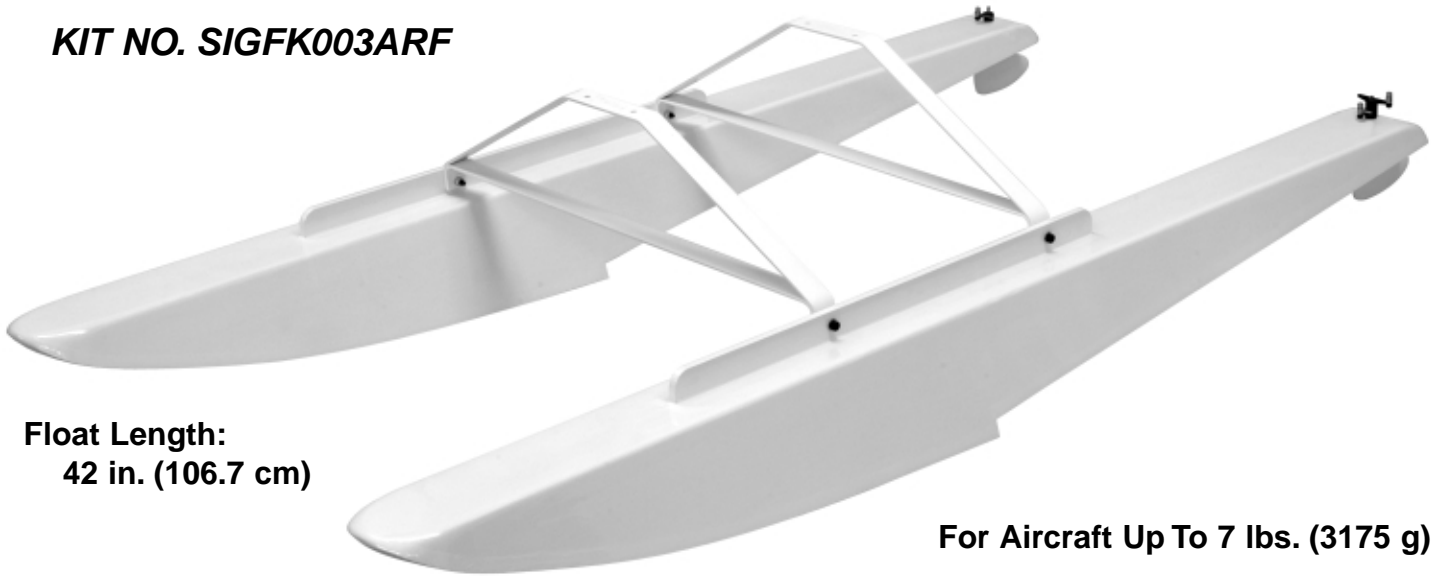




40-Class Wood RTF FLOATS

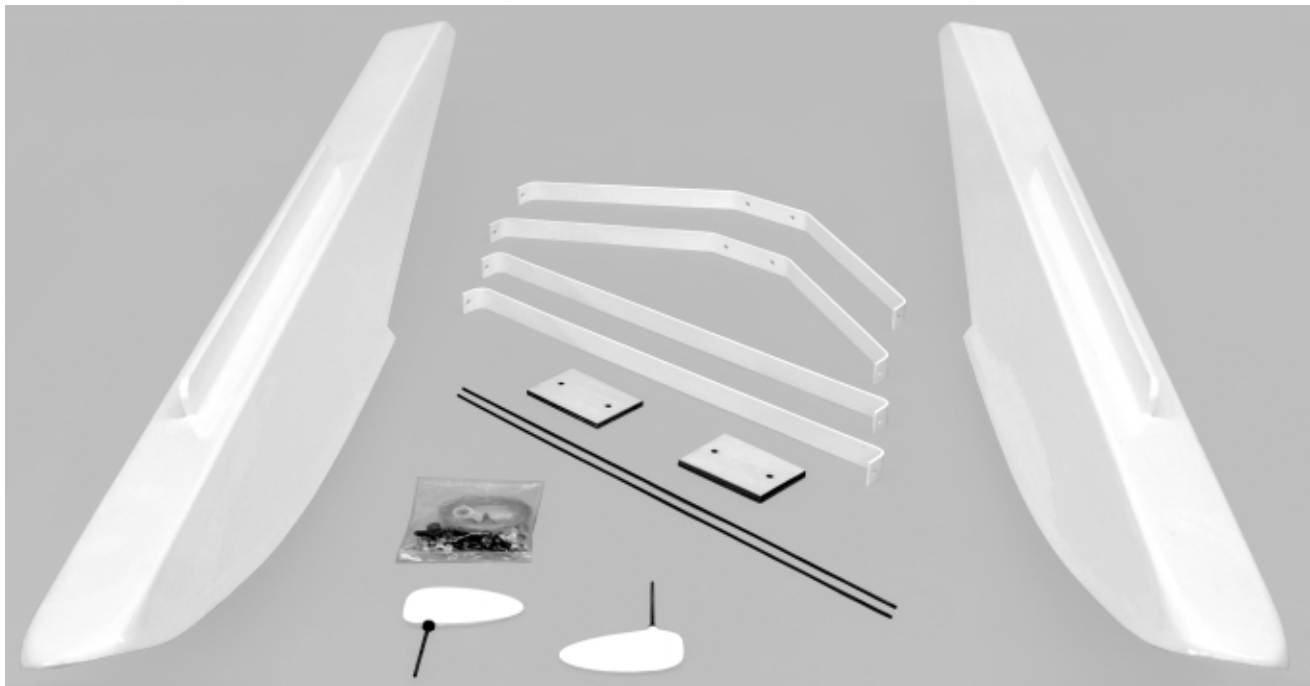
KIT NO. SIGFK003ARF



Float Length:
42 in. (106.7 cm)

For Aircraft Up To 7 lbs. (3175 g)

ASSEMBLY MANUAL



SIG MANUFACTURING CO., INC.

401-7 S. Front St.
Ph: 641-623-5154

Montezuma, IA 50171
www.sigmfg.com

ASSEMBLY MANUAL



42" Long

40-Class Floats

#SIGFK003ARF



INTRODUCTION:

Welcome to the world of flying R/C model airplanes off water! If you have never done it before, you are in for a thrill. Flying off water is no more difficult than flying off land - only different.

Most typical 40-size R/C sport models with average wing area (aka: Sig Four Star or Rascal) or larger than average wing area (aka: Sig Kadet or Cub) should perform well flying off water with these floats. Typically the changeover from the wheel landing gear to floats will add significant weight to the airplane, thus airplanes with a light wing loading make the best candidates for conversion to float flying. Overweight airplanes do not make good float planes! This float kit has been designed to provide an optimum setup for float flying with a suitable 40-size R/C airplane.

This entire float system is simple, lightweight and very sturdy. The floats themselves have a optimized hull design that enables them to get on top of the water quickly with minimal spray. The hardened aluminum struts are very lightweight yet amazingly strong. Properly mounted to your model this float system should provide you with many successful seasons flying off water.

Producing a float kit that provides absolutely everything needed for every airplane installation is virtually impossible. Because of different fuselage shapes and structures, some installations may require different size or shape struts or different hardware. So what we have done is provide complete hardware for mounting these floats to the SIG Rascal Forty ARF or the SIG Kadet LT-40 (both the kit and ARF versions), as we figure that these are going to be two of the most popular installations in our line of airplanes. These two installations also cover the two most commonly used water rudder systems - single or dual rudders with wire pushrods or pull-pull cables. Most of the hardware in this kit will also be applicable for installation of these floats to other airplanes.

Metal bearing tubes for the water rudders have been built into the rear of each float. Using dual water rudders provides the utmost in positive water-handling, even in relatively windy conditions. A single water rudder works OK in near calm conditions. The water rudder(s) can be steered directly off of the model's flying rudder (ala the Rascal) or the nose gear (ala the Kadet LT-40).

