



SkyStar Aircraft Corporation

100 N. Kings Road • Nampa, ID 83687
Telephone: (208) 466-1711 • FAX: (208) 466-7194

December 15, 1992

SERVICE BULLETIN #29

SUBJECT: HEADER TANK AND FUEL LINE ROUTING FOLLOW-UP
(Follow-up to Service letter #22) **MANDATORY**

TO: ALL KITFOX BUILDERS WITH HEADER TANKS

FROM: SKYSTAR AIRCRAFT

Service Letter #22 was an advisory to all Kitfox owners who utilize a header tank in conjunction with one or more wing tanks. It dealt with the possibility of fuel not flowing to the header tank from the wing tank if the wing tank fuel pick up is unported, causing air to enter the line. Then fuel flow stoppage to the header tank, can cause the header tank to drain; resulting in fuel starvation to the engine.

This Service Bulletin will deal with specific recommendations and instructions on how to deal with this potential problem. The overall object, is to have the fuel flow from the wing tank to a rear mount header tank and then forward, to the firewall with the greatest amount of droppage as possible (gravity feed with no high point). It has also been determined that deleting the individual fuel valves from each wing tank, helps prevent, air entrapment in the fuel lines.

RECOMMENDATIONS

(1): All front mount header tank systems must be removed and a rear mount header tank must be installed. (SkyStar Aircraft is offering a new, rotationally molded header tank for easier installation of a retrofit rear mounting position, at a special reduced price for this Bulletin.)

(2): Each wing tank fuel valve must be removed from the headrack.

(3): The fuel line routing, should flow directly from the wing tank to a rear mounted header tank. From the header tank, fuel line routing should travel down to the bottom of the door frame, forward (under the door frame) to the firewall, across the firewall to the shut-off valve.

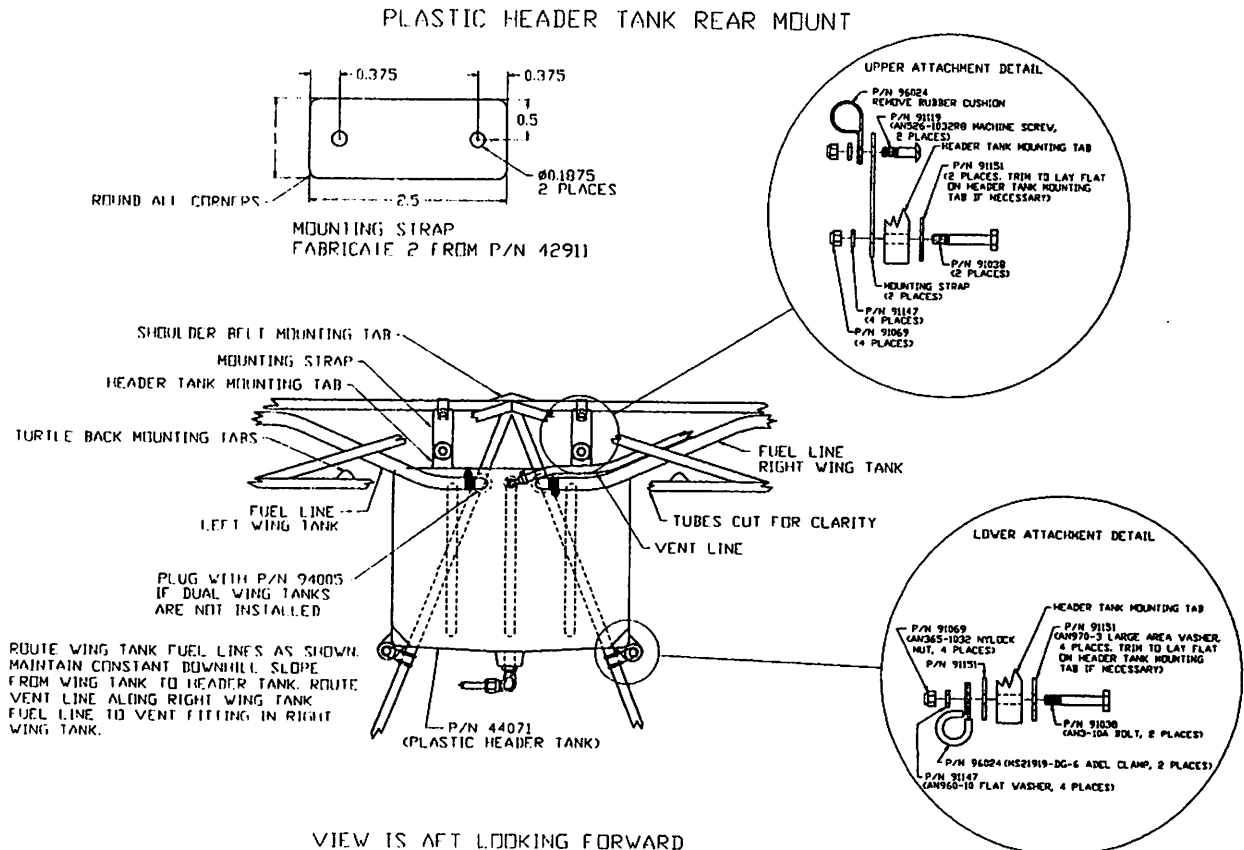
NOTE: For those operating wing tanks in conjunction with the large, front main tank, the wing tank fuel lines should route: forward from the wing tank, above the door frame work, down the diagonal bracing in the windshield area, and plumbed directly into the filler neck of the main tank. The wing tank fuel valve can be

