

Type-R TB on B21 Manifold

Introduction:

This is a write-up on how to modify and install an overbore 65mm Integra Type R throttle body on to a B21 Intake manifold. This write-up also includes what parts you'll need to do the job the RIGHT way, and what tools you'll need to complete the mod.

Background info:

First things first. I chose the Type R throttle body for the fact that it did not use the FICV on the bottom of the throttle body. All other b-series uses this valve on the bottom and to me its just in the way. However you could just make a block off plate, but hey...that's more work. I also used a 65mm throttle body (aftermarket). The stock Type R throttle body is a 62mm and would work great as well. And to be honest I believe that the stock Type R throttle body would be an easier mod and install to perform due to a smaller bore. Stock PRELUDE throttle body (left) 65mm Type R (Right)



Picture of other b-series with the FICV on throttle body:



Okay on to the parts and tools...

Here is a parts list that I used to complete this operation:

1. Throttle Body-Type R shown. Other b-series will bolt up the same way once modified. Will require same mod as Type R but others will have the FICV ^^^.
2. Gaskets--All O-rings for sensors and valves on Intake manifold and this includes the FUEL INJECTORS O-RINGS!!!!-REPLACE THEM!!!

Here are the part numbers I used for the gaskets and O-rings.(B21 ONLY)

Honda Pt. #

#16077-PR3-005

#17341-PT2-000

#91304-PE2-005

#36455-PM3-J01

{#18721-PJ0-660} EGR gaskets

{#18715-PB2-000}

Beck/Arnley Pt.# (For B20/B21)

#158-0308 x4

FelPro IM gasket Set

MS 94836

3. Socket head Allen bolts (M8x1.25mmx30mm) x4 which will be used to replace the studs in the IM that hold the TB on , and other M8x1.25mm bolts in various lengths for replacing other factory IM bolts and studs. The extra bolts are not necessary to change. Can reuse stock bolts.

4. Tools- Of course you'll need ratchets, sockets, screw drivers, etc.

Also an air rasp to open up the intake manifold, grinding stones, drill press would help, and a welder<--I didn't use. Scrap pieces of aluminum.

Okay....On to the FUN part....

Here is a picture of the gasket that has been modified. This is the same pattern that you want to use to drill the holes out on the new TB.



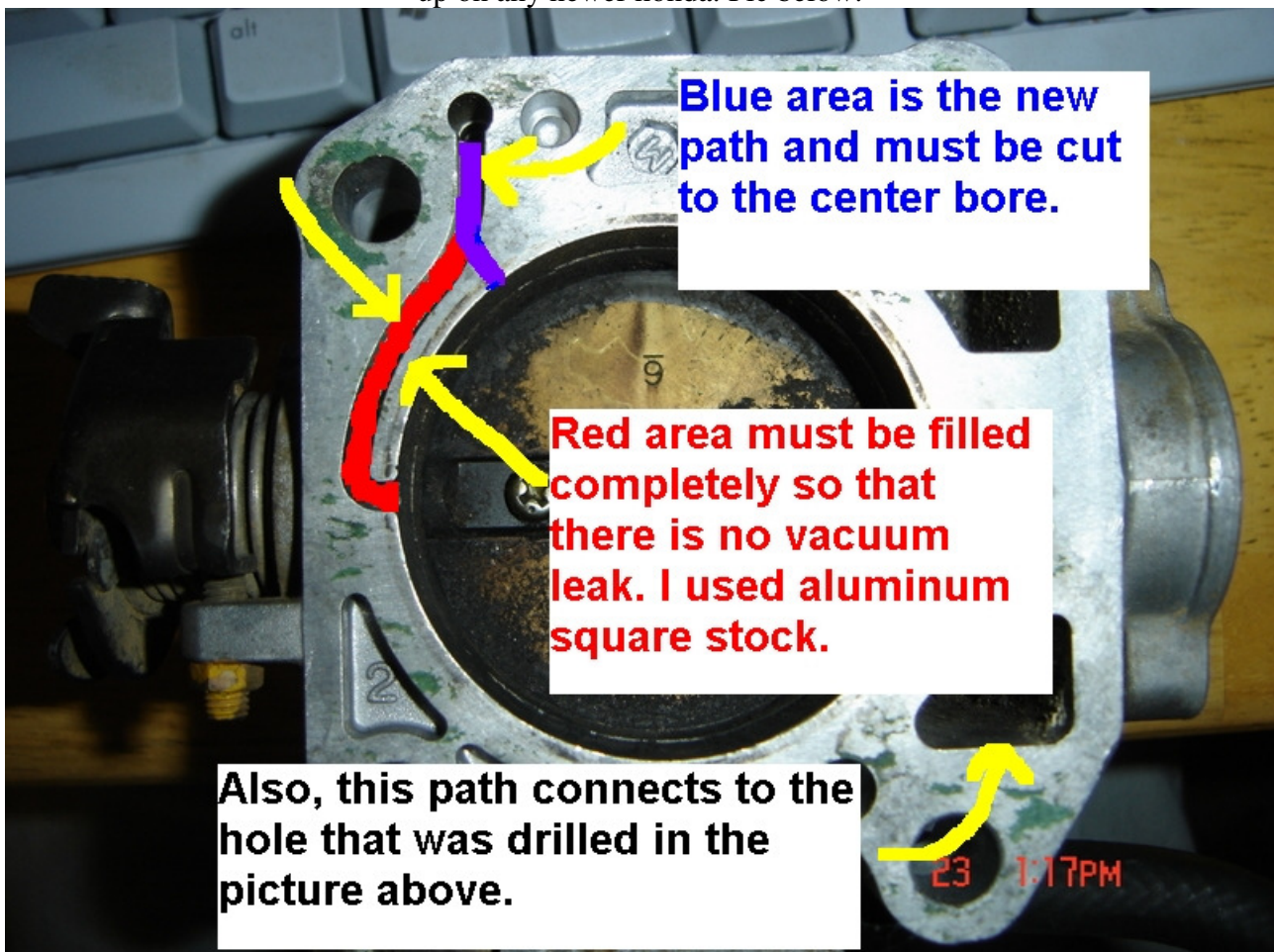
I made these holes in the TB with a drill and an air rasp. It took quite a while to open up the holes enough to pass over the studs on the intake manifold. I drilled and cleaned out the holes until it slid onto the studs. I do not have pictures of the modified throttle body. But I will do the best I can with internet pictures to show how to do all the mods.