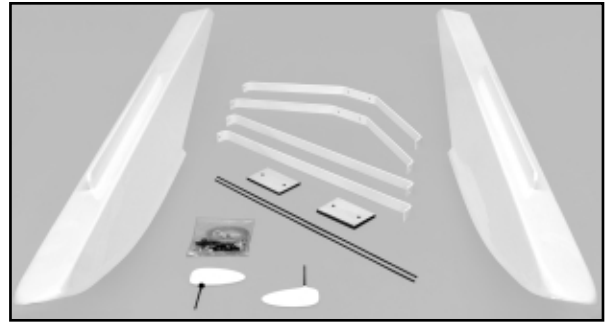
IMPORTANT:

Flying an R/C model aircraft from water is not difficult. However, flying an R/C floatplane without previous R/C flying experience will likely be very difficult and is definitely not recommended or suggested. If you are not comfortable landing and taking off your R/C model from land, we strongly suggest that you gain more time and experience before attempting to fly the airplane off of water. These instructions assume that you are a experienced R/C pilot.

COMPLETE KIT PARTS LIST:

The following is a complete list of all parts supplied with this kit. Before beginning assembly, we suggest you take a few moments to inventory the parts in your kit.

Note that some of the parts are earmarked for either the Rascal or the Kadet LT-40 "only". These items primarily pertain to the different steering methods used on the two models (pushrods vs. cables). So if an item says "Rascal only", it is not needed for the Kadet installation, and vice versa. All items that are not earmarked are common to both airplane installations.



KIT PARTS:

- 2 Pre-Built Floats
- 2 Fiberglass Water Rudders
- 1 Aluminum Front Float Strut (approx. 4-5/8" tall)
- 1 Aluminum Rear Float Strut (approx. 4-7/8" tall)
- 2 Aluminum Spreader Bars
- 2 1/4" Plywood Float Mount Doublers (Kadet only)
- 2 2 mm dia. x 450 mm Music Wire (Rascal only)
- 1 3 mm dia. x 45 mm Music Wire (Kadet only)
- 8 M4 x 20 mm Socket-Head Bolts
- 4 M4 Lock Nuts
- 4 M4 Lock Washers
- 4 M4 Flat Metal Washers
- 4 M4 Blind Nuts
- 4 Pushrod Connector assemblies, consisting of:
 - 4 each Metal Body
 - 4 each M3 x 4 mm Bolts
 - 8 each M2 Hex Nuts
 - 4 each M2 Flat Metal Washers
- 2 2-sided Plastic Steering Arms
- 2 1-sided Plastic Steering Arms (Rascal only)
- 2 Braided Steel Cables (Kadet only)
- 4 2 mm od x 4 mm Metal Swage Tubes (Kadet only)
- 1 1/8" Nylon Nose Gear Bearing (Kadet only)
- 1 1/8" Nylon Nose Gear Steering Arm (Kadet only)
- 1 6-32 x 1/4" Self-Tapping Set Screw (Kadet only)

REQUIRED TOOLS & MATERIALS:

For assembly, you will need the following tools and materials:

- Small Bubble Level
- Carpenters Square or 90° Triangle
- Screwdriver Assortment
- Small Allen Head Wrench Assortment
- Pliers
- Power Drill With Selection of Bits
- Dremel® Tool With Carbide Cut-Off Wheel
- Soldering Iron and Solder
- Threadlock Compound (Loctite® Non-Permanent Blue)
- Scrap Wood Blocks For Shimming Fuselage
- Tape
- Non-Permanent Marker Pen
- Pencil

THE CORRECT SET-UP:

For good performance, both on the water and in the air, the following guidelines should be followed when mounting twin floats on an R/C model aircraft:

1) The floats must be accurately aligned with the model in the side, front and top views.

2) **SIDE VIEW:** The "step" of the floats should be located right on, or just slightly behind, the model's normal center of gravity (C.G.). The exact step location is not super critical, just as long as you are pretty close. On models of this size, you could be 1/8" forward or aft of the C.G. without causing any serious handling problems.

3) **SIDE VIEW:** The flat top surfaces of the floats should be mounted parallel with the model's 0° reference line. In other words when the tops of the floats are level, the airplane should also sit level, or with its nose just slightly up. In this alignment, the airplane should lift off the water effortlessly once flying speed is reached.

How do you know when your airplane is sitting level? You must determine the 0° datum line of your airplane. If you have a high-wing airplane with a flat bottom airfoil, like the SIG Rascal or Kadet LT-40, the bottom surface of the airfoil is a good reference, as it is usually set near 0°. In those cases, the tops of the floats should be parallel with the bottom surface of the wing. Use a small bubble level to check the alignment (see bubble level being used in later photos in this instruction manual). In some cases, where you're model has a "flat plate" stabilizer, which is set at 0°, it is handy to take your measurement with the bubble level there at the stab. If you are putting the floats on an airplane with a symmetrical airfoil, you can usually determine the correct 0° datum line of your airplane by studying the plans, and then take your measurements there.

4) **FRONT VIEW:** The floats should be square with each other and the model should not lean to the side.

5) **TOP VIEW:** Both floats should be parallel and square with each other and with the centerline of the fuselage.

WATER RUDDERS:

Metal bearing tubes have been built into the rear of each float for the water rudders. Using dual water rudders provides the utmost in positive water-handling, even in relatively windy conditions. A single water rudder works OK in near calm conditions. The water rudder(s) can be steered directly off of the model's flying rudder (in the case of the Rascal) or the nose gear (in the case of the Kadet LT-40). It is very easy to install, adjust, and use.

A PERFECT FIT FOR THE SIG RASCAL AND KADET LT-40:

These float assembly and installation instructions will show two different airplanes, the SIG Rascal Forty ARF and the SIG Kadet LT-40. We have flown both of these models with outstanding results, using this float system.

There is an old rule of thumb in full-scale aviation that you need more power to fly off water than off land. That may be true in full-scale, but in our experience it doesn't carry over to models. Most R/C models are vastly overpowered already, compared to full-scale airplanes. Consequently, we find that we can fly our Rascal Forty ARF and LT-40 models with the same engines that we use when we fly off land. Our Rascal Forty models typically fly with .46 - .52 four-stroke engines and our LT-40 models fly with .40 - .46 two-stroke engines. Both of these airplanes perform perfectly in flight with the floats using the same engines.

The reason for this is that while these two airplanes may look totally different, the Rascal Forty and the Kadet LT-40 have one most important factor common - they both have a great deal of wing area and therefore, very favorable wing loadings - making them ideal floatplane subjects. To illustrate this fact, consider the following numbers, taken directly from our models here at SIG:

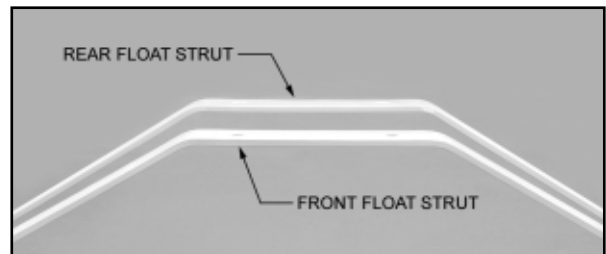
	<u>ON LAND GEAR</u>	<u>ON SIG FLOATS</u>
RASCAL FORTY		
R.T.F. Weight	5 lbs. 8 ozs. (88 oz.)	7 lbs. 1 oz. (113 oz.)
Wing Loading	17.4 oz./sq. ft.	22.3 oz./sq. ft.
KADET LT-40		
R.T.F. Weight	6 lbs. (96 oz.)	7 lbs. 12 oz. (124 oz.)
Wing Loading	15.4 oz./sq. ft.	19.8 oz./sq. ft.

