

# PENNTEX IDLE CONTROLLER 1996-1999 CHEVY 7400VORTEC C-K & G CHASSIS: PI-1019

## **INSTALLATION:**

NOTE: The air cleaner has air flow sensors mounted in it that feed information to the PCM. The engine will not run properly without the air cleaner and all air intake ducts connected to the throttle body. Modifications to chassis and idler may be necessary in some applications. Controller extension harnesses are available.

**\*\*\*\*\* DISCONNECT THE GROUND CABLE FROM ALL BATTERIES.\*\*\*\*\***

1. Mount the idle controller (inside vehicle) in a location that is both easily accessible to driver and within wiring harnesses reach.
2. Connect the red wire from the idler to a source that provides +12 volts when the ignition switch is in the "run" position (ex. brown wire from fuse # 24 (circuit #341), also found at the "Convenience Center" cavity E 11).
3. Connect the green wire from the idler to a white wire (circuit # 17) from the TCC/ Stop Lamp Switch. This wire should pull to +12 volts when the brake pedal is pressed. This wire is also available at position number E4 in the "Convenience Center."
4. Connect the yellow wire from the idler to a light green wire (circuit # 275) from the TCC/ Stop Lamp Switch. This wire should pull to +12 volts when the ignition switch is in the "RUN" position and the gear selector (automatic trans.) is in the "PARK" position.
5. Connect the black wire from idler to chassis ground.
6. Drill a 1/2-inch hole through the firewall. Be careful not to drill through harnesses, hose etc.
7. Feed harness through to grommet. Be sure grommet seats properly in hole.
8. Tape and tie any loose wire or harnesses away from sharp edges and moving parts.
9. Mount Circuit Breaker & Relay close to a source for +12v (>30A), and away from heat sources such as exhaust manifolds or direct exposure to water spray from tires.
10. Route the idler harness over to relay. Secure harness away from heat sources, sharp edges or moving parts.
11. Connect the blue wire to relay terminal #85.
12. Connect the gray wire to relay terminal #86.
13. Connect the circuit breaker's "BAT" terminal to a +12 Volt source that can supply >30A such as the battery or the power studs on the under-hood fuse center.
14. Check to insure that the solenoid's idle control nut and cable housing are fully retracted. Mount solenoid close to relay and within cable's reach of throttle bracket but away from direct exposure to high heat sources or water spray.
15. Ground the negative terminal of the solenoid to a suitable high current ground. Solenoid mounting screws may be used if solenoid is mounted to frame/ chassis.
16. Connect the positive terminal of the solenoid to relay terminal #87.
17. Chassis built in '97 and later are equipped with the On Board Diagnostics 2 system which can inadvertently turn the "Check Engine" light on during high idler operation. To prevent the "Check Engine" light from falsely being turned on, the PTO relay kit must be installed.
  - a) Mount the PTO relay next to the solenoid

- b) Ground the black wire from relay terminal #86.
  - c) Connect the orange wire from relay terminal #85 to the solenoid's positive terminal along with the 10 AWG red wire.
  - d) Locate the Vehicle Control Module. Remove the locking clip and disconnect the 24-pin connector marked "BLACK" on the VCM. Open the wire dress cover to expose the rear of the connector.
  - e) Remove the Terminal Position Assurance (TPA) clip from the front of the connector by releasing the clips on the side.
  - f) Carefully insert the terminal on the brown wire (from relay terminal # 87) into the cavity marked "17" with enough force to break through the rubber terminal seal lower. Terminal should lock into place. To avoid VCM damage double check to insure that the brown wire is in cavity "17" in the connector marked "BLACK" on the VCM!
  - g) Reinstall the TPA & close the wire dress cover. Plug into VCM and replace locking clip.
18. Secure ALL loose wires away from heat sources and sharp edges or moving parts.
  19. Remove the throttle bracket bolt nearest to the throttle cable.
  20. Lift the throttle bracket and slide the short leg of the PennTex throttle bracket under the OEM bracket from the throttle body side of the bracket. Replace the OEM throttle bracket bolt but do not tighten.
  21. Drill a 3/16" hole through the OEM throttle bracket close to the top and between the throttle and cruise cables that will line up with the hole in the PennTex bracket.
  22. Using the supplied #8-32x1" screw and associated hardware, bolt the two brackets together with the 0.200" spacer sandwiched in between. Make certain that the bracket does not interfere with the OEM cables.
  23. Tighten the OEM throttle bracket bolt.
  24. Route the PennTex high idler cable over to the throttle body and attach to the bracket. Secure the cable away from heat sources sharp edges and anything that could cause damage.
  25. Attach linkage adapter to throttle cable. Remove cruise control linkage if installed. Attach linkage adapter to cruise lever with the flat side toward the throttle cam. Reinstall cruise linkage or slide throttle clip onto cruise pivot and crimp open end closed.
  26. Leave approximately 3/8" - 1/2" of slack in cable to insure that the linkage adapter swivels downward when the gas pedal is pressed. Tighten the screws on the linkage adapter. Operate throttle lever manually to insure obstruction free downward swivel of pivot adapter without hanging or jamming.
  27. Reconnect all battery ground cables.

### **TESTING AND ADJUSTMENT:**

1. Set the park brake (emergency brake). Turn ignition switch to run position, but **DO NOT START ENGINE**. The "LOW" battery indicator (red) should be lit. After 10 seconds the "HIGH IDLE" indicator (yellow) should light up.
2. Press the brake pedal. The "HIGH IDLE" indicator (yellow) should turn off. Release the brake and it should come back on with no delay.
3. Press the brake pedal and move the gear shift to "DRIVE". Release the brake pedal. The "HIGH IDLE" indicator (yellow) should not be lit. Put the shifter in "PARK". The "HIGH IDLE" indicator should light.
4. Start engine and press the "MANUAL ENGAGE" button. Allow engine to fully warm up. Turn on all possible engine and electrical loads. Using solenoid's adjustment nut adjust engine RPM to a level adequate to maintain battery voltage above 12.75 volts (1000 to 1500 RPM). Tighten solenoid's locking nut after final adjustment. Alternator may take a few minutes to recharge batteries before voltage can rise. Alternator must also be capable of putting out more current than vehicle and accessories draw at a given RPM.
5. Press brake to insure idle speed returns to normal.
6. Installation complete.