KADET LT-25

SIGRC74

INSTRUCTION BOOK

Sig Mfg. Co., Inc....401-7 S Front St...PO Box 520....Montezuma, IA 50171-0520

Welcome to the sport of Radio Control flying, and thank you for choosing the SIG KADET LT-25.

We understand how anxious you are to get started building and flying your KADET LT-25, but please take a few minutes right now to study the full-size plans while you page through this instruction book. This will familiarize you with the general layout of the airplane and the building sequence, making the entire project easier in the long run.

Introduction

In order for your KADET LT-25 to fly as well as it was designed to, it must be carefully assembled. A model airplane that is not built properly will not fly properly! Remember to work slowly and follow the instructions exactly. SIG, as the kit manufacturer, can provide you with a proven aerodynamic design, quality materials, and detailed instructions, but ultimately the flyability of your finished model depends on how well YOU put it all together.

Customer Service

SIG Mfg. Co., Inc. is totally committed to your success in building and flying the KADET LT-25. Should you encounter any problem building this kit or find any missing or damaged parts, feel free to contact us.

SIG MFG. CO., INC.
401-7 S Front St
P.O. Box 520
Montezuma, IA 50171-0520

SIG ORDER LINE:	1-800-247-5008 - (to order parts)
SIG MODELER'S HOTLINE:	1-641-623-0215 - (for technical support)
SIG WEB SITE:	www.sigmfg.com
E-Mail:	mail@sigmfg.com

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 be made only with the assistance of an experienced R/C flyer.

The governing body for radio-control model airplanes in the United States is the ACADEMY OF MODEL AERONAUTICS, sometimes referred to as the AMA. The AMA SAFETY CODE provides guidelines for the safe operation of R/C model airplanes. While AMA membership is not mandatory, it is a good idea and we encourage all new R/C fliers to join the AMA. Membership in the AMA provides you with important liability insurance protection in case your R/C model should ever cause serious property damage or personal injury to someone else. For more information, contact:

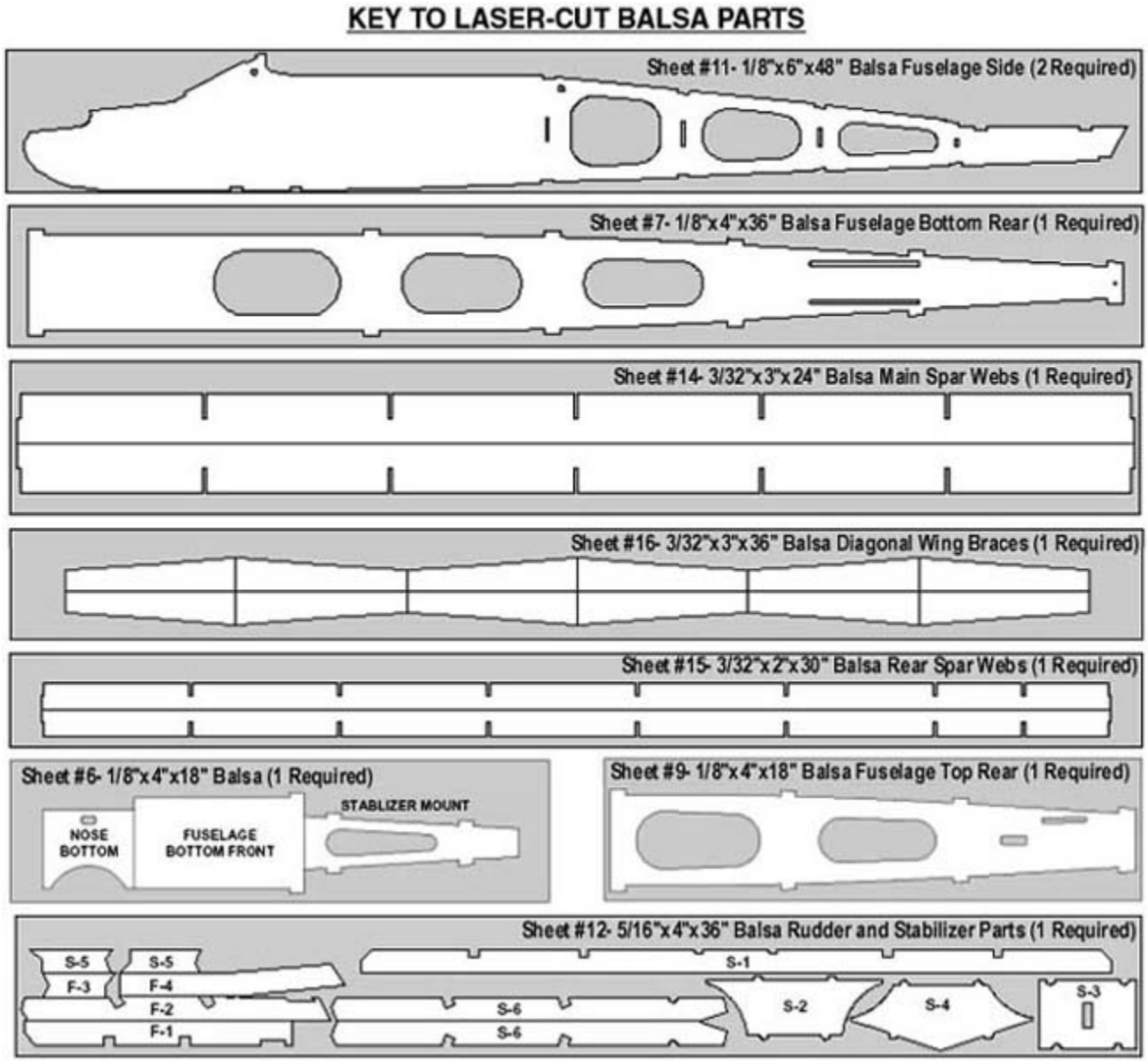
ACADEMY OF MODEL AERONAUTICS
5161 East Memorial Drive - Muncie, IN 47302 - Telephone: (765) 287-1256

COMPLETE KIT PARTS LIST							
Laser-Cut Balsa							
1	3/32"x3"x12" Sht #1 - W-1 Wing Ribs	1	3/32"x3"x12" Sht #2 - W-2 Wing Ribs	1	3/32"x3"x12" Sht #3 - W-3 Wing Ribs	1	3/32"x3"x12" Sht #4 - W-4 Wing Ribs
5	3/32"x3"x12" Sht #5 - W-5 Wing Ribs	1	1/8"x4"x18" Sht #6 - Fuselage Bottom Front,Nose Bottom, Stab Mount	1	1/8"x4"x36" Sht #7 - Fuselage Bottom Rear	1	1/8"x4"x24" Sht #8 - Formers, Tank Floor
1	1/8"x4"x18" Sht #9 - Fuselage Top Rear	2	1/8"x6"x30" Sht #10 - Fuselage Doublers	2	1/8"x6"x48" Sht #11 - Fuselage Side	1	5/16"x4"x36" Sh t#12 - Stabilizer, Fin
1	1/8"x6"x24" Sht #13 - Wing Tip, Windshield	1	3/32"x3"x24" Sht #14 - Main Spar Web	1	3/32"x2"x30" Sht #15 - Rear Spar Web	1	3/32"x3"x36" Sht #16 - Diagonal Wing Braces
Balsa Sheet							
1	3/32"x4"x24" Wing Center Sheet	3	3/32"x3"x24" Wing Leading & Trailing Edge Sheet				
Balsa Sticks							
4	3/16"x1/4"x36" Rear Wing Spars	8	1/8"x3/16"x24" Forward Wing Spars	1	1/2" Triangle x12" Brace for Firewall & Landing Gear Mount	1	5/16"x5/16"x30" Brace for Stabilizer & Fin
4	3/16"x3/8"x36" Main Wing Spars						
Pre-Shaped Special Cut Balsa							
2	36" Long Leading Edges	2	30" Long Trailing Edges	2	1/2"x1-1/2"x30" Ailerons	2	1/2"x1-1/2"x3-5/16" Center Section Trailing Edges
1	5/16"x2"x24" Elevator	1	5/16"x8-3/16" Rudder				
Laser-Cut Lite-Plywood							
1	1/8"x6"x8" Sht #17 - Hatch,Hatch Tongue,Dihedral Gauge, Tailwheel Mount, & F-2D						
Laser-Cut Birch Plywood							
1	3/16"x4"x6" Sht #18 - Firewall, Landing Gear Mount	1	1/8"x5-1/2"x9-1/2" Sht #19 - Servo Trays, Dihedral Brace, Tiller Bar & Tiller Bar Mount				
Hardwood							
2	1/4"x4-3/4" Wing Dowels						
Wire Parts							
1	Right Aileron Torque Rod	1	Left Aileron Torque Rod	7	2-56 x10" Threaded Steel Rods (for pushrods)	1	1/16" dia. Pre-Bent Tailwheel Wire
Hardware							
2	4-40 x1/2" Mounting Bolts (for Landing Gear)	5	4-40 x3/4" Mounting Bolts (Tiller Bar, Engine to Eng.Mounts)	4	6-32 x3/4" Mounting Bolts (for Eng.Mounts to Firewall)	2	6-32 x1-1/2" Mounting Bolts (for Axles)
4	6-32 Hex Nuts (for Axles)	5	4-40 Aircraft Lock Nuts (Tiller Bar, Engine to Eng.Mounts)	2	6-32 Aircraft Lock Nuts (for Axles)	2	4-40 Blind Nuts (for Main Gear)
4	6-32 Blind Nuts (for Eng.Mounts to Firewall)	4	#2 Flat Washers (for Tailwheel)	2	#4 Flat Washers (for Tiller Bar)	3	3/16 ID. Nylon Washers (for Tiller Bar)
1	#4 Nylon Bushing (for Tiller Bar)	4	#2 x3/8" Sheet Metal Screws (Hatch Cover, Tailwheel Bracket)	4	#2 x3/4" Sheet Metal Screws (for Elev,Rud Horns)	1	small Nylon Control Horn (for Rudder)
1	medium Nylon Control Horn (for Elevator)	2	4-40 Nylon Aileron Connectors	4	2-56 Solder Clevis (servo end Ail,Elev,Rud Pushrods)	4	2-56 Nylon R/C Links (Ail,Elev,Rud Pushrods)

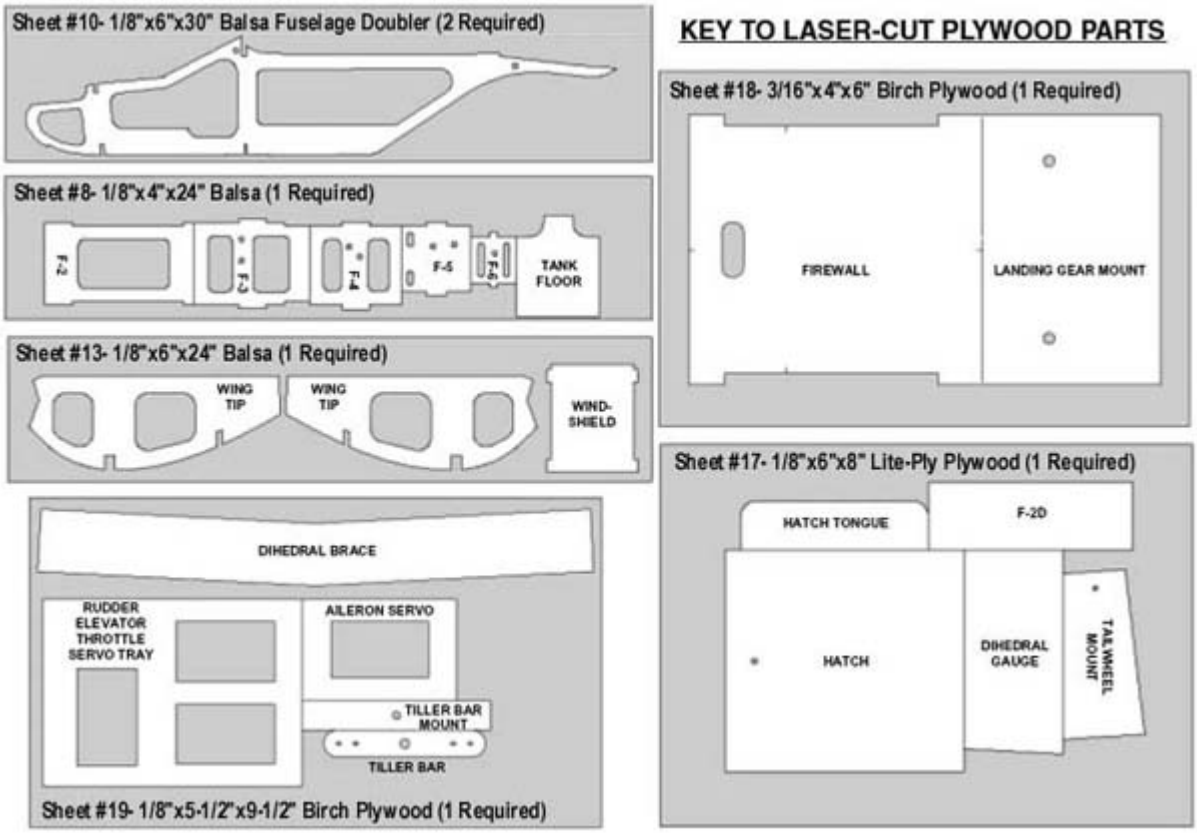
Hardware Continued							
3	Pushrod Connectors (Throttle & Tiller Bar)	1	EM-001 (pair) Engine Mounts	1	Nylon Tailwheel Bracket	1	Nylon Tailwheel Steering Arm
2	1/16" Wheel Collars (for Tailwheel)						
Miscellaneous Parts							
1	.090 Aluminum Main Gear	1	1"x24" Fiberglass Tape (Wing Center Joint)	1	1/16" dia.x18" Steel Cable (for Thr.Pushrod)	1	1/8" o.d.x20" Small Nylon Pushrod Tubing (for Throttle Pushrod, Pull-Pull Cable Guides)
2	1/8" o.d.x36" Small Nylon Pushrod Tubing (for inner part of Elev, Rud Pushrods)	2	3/16" o.d.x36" Large Nylon Pushrod Tubing (for outer part of Elev, Rud Pushrods)	4	3/32" o.d.x1/2" Aluminum Tubes (Pull-Pull Cables)	1	.027x6' Steel Cable (Pull-Pull Cable)
16	SIG Easy Hinges	1	10"x27" Decal Sheet				
Documentation							
1	38"x50" Plate #1 Full Size Plan	1	38"x50" Plate #2 Full Size Plan	1	Instruction Book		

Wood Parts Identification

Wood parts such as standard stick and sheet stock, leading edges, trailing edges, ailerons, elevator, etc., are all easily identifiable by comparing their shape and dimensions to the plans and the "KADET LT-25 COMPLETE PARTS LIST" (above); therefore we did not feel that there was any need to label these parts. On the other hand, proper identification of the different wing ribs, wing sheeting, fuselage formers, etc., can be confusing because some of them are very similar looking, but in fact they are quite different. Wherever possible, we have labeled (printed) these parts.



The laser-cut Plywood and Balsa parts are not labeled. They can be identified using the plans and the "KEY TO LASER-CUT PARTS". Use a pencil to label each part with its name or number, before removing the parts from the laser-cut sheets. Be careful when removing parts from Laser-Cut sheets. If difficulty is encountered, do not force the part from the sheet - use a modeling knife to cut it free. Handle the removed parts carefully, as long parts (such as the fuselage sides) are fragile until glued into a structural unit. Sort the different parts into individual piles to avoid confusion during building. Save all scrap wood until the model is finished. You never know where a small piece of scrap wood may come in handy during construction.



About The Wood In The Kit

We strive to supply good quality materials in all SIG kits. However wood is a highly variable material (unlike man-made plastic or metal), so every single wood part in a kit will probably not have flawless appearance. Often things that look like an imperfection are actually quite acceptable when you consider the function the part will serve. Mineral stains and tiny knots do not seriously affect balsa wood strength. Also, there is a natural tendency for some balsa sticks and sheets to immediately bow upon being cut off from a perfectly square block due to internal stresses in the wood. In most cases, bows in wood parts (such as leading edges) readily straighten out as they are glued into a structural unit.
If you are in doubt about the suitability of any part in your kit for it's intended purpose, call or write to us for assistance and/or a replacement part.

Additional Components Needed

- **6 oz. Plastic Fuel Tank (rectangular)**
- **1-3/4" Spinner**
- **(2) 3" dia. Main Wheels and (1) 3/4" dia. Tailwheel**
- **.25 to .32 cu. in. 2-Stroke Glow R/C Engine w/Muffler or .20 to .26 cu. in. 4-Stroke Glow R/C Engine w/Muffler**
  NOTE: Engines larger than those listed are not recommended! Use of oversize engines will cause balance problems and may overload the structure of the airplane. The KADET LT-25 has a light wing loading and does not need a super "hot" engine to fly well! Any normally ported .25 2-stroke glow R/C engine will provide adequate power to fly the KADET LT-25. We believe that the .25 2-stroke glow R/C engine will be the most commonly used engine in the KADET LT-25, so that is what we've shown on the full-size plans and in this instruction book.

- **Propeller**
  Propellers are a subject that can fill a book all by themselves! There are a large variety of propeller sizes available, and selecting the best one to use on your KADET LT-25 will depend mostly on which engine you end up buying. Refer to the instruction sheet that comes with your engine for a recommended propeller size. If the engine manufacturer lists several possible sizes, pick the one that sounds like it is for a slower flying model - choose "sport or scale" instead of "pattern or racing". As a general rule, if you are going to use a normal .25 2-stroke glow R/C engine in your KADET LT-25, you will undoubtedly use a 9-4 propeller.

- **Radio Control System**
  You will need a (minimum) 4-channel radio control system with 4 servos to operate the ailerons, elevator, rudder, and engine throttle of your KADET LT-25. The KADET's fuselage is spacious enough that any common brand of radio equipment with standard size servos and battery pack can be used. Be certain that your radio system transmits on one of the FCC-approved frequencies for R/C model aircraft.

- **1/4"x8"x12" Soft Foam Rubber (such as SIG #RF-239)**
  Used to protect your radio receiver and battery pack from damaging engine vibration. Also used as packing around the fuel tank and radio components to keep them from shifting around in flight.

- **#67 Rubber Bands (such as SIG #SH-747)**
  Used to hold the wing on the fuselage. Always use at least 10-12 rubber bands when flying. Replace any bands that have stretched out or have become oil soaked.

- **3 Rolls of Covering Material (such as SIG SUPERCOAT COVERING)**
  Although the KADET LT-25 can be finished with a wide variety of covering materials (some which need to be painted and some which don't), this instruction book assumes that the beginner will use one of the popular pre-finished iron-on plastic film coverings.

- **4 oz. of Fuel-Proof Paint (such as SIG SUPERCOAT DOPE)**
  For fuel-proofing the engine compartment, tank area, wing saddle, and ends of the wing dowels.

- **Light-Weight Wood Filler**
  For filling holes, nicks, and dents after assembly of the model, but before covering. Regular household "wall repair" or "spackling" compound (3M, Red Devil, DAP, etc.) works well for this. There are also several excellent "model fillers" available at the hobby shop. Just make sure whatever you use is light weight and sands easily. Do not use household patching plaster - it's way too heavy!

- **Glue**
  There are so many different types of glue available today for model airplane construction that it can be confusing to even the experienced modeler. To simplify matters, most model airplane glues an be classified as one of four basic types:

  1. **Cyanoacrylate Adhesives**, such as SIG CA, are very strong and bond in just seconds. Dramatically speeds up building time! Different viscosity's and cure times are available to suit all areas of model construction.