Below is a picture of the hole that WAS NOT in my Type R throttle body. So I had to drill this hole so that the air boost valve, FICV, etc would work properly... The hole that needs to be drilled is shown in the pic with a

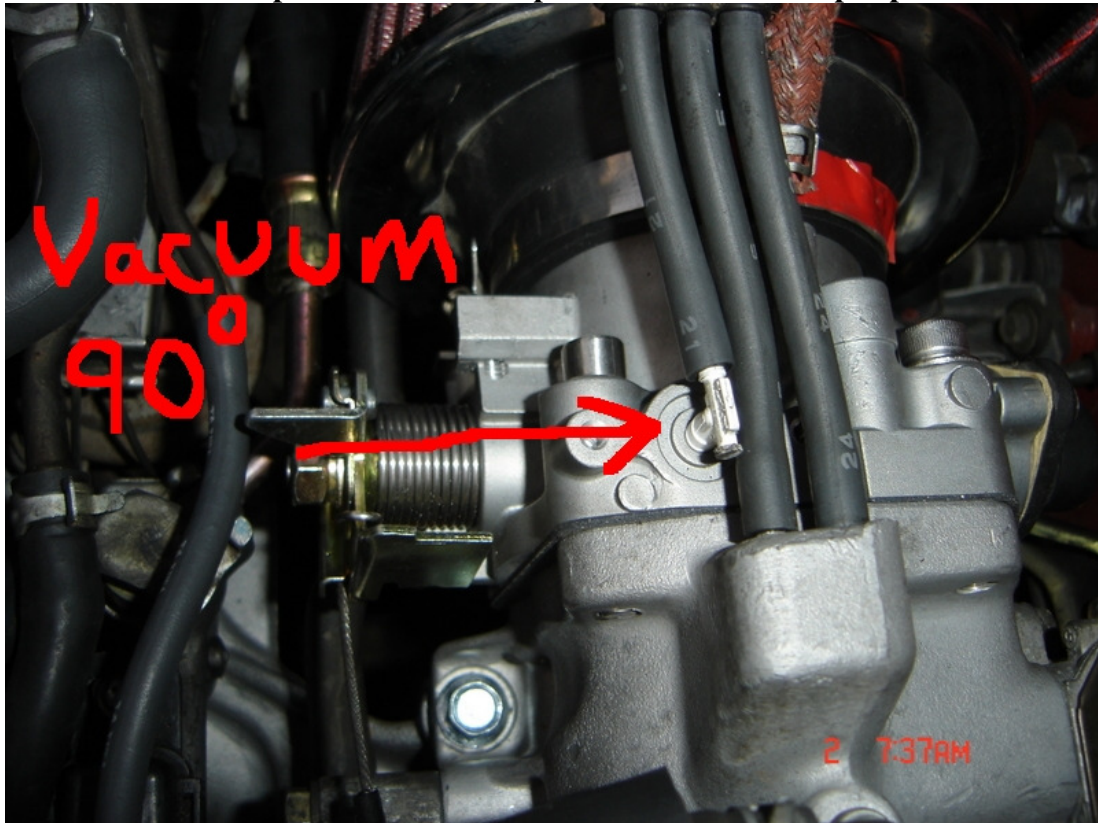
circle. This is not an actual picture of my throttle body, but similar.