Service Bulletin #29 (con't)

installed in the headrack above the door. Because of the capacity and fuel visibility in the main tank, the question of fuel flow stoppage from the wing tanks is not as critical. With the fuel routed into the filler neck, you will have a constant visual on all fuel.

Enclosed, you will find in-depth instructions for the mounting and retro-fit mounting of the rear mounted header tank. You will note that some of these instructions are in the form of revised manual pages. Those who have the new format construction manual should exchange these pages for those in their manual. The new pages are marked "Revision" 1.

If you have questions regarding this Bulletin or procedures, please feel free to call our Technical Support Department. The Header Tank Replacement Kit, front mount to rear mounted header tank, is part number #69141 and will normally retail for \$119.99. Those ordering in response to this Bulletin will be able to purchase this kit (#69141) for the price of \$76.00. Those aircraft which presently utilize a rear mounted header tank, may use there existing header tank but need to modify the routing, extra #47000 Fuel Line for this modification and the Replacement Kit can be ordered from the Customer Service Department. Phone: (208) 466-1711 Fax: (208) 466-7194



Rear Mount Header Tank (#44071) Installation

Preface

Read each step carefully to determine the specific application to your installation. Some steps may not, in their entirety, deal with your application; but, may contain points that you should be aware of and act upon.

1. Drain all fuel from the wing tanks and header tank. Try to eliminate fumes and "ground" the aircraft.
2. Remove baggage sack and seat back cover.
3. Remove the existing fuel line and #29001 Wing Tank Fuel Shut Off Valve from each wing tank to the front rear mounted header tank. (For existing Rear Mount Modification, skip to Step 9.)
4. Remove the existing aluminum #65032 Front Header Tank from the firewall bulkhead.
5. Attach the #44071 Header Tank (new rotationally molded) to fuselage diagonal brace tubing, above and behind the control system. as per Fig CFO-4b.
6. Install #94002 Elbow Fittings in the #44071 Header Tank inlets and outlet. For single wing tank aircraft use a #94005 Plastic Plug in place of the #94002 Elbow. Use a good grade thread sealant on all threads. Be sure to use a wrench on the hex portion of the brass adapter bushing, to prevent its turning when tightening the Elbow. Orient the barbed, inlet Elbows outboard and outlet Elbow to the left. Also install a #94000 Vent Elbow using above procedure and orient the barbed end to the right. See Fig. CFO-4b.
7. Install the #44000 Rubber Fuel Line Hose between the Wing Tank Outlet and the Header tank. Route the fuel lines to insure a continuous drop, from the Wing Tank to the Header Tank. Secure these lines to the fuselage structure with tie wraps. Make sure the Hose is long enough to allow folding of the wings. Route the Hose under the headrack carry through brace as shown in Fig WO-3-1. (For those with an existing, Aluminum Rear Mount Header Tank, slip the hose over the inlet nipple and secure with a hose clamp.)
8. If not previously accomplished, install a return vent line and barbed fitting in the right wing tank, as per Auxiliary Wing Tank Instruction, dated 24 Sept. 92. Route the #44065 Tygon Vent Line up with the fuel line. Secure with tie wraps. Do not over tighten the tie wraps

