Intercooled TR6

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June 2006

Jump ahead to June 2006 and I'm still working on this car!

It's Spring in Maine and for some reason all we've had is rain. Week after week of it. So much so that there is some spotty flooding. Anyway while it rains I may as well add the intercooler. The intercooler is one of my three projects planned for this year (intercooler, exhaust, and renew the dashboard).

Finding an intercooler that would fit in the narrow confines of a TR6 has taken some time. I've searched sites and monitored ebay all winter. Finally on ebay appeared an intercooler listed for a Civic or Integra. It handles up to 500Hp and measures 18″ wide, 12″ tall , three inches thick and has 2.5″ ports. The ports will need to be cut off and 2.75″ aluminum tubing welded on at the proper angles. Since purchasing this unit I came across a unit used on twin turbo 300ZX's that might be an easier install. Once again let me say that the tubing used on this installation is oversize making the install that much more difficult because of space limitations. Smaller tubing may not give the same look but

would not effect performance.

Fitting the intercooler is part of my “clean up the loose ends” campaign. I want to have the car finished or nearly so before the British Invasion Show at Stowe VT in September 2006. Not only finishing up my planned projects but the little things that are not done as nicely as they could be. Things like hose and harness routing, brackets, and clean up some of my welds, etc. This is the intercooler after I welded 2.75 inch tubing ports in place.

A concern with fitting the intercooler in front of the radiator is that the reduced air flow may cause over heating problems. To make matters worse, making room for the intercooler required removal of the oil cooler. For the time being a hydraulic hose was used to connect the oil filter adaper’s ports together. A new spin on adapter is on order that has no provisions for a cooler and I’ll hang onto the original cooler set up just in case (the new adapter has arrived and is now in place).

The original cardboard duct work that directs air from the grill to the radaitor was in tatters and no longer fit with

the tubing to the intercooler and the cold air intake. Aluminum sheeting would replace the cardboard, after all how hard could that be? Well it turned out to be one of the more difficult and time consuming tasks ever! Certainly not rocket science but at times I never thought it would be complete. Tv’s car shows have this sort of thing done in no time at all. It takes skill and experience to make it look so easy. Now that it’s done it doesn’t look at all challenging.

The top cover is made from some of the same sheeting. I did have the luxury of doing some of the longer bends at my friends shop on his break. Round trip to his takes about 45 minutes so only critical bends were done there. The shorter bends were done with a vise or over the edge of the bench with a wooden block and hammer. Offsets in the panels were done with triangular pieces and riveted in place. At the bottom, holes were drilled to align with the horn bracket mounting bolts into the frame.. The brackets will go back in place as will the horns.

The top cover is held in place with Dzus wing nut fasteners and a couple of plastic wing nuts. I wanted to be able to easily remove it to service the air cleaner. The real time consuming portion is cutting holes for the tubing. As the tubing is atttached to an engine that moves, a bit clearance is needed around all the cutouts. A white nylon edging rings the cut outs to help protect the tube and dress things up. All in all it is a nice looking installation. On the downside is after all that work to fit the intercooler and cold air intake thay are now hidden. Click on the photos below for a larger view.

Another element to fit in is the bypass hose that connects the bypass valve over on the right hand side with the air cleaner on the left. It is 1.25″ and is now routed in pvc tubing that can be tucked inside under the inner lip of the grill. When not running in supercharged mode much of the engine’s fresh air is drawn through this tube. In the picture you can see a small air filter attached to the idle air control motor. Originally this assembly was positioned so it allowed air to bypass the throttle plate drawing it’s air from the tubing just ahead of the throttle plate. It turns out that boost pressure would open this valve so when returning to idle the speed would be way too fast. The little air filter was a temporary fix to see if atmospheric air would allow the IAC to fubction properly. It did, so the filter will be removed and a hose will connect to the bypass hose supplying filtered from the normal air cleaner.

With the hood off and working in front of the radiator, you couldn’t help but notice damp spots on the radiator. Now is the time for a new one. It is a bit more complicated as the

lower hose connection needs to be rotated to clear the alternator mounted on the lower right side. The seeping water pump will also be replaced..

It’s June 19th and the car is still apart but will be back together in the next few days. I will post an update about how the intercooler performs.

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