

13.3.1 Ram Air Duct Assembly & Installation – Standard Jabiru airframe tractor installation

- Remove the top two rocker cover capscrew from all cylinder heads. Place the each ram-air duct on the engine.
 - Push the ducts forward on the engine until there is a gap approximately 8-10mm between the rear cylinder barrel and the edge of the duct.
 - Standard tractor ducts are placed with the duct side wall sitting between the second and third fins from the base of the cylinder barrel.
 - Other ducts vary and may be have the side wall placed one or two fins further out. Check where the outside wall lies. It should sit flush (or close to flush) against the rocker cover face.



Figure 44 - Position ram-air duct on engine

- With the ram-air duct in place mark the position of all rocker cover capscrew hole (four marks for a 2200, 6 marks for a 3300)
 - Remove the duct so as to avoid damage to the engine when drilling and sanding.
 - Drill the two outside holes to 1/4inch (it doesn't matter if the holes have to be elongated slightly to get them to align with the engine).
 - For the other holes, sand a circular relief in the duct using round tube wrapped in coarse emery cloth or garnet paper. The reliefs should be 12-14mm typically)

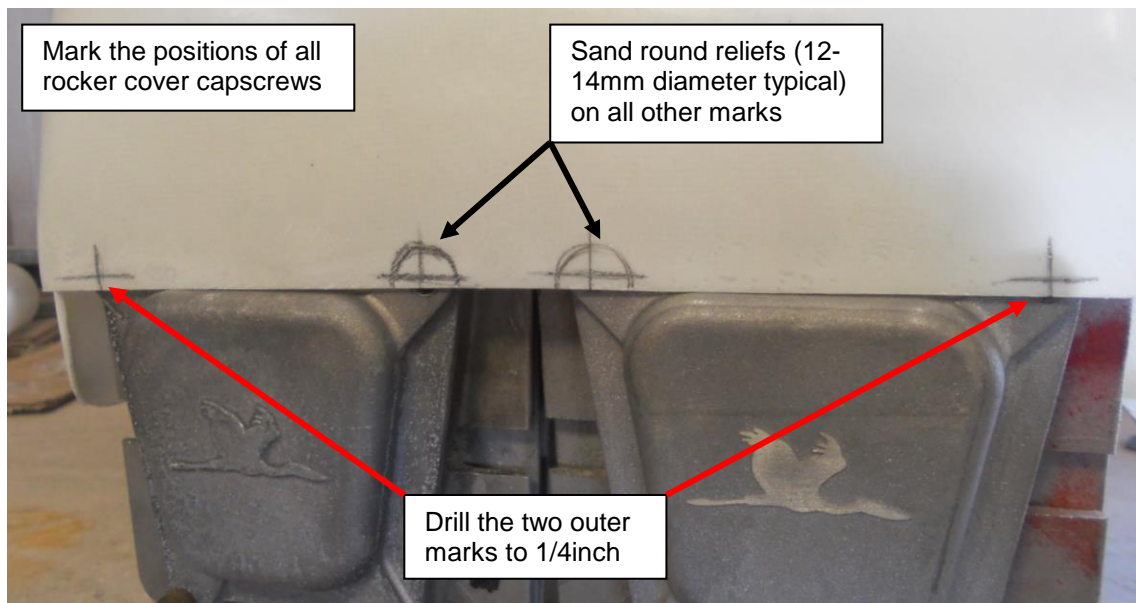


Figure 45 - Mark, Drill and sand holes and reliefs

- Place the ducts back on the engine with the previously drilled 1/4inch holes aligned with the rocker cover holes.
 - Place stainless steel tags over the holes and install a capscrew to retain the tag over the previously drilled 1/4inch holes.
 - With the tag pointed upwards mark and drill through the two smaller holes in the stainless steel tag with a 1/8inch drill.
 - Remove the duct from the engine. Permanently fix the tags in place using 1/8inch rivets. Install rivets from the outside and use a steel backing washer on the inside.
 - The duct should now be installed with capscrews to hold it in the correct position for all other fitting operations.

