RXL Hood Assembly

2/25/19

Big Warning

Before you do anything inspect your aluminum side bumpers. They have to be in the original shape or the hood won't kiss the nose with a minimal gap. Do what you must to return them to spec

Don't scratch the gelcoat

It is just too easy to scratch the nose and/or hood when installing or removing the hood. The little ring on the Dzus ¼ turn latch acts as a finger hold as your other hand grabs the back of the hood. You must ever be mindful to avoid scratching the gelcoat surface. You will be able to do this smoothly in time. If you have a dark hood and get a white (deep) scratch you can cheat with a thin point Magic marker and blend in with a finger.

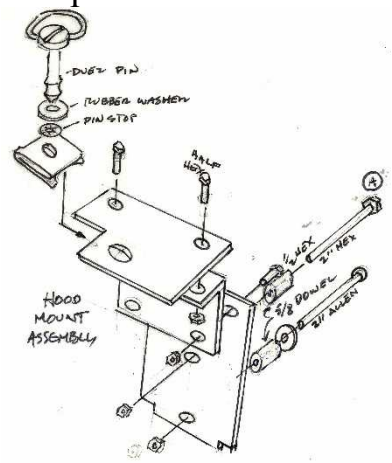
Mission One

Remove exhaust-you need room to work. Drill out the four big holes in your belly pan to match those in the aluminum support if this was not done at the factory

Mission Two-Install the tower

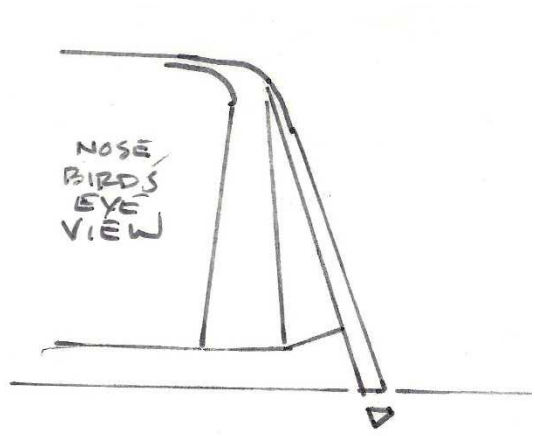
I call the hood mount a tower

I've pre-assembled the tower



Insert the 2” hex bolt (A) thru the top center hole in your pan and bulkhead. Bolt goes in from the front. Slip on a 5/8 dowel-this goes between bulkhead and assembly. Loose fit the lock nut. Insert Allen screw the same way into the lower center hole.

Mission Three Install nose



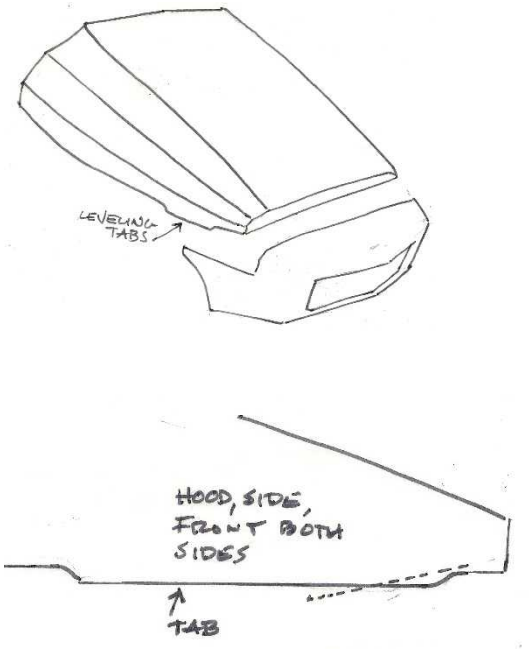
File off the edges of the bumper on the nose. You want the fiberglass angle to match the real aluminum bumper. Align the nose with these mating edges. I supplied six black 1” Allen screws and Nyloc nuts. Mount the nose with them. I’ve had to use longer ¼ screws to pull the nose close on a temporary basis. Jiggle the nose so the bumpers line up. You may have to slot the holes if your aluminum bulkhead has taken too many tree shots over the years. Insert the 2” black Allen screw from the outside into the lower center hole. The 5/8 dowel goes between bulkhead and tower. Now you can cinch down the lower plate of the tower. This part is done.

