

Service Bulletin No. SB 06-2-23

MANDATORY SERVICE BULLETIN

Date: February 23, 2006

Subject: Safelying of standard and flop-type fuel pickup tubes.

Affected Models: All single and two place RV models with wing fuel tank components shipped prior to February 23, 2006.
All single and two place QuickBuild Kits shipped prior to February 23, 2006.

Time of Compliance: Before further flight.

Reason for Issuance:

Van's Aircraft has received a report from the field that a standard fuel pickup tube allegedly loosened and fell off of the bulkhead fitting inside the fuel tank causing fuel starvation and an off airport landing. The operator of this aircraft reported that, on multiple occasions, fuel would not feed from the affected tank when the level reached approximately one third full. This would be an indication that the associated fuel pickup was loose or was not attached to the bulkhead fitting inside the tank.

In the interest of safety, Van's Aircraft is issuing this bulletin requiring the inspection of all fuel pickup tube assemblies and safelying of the nut attaching them to the bulkhead fitting inside both fuel tanks. If your fuel tanks are unassembled, use this service bulletin as a guideline to safety your fuel pickups during assembly.

Parts and materials necessary for compliance:

Tank sealant PN# MC-240-B1/2 (one per tank)

.032 safety wire

T-407 GASKET (optional, one per tank)

- Estimated cost of parts per aircraft....\$20
- All work can be accomplished without removing the wings or fuel tanks.
- Caution! Eye protection and protective gloves should be worn any time work is done on the fuel system.

Method of Compliance:

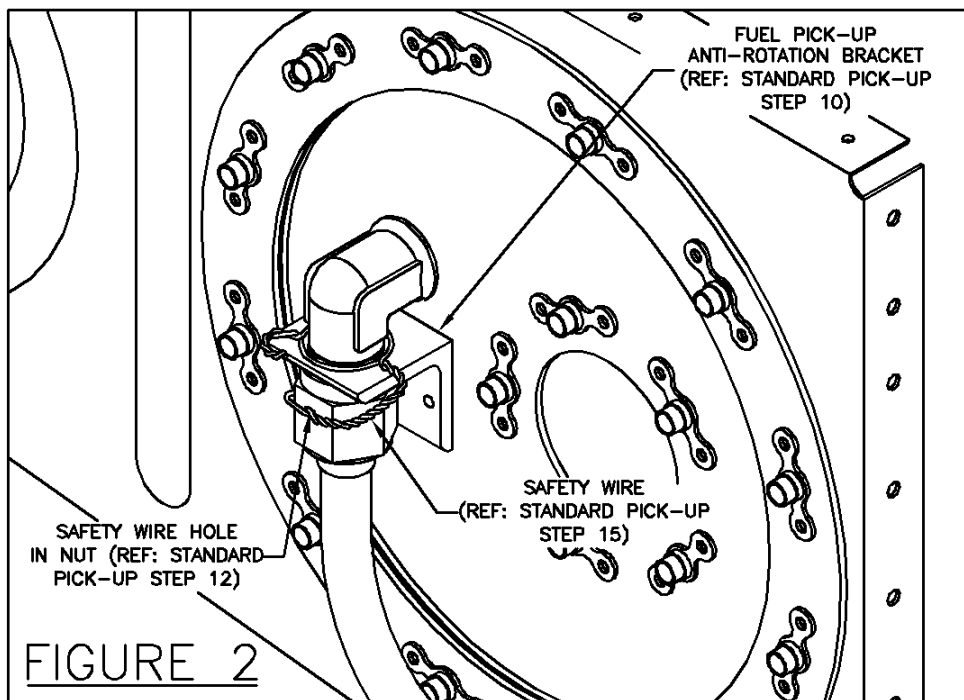
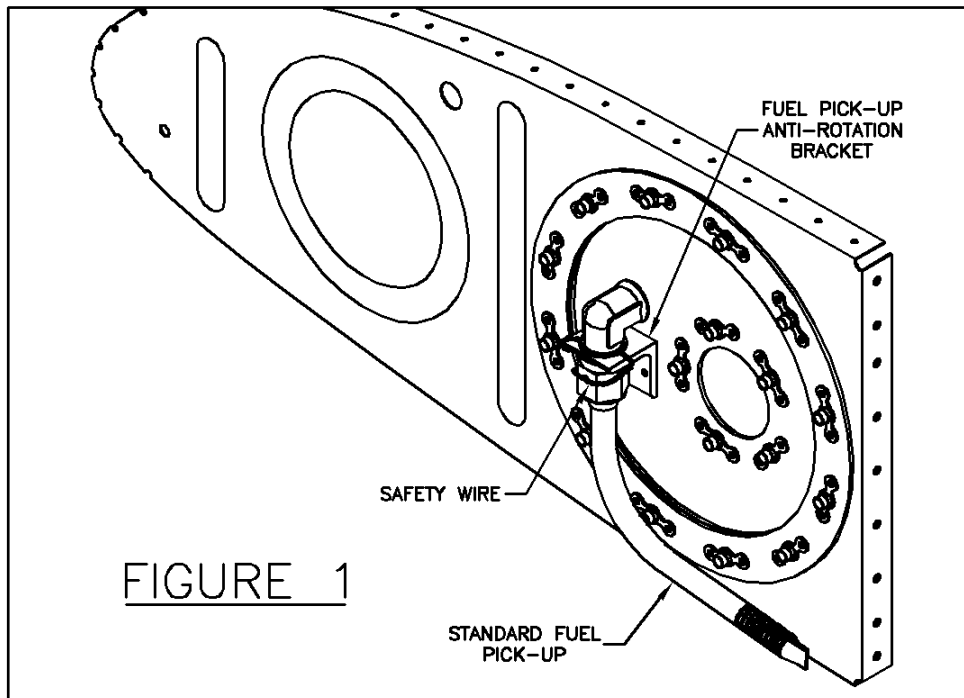
For tanks equipped with **standard type** fuel pickup tubes:

