

KITFOX #69001 FLOAT KIT INSTALLATION

PREFACE:

The #69001 Float Kit consists of Aeroceet Floats and mounting hardware designed specifically for KITFOX™ aircraft equipped with front float attach brackets. If your KITFOX™ does not have float attach brackets, you can order the Float Attach Bracket Kit and install it according to directions included with that kit. Its installation does require welding.

The #65001 Undercarriage Fuselage Brace is required on all fuselages up to serial number 1036 except serial numbers 1021, 1028, 1029 and 1033.

The float mount brackets are pre-drilled and the streamlined mount tubes are cut to the proper length for installation of the floats on any KITFOX™. Only one hole is pre-drilled in each end of each mount tube. This allows some adjustment for proper alignment of bolts.

The water rudder is fitted to the left float at the factory, so the KITFOX™ owner has only to fit the control cables to the rudder pedals and swage on the cable bushings.

You can install the floats next to the water but it may be easier and safer to install them in a shop, out of the wind and weather. The KITFOX on floats transports very nicely on an 8 foot wide flat trailer. If you have no hoist, eight men can easily pick up the aircraft and load it on the trailer. Swing the wings out before you back the trailer into the water. We have loaded and unloaded our float-equipped demonstrators many times with no problems. We always extend the wings and fold them with the aircraft on the trailer.

OBJECTIVE:

Assemble the float platform by bolting the spreader bars in place with the bottom mounting brackets in place. Position the streamlined float mount tubes on the bottom brackets and install the top brackets. Hoist the aircraft and remove the landing gear. Slide the float platform under the aircraft. Install the fuselage undercarriage brace if required, and attach the floats to the rear landing gear brackets and float mount brackets. Align the floats with the fuselage, drill the bolt holes and install all bolts, cable tangs and cable braces. Connect the water rudder to the aircraft rudder pedals and install the water rudder retract system. Remove the tailwheel and install the ventral fin.

STEP (1): Measure the #61901 4" streamlined spreader tubes. They should be 84" long. If they are too long, cut them to 84".

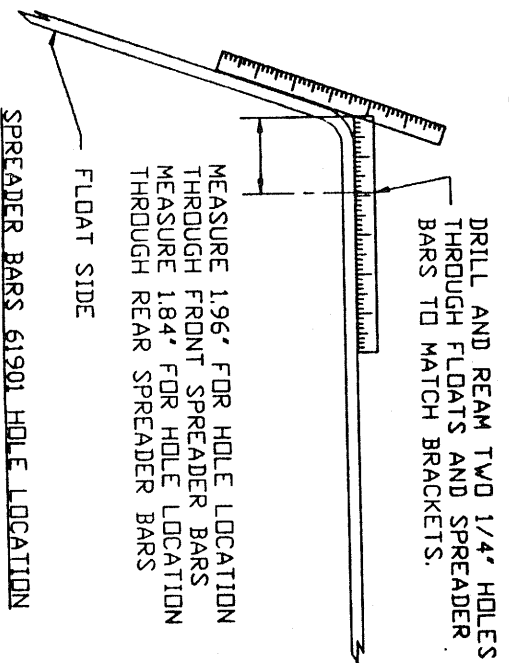


Figure. 1

STEP (2): Mark on the float deck with a felt tip pen the centerline of the bolts that will attach the bottom mounting brackets. To do this, hold a straightedge upright against the side of the float across the spreader bar slot. Set your ruler flat on top of the float and measure from the straightedge. The center of the bolts for the front brackets should be 1.96 inches from the straightedge. Mark the centerline for the rear bracket bolts at 1.84 inches. See Fig. 1.

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STEP (3): File and sand the ends of the spreader bars smooth and lubricate about one foot on each end with wax or mineral oil. Insert the tubes into the slots on the floats and push the floats together until the tubes "bottom" in the slots.

STEP (4): Set the four bottom mounting brackets in their appropriate locations on the floats. Center the bolt holes of each bracket over the lines you have drawn and center the brackets fore and aft between the non-skid surfaces. With a transfer punch mark the top of the float through the center of one bolt hole in each bracket.

STEP (5): Remove the brackets, and slide the floats in or out on the spreader bars until the bolt hole centers are 64" apart along both spreader bars. The objective is to align the floats exactly parallel, even if the bolt holes are not exactly 64" apart.

