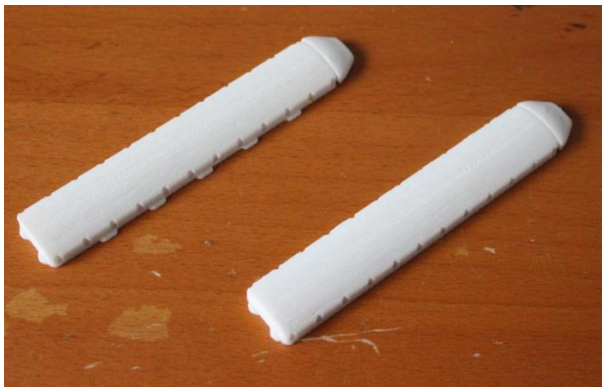
Semi-Scale Renault Turbo Allison Motor

Tools needed

Sandpaper, Xacto knife, drill bits, CA Gap filling glue, Spackling compound, paint

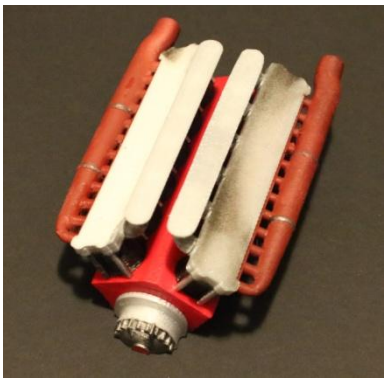


1) Check all of the part for burrs and seams from the 3d printing process. They can be cleaned up with the Xacto blade and/or sanding. Rough areas can be filled a bit with spackling compound and sanded. This is really important on the head covers which you want to make as smooth as possible.

You can also assemble the exhaust header if I have not done that. It is two pieces now, but the seam may need to be filled with spackle.

The extra piece of the exhaust header has an "S" shape and is attached to bend in toward the motor. The bend is aligned with the ports as it bends in toward the motor block. You can see that part at least a bit in the following picture..

2) At this point it is probably a good idea to paint the various parts. The pictures to the right provide one concept for a color scheme. I used Perfect Match paints from the auto supply. The exhaust header, cross beam and turbo "hot end" are painted with the red primer. Other parts are either Perfect Match Red or Silver.



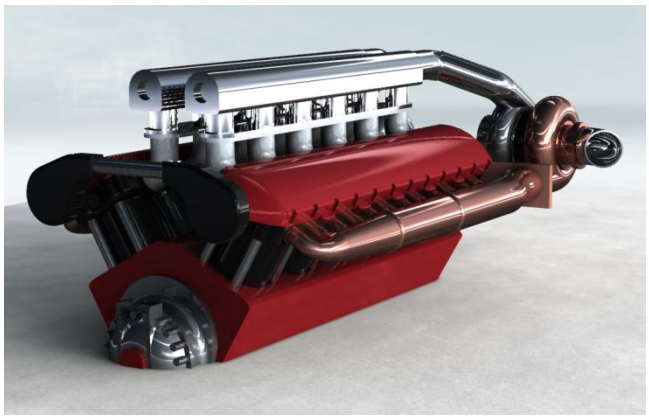
3) Assemble the upper intake tube, which consists of a long tube (plenum) and a header piece. The flat top of the header has pins that will fit into holes in the flat bottom of the plenum. Note: there are holes in the cylinder heads for the lower section of the intake.... make sure they are on the inside and the slot for the exhaust is on the outside of the motor.

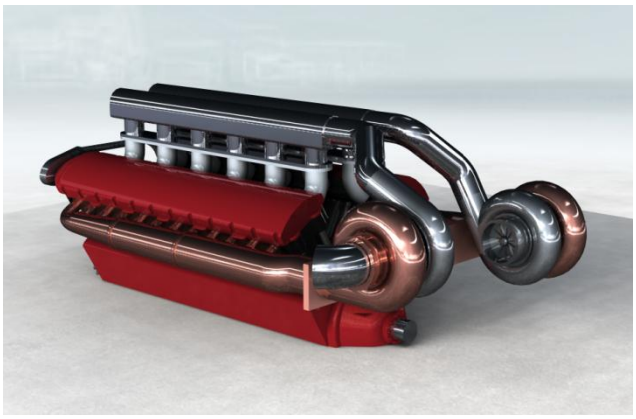
4) Assemble the turbo cold end which has a "cap" to add to the flat surface opposite of the boss. The boss goes into the hole on the hot end.

5) Now we are pretty much down to putting it all together. The cylinder blocks fit into the "crankcase". There are holes for the lower intakes and a slot for the exhaust header as noted above.

The cross beam goes on the back edge of the exhaust header, attaching to the

"S" bend exhaust pieces. The upper intake tubes match up with the plate from the lower intake header.





There are two different turbo hot end pieces - one with a slight bend and one that is straight. They glue to the cross beam and match up with the exhaust tubes. The angled side goes on the right hand side of the motor looking from the back as in the picture to the right.

Note that unlike the Turbo Allison on the Cooper's Express, the Renault turbos are on the back of the motor and away from the narrow end of the head cover and the cam unit (interconnecting bit).

There are 4 tubes with 45 degree bends and one straight tube. These are used to connect the turbo cold ends to the intake tubes.

The medium length tubes, marked A on the image to the right, comes out of the intake plenum.

The long tube, marked "B", connects the left side turbo.

The short 45 degree angle tube "C" mounts on the right side turbo. The straight tube mounts is marked as D on the image to the right and bridges between the short tube and the tube "A" on the right side (from the back) turbo.

Fitting the tube connecting tubes takes a bit of tweaking to get things lined up. Use the picture for reference.

At this point - you could add the relief valves to the exhaust. They go on the "S" curve of the exhaust back by the cross beam. Add the exhaust flare to the hot end of the turbo units, and the gearbox to the front... and you have a Renault Turbo Allison motor.