to where they pinch off the vent line.

NOTE: All aluminum fuel lines should have a 37° flare, mating up with its respective fitting.

9. Install and route the aluminum fuel line from the bottom outlet of the Header Tank to the #46018 Main Fuel Shut Off Valve. This fuel line routes under the door frame, forward to the firewall, up to and across the horizontal fuselage tubing (above the rudder pedals), and to the Main Valve. Connect the fuel line to the Main Fuel Shut Off Valve and Assembly using a #94010 Nut and a #94011 Sleeve (Retrofit Only). Be sure to keep all lines clear of rudder and brake pedal, secure all fuel lines to the fuselage structure with tie wraps.
10. Recalculate the Empty Weight C.G. using following information:

COMPUTING NEW CG				
ITEM MAKE & MODEL	WEIGHT	X	ARM	= MOMENT
Extreme AFT CG				
Rear Header Added	7.9		45.9	362.61
Added				
Front Header Removed	-7.5		-15.5	116.25
Removed				
NEW TOTALS	= NW			= NM
$\frac{NM}{NW} \text{ _____ } = + \text{ _____ } = \text{New CG}$				

NOTE: Plastic Header Tank Weight 2 lbs. 11 oz.
Plastic Header Tank Capacity 1.1 gals

11. Recalculate the Extreme AFT CG. using the instructions found in the back of your construction Manual, "Paperwork" Section. If the AFT C.G. is now greater than 14.28", it can be moved back within limits by relocating other equipment forward to the firewall area, such as the battery and the strobe power supply.

Front Header/Plastic Header Tank Retrofit Kit
Kit #69141 Parts List

<u>Quan</u>	<u>Part #</u>	<u>Description</u>
1	44071	Plastic Header Tank
1	42911	Mounting Strap Material
1	41008	5/16" Aluminum Fuel Line, 11'
2	44000	5/16 Rubber Fuel Line, 42" ea
<u>FITTINGS</u>		
1	94000	1/8" NPTx1/4" Barbed Elbow, Header Tank Vent
1	94005	1/4" NPT Plastic Plug, Unused Header Tank Fuel Line Port
2	94002	1/4" NPT, 5/16" Barbed Elbow, Header Tank Fuel Lines
3	94011	5/16" Sleeve, Header Tank Fuel Lines
3	94010	5/16" Flare Nut, Header Tank Fuel Lines
1	94019	AN815-5D Union, Fuel Shut Off Valve
<u>CLAMPS</u>		
1	96014	SNP2 Plastic Hose Clamp, Vent line to Header
4	96024	MS21919-DG-6 Adel Clamp, Header Tank to Fuselage
<u>HARDWARE</u>		
4	91038	AN3-10A Bolt, Header Tank Mounting
2	91119	AN526-1032R8 Machine Screw, Header Tank Mounting
6	91069	AN365-1032 Nylock nut, Header Tank Mounting
6	91147	AN960-10 Flat Washer, Header Tank Mounting
6	91151	AN970-3 Large area Washer, Header Tank Mounting