STEP (6): With a #30 bit, drill the one hole for each bracket into the float and through the spreader bars. Be very careful to keep the bit square with the top of the float.

STEP (7): Drill the bolt holes to 15/64" and ream to .2500". Insert a 1/4" bolt through the appropriate bracket and into the holes you reamed to .2500".

STEP (8): Use a transfer punch to mark the center of second hole in each bracket. Remove the bracket before drilling the second hole. Do not drill through the bolt holes in the brackets, as they are precisely reamed at the factory.

STEP (9): Remove the float inspection covers and install the four brackets in their appropriate locations with one bolt in each bracket. Hold a #62903 (2.75 x 1.25") aluminum plate over the bolt inside the float, and mark the plate for the second hole with a transfer punch. Remove the #62903 and drill to 17/64". Drill the holes on the centerline of the plates. Label the plates for final assembly.

STEP (10): Install the appropriate bottom brackets at each of the four attach points and insert the AN4C32A Bolts. Use a bit of silicone around each bolt to seal the hole. These bolts do not require a washer under the head.

STEP (11): Install the proper #62903 1/4" aluminum plate inside the float under each bracket. Use an AN960C4 washer on each bolt and an AN365C428 Nylock nut. Torque these nuts to 90 inch pounds only. See Fig. 2.

STEP (12): The streamlined float mount struts are cut to the proper lengths and have one hole drilled in each end. File smooth and dress the ends of the tubes.

STEP (13): Assemble these six tubes on the bottom float mount brackets using AN5 bolts just stuck in the holes. To secure them tape these bolts in place so they will not fall out. For final assembly, you will use two AN960C516 Washers on each side of the lower brackets as shims, between the brackets and the inside of each streamlined tube. You should insert these shims now as you locate the second bolt hole in each end of each tube. The best way to hold the washers in place while you slip the tubes over them is to tape the washers to the brackets with Scotch Tape. Then, just punch through the tape with the bolt. See Fig. 2.