  2. **Two-Part Epoxy Glues**, such as SIG-KWIK-SET (5-minute cure) and SIG EPOXY (3-hour cure), are super strong but too heavy for general construction. Often used in high stress areas such as the firewall, landing gear, and wing joiners.

  3. **Water-Based Glues**, such as SIG-BOND (aliphatic resin), are very safe and easy to use. Excellent for general construction, although somewhat slow drying.

  4. **Solvent-Based Model Cement**, such as SIG-MENT, is the oldest form of traditional model airplane glue. Still used for general construction by some modelers - especially when building super light weight free flight models.

  You could build the KADET LT-25 using any of these four basic types of glue. Each type has different characteristics and advantages, and all of them will result in a bond that is stronger than the wood materials being glued together. Often times the choice of which type to use boils down to a matter of personal preference based on past experience. However, if you want to get your KADET LT-25 into the air as quickly as possible, we recommend that you use CA glue for the majority of the assembly of this kit. CA glue is not only fast and strong, but it also makes it possible to do some unique things in the construction sequence. For instance, since CA glue has the ability to penetrate into an already assembled joint, we can first assemble the interlocking fuselage parts "dry" (without glue), then check and adjust the alignment, and finally apply CA to the pre-assembled joints. This makes it very easy to build a straight and true fuselage in a very short time.
  NOTE: The instructions in this book are written assuming the use of MEDIUM CA glue for all steps, unless otherwise noted. In other words, if an instruction simply says "glue" part A to part B - use MEDIUM CA! If THIN CA, SLOW CA, EPOXY GLUE, or SIG-BOND GLUE would work better in a specific instance, we will call for it.

Workshop Tools And Supplies

As the old saying goes, "Having the right tool makes the job easy". That certainly holds true with building model airplanes as well as anything else. Below is a list of the tools we feel are the minimum required to speedily and accurately assembly this kit, and to build other model airplanes in the future. Some of them are common household tools that you probably already have, while some are special "modeling" tools that you will have to purchase at the hobby shop. While there are many more special modeling tools available, and they all do a wonderful job in certain areas, these are the basics with which to get started in the hobby. Like the rest of us, eventually you will add others to your workshop as the need arises.

- **Building Board - 12"x36" minimum size**
  This can be any flat surface that will accept and hold pins - such as insulation board, foam board (cardboard laminated to both sides of a foam sheet), cork bulletin board, soft plywood, a reject "door core" from the lumber yard, etc. The most important thing is that the board must be perfectly flat and untwisted! Your wings and tail surfaces will be built on this board, and if the board is twisted or bowed, the parts you build on it will assume the same shape and your model will not fly properly.
  NOTE: The building board you'll see us using in the photos in this book is an 18"x48" piece of 3/4" thick plywood (perfectly flat!), with a same sized piece of cork bulletin board stuck down on top of the plywood with double-sided sticky tape. The plywood provides the rigidity and flatness we need, and the semi-flexible foam board lays flat on the plywood and gives us a surface to push pins into. All materials were obtained from the local lumber yard. Insulation board or cork sheet would make a good substitute for the foam board, if that is not available.

- **Wax Paper** Used to cover the plans so that parts are not accidentally glued to them.

- **A Few Dozen T-Pins (such as SIG #SH-310)** For holding parts together during construction.

- **Masking Tape or Scotch Tape** For holding parts together during construction.

- **Scissors**

- **Ruler or Tape Measure**

- **Pencil** Do not use a ball-point or felt-tip pen for making marks on the model during construction. If not sanded off, ink marks may show through the model's final finish. Use a pencil instead of a pen.

- **Modeling Knife (such as X-Acto #1 knife with extra #11 blades)** For general cutting.

- **Razor Saw (such as X-Acto #75300 or Zona #500)** For cutting thicker wood pieces.

- **1/2-Dozen Single-Edge Razor Blades (such as SIG #SH-283)** For cutting and trimming covering material.

- **Long Metal Straight Edge (such as SIG #SE-236)** To aid in making long straight cuts in wood and covering material.

- **Triangle (such as metal SIG #TR-036 or plastic draftsman's triangle)** For squaring up parts during assembly and to aid in making short straight cuts in wood and covering material.

- **Assorted Screwdrivers**

- **Assorted Hex "Allen" Wrenches**

- **Regular Pliers**

- **Assorted Drills**

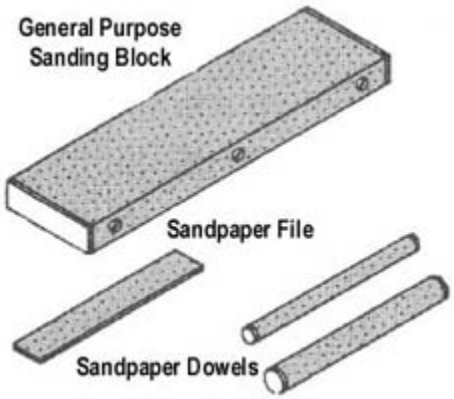
- **Needle-Nose Pliers with cutting jaws** For cutting, bending, and shaping pushrod wires.

- **Soldering Iron, Rosin Core Solder, and Soldering Paste Flux** There is one part in this kit that needs to be soldered. (If you don't have a soldering iron, perhaps you can borrow one for this part of the construction.)

- **Covering Iron** For applying iron-on covering material. Although a household iron can be used to apply covering, smaller easier-to-use irons specifically designed for model covering are available at the hobby shop. (Like the soldering iron, perhaps you can borrow one from another modeler if you are covering your first airplane.)

- **80 and 220 Grit Sandpaper** We prefer either garnet or silicon carbide type open-coat sandpaper. Use the 80 grit to rough sand and shape parts. Use the 220 grit to fine sand the entire model prior to covering. Sand with the grain of the wood whenever possible. Always use fresh, sharp sandpaper. Sharp sandpaper will cut through glue and hard materials easily, giving an even surface. Dull sandpaper will require more pressure and may gouge the surface.

- **Sanding Blocks** The instructions will call for you to sand some parts of the model using a "sanding block", which is simply a piece of sandpaper backed up by a solid, flat block of wood, plastic, or whatever. A sanding block will give you a much flatter, truer result than you would get with an unbacked, limp piece of sandpaper held in your fingertips. An assortment of different size sanding blocks are indispensable tools for all model construction. There are many styles of commercially made sanding blocks available in hobby shops, or you can make your own.

  A good general purpose sanding block can be made by wrapping a full-size standard 9"x11" sheet of sandpaper around a piece of hardwood or plywood, as shown. This is the most commonly used sanding block in our workshop! Use screws or thumbtacks along one edge to hold the overlapped ends of the sandpaper in place. Put 80 grit sandpaper on the block during general construction, and then switch to 220 grit sandpaper for final sanding just before covering (or make yourself two of these blocks, one for each grit sandpaper).

  There will be other times when a slightly smaller sanding block is easier to manage. Also, you can make a small sandpaper "file" by simply gluing a strip of 80 grit sandpaper onto a scrap plywood stick. Sandpaper glued or taped to different size hardwood dowels are great for sanding inside curves and holes. Last but not least, for sanding really large areas, glue 80 grit sandpaper onto a 24" or 36" long piece of aluminum "channel" or "T-Bar" stock (most hardware stores carry a rack of aluminum extrusions in various sizes and shapes).

How To Use These Instructions

Like a full-size airplane, the KADET LT-25 is built by first constructing several basic structures - the FUSELAGE, WINGS, STABILIZER, FIN, etc. - which are then assembled into a completed airplane. This manual will take you step-by-step through the construction of each basic structure and then the final assembly. Check-off boxes (?) are provided so you can keep track of which steps you have completed.

How To Use The Plans

There are two sheets of Plans included in this kit. The plans will be used in several ways. They will help you identify all the parts and determine the relationship of all the parts to each other. They will also be used as a building pattern for the Wing Panels, Stabilizer, and Fin - which will be assembled directly on top of the plans. The plans also show how we would install a typical radio and engine in the KADET LT-25. By referring to the examples shown on the plan, you should be able to properly install your radio and engine, even if they are not exactly the same as what is shown on the plan.

Everything on the plans is drawn FULL-SCALE, or ACTUAL SIZE (except for the Wing Front view which is half-size) to show the correct size, shape, and relationship of all the parts to each other.

The plans show the model completely assembled. Unfortunately this often covers up the important parts inside the model, making it hard to understand how things fit together. In normal drafting practice, parts hidden inside the model would be shown with dashed lines, and you will find many areas of the plan that do use this method. However in areas where there are so many hidden parts that it would be confusing to use so many dashed lines, we have elected to use "cutaway views". Cutaway views make it appear as if a portion of a part has been cut out and removed. This is done to clearly show the parts that are immediately under the cutaway part. For instance, on Plan Sheet 1 we have used a cutaway to completely remove all of the left fuselage side so that the details inside the fuselage could be clearly seen. On Plan Sheet 2 there are several small cutaways in the wing sheeting to allow details underneath to be clearly seen.
NOTE: The cutaways on the plan do not mean that the parts should actually be shaped that way!

Whenever building a structure directly on top of the plans (like the Wing Panels, Stabilizer, or Fin), you must first tape or pin the plan onto your building board and then cover it with a layer of wax paper. The wax paper will keep excess glue from sticking the model parts to the plans. As you add parts to the structure, any parts which naturally come in contact with the plans should be firmly pinned to the plan/building board with TPins. Take a look at the photos in this book of the wing construction and you will see what is meant. In the pictures you will see that lots of TPins have been used to anchor the parts firmly in position on the plans.

WING CONSTRUCTION

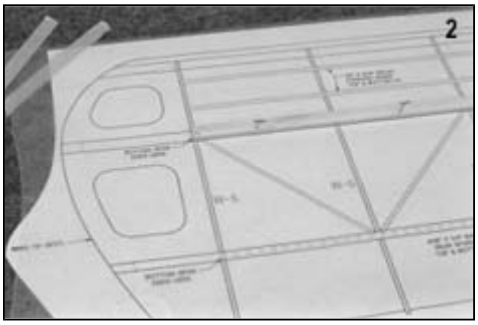
The KADET LT-25's wing is designed to be built in two halves - called the LEFT WING PANEL and the RIGHT WING PANEL as shown on fullsize plan sheet 2. Each wing panel will be built directly on top of its own plan, using the plan as a pattern to position the parts.

It's best to work on just one wing panel at a time. Occasionally you will find as you are working on one wing panel that the parts you have already installed will be covering up some of the plan lines and text that you are looking for in a subsequent step. In that case, simply refer to the other wing panel plan to see what is covered up.

Let's start building the LEFT WING PANEL first.

1. Cut the drawing of the LEFT WING PANEL loose from the rest of Plan Sheet 2. Tape or pin it on top of your building board. Cover the plan with a sheet of waxed. paper, also taped down. This will keep excess glue from sticking to the plan when you are gluing the parts in place.

2. Locate one 3/16"x3/8"x36" balsa stick for the Bottom Main Wing Spar. Pin the Bottom Main Wing Spar in position on the plan.
IMPORTANT: Position the Bottom Main Spar on the plan precisely by lining up the outboard end of the spar flush with the location of the last W-5 wing rib. (at the wing tip).

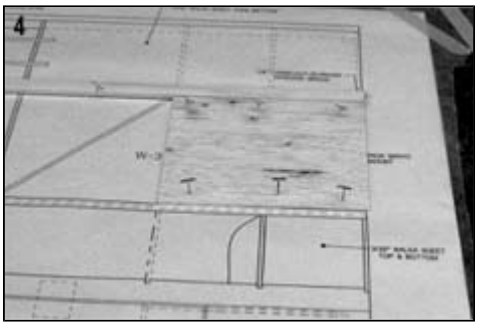


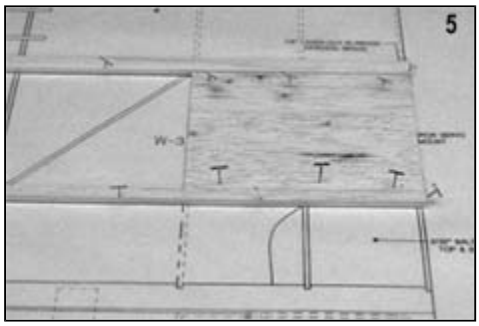
3. Use a razor saw to cut off the excess at the root rib (W-1.)

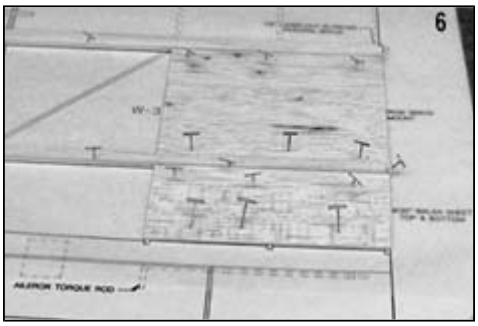
4. Cut a piece of wing center sheet from the 3/32"x4"x24" balsa Sheet, to fit between the main and rear spars. Place on the plan, gluing and pining its front edge to the back of the Bottom Main Spar at the same time.

5. Locate the 3/16"x1/4"x36" balsa stick for use as the Bottom Rear Spar and pin it in place on the plan, gluing it to the rear edge of the balsa sheet at the same time. Cut off the excess at the root rib (W-1).

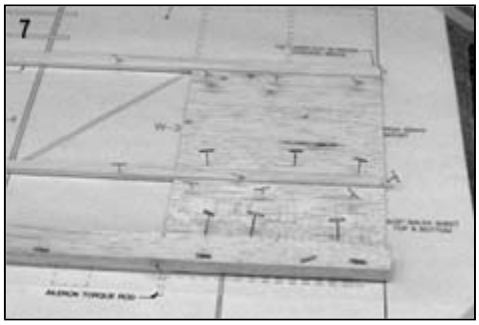
6. Cut a piece of wing trailing edge sheet from the 3/32"x3"x24" balsa sheet, to fit between the rear bottom spar and the trailing edge. Place on the plan gluing and pining its front edge to the back of the Bottom Rear Spar at the same time.







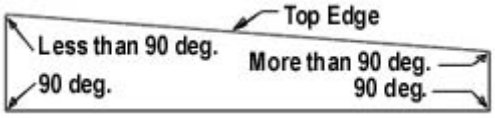
7. Pin the pre-shaped balsa Trailing Edge in place on the plan, gluing it to the back edge of the trailing edge sheet at the same time. Be sure to align all of the notches in the Trailing Edge with the rib locations on the plan.

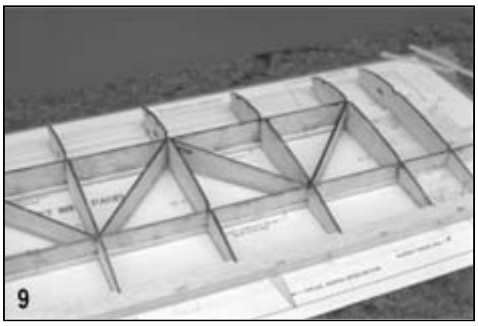


NOTE: It is possible for plan paper to shrink or expand slightly with humidity changes. If it has, this is where you will notice it! You may find that the rib notches in the Trailing Edge do not exactly match the rib locations on the plan. Nonetheless, they should be very close, not off by more than the thickness of a rib. A slight difference is nothing to worry about! The machine-cut notches in the Trailing Edge are correct, and you should build your wing according to them. To install a wing rib in the steps coming up, simply put the rear end of the rib in the notch, and then align the rest of the rib parallel with the rib lines on the plan. Do not alter the notches in the Trailing Edges!

8. Carefully remove all the ribs (W-1 through W-5) from the lasercut sheets #1 through #5. Take time to familiarize yourself with the ribs and how they differ. You will notice that ribs W-1, W-2, W-3, and the front of rib W-4 are smaller than the W-5 ribs to all allow for the 3/32" thick balsa wing sheet pieces.

9. Assemble (but don't glue) Wing Ribs W-2 thru W-5, plus the Main Spar Web and the Rear Spar Web, onto the Bottom Main Spar and Bottom Rear Spar. Do not glue any of these parts at this time!





Next add the Diagonal Wing Braces between the ribs as shown. Do not glue these either!.

NOTICE: The Diagonal Wing Braces ARE NOT SYMMETRICAL! Make sure you properly identify the top of each Brace

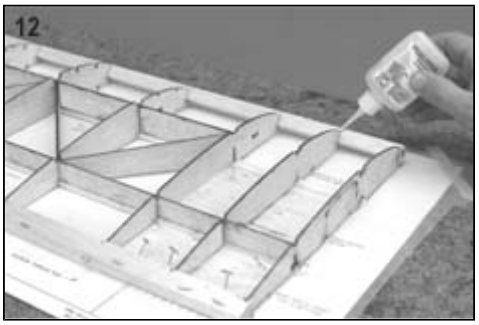
10. Use the dihedral gauge to set the root rib (W-1) at the proper angle (3°). Glue the root rib to the bottom spars, balsa sheeting and trailing edge.

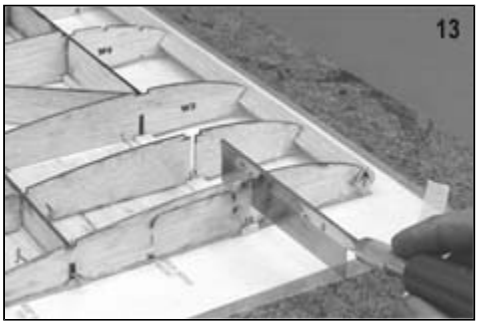
11. Double check to see all the remaining ribs are 90° to the building board, if so glue all remaining Ribs, Spar Webs, and Diagonal Braces at all joints.

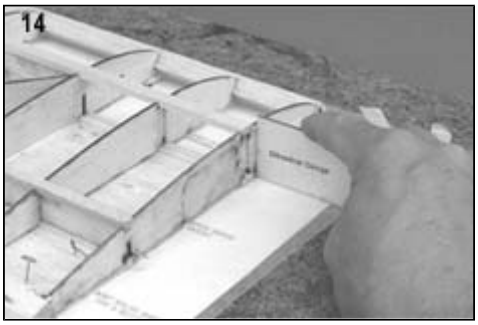
12. Glue the pre-shaped balsa Leading Edge in place in the notches in the front of the wing ribs. Note that the Leading Edge is extra long! Glue it on with one end flush with the W-1 rib, and allow the other end to stick out past the last W-5 rib. Do not cut off the excess length at this time - we will do that later, after the wing tip is installed.
CAUTION: Take a close look at the end of the Leading Edge before gluing it in place! Notice that it is not symmetrical! Hold the Leading Edge against one of the wing cross-section drawing on Plan sheet 2, and after you are sure that you have it matched up correctly, mark an "up" arrow on one end. Now make sure you glue it into the wing right side up!

13. With a X-Acto saw, finish cutting the notch in the W-1 and W-2 wing ribs using the laser-cut notches as a guide. This will leave a space for the dihedral brace.

14. Glue the Top Main Spar and the Top Rear Spar in place. It is critical that you get a good glue joint between the spars and the spar webs, both top and bottom. Also, be sure to use the Dihedral Gauge to hold the W-1 wing rib at the correct angle when gluing the top spars in that area.
NOTE:
The top spars are extra long, just like the Leading Edge was. Like before, put one end of the spars flush with rib W-1, and leave the excess length at the tip end of the wing panel. They will be cut off later, after the wing tip is installed.