As you can see, the wing loading for both of these models remains very favorable with the floats in place. This is certainly one of the reasons that both of these airplanes work so well as float-equipped seaplanes, using the same engines that they normally fly with from land based fields. Both the Rascal Forty and LT-40 airplanes can be flown with this float system without the need to change engines.

Note: If your model is equipped with a marginal engine, one that barely flies it from land based fields, then you will want to consider a more powerful motor. This is simple common sense whenever you are adding the additional weight of floats to your model!

IMPORTANT: Please note that these instructions assume that your airplane is already built, flown, and flight-trimmed for landplane purposes. This is important because you will need to know exactly where your airplane's C.G. (balance point) is for reference when positioning the floats on the airplane.

Included in this kit are two (2) pre-bent aluminum Float Struts and two (2) pre-bent aluminum Spreader Bars. Notice that one of the pre-bent float struts is taller than the other. The Front Float Strut is the short one, measuring approximately 4-5/8" in height. The Rear Float Strut is taller, measuring approximately 4-7/8" in height. The two Spreader Bars are identical in size and shape.

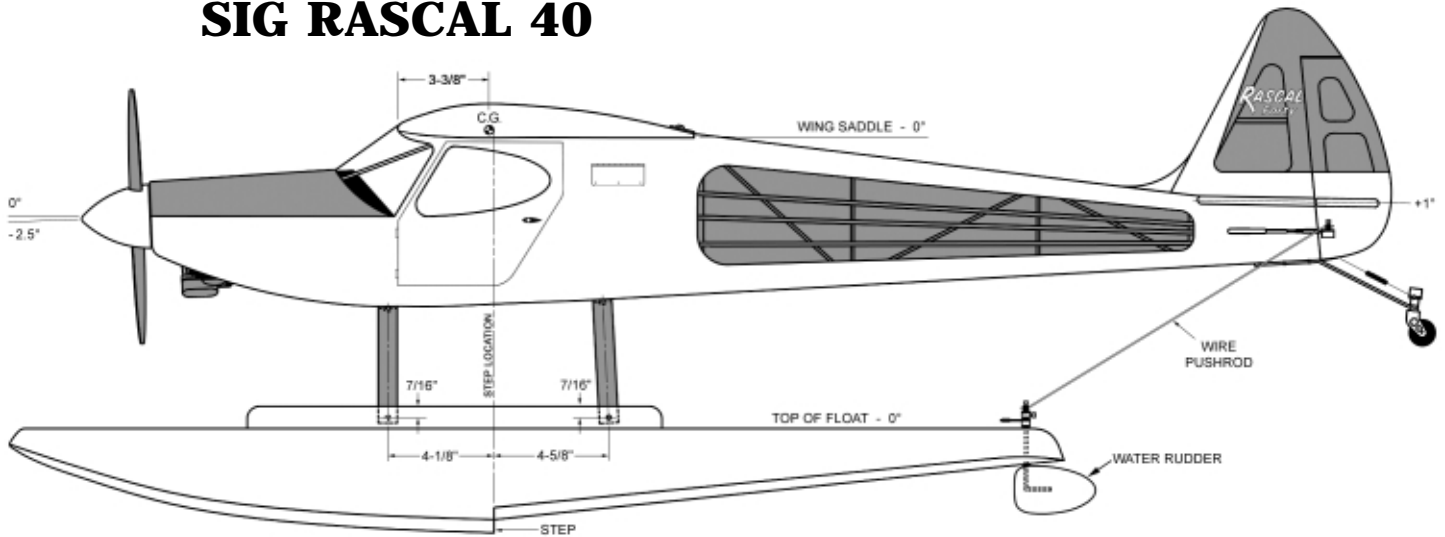


If you are putting these floats on a SIG Rascal Forty, go to page 3 to begin assembly.

If you are putting these floats on a SIG Kadet LT-40, go to page 7 to begin assembly.

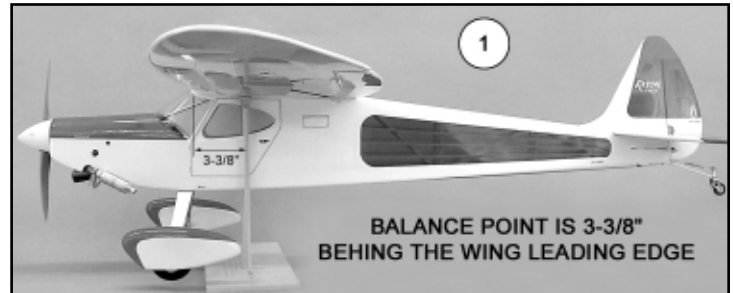
If you are putting these floats on a different airplane, study both the Rascal and Kadet instructions for ideas you can apply to your custom installation.

INSTALLING THE FLOATS ON A SIG RASCAL 40

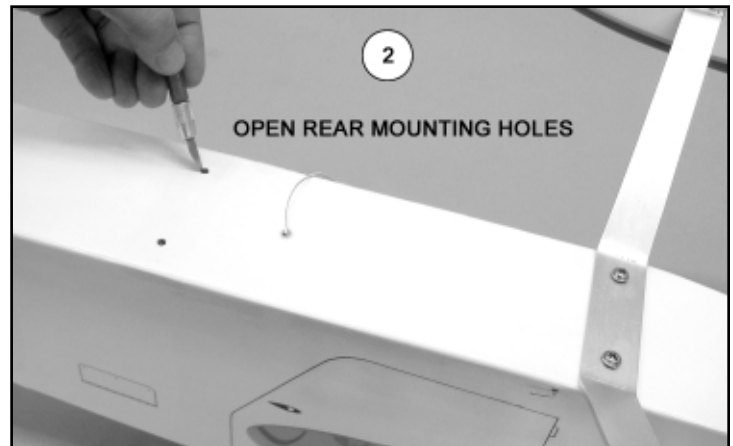


1) The standard Balance Point (or C.G.) for the Rascal Forty, as specified in its assembly manual, is exactly 3-3/8" behind the leading edge of the wing. This is the balance point recommended for flying this airplane from land, and it is the same balance point we recommend for float flying. If your Rascal Forty's balance point is not currently at 3-3/8", we recommend that you rebalance your airplane at that C.G. location at this time.

Question: Why is it important to know your model's precise Balance Point when mounting floats? **Answer:** Because for any float-airplane combination, the "step" on the bottom of the floats should always be located just slightly behind the airplane's balance point for proper performance on the water.



2) Your Rascal Forty ARF was built with a plywood hardpoint pre-installed in the bottom of the fuselage for the rear float strut attachment point. This rear hardpoint has been pre-drilled at the factory and has two 4 mm blind mounting nuts installed on the inside. You should be able to see and feel the two holes underneath the covering material. Use a #11 hobby knife to carefully open these two bolt holes in the bottom of the fuselage.



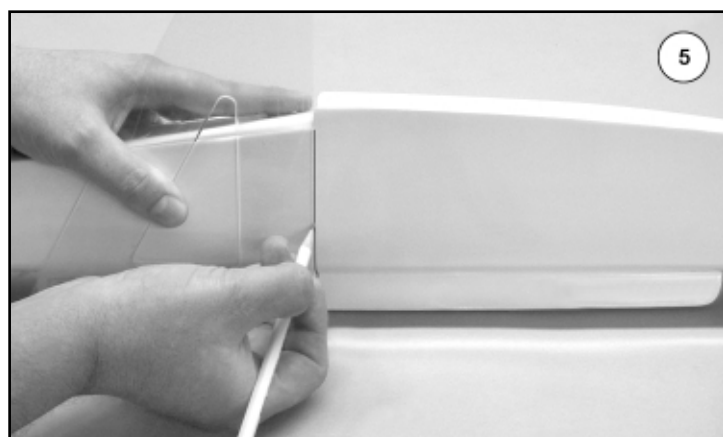
3) Remove the main landing gear assembly and set it aside. Use the same two bolts and lock washers that held the main landing gear to bolt the aluminum Front Float Strut (that's the shorter one) in place on the fuselage.