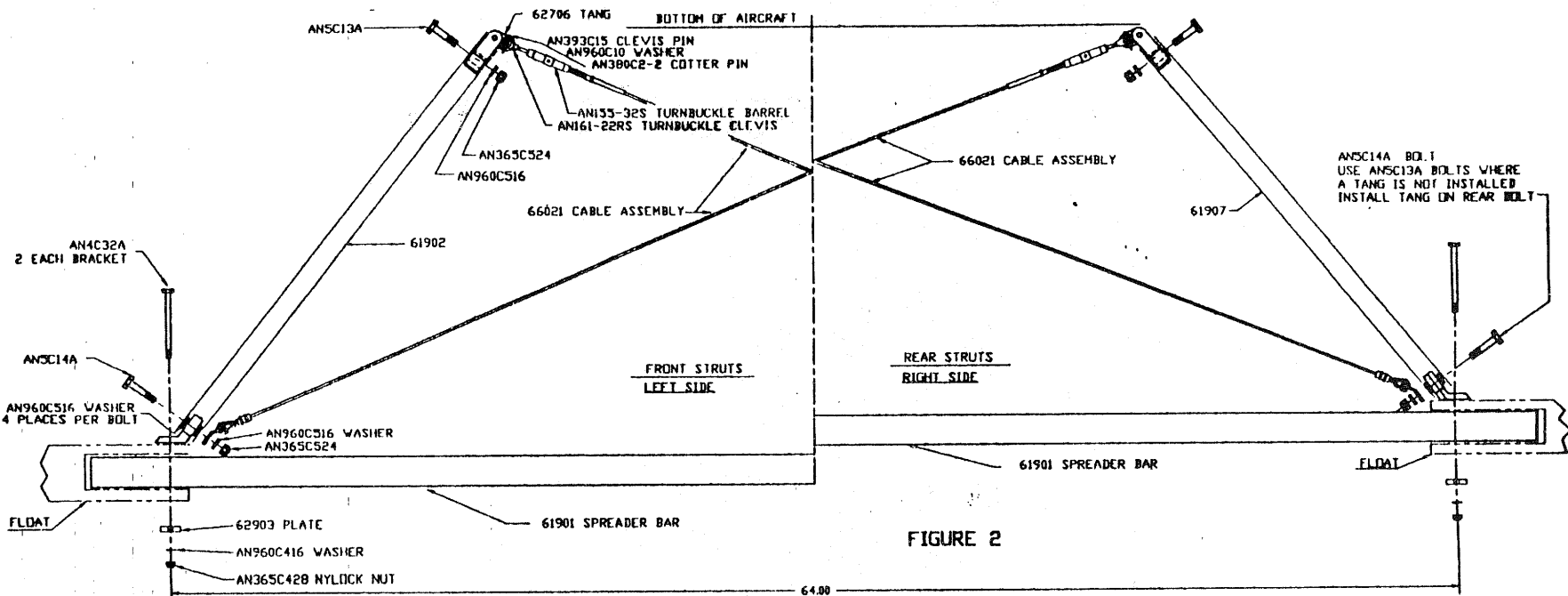


FIGURE 2

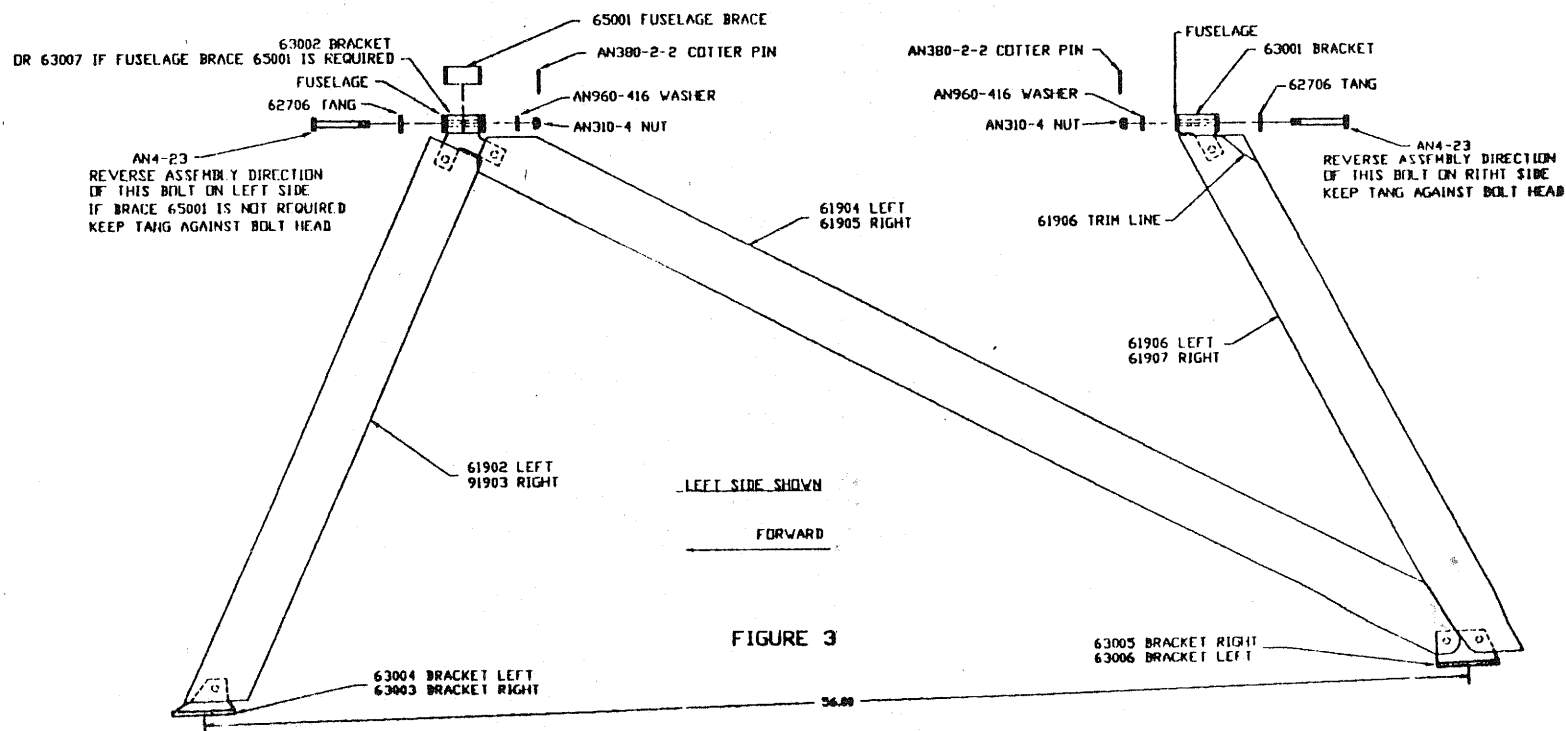


FIGURE 3

STEP (14): Put the top float mount brackets in place. Also pin them in place with AN5 bolts and tape the bolts in place.

