

# TOTAL PERFORMANCE VAN'S AIRCRAFT

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## SERVICE BULLETIN 13-12-19

**Date Released:** December 19<sup>th</sup>, 2013

**Date Effective:** December 19<sup>th</sup>, 2013

**Subject:** Fuel Tank Attach Modification

**Affected Models:** All RV-12 Fuel Tanks shipped prior to December 19, 2013  
All SLSA RV-12 serial numbers 12019 and below.

**Required Action:** Install T-01220 Doublers and Upgrade T-1205 attach hardware.

**Time of Compliance:** At or before next annual condition inspection.

**Labor Required / SLSA Warranty Allowance:** 5.5 Hours / \$440 US

### Synopsis:

Although the RV-12 tank meets or exceeds all testing required by ASTM-2254 a recent accident in which the main landing gear failed aft causing rotation of the center section resulted in a breach of the fuel tank. Adding more robust hardware in conjunction with doublers inside the tank will help the frangible head of BOLT-00002 to fail before significant distortion of the tank and make the tank more resistant to a breach.

### Method of Compliance:

**Note:** Van's Aircraft will supply, at no charge, the necessary parts and hardware to comply with this Service Bulletin. (A small amount of tank sealant will be required but will not be supplied due it's limited shelf life.) **Owners do not need to contact Van's to obtain the parts. Van's will ship the parts to all known owners of RV-12 Fuel Tanks. Shipments will begin the last week in December, 2013 and should be completed within two weeks.**

Step 1: Go to the RV-12 Service Information and Revisions web page a [www.vansaircraft.com](http://www.vansaircraft.com). Download the latest copy of the Maintenance Manual and KAI Section 37.

Step 2: Remove the Fuel Tank Assembly from the aircraft using instructions in the Maintenance Manual.

Discard the old BOLT-00002 bolts (Rev 1 with head drilled to ~ .150 depth)

Step 3: Remove the T-1209 Sender Plate from the Fuel Tank Assembly. See KAI Section 37. Clean the cured sealant from the mating surfaces of the sender plate and the T-1202 Fwd Tank Bulkhead.

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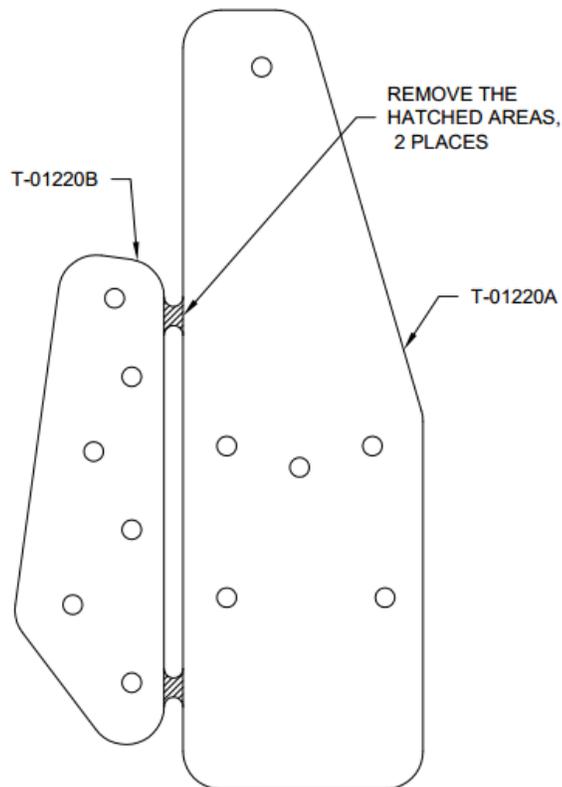
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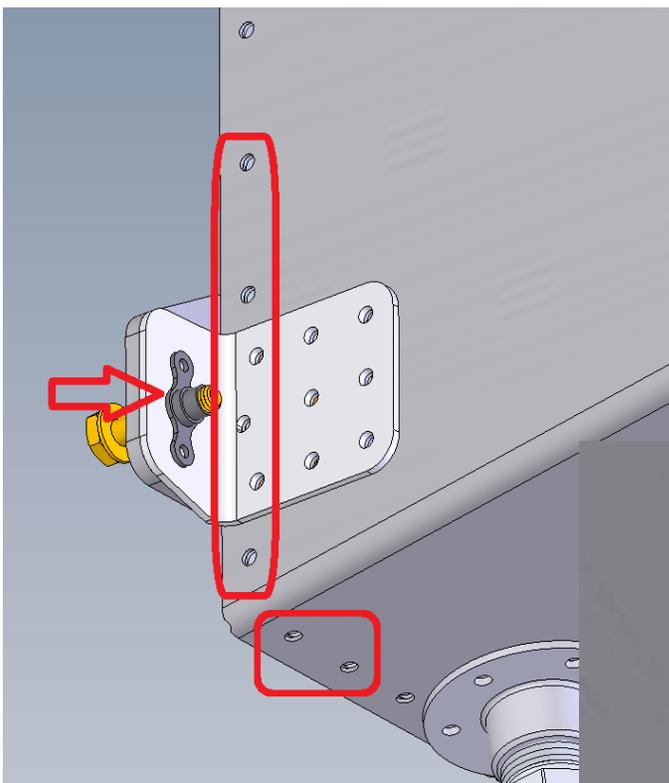
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**Step 4:** Separate T-01220 Doubler into A & B parts as shown in Figure 1.