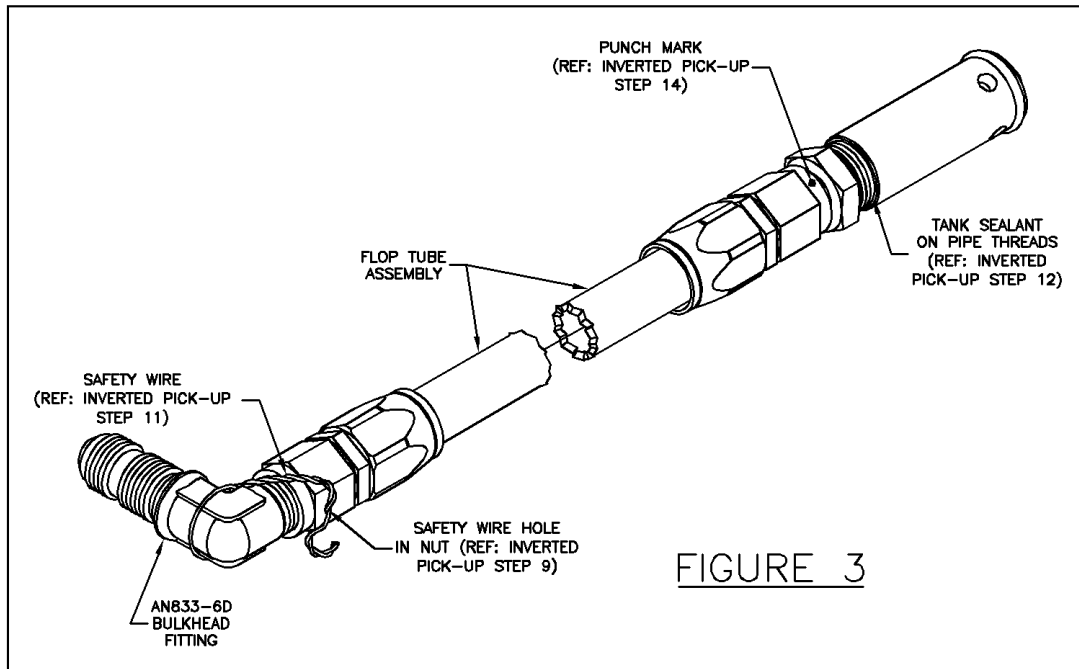
1. Ground the airframe.
2. Drain the fuel tank in a well-ventilated area.
3. Remove the wing root fairing(s).
4. Disconnect the fuel line from the bulkhead fitting on the T-408 cover plate.
5. Disconnect the fuel gauge sender wire from the sender.
6. Remove the five #8 screws attaching the fuel sending unit to the T-408 cover plate.
7. Remove the sending unit.
8. Remove the twelve #8 screws attaching the T-408 cover plate to the inboard fuel tank rib.
9. Remove the T-408 cover plate. The cover plate will have to be simultaneously lifted and rotated to allow the pickup tube to clear the edges of the access hole.
10. Confirm that the Fuel Pickup Anti-rotation Bracket has been installed in accordance with Van's Aircraft Service Letter dated June 12, 2000. (All service letters and bulletins are available on Van's Aircraft web site, www.vansaircraft.com.) If the anti-rotation bracket is not installed, do so at this time using the above service letter as guidance.
11. Remove the fuel pickup tube. Slide the AN818-6D coupling nut back from the AN819-6D sleeve and flared tube end.
12. Drill a hole in the AN818-6D coupling nut as shown in Figure 2 to allow installation of safety wire.
13. Reinstall the pickup tube and verify that it is positioned as shown in Figure 1.
14. Torque the AN818-6D coupling nut on the pickup tube to 110-130 in.lb.
15. Safety wire (.032" wire) the AN818-6D coupling nut to the bulkhead fitting as shown in Figure 2.
16. Before installing the T-408 cover plate, check the security of the AN818-4D coupling nut attaching the vent line to the inboard rib inside the tank. This fitting should have a torque of 50-65 in.lb.
17. Reinstall the T-408 cover plate/pickup tube assembly to the inboard rib using tank sealant to seal the plate and screws to the tank rib. Care should be taken not to damage the pickup tube while installing or removing the cover plate from the fuel tank.
18. Reinstall the fuel sending unit onto the T-408 cover plate.
19. Reattach the fuel line to the bulkhead fitting on the T-408 cover plate and torque the AN818-6D coupling nut to 110-130 in.lb.
20. Reattach the fuel sender wire.
21. Reinstall the fuel tank quick drain.
22. Allow tank sealant to cure for 3-4 days.
23. After tank sealant has cured, refuel the aircraft and check for any fuel leaks.
24. Reinstall the wing root fairing(s).
25. Ground run the aircraft and check for proper operation of the fuel system.
26. Make appropriate airframe logbook entry showing compliance with this service bulletin.