STEP (15): Support the aircraft off the floor and remove the main landing gear. You can use a tail stand and jackstands under the front lift strut attach brackets. Or you can replace the four spar attach bolts with eyebolts and support the airplane with a hoist.

STEP (16): With the airplane supported in a level attitude, slide the floats with struts attached into position under the aircraft.

STEP (17): Install the #65001 Undercarriage Fuselage Brace, if needed (see preface). Do not bolt it on now. Tape it to the belly if you have to, to keep it in position temporarily.

STEP (18): Place blocks or shims under the floats and maneuver the top brackets into position in the float attach brackets and rear landing gear brackets.

STEP (19): Insert the AN4-23 Bolts to attach the float brackets to the airplane. Install the #62707 Cable Tangs under the head of each bolt. Insert the two bolts on the right side, and the front bolt on the left side, from the front of the aircraft. The left rear attach bolt must be installed from the rear with the tang installed under the head. Use the castellated nuts you removed with your landing gear and a washer under each nut. Do not use the cotter pins yet as you will soon remove the bolts.

STEP (20): Now remove the blocks so the floats are suspended under the aircraft. Measure from each attach bolt diagonally to the junction of the opposite float and spreader tube. Adjust the float platform side-to-side if necessary so it fits squarely under the fuselage and block and prop the floats securely.

STEP (21): Remove each bolt from the streamlined strut tubes one at a time and replace it with the #60005 Drill Guide. Drill a pilot hole (13/64") in each location, through the opposite wall of each tube.

STEP (22): Once the pilot holes are drilled you need to drill and ream them to fit the AN5 bolts. To avoid elongating the bolt holes in the aluminum brackets, remove all six streamlined tubes before you drill them so you will not have to drill through the bracket or the opposite wall of the tube. Drill all these holes slightly undersize and ream them to a tight fit on the AN5 bolts.

STEP (23): Reassemble the six streamline tubes and the brackets back in place on the floats with the AN960C516 washers as shims on each bottom bolt (see step 13). Use one washer under each nut.

STEP (24): Attach the floats to the aircraft with the fuselage brace in place if required. Attach the #62707 Tangs to the top brackets as shown in Fig. 2. Install the tangs under the head of each bolt for maximum strength. The left rear attach bolt should be inserted from the back to allow room for the rudder control cables. Install the longer AN5C14A Bolts in the rear holes of each lower bracket.