4) Use two M4 x 20 mm Socket-Head Bolts and two M4 Split Ring Lock Washers to bolt the aluminum Rear Float Strut in place on the fuselage.



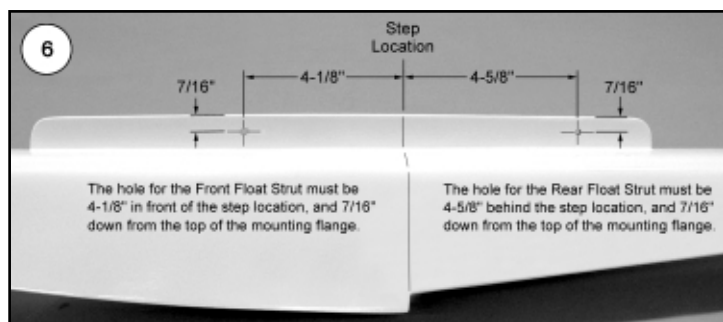
5) Next, you need to mark the step location on the plywood mounting flanges that are protruding from the tops of the floats. A simple, accurate way of doing this is to set the float upside down on a flat surface and use a 90° triangle to project the step location onto the side of the float and then on to the mounting flange. Use a soft lead pencil or non-permanent marker to mark the step location.



6) a) Now mark the hole locations for the aluminum Front and Rear Float Struts onto the plywood mounting flanges according to the measurements shown here. You must be very precise when laying out these marks, because if they are off, the floats will not be properly aligned with the airplane when you are all done.

b) After you've got the marks laid out, drill the holes completely through the plywood mounting flanges with a 5/32" or #22 or 4 mm dia. drill bit, to create clearance holes for the M4 mounting bolts that will be used.

c) Iron down the plastic covering material around the holes to make sure the covering is stuck tight to the wooden structure.



7) Assemble the floats and the aluminum Spreader Bars onto the Front and Rear Float Struts with the M4 x 20 mm Socket-Head Bolts, M4 Flat Metal Washers, and M4 Lock Nuts provided. Snug the bolts and nuts, but do not tighten them completely until the next step.

8) Make a final check of the alignment of the floats. Set the float plane on a smooth flat surface and slide wood blocks or books underneath the front and rear ends of the floats to keep the model from tipping fore or aft. Now set a small carpenter's bubble level on top of one float and shift the blocks in or out until the level indicates that the float is perfectly level. Now place the bubble level on the wing saddle of the fuselage. If everything has gone together accurately, the wing saddle should also be very close to level. If not, further adjustments can be made by using a shim of 1/64" or 1/32" thick scrap plywood, cut to fit between the tops of the floatstruts and the bottom of the fuselage. If you want to raise the nose slightly,



put a shim between the front float strut and the fuselage. To raise the tail, shim the rear float strut. Check the squareness of the floats to each other and to the fuselage. When satisfied, tighten all the mounting bolts securely.

9) Locate two 1-sided Plastic Steering Arms, one 2-sided Plastic Steering Arm, and three complete Pushrod Connector assemblies.

a) Drill out the holes in the Steering Arms with a 5/64", #47, or 2 mm dia. drill bit, so that the stud of the Pushrod Connector will go in freely.

b) Assemble a Pushrod Connector on each Steering Arm, as shown.

Note: Although flat metal washers are provided with the pushrod connectors, we didn't use them. Simply screw the two hex nuts onto the bottom of the connector, and then tighten the two nuts against each other, with a very small drop of threadlock (Loctite®) between the nuts. Don't get any Loctite® between the connector and the steering arm - it must turn freely.

10) Metal bearing tubes for the water rudders have been built into the rear of each float. Use a sharp #11 hobby knife or the heated tip of an awl to open up the covering over the holes. Make sure the covering material around the holes is ironed down tight before going any further.

11) a) Insert one of the water rudders into the bearing tube, in the rear of the left float, from the bottom.

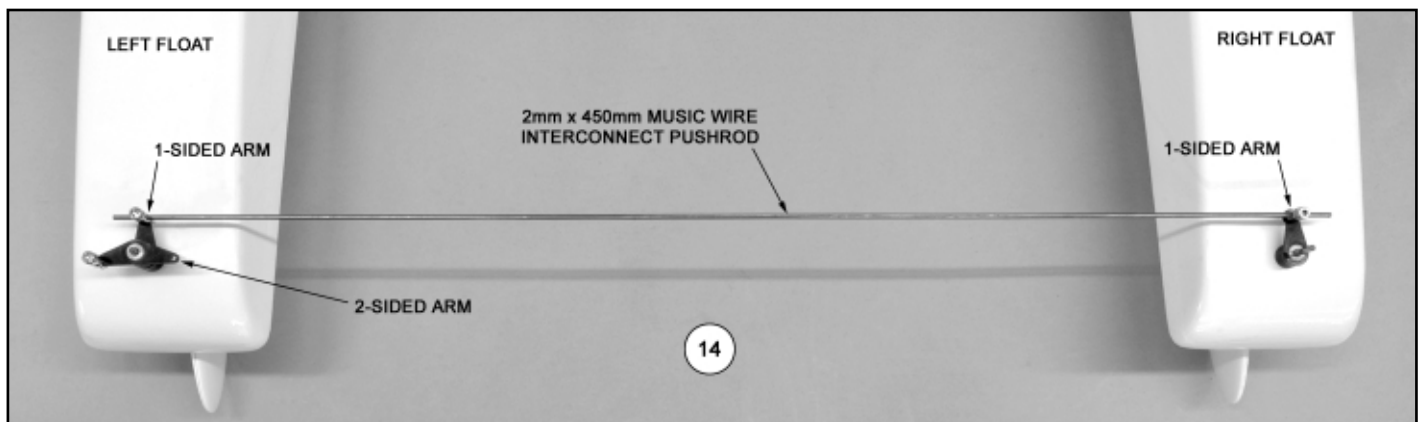
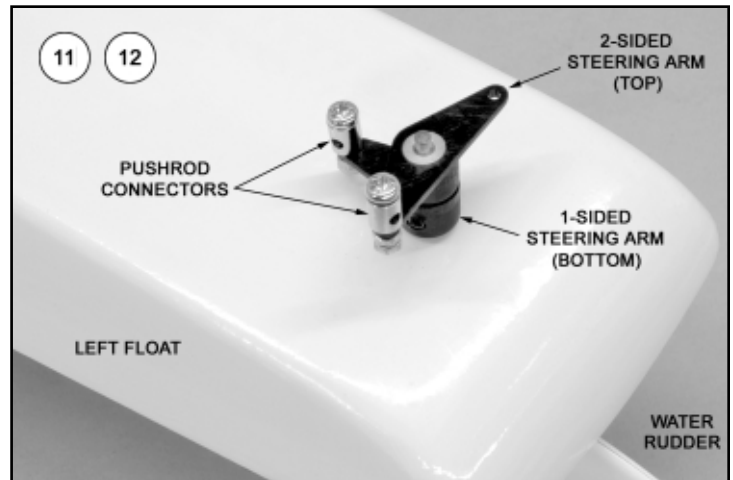
b) Install one of the 1-sided Plastic Steering Arms (from Step 9) onto the Water Rudder wire protruding from the top of the float. Install it with the arm facing forward when the water rudder is straight back. Then tighten the steering arm set screw.

c) Check the movement of the water rudder to make sure it turns free and easy. If not, find the bind and fix it.

