

# TOTAL PERFORMANCE VAN'S AIRCRAFT

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## SERVICE BULLETIN 14-08-29

**Date Released:** August 29, 2014  
**Date Effective:** August 29, 2014  
**Subject:** RV-10 engine mount elastomer plate cracking.  
**Affected Models:** All RV-10 aircraft.

### Required Action:

Remove the engine cowling. Remove the WD-1015 Collar Assembly from the WD-1016 Nose Gear Link Assy. Remove the weight from the nose wheel with the use of a ballasted tail stand, etc. Remove the bolt at the lower end of the nose gear link assembly. Remove the nose gear link assembly and J-11968-14 Elastomers.

Inspect the WD-1001E Elastomer Plate on the engine mount for cracks (use of a die penetrant inspection kit may be useful in determining the presence of cracks). Based on inspection results, complete the modifications required by this document.

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

### Synopsis:

Cracks have been discovered in the elastomer plate of some RV-10 engine mounts. To date, all incidents of cracking have occurred on aircraft operating on rough fields.

*Engine mounts shipped after August 13, 2014 are not affected by this service bulletin.*

### Method of Compliance:

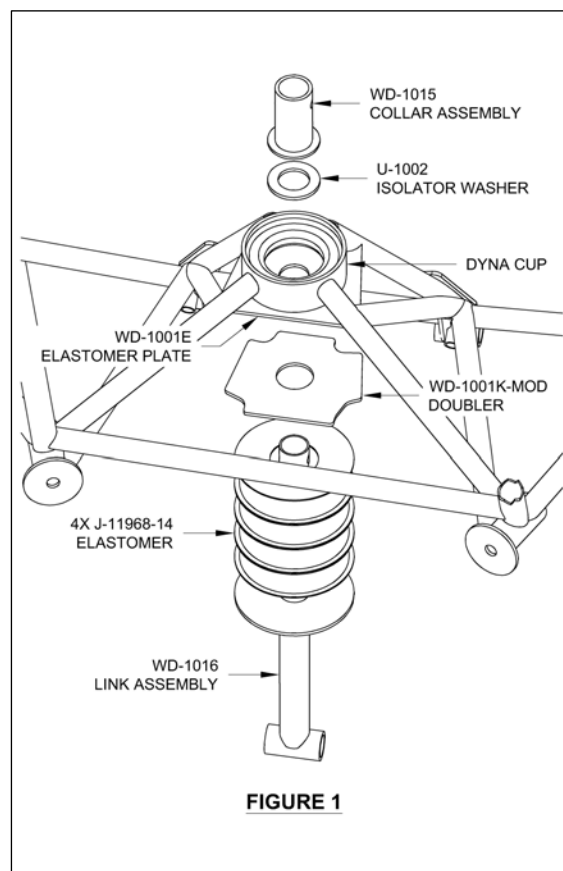
#### If NO cracks are discovered:

**Step 1:** Obtain a WD-1001K-MOD Doubler from Van's Aircraft. See Figure 1.

**Step 2:** Place the WD-1001K-MOD Doubler on the bottom face of the WD-1001E Elastomer Plate with the four edges aligned. See Figure 1. The doubler is not symmetrical and might have to be flipped over to be correctly positioned. When it is correctly positioned, all four edges will be aligned and the center hole will be concentric with the hole in the elastomer plate.

**Step 3:** If there is any interference with the corner welds and the doubler that prevents the doubler edges from contacting the elastomer plate, grind or file the doubler to remove the interference.

**Step 4:** Paint the doubler and allow it to dry.



**Step 5:** Reinstall the WD-1016 Link Assembly with the doubler inserted between the elastomers and the elastomer plate.

**Step 6:** Reinstall the WD-1015 Collar Assembly with U-1002 Isolator Washers. With the nose wheel clear of the ground, there must be no gap between the elastomers, doubler, or elastomer plate. If more than three washers are necessary to prevent a gap from forming, the elastomers must be replaced.

**Step 7:** Make a logbook entry showing compliance with this notification.

If cracks ARE discovered:

**Step 1:** Obtain a WD-1001H Ring Brace and WD-1001M-MOD Doubler from Van's Aircraft. See Figure 2.

**Step 2:** Remove the engine and nose gear leg from the engine mount, then remove the engine mount from the firewall.

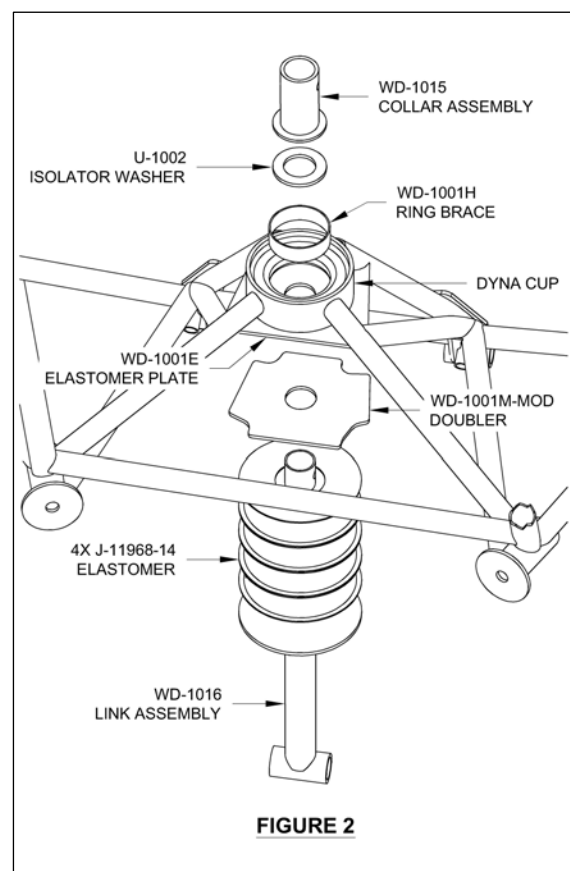
Note: If precision welding is possible at the location where the work is being performed, the engine can be left attached to the engine mount to save some removal and reinstallation time. Just detach the nose gear leg from the engine mount, and the engine mount from the firewall.