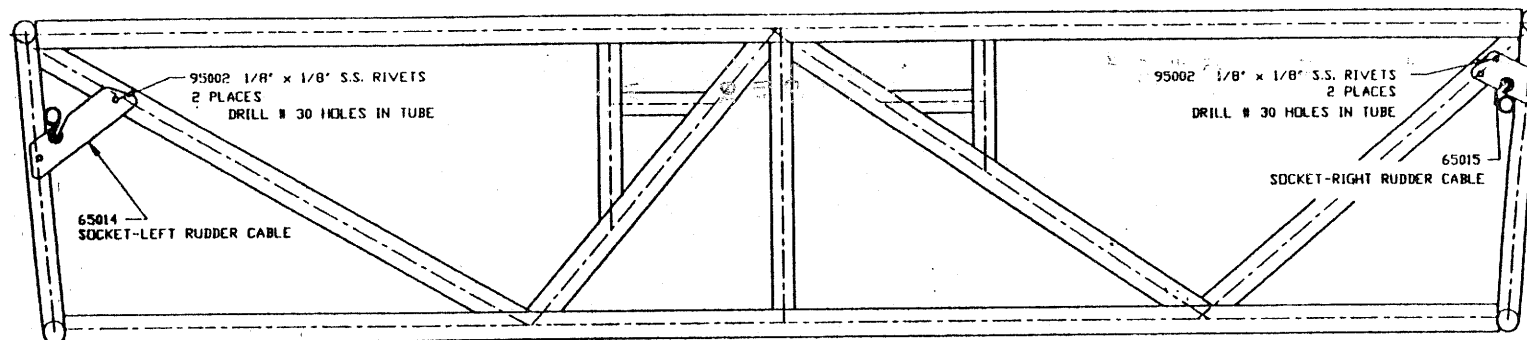


FIGURE 5

LANDING GEAR TRUSS BULKHEAD
FLOAT RUDDER CABLE SOCKET INSTALLATION
VIEW LOOKING FORWARD

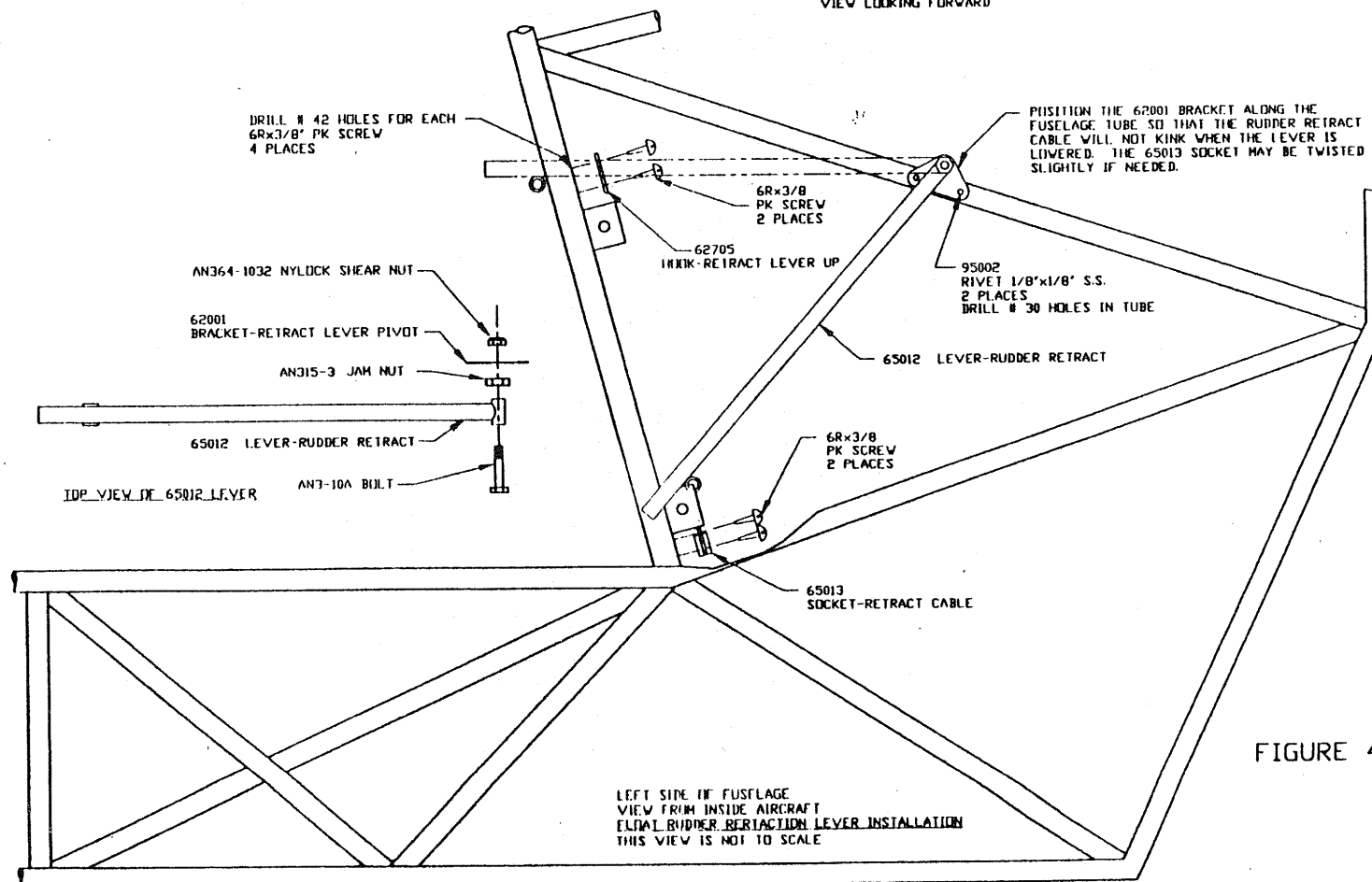


FIGURE 4

LEFT SIDE OF FUSELAGE
VIEW FROM INSIDE AIRCRAFT
FLOAT RUDDER RETRACTION LEVER INSTALLATION
THIS VIEW IS NOT TO SCALE

STEP (25): Attach the #66017 Cable Assemblies as shown in Fig. 3, with the lower tang under the AN9600C516 washer and AN365C524 Nut on the AN5C14A Bolts. Tighten the nuts to about 120 inch pounds.