Method of Compliance:

For tanks equipped with **inverted fuel pickups** (flop tube).

1. Ground the airframe.
2. Drain the fuel tank in a well-ventilated area.
3. Remove the wing root fairing.
4. Relocate the brake line if necessary and remove the T-411 access cover plate.
5. Remove the fuel line attached to the bulkhead fitting at the nose of the inboard tank rib.
6. Remove the nut securing the bulkhead fitting to the tank rib. Reach through the access hole and grasp the bulkhead fitting inside the tank. Twist the fitting up and down to break the sealant bond.
7. Remove the flop tube/bulkhead fitting assembly from the fuel tank.
8. Remove the flop tube from the bulkhead fitting.
9. Drill the nut on the flop tube hose end as shown in Figure 3.
10. Clean any tank sealant from the components and re-assemble the floptube to the bulkhead fitting.
11. Safety wire the nut to the bulkhead fitting as shown in Figure 3.
12. Remove the brass weight from the end of the floptube. Being careful not to get the sealant into the fuel line, apply tank sealant to the pipe threads and reinstall the weight to the end of the flop
13. Check the security of the nut attaching the weight to the floptube and safety as described below.
14. Using a small punch and hammer, make a punch mark on the 'weight end' nut of the floptube. Punch the flange of the nut as shown in Figure 3. The punch mark should be deep enough to effectively lock the nut in position.
15. Clean the outside of the bulkhead-fitting hole in the tank rib, removing all the old sealant.
16. Liberally coat the bulkhead fitting with new sealant. Slide the assembly inside the tank and through the hole. Hold the tube in position and coat the outside of the bulkhead nipple with sealant. While holding the flop tube assembly in position inside the tank, tighten the outside nut.
17. Reinstall the fuel line and torque the AN818 nut to 110-130 in.lb.
18. Before installing the T-411 cover plate, check the security of the AN818-4D coupling nut attaching the vent line to the inboard rib inside the tank. This fitting should have a torque of 50-65 in.lb.
19. Reinstall the T-411 cover plate to the inboard rib using tank sealant.
20. Allow tank sealant to cure for 3-4 days.
21. After tank sealant has cured, refuel the aircraft and check for any fuel leaks.
22. Reinstall the wing root fairing(s)
23. Ground run the aircraft and check for proper operation of the fuel system.
24. Make appropriate airframe logbook entry showing compliance with this service bulletin.





FUEL PICK-UP TUBE ANTI-ROTATION BRACKET

APPLICABILITY

All RV aircraft with wing fuel tanks and fixed fuel pick-up tubes should have anti-rotation brackets installed. This does not apply to flexible "flop-tube" pick-up tubes designed for inverted flight.

