a checklist system and highly recommend that you create one of your own and keep a copy in your workshop and another in your flight box. Using such a list can actually save your airplane from disaster and is well worth the effort. For reference, the following is our pre-flight checklist:

Before Leaving For The Field:
- ❑ Transmitter and airborne flight batteries fully charged & checked with an ESV
- ❑ Airborne radio and ignition On/Off switches in off position
- ❑ Transmitter switch off and trims are zeroed, as well as the airplane's flight surfaces
- ❑ Airplane inspected completely - connectors, linkages, safety keepers, nuts, bolts, etc.
- ❑ Fuel container is full and sealed - if gas, oil has been added and the mixture is correct
- ❑ Flight box contains all required tools and spare parts
- ❑ Flight box power battery charged and checked
- ❑ Expanded Scale Volt Meter & Leads
- ❑ Field Charger & Connector Cables
- ❑ Paper Towels & Cleaner
- ❑ Current AMA License
- ❑ Flight Hat
- ❑ Sunglasses

At The Field:
- ❑ Assemble the model, double-checking that all bolts are in place and secure
- ❑ Check each flight surface for anything loose - hinges, linkage connections, clevis safety keepers, etc.
- ❑ Assembled model is correctly balanced
- ❑ Get frequency pin and use transmitter to check:
  - Check model memory for correct model number
  - Flight surfaces are moving in correct directions (right aileron moves right aileron up)
  - Flight surfaces all move freely with no binding
  - Flight surfaces always return to neutral
  - Throttle servo moves easily without binding
- ❑ Fill tank and test run engine:
  - Throttle response is smooth with good mid-range transition
  - Idle is consistent
  - If transmitter engine "kill" switch is enabled, test this function
- ❑ Conduct range check - with and without the engine running
- ❑ Fuel tank is full before each flight
- ❑ ESV check of airborne battery pack(s) before each flight

Flying:

The purpose of this section is to guide you through the first test flight of your Edge 540T ARF model, using advice and procedures that we feel will lead to your success. This section has nothing to do with aerobatics. Aerobatics will be covered after the test flights are made and the airplane is trimmed. However, if you still feel that you might be tempted to start wringing out your model on the first flight, we have some very serious words of wisdom for you:

IMPORTANT: The SIG Edge 540T ARF model has been designed and built for all-out 3D aerobatics. However, it is important that you completely understand that such maneuvers are always performed at low airspeeds. The SIG Edge has very large flight surfaces that work perfectly in the low speed aerobatic flight envelope, especially so at high rates. Excess flight speed with large flight surface deflections can and will place tremendous stresses on the airframe, possibly leading to surface flutter and/or airframe damage. All airplanes - full-scale and models - have their limits. The most basic things to learn about these kinds of high-performance models is to understand the airframe you are flying, the available power and its proper management. Understanding and making these three factors work together is the definition of an accomplished R/C pilot.

We have performed just about every extreme 3D maneuver imaginable with our Edge 540T models and have never experienced airframe stress problems or surface flutter or any kind. But we have always practiced low speed maneuver entries and exits, good flight surface rate management, and used common sense with the power. In addition, extreme 3D work places an absolute premium on the use of good equipment, including appropriately sized metal geared servos with zero-slop linkage set-ups and engines that are well broken-in and completely reliable.

It should come as no surprise that you should *NEVER* fly this model if you are by yourself at the field. In consideration of common sense and safety, you will need the assistance of at least one other adult individual to securely hold the airplane when the engine is started and run-up prior to flight. Gas engines in the 95 to 110cc range, turning typical large diameter propellers, are capable of producing a huge amount of thrust. So for your test flight outing be sure to arrange for a friend or two to meet you at the flying field - you will need them! *Do not* be tempted to use a restraining yoke on this model. Such yokes place all of the static thrust loads directly onto a very small area of the leading edges of the stabilizer halves. At 75 pounds of static thrust these stab halves *will* be damaged by even a padded yoke and in the worst case, the stab mounting tubes could be permanently damaged.

