



Car Won't Start

by [Larry Carley](#) copyright 2019 AA1Car.com

YOU TRY TO START YOUR CAR BUT IT WON'T START

What should you do when your car won't start? Diagnosing a no-start condition requires a logical approach to figuring out what might be preventing your car from starting. Below is a list of possible causes that can prevent your car from starting.

COMMON CAUSES OF NO-CRANK NO-START

Low battery (Check battery voltage, recharge if low, or jump start with another vehicle or battery charger).

Loose or corroded battery cables (Inspect, clean and tighten BOTH ends of BOTH battery cables).

Bad starter relay wiring connections or ground connection (Inspect, clean, tighten wiring connections).

Bad starter relay/solenoid (Check for voltage at relay, if relay has voltage but there is

no "click" when key is turned to start, replace relay).

Bad starter (Jump battery voltage direct to starter to see if it spins, or remove starter and have it bench tested at auto parts store).

Damaged starter drive or teeth on flywheel (Remove starter and inspect drive gear and flywheel teeth, replace damaged parts if necessary).



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Bad ignition switch (Check to see if voltage reaches starter relay/solenoid when turn to start. If not, check for open P/N switch and brake or clutch pedal switch. Replace [ignition switch](#) if defective).

Open P/N safety switch, or open Brake Pedal Safety Switch (automatic transmission) or open Clutch Pedal Switch (manual transmission). Bypass switch with jumper wire to see if engine cranks, or use test light or voltmeter to check for voltage passing through switch when ignition is turned to start.

Bad Start Button or Smart Key Fob If nothing happens when you push the Start button, the battery in your key fob may be dead, or the fob may be defective, or there may be a problem with the push button circuit. For more information on Push Start Button diagnostics, [Click Here](#). Refer to your owners manual for emergency starting procedure if your [Key fob won't start your car](#). On some vehicles, placing the fob next to the push start button, pressing the Start button with the fob, or inserting the fob into a special slot on the instrument panel, steering column or center console may allow it to communicate with the ignition system so your engine will crank and start.



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Engine seized due to bearing failure or internal damage (Use socket and long handle to see if engine can be turned by hand, if not engine is locked up).

Engine hydrolocked due to coolant leak from leaky head gasket (Use socket and wrench to see if engine rotates, remove spark plugs and see if coolant comes out or engine can not be cranked with plugs out).

ENGINE CRANKS OKAY BUT WON'T START

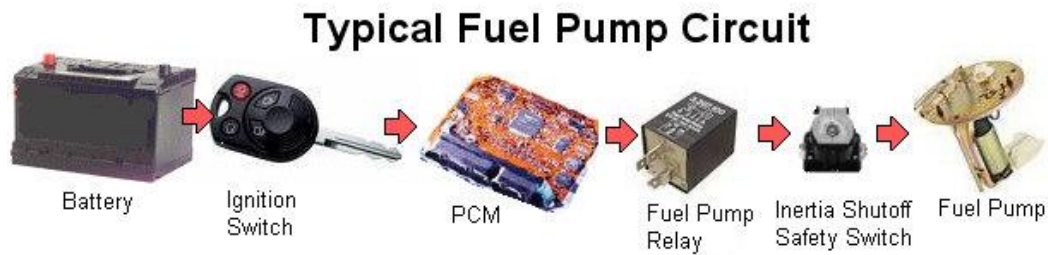
If the engine cranks over normally when you attempt to start your car, but the engine does not start, the problem may be **NO FUEL, NO SPARK or NO COMPRESSION**. The engine needs adequate fuel pressure, a properly timed spark and normal compression to start.

TIP: To find why the engine won't start, remove the air inlet tube from the throttle body, push the throttle open and spray a small amount of aerosol starting fluid into the engine. Crank the engine. IF it has spark and compression but NO FUEL, it will start and run a few seconds before dying. If it does NOT start, it probably has NO SPARK.

TIP: Another method to check for spark is to pull a spark plug wire off of a spark plug (if it has plug wires, coil-on-plug ignitions do not) and place the open end of the plug wire near a metal surface on the engine. Have a helper crank the engine while you watch for a spark. DO NOT hold the wire while doing this as it can shock you. If you see a spark, the problem is not spark, but most likely NO FUEL or NO COMPRESSION. If you do not see a spark, the problem is in the IGNITION CIRCUIT.