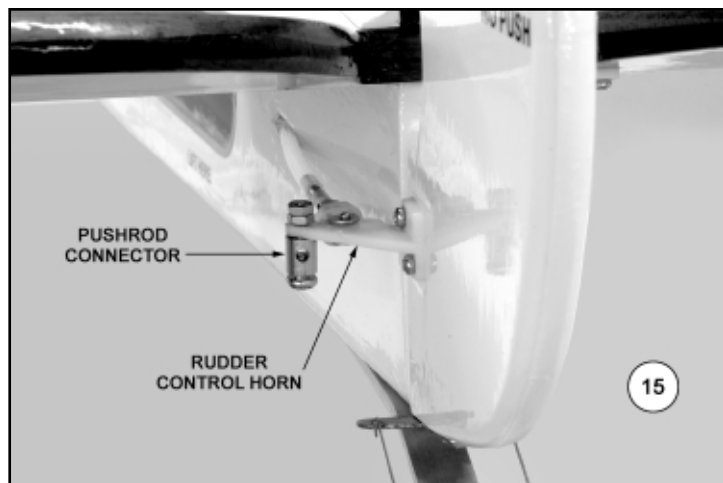
12) Install the 2-sided Plastic Steering Arm (from Step 9) on the left float, on top of the single arm. Note that it should be turned 90° to the first arm, with its both its arms facing across the float, as shown.

13) Repeat Step 11 to install a water rudder and 1-sided Steering Arm on the rear of the right float. The steering arm should be installed pointing straight forward when the water rudder is straight back.

14) Locate one of the 2 mm dia. x 450 mm Music Wires. This piece will be used as an Interconnect Pushrod between the two water rudders. Install the wire in the Pushrod Connectors of the 1-sided Steering Arms on the left and right floats, adjusting the length of the pushrod as necessary to make both water rudders parallel to each other.



15) Install a Pushrod Connector assembly in the outermost hole of the airplane's rudder control horn (on the left side of the model). Pre-drill the hole in the control horn with a 5/64", #47, or 2 mm dia. drill bit, so that the stud of the Pushrod Connector will go in freely. Note that the head of the Pushrod Connector should be pointed down, with the two hex nuts on top of the horn.

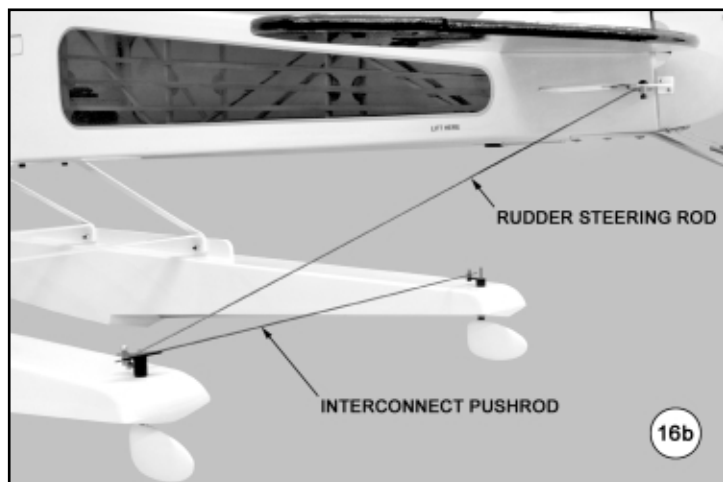


16) A piece of 2 mm dia. x 450 mm Music Wire is provided for the Rudder Steering Rod, which links the model's rudder to the water rudder on the left float.

a) With a pliers, bend the last 1/2" of each end of the music wire to a 30° angle. Make sure the bends are going opposite each other, as shown in the drawing.



b) Install one end of the Rudder Steering Rod in the pushrod connector in the model's rudder control horn. Install the other end in the pushrod connector in the top steering arm on the left water rudder. Adjust as necessary to make the water rudders parallel with the air rudder, and then tighten the set screws. Check for proper movement.



17) Now that everything is in place, recheck the balance of your model with the floats on. The balance point shouldn't have changed much, since the floats themselves balance very close to their step, and the step is located near the model's normal C.G. (3-3/8" behind the leading edge of the wing).

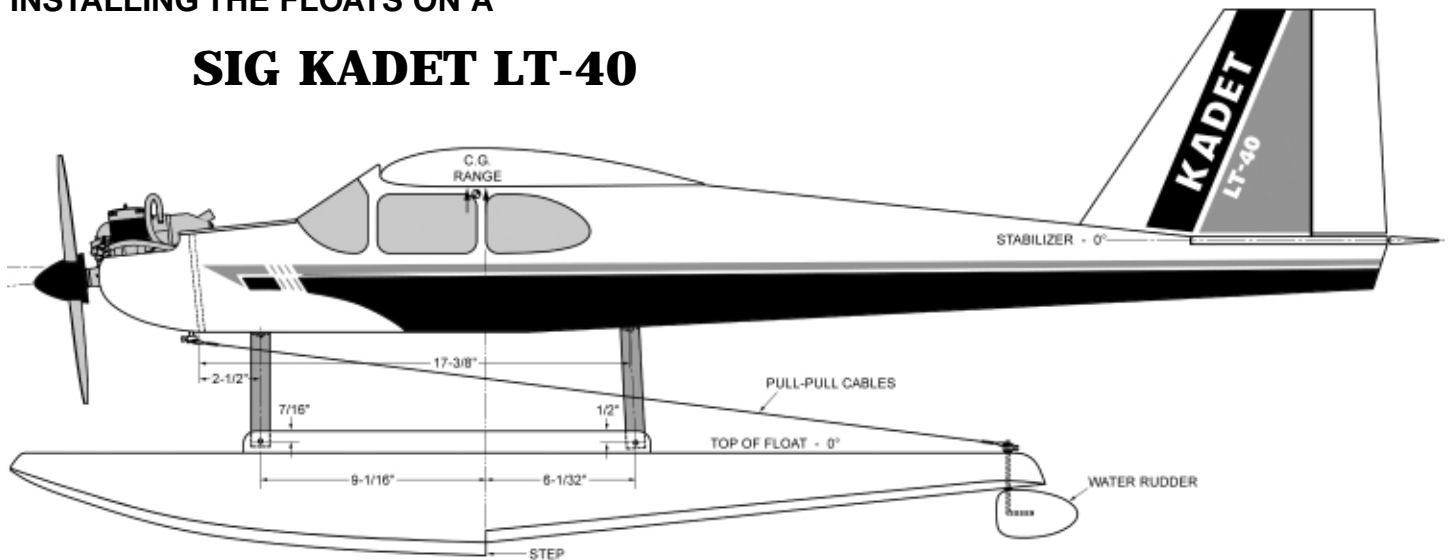
If you find that your model is tail heavy with the floats on, the first thing to do is to remove the land-based tailwheel assembly completely from the model. In most cases, that will correct the tail heaviness. If it's still tail heavy, check to see that your radio battery pack is as far forward as possible. If you find you need to add nose weight, we suggest that you use a Harry Higley™ "Heavy Hub" spinner nut on your engine.

You MUST be sure that your airplane is properly balanced before you try to fly it. Do whatever is necessary to get your Rascal Forty balanced at 3-3/8" behind the leading edge of the wing with the floats on.

The installation of the floats on your Rascal Forty ARF is complete. Proceed to page 10 of this manual for float flying tips.



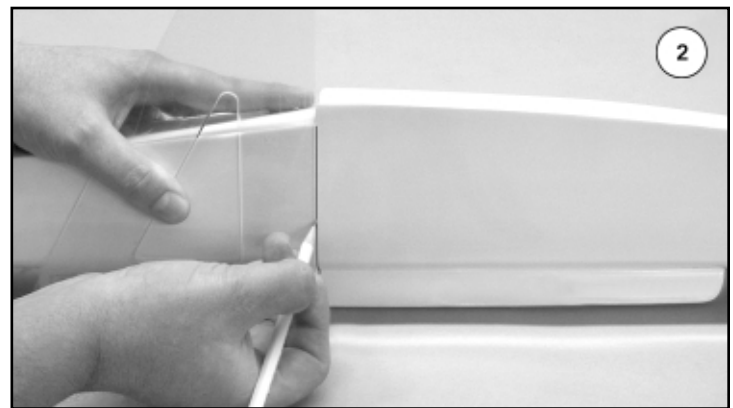
INSTALLING THE FLOATS ON A SIG KADET LT-40



1) The standard Balance Point (or C.G.) range for the Kadet LT-40, as specified in its assembly manual, is 3-1/2" to 4-1/4" behind the leading edge of the wing, measured directly next to the fuselage side. This is the balance point that is used when flying this airplane from land and it is the same balance point we recommend for float flying. If your Kadet's balance point is not currently located between 3-1/2" to 4-1/4", we recommend that you rebalance your airplane to that C.G. location at this time.