15. Cut a piece of 3/32"x3" sheet balsa to fit between the Top Rear Spar and the Trailing Edge. Trim and sand the sheet carefully to fit and then glue it in place on the ribs. Next cut another piece of 3/32"x3" sheet balsa to fit between the Top Main Spar and the Leading Edge. Sand it to fit and then glue it in place. Last, cut more 3/32" sheet balsa to fit in the area between the Top Main Spar and the Top Rear Spar, and then glue it in place.
Caution: Be sure to remove any pins that are holding the wing structure to the building board in the areas where the top sheeting is going to be glued on. If you don't, you'll find it difficult to remove the wing from the building board later.

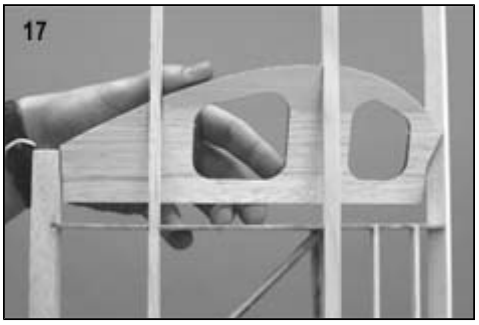
16. After the glue on the center section sheets has cured, cut two 1/8" wide x1/2" long slots in the Top Leading Edge sheet at the W-4 wing rib to accomodate the ends of the two 1/8"x3/16"x24" balsa Top Forward Spars. Glue the Forward Spars into these slots and into the notcheds in the top of all the other wing ribs. Cut the Forward Spars off flush with the W-5 rib at the tip.
When all the glue joints have dried, unpin the wing panel from the building board and check it for straightness. If it looks straight, go back and reglue every joint in the wing panel using MEDIUM or THICK CA. Don't be stingy here - the integrity of your wing depends upon strong glue joints. Glue BOTH sides of EVERY joint! BE ABSOLUTELY POSITIVE THE SPAR WEBS ARE BONDED TO BOTH THE TOP AND BOTTOM SPARS

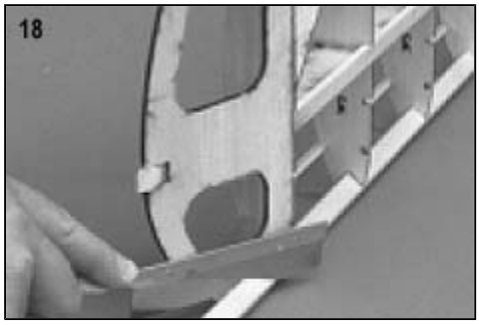
17. Now you can add the wing tip! The only way to get the lasercut balsa wig tip in place is to slide it over the ends of the Top Spars, Leading Edge, and Trailing Edge - all at the same time. It's a little tedious, but with a bit of careful wiggling and pushing, you should be able to get it to slide on OK. Once in position, securely glue the wing tip to all the parts it comes in contact with.

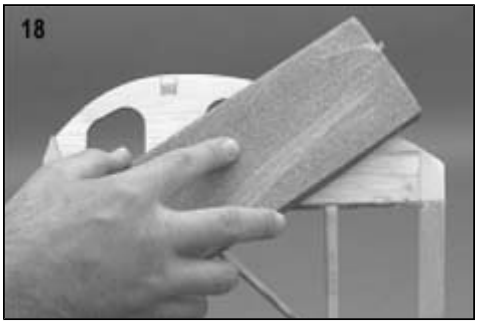
    NOTE: Practically everywhere that the wing tip comes in contact with another part there are angles involved. This means there will be some unavoidable small gaps between the parts. For instance, underneath both of the Top Spars there will be a gap. Also around the backside of the Leading Edge there will be some gaps. All of these gaps can be filled with glue and light-weight wood filler.

18. Cut the Leading Edge, Trailing Edge, Top Main Spar, and Top Rear Spar off flush with the bottom surface of the wing tip.

    NOTE: It's best to first make a "pretty close" cut with a razor saw to quickly remove the bulk of the part, and then use a sanding block to get everything perfectly flat and flush.

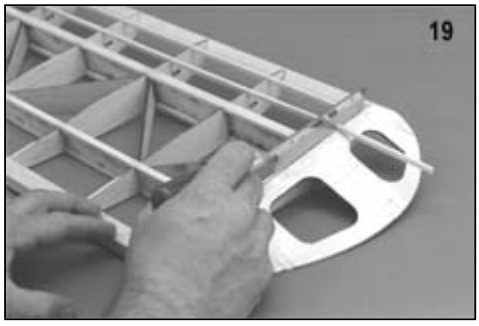


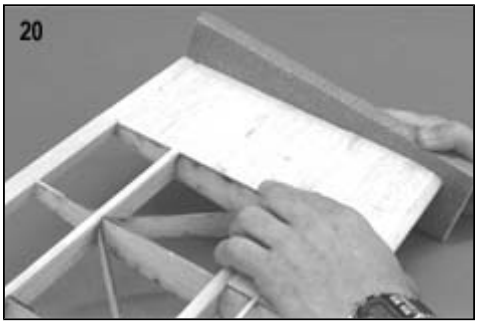




19. Cut and fit 3/32"x3" balsa sheeting to fit between the Bottom Main Spar and the Leading Edge (just like in Step 15).

    After the glue has dried, cut 1/8" wide x 1/2" long slots in the Top Leading Edge sheet at the W-4 wing rib to accomodate the ends of the two 1/8"x3/16"x24" balsa Top Forward Spars. Glue the Forward Spars into these slots and into the notcheds in the top of all the other wing ribs. Cut the Forward Spars off flush with the W-5 rib at the tip (see photo).





20. Carefully saw off and block sand the root ends of all the Spars, Leading Edge, and Trailing Edge flush with the pre-angled W-1 wing rib. Use a large sanding block and sand slowly to keep the end of the wing panel straight and true. Try not to sand into the W-1 wing rib.

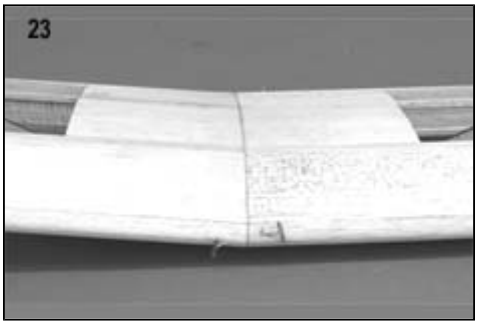
21. Look closely at rib W-1 and you'll see that a cutout for the aileron servo has been partially pre-cut in the rib - it's a large inverted "U" shape, located aft of the main spars. Also notice that the vertical legs of the cutout stop short of the bottom of the rib. In this step, you will complete the aileron servo cutout in the W-1 rib. First lay the wing panel flat on the building board and use a modeling knife to cut straight down through the last of the rib on both vertical legs. Stop cutting when you get to the bottom wing sheet. Carefully break out the portion of the rib inside the cutout area.

    Now repeat Steps 1 through 21 to build the other wing panel.

Joining The Wing Panels

22. Trial fit the two wing panels with the 1/8" laser-cut plywood dihedral brace installed between the main spars. Be certain that the dihedral brace is not preventing the panels from making solid contact with each other at the center. If necessary, trim or sand the brace for a snug fit. The 3° dihedral per wing panel will automatically be built-in by the dihedral brace. If you want to check the angle, place the wing on the table so that one side sits flat, and the other is raised. The bottom of the raised wing tip should be about 3" above the surface of the table. A variation of up to 1/4" either way is acceptable and will not affect flight performance. The most important point to have a tight joint at the wing center with no gaps.

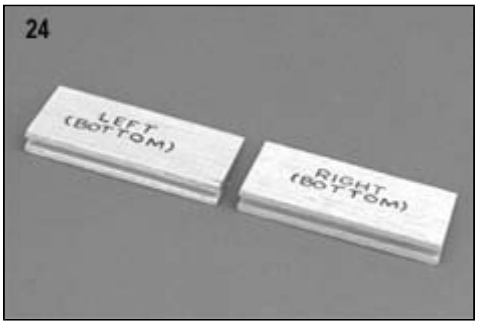
23. Use epoxy (either SIG 5-MINUTE or SLOW-CURE) to join the two wing panels. Apply glue generously to the end ribs and the dihedral brace. Work some glue into the slot in each wing root. Carefully slide the wing halves into place and hold in place with pins and tape. Wipe away any excess epoxy that oozes from the center joint with a paper towel or a rag dampened with isopropyl alcohol. Before the glue cures, make sure that the leading and trailing edges of both panels are perfectly aligned and that there is no built-in twist. Let cure.

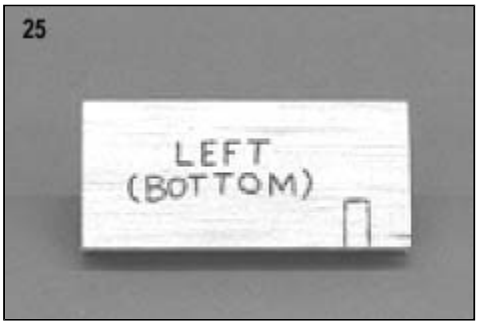


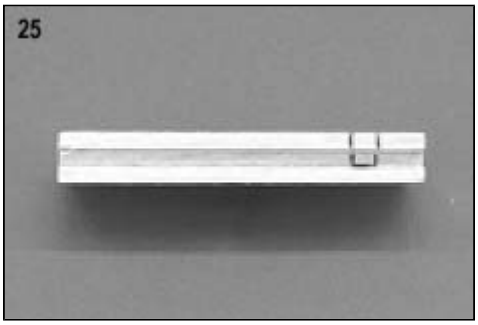
Aileron Installation

24. Locate the two pre-shaped balsa Center Section Trailing Edge pieces. Mark one Left Bottom and one Right Bottom.

25. On the Left Bottom Center Section Trailing Edge piece, draw a box 1/4" wide x 1/2" deep, exactly 7/16" from the end, as shown here. Continue the lines down the front of the piece, until you reach the bottom of the pre-cut groove in the front.







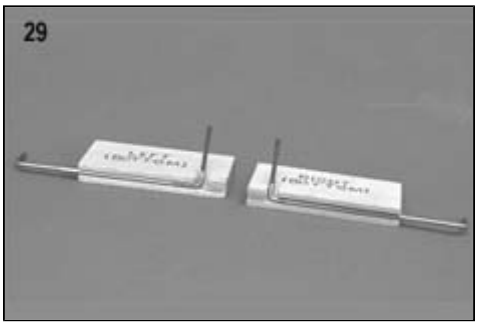
26. Using a razor saw, carefully cut along the side lines of the box, stopping when the blade is deep enough to reach across to both end lines.

27. Use a modeling knife to "chip" the wood out between the saw cuts until you have notch the full depth of the box you drew originally.

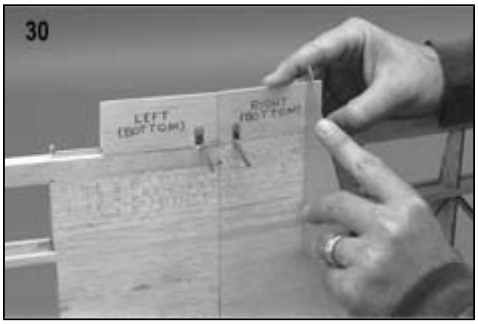
Repeat steps 25 through 27 to make the Right Bottom Center Section Trailing Edge a mirror image of the left one.

28. Familiarize yourself with the pre-bent Aileron Torque Rods w/Brass Bearings. Note that there is a Left and a Right Torque Rod. Study their positions on the full size plans to help you identify which one is Left and which is Right. Notice that when the Torque Rods are in position in the wing, the threaded end of the Torque Rod will come out the bottom of the wing and the shorter unthreaded end will face back into the aileron.

    Also notice that the threaded portions of the Torque Rods should lean back slightly towards the rear of the airplane when the ailerons are in neutral position. That rearward lean provides the Kadet LT-25 with a small amount of "differential" movement in the ailerons (more up than down), which makes for smoother turning.

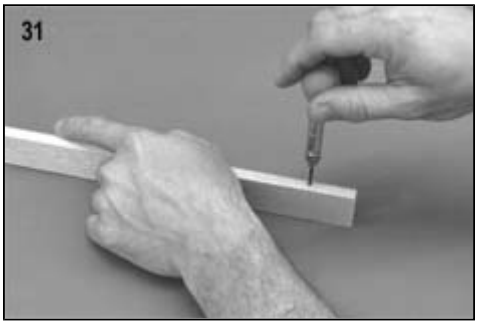


29. Use a small amount of Thick CA to glue the Brass Bearing portion of the Left Aileron Torque Rod into the groove in the front of the Left Center Section Trailing Edge piece. GLUE ONLY THE BRASS BEARING, NOT THE WIRE PORTION OF THE TORQUE ROD! The wire portion of the Torque Rod must be completely free to rotate inside the Brass Bearing. Now glue the Right Aileron Torque Rod into the groove in the front of the Right Center Section Trailing Edge.
    IMPORTANT: Be sure to keep all glue at least 1/8" away from the ends of the Brass Bearings to minimize any chance of glue seeping inside the bearing and causing a bind in the movement of the Torque Rod.



30. Apply a bead of Slow CA to the leading edges of the Left Center Section Trailing Edge piece. Keep the glue on the balsa, do not get any glue on the Torque Rod or the Brass Bearing! Hold the Center Section Trailing Edge assembly in position on the trailing edge of the wing. Use a straight edge to confirm that the bottom surface of the part is flush with the bottom surface of the wing. Let dry.

    Repeat this step for the Right Center Section Trailing Edge piece on the back of the wing, also gluing it to the Left Center Trailing Edge at the same time. When the glue has cured, check to verify that both Aileron Toque Rods will pivot freely. If they don't, you must find the problem and correct it now before proceeding!

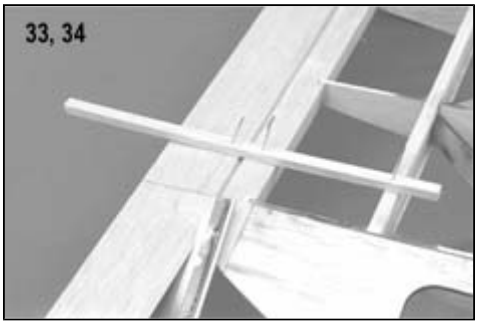


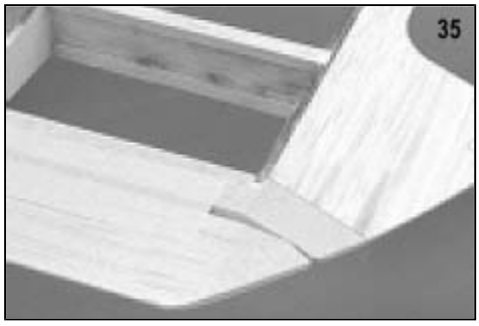
31. Locate the two pre-shaped balsa wood Ailerons. Using a 3/32" dia. drill bit, drill a hole 5/8" deep in one end of each aileron to accept the Aileron Torque Rod wire. The location of the hole must be centered on the Leading edge of the aileron, and it should be 1-3/8" from the end of the aileron. The path of the hole must travel straight into the core of the aileron, centered equal distance from both sides.

32. Use a modeling knife to cut a (3/32" wide x 3/32" deep) groove in the leading edge of the aileron to accept the Aileron Torque Rod wire. The groove should go from the 3/32" hole to the root end of the aileron. Trial fit the aileron over the end of the Torque Rod wire to check the fit.

33. Tape the aileron into neutral position, with the root end in perfect alignment with the fixed Center Section Trailing Edge pieces.

34. Pin a piece of scrap balsa to the bottom surfaces of both the aileron and the wing, out near the wing tip, to hold this end of the aileron securely in neutral position.





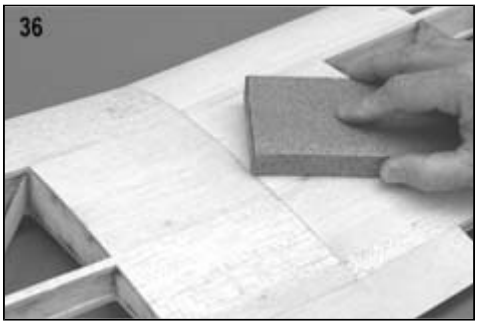
35. Cut and block sand the end of the aileron to match the shape of the wing tip. Remove the ailerons from the wing and set them aside until time for covering.

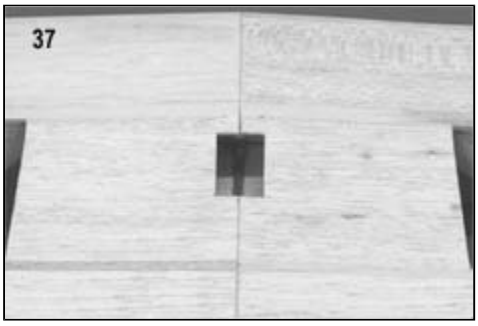
Completing The Wing

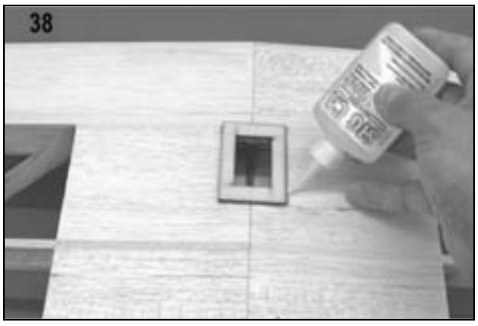
36. Use a sanding block with 80 grit sandpaper to give the entire wing a final sanding. Sand just enough to take off any prominent high spots and to smooth out any mismatched joints between parts. Sand all wing sheeting down flush with the spars, leading edges, and trailing edges. Avoid sanding into the spars, leading edges, and trailing edges themselves as much as possible, just sand the wing sheeting pieces down to them! if you've got sheet that is lower than the spars, etc. then fill in the low spot with light-weight wood filler and sand smooth. You shouldn't have to sand the edges of the wing ribs at all - they should already be level with the surface of the spars, etc. However, you may need to use a small sanding block to touch up any excess glue on the rib to spar joints. Excessive sanding of the ribs themselves will distort the airfoil shape.

37. On the bottom of the wing, draw a short line parallel to and 1/2" aft of the main spar. Draw a second line, 2-1/8" aft of the main spar. Cut a opening 1" wide x 1-5/8" long in the bottom of the wing sheeting for the aileron servo.

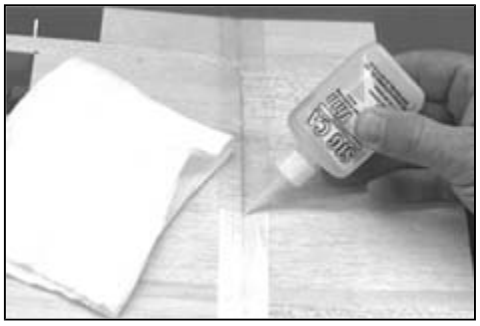
38. Remove the aileron servo mount from the Laser-Cut sheet #19. Use Slow CA to glue it in place on the bottom of the wing. Make sure the plywood mount is centered over the cutout that in the wing sheeting. Use enough glue to fill in the gap under each side of the aileron servo mount, caused by the dihedral angle.