TIP: Proper fuel pressure is critical for fuel injected engines to start and run. You should hear the fuel pump inside the fuel tank buzz for a couple of seconds when the ignition is turned on (no buzz means the pump is not running and the engine is not getting fuel). You can smell the tailpipe for gasoline vapors after cranking the engine. If you smell gas, the problem is likely not fuel but NO SPARK. You can also remove the plastic cap and press the schrader valve test fitting on the fuel rail to see if there is any fuel pressure to the engine (not a very accurate test because fuel pressure must be at a certain level for the engine to start, for that you need a gauge). Even so, no fuel at the fuel rail would tell you fuel is not getting to the engine.

✓ FUEL RELATED CAUSES OF A NO START



Anti-Theft system issue. If your Anti-Theft light is flashing, the anti-theft system is disabling the fuel pump to prevent the engine from starting. The problem could be a defective chip in a smart key, or a dead battery in a smart key or keyless entry fob, or a fault in the Anti-Theft system itself. See [Diagnose Anti-Theft System](#) for help.

Bad [fuel pump](#) (Pump should run for a few seconds when ignition key is turned to start, no buzz means no fuel delivery to the engine).

Bad fuel pump relay (Relay is energized by PCM to route power to fuel pump when ignition is on).

Bad inertia fuel shut-off safety switch (Shuts off fuel in an accident, may have been tripped by a severe jolt, press button to reset).

Open in wiring anywhere in fuel pump wiring circuit (power or ground). Problem may be at wiring connector on top of fuel tank (hard to reach!).

No gas in fuel tank (Check the fuel gauge, and keep in mind the gauge may not be reading accurately).

Bad gas (Contaminated with water or too much alcohol or diesel fuel). If you just filled up with gas and now your car won't start, suspect bad gas.

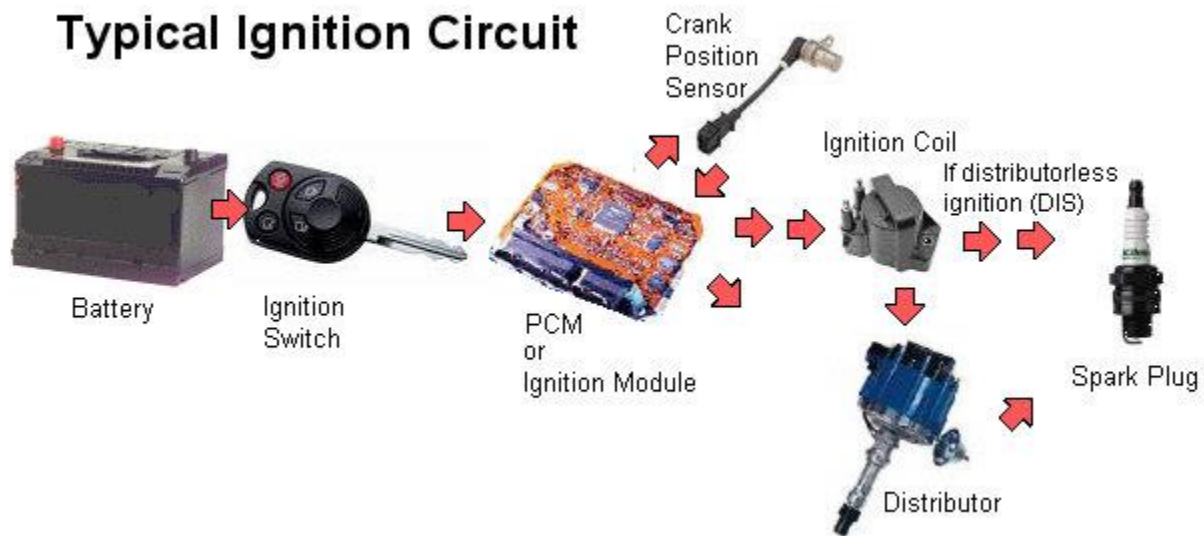
Plugged Fuel Filter (When was the filter last changed?). Replace the filter. If plugged with rust, fuel tank may also need to be cleaned or replaced.

Plugged or Pinched Fuel Line (Inspect fuel lines under vehicle for damage).

Leaky Fuel Pressure Regulator (Controls fuel pressure to injectors, which is critical for starting and proper air/fuel mixture).

No power to Fuel Injectors (Due to faulty fuel injector relay, blown fuse, no input signal to PCM from crank position sensor or cam position sensor, or bad PCM driver circuit). Injectors should usually