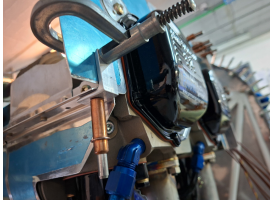


Continued on the outer angles from last session. match drilled them to the side and bottom baffle. These will get #6 screws so a #30 hole for initial fitting is good for now. It will be updrilled later when the diffusers are in place.



Time to start some epoxy work. The diffuser air intakes are too long as they come out of the mould. On the underside, the flat area has to lay flat on the upper surface of the front baffle.

This is the first critical fitting point. I measured generously for an initial cut and will sand back after test fitting it a couple of time on the structure.



I also cut the sides perpendicular with the amount trimmed at the bottom. On the top, I left the overhang. It's not bothering anything and will see with the plenum top in place how this turns out. I then reinstalled the lower SJ cowling and verified roughly how much I would have to cut from the front of the diffuser so that it would fit behind the aluminum intake rings of the cowling.

I received some messages from Bill Lane saying that the distance to aim for between the front of the diffuser and the inlet ring is about 3 to 4 mm.

Here is what Bill said: "First set the rings like SJ instructions, then when you are installing the inlets allow the excess on the front to extend into the hole on the cowl. Once the inlets are happy with sides and all, then trim the front to allow 3-4 mm of clearance to the rings. No more is needed, they won't hit with the engine running."

So i went ahead and drew a line couple of mm behind the inlet ring so that I could position the diffuser on the front baffle with the ring

13/03/26 - Cutting diffusers and trim baffles - 6h

Category: 6.12 Bill Lane Plenum

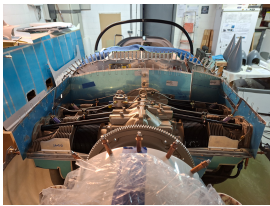
Published: Thursday, 09 July 2026 08:33

Hits: 215

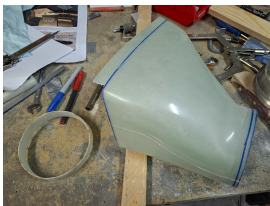
in place. Alignment between those 2 is critical. Esthetically as well as functionally. I t took me a couple of iterations sanding back the front more and more. I used a narrow hand held belt sander to gradually sand back at equal distances.



I read somewhere about a cowl height measuring trick with paperclips. I tried this to see how it works and will use this in a couple of days when cutting back the baffle wall heights.



more cutting back. It worries me a bit that the front flat section becomes quite short. I hope I will still be able to put a hardware clamp on there.



Started the same work on the pilot side diffuser. The cylinder is more backwards there so the front tube is a lot longer to start with



This is how it looks like with the ring installed. Still too tight in

Category: 6.12 Bill Lane Plenum

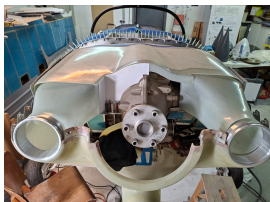
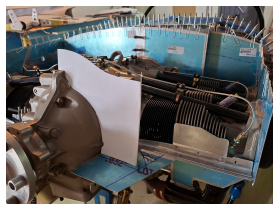
Published: Thursday, 09 July 2026 08:33

Hits: 215

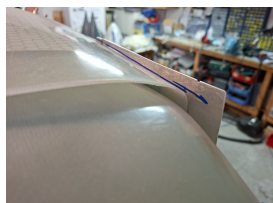
the front for now but I prefer to have some leeway once everything is in place. All I want for now is to align horizontally on the front baffle surface and in line horizontally with the inlet ring so that I can drill those bottom holes in the diffuser.



I cut out the left and right side paper templates for the front baffle. They will need minor modifications to follow the contour of the superior engine.



Did some initial fitting with the roof on and marked some trim lines on the baffle side and rear line. This is all very temporary in order to be able to fit the top cowling on and do the real measuring using the paperclip method. I'm always afraid to cut too much so I'm very conservative. It takes a lot more time but also gives peace of mind.

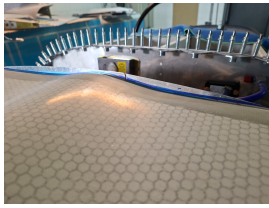


13/03/26 - Cutting diffusers and trim baffles - 6h

Category: 6.12 Bill Lane Plenum

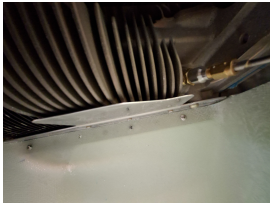
Published: Thursday, 09 July 2026 08:33

Hits: 215

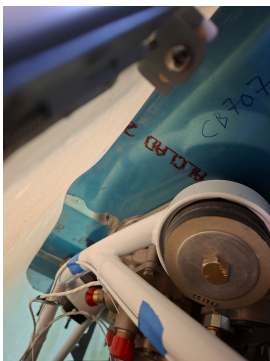


Drilled the initial holes in the diffuser floor. Key here is to make sure the diffuser bottom surface is truly flat on the surface of the front baffle.

I drilled a holes #4 and then put #4 screws and nuts on to pull it together before drilling the next hole. Finally this will get #6 screws so it also allows for some minor repositioning while updrilling.



Then I have put the top cowling on for a first time. To my surprise, the baffles are still way too high.



You can see here in the rear corner how close this baffle is to the curve in the top cowling.

You need 3/8 to 1/2" ideally under the top cowling to avoid rubbing by engine movement (especially during startup).

13/03/26 - Cutting diffusers and trim baffles - 6h

Category: 6.12 Bill Lane Plenum

Published: Thursday, 09 July 2026 08:33

Hits: 215



You can also see in the image below that the baffle walls from the standard vans kit are too high for the Sam James cowling. Not a big deal to cut back the baffles walls, the only issue that will show up is that the rear baffle wall support bracket will have to be modified the this also will be way too high. I have seen that modification also in the Bill Lane install manual so I'm not too worried about that.