Reinforce Wing Center Joint



39. A 1" wide x 24" long piece of fiberglass cloth tape is supplied to reinforce the joint between the Right & Left Wing Panels. Cut the 24" long tape into one 18" long piece and one 6" long piece. Lay the 18" long piece of fiberglass tape over the center joint on top of the wing. Using a small amount of Thin CA, tack glue the end of the tape to the Trailing Edge. Make sure the width of the tape is overlapping 1/2" onto the Right Wing Panel and 1/2" onto the Left Wing Panel.

    After the Thin CA dries, pull the other end of the tape completely around the Leading Edge and down onto the bottom surface of the wing. The tape should lay nice and flat, tight against the top surface of the wing. Again make sure the tape is centered over the joint - half on the Right Wing Panel and half on the Left Wing Panel. Then tack glue the tape to the Leading Edge.

    Now carefully flow Thin CA glue into the tape on top of the wing. Use just enough glue to saturate the tape - too much glue will run outside the tape and get all over the place. If you do get too much glue on the tape, take a clean rag and quickly wipe off the excess before it dries (don't rub too hard and disturb the tape position). By working slowly and gluing small (3" long) sections of tape at a time, you should be able to glue the entire length of tape in place without wrinkles or bumps. CAUTION: Do the gluing in a well ventilated area to avoid breathing the fumes from the Thin CA glue!

    After you've finished gluing the fiberglass tape on the top of the wing, turn the wing over and glue the remainder of the original 18" long piece to the bottom front of the wing. Cut it off right in front of the plywood ASM part.

    Using the same techniques, glue the 6" long piece of fiberglass tape to the bottom of the wing. It goes from the back of plywood part ASM, all the way off the end of the wing. When dry, cut it off flush with the end of the wing. NOTE: Be very careful when gluing the tape in the area of the Torque Rods! If you get too much Thin CA in that area, the excess could seep into the Torque Rods, binding them up permanently.

    After all the glue is dry, lightly sand the fiberglass cloth with a piece of 220 grit sandpaper to remove any lumps or high spots. Be careful not to sand through the fiberglass cloth.

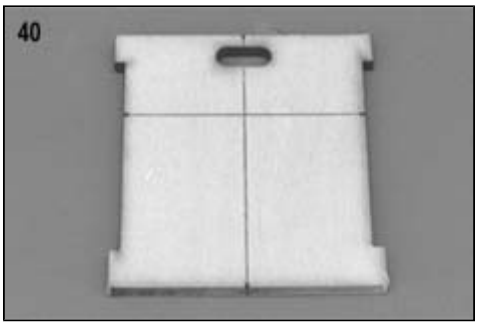
FUSELAGE CONSTRUCTION

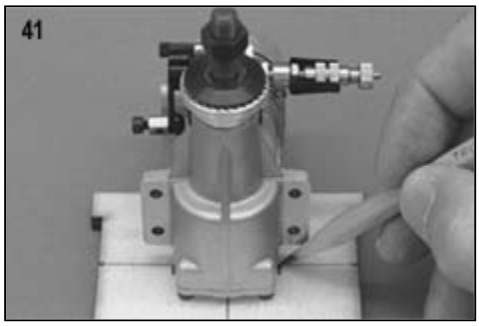
NOTE: You will need to have the engine that you will be using before starting on the fuselage construction.

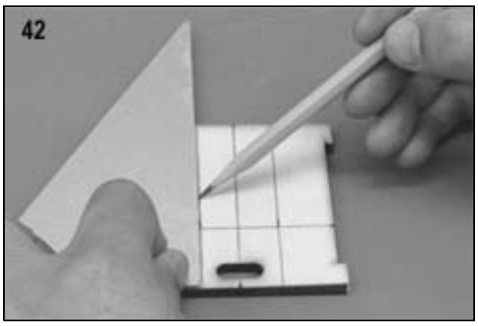
40. Mark the vertical center line and thrust line on the front of firewall F-1. Notice that there are small "tic marks" (cuts) burned iinto the front of F-1 which indicate the proper locations of these lines.

41. Set your engine on the front of F-1 as shown in the photo, with the crankshaft of the engine directly in line with the vertical center line. Make two pencil marks on the Firewall, one on each side of the engine's crankcase, to indicate where the inside of the of the two Engine Mounts should be.

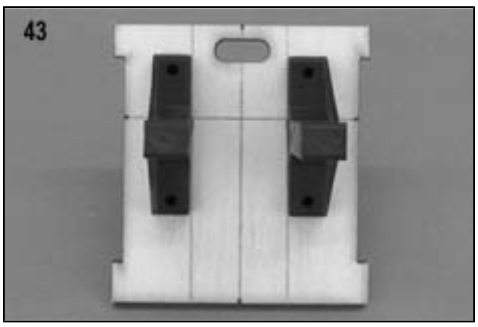
42. Draw a vertical line through both of the pencil marks you made in the previous step. Make sure that both lines are exactly parallel to the vertical center line.







43. Line up the inside edges of the Engine Mounts with the vertical lines you made in the previous step. Also make sure that the top suface of the beams of the Mounts (where the engine will sit) are lined up with the thrust line. When you are sure that you have the Mounts positioned properly, mark the four mounting holes on the Firewall, and then drill the holes with a 11/64" drill bit.



44. Bolt the Engine Mounts loosely to the Firewall with four 6-32 x3/4" Mounting Bolts and 6-32 Blind Nuts. Double check the position of the Mounts one more time, and then tighten the Bolts until the prongs of the Blind Nuts are just started into the wood and holding firmly.

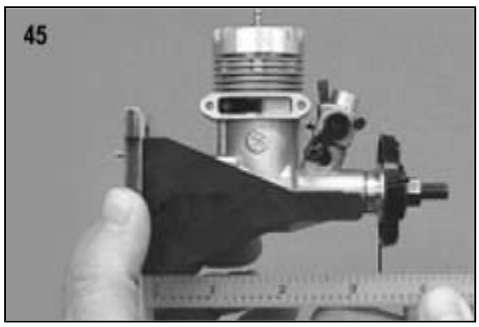
    Now loosen the Bolts and remove the Engine Mounts from the firewall. Seat the Blind Nuts completely into the wood with a hammer.

    Apply a little Medium CA glue around the flanges of the Blind Nuts to keep them from coming loose. Be careful not to get any glue in the threads of the Blind Nuts. When the glue has cured, bolt the Engine Mounts back onto the Firewall.

45. Position your engine on the Engine Mounts, with the back of the Spinner back plate approximately 3-5/16" away from the front of the Firewall. This is done so the back of the spinner will clear the fuselage "cheeks".

    View down on the engine from above to make sure that the engine is pointing straight ahead, without any left or right side thrust.

    NOTE: 0° side thrust is the ideal! However a slight amount of RIGHT thrust would also be OK, but under no circumstances should you have left thrust!



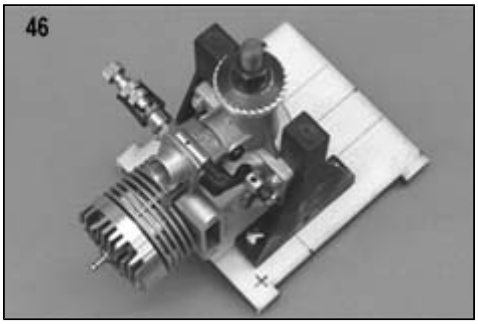
Hold the engine in correct position on the Mounts while you use a pencil to mark the locations of the engine's mounting holes onto the Mounts.

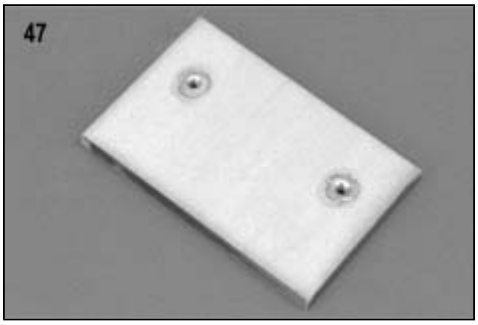
Remove the Engine Mounts from the firewall and drill down vertically thru the beams of the Mounts, on the pencil marks, with a 1/8" drill bit (use a drill press if available).

46. Bolt the Engine Mounts back onto the Firewall. Then bolt the engine to the Engine Mounts using the 4-40 x3/4" Mounting Bolts and 4-40 Aircraft Lock Nuts provided.

    Next we need to mark and drill the location for the Throttle Pushrod to pass through the firewall. Note: In most 2-cycle engine installations, this will be approximately as shown in the photo. However be sure to determine whether this will work OK for your particular engine. Then drill a 9/64" hole at this mark for the outer housing of the flexible cable.

    When done, unbolt the Engine Mounts from the firewall, leaving the engine bolted to the Mounts. Set the engine/engine mount combination aside until needed later.





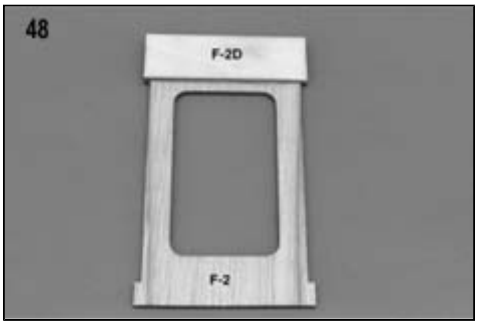
47. Bolt the Aluminum Landing Gear onto the 3/16" laser-cut plywood Landing Gear Mount using 4-40 x1/2" Mounting Bolts and 4-40 Blind Nuts provided. Tighten the Bolts until the prongs of the Blind Nuts are just started into the wood and holding firmly. Then remove the Aluminum Landing Gear and seat the Blind Nuts completely into the wood with a hammer. Apply a little Medium CA glue around the flanges of the Blind Nuts to keep them from coming loose. Be careful not to get any glue in the threads of the Blind Nuts.

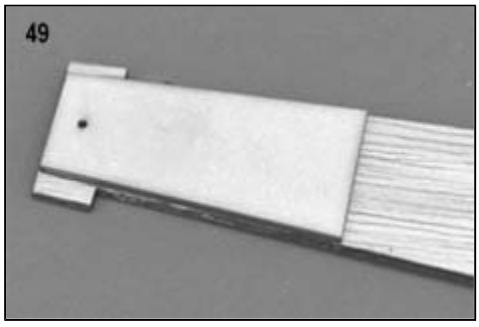
48. Glue laser-cut lite-ply former F-2D in place at the top of lasercut balsa former F-2. Be careful to get the top and side edges of the formers flush with each other.

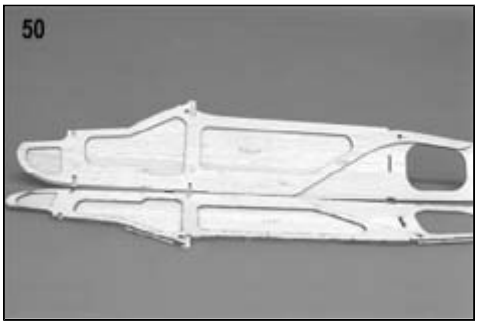
49. Glue the laser-cut lite-ply Tailwheel Mount onto the aft end of the balsa wood Fuselage Bottom Rear. Make sure the small hole in both parts line up with each other.

50. Glue a laser-cut balsa Fuselage Doubler in place on each laser-cut balsa Fuselage Side. NOTE: Study the full-size plan to make sure you know exactly where the Fuselage Doubler should go before you apply the glue. There are some places where the edges of the Fuselage Doubler should be flush with the edges of the Fuselage Side, and that there are other places where the Fuselage Doubler is inset 1/8" away from the edge of the Fuselage Side. Use a slow drying glue to allow you plenty of time to accurately position the Doubler before the glue dries. Pin flat to the building board until dry.

    CAUTION: Be sure to make one RIGHT and one LEFT fuselage side assembly!





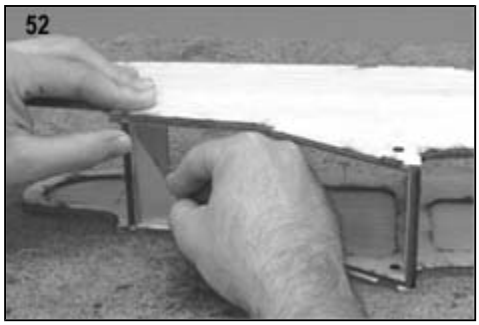


51. With the right Fuselage Side pinned flat to the building board, glue the Firewall in place in the first notch in the Fuselage Doubler. Use a 90° triangle to keep Firewall perpendicular to the Fuselage Side. Let the glue dry before proceeding.

    Next glue the F-2 former assembly in place on the right Fuselage side in the same manner you just did the Firewall. Be sure to glue it in with the F-2D part of F-2 facing forward (towards the nose - see side view of Fuselage plan.) When dry, unpin the right Fuselage Side from the building board.

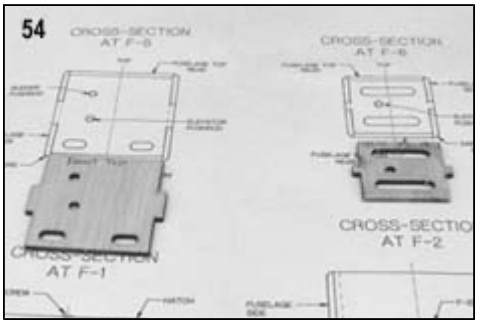
52. Pin the left Fuselage Side down to the building board. Join the right and left Fuselage Sides together by gluing formers F-1 and F-2 into the notches in the left Fuselage Side.
Again use a small 90° triangle to keep the formers perpendicular to the fuselage side.

    Let dry.



53. Fit the laser-cut balsa Fuselage Bottom Rear between the two Fuselage Sides, using masking tape to hold it in place. DO NOT GLUE AT THIS TIME!

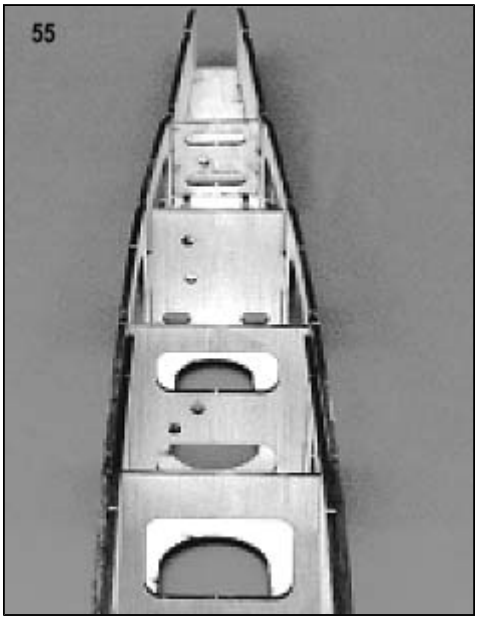
54. Identify the laser-cut balsa formers F-3, F-4, F-5, and F-6, and carefully match them up with their respective cross-section drawings on the full-size fuselage plan (Plate 1). Make sure that you have all the pre-cut holes in the formers properly oriented. Then mark each former as to its correct top and front side with a pencil.
NOTE: IF THIS STEP IS NOT DONE CORRECTLY, THE ELEVATOR AND RUDDER PUSHRODS WILL NOT INSTALL PROPERLY LATER.



55. Carefully install formers F-3, F-4, F-5, and F-6 in the fuselage, making sure that you have the front of the formers facing the front of the fuselage (towards the nose). Do not glue in at this time!

56. Fit the laser-cut balsa Fuselage Top Rear and the laser-cut balsa Stab Mount between the two Fuselage Sides, using masking tape to hold them in place. DO NOT GLUE AT THIS TIME! Make sure the rudder exit slot in the Fuselage Top Rear is on the right side of the fuselage.

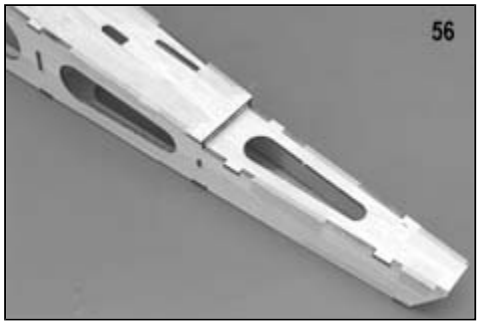
    Double check to see that the entire fuselage structure is in correct alignment. Make sure that the entire structure is straight and square and that all the parts are taped tightly together before proceeding.



57. Now you can start gluing the fuselage parts together! Use MEDIUM CA glue, and start with small patches of glue in the corners, checking the fuselage alignment as you go. Keep applying glue until the complete inside of the fuselage has been gone over once. Now go back and glue all of the joints on both sides. Leave the tape in place until all the glue has cured completely.

58. Turn the fuselage assembly upside down on the workbench and glue the laser-cut plywood Landing Gear Mount inplace. Glue it to all the surrounding parts, the doublers and the bottom of former F-2. Don't be stingy with the glue or you may find yourself picking up the landing gear as a separate piece after a hard landing.

59. Cut four 7/8" long pieces of 1/2" balsa triangular stock from the 12" long piece provided. Glue these four pieces inside the fuselage to reinforce the Landing Gear Mount installation (see full-size plan). Note: You will need to cut notches in the triangle stock that goes behind former F-2 to clear the blind nuts in the Landing Gear Mount.

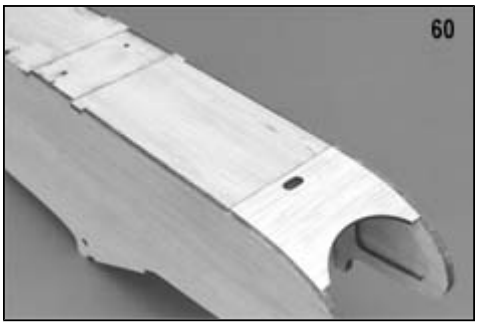


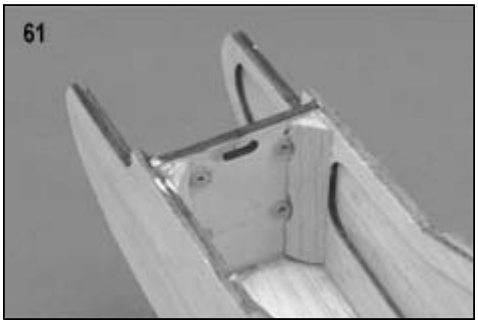
60. Glue the laser-cut balsa Fuselage Bottom Front in place with MEDIUM CA. Be sure to glue the joint between Fuselage Bottom Front and the Landing Gear Mount. Glue in the laser-cut balsa Nose Bottom.

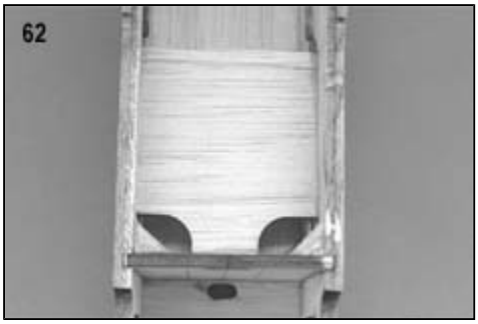
61. Cut two pieces of 1/2" balsa triangle to glue onto the back of the firewall to reinforce the firewall-to-fuselage joint (see full-size plan). Cut notches in the triangle where necessary to clear the blind nuts and pushrod hole. Glue the triangles firmly in place.

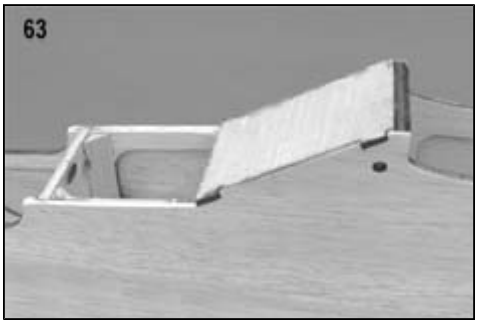
62. Glue the laser-cut balsa Tank Floor into the nose. The Tank Floor should sit flat on the ledges created by the Fuselage Doublers, with the front of the Tank Floor up against the back of Firewall.