Second, when you arrive at your flying field, carefully and methodically assemble your model, again with the help of a friend. Two sets of eyes are better that one. Also, *do not* rush this process. The real goal is to test fly your model and this should *never* be based on how fast you can do it but rather on how well you do it.

After your Edge is fully assembled, get the frequency pin. Turn on your transmitter and if it's the multi-model memory type, *make sure you are in the correct model number for your airplane*! Now turn on the airborne radio system. Check and then double-check the ailerons, elevator, and rudder for proper direction of movement - up is up, down is down, left is left, etc. Now check your transmitter to make sure that these flight surfaces are each on low rates. Turn the airborne system off, followed by the transmitter. At this stage, we always suggest checking battery packs with an Expanded Scale Voltmeter to make sure that they are fully charged.

The next thing that *must* be done is to conduct a proper range check of your radio system, using the system manufacturer's recommended procedures and criteria. We suggest doing this in two modes - first with the engine not running, second with the engine running. If any range related problems show up in these tests, *DO NOT* fly the airplane until the problem is found and completely eliminated. Range problems *do not* magically disappear when the airplane is in the air. Such problems are serious and must be found and dealt with in order to fly the model safely and with confidence.

Assuming that your Edge has passed the range check procedures, it should be ready for that all-important first flight. As we said earlier, this is only a test flight and it therefore does not need to be lengthy. We suggest that you make this first flight short in duration, just a few minutes or so. This amount of time will give you the opportunity to input any needed trims in the flight surfaces to achieve straight and level flight. We further suggest that this first flight be made using no more than about 1/2 throttle or just enough to fly the airplane at lower airspeeds. There is no need on this first test flight to perform aerobatics - this will all come soon enough! The only real goal of this first flight is to get the model up, trimmed, stall checked, and then safely landed.

Always fly with a spotter next you. This precaution has saved many airplanes and provides two sets of eyes. With the engine running and a clear runway, hold some up elevator to keep the tail wheel planted firmly on the ground and perform a simple taxi test, getting a feel for how the model responds to rudder/tail wheel steering inputs. When you are satisfied, the airplane should now be ready for take-off.

The SIG Edge 540T is actually quite easy to take off. However, it is a tail dragger and coordinated rudder input will be needed during the take-off run to manage torque. Our procedure is to taxi downwind, turning 180°, lining the airplane up directly into the wind, centered on the runway. Hold a little up elevator - maybe 20% or so - and slowly and smoothly advance the throttle. Never slam the throttle wide open all at once! As the airplane begins to move forward, use a little right rudder as needed to compensate for engine torque, keeping the airplane tracking straight ahead. As speed builds, smoothly relax the up elevator input. The tail will come up and the airplane will be running on the main wheels. When the speed is sufficient, a slight amount of up elevator should get the model airborne. With the speed up and building, the rudder input is no longer needed and should be backed off to neutral. Continue flying the model upwind until a comfortable maneuvering altitude is reached. Make a smooth left or right departure turn - as the field pattern dictates - keeping the nose up a little. At this point your throttle setting should be no more than one half. Adjust the throttle setting to achieve what appears to be a "normal" flying speed and leave it there. At a safe altitude, use the transmitter trims to trim each flight surface as needed to produce straight and level flight, without stick inputs.

At this point in the flight, we suggest getting familiar with the way your Edge flies in normal left and right turns. A few easy circuits around the field should do this for you. Next, we suggest that you fly the airplane up to a safe altitude and explore the stall characteristics. Observe the speed and attitude of the airplane when the stall occurs. Our own Edge prototypes stall very cleanly and at acceptably low airspeeds. All of this is great information to have when setting up for the first landing.