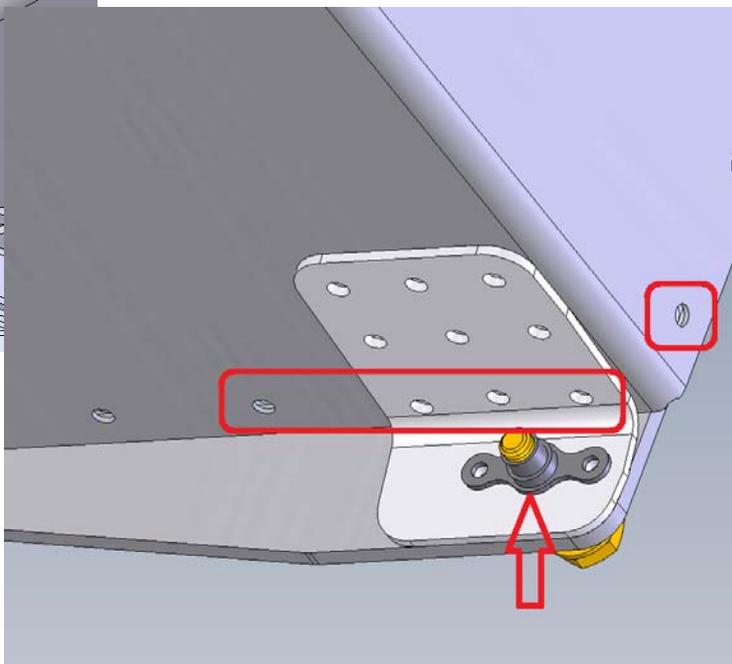
**Step 5:** Remove the two K-1000-3 nutplates attached to the T-1205 Fwd Tank Bracket and save them for reinstallation later (Reuse of the old nutplates is beneficial. Since they have already had a bolt inserted, the prevailing torque of the locking feature will be lower which reduces the risk of over torquing and fracturing the frangible bolt). Removal of the rivets common to the doublers and other rivets depicted will greatly help with the removal process of the existing sealant. See Figures 2 and 3. See KAI Chapter 5 for further information on removing rivets.



**FIGURE 1:** SEPARATING THE DOUBLERS



**FIGURE 2:** REMOVING INBOARD RIVETS AND NUTPLATES



**FIGURE 3:** REMOVING OUTBOARD RIVETS AND NUTPLATES

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Step 6: Disconnect the fuel return line from the fitting on the bottom inside corner of the tank and gently bend it out of the way to improve access to the lower fwd corner of the tank.

Step 7: Remove sealant within the contact area of each doubler. A hard plastic scraper about 1/2" wide is useful for sealant removal. See Figure 4. A Polysulfide Stripper (such as PolyGone 300AG available from Van's Aircraft) can be used to soften the sealant for easier removal. If used, be sure to remove all sealant softened by the stripper.