63. Glue in the laser-cut balsa Windshield in place.





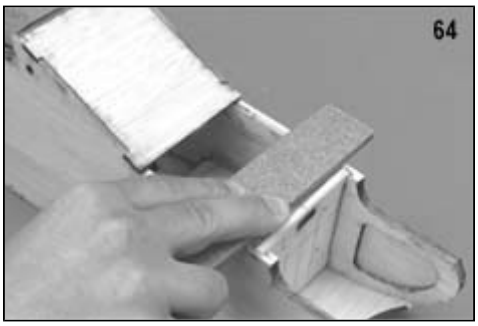


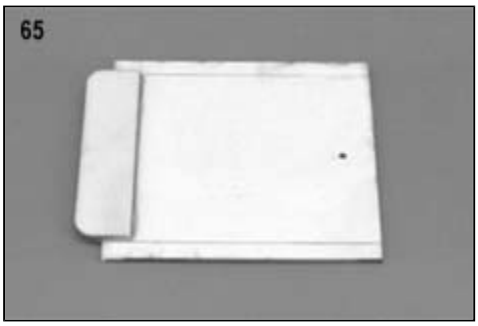


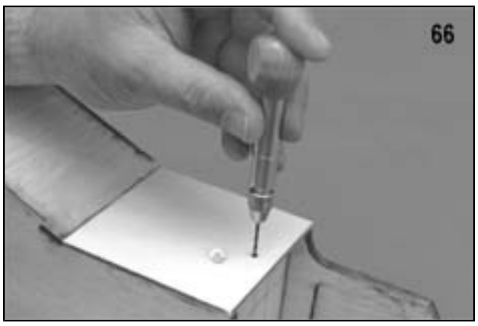
64. Lightly block sand the Hatch area to remove any bumps, glue spots, or mismatch between the fuselage sides, the doublers and the top of the firewall. Be careful not to sand a curve in the fuselage sides which would cause an unsightly gap when the Hatch is installed.

65. Locate the laser-cut plywood Hatch. Inspect both sides and choose the best looking side for the top. Draw guidelines on the bottom of the Hatch for the location of the Hatch Tongue. The guidelines should be 1/4" in from each side, and 3/8" down from the back end of the Hatch (see full-size Plan Sheet 1). Glue the laser-cut plywood Hatch Tongue in place on the bottom of the Hatch.

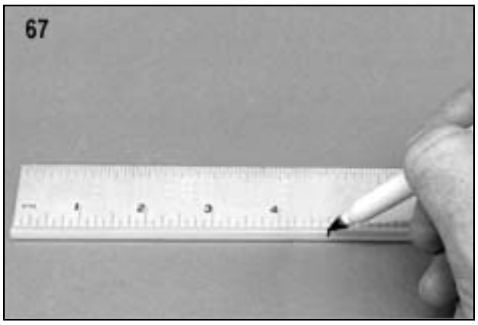
66. Tape the Hatch in place on the fuselage. Using the hole in the Hatch as a guide, drill a 1/16" dia. pilot hole in the top edge of the firewall. Screw the Hatch down with a #2 x 3/8" Sheet Metal Screw and #2 Flat Washer.







67. Two pieces of 3/16" o.d. x36" Large Nylon Pushrod Tubing are provided for making the outer casing of the Elevator and Rudder Pushrods. Cut one piece for the elevator pushrod to an overall length of 26-1/2". The piece for the rudder pushrod will be cut off later in Step 69, so leave it full length for now.
Study the fuselage top and side views on full-size Plan Sheet 1 to familiarize yourself with the proper location for each pushrod. Make a mark at 4-3/4" from one end of each outer casing - this will be the servo end of the tube that sticks out in front of former F-3. Feed each tube into place in the fuselage, starting from the front and sliding them into the proper holes in the formers.
When you've got both tubes properly positioned, glue them permanently to all the formers with Thick CA.

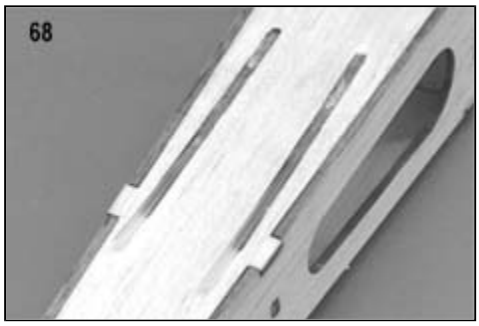


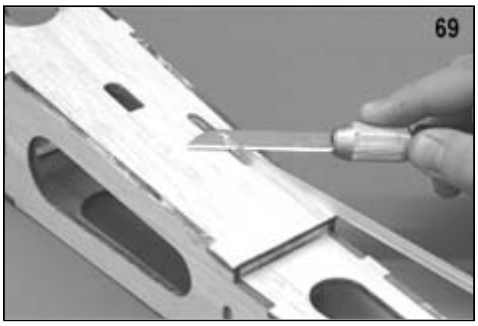
68. Cut two 5" long pieces of the 1/8" o.d. Small Nylon Pushrod Tubing from the 20" long piece provided (save the remainder for the throttle pushrod - see Step 70). These will be the Pull-Pull Cable Guides. Glue them in place in the slots in the aft end of the Fuselage Bottom Rear. Note that the rear ends of the tubes should be outside the fuselage, while the front ends of the tubes should be on the inside.

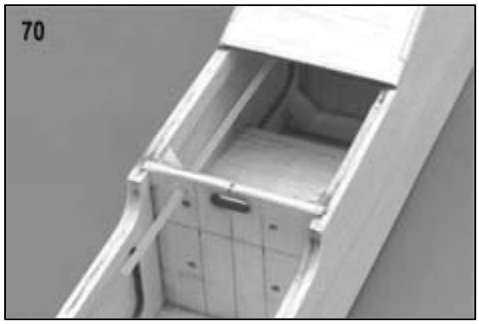
69. Use a long blade on a modeling knife to cut off the excess rudder pushrod tube (from Step 67) and the pull-pull exit tubes (from Step 68). Cut the tubes as close as you can to the fuselage. Then block sand the tubes, and any excess glue, flush with the fuselage.

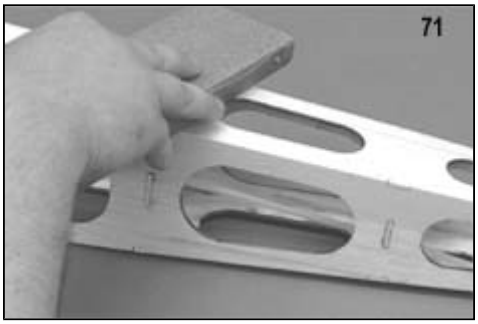
70. Glue the 10" long piece of 1/8" o.d. Small Nylon Pushrod Tubing (left over from Step 68) into the hole in the Firewall for the Throttle Pushrod. Leave about 2 inches of the tubing extending in front of the firewall.

71. The fuselage is now ready for final sanding. Use a sanding block with 80 grit paper to sand smooth all the exterior glue joints on the sides, top and bottom of the fuselage. Sand all protrusions until they are level with the surface. Block sand the exterior corners of the fuselage slightly round for a more pleasing shape. The cross sections on Plan Sheet 1 can be used as reference for shape. Do not round the corners in the areas where the wing and stabilizer will be mounted or in the Hatch area. After leveling everything with the 80 grit sanding block, go over the entire fuselage with hand held 220 grit sandpaper.









The basic fuselage construction is now complete! Set the fuselage aside until covering.

Stabilizer And Elevator

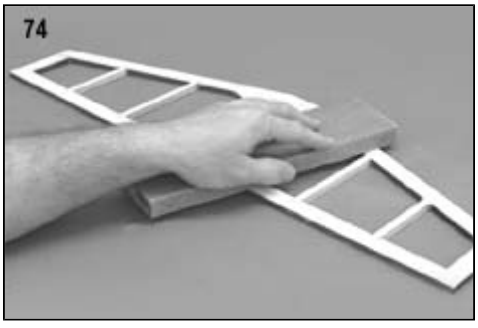
72. Tape the Stabilizer Plan to the building board, and cover with wax paper. Pin down over the plan and glue in place all of the 5/16" laser-cut balsa stabilizer parts S-1, S-2, S-3, S-4, S-5, and S-6. Cut four 5/16" sq. balsa ribs from the 30" long piece provided, and glue them in place with THIN CA.

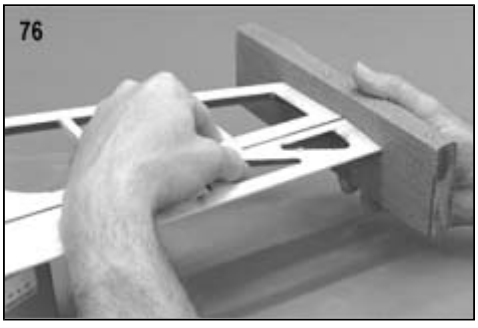
73. Once the glue is dry, remove the Stabilizer frame from the plan and re-glue all the joints with Medium CA. Use just enough glue to completely fill the joint, plus leave small fillet of glue between the parts. Take your time and don't miss any joints! Each and every one of them contributes to the finished strength of the Stabilizer.

74. Lay the Stabilizer flat on the building board and lightly block sand both sides to smooth out all the glue joints. CAUTION: Do not sand so much that you thin down the Stabilizer more than 1/32" under its original 5/16" thickness.

75. Mark a center-line on the front of the Stabilizer Leading Edge. Using the center-line as a guide, carve and sand the Leading Edge round. NOTE: Leave the trailing edge and ends of the Stabilizer flat and square.

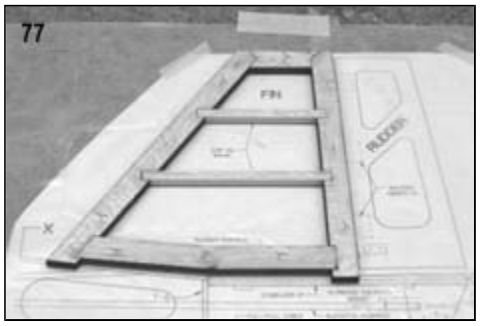
76. Temporarily tape the pre-shaped Elevator to the back of the Stabilizer. Use a sanding block to even up the tips of the Elevator and Stabilizer. **Set the Stabilizer and Elevator aside until time to cover.**





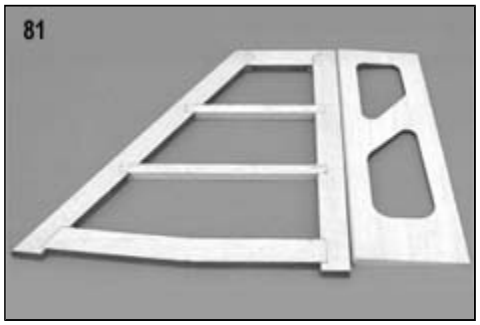
Fin And Rudder

77. Tape the Fin plan to the building board, and cover with wax paper. Pin down over the plan and glue in place all of the 5/16" balsa laser-cut fin parts. Cut two 5/16" sq. balsa ribs and glue them in place with THIN CA.



78. Once the glue is cured, remove the Fin Frame from the plan and re-glue all the joints with Medium CA. Use just enough glue to completely fill the joint, plus leave small fillet of glue between the parts. Take your time and don't miss any joints! Each and every one of them contributes to the finished strength of the Fin.

79. Lay the Fin flat on the building board and lightly block sand both sides to smooth out all the glue joints.
CAUTION: Do not sand so much that you thin down the Fin more than 1/32" under its original 5/16" thickness.



80. Mark a center-line on the front of the Fin Leading Edge. Using the center-line as a guide, carve and sand the Leading Edge round.
NOTE: Leave the trailing edge, top end, and bottom of the Fin flat and square.

81. Locate the pre-shaped balsa Rudder. Compare the overall height of the Rudder to the overall length of the Fin's trailing edge. Notice on the plan that the Rudder should be 3/8" shorter in height than the Fin's trailing edge. This is to provide a gap between the bottom of the Rudder and the top of the Stabilizer after the model is assembled. Sand the end of the Rudder slightly if necessary to achieve an adequate gap. Sand the sides of the Rudder smooth with 220 grit sandpaper. Set aside until ready for covering.

COVERING

In this step you need to cover all the parts of your model with the covering material of your choice, before proceeding on to Final Assembly of the model.

General Notes

There are many different covering materials available for finishing model airplanes. They range from raw coverings that must be bonded to the structure with adhesive and then painted; to iron-on plastic materials that have the color and finish built right in.

The choice of which type of covering material to use on your KADET LT-25 is a matter of personal choice. However, if this is your first model airplane, we recommend that you chose one of the popular pre-finished iron-on plastic film coverings. This type of covering material provides a high gloss, durable finish that is easy to apply and repair. It goes on relatively quick and is not near as messy or smelly as using a covering material that must be painted. All of the KADET LT-25 prototypes built here at the SIG factory were finished with SIG SUPERCOAT IRON-ON PLASTIC COVERING.

Since all iron-on plastic covering materials come with detailed step-by-step instructions on how they should be applied, we will not go into a repetitive step-by-step sequence here. We will instead outline some ideas that are specific to the KADET LT-25. Be sure to read all the instructions that come with your covering material and follow them carefully. NOTE: There are also complete books and video tapes available on applying iron-on covering materials. These sources can be very helpful, providing a lot more tips than we can cover in these instructions. Often times, the video tapes can be rented or borrowed from your local hobby shop or model airplane club.

Choice Of Color Scheme

One of modeling's pleasures is the chance to decorate your model to suit your own taste. There are a huge variety of after-market items available in the hobby shops to dress up your airplane. Striping tapes and trim sheets in every color of the rainbow, stick-on decals and markings, are all available and easy to apply.

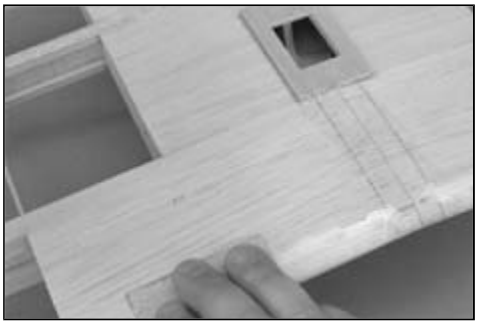
You can go for a military look, a Cessna-like civil aviation look, or something totally wild in vivid neon colors. Your imagination is the only limit!

If this is your first model, our advice is to keep the color scheme simple and visible. The most economical way to go is to choose one primary color for the entire model. Choose a light color! Covering the entire model in black, dark blue, gray, etc., is not a good choice. In the air a dark colored model will quickly turn into a black silhouette, and it will be difficult to distinguish which way the airplane is going. A light color is more visible at greater distances! White, yellow, orange, cream, and neon colors are excellent choices for a trainer model.

KIT COLOR SCHEME

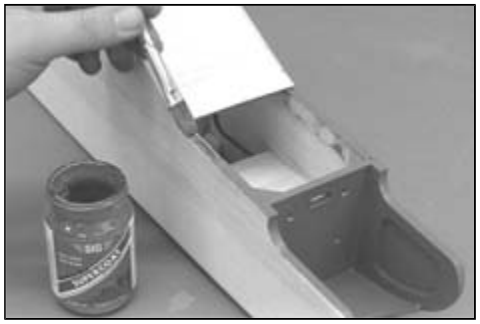
The LT-25 kit includes one sheet of stick-on decals to duplicate the windows on the fuselage and fin. On our kit box model, we covered the back part of the wing with white covering material, and then covered the front part of the wing with blue covering. The blue covering overlaps approximetely 3/8" onto the white covering material, at the main spar. The fuselage is done the same way. If you want to make your LT-25 the same as ours, it will take 2 rolls of White and 1 roll of Medium Blue. This 2-color scheme will take a little more time than if you make the wing and fuselage all one color. The choice is yours!

Surface Preparation



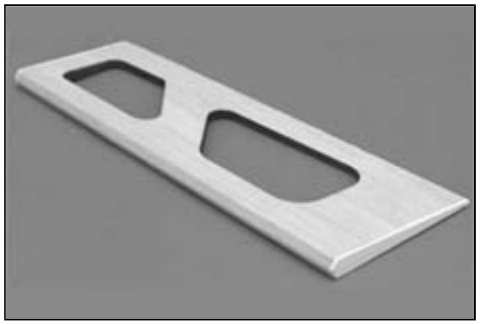
A good covering job starts with good surface preparation! Regardless of what type of covering material you use it won't hide poor workmanship. Finish sand the entire model with 220 grit sandpaper. Fill any holes, gaps, nicks or dents on the surface of your model with lite-weight filler. After the filler dries, sand off any excess flush with the surface.

Fuel Proofing



Since it's very difficult to apply iron-on covering material inside the engine compartment, this area should be fuel proofed by painting it with a fuel-proof hobby paint, before the covering material is applied. We prefer to use SIG SUPERCOAT BUTYRATE DOPE. It's an excellent fuel proofer. Choose a color of paint that closely matches the color of the covering you will be using. Use a small (1/2") wide brush to apply 2-3 coats of paint to the engine compartment, letting it dry between coats. Paint the entire front surface of the Firewall plus the inside of the engine compartment "cheeks". Run the paint around the edges onto the outside of the fuselage sides, far enough that the iron-on covering material will overlap the painted areas at least 1/8" when applied. Also paint the edges of the hatch area, the wing saddle, and partway inside the tank compartment.

Cover The Rudder



First cover both ends of the Rudder with small pieces of scrap covering material before covering the sides. Run the end covering "around the corner" about 1/8" onto the sides and the front of the Rudder. Trim off the excess.
NOTE: Always be careful when trimming excess covering material off of the wood parts. Don't "score" or cut into the wood. Scoring a critical structural component of the airplane could seriously weaken its strength and possibly cause an in-flight failure.
Cover the left side of the Rudder with a separate piece of covering material. Run the left side covering completely around the leading and trailing edges, far enough so that there will be at least 1/8" overlap with the right side covering when it is applied. Trim the side covering flush with the top and bottom ends of the Rudder.
Cover the right side of the Rudder in the same manner you did the left side, making sure that it overlaps all other pieces of the covering material at least 1/8". No areas of wood should be exposed.

Cover The Fin

Cover the top end of the Fin with a small piece of scrap covering material before covering the sides. Run the top covering aroung the corners about 1/8" onto the sides, front, and back of the Fin. Now, cover the left and right sides of the Fin with separate pieces of covering material like you did the Rudder. Do not cover the bottom of the Fin, where it will be glued onto the fuselage.

Cover The Ailerons, Elevator, And Stabilizer

Covering these parts is virtually the same as covering as covering the Rudder. First cover the ends of the part with small pieces of scrap covering material. Now cover the top and bottom with separate pieces of covering material. Overlap all seams at least 1/8".