Our experience in landing the Edge 540T has demonstrated that the airplane is docile and very predictable. However, the number one thing to always keep in mind is that this is a very large model and the throttled back sink rate must be managed to achieve smooth landings. Both 2-point and 3-point landings are well within the capability of this model. For your first landing, we would

suggest that the upwind final approach be made with just a bit more speed than you might first want. This ensures that the airplane will continue to fly, without stall concerns. Make sure the airplane is headed into the wind on final approach and use rudder input as needed to maintain a straight heading, along with aileron input to keep the wings level. Allow the model to sink smoothly to the runway. A few feet above the runway gently flare the airplane for touch down. After touch down, close down the throttle and keep the airplane moving straight ahead until it comes to a stop. Hold up elevator and taxi back to the designated engine shut down area at your particular field. Switch off the ignition first, followed by the airborne radio system. Congratulations! You've just successfully test flown your new Edge 540T.

With this important basic trim flight now accomplished and out of the way, the next thing to do is completely check everything in your model, including every last nut and bolt. Problems with new R/C airplanes typically show up early in their lives. This is the time to find any and all problems and fix them. If bolts have come loose, use good quality thread locking compound on the threads and securely reinstall them. Check the rudder pull-pull cables and their connections to make sure they're all sound. Check the battery packs - airborne and ignition packs - to make sure they are still securely in place and likewise, check the fuel tank to make sure it's also secure. Check for any fuel leaks and the fuel line connections themselves. Inspect the aileron, elevator, and rudder servos closely, checking for any loose clevises or clevis lock nuts. In short, take the time to go over your model completely with a very critical eye - it will pay off later.

Aerobatics:
Ok, assuming that you've gotten to this point, you're probably ready to see what your Edge 540T is capable of. Remember what we had to say earlier about throttle management and aerobatics, because all of that advice now comes into play. We won't go through every maneuver and how to fly it in this section, but we will cover a few of the more common maneuvers.

Simple Axial Roll:
A simple axial roll at level flight is a great way to begin getting used to your Edge. An axial roll is nothing more than left or right aileron input, rotating the airplane 360 around the fuselage axis. This simple maneuver can none-the-less be challenging to make perfect. The maneuver should be entered from level flight at slow to moderate speed, with the ailerons on low rates. Mastering the axial roll will lead to multiple axial rolls, always beautiful when done well.

Slow Axial Roll:
This is the same as the axial roll above, but performed with much less aileron input, rotating the airplane at considerably lower speed. This is likewise a simple but challenging maneuver to master.

Loops:
Everyone knows what a loop is - enter from level flight, pulling smoothly up with the elevators, continuing all the way up and over, back to level flight on the same heading and at the same altitude as the entry. Sounds easy. The real secret to a proper loop is maintaining the same airspeed all the way around the loop, using throttle input as needed to pull up on the upline and throttling back on the downline and pullout to level flight. This is a great maneuver to practice your throttle management skills. With practice, you can add a snap roll at the top of the loop and then continue down the backside of the loop as you normally would. This is called an Avalanche.

Knife-Edge Flight:
The SIG Edge 540T has exceptional knife-edge capability! As mentioned earlier in the manual, the CG location has a direct effect in this maneuver. The further back the CG location, the more effect the rudder has in knife-edge flight. We fly at a 29% CG location and can fly typical knife-edge flight at either a more normal fuselage angle of 25° or so, or with just a bit more power, we can also fly "high alpha" knife-edge at a very steep fuselage angle of attack. Knife-edge flight is a signature Edge 540T maneuver.

Harriers:
Harrier maneuver can be described as forward flight with the fuselage at a very steep nose-up angle of attack. This maneuver requires very good power. We like to enter this maneuver from slow level flight. Using high rates, quickly pull the nose up to about 60° and add power to maintain altitude and forward flight. Keep holding full up elevator, holding the tail down, along with throttle input as needed to keep the altitude constant. You'll need rudder input for heading control because the ailerons become fairly ineffective in this attitude. With practice you can learn to fly the model in the Harrier attitude with relative ease. Want to bail out of this maneuver? Easy. Return the elevators quickly back to neutral and throttle up the engine to quickly and smoothly fly out and into level flight. If you've never done this maneuver before, we suggest practicing at an altitude that is at least a couple of mistakes high. Once you've mastered this maneuver, it can be used to make spectacular "Harrier Landings".