Wing Tanks, also see **SB 06-2-23**.

MODIFICATION DETAILS

Step 1: Fabricate the fuel pick-up anti-rotation brackets shown in Figure 1.

Step 2: Remove the fuel tank access plate and fuel pick-up assembly.

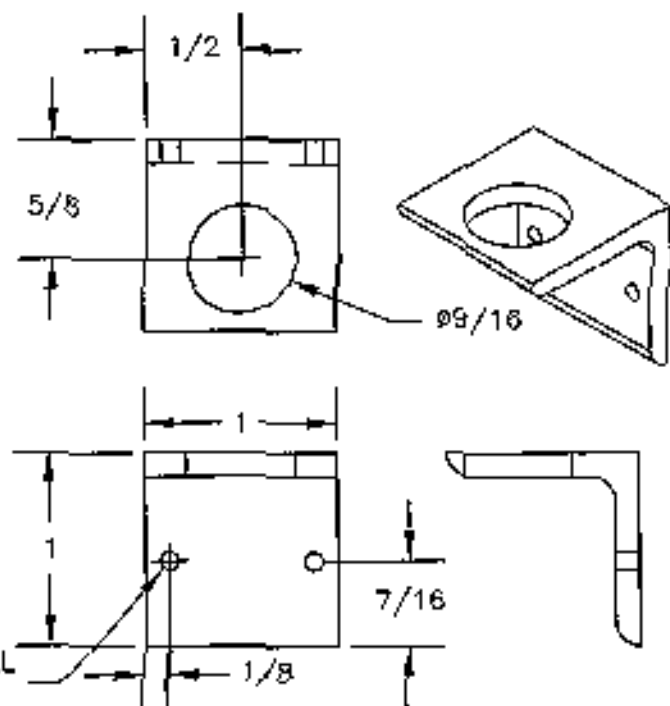
Step 3: Remove the fuel pick-up tube from the bulkhead fitting mounted in the access plate. Install the anti-rotation bracket on the access plate, using the bulkhead fitting and Figures 1 and 2 to locate it correctly. Use the #30 holes in the bracket to match-drill the access plate.

Step 4: Deburr the holes. Apply fuel tank sealant between the bracket and the access plate and rivet them together with two AN470AD4-6 rivets.

Step 5: Re-install the pick-up tube on the bulkhead fitting.

Step 6: Apply fuel tank sealant to the access cover and fuel tank rib and reinstall the access plate/fuel pick-up assembly.