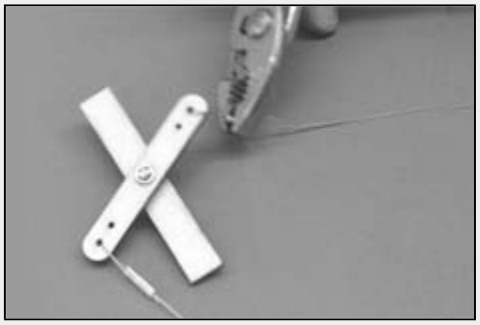
Cover The Fuselage

The fuselage should be covered with several pieces of covering material (bottom, top rear, windshield, left side front and rear, right side front and rear). Start by covering with one or two colors, the entire bottom of the fuselage. Run the sides of the covering up around the corners about 1/8" onto the sides of the fuselage. Trim the front of the covering flush with the Fuselage Bottom Front. Trim the rear end of the covering flush with the tail end of the Fuselage Bottom. Now, go back and seal the covering to the fuselage bottom. Cut the exit slots in the covering for the tailwheel cables.

PAUSE IN COVERING THE FUSELAGE
Now is the best time to install the Tiller Bar Assembly.

TILLER BAR ASSEMBLY - Assemble the laser-cut plywood Tiller Bar and plywood Tiller Bar Mount using a 4-40 x 3/4 Mounting Bolt, 4-40 Aircraft Lock Nut, 2 Flat Metal Washers, 3 Nylon Washers, and Nylon Bushing- as shown by the drawing on Plan Sheet #1.

Cut the .027 x 6' steel cable provided into two equal length pieces. Attach one end of each cable to each end of the plywood Tiller Bar as shown in this photo. First pass the end of the wire through the hole in the end of the Tiller Bar. Loop approximately 1" of the end of the wire back to lay alongside the rest of the wire. Slide a 3/32"o.d. x 1/2" Aluminum Tube over both wires and smash the tube tightly to crimp both wires securely together.



Glue the Tiller Bar assembly in place in the Fuselage. Feed the cables through the Fuselage formers and out through the nylon exit tubes in the bottom of the Fuselage. Tape the loose ends of the cables to the bottom of the fuselage so they won't be in the way while you do the rest of the covering.

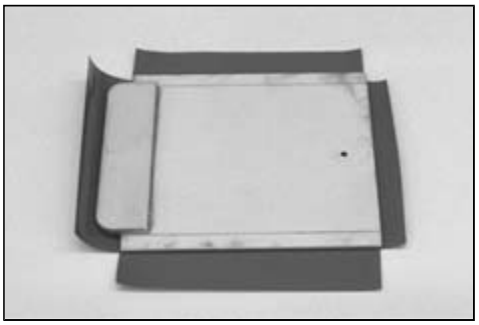
Finish Covering The Fuselage

Next cover the top rear of the fuselage with one piece of material. Run the sides of the covering down over the corners about 1/8" onto the sides of the fuselage. Trim the front and rear ends of the top covering flush with the ends of the Fuselage Top Rear. Cut open the holes where the rudder pushrod and Fin leading edge go through.

Using the fuselage plan as a guide cut the angle on the Fuselage side rear covering. Seal it as you did before with overlapping 1/8" over the top and bottom. Repeat this step for the other Fuselage rear side.

Cut the angle on the front Fuselage right and left sides covering and seal them to the Fuselage Front. Overlap all seams 1/8" onto other covering material or onto the pre-painted areas. At the engine compartment, try to work the covering around the first corner of every edge, and then trim off the excess covering flush with the inside corners. Do the same for the wing saddle area. Do not apply any covering on the Stab Mount, where the Stabilizer will be glued on! When you've finished, cut the holes in the fuselage sides for the wing dowels.

Cover the windshield with a single piece of covering. Run the sides of the covering down over the corners 1/8" onto the sides of the fuselage. Tuck and iron the front and rear edges of the covering around the ends of the windshield.



Cover The Hatch

There are so many corners and edges, that it takes some time to get all of the Hatch covered. And because the Hatch will be directly exposed to a lot of engine exhaust, it is very important to get it all covered. Do not leave any exposed wood! Start by applying an overside piece of covering to the top of the hatch. Then turn it over and cut out the corners of the excess covering to make it easier to wrap and seal the covering around the edges. Continue wrapping and sealing the covering around the edges and onto the bottom.

Cover The Wing

Begin by covering the ends of the Center Section Trailing Edge with scrap covering. Run the covering around onto the top and bottom. Slit the covering to lay down smoothly around the torque rods.

Next cover the bottom of one panel with one piece of covering material. Like all open structures, you should seal the covering down all along the outside edges of the structure first. (Do not shrink the center of the covering tight at this time). At the root of the wing panel, seal the covering down about 1/4" past the center joint. Cut a hole in the covering to allow the aileron torque rod to stick through. Also, it's not necessary to cover over the Aileron Servo Mount - merely cover up to it. At the back of the wing panel, slit the excess covering at the end of the Center Section Trailing Edge, then run it around the corner and seal it onto the back of the Trailing Edge. Trim off flush with the top rear corner of the Trailing edge.

At the tip end of the wing panel, seal the bottom covering to the last W-5 wing rib. Then continue on, working the covering bown smoothly onto the bottom of the wing tip. Wrap and seal the covering completely around the edges of the Wingtip. Trim off flush with the top surface of the Wingtip.

Now cover the top of the wing panel in the same manner you just did the bottom. Remember to overlap all seams at least 1/4" onto the other pieces of covering material.
Then cover the other wing panel in the same manner.

CAUTION ON SHRINKING WING COVERING!

Wait until all pieces of the wing covering have been completely sealed down around their edges before shrinking the middle areas of the covering. When shrinking the middle, do not completely tighten one side of the wing first. It's best to alternate between the top and bottom wing surface, shrinking each side a little at a time, to avoid uneven shrinking which could case a warp.

Installing Easy Hinges

WARNING: SIG EASY HINGES are designed to be used in conjunction with THIN CA glue. Thin CA (any brand) is the ONLY type of glue that can be used on EASY HINGES - do not use any other type of glue on EASY HINGES!

1. Mark the locations for the Easy Hinges on the model parts, using the full-size plans as a guide.

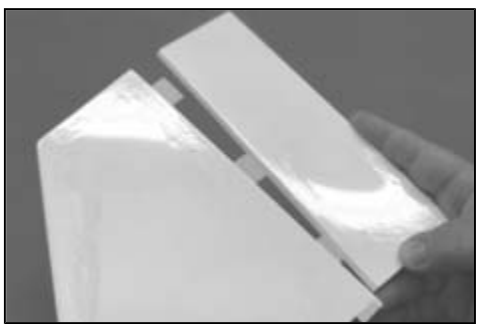
2. Begin by carefully cutting a very shallow slit at the hinge location using a sharp #11 blade in your modeling knife. This first slit should be very shallow so you can better control the direction of the knife. It's main purpose is to establish your hinge slot in the right place, so concentrate on staying on the hinge line and don't try to cut too deep. NOTE: Make the slit slightly wider than the actual hinge.

3. Now make 3 or 4 more cuts in the exact same line, going slightly deeper each time. As you make these additional cuts, concentrate on staying in the slit and keeping the headed straight into the center of the wood so that it won't come out the side of the part. You will find that as the blade gets deeper into the wood, it will become harder to move it along the slot. Try "wiggling" the knife handle in the slot to make it cut, instead of trying to "slice" the blade along in one continuous motion. Continue making additional cuts until the slot is approximately 1/2" deep.
   CAUTION: You must use extreme care to avoid cutting yourself while cutting the hinge slots. If the balsa breaks while you are pushing on the knife, the blade could go into your hand before you can stop it. A good precaution is to wear a leather glove on the hand that is holding the model part while you are cutting the slots.

4. After all the slots have been cut, insert a single Easy Hinge halfway into each hinge slot in the fin (or rudder, stab, elevator, aileron, wing, as the case may be). If the hinge is difficult to push in, re-insert the knife and move it back and forth in the slot a few more times and then try again.
   DO NOT GLUE THE HINGES IN AT THIS TIME!

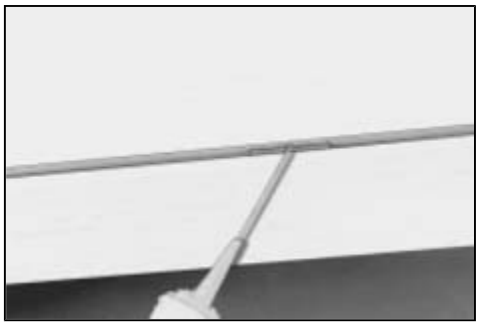
5. Now carefully slide the mating part onto the exposed half of the Easy Hinges. You will find it easiest to slide the part onto the hinges at an angle, one hinge at a time, instead of trying to push it straight onto the hinge at once. Don't be overly concerned if the hinges don't end up perfectly straight or centered in the slots - they do not have a center line.

   ONCE AGAIN, DO NOT GLUE THE HINGES IN AT THIS TIME!



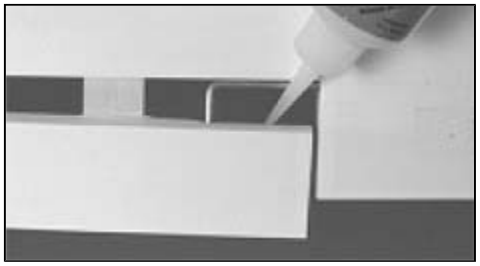
6. To set the proper amount of gap between the model parts, simply deflect the control surface to the maximum amount of travel needed. This will automatically set the proper hinge gap! Keep in mind that for best control response the gap should be kept as small as possible, but big enough to allow full movement of the control surface. If everything appears to function properly, move on to the next step.

7. Place three or four drops of Thin CA glue directly onto the Easy Hinge in the gap. You will notice that the glue is quickly wicked into the slot as it penetrates both the wood and the hinge. Turn the part over and glue the other side of the Easy Hinge. Continue this process until you have glued both sides of all the Easy Hinges! Keep a rag handy to wipe off any excess glue. (CA glue residue can be cleaned from most iron-on plastic covering materials with CA Debonder).
VERY IMPORTANT: Make only one application of glue to each side of an Easy Hinge! If you apply additional glue to the hinge after the first application of glue is already cured, the second application of glue will merely puddle in the hinge gap and make the hinge too stiff to operate properly. The excess glue could also weaken the hinge! When properly glued, the portion of the Easy Hinge that you can see in the hinge gap should have a dry appearance, not wet. A dry appearance indicates that almost all of the glue has properly soaked into the hinge slot. A wet appearance indicates that excess glue is puddled in the hinge gap. Three to four good size drops of Thin CA should be about the right amount. **NEVER USE CA ACCELERATOR ON EASY HINGES!**



8. Let the glue cure a minimum of 3-5 minutes before flexing the hinges. At first you might notice a little stiffness in the joint. This will go away after the hinges have been flexed back and forth a couple dozen times.

9. SPECIAL INSTRUCTIONS FOR HINGING THE AILERONS - The ailerons will be hinged exactly like the tail surfaces, except that the torque rods must be glued in before the Easy Hinges are glued. Start by completely re-assembling the ailerons and Easy Hinges back onto the wing without any glue. Next, working with one aileron at a time, pull the root end of the aileron back away from the wing until the first Easy Hinge is just barely still in its slot and the torque rod is exposed as shown in the photo. Slide a small piece of wax paper between the front of the torque rod slot and the wing trailing edge. Apply glue, then quickly slide the aileron back into position against the back of the wing.Remove the wax paper and wipe off any excess glue that oozes out of the slot with a rag. If any glue remains between the front of the torque rod and the trailing edge, slide a piece of paper through there to mop up the excess. Let dry!



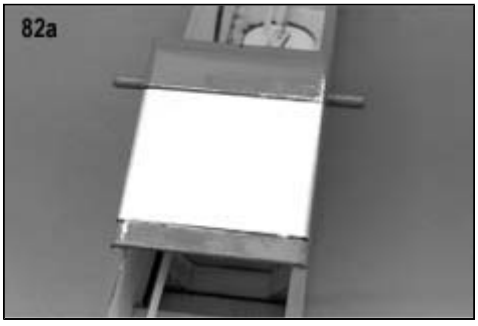
Decals

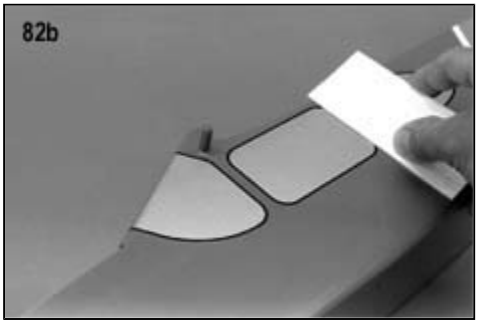
82. The following sequence is recommended for applying the window decals.

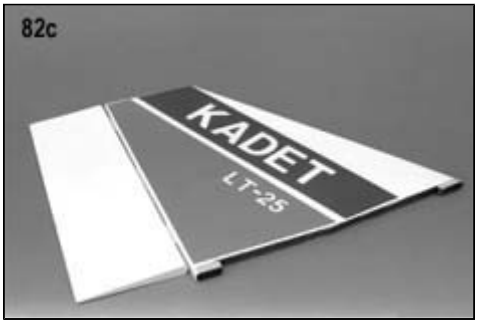
a. First stick the front windshield decal in place on the model. Note in the picture that the bottom edge of the windshield decal should be approximately 7/16" up from the bottom of the balsa windshield. Wrap the overhanging sides of the decal down onto the sides of the fuselage.

b. Apply the decals of the left and right side windows next. Leave the 3 side windows in one piece. Do not cut them apart! Applying them as a single piece will guarentee that they will end up perfectly lined up with each other.
HELPFUL HINT - When applying the side window decals (or any large decal for that matter) it is best to first squirt some type of soapy water solution (window cleaner, SIG Pure Magic Cleaner, etc.) onto the model before laying down the decal. The soapy water will allow you to slide the decal into exact position before it sticks permanently in place. Once you have the decal properly positioned, use a small piece of scrap sheet balsa or stiff cardboard to squeegee the soapy water out from underneath the side window decal. Any residual soapy water will evaporate out from under the decal within 24 hours, and at that point the decal will be permamently bonded to the model.

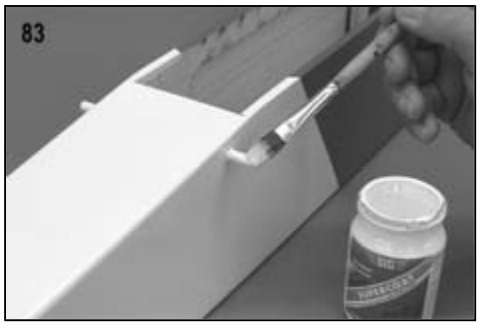
c. The decals for both sides of the fin should also be applied wet because of their large size. We recommend that the fin decals be applied in one piece - without cutting apart the orange and blue sections.
WARNING: Do not try to paint over the kit decals! Butyrate dope, lacquer, enamel, and many other paints will dissolve the decals. If you wish to top coat your decals, be sure to test for compatibility on a scrap decal before applying the paint. Frankly, SIG MFG. CO. does not recommend top coating the decals in this kit. They are already fuel-proof!

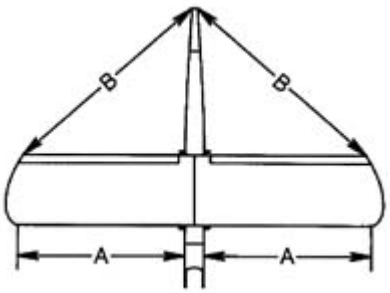






Final Assembly

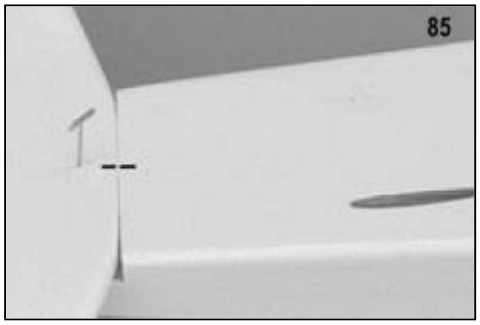


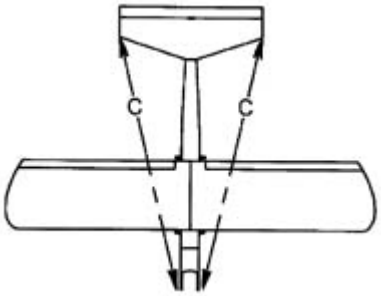


83. Insert the two 1/4" x 4-3/4" hardwood dowels through the holes in the fuselage. The dowels should protrude 11/16" from each side of the fuselage. Glue the dowels in place.

    Paint the exposed portion of the dowels with a couple coats of fuelproof paint. Let dry.

84. Mount the wing on the fuselage with two #67 rubber bands. Using a tape measure, carefully measure from the fuselage sides out to the wing tips (measurement A) to be sure that the wing is centered on the fuselage. Now, measure from the wing tips back to the tail end of the fuselage (measurement B) to make sure the wing is square with the fuselage. Once the wing is properly located, put some line-up marks on both the wing and fuselage so that you can easily re-locate the wing the next time you put it back on the fuselage.





85. Put a center mark on the top of the fuselage, right above former F-6. Also put a center mark on the front of the Stabilizer. Using no glue, trial fit the Stabilizer onto the fuselage. Line up the center marks at the front and use one T-Pin to secure the front of the stab, as shown. Push the pin completely through the stab and into the fuselage, to secure it in position.

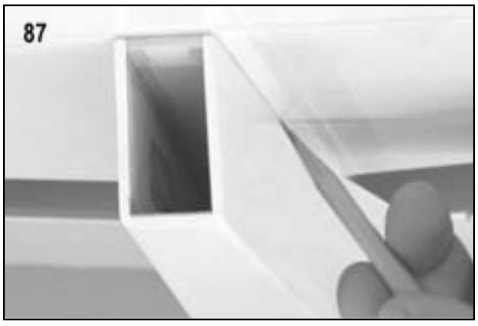
86. Carefully measure from the stab tips to the fuselage front (measurement C), to make sure the Stabilizer is square with the fuselage. Pivot the back of the stab until both measurements are exactly the same! Now, push another T-Pin through the stab, into the fuselage, to secure it in position.

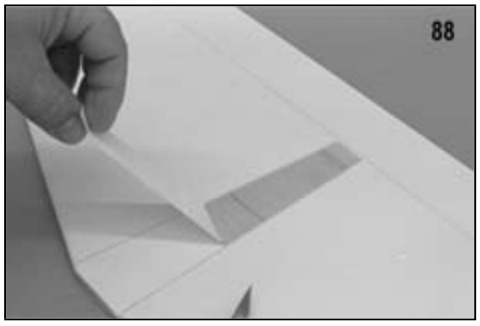
87. Lift the rear of the fuselage up, without jarring the stab loose, to enable you to mark the location of both fuselage sides on the bottom of the stab with a pencil.

88. Remove the stabilizer from the fuselage and very carefully strip away the covering material on the bottom, between the two lines, where the stab will be glued to the fuselage. CUT THE COVERING LIGHTLY ALONG THE LINES! AVOID CUTTING THE WOOD UNDERNEATH THE COVERING MATERIAL! HINT: For a better finished appearance, cut about 1/32 inside the lines so that the stab covering will appear to tbuec ked inside the glue joint.

89. Gluing the Stabilizer to the Fuselage: First apply a coat of SIG Epoxy or Thick CA glue to the area of the fuselage where the Stabilizer will go. Use enough glue to completely wet the entire surface of the joint. Quickly remount the stab onto the fuselage, using the edges of the cutaway covering on the bottom to get the stab back into correct alignment on the fuselage. Press the Stab down firmly into contact with the fuse while you wipe off any excess glue that oozes out of the joint with a rag. Hold tight until the glue cures.

