

PI-1015 PENNTEX IDLER CONTROLLER FOR UNIVERSAL APPLICATIONS

INSTALLATION:

Some modifications to idle controller kit and vehicle may be required. This is a universal kit and PennTex cannot make specific instructions on how to connect the idler to the electrical system. For this reason PennTex will not be held responsible for damages that might occur during installation or operation.

Disconnect the ground cable from all batteries as needed to protect unfused circuits and batteries when making connections to the electrical system!

1. Mount the idle controller (inside vehicle) in a location that is both easily accessible to driver and within wiring harnesses reach (Harness extensions for controller are available).
2. Connect the red wire from the idler to a source that provides +12 volts when the ignition switch is in the "RUN" position. This source should be as close to the fuse panel as possible to minimize voltage drop. The idle controller senses the system voltage on this wire.
3. Connect the green wire from the idler to the wire from the main brake switch that feeds the stop lamps. This wire should be +12 volts only when the main brake pedal is pressed. The idler uses the green wire to disengage the idler when the main brake is pressed. Some vehicles have the hazard flasher tied directly to this circuit and intermittently pull this wire to +12 volts when the hazard switch is turned on (ex. Some Chevy chassis prior to '95). If this is the case then use the two 6 amp. rectifiers in parallel (included in this kit) to isolate the green wire from the hazard circuit as in figure 1 -A. This wire is usually white on Chevy's and may be accessible at the steering column as in figure 1 -B.
4. The idle controller senses when the vehicle is in "PARK" or "NEUTRAL" through the orange wire. This wire must be connected to a source that is grounded only when the gear selector is in "PARK" or "NEUTRAL" so that the idler can **not** engage when in gear. This part of the installation will vary between manufacturers and chassis. Listed below are some suggestions and guidelines:
 - a. Some chassis use a "PARK/ NEUTRAL" switch to prevent the starter from being engaged when in gear. This switch is usually in series between the ignition switch and the starter solenoid or starter relay. The orange wire may be connected in between the ignition switch and the "PARK/ NEUTRAL" switch as shown in the wiring diagram. The idler draws approximately 0.2 amps through the orange wire when engaged. As long as the resistance in the starter relay's coil is less than 10 ohms, this method will work. If the resistance in the coil is higher the idler may not engage reliably and the starter could be engaged when the idler engages. This method will work on most Ford and Dodge chassis prior to the writing of these instructions (10-18-96). On Ford chassis this should be a white with pink stripe wire from the ignition switch. On Dodge chassis this should be a brown with orange stripe wire from the "PARK/ NEUTRAL" switch. On some GM chassis prior to '95 this method may work if the "P/ N" switch on the steering column is used for starter lockout. See figure 2.
 - b. On some GM chassis a mechanical starter lockout is used that prevents the key from being turned to the "CRANK" position when the gear selector is not in "P" or "N". Prior to '97 these chassis still used the "PARK/NEUTRAL/REVERSE" switch only to turn the backup lamps on. If the switch does not have the terminals for "P/N" then the switch must be replaced as in figure 3.
 - c. Newer chassis may have a digital transmission selector switch that sends information to the ECM. Do not attempt to tie into this switch because this could damage the ECM.
 - d. Some late model chassis may have a +12 volt output from the gear selector switch that activates the shift lock actuator through the brake switch when the gear selector is in "PARK". Chevy G-vans have this starting in '96. Connect this wire to a "BOSCH" type 30A relay as in figure 4 to convert this to a ground signal for the idlers orange wire.

- e. Some chassis may not have a usable OEM switch. If this is the case then one will have to be added.
 - f. If the vehicle has a manual transmission or an automatic transmission without a "PARK" position then connect the orange wire to the "PARK" brake switch wire that goes to the instrument panel's "BRAKE" warning lamp. This wire should connect to ground only when the "PARK" brake is set. If the vehicle has air "PARK" brakes then there may be a pressure switch that activates the "BRAKE" warning lamp when the brakes are set and the air pressure is released. If not then add a pressure switch to the air line that is closed with less than 4-6 psi.
5. Connect the black wire from the idler to chassis ground.
 6. Drill a 1/2-inch hole through the firewall or floor and feed the harness (blue and gray wires) through to grommet. Install grommet into hole to protect the harness.
 7. Secure any loose wires and harness away from sharp edges and moving parts.
 8. Mount the circuit breaker and relay close to a source for +12 volts (>30 amps), and away from heat sources or exposure to water spray from tires.
 9. Route the idler harness over to relay. Secure harness away from heat sources, sharp edges and moving parts.
 10. Connect the blue wire to relay terminal #85.
 11. Connect the gray wire to relay terminal #86.
 12. Connect the circuit breakers "BAT" terminal to a +12 volt source that can supply >30A.
 13. Check to insure that the solenoid's idle control nut and cable housing are fully retracted.
 14. 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 the solenoid is mounted to the frame or chassis.
 16. Connect the positive terminal of the solenoid to relay terminal #87.
 17. Secure any loose wires and harness away from heat sources, sharp edges and moving parts.
 18. Route solenoid's throttle cable to throttle bracket. Secure cable away from heat sources, sharp edges and moving parts.
 19. Mount idler throttle cable housing to OEM throttle bracket. Cable housing requires a 3/8-inch-mounting hole. It may be necessary to fabricate special bracketry to mount the cable. Be careful not to mount cable in a position that will pull at an angle or directly across throttle shaft from pivot.
 20. Connect the idler throttle cable to the throttle lever using the chain and cable clamp/pivot provided as suggested in figure 5 or by the best means possible. Leave approximately 3/8 inch of slack in chain. Since this is a universal kit and throttle linkages vary drastically we cannot tell you the best way to do this. You must rely on your own ingenuity. We will not warrant or take responsibility for this part of the installation or the kit or the vehicle.
 21. Operate throttle manually to make absolutely certain that throttle operates freely without obstruction or binding. Make certain that neither chain or cable can cause throttle to hang.

TESTING AND ADJUSTMENT

- 1 Set the park brake. Turn the ignition switch to the "RUN" position, but **DO NOT START ENGINE**. The "LOW" battery indicator (red) should be lit. After approximately 10 seconds the "HIGH IDLE" indicator (yellow) should light up.
2. Press the brake pedal. The "HIGH IDLE" indicator should turn off. Release the brake and it should come back on with no delay.
3. If the vehicle has an automatic transmission and the idlers orange wire was connected to the "PARK/NEUTRAL" switch follow these instructions:
Make certain that the emergency brake is on, press the brake pedal and move the gear selector to "DRIVE". Release the brake pedal. The "HIGH IDLE" indicator should be off. Put the shifter in "PARK" and it should come back on with no delay.

If the vehicle has a manual transmission or it is an automatic and does not have a "PARK" position and the idlers orange wire was connected to the parking brake follow these instructions:

Make certain that the vehicle can not roll by blocking the wheels. Release the parking brake. The "HIGH IDLE" indicator should be off. Re-engage the parking brake and it should come back on with no delay.

4. Start the engine and press the "MANUAL ENGAGE" button. Allow the 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 12.85 volts (1000-1500 RPM). This is the voltage that the idler turns on the "OK" indicator. Tighten the solenoid's locking nut after final adjustment. The alternator may take a few minutes to recharge the batteries before the voltage can rise. The alternator must also be capable of putting out more current at a given RPM than the vehicle draws.
5. Press the brake to insure that the idle RPM returns to normal.

INSTALLATION COMPLETED