Mission four
prep the tower assembly

The upper portion of the tower has slotted holes. Raise the upper portion of the tower and semi snug the short Allen screws. Eye ball the Dzus hole and snug that plate. When you begin to install the hood you want the tower parts to yield to the downward pressure of the hood as it is put in place.

Warning
Non stock exhaust applications may require you to modify the Tower Assembly. See the last entry in this manual

Mission five-fit the hood



I added longish tab to the front edges of the hood. These are designed to be ground away to level the hood in the bumper tray to match surfaces of the nose and hood. On the hoods I've done I've only had to grind off the leading corner (see dotted line.) It's hard to say how much you'll have to remove. The key thing is when you force the hood forward toward the nose (to close the gap) you want the entire deck surface dead nuts flat and flush. Take a bit off at a time so you don't too far. The amount taken from each side can vary. Your goal is to close the gap and level hood/nose.

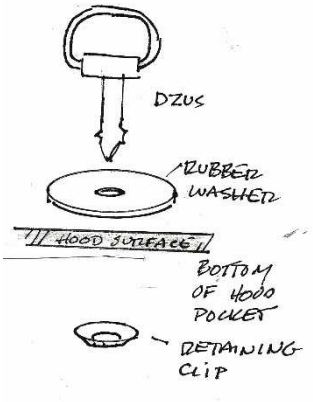
Mission six-finalize the Dzus tower

We should talk about how the Dzus works. The Dzus locks under tension from 1) the spring parts of the lock and 2) from your hood itself. At the end of these instructions you will have to push the Dzus down sorta firmly to engage the lock with a ¼ turn. Once locked it will stay place from spring tension.

Install hood and gauge the tower's position. Pull off the hood and adjust the tower. (This is the worst part.) Keep repeating this process until the Dzus pin (without the locking washer) secures the hood in the perfect place. Now torque all the Allen screws. Check tower alignment one more time then assemble the Dzus pieces.

The Dzus D-ring is the quarter-turn fastener. The little dished washer is the locking retainer-don,t loose it. I have included a rubber

washer-it goes under the D-ring head and over the hood. It helps protect the hood surface. It can takes up varying hood thicknesses.



Dzus assembly
Insert rubber washer on Dzus pin. Insert Dzus pin in hood hole. Push the locking washer (clip) on with a deep well socket-the split side goes away from the Dzus pin.

Make sure the hood is snug with the nose or you'll lock yourself into a hood/nose gap which will be most unsightly. Good that's done. Install the rear bungees and it's off to the snow for you.

Fresh air cooling
Cooling should be a minor issue with liquid engines. If you have a 440/500 fan I will be making a bolt-on cooling system which introduces more fresh air into the fan and exhausts more heated air from the engine compartment.

Applying tunnel graphics
Rub the stickers with a smooth plastic Bondo applicator. You are transferring adhesive bonding between cover sheet and vinyl sticker
[ ] Trim around live sticker with scissors to make it easier to position it particularly under rear bumper.
[ ] Use blue masking tape to position sticker in place.
[ ] Peel away about 3" of the bottom layer under vinyl on an end of graphic. Cut off bottom layer exposing vinyl's adhesive. Don't allow it to stick. Hold exposed edge away from tunnel with one hand as you rub your fingers up and down from cut--out to end of the sticker. What you are doing will prevent bubbles.
[ ] Now apply the rest of the sticker the same way
[ ] You will be horrified to see a fair amount of wrinkling around rivet heads. Not to worry
[ ] Liberate you wife's hair dryer and warm up the wrinkles. This softens the vinyl and allows you to work the wrinkles out. Work toward the rivet heads. The remaining bubbles can be lanced with a sharp pin. Press the air out of the hole

About a Conrad Von Batavia seat
Conrad is a pro and does a perfect job. If you are going to use my long LED RXL tail light let me know so I can send it to Conrad.

He will incorporate a tail light mount in your custom RXL seat.

Warning

Modifications to Hood Mount Assembly. My showcase sled is a 500 F/C with a 500 L/Q exhaust and don'tcha know I had to change my hood mounts. The pipe needed ¼ more forward room right where the tower was. We solved the problem two ways.