FIGURE 1



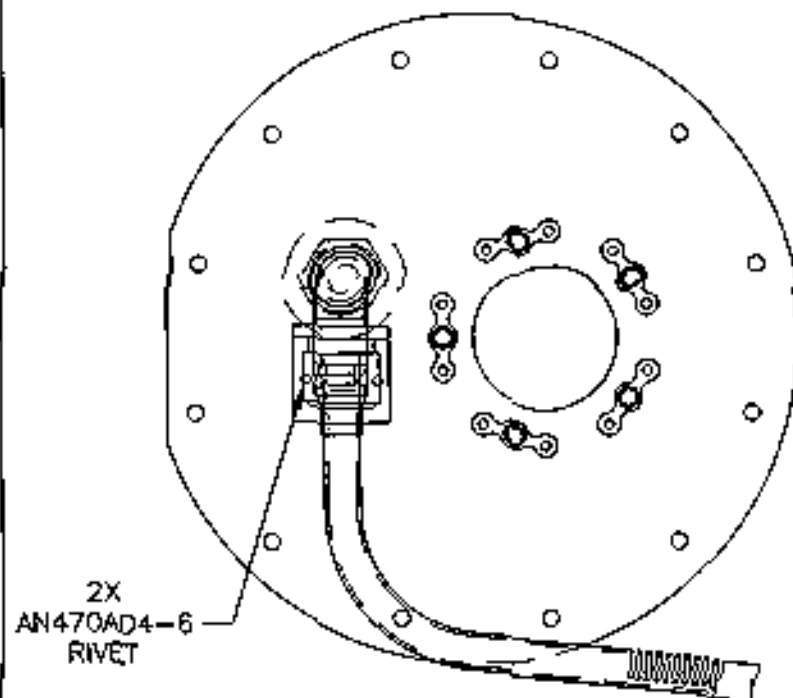
FUEL PICK-UP ANTI-ROTATION BRACKET

FULL SCALE

1 REQ'D PER TANK

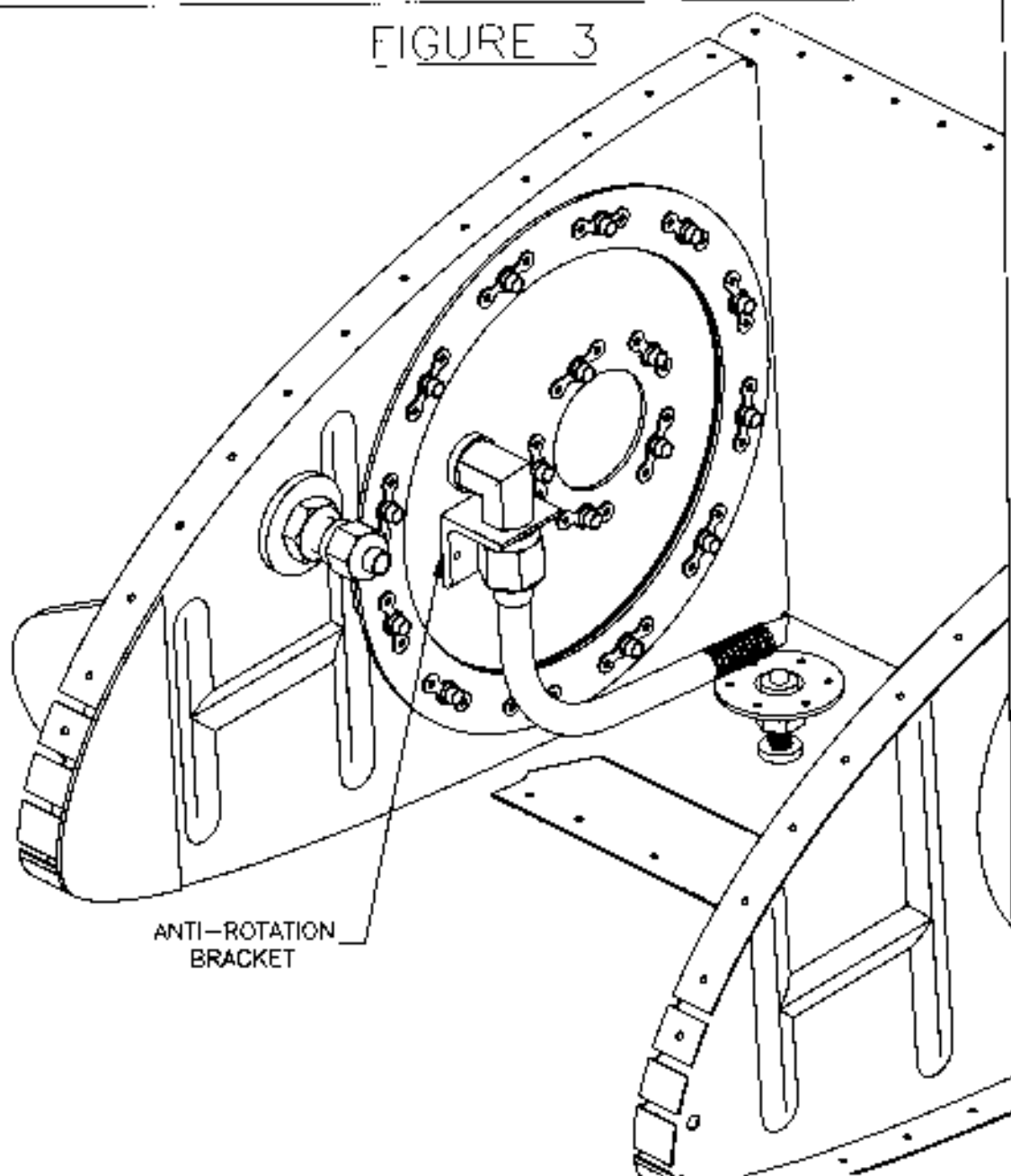
MAKE FROM: A46-125X1X1

FIGURE 2



ANTI-ROTATION BRACKET INSTALLATION DETAIL VIEW LOOKING NORMAL TO FUEL TANK ACCESS PLATE

FIGURE 3



ANTI-ROTATION
BRACKET

ANTI-ROTATION BRACKET INSTALLATION DETAIL -
ISOMETRIC VIEW OF LEFT FUEL TANK
(VENT LINE AND SKIN NOT SHOWN FOR
CLARITY)