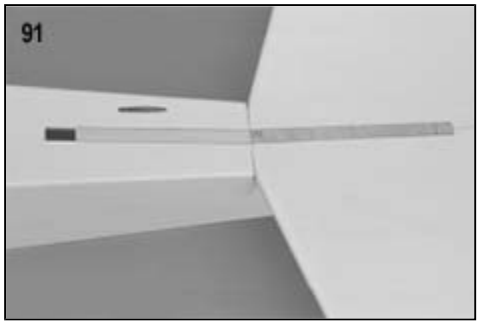
90. Draw a center-line on top of the stab, running from the center mark above F-6 to a point above the rear of the fuselage. NOTE: In the photo you ll see that we have temporarily stuck a T-Pin through the hinge gap to give us a visual alignment with the middle of the end of the fuselage. Use a straight edge to draw the line from the mark above F-6 to the pin.





91. Place the Fin/Rudder assembly on the fuselage, sticking the leading edge of the fin through the hole in the top of the fuse. Carefully line up the trailing edge of the fin using the center-line on top of the stab as a guide. Draw along both sides of the fin, marking its location on the top of the fuselage and stab. Take the Fin/Rudder assembly off the fuse and strip away the covering material inside the lines.

92. Gluing the Fin to the Fuselage: Apply a coat of Thick CA glue to the area where the Fin will go. Remount the Fin onto the fuselage, line it up as before, and hold it firmly in place until the glue dries. Hold a 90 degree triangle against the Fin to insure that it cures perpendicular to the stab.



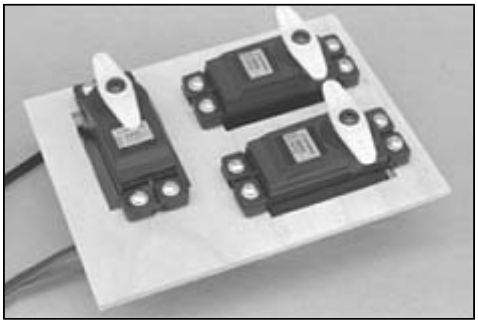
Radio Installation

NOTE: The receivers and servos of different brand radios are not all the same size! Consequently, it is practically impossible for us to guarantee that every word and picture in this next sequence will pertain exactly to your installation. As you go along, you may notice some differences between your radio equipment and ours! Nonetheless, most of the radio system components will be close enough in size and appearance that you should be able to figure out for yourself how to handle any minor differences. Follow the instructions as closely as possible. If you have any questions, seek the advice of an experienced modeler. The installation of the control system in your new model is very important! It must be done correctly in order for your airplane to fly successfully and safely.

MOUNTING THE FUSELAGE SERVOS

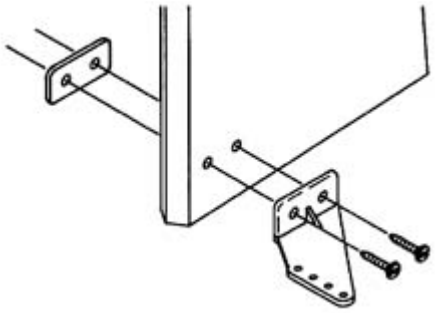
93. Locate the laser-cut plywood servo tray. Mount your throttle, elevator, and rudder servos in the tray using the screws, washers, and rubber grommets that came with your radio system. Be sure to orient the servos in the tray as shown in the fuselage top view.

CAUTION: The rubber grommets act as shock absorbers and prevent engine vibration from damaging the electronics in the servos. Do not over tighten the servo mounting screws to the point where they compress the rubber grommets so far that all shock absorbing ability is lost. Tighten the screws just enough to make contact with the grommets and keep the servos in place.

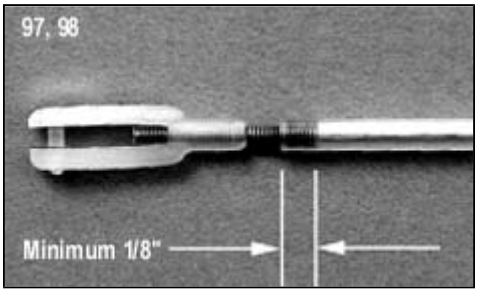


94. Set the servo tray in place inside the fuselage, on the "shelf" made by the fuselage doublers. Slide the servo tray as far forward as you can. Flow Medium CA glue into the joints between the edges of servo tray and the fuselage sides. Be careful to not get any glue on the servos or servo wires.

RUDDER AND TAILWHEEL CONTROL



95. Locate the Small Nylon Control Horn (the one with 4 holes) and two #2 x 1/2" Sheet Metal Screws for the Rudder. Cut the Control Horn and the Retainer Plate apart. Hold the Control Horn in exact position (see plan) on the right side of the rudder and mark the location of the mounting holes. Drill pilot holes through the rudder with a 1/16" dia. drill bit (turn the bit with your fingers, a drill is not necessary). Mount the Control Horn onto the rudder with the Sheet Metal Screws and Retainer Plate.
NOTE: Turn the screws down until both the control horn and retainer plate make firm contact with the balsa. Then, turn each screw in 1/2 turn further. By tightening the screws in this manner, the control horn will not crush the balsa.



96. Cut one of the 10" Threaded Steel Rods to 7" overall length. Cut off the plain end of the rod, not the threaded end!

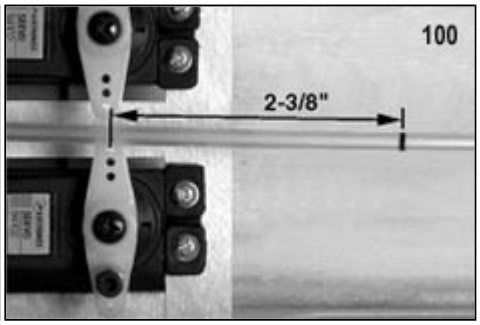
97. Locate one piece of Small Nylon Pushrod Tubing (1/8" O.D. x 36" long). Slide the plain end of the 7" long threaded steel rod inside the tubing up to the beginning of the threads. Now get a good grip on the threaded portion of the steel rod on the nylon tube and start screwing the threads into the tubing. Keep turning the rod until a MINIMUM of 1/8" of threads are inside the nylon tubing (3/16" is even better).

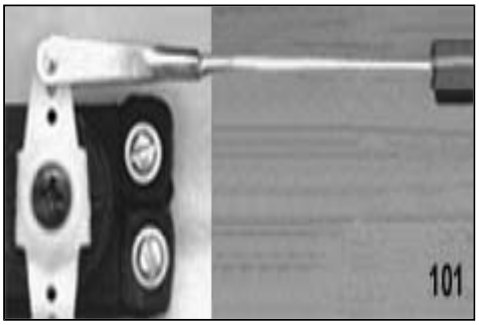
98. Screw one of the Nylon R/C Links onto the threads remaining outside the nylon pushrod tube. Screw it halfway onto the exposed threads - until there are the same amount of exposed threads in front and in back of the R/C Link.

99. Slide the rudder pushrod (from the rudder end) inside the larger nylon pushrod tube that is already in the fuselage. Slide it in until the nylon R/C link is even with the rudder control horn. Pry open the R/C link, clip it into the outermost hole of the control horn, and then snap it shut. Now reach into the fuselage and try operating the rudder pushrod from the servo end. It should work smooth and easy. If not, figure out why and fix it.

100. Set the rudder in neutral position. Mark the servo end of the Small (inner) Nylon Pushrod Tubing exactly 2-3/8" from the hole in the rudder servo arm. Cut off the nylon tube at the mark.

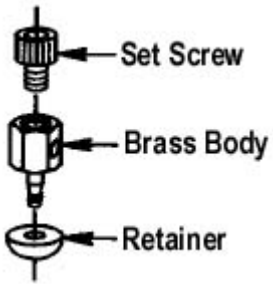
101. Cut another 10" Threaded Steel Rod to 2-1/2" overall length. Cut off the plain end of the rod, not the threaded end! Solder a 2-56 Solder Clevis to the smooth end of the rod. Screw the threaded end of the rod completely into the end of the inner Nylon Pushrod Tube. Then connect the Solder Clevis to the servo arm.





102. Using the leftover cutoff wire from the previous step, make a pushrod to run from the opposite side of the rudder servo arm back to the plywood Tiller Bar. Bend the wire according to the full-size pattern shown at the bottom left corner of this page.

103. Assemble a Pushrod Connector in the innermost hole of the rudder servo control arm.



NOTE: A Pushrod Connector consists of a brass Connector body, a 4-40 Set Screw, and a Nylon Retainer .

104. Install the Tiller Bar Pushrod in the Pushrod Connector and Tiller Bar (see full-size plan). Put the 90° bend of the pushrod in the hole in the plywood Tiller Bar - the other end in the Pushrod Connector on the rudder servo arm.

105. Temporarily plug the rudder servo into the receiver and testthe operation of the rudder. If you sense any binding in the rudder movement, find the cause and fix it now. With full right and left movement of the transmitter's rudder control stick, the rudder should move approximately 1" right and 1" left.

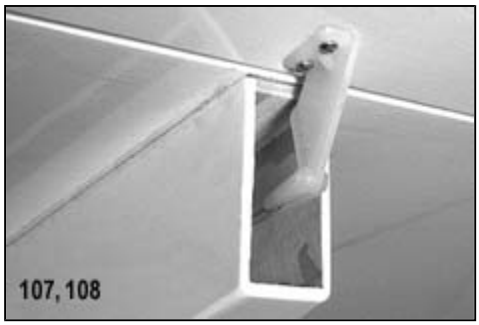
NOTE: If you are not getting the correct amount of rudder travel, try moving the nylon R/C link to a different hole in the servo arm. Also, fine tune the overall length of the rudder pushrod, by screwing one or both of the nylon R/C links further in or out, until the rudder is exactly neutral when the transmitter stick (and trim lever) is neutral.

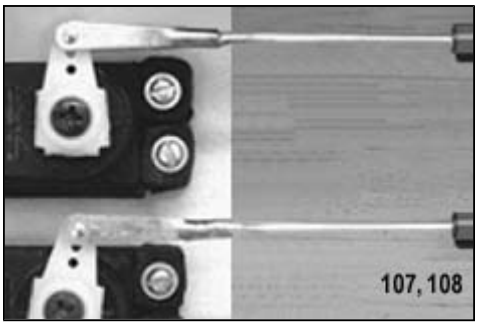
106. Complete the installation of the steerable tailwheel by assemblying the Tailwheel Wire (w/Wheel), the Tailwheel Steering Arm, and two 1/16" Wheel Collars into the Tailwheel Bracket as shown on the plan. After the parts are secured, turn on the radio, center the rudder servo and the tailwheel, and then crimp the ends of the steering cables to the tailwheel steering arm with the aluminum tubes provided.

ELEVATOR CONTROL

107. Construct and install the Elevator Pushrod, using previous Steps 95 thru 101 as a guide (simply subsitute the word "elevator" whenever the word "rudder" is used in those steps).

108. When finished, temporarily plug the elevator servo into the receiver and test the operation of the elevator. If you sense any binding in the elevator movement, find the cause and fix it now. With full up and down movement of the transmitter's elevator control stick, the elevator should move approximately 9/16" up and 9/16" down.





NOTE: If you are not getting the correct amount of elevator travel, try moving the nylon R/C link to a different hole in the servo arm. Also, fine tune the overall length of the elevator pushrod, by screwing one or both of the nylon R/C links further in or out, until the elevator is exactly neutral when the transmitter stick (and trim lever) is neutral.

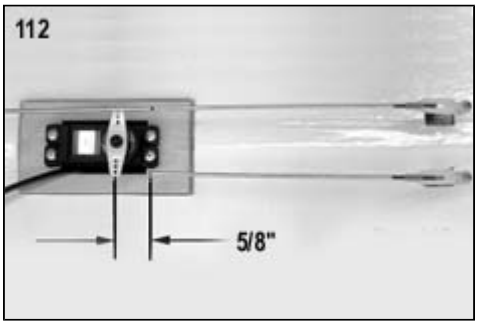
AILERON CONTROL

109. Mount your aileron servo in plywood tray which is already installed on the bottom of the wing. REMEMBER: Do not over tighten the servo mounting screws to the point where they compress the rubber grommets too far.

110. Locate the Nylon Aileron Connectors and cut them apart. Thread one Nylon Aileron Connector onto the end of each Aileron Torque Rod. Screw the connectors on until they are about 1/8" past the tip of the torque rods (see Plan Sheet 1, Fuselage Side View).

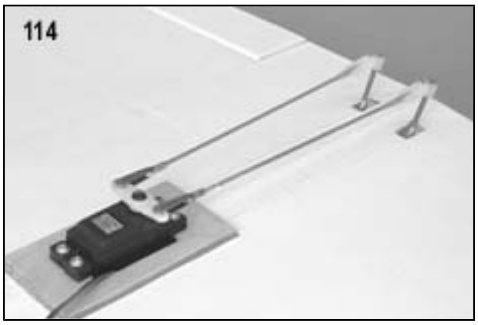
111. The aileron pushrods are made from two 10" Threaded Steel Rods. Screw a Nylon R/C Link halfway onto the threaded end of each rod. Then clip the R/C Links into the holes in the Nylon Aileron Connectors and line up the pushrods with the servo arms.

112. Tape the ailerons in neutral position (the bottom of the ailerons and the wing should be flush). Mark and cut the plain end of the pushrod wires 5/8" short of the holes in the aileron servo arm.



113. Solder an R/C Solder Link onto the end of each pushrod wire. NOTE: It's best to take the pushrods off for soldering. You wouldn't want to drop a piece of hot solder and burn a hole through the wing. Also, make sure the pushrod wire sticks completely inside the barrel of the solder link.

114. When done soldering, untape the ailerons and install the aileron pushrods between the servo and the torque rods. It will probably be necessary to re-adjust the overall length of the aileron pushrods. Screw the Nylon R/C Links further in or out, to get both ailerons into neutral position at the same time make sure the aileron servo is neutral while doing this.



115. Temporarily plug the aileron servo into the receiver and test the operation of the ailerons. If you sense any binding in the aileron movement, find the cause and fix it now. With full right and left movement of the transmitter's aileron control stick, the ailerons should move approximately 3/8" up and 3/8" down.

NOTE: If you are not getting the correct amount of aileron travel, try moving the nylon R/C links to a different hole in the servo arm. You can also screw the Aileron Connectors up or down on the Torque Rods to increase or decrease the amount of travel.

THROTTLE PUSHROD

116. Materials are provided for making a "flex-cable type" throttle pushrod. This type of pushrod is semi-flexible, which means it can be bent in gradual flowing curves if necessary to make its ends line up with both the engine's throttle arm and the throttle servo. The Throttle Pushrod consists of: one 1/8" o.d. piece of Small Nylon Pushrod Tubing (already glued into the firewall back in Step 70); one 1/16" dia. x 18" Steel Cable; and two Pushrod Connectors.

117. Assemble one Pushrod Connector into the engine's throttle arm, and the other Pushrod Connector into the throttle servo arm.

118. Stiffen one end of the 1/16" dia. Steel Cable by flowing solder into it. Start by first coating the end of the Cable with "soldering paste". Then heat the end of the Cable with a good hot soldering iron. When you think you've got the Cable hot enough to melt the solder, touch the solder to the hot Cable (do not touch the solder to the soldering iron). The solder should melt imediately and flow into the Cable. If it doesn't, it means you didn't get the Cable hot enough. Continue to heat the Cable with the soldering iron until the Cable is hot enough to melt the solder. When you have approximately the first 2"-3" of the Cable filled with solder, let it cool completely. Then sand the soldered end smooth if necassary to remove any lumps of solder.

119. From the front of the airplane, slide the soldered end of the Cable into the Nylon Pushrod Tube that is glued in the firewall. Slide it in until you can slip the soldered end of the Cable into the Pushrod Connector on the engine.

120. Inside the fuselage, grab the end of the Steel Cable that is sticking out of the Nylon Pushrod Tube and try to work the throttle. If it sticks or binds at the engine end, find the cause and fix it before going on to the next step. You may have to put some slight bend(s) in the soldered portion of the cable to make it operate smoothly.

121. Back inside the fuselage, mark the appropriate spot for cutting off the ends of both the Nylon Pushrod Tube and the Steel Cable. Note that the Nyon Pushrod Tube should end in front of the throttle servo, while the Steel Cable should be long enough to pass thru the Pushrod Connector on the throttle servo arm (see top view of full-size plan). Remove the Steel Cable from the Nylon Pushrod Tube while you cut them both to length.

122. Before sticking the Steel Cable back inside the Nylon Pushrod Tube, stiffen the servo end of the Cable in the same manner you did the throttle end (Step 118). When cool, install the Cable inside the Nylon Tube for the final time, and tighten down the Pushrod Connectors at both ends.

RECEIVER BATTERY PACK

123. Wrap the battery pack with a single layer of 1/4" thick soft foam rubber to insulate it from engine vibration and shock. Use tape or rubber bands to hold the foam around the battery. Install the wrapped battery pack inside the nose of the model, under the fuel tank floor, in the position shown on the plan (fuselage side view).

RECEIVER

124. Drill a 1/16" dia. hole completely through the bottom of the fuselage in the area where the receiver will be located. This hole is for the receiver antenna wire to exit the fuselage. Put a single drop of Thin CA glue around the edges of the hole to keep the covering from coming loose. Let cure completely!
NOTE: These instructions describe running the antenna outside along the bottom of the fuselage. There are a lot of other ways to handle the routing of a receiver antenna. If you prefer a different method, by all means use it. The main thing to keep in mind is that you should always strive to keep the antenna as far away as possible from all the servo and battery wires.

125. Wrap the receiver with a single layer of 1/4" thick soft foam rubber to insulate it from engine vibration and shock. Use tape or rubber bands to hold the foam around the receiver.

126. Following the radio manufacturer's instructions, plug all the wires for the servos, battery pack, and switch harness into the receiver so the radio system is fully operational. Double check to be sure that each servo is plugged into its correct receiver terminal and that it is responding properly.
NOTE: Since the receiver will be hard to get at, you should use a short "extension" wire (available from the radio manufacturer) for the ailerons. Plug the extension wire into the receiver's aileron terminal. Whenever you take the wing on/off the model, you can connect/disconnect the ailerons at the plug-in between the extension wire and the servo wire, leaving the extension wire itself permanently plugged into the receiver.

127. Install the wrapped receiver inside the nose of the model, right behind the battery pack. Before you get the receiver completely in place, poke the antenna wire down through the hole in the bottom of the fuselage (use an "antenna strain relief" fitting if one came with your radio). Make sure the antenna wire is not tangled up in the servo and battery wires! Continue pulling the antenna out the bottom of the fuselage as you slide the receiver forward against the battery pack. If the receiver seems loose in the nose of the model, pack additional pieces of foam rubber around it to make sure it cannot move around in flight.

128. Anchor the loose end of the antenna on the outside of the model near the rear of the fuselage using a small rubber band and a T-Pin (an "antenna hook" is also handy if one came with your radio). Stick the T-Pin into the bottom of the fuselage at an angle, as shown. Put a drop or two of Slow CA glue on the pin to keep it in place. Tie the rubber band to the antenna (or the antenna hook) and then loop it over the T-Pin. The antenna should be just taut, not tight! The rubber band allows a certain amount of give in case the antenna is snagged by accident.

129. Cut an opening in the left side of the fuselage (the side away from the exhaust) to accommodate the radio's on/off switch. Use the switch cover plate as a guide to mark the location and size of the opening and the two holes for the mounting screws. Install switch.