We got rid of the 5/8" spacers so the vertical plate could move forward, away from the pipe. We cut the corners off the bottom edge of the vertical plate so the plate would sneak ahead even more. We (you) may have to flip the bottom Allen screw around so the pipe doesn't hang up on the nut

Don't install your own hood/nose graphics

Unless you are a pro and know the wet installation method, take your sled with a perfectly aligned hood and nose to a sign company (with photos of a finished RXL) and let them do it

Indy fan cooled sleds overheating

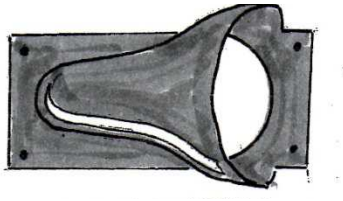
A special concern with RXLs hoods

Most Trail Indys with stock hoods do not over heat because stock hoods have lots of fresh air scoops. Some owners do experience bogging in warm weather from overheating not caused by air box blockage (mice), improper jetting, bad plugs, plugged gas cap vents or other mechanical issues. If you have this experience, my solution can help you too.

The cause over heating with fan engines
The factory ran the exhaust pipe right next to the engine intake fan. The air flowing over the engine was warmed. The temperature in the engine compartment further increases if it is not expelled from the fan exhaust port. The probability of overheating with a fan engine under my RXL hood is increased because fresh air intake is reduced by the non-vented RXL hood. The single source of fresh air are the four 2" holes in the bulkhead.

There are two solutions
One. Deflect the exhaust heat so it is not sucked into the engine
Two. Drill holes in the back of the air box so cooler air is sucked in from the left engine compartment side. This trick can be used for liquid cooled engines as well if bogging occurs.

Deflecting exhaust heat



Fan cover shroud & right pan vent

My early idea was to make a shroud to cover the fan and suck fresh air from the right side pan vent. That idea was buttressed by Ryan Kornkven from Wisconsin. He could print a 3D shroud system augmented with a blower. Then I thought of building a long aluminum shroud which completely encased the pipe. In all three approaches I worried about cost. I don't think Indy owners would be willing to spend north of $300 to solve a problem that occurs mostly on warm days.

A eureka moment
I have no idea why I didn't come to this solution two years ago. For over ten years, I have been doing advertising (my other business) for **Swain Tech**. They are the only company on the planet who coats exhaust systems with ceramic. Ceramic (a stone-like material) contains heat inside the pipe. You can grab the pipe with bare hands when the engine running full blast.

Let me tell you about this stuff. It's called White Lightning™. It's a .015" (about 1/16") thick ceramic coating that fuses with the pipe steel at extremely high temperature. This cures the engine compartment heat problem so even a fan engine can be properly cooled. Heat radiation is reduces by up to 50%. Under car hoods from 800°F to below 400°F.

However there's more.
This thick insulating layer contains heat inside the pipe but also increases gas velocity and improves scavenging. This combustion effect increases horsepower by about 3%. Against a similar stock sled, you'll pass them every time because ceramic is "bolt-on" horsepower.

I can hear you thinking
"*Why not just wrap the pipe with bands of fiberglass heat wrap or Kevlar*" you say. Well I'm here to tell you, that will work until your exhaust system crumbles into rust pile. The problem is snow (water) gets between the wraps and rust immediately attacks the pipe-not a slick idea!

Do what I am going to do with both my RXLs

White Lightning is white and gets ugly with use. The uglier it get the better it works

This summer I'm going to have my pipes and headers sand blasted, then send to Swain for White Lightning coating. The cost is cheaper than anything I could develop.
[ ] Single pipes are $90-135
[ ] Twins are $150-175
[ ] Triples are $225-275
[ ] Y-headers, about $35
The price may vary a bit

Swain Tech Coatings

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Will triple pipes fit under RXL hood?
Most factory and aftermarket pipes fit under the RXL. I can't recall anyone having to consider cutting holes in the hood. However, it's easy to find out. Measure 2 ½" up from the aluminum cross brace the nose bolts to. Then measure 3 ½" up from the hoop that the handle bar bolts to. Now run a straight edge between those two points. If the straight edge is above your pipes-you will have clearance. However if the pipes come close-you may have to wrap your top pipe with insulating material

Retro hood note
If the vinyl in the Dzus pocket has lifted since installation and is wrinkled-use a hair dryer or heat gun to stretch the vinyl smooth. Heat the area gingerly without excessive heat and use your finger to smooth out. Too much heat and the vinyl will melt-so go easy until all is smooth

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