Snap Rolls:
The Edge does really nice looking snap rolls, as long as the control inputs and proper rates are used. The ailerons should be in the high rate position. The elevators and rudder should be in low rate positions, with the low to moderate entry speed. A word of caution is in order here. Snap rolls are high stress maneuvers. Do not be tempted to throw excessive elevator throw into this maneuver. Doing so may overstress the airframe, especially the wings. Also, note that aft CG locations may make this maneuver a little more challenging.

Waterfall:
The waterfall maneuver has been described as nothing more than a series of super tight outside loops - *on steroids*! That said, the waterfall is both a spectacular and challenging maneuver and a lot of fun. Make sure to practice this maneuver at a fairly good altitude. In level, low speed flight, go to high rate elevators and smoothly pull the nose up to either vertical or near vertical. Just before the airplane stalls, push full down elevator and full power. The airplane should pitch forward and down, rotating all the way around 360°. Holding the elevator and throttle in this position, the airplane will continue this insane action in a slow downward decent. Some rudder and aileron input will be needed to keep the wings level and the fuselage properly aligned. To bail out of a waterfall, return the elevators to neutral and back off of the throttle.

The Edge 540T is capable of many more different maneuvers! And this is one of the real challenges when flying such a capable model. The only real secret to learning how to fly these maneuvers can be distilled down to three words - *practice, practice, practice*.

Please operate your airplane in a safe, responsible manner with constant regard to other flyers, spectators, and property.

GOOD LUCK AND GOOD FLYING!

Referenced Manufacturer Information:
Throughout this manual we have referenced several different manufacturer's products. The following is the current contact information for these various suppliers.

Dave Brown Products www.dbproducts.com	Aftermarket wheels, spinners, etc.
Hitec RCD www.hitecrcd.com	Quality radio control system manufacturer, aftermarket servos,etc.
Maxx Products www.maxxprod.com	Aftermarket battery packs, switch assemblies, servo extensions, Y-harnesses, spinners, etc.
SIG Mfg. Co., Inc. www.sigmfg.com	F.P.E. Engines, kits, ARF models, balsa and plywood, etc.
Troy Built Models www.troybuiltmodels.com	Aftermarket heavy-duty servo output arms, fuel dot fillers and other giant-scale modeling supplies

WARNING! THIS IS NOT A TOY!

Flying machines of any form, either model-size or full-size, are not toys! Because of the speeds that airplanes must achieve in order to fly, they are capable of causing serious bodily harm and property damage if they crash. **IT IS YOUR RESPONSIBILITY AND YOURS ALONE** to assemble this model airplane correctly according to the plans and instructions, to ground test the finished model before each flight to make sure it is completely airworthy, and to always fly your model in a safe location and in a safe manner. The first test flights should only be made by an experienced R/C flyer, familiar with high performance R/C aircraft.

JOIN THE AMA

The governing body for radio-control model airplanes in the United States is the ACADEMY OF MODEL AERONAUTICS, commonly called the AMA. The AMA SAFETY CODE provides guidelines for the safe operation of R/C model airplanes. While AMA membership is not necessarily mandatory, it is required by most R/C flying clubs in the U.S. and provides you with important liability insurance in case your R/C model should ever cause serious property damage or personal injury to someone else.

ACADEMY OF MODEL AERONAUTICS

5161 East Memorial Drive
Muncie, IN 47302
Telephone: (765) 287-1256

AMA WEB SITE: www.modelaircraft.org

CUSTOMER SERVICE

SIG MANUFACTURING COMPANY, INC. is committed to your success in both assembling and flying the EDGE 540T ARF. Should you encounter any problem building this kit or discover any missing or damaged parts, please feel free to contact us by mail or telephone.