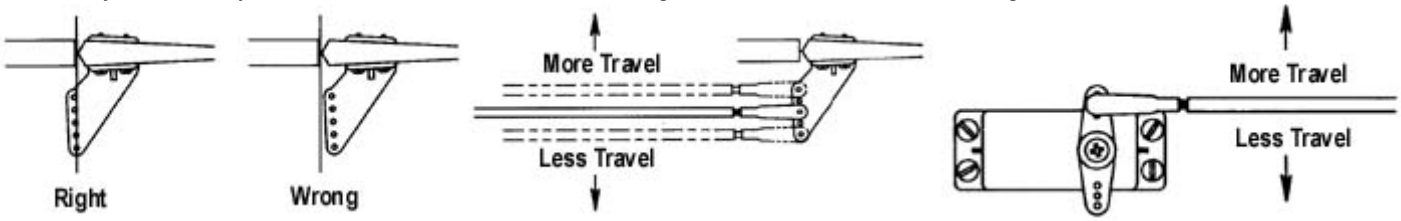
CAUTION: Make sure the opening you cut for the switch's on/off lever is just slightly bigger than the lever, so that the switch will operate safely, without catching or binding on the wood.

Control Horn Basics

- Sometimes the holes in molded plastic control horns and servo arms end up being a little undersize, making it very hard to install the R/C Links and Pushrod Connectors that attach to them. All of the R/C Links and Pushrod Connectors in this kit have a pin size of 1/16" dia. If you have difficulty getting the pins to go into the holes in the control horns or servo arms, open up the holes with a 1/16" dia. drill bit. DO NOT USE A BIT LARGER THAN 1/16" DIAMETER!

- Nylon control horns should always be mounted so that the adjustment holes in the control arm line up with the hinge line of the control surfaces! If not, the control surface will have unequal travel in one direction.

- Some radios have a feature called "End Point Adjustment" (sometimes called "Adjustable Travel Volume") that allows the user to electronically adjust the total travel of the servos, and thus, the total travel of the control surfaces. This is a very handy feature! If you do not have this radio feature, you can still make control surface travel adjustments by mechanical means. Move the linkages in the directions shown to get more or less travel.

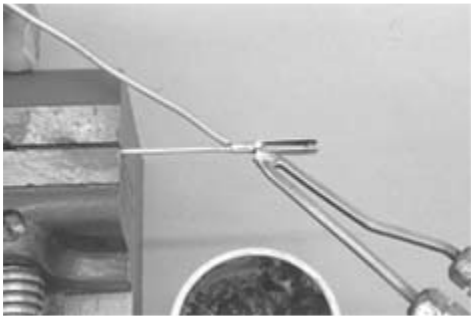


Why Solder Links

You may be wondering why we provided R/C Solder Links for the servo ends of the aileron, elevator, and rudder pushrods, when all the rest of the control system installation is solderless! Why didn t we use more Pushrod Connectors, or maybe just a Z bend in the wire?

Well first off, Z bends are a good alternative, but we felt that they are too difficult for a beginner to make correctly on his first try. Second, Pushrod Connectors are great, but not in all situations. They are more than adequate for non-aerodynamic controls like the throttle and nose gear. However the set screw in a Pushrod Connector can come loose! If that happens to the throttle or nose gear, it most likely won t cause any serious problem. But if it happens to the ailerons, elevator, or rudder, the airplane will most likely crash! That s why you don t see any Pushrod Connectors on the ailerons, elevator, or rudder pushrods of the KADET LT-40!

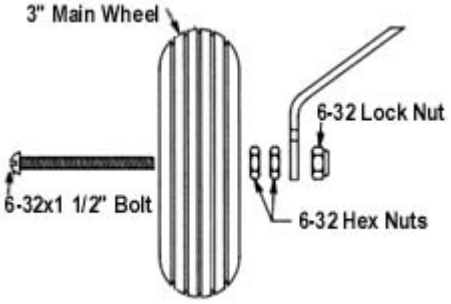
If you have never soldered before, don t worry, it s not difficult. The hardest part will probably be coming up with a soldering iron (or gun). If you don t want to purchase one at this time, seek the assistance of someone who already has one and knows how to use it. The secret to easy soldering is to use plenty of heat! You need a heavy-duty soldering iron to do this job, not one of the little pencil style irons that are only intended for soldering small electrical wires and components. It will take a soldering iron of at least 75 watts (100w or 200w is better) to solder the R/C Solder Links and pushrod wires in this kit. Use ROSIN CORE SOLDER (60% tin, 40% lead) and a good brand of SOLDERING PASTE FLUX. Put the wire in a vise. Coat the end of the wire with soldering paste flux.



Slide on the R/C Solder Link. Press the tip of the soldering iron firmly to the outside of the barrel of the R/C Solder Link. Let it heat! Keep the iron against the barrel while you touch the tip of your solder to the joint (not to the soldering iron). When the two parts get hot enough, the solder will melt and flow into the joint. Continue flowing solder into the joint until it is full. Let cool. Wipe the solder joint clean with a rag.

Landing Gear

130. Bolt the aluminum Main Landing Gear in place on the fuselage with two 4-40 x 1/2" bolts.

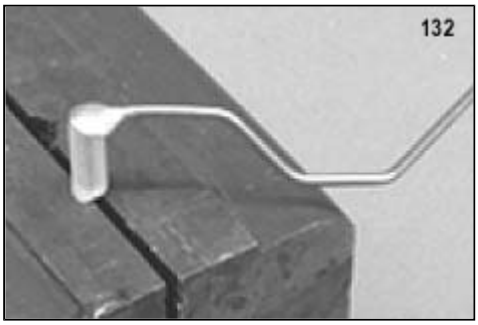


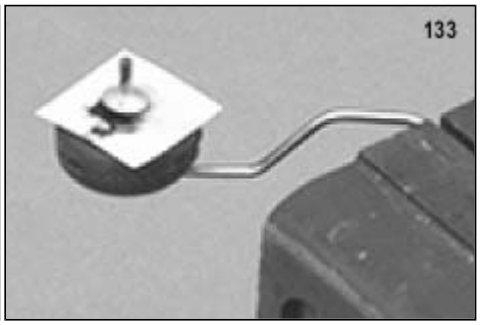
131. Assemble the wheels to the main landing gear as shown in this drawing. First slide the 3" dia. wheel (not provided) onto a 6-32 x 1-1/2" Mounting Bolt. Thread on two 6-32 hex nuts, side by side. Run both hex nuts up close to the wheel hub, but not too close - make sure that the wheel can still turn freely on the axle. Tighten the hex nuts up against each other. Stick the end of the bolt thru the aluminum gear leg and thread on 6-32 aircraft locking nut. Tighten securely.

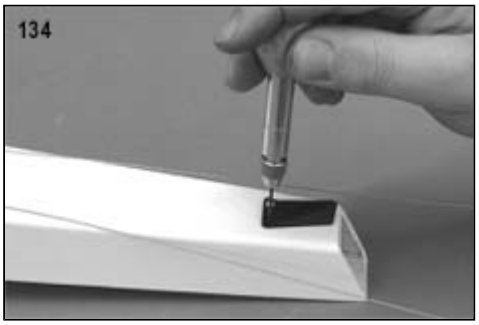
132. Because of the tiny size of the tailwheel wire, we prefer to use soldered washers to mount the tailwheel instead of wheel collars. First solder a #2 flat metal washer at the inner bend of the tailwheel wire as shown. Helpful Hint: Slide a small piece of small diameter silicone fuel line tubing onto the axle wire to hold the washer in position while you solder. After the solder joint has cooled, remove the fuel tubing.

133. Slip the tailwheel onto the axle, and then put a small piece of thin cardstock or paper (the paper serves two purposes - to protect the wheel hub from the solder, and serves as a spacer to insure that the wheel will turn freely after the soldering). Next slide a #2 flat metal washer on the wire and solder it place.
A Soldering Tip: The secret to easy soldering is cleanliness. Sand the washers and the wire where the washers are to be soldered and then wipe everything clean with alcohol before attempting to solder.

134. Lay the Nylon Tailwheel Bracket in position on the bottom of the fuselage, aligning the rear hole in the bracket with the hole in the fuselage. Drill three 1/16" dia. pilot holes in the bottom of the fuselage, and attach the Tailwheel Bracket using three #2 x 3/8" Sheet Metal Screws.







Fuel Tank

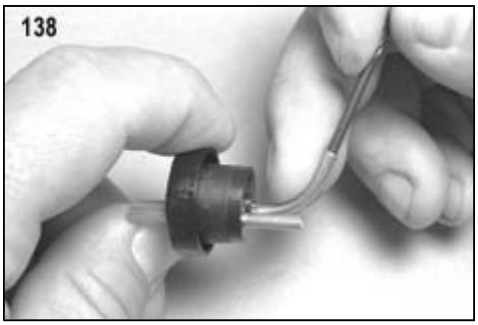
The following instructions and photos pertain specifically to a 6 oz. Du-Bro Fuel Tank, although the proceedure for assemblying other brands of plastic "clunk" tanks should be basically the same.

135. Pull the stopper cap out of the front of the fuel tank. Inside the tank there should be two brass tubes, one brass clunk weight, and a short piece of fuel line tubing. Shake the tank to get these parts out through the hole. You may have to reach inside the tank with a tweezers or needle nose pliers to get a hold of the fuel line tubing and pull it out . (CAUTION: Don't squeeze too hard and put a hole in the tubing). Now shake the tank a few more times to make sure there is no dirt or plastic shavings inside!

136. Take a look at the stopper cap. Rotate the front plastic cap, the middle rubber stopper, and the rear plastic cap until the holes line up. You should be able to see daylight through two of the three holes. NOTE: We will only be using two of the holes. Leave the third hole closed.

137. Cut one of the brass tubes to 1-1/2" long - this will be the Fuel Feed Tube. Cut the other brass tube to 2" long - this will be the Vent Tube. A razor saw works well for cutting the brass tubing. Clean up the sawn end of the tubing with 220 grit sandpaper to remove any burrs or sharp edges that might cut the fuel line tubing later.

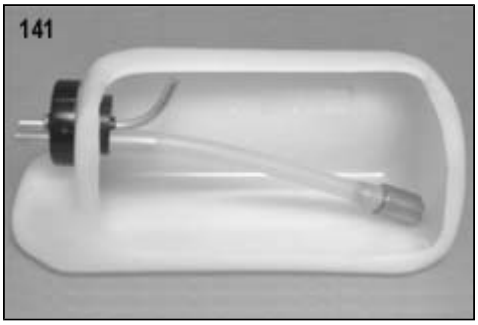
138. Put the plain end of a 3/32" dia. drill bit about 1/4" inside the back end of the vent tube. Using the drill bit for leverage, slowly bend the back end of the vent tube upwards about 45º, or until the end of the tube is even with the top of the stopper cap.



139. Carefully push the brass tubes through the two open holes in the stopper cap. Keep pushing the tubes in until 3/8" of tube sticks out in front of the stopper cap. (PLAN AHEAD: The two brass tubes should end up horizontally opposed to each other at the bottom of the stopper cap. The short fuel feed tube should be on the left side, and the long vent tube on the right.)

140. Cut the piece of fuel line tubing. Slide one end of the tubing onto the brass clunk weight. Slide the other end of the tubing over the back end of the fuel feed tube.

141. Insert the completed assembly into the neck of the fuel tank. Rotate the stopper cap so the brass tubes are horizontal at the bottom of the stopper. Hold the tank up to a strong light and look inside to see if the vent tube is close to the top of the tank. Also check to see if the brass clunk weight inside the tank swings freely from side-to-side, whether the tank is right side up or upside down. If the clunk weight is hitting the back wall of the tank, take the stopper cap back out, shorten the length of the fuel line tubing a little, and then test again. When everything is right, tighten the screw in the stopper cap until the cap is snug in the neck of the tank.



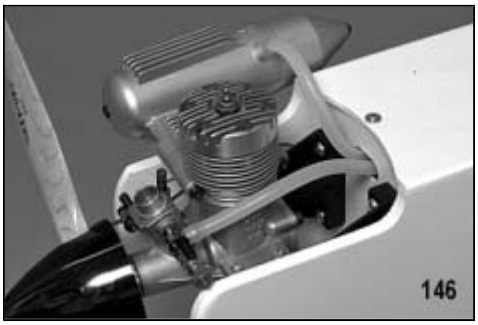
142. Test the fuel tank for leaks! Fill your kitchen sink with water. Slip the 12" long piece of Fuel Line Tubing onto the tank's vent tube. Submerge the tank in the water, holding your thumb firmly over the fuel feed tube. Blow air into the other end of the fuel line tubing and watch for air bubbles coming around the cap of the tank. If it's leaking, tighten the screw in the cap a little at a time until the leaking stops.

143. Cut two pieces of fuel tubing, approximately 6" long. Slip one piece onto the tank's fuel feed tube and the other onto the vent tube. Run the loose ends of the fuel line tubing through the hole in the firewall at the same time that you are placing the tank in the fuselage.

144. Slide the fuel tank up against the back of the firewall. Cut a piece of scrap wood (can be stick or sheet, balsa or plywood) to use as a rear tank brace. Reach in through the servo area and wedge the brace between the fuselage sides, right up tight against the back end of the tank. Spread some Slow CA glue on the ends of the brace to glue it to the fuselage sides. (HINT: Put some glue on the end of a long stick or nail, then reach in and dab the glue on the ends of the brace.) This brace will insure that the tank cannot shift backwards in flight.

145. Cut two strips of 1/4" thick soft foam rubber to fit along the sides of the fuel tank, between the tank and the fuselage sides. This packing keeps the tank from shifting sideways in flight.

146. Attach the fuel feed line to the engine's carburetor and the vent line to the pressure fitting on the muffler. (NOTE: Trim off any excess length of fuel line tubing. The fuel lines should be kept as short as possible for best fuel draw, but not so short that there is danger of them coming off in flight. Leave a little slack in the lines.)



147. To fill a fuel tank with this vent arrangement, first remove the fuel lines from the carburetor and the muffler pressure fitting. Pump the fuel into the tank through the fuel feed line (carb line). When the tank is full, fuel will begin to run out the vent line (muffler line). Stop pumping when you see the fuel start to come out the vent line! Re-connect the fuel lines and you are ready to start the engine.

Balance Your Airplane

Yes, we know your KADET LT-25 looks done and you're real anxious to go out and fly it, BUT WAIT A MINUTE - IT'S NOT REALLY DONE YET! It must be balanced! All airplanes, model or full-size, must be accurately balanced in order to fly successfully. An airplane that is not properly balanced will be unstable and will most likely crash!

PRELIMINARY: To balance your KADET LT-25, all of the parts and components must be installed in their correct positions on the model. The battery pack and receiver must be installed in their correct locations; the propeller, spinner, and muffler must be installed on the engine; the fuel tank and fuel lines must be installed and connected; and every other piece of essential equipment must be installed, ready for flight. **ALWAYS BALANCE THE KADET LT-25 WITH THE FUEL TANK EMPTY!**

148. Attach the wing to the fuselage with twelve #67 rubber bands (at least 6 per side).

149. Familiarize yourself with the balance point shown on fuselage side view plan.

BALANCE POINT = 30%, or 3-1/2" Aft of The Leading Edge of the Wing

Using a ruler, measure back 3-1/2" from the leading edge of the wing and make a pencil mark at this point, on the bottom surface of the wing next to the fuselage. Make the same mark on the other side of the fuselage. Next place a fingertip on each pencil mark and lift the airplane up in the air. No part of the model should be touching anything except your fingertips!

If the KADET LT-25 will sit on your fingertips in a LEVEL ATTITUDE, then it is PROPERLY BALANCED and ready to fly. If the airplane sits on your fingertips in a NOSE DOWN ATTITUDE, then it is NOSE HEAVY!

You will have to add weight to the rear of the airplane to get it to balance. NOTE: Before adding additional weight to the tail of your model, try simply moving the battery pack to a further aft location. The battery pack is relatively heavy and therefore makes a good balancing tool. You might try switching places between the battery and receiver; or move the battery right in front of the servos; or in extreme situations, move it behind the servos. If you can't get your model balanced simply by re-locating the battery pack, then you will have to glue lead weights into the tail end of the fuselage.

If the airplane sits on your fingertips with the TAIL DOWN, it is TAIL HEAVY! DO NOT ATTEMPT TO FLY IT! A tail heavy model is very dangerous and will most likely crash!! Lead weight will have to be added to the nose of the model to bring it into balance. The weights can be glued to the inside of the fuselage "cheeks" in front of the firewall; or inside the fuselage alongside the fuel tank. There are also "spinner weights" available for tail heavy models. Wherever you put the balancing weight, make sure it cannot be lost in flight!

Pre-Flight Checkout

Be certain to range check your radio equipment according to the manufacturer's instructions before attempting to fly.

A lot of problems can be avoided if your new engine has been "broken in" on a test stand per the manufacturer's instructions before you attempt to fly.

Double check the alignment and movement of all the controls one more time! Make sure the control surfaces move in the proper direction when you move the sticks. You'd be amazed to know how many models have been destroyed on takeoff with one of the controls reversed. If you're in this hobby for very long, you will see it happen. Don't let it happen to you! It's a good idea to get into the habit of checking for proper control response every time you get ready to fly.

Adjust all of your pushrod linkages so that the control surfaces are in their neutral position when the transmitter sticks and trim levers are centered. When you get to the flying field, don't be surprised is the elevator and rudder are suddenly misaligned after you had them perfect at home. Temperature and humidity changes can cause nylon pushrods, like those on the KADET LT-25's elevator and rudder, to shrink or expand slightly. If they are just slightly out of neutral, use the trim levers on the transmitter to neutralize them before flying.

Adjust your pushrod linkages as necessary to provide the prescribed amount of control surface travel. Make sure all of the R/C Links are securely snapped shut.

ALWAYS USE AT LEAST TWELVE #67 RUBBER BANDS TO HOLD THE WING ON THE KADET LT-25.

RECOMMENDED CONTROL SURFACE TRAVEL	
ELEVATOR	9/16" up, 9/16" down
RUDDER	1" left, 1" right
AILERONS	3/8" up, 3/8" down

Find A Safe Place To Fly

Don’t try to fly your KADET LT-25 in your backyard, at the local school yard, or in any other heavily populated area! If you have never seen an R/C airplane fly before, you probably don’t realize how much room you really need. It’s more than most people think! A school yard may look inviting, but it is too close to people, houses, power lines, and possible radio interference.

The best place to fly your model is at a designated model airplane club flying field. Ask your hobby shop dealer if there is a model club in your area and join. Not only will you have access to a large, safe place to fly, but you will enjoy being around all types of R/C model airplanes and talking to their builders.

The KADET LT-25 is designed to give you the best possible chance to succeed in learning to fly R/C. However, learning to fly model airplanes is not a skill you can learn overnight. It’s very similar to learning to fly a real airplane in that you should go through a learning phase with an instructor before you try to pilot the airplane yourself. A lot of things can go wrong with these machines, and if you are not prepared to deal with them instantly, you will loose your new airplane in a crash. To reduce the chance that your first flight will end in disaster, we strongly recommend that you seek the assistance of a competent R/C pilot to help you with your first flights.

GOOD LUCK AND SAFE FLYING!

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In use of our products, Sig Mfg. Co.'s only obligation shall be to replace such quantity of the product proven to be defective. User shall determine the suitability of the product for his or her intended use and shall assume all risk and liability in connection therewith.