Idle Air Control

(Initial tuning of the engine is best done with the IAC disabled)

The Idle Air Control, referred to as the IAC, is actually a variable flow valve that bleeds air into the intake manifold. It's purpose is to provide air during startup, raise the idle speed during engine warm up, stabilize idle speed, prevent stalling, act as a damper during deceleration, and provide additional air during hard acceleration. Although optional, it's suggested it be included in all installations and is a must on engines with air conditioning or automatic transmissions to maintain a steady or increased idle speed.

Patton Machine offers a billet aluminum CNC machined remote mounted IAC assembly. The assembly can be mounted on the engine, firewall, inner fender, or even on the air cleaner housing.

There are two hose connections; the one closest to the IAC stepper motor goes to the intake, and the other is the air intake. Fittings are pipe thread and only need to be snug using a little Teflon tape, they will not screw all the way into the housing. The air intake can be any source of clean filtered air such as a small breather style filter (such as AID 775-132 from Summit Racing) clamped to the nipple or a hose to the air cleaner where it can draw filtered air. The shorter the distance to the intake the better, with three feet being the max.

Selection of a port on the intake manifold is critical. Filtered air bled from the IAC into the intake must be to a central section of the manifold. Care must be taken with port placement that IAC air reaches ALL cylinders rather than into an individual runner where only one or two cylinders are affected. If the IAC is not connected centrally some cylinders may run leaner than others potentially damaging the engine.

Best inlet port locations are into a shared central chamber, a balance tube, or split and run into multiple locations.

Sharing a port with the MAP sensor can be done only if the port is large. In no circumstance should the IAC be tee'd into the hose with the MAP sensor. The MAP sensor senses vacuum to determine load on the engine. Less vacuum equates to higher load and therefore more fuel. So if the IAC bleeds air into the vacuum path of the MAP sensor, the MAP senses less vacuum and incorrectly adds too much fuel.

Initial tuning of the engine should done with the IAC disabled. Pinch or cap off either hose to disable it rather than pulling the electrical connector. Once the engine is running well and all the other adjustments finalized, it's time to complete the IAC set up. Use the target idle speed programmed into the ECM chip and set the idle speed screw(s) to the target idle. If you are unsure of the target idle try 900 RPM until you obtain the correct figure. Take the time to set ALL throttle idle stop screws so each that carb is supplying the same amount of air using a device like a Unisyn or a hose or stethoscope listening for equal "hiss". Failure to do so may result in stalling when coming back to idle.

Once operating, the IAC will bleed a small amount of air to bring the RPMs back to your target idle speed or raise the speed during warm up. Enable the IAC and restart the engine. The idle should automatically reach the target unless it's cold or the air conditioning is operating. If the idle speed is too high with the IAC operating, unscrew the idle stop screws slightly. Once the engine is warmed up, little or no air will be drawn through the IAC at idle. There are no adjustments on the IAC itself.