**Step 3:** Remove any loose pieces from the WD-1001E Elastomer Plate if it is severely cracked.

**Step 4:** Use a 2 inch diameter hole saw to enlarge the central hole in the WD-1001E Elastomer Plate. Apply lubricant to the saw, then insert the saw through the hole in the dyna cup and saw through the elastomer plate using low RPM. The inside diameter of the dyna cup will keep the saw centered on the elastomer plate. Apply lubricant during the sawing operation as necessary.

**Step 5:** Ensure that the WD-1001H Ring Brace will fit easily into the new hole in the elastomer plate. The ring brace does not need to contact the edges of the hole, in fact, a very loose fit is preferred. Enlarge the hole with a file or grinder as necessary.

**Step 6:** Place the WD-1001M-MOD Doubler on the bottom face of the WD-1001E Elastomer Plate with the four edges aligned. The doubler is not symmetrical and might have to be flipped over to be correctly positioned. When it is correctly positioned, all four edges will be aligned and the center hole will be concentric with the hole in the elastomer plate.



**Step 7:** If there is any interference with the corner welds and the doubler that prevents the edges of the doubler from contacting the elastomer plate, grind or file the doubler to remove the interference.

**Step 8:** From below, insert the ring brace through the elastomer plate and into the dyna cup. Place the doubler in position and ensure that the ring brace fits flush against the doubler without touching the edge of the hole in the elastomer plate. Enlarge the hole if necessary.

**Step 9:** Remove the powder coating from the areas on the engine mount that will be welded (bottom face and edges of the elastomer plate, and the inside diameter of the dyna cup). See Figure 3. Klean-Strip® Aircraft® Paint Remover has been used successfully with approximately twenty minutes of constant, wet contact.

**Step 10:** Insert the ring brace into the dyna cup from below, and clamp the doubler in place.

**Step 11:** To prevent pressure build-up during welding, drill a 1/16 inch diameter hole in the side of the dyna cup centered between the top and bottom edges as shown in Figure 3.

**Step 12:** Using ER 70 S-2 welding rod, tack the ring brace to the dyna cup and doubler, and tack the doubler in place on the elastomer plate.

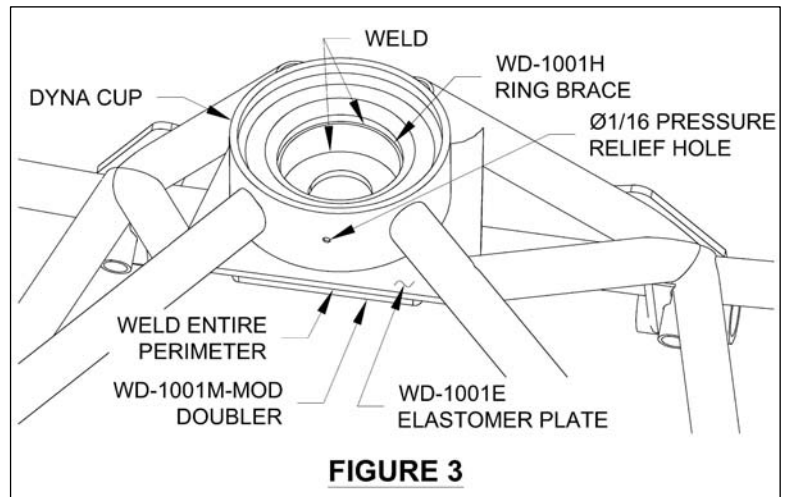
**Step 13:** Weld the bottom edge of the ring brace to the doubler, and the top edge of the ring brace to the inside diameter of the dyna cup. See Figure 3.

**Step 14:** Weld the doubler to the elastomer plate and engine mount tubes along the entire outside perimeter of the doubler. See Figure 3.

**Step 15:** Paint the engine mount as necessary.

**Step 16:** Reinstall the engine mount.

**Step 17:** Reinstall the nose landing gear, WD-1016 Link Assembly, and elastomers.



**Step 18:** Apply a small amount of weight to the nose wheel ( $\approx 20$  lbs), then reinstall the WD-1015 Collar Assembly with U-1002 Isolator Washers. If the bottom most isolator washer interferes with the weld at the bottom of the ring brace, chamfer the bottom edge of the isolator washer. With the nose wheel clear of the ground, there must be no gap between the elastomers and WD-1001M-MOD Doubler. Remove any gap with the installation of additional isolator washers. No more than three isolator washers are to be installed; if more are necessary, the elastomers must be replaced.

**Step 19:** Reinstall the engine and cowling.

**Step 20:** Make a logbook entry showing compliance with this notification.