STEP (26): Measure diagonally from the top bracket to the lower bracket on the opposite side. Adjust the float platform so the distances are equal and block the floats in position.

STEP (27): Adjust the turnbuckles of all four cables so the floats fit squarely on the fuselage and the cables are tight. Secure the turnbuckles with safety wire.

STEP (28): Cut or burn a hole about 1/2" in diameter through the belly fabric just behind the left rear attach bracket. A soldering iron works real well to burn the hole and sear the edges of the fabric.

STEP (29): Thread the bundle of water rudder control cables through the float and up the left rear support tube and through the hole in the belly.

STEP (30): Remove the seat for easier access while you connect the cables and install the brackets. Route the longer rudder cable across the aircraft just above the elevator control tube bellcrank, it will attach to the right side rudder pedal. Work the cables before you attach them to be sure the water rudder will move in unison with the aircraft rudder.

STEP (31): Rivet the water rudder cable sockets to the landing gear bulkhead, #65014 in the upper left corner and #65015 in the upper right corner as shown in the diagram Fig. 4.

STEP (32): Insert the cables into the sockets. The water rudder control cables attach to the rudder pedals with the same bolt alongside the aircraft rudder control cables. Center the water rudder and the aircraft rudder and clamp them in place. You can clamp the aircraft rudder with a simple gust lock made of two 1" x 4" boards about 3 feet long. Pad one side of each board with carpet and tie the ends together and slip the unit over the vertical fin and rudder. With the water rudder in the "up" position, align it with the centerline of the float and tape it securely in place with duct tape.

STEP (33): Bolt the AN111C3 Cable Bushing in place on the rudder pedal with AN3-7 bolts. Slip a 21-1-C Nicopress sleeve and a piece of #64007 Heat Shrink Tubing over each water rudder cable and wrap the cable around the cable bushing. A small amount of slack is permissible in the water rudder cables, but not in the aircraft rudder cables. Hold or tie both outside rudder pedals forward to keep the aircraft rudder cables tight while you swage the water rudder cables with the Nicopress sleeves. Shrink the plastic tubing over the cut end of the cable. Use a cigarette lighter or a small heat gun. It doesn't take much heat.

STEP (34): Fasten the #65013 Retract Cable Socket and the #62705 Control Lever Hook in place on the front doorpost with 2ea 6R x 3/8" PK screws. See Fig. 5. Attach the #62001 Control Lever Bracket with 1/8" rivets. Assemble and mount the #65012 Lever as shown in Fig. 5. With the control lever in the "down" position, the water rudder should just contact the down stop. With the lever in the "up" position, the water rudder should come just up to the stop. The tubular rubber stop on the cockpit end of the retract cable should prevent the lever from hitting the cable bracket.

STEP (35): Secure all the cable sheaths to the aircraft with #96003 Zip Ties so they will not interfere with any control linkage movement. Replace the seat and upholstery.