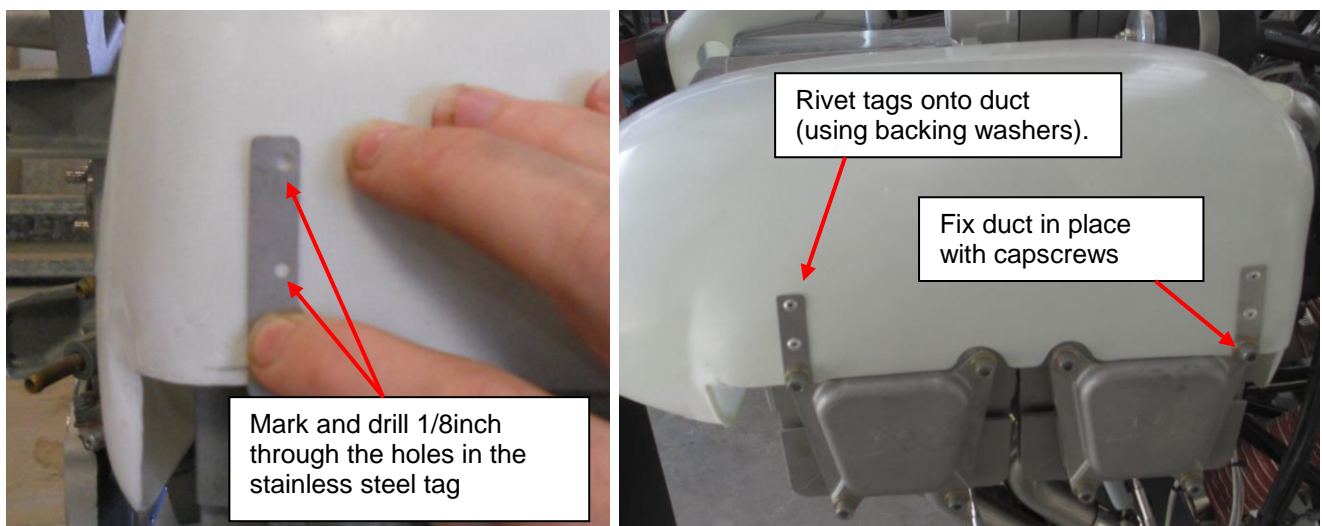


Figure 46 - Fitting stainless steel tags

- Install the small tension spring on the tag at the front of the engine.
 - Pull the spring up to the duct and mark the position where the duct is closest to install corresponding tag.
 - Drill through the marked position (1/8inch) and install the small angled tag with a 1/8inch rivet from the outside with a steel washer backing on the inside.