**FIGURE 4: SEALANT  
REMOVAL TOOL**

Step 8: Test fit the doublers inside the tank. Radius the edges of the doublers to fit against the bend radii in the T-1202 Fwd Tank Bulkhead. See Figure 5.

Step 9: Cleco the T-01220A Doubler to the front face of the T-1205 Fwd Tank Bracket.

Match-Drill #30 the new hole in the doubler common to the T-1205 Fwd Tank Bracket and T-1202 Fwd Tank Bulkhead.

Insert 1/8 thick spacer between the doubler and the tank bulkhead near the upper hole in the doubler. Match-Drill #30 the bulkhead using the upper hole in the doubler as a guide after carefully checking (or use a guide) that the drill bit is perpendicular to the surface.

Remove the doubler then cleco the doubler to the inside of the tank (as-installed position).

Step 10: Final-Drill #19 the three inboard holes that will be filled with AN525-832R10 or AN509-8R10 screws (Use a closely placed cleco as a visual aid for drilling perpendicular to the T-1005).

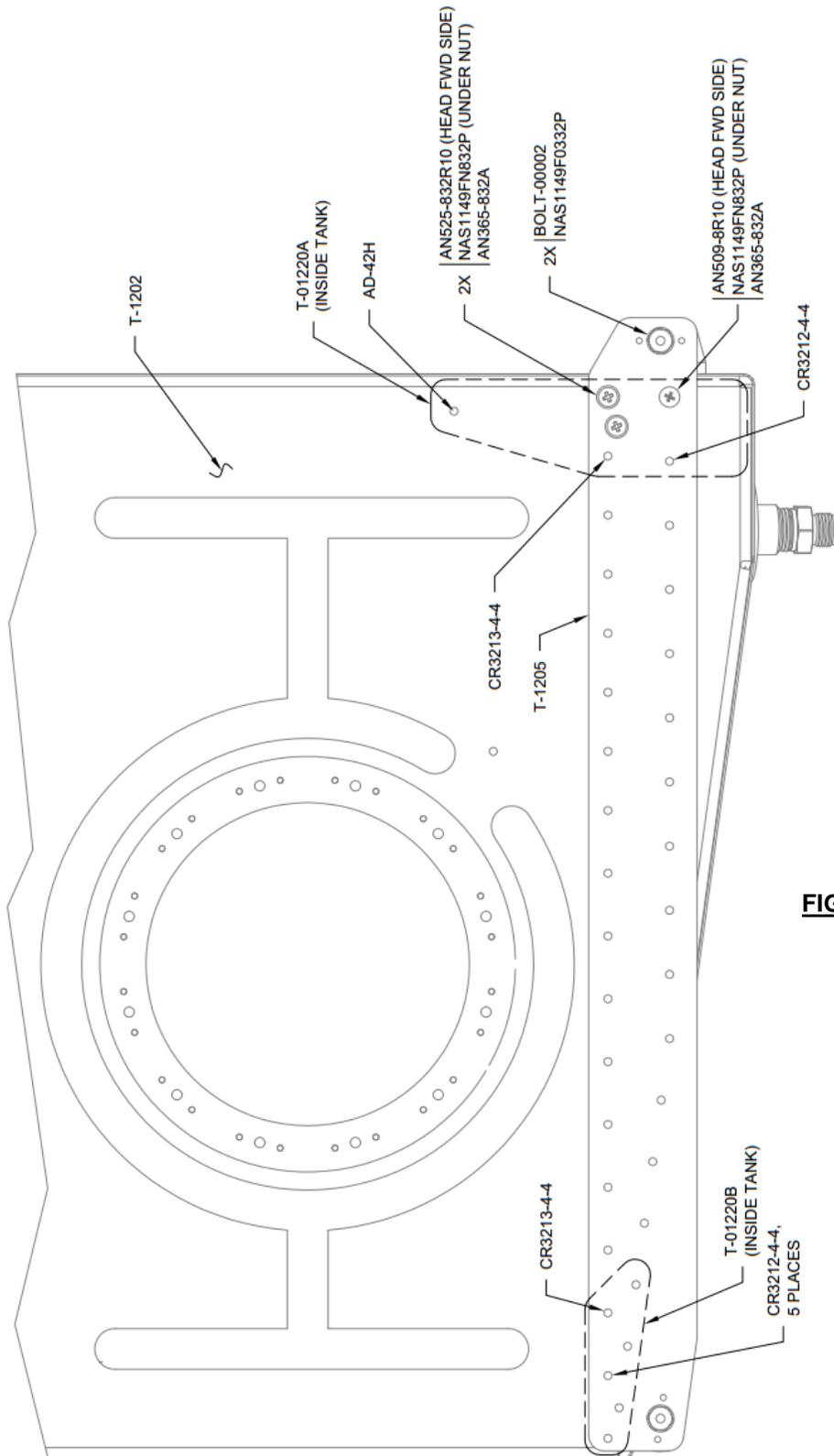
Step 11: Machine countersink the lower screw hole just drilled in the T-1205 Fwd Tank Bracket for the head of the AN509-8R10 screw.