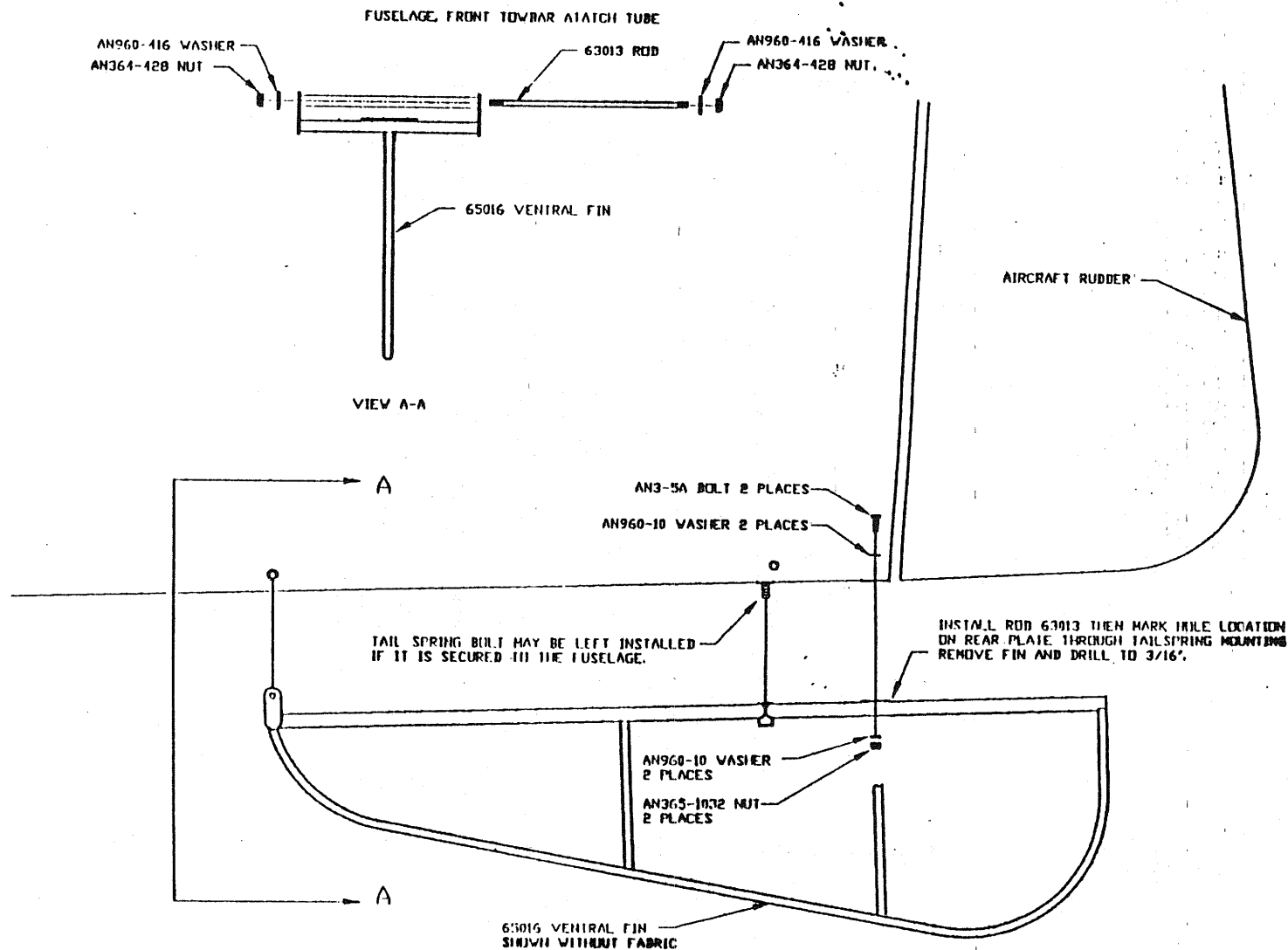


Figure 6

STEP (36): Remove the access covers, and drill out the ends of the bilge ports. Attach a section of tubing to each port that is long enough to reach the bottom of the compartment. There are two ports in the third compartment. Use one to pump out the third compartment and extend the tube from the other through the hole in the bulkhead to pump out the baggage compartment. Seal the hole in the bulkhead with silicone so that water cannot leak from one compartment into the other.

STEP (37): Seal with silicone around the control cables where they pass through the bulkheads in the left float, taking special care to get a good seal at the rear bulkhead.

STEP (38): Use the #64012 Door Seal Stripping around the access doors when you replace them, and around the cargo compartment doors.

STEP (39): Insert a #64013 Plug in each bilge port.

STEP (40): Cover #65016 Ventral Fin with scrap material from the cover and finish kit. Finish and paint it to suit your aircraft. Install drain grommets in the fin or burn a small drain hole in the fabric at the lowest point with your soldering iron.

STEP (41): Remove the tailwheel assembly. Leave the tailspring bolt in place if it is welded or bonded to the fuselage.

STEP (42): Install the Ventral Fin as shown in Fig. 6.

Last Step: Double check everything you have done, and head for the water!

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