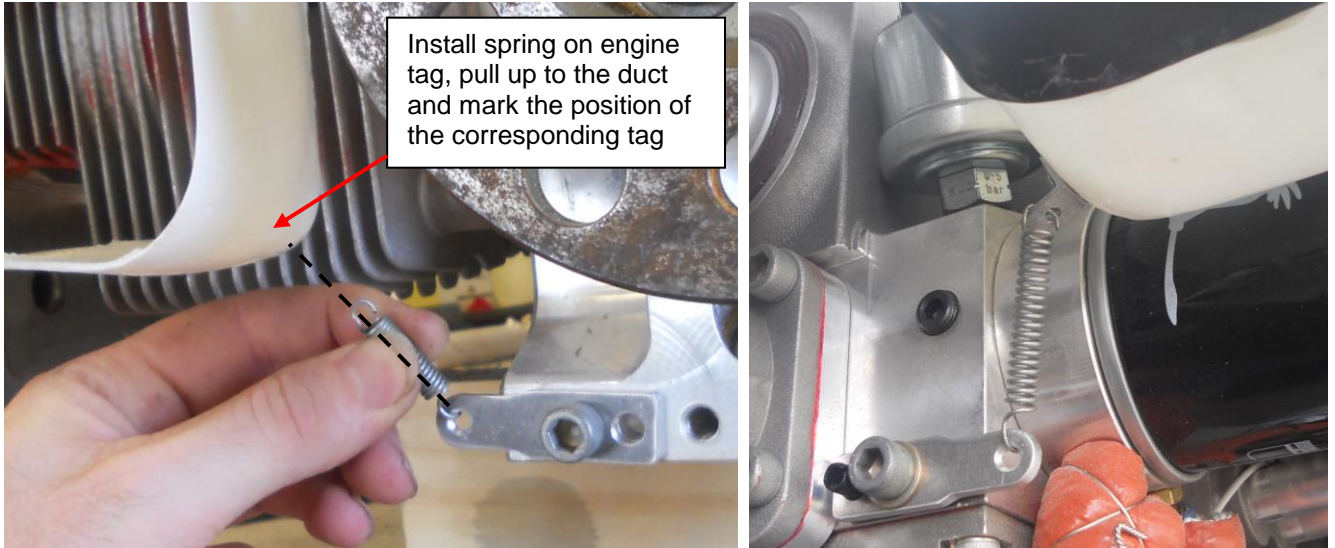


Figure 47 - Front tag installation

- Place bent aluminium tube on ducts to determine the position for these tube to direct air onto each ignition coil (the left duct does the left coil and right does right).
 - Mark the position of the holes, drill out holes to size sufficient to accommodate tubes (it is best if the ducts are removed from the engine for drilling).
 - Reinstall ducts on engine and install cooling tubes to point at the coils. Bond the tubes in place with 5 minute epoxy (the bonding surface of the tube should first be roughened with a coarse sanding disk to aid bond adhesion).