Question: Why is it important to know your model's precise Balance Point when mounting floats? **Answer:** Because for any float-airplane combination, the "step" on the bottom of the floats should always be located just slightly behind the airplane's balance point for proper performance on the water.

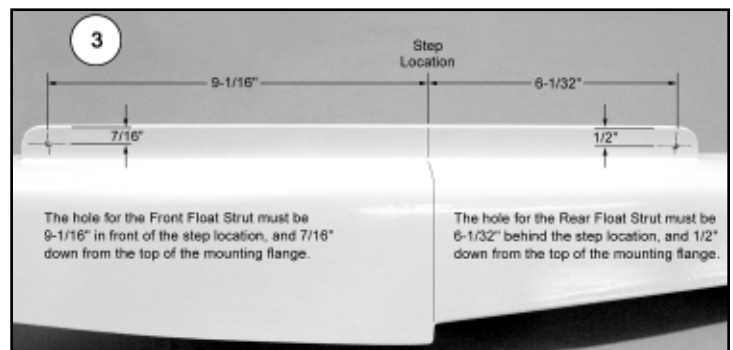
2). Mark the step location on the plywood mounting flanges that are protruding from the tops of the floats. A simple, accurate way of doing this is to set the float upside down on a flat surface and use a 90° triangle to project the step location onto the side of the float and then on to the mounting flange. Use a soft lead pencil or non-permanent marker to mark the step location.



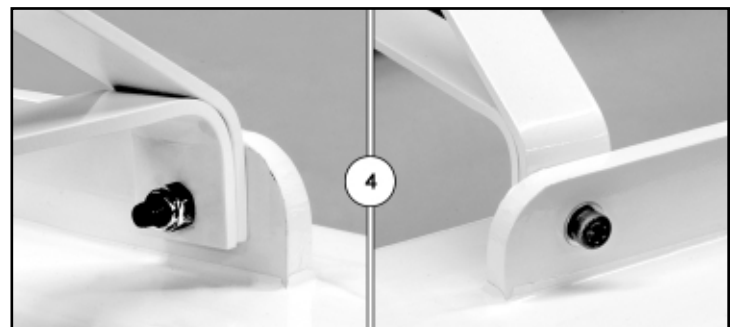
3) a) Now mark the hole locations for the aluminum Front and Rear Float Struts onto the plywood mounting flanges according to the measurements shown here. You must be very precise when laying out these marks, because if they are off, the floats will not be properly aligned with the airplane when you are all done.

b) After you've got the marks laid out, drill the holes completely through the plywood mounting flanges with a 5/32" or #22 or 4 mm dia. drill bit, to create clearance holes for the M4 mounting bolts that will be used.

c) Iron down the plastic covering material around the holes to make sure the covering is stuck tight to the wooden structure.



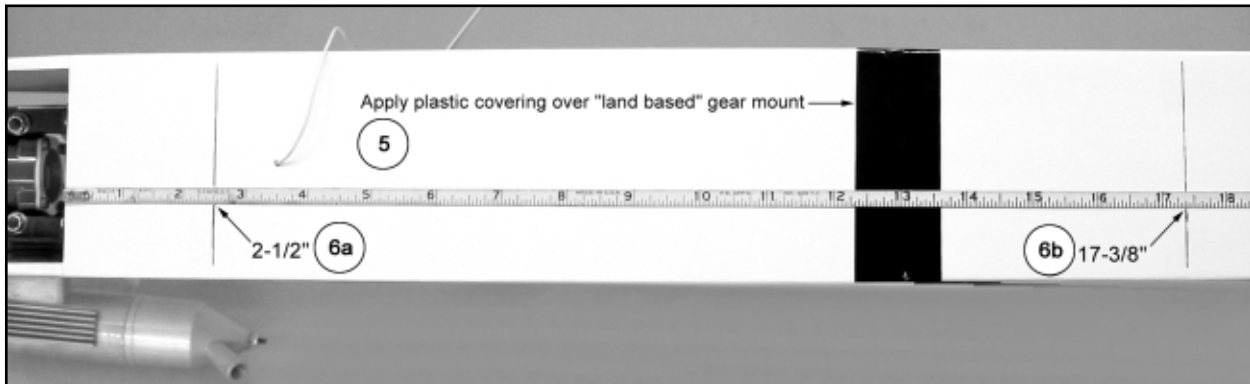
4) Mount the aluminum Front and Rear Float Struts and Spreader Bars to the plywood mounting flanges of the floats with M4 x 20 mm Socket-Head Bolts, M4 Flat Metal Washers, and M4 Lock Nuts. Put the flat metal washers under the socket-head of the bolts. The lock nuts don't need washers since they bear on the aluminum struts. Snug the bolts and nuts, but do not tighten them completely until later.



5) Remove the standard "land based" main landing gear from your Kadet LT-40. Waterproof the area where the main gear was by covering over it with a scrap piece of plastic covering material, plastic "trim" sheet, or some type of waterproof plastic sealing tape.

6) a) Draw a line across the bottom of the fuselage exactly 2-1/2" back from the bottom of the firewall. This is the centerline where the Front Float Strut will be mounted.

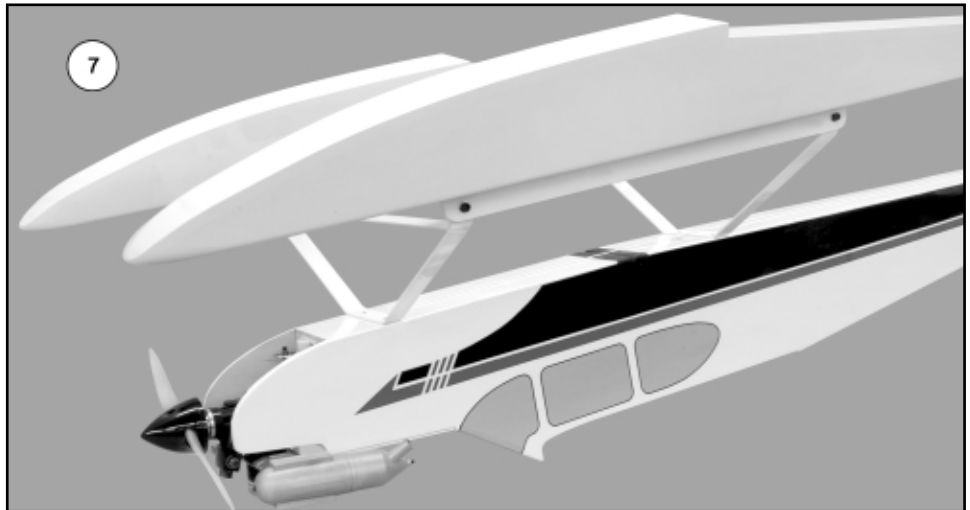
b) Draw another line across the bottom of the fuselage exactly 17-3/8" back from the bottom of the firewall. This is the centerline where the Rear Float Strut will be mounted.