SIG MANUFACTURING COMPANY, INC.
401-7 South Front Street
Montezuma, IA 50171-0520

SIG MODELER'S ORDERLINE: 1-800-247-5008
(to order parts)

SIG MODELER'S HOTLINE: 1-641-623-0215
(for technical support)

SIG WEB SITE: www.sigmfg.com

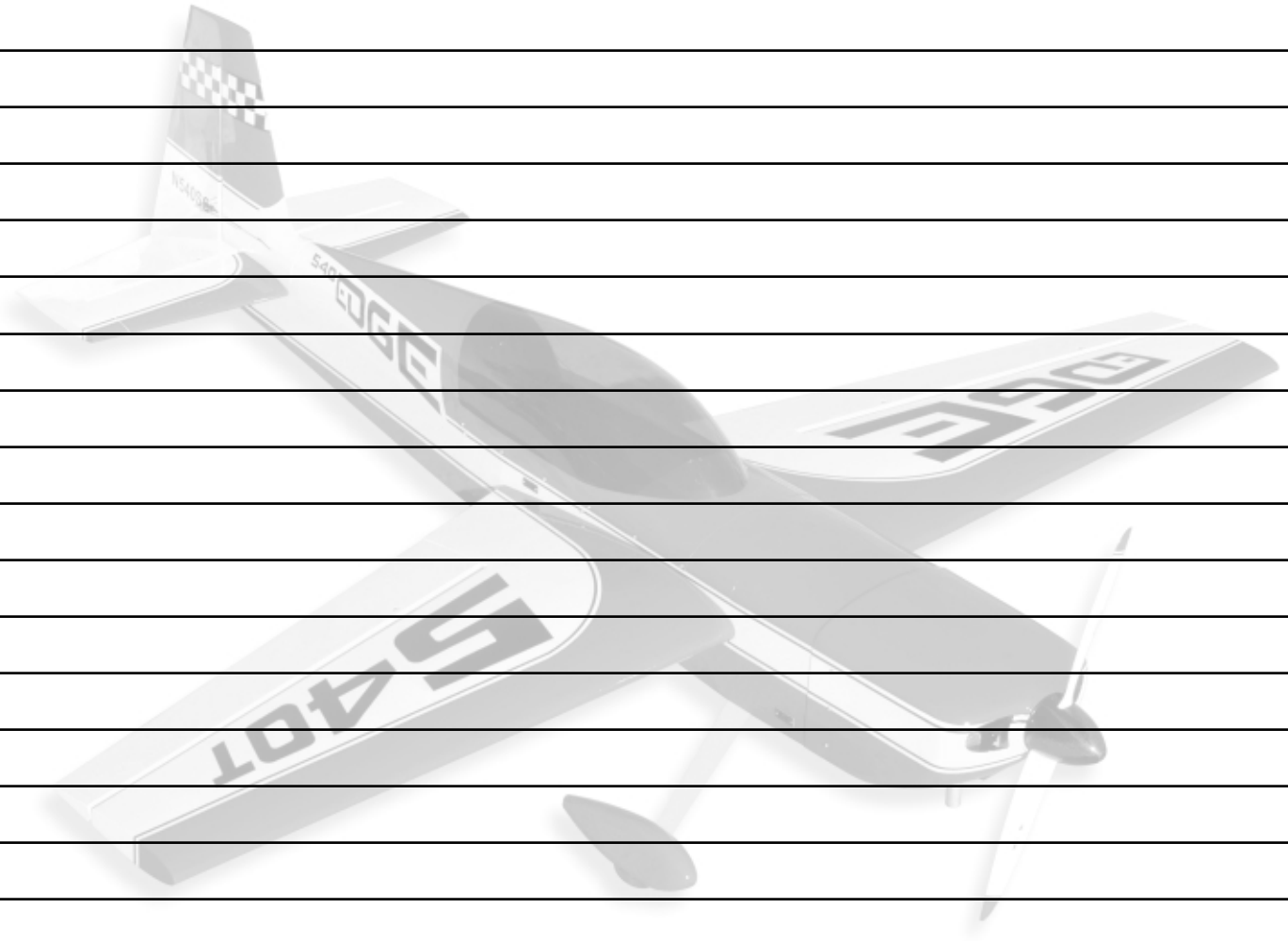
LIMIT OF LIABILITY

The craftsmanship, attention to detail and actions of the builder/flyer of this model airplane kit will ultimately determine the