

Removing Idle Stop Cap from a GM TBI and Adjusting the Idle Set Screw

For whatever reason you have determined that you need to adjust your base idle on your GM TBI vehicle. In most cases this is only done if you have modified the internals of your engine or you have swapped a larger throttle body onto your vehicle.

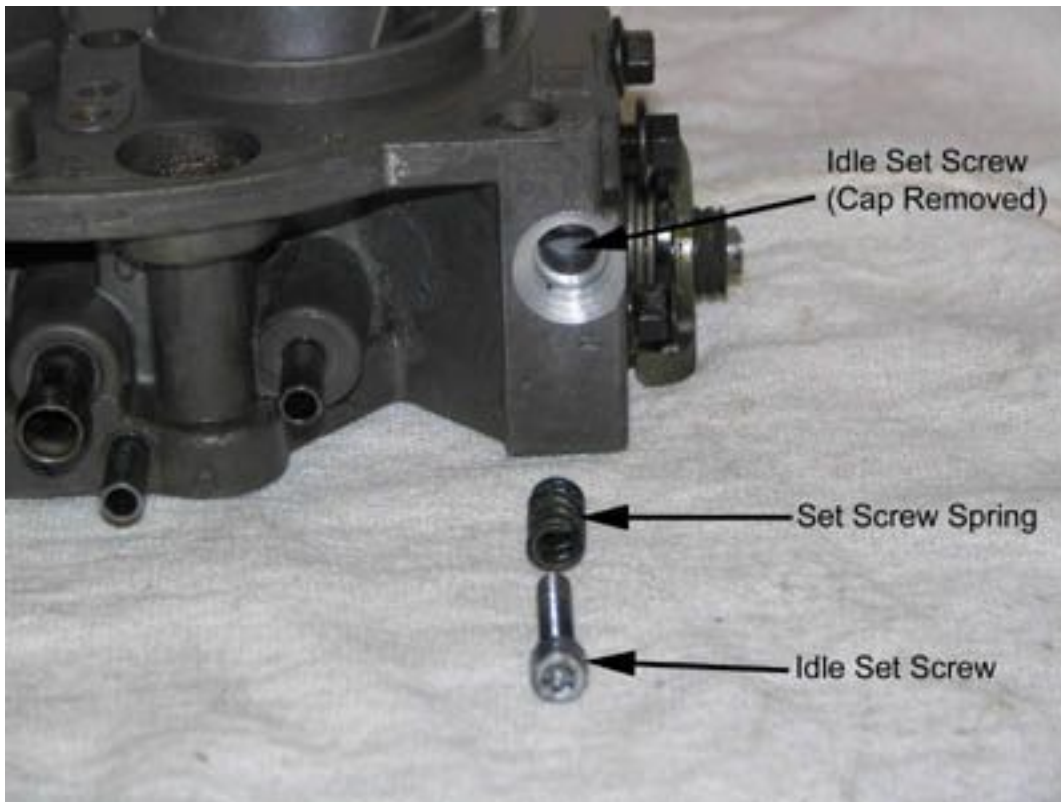


On a factory TBI unit the idle set screw will be capped from the factory so you cannot mess with it. But you just knew one day you would.

Not all caps look like the one pictured but this is the one that is hardest to remove. The easiest way is to first grind the cap flush with the surface of the throttle body. Then use a center punch to help start your drill bit. Drill a 1/8" pilot hole first. You will need a good bit. This cap is made from a hard metal. Once you drill your pilot hole then drill a hole just large enough to get a TORX bit through the hole and onto the screw head. DO NOT drill a hole larger than the screw head. If you drilled your hole just big enough you can simply insert your TORX bit and begin backing out the screw. When the screw hits the underside of the cap it will begin to lift it right out of the hole. No fussing around.

If you have a flat cap found on older model TBI units that still fit tight then you can just

begin by drilling a hole in it. Sometimes this style cap is already loose and can be pried out with a small screwdriver.

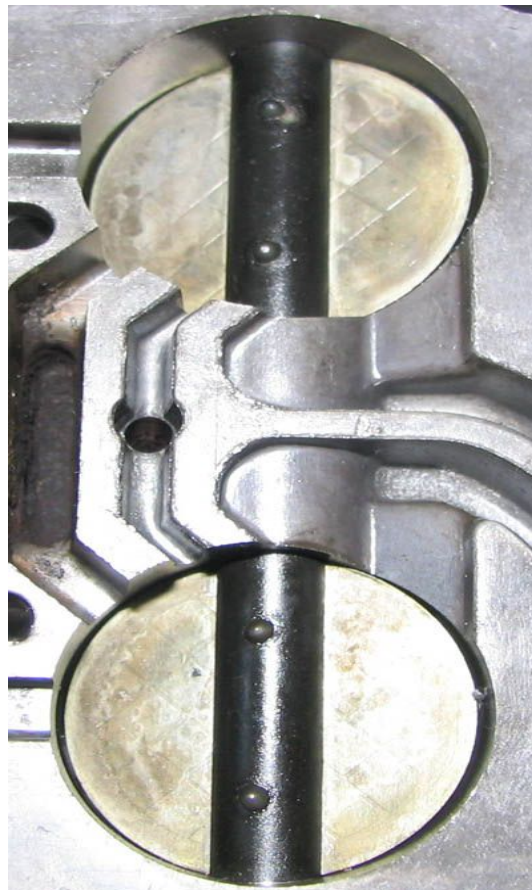


When the cap is out it is a good idea to make a large chamfer on the hole. It makes it easier to locate when under the hood of the vehicle and you can get a bit to the right spot easier.

In the image you can see the set screw and the spring out of the TBI unit. The spring is there to keep the screw from backing out and your idle changing.



Here is the idle set at maximum speed. The throttle cable bracket has been removed



Here is an image of the throttle blades at their full open position on the throttle stop.

You now need to set the idle speed on your vehicle. Start by jumping the A&B pins on the ALDL (Assembly Line Data Link) connector under the dash. Pins A&B are on the upper-right-hand side. These are the same two pins you jump to read codes from the ECM. Now turn the key on (the Check Engine light should be lit) and leave the key on

for at least 30 seconds. The computer will extend the IAC plunger all the way out to allow adjustment of the idle speed.

After the 30 second wait, unplug the IAC (square 4-pin connector on the throttle body) WHILE THE KEY IS STILL ON. This prevents the ECM from adjusting the idle speed while you make your adjustments.

Block the drive wheels, set the emergency brake, and start the engine. Set the idle speed by adjusting the idle speed screw. The engine should be at operating temperature for this. The exact setting is on the emissions label on the radiator shroud, but in general, the idle speed should be about 500 RPM in Drive, 700 in Park / Neutral, or if you have a manual transmission, somewhere between 600-800 RPM. Remember that the truck is running during this adjustment, so stay clear of the fan, and make sure it can't roll or otherwise be put into gear while this is done.

Once the minimum idle speed is set, turn the engine off, reconnect the IAC, and remove the jumper from the ALDL connector. The TPS minimum voltage must now be set. Turning the idle-speed screw may have moved the TPS idle voltage away from the specification, so it should be adjusted next.

Connect a voltmeter between pins A (usually dark blue) and B (usually black, or black/pink) of the TPS, and turn the key on. Don't start the engine. Loosen the two torx screws holding the TPS in place, but don't remove them. Rotate the TPS until the voltmeter reads between 0.45 and 0.55 volts, with 0.50 being ideal. Tighten the mounting screws (carefully, they thread into soft aluminum) and re-check the voltage to make sure it's still within range. The best way to set the TPS voltage is with a scan tool. This way you can view what the computer actually sees.