7) a) Turn the fuselage upside down and set the floats in position, carefully lining the struts up with the lines drawn in the previous step. Make sure the floats are centered and square with the fuselage. Then carefully mark the locations of the four mounting holes through the mounts and onto the bottom of the fuselage.

b) Remove the floats and set them aside. Drill the four holes through the bottom of the fuselage with an 5/32", #22, or 4 mm dia. drill bit.

c) Iron down the plastic covering material around the holes to make sure the covering is stuck tight to the fuselage.



8) a) Install an M4 Blind Nuts into each hole in one of the laser-cut plywood Float Mount Doublers. Tap the blind nuts in place with a hammer, making sure they go straight into the holes and that the flanges end up flush with the surface of the plywood. Put a little glue on the flanges to keep the blind nuts from coming loose.

b) Set the Float Mount Doubler in position inside the fuselage, at the location for the rear float strut mounting. Carefully line up the holes in the blind nuts with the holes you drilled in the bottom of the fuselage. When you have the doubler positioned correctly, flow some Thin CA glue along the edges of the doubler. The Thin CA will wick underneath the doubler, bonding it to the fuselage.



9) Temporarily remove the fuel tank and any radio components from the nose of the airplane. Then repeat steps 8a. and 8b. to install the front plywood Float Mount Doubler and Blind Nuts in the nose of the fuselage.

10) Finally, assemble the floats onto the fuselage. Once you have them in place and properly lined up, go back and finish tightening all the bolts and nuts.

11) A metal bearing tube for the water rudder has been built into the rear of the floats. Use a sharp #11 hobby knife, or the heated tip of an awl, to open up the covering over each end of the tube in the left float only (this is for a single water rudder installation). Make sure the covering material around the holes is ironed down tight before going any further.

12) a) Insert one of the water rudders into the bearing tube in the left float, from the bottom.

b) Install one of the 2-sided Plastic Steering Arms onto the water rudder wire protruding from the top of the float. Install it with the steering arm perpendicular to the water rudder, (facing crosswise on the float when the water rudder is pointed straight back). Then tighten the steering arm set screw.

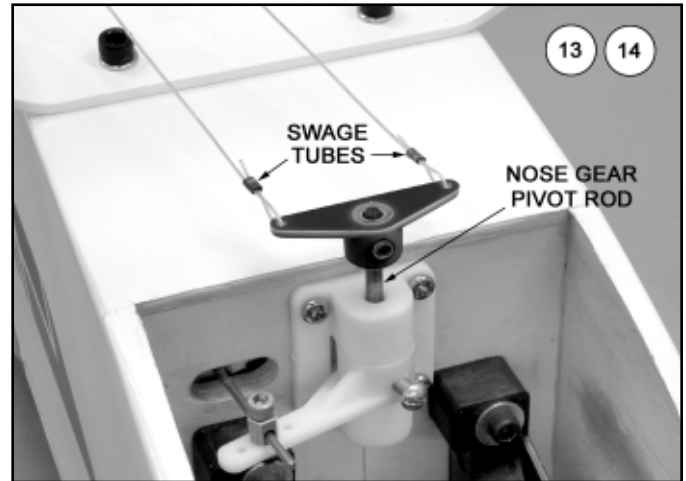
c) Check the movement of the water rudder to make sure it turns free and easy. If not, find the bind and fix it.

13) If you haven't already done so, remove the standard "land based" nylon nose gear steering arm and nylon nose gear bearing from the firewall of your Kadet LT-40. The steering arm and nose gear bearing that you are taking off are 5/32" id size. This float kit provides a new 1/8" Nylon Nose Gear Bearing and 1/8" Nylon Nose Gear Steering Arm that are a direct replacement for the 5/32" size.

a) Bolt the new 1/8" Nose Gear Bearing in place on the firewall, using the same mounting bolts from the old bearing. The mounting hole spacing is exactly the same for both bearing.

b) A piece of 3 mm dia. x 45 mm long music wire is provided for the Nose Gear Pivot Rod. Assemble the pivot rod and the nose gear steering arm into the nose gear bearing, using the 6-32 x 1/4" Self-Tapping Set Screw to secure the rod. Leave the excess length of the pivot rod sticking out the bottom of the nose gear bearing. Then hook the steering arm up to the nose gear pushrod exactly like it was in the original land installation.

c) Install one of the 2-sided Plastic Steering Arms onto the bottom of the protruding nose gear pivot rod, as shown.

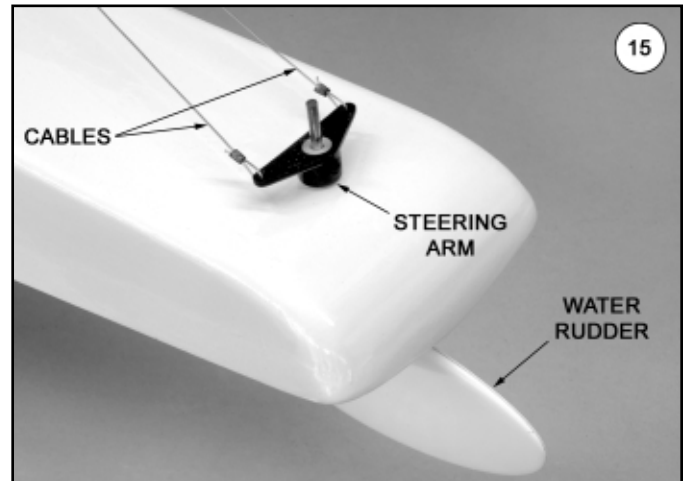


14) The water rudder is driven by pull-pull cables running from the 2-sided steering arm on the nose gear to the 2-sided steering arm on the water rudder.

a) Begin the installation of the pull-pull cables by turning on your radio system and centering the rudder servo, the rudder, and the steering arm on the nose gear. When done, turn the radio back off.

b) Locate the two pieces of Coated Steel Cable and four 2 mm od x 4 mm Metal Swage Tubes. Slide one of the swage tubes over the end of one of the cables. Then poke the end of the cable through the outermost hole in one side of the steering arm at the nose gear. Next, loop the end of the cable back through the swage tube. Slide the swage tube up close to the steering arm (about 3/8" away). Use a

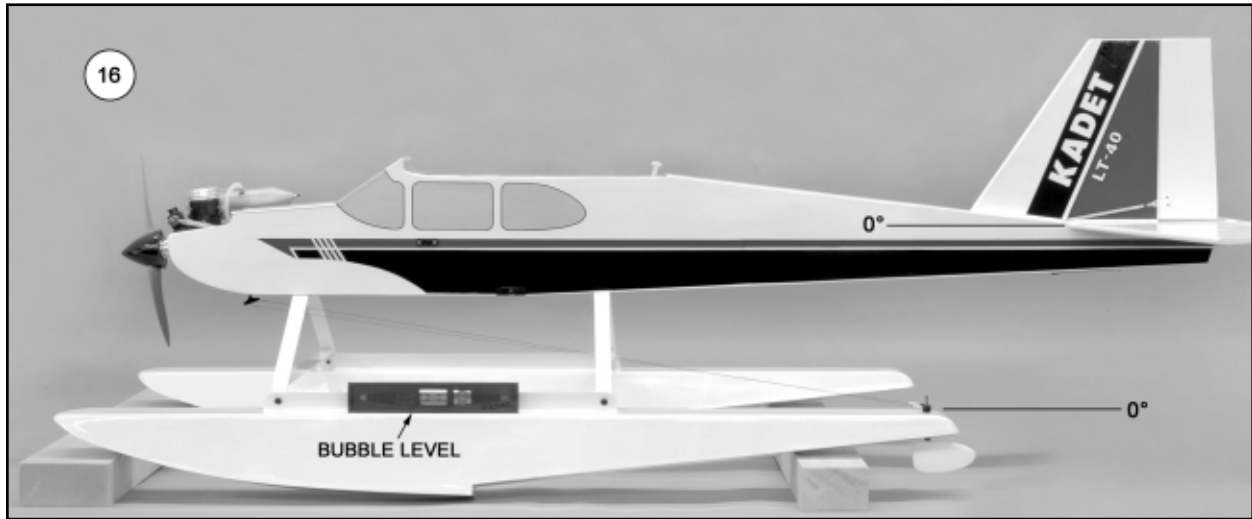
pliers or a crimping tool to squeeze the swage tube tight against the cable, locking it in place. Cut off the excess short end of the cable that is sticking out of the tube. Repeat the process to attach the other steel cable to the other side of the nose gear steering arm.



