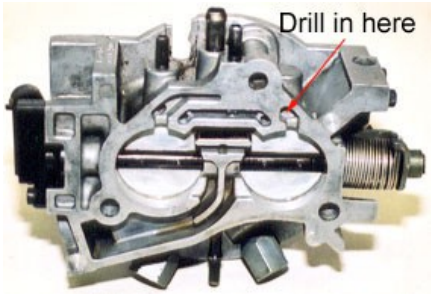
Changing A 2.8L TBI to a 4.3L TBI

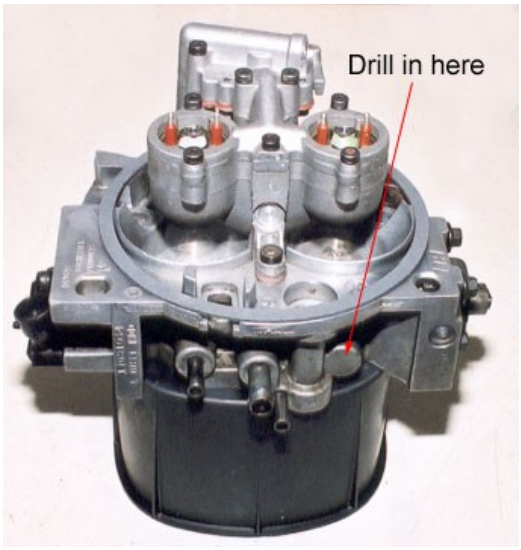
This article assumes that you know basic mechanical practices and are comfortable removing your engine components and reassembling them. The intake manifold, rockers, pushrods and valve covers will all be removed for this procedure and will require reassembly with new gaskets. Also some belt driven accessories electronics and vacuum lines will also be removed and reinstalled. There are a couple versions of doing this swap. One: You have a 2.8L in your truck and need more air flow. Two: you did the 3.4L swap and need more air AND fuel. In the first instance you are going to change to the 4.3L throttle body and keep your current injectors. In the second case you are going to change to the 4.3L throttle body and also use the 4.3L injectors. Either way the procedure remains the same except for a few extra steps for the 3.4L process.

Some things to keep in mind when hunting. ALL GM TBI units that were 2 barrel (2.5l was a 1bbl. 2.8, 4.3, 305, 350, 454 were 2bbl) have the same bolt pattern and the same body. Things that were different were the bore sizes and injectors. The 2.8L has a 1 3/8" bore. 4.3, 305, 350 have a 1 11/16" bore and the 454 has a 2" bore. Each engine has different injectors that flow a different volume of fuel but all fit the same and are interchangeable. The TPS sensors changed in late 89 to a different style. All IAC motors were the same. 2.8L TBI units have 4 vacuum ports but all others have only 3. However, they can all be drilled for the extra vacuum port because the location exists in it for all the castings. Throttle linkage also varied between models but these are also changeable. Some other rare differences also were present, some injectors had a hole drilled below the fuel pressure regulator and had the fuel fittings clearanced for a bolt to pass through which allows for the change to an adjustable regulator. But all GM regulators were non-adjustable. The regulator consists of 4 simple parts. A diaphragm, spring, spring retainer and the housing. The spring keeps pressure on the diaphragm valve which regulates flow to maintain pressure. The retainer keeps the spring in position and the housing encloses the system. So now you know the basics. And now you know that when looking for a throttle body that all the 4.3L, 5.0L and 5.7L engines were all the same size. So don't walk right by the V8 trucks in the junk yard. And remember that the TPS changed in 89 so you must find one with the right style or you will be doing some splicing. When doing this swap on your S-10 try an find an Astro Van throttle body because it has the 3 same bolt holes for the throttle cable bracket as the 2.8L throttle body. If you have a 90 or later truck with the new TPS then a Silverado or Astro Van will have the 3 bolt holes for the throttle cable bracket. This way you avoid having to drill and tap the holes. If you have a truck with the old style TPS you often will not find the combination you need with the bolt holes for the throttle cable bracket and the old style TPS sensor. If this is the case then get the throttle body with the 3 bolt holes off of an Astro Van and make sure you get the new style TPS with it and its pigtail connector. Then when you make the swap just splice in the new connector. It is much easier to do this than it is to drill and tap the 3 holes required to hold the throttle cable bracket on. Just follow the chart below

Wire	GMC/Chevrolet Truck TPS Wiring		Isuzu Trooper/Rodeo TPS Wiring	
	New Throttle Body	**Existing Truck Wiring**	**New Throttle Body**	**Existing Truck Wiring**
TPS Signal	Dark Blue	Dark Blue	Dark Blue	Blue/Red
+5V Reference	Gray	Gray	Gray	Green/Yellow
Ground	Black	Black	Black	Black

When you get your throttle body home start stripping it down and clean it up a little. Swap over all your 2.8L stuff. Why? Because you know it works and wasn't in a junkyard. If your stuff doesn't work you can take a chance on the junkyard stuff but it would be a better idea to get new stuff. A TBI rebuild kit would also be a good idea right now. Install either your 2.8L injectors or a set of 4.3L injectors depending on your application. If you found a throttle body with the same linkage as your old 2.8L your in luck. If not, don't worry. Grind the tab off the end of the throttle shaft that holds the linkage on (do this to both throttle bodies) and you will be able to wiggle off the linkage (it may take a pair of pliers). Now swap your old linkage over to the new throttle body and tack weld it on. Last thing to address is the missing vacuum port. While you can splice in a "T" to the existing vacuum line on the opposite side of the throttle body it is suggested you do it right and put in a new port. All you need to do is find a small piece of pipe, 1/4" OD, and drill a hole into the casting of the throttle body and the epoxy the pipe into the hole and you have the port.





In the images above on the left and right you will see where you need to make your holes. You must drill the 2 holes so they will intersect each other. Take your time and don't drill too far. When done right you will have your self a fully functional vacuum port.

The above left image shows the new hole drilled in the under side of the throttle body. Use an 11/64 drill bit for this hole. The image above right shows the new tube epoxied in place. Use a 1/4" drill bit for this hole and some 1/4" OD tube. Brake line tubing from the parts store works well. Any 2 part epoxy like JB weld is ideal for this application.

Now that your throttle body is all ready to go and hopefully got a set of new gaskets and o-rings it is time to address the intake. Your intake MUST be bored out to match the 1 11/16 bore of the 4.3L throttle body. If not the throttle blades will hit the edges of the smaller intake bores and you will also be creating a bottle neck because the intake bores are still at 1 3/8" so there would be no point in doing the swap anyway. Remove the intake and take it to a machine shop and have them drill it to 1 11/16". When you tell them to do this be sure that they make the bores square to the TOP deck of the intake. The bottom and top of the intake are NOT parallel this is because the engine sits on a slope and the intake compensates for this and makes the throttle body sit as level as possible. You may attempt to do this yourself and I have herd of people just hogging out the aluminum with a die grinder. However, this produces less than perfect results. So unless you have an end mill or drill press with a bit big enough, take it to a shop. When you get it back now is a good time to smooth up the casting with a die grinder and rotary file. You want to ease the transition from the throttle bores into the intake runners and also clean out the intake runners. Now clean it out really good with soap and water. Any water based de greaser works good such as Simple Green. If you can, blast it with a pressure washer. Be sure no aluminum filings are left over and get the rust (if any) out of the water passages. You can now begin reassembly

This article will not cover the re installation of the manifold. If you are not sure on the procedure then consult a manual for the proper procedure. Follow the torque specs and proper adjustment procedures for the rocker arms.

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