airworthiness, flight performance and safety of the finished model. SIG MANUFACTURING COMPANY, INC.'s obligation shall be to replace those parts of the kit proven to be defective or missing. The user shall determine the suitability of the product for his or her intended use and shall assume all risk and liability in connection therewith.

EXTRA 540T LOG BOOK

Date of first flight:

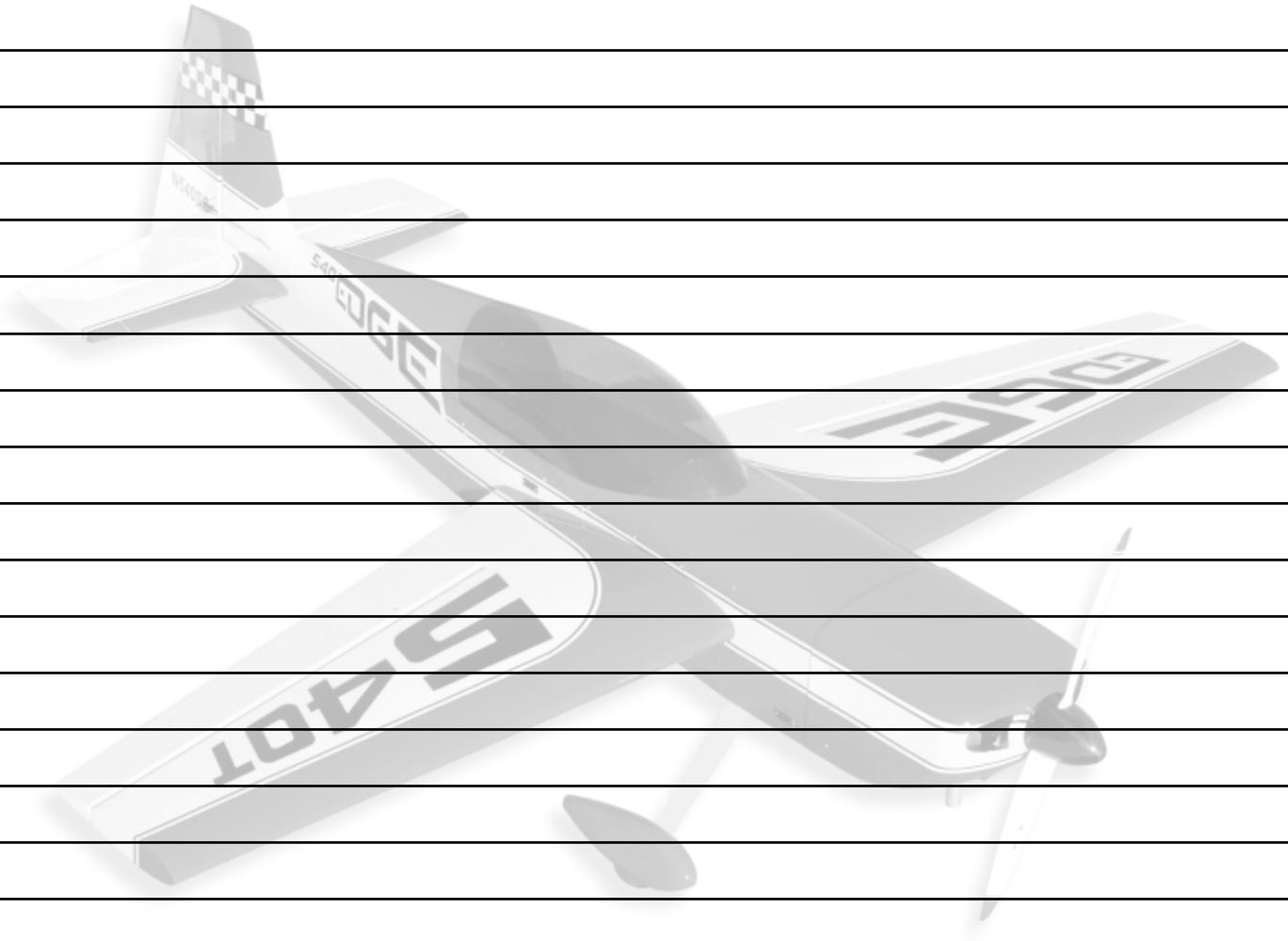
Comments:



