

Down and Dirty Diagnostics

No start diagnostics - Engine does not turn over

- 1) Does engine turn over?
 - a. No, (the problem is in the starter/battery/alternator system) go to #2
 - b. Yes, (the problem is not in the starter/battery/alternator system) . This is not covered here. Go to No Start Diagnostics for the Do It Yourselfer or Professional.
- 2) Is there any noise? Click or high speed spinning noise?
 - a. No noise. No noise means a problem exists in the starter/battery system go to #3
 - b. A click from the starter or solenoid means the starter system is trying to engage. The problem may be low power from the battery or a starter problem. Go to #3
 - c. A high speed spinning noise means the starter is engaging but spinning without turning the engine. This means the starter drive is defective. It is part of the starter – replace the starter.
- 3) Turn on the headlights
 - a. Headlights are dim or do not light means there is a problem with power from the battery. Go to #4
 - b. Headlights are bright means there is power from the battery go to #11
- 4) Connect a jumper battery to the battery
- 5) Are the Headlights on bright?
 - a. Yes means there is good power to the battery.
 - b. No means there is still not good power to the battery, make a better connection. You must have good power at the battery to continue.
- 6) Try to start the engine.
 - a. A click means the starter is attempting to engage. Go to #11
 - b. The engine turns over means the battery is low on charge or bad. Go to #7
 - c. The engine does not turn over means there is low power from the battery and there is another problem in the starter system. This requires more knowledge and understanding and testing not covered here.
- 7) Start the engine
- 8) With engine running disconnect the jumper cables
- 9) Are the headlights as bright without the jumper as they were with the jumper? Yes or no? Go to #10
- 10) With the engine running and the headlights on, watch the headlights as you turn the heater blower motor to high and turn on the windshield wipers
 - a. Headlights continue bright means the charging system is working.
 - i. Charge and test or replace the battery to be sure it is good and fully charged.
 - ii. Have the charging system tested professionally
 - b. The headlights dim when the heater blower motor or wipers are turned on high means the charging system has a problem or the battery is taking everything the charging system can put out.
 - i. Charge the battery and test the battery to be sure it is good and fully charged
 - ii. Have the charging system tested professionally
- 11) Tap on the starter with a hard item such as a small hammer or large wrench. Then try to start the engine again.

- a. The engine turns over now means the starter has connection problems inside and needs to be replaced.
- b. The starter clicks but the engine does not turn over means the starter is bad or there are electrical connection problems. This requires more knowledge and understanding and testing not covered here.