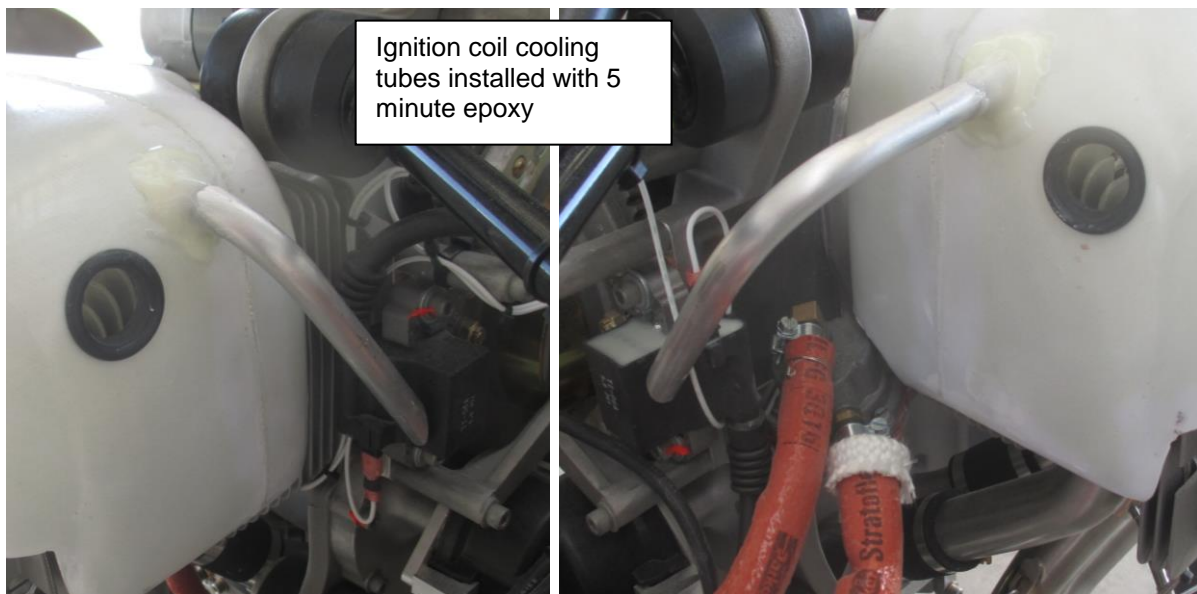


Figure 48 - Ignition coil cooling tubes

- With the ducts installed on the engine the front air dams are sized, trimmed and bonded into the ram-air cooling ducts.
 - Place each dam in the front of the ducts so the upper lip is in contact with the cylinder and the bottom of the dam in contact with a duct itself
 - Mark the outline of the duct to trim away, then using sharp snips, trim the excess material away, refit and check, retiming or sanding as necessary.
 - Mix some 5 minute epoxy with flock, position the dam in the duct and apply a bead of epoxy around the join line.
 - When fitting the left side duct (on a tractor installation) note the cut-out needed to clear the oil filter and trim the dam accordingly.