EXTRA 540T LOG BOOK

Date of first flight:

Comments:



CHECK OUT A COUPLE OF GREAT SIG PRODUCTS THAT WILL COMPLIMENT YOUR EDGE 540T ARF!

SIG

GAS PASSER FLIGHT BOX

#SIGBX003

Designed for the special needs of the gasoline-powered flyer, the Gas Passer Flight Box features an extra large compartment to hold a 3.8 l (gallon) bottle, can, or DuBro's EZ Fill 3.8 l (gallon) container. And it wouldn't be a SIG flight box without roomy parts drawers and a large battery compartment for wet or gel cell batteries. Builds fast with 100% laser cut parts and easy-to-follow instructions. Finish it off any way you want, or just coat it with good polyurethane for a polished, professional look. Power panel not included.

Specifications:

Length:	18.5 inches	Height:	13.75 inches
Width:	9.5 inches	Weight:	6 pounds (empty)

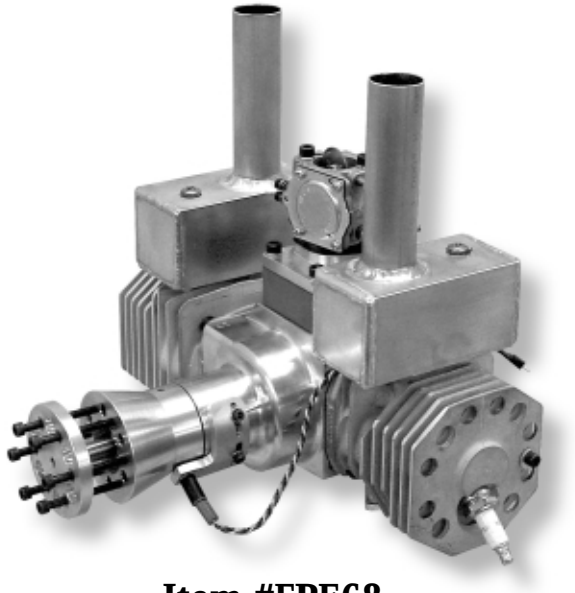
First Place ENGINES

For the SIG Edge 540T, we recommend the

FPE 6.8 cu. in. Gas Engine

This is no overweight, bone-jarring converted lawn care engine!

Chock full of power, the FPE 6.8 is the lightest, smoothest running engine in its class. Utilizing a premium Husqvarna piston and cylinder, *First Place Engines* machines all other major components from billet aluminum and bar steel stock. It's a gas engine designed and produced by modelers for modelers. The perfect power plant for the SIG Edge 540T ARF!



Item #FPE68

Specifications:

Size:	6.8 cubic inches (111 cc)
Weight:	116 ounces with muffler
Prop:	28 x 10
RPM:	5,800 rpm (APC 22x10)
Thrust:	75 pounds
Horsepower:	11.5 bhp@6,000 rpm