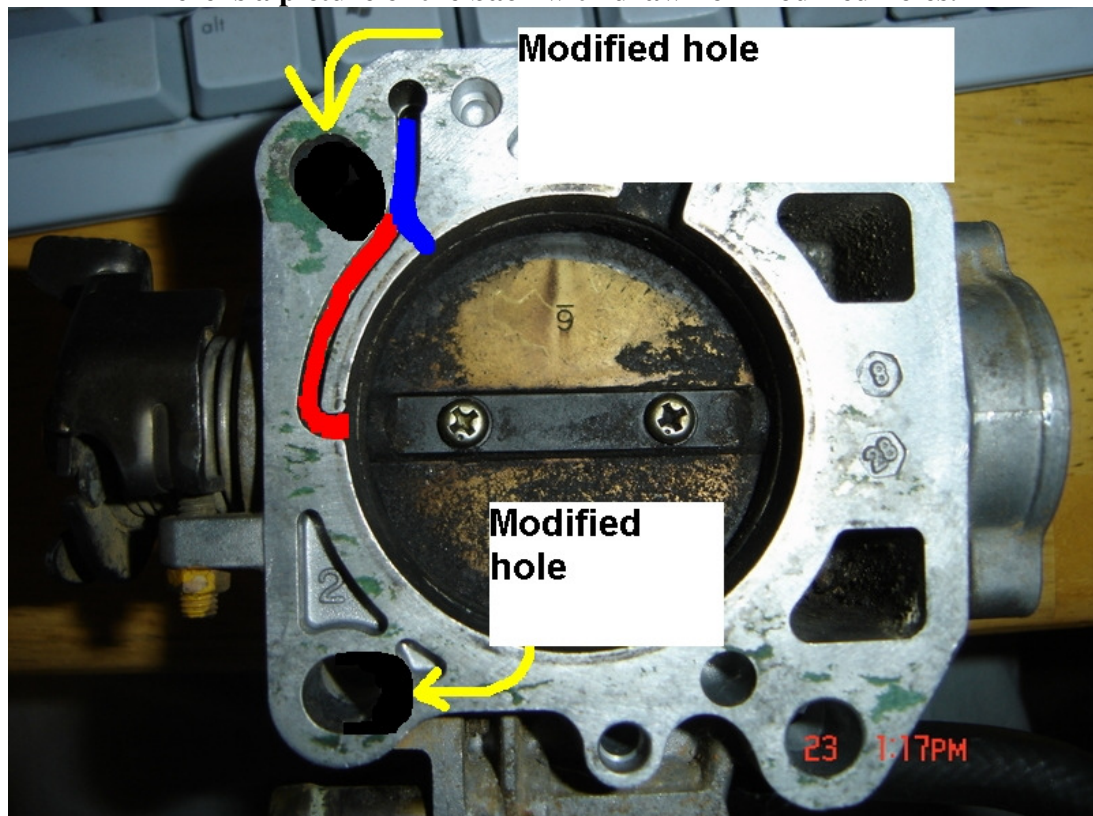
Also, the map sensor path will need to be modified. The path on the backside of the throttle body needs to be filled with either aluminum pieces or welded up and filed flush. I pressed pieces of aluminum into the area. The reason being is that the bigger throttle body is wider. Being that the map sensor path has to go around the outside of the bore, it results in the path being exposed to the atmosphere. The path actually goes outside of the gasket and outside of the edge of the Intake manifold. So Here is a pic of where to modify the path. To finish with the map sensor path you'll need to put a vacuum "T" or 90 into the hole where the map sensor would bolt up on any newer honda. Pic below:



Here is pic of vacuum 90 I pushed into the hole up-top....