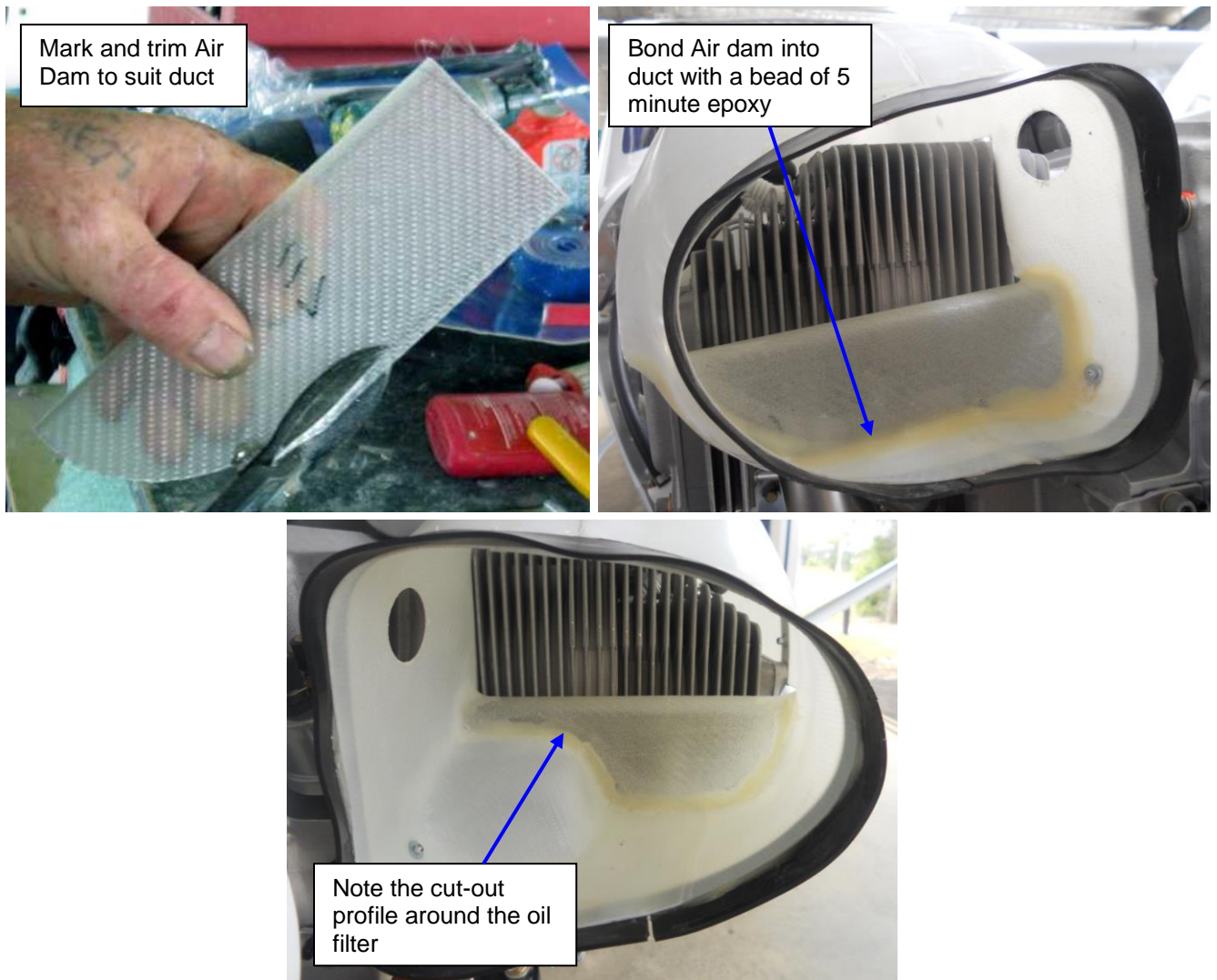


Figure 49. Air Dam Installation

- Finally bond the black insertion rubber strip around the perimeter of the ram-air duct inlet
 - The rubber strip should protrude 10-15mm past the edge of the duct
 - Use 5-minute epoxy and flock to bond the rubber to the duct
 - Before bonding the contact area of the rubber strip must be roughened with a coarse sanding wheel to aid bond adhesion.
 - The split in the rubber strip should be placed at the bottom of the duct.

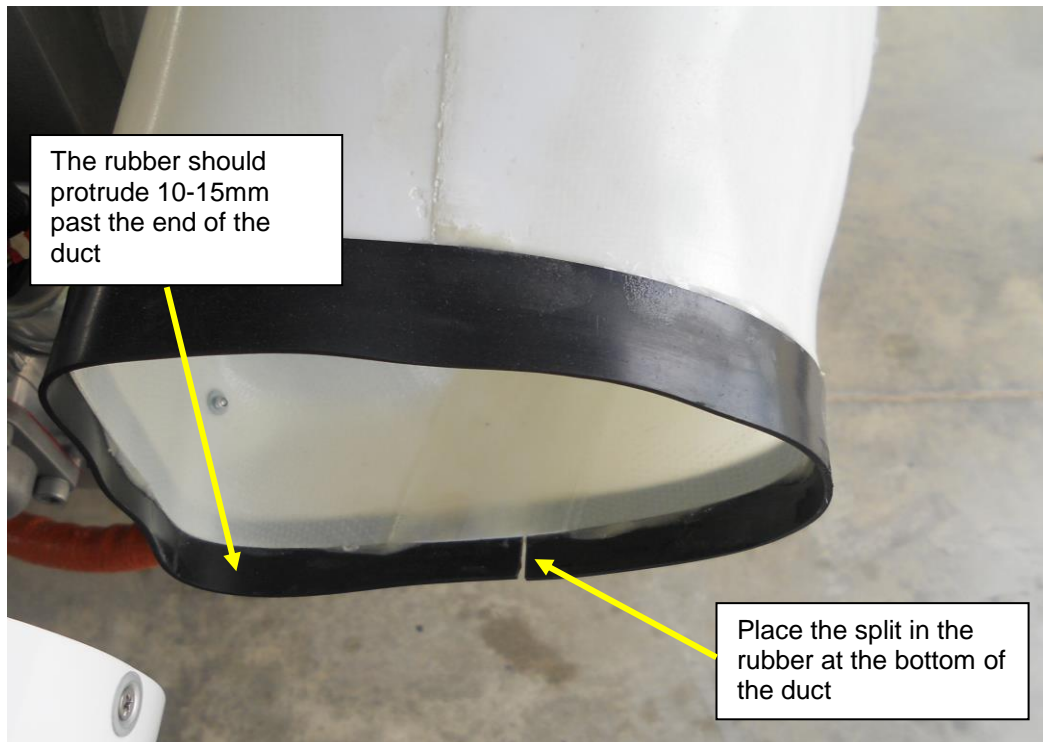


Figure 50 - Attach insertion rubber strip