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**FIGURE 5: INSTALLING THE DOUBLERS**

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Step 12: Deburr the tank and doublers as required.

Remove the doublers from the tank. Remove any rags used to collect debris from inside the tank. Clean any remaining debris from inside the tank.

**NOTE: Read Section 5S for more information on fuel tank sealant. The tank is assembled much like any other structure with two important differences. First apply sealant between scuffed and cleaned parts that comprise a seam through which fuel could conceivably leak. This includes every fastener. Spin fastener shanks in sealant to apply a thin even coating before they are inserted. Read through this section and scuff mating parts before beginning assembly. Second, set rivets slowly using a hand blind rivet puller, allowing the tank sealant to displace before the rivet is completely set.**

Step 13: Add a very thin layer of sealant covering the face of the doublers that will lay against the T-1202 Fwd Tank Bulkhead. Using the hardware callouts shown in Figure 5 rivet the doublers to the tank structure using tank sealant. Refer to Section 5 for installation of Cherry Max rivets.

Step 14: Install the screws common to the inboard doubler as shown in Figure 5.

Step 15: Install all remaining rivets that were removed to simplify sealant removal.

Step 16: Apply sealant on the interior to cover all newly installed nuts and rivets. Apply a generous fillet of sealant in the fwd lower tank corners.

Step 17: Reconnect the fuel return line to the fitting on the bottom of the tank.

Step 18: Reinstall the previously removed nutplates.

**NOTE: Double check that the fuel passages in the T-1208 Baffle are open and clear of any sealant! Double check behind the bulkhead for any debris that may clog these holes. See KAI Section 37 instructions for T-1208 installation.**

Step 19: Re-install the T-1209 Sender Plate with fuel tank sealant using the hardware called out in KAI Section 37. Use two new lock washers supplied with the hardware for this service bulletin to insure proper grounding of the sender plate to the airframe.

Use a 1/16 inch thick layer of sealant between the sender plate and the T-1202 Fwd Tank Bulkhead and in place of the IE F-385 Gasket. Tighten screws just enough to cause sealant to bulge evenly from underneath the perimeter of the sender plate.

Step 20: Re-install the Fuel Tank Assembly as shown in KAI Section 37 and the Maintenance Manual. Use new BOLT-00002 bolts (Rev 2 with a drilled head depth of ~.370)

**CAUTION: BOLT-00002 torque should be standard AN value 20-25inlb, plus the prevailing nutplate torque (usually <10inlb). Torque in excess of this may shear the frangible head.**

Re-install the Fuel Sender Wire as shown at the end of KAI Section 37.

Step 21: Make an entry in the aircraft logbook indicating that this Safety Bulletin has been complied with.

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**CAUTION: The tank sealant must be fully cured before refueling the aircraft for return to service.**

**PART NUMBER**

1 AD-42H  
7 AD-41H  
3 AN365-832A  
4 AN426AD3-6  
1 AN509-8R10  
2 AN525-832R10  
2 BOLT-00002 (Rev 2 drill depth for hole in bolt head of .370)  
6 CR3212-4-4  
2 CR3213-4-4  
2 MS35333-38  
6 MSP-42  
3 NAS1149FN832P  
1 T-01220