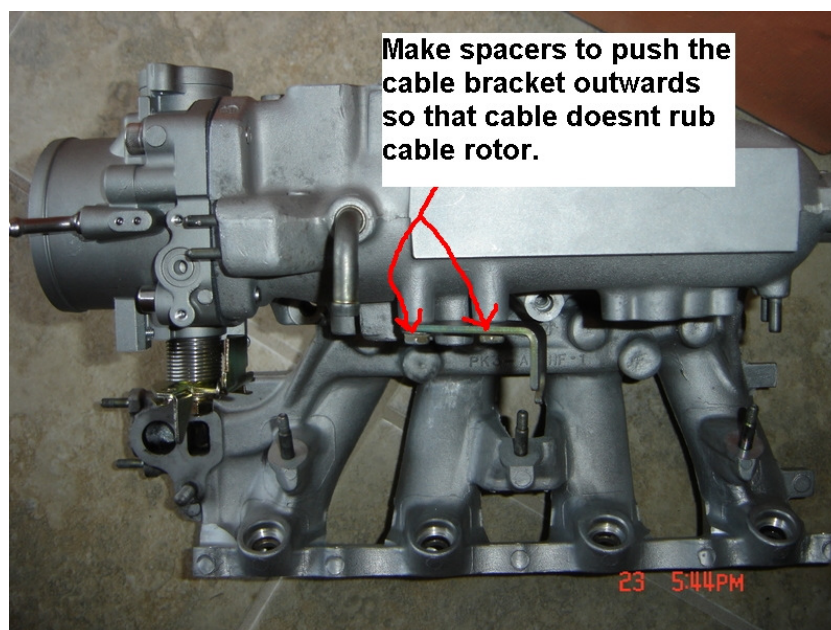
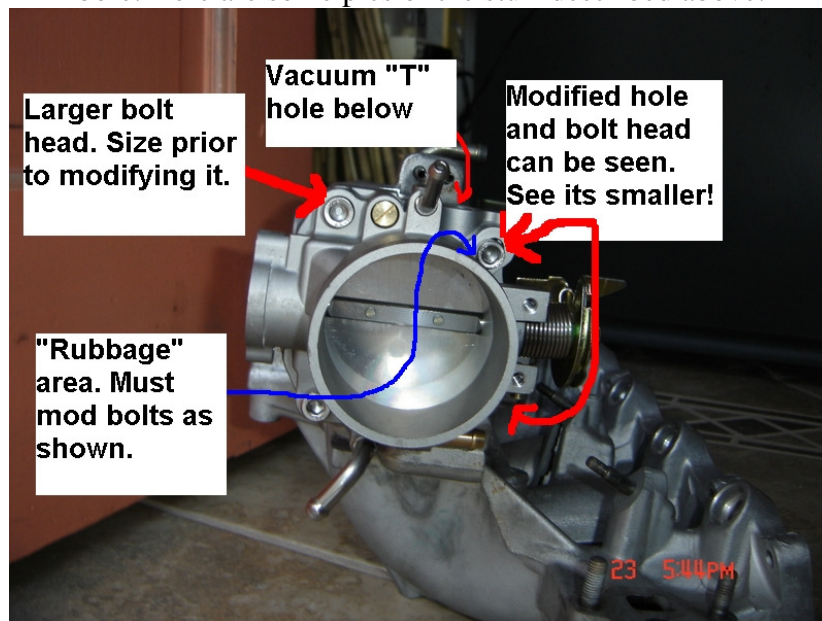
Here is a picture of the back with drawn on modified holes.