15) Pass the long unfinished ends of the braided cables back to the water rudder steering arm. Turn on your radio and make sure the rudder servo is centered. Determine which cable goes on the right side of the rudder and which goes on the left for proper steering direction. Attach the ends of the braided cables in the outermost holes of the water rudder steering arm in the same manner you did the nose gear ends. Be sure to pull the cables tight, taking out all the slack, before squeezing the swage tubes tight. It's not necessary to have the cables super taught, but there should not be any slack.

16) Double check the final alignment of the floats to the fuselage. Set the airplane on a smooth flat surface and slide wood blocks or books underneath the front and rear ends of the floats to keep the model from tipping fore or aft. Now set a small carpenter's bubble level on top of one float and shift the blocks in or out until the level indicates that the float top is perfectly level. Now place the bubble level on the stabilizer. If everything has gone together accurately, the stabilizer should also be very close to level.

Further adjustments to the final alignment can be made by using a shim of 1/64", 1/32", or 1/16" thick scrap plywood, cut to fit between the aluminum float struts and the bottom of the fuselage. If you want to raise the nose slightly, put a shim between the front float strut and the fuselage. To lower the nose, shim the rear float strut.



17) Now that everything is in place, recheck the balance of your Kadet with the floats on. The addition of the floats should not have changed the balance point very much. The floats by themselves balance near their “step”, so if they are properly mounted on the model with the step located at the model's balance point, then the model shouldn't become either nose heavy or tail heavy because of the addition of the floats.

If you find that your model is slightly nose heavy or tail heavy with the floats on, then you will have to either; 1) shift your radio components fore or aft, or 2) add nose or tail weight to get it to balance. You **MUST** be sure that your model is properly balanced with the floats on before you try to fly it. Do whatever is necessary to get the airplane balanced within the prescribed C.G. range of 3-1/2" to 4-1/4" behind the leading edge of the wing.

The installation of the floats on your Kadet LT-40 is complete. Proceed to the float flying tips in the next section.

FLOAT FLYING TIPS

PRE-FLIGHT:

Waterproof your model as much as possible. You'll find that it is almost impossible to keep all water out of your airplane. Water has a tendency to get inside the smallest openings. However, if you take a few simple precautions you can usually avoid any serious problems. First, seal any openings in the model you can, especially on the bottom half of the fuselage, where there will be a lot of water spray. Don't try to seal the pushrod exits, you shouldn't put any bind on them and they are most likely high enough above the water to avoid being a problem. Put your receiver and battery pack in plastic bags and seal the bags shut with rubber bands. These two important pieces of equipment often sit on the bottom of the fuselage where any water that does get in will naturally collect.

Mount all radio or battery switches inside the fuselage and actuate them with push/pull wires to the outside. Keep the charging jack inside the fuselage. Do not mount your servos against the floor. Following these guidelines should provide adequate waterproofing in most cases.

In spite of all precautions, a wet interior is inevitable at some time. Make interior checks between flights and at the first sign of any moisture, dry everything out completely before flying again! If your servos or receiver get wet, open up the cases, blow them out, and allow to dry thoroughly before reassembly.

FLYING:

Float flying is fun! It's no more difficult than flying off land, just a little different. If you can successfully fly a model with wheels, you can be just as successful flying off the water. Some aspects of float flying are a little easier. For instance, most water flying sites are much bigger and flatter than any model runway. On the other hand, if your engine stops at any time while you plane is away from shore, it's a lot harder to retrieve the model, unless you have a boat. For that reason, your engine's idle reliability is very important!



The best time to fly off water is when the wind is below 10 mph. In higher winds, taxiing into position for takeoff and back to shore after the flight, can become very difficult. Simply stated, the "grip" of the floats on the water is nothing like the grip of wheels to land. Your model will want to slide or drift across the water with the wind. It will also tend to weathervane into the wind. The floats just won't hold the model from turning as wheels would do on the ground. Likewise, the water rudder is too small to hold all of the rest of the model, which is above water and catching the strong wind. You will also find that many float planes will turn much better to the left than they do to the right due to engine torque. Sometimes, if you're having trouble turning the model to the right to point it in the direction you want to go, try making a wide left turn all the way around the other way.

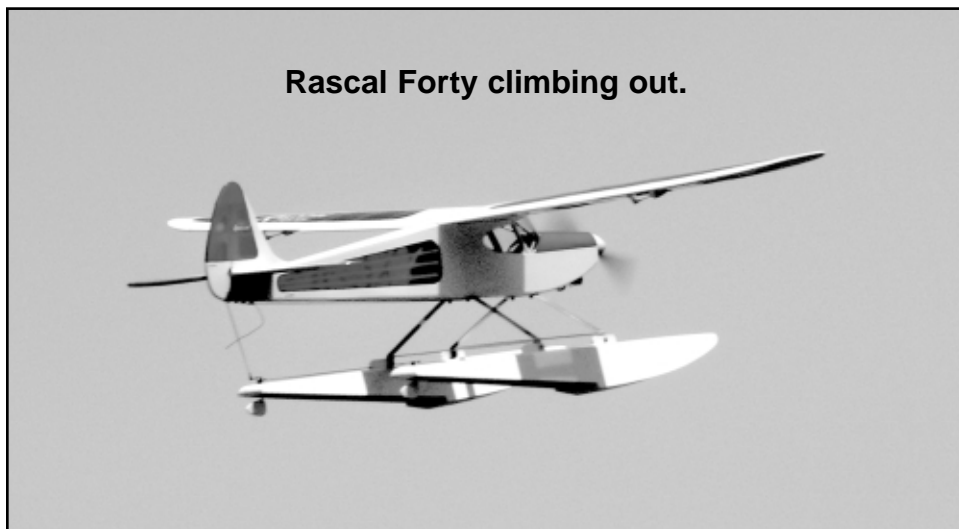
Experience will quickly teach you how much wind is too much for float flying. Below 5-10 mph, the water rudder is very effective and can steer the model at slow speeds. Until you gain some experience, wait for a relatively calm day to try out your new floatplane. For maximum enjoyment, the less wind the better! Except for taxiing and steering on the water, the wind is no more of a factor in float flying than it is in land flying.

Always takeoff directly into the wind. Hold full up elevator and then advance the throttle. Steer straight with the rudder. As the model accelerates, relax the up elevator and the plane will start riding on the step of the floats. The back end of the floats will be out of the water and the airplane will accelerate even faster. You should be holding very little, if any, up elevator at this point. When flying speed is reached pull up slowly on the elevator until the plane lifts off. Keep your climb out and turns gentle until you get to safe altitude. Your model will probably not fly too much different on floats than it did with its wheel landing gear. It will just feel a little bit heavier, especially in the glide to landing.

Make your first attempts at aerobatics - simple loops and rolls - at high fairly high altitude until you become familiar with your model's new flying characteristics. It won't take you long to discover that making touch-and-go landings on glassy smooth water is pure joy.

Use common sense to avoid damaging your floats on rocky or sandy shorelines. Use the technique of killing your engine with the transmitter about 6' to 8' from shore and catching the airplane as it comes to you, before it hits the shore.

Good luck and stay dry!



Even though these instructions don't detail this setup, these floats are a good fit on the SIG Four-Star 40. Using the basic methods shown in this manual, plus your own ideas, the floats can be installed on any suitable low-wing or high-wing 40-size airplane.