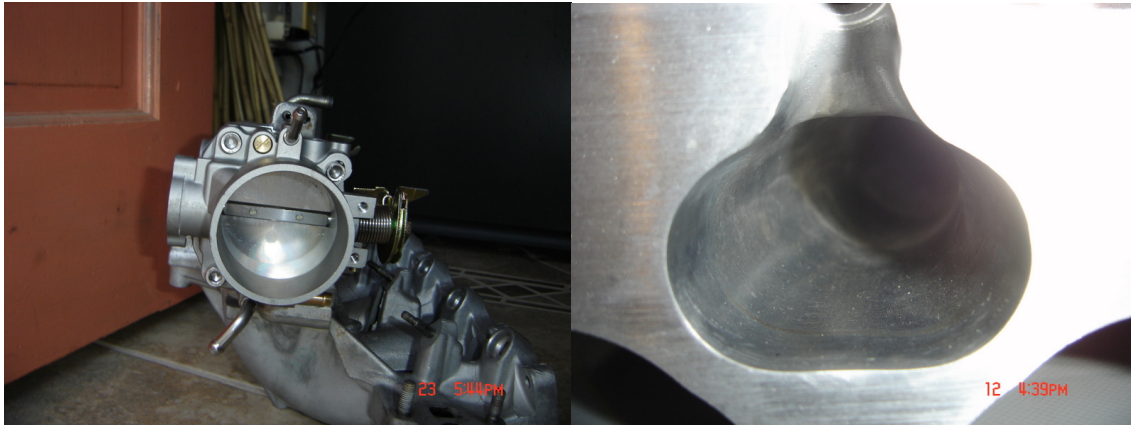
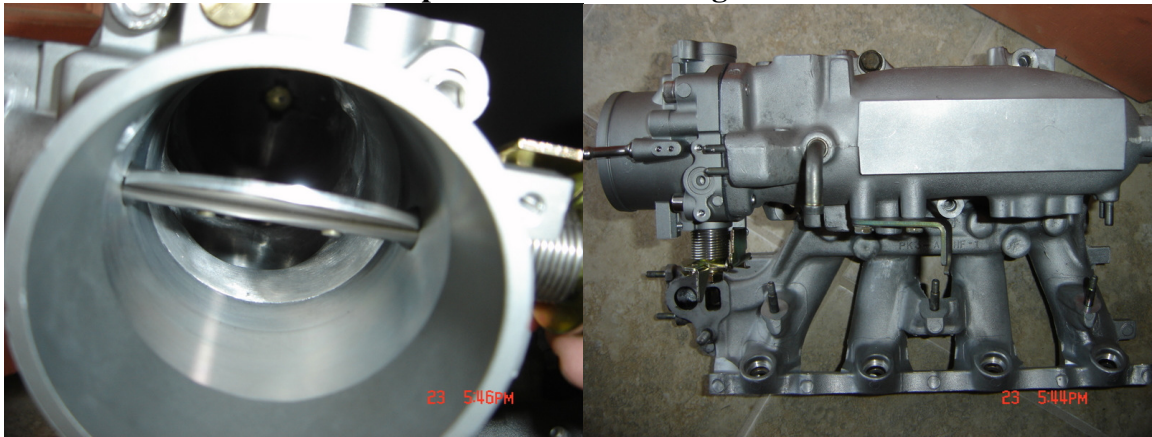
Okay you are now done with the TB modification. I hope that this helped. On to the Manifold....

The Intake manifold

The intake manifold needs to be completely disassembled. All sensors and valves must be removed and gaskets replaced. I also removed the injectors. But before you reassemble the manifold you will need to have the plenum over bored to match the bore of the throttle body. I also slightly ported and polished my plenum and runners. I bored mine out with an air rasp with a grinding stone until desired size. Worked really well!!! Then I polished the inside once again to achieve a smooth finish. After all the machine and grinding, and cutting were done on the manifold I then took it to a machine shop to have it acid dipped. That way all of the metal shavings were removed and the outside would be clean like new!! You then want to remove all the studs on the plenum so that you can replace them with the socket head allen bolts. **YOU HAVE TO DO THIS!!!** If not you will never get the throttle body bolted to the IM due to the fact that the nuts will rub the outside diameter of the TB. The reason they will rub is because after you move the 2 right side holes over then they are too close to the TB outside bore. SO, to fix this problem I removed the studs and replaced them with socket head allen bolts. **BUT** you have to modify the heads of the bolts to be used in the modified holes. To do this I put the threaded end of the 2 bolts into the chuck of a cordless drill. Then I got a part-off wheel (Grinding disc). I used the drill to spin the bolt and the grinder to grind the size of the bolt head down, so that it will fit through the TB and not rub the bore. Here are some pics of the stuff described above:



More pics of Manifold and gaskets:



Fuel Injector O-RINGS

Modified Bolts



Sensor/valve gaskets for IM



Okay guys I think that about wraps it up....If I see any problems Ill edit the post, but I think I covered all that I can. I hope this helps some of you guys out that would like to tackle this modification. Some of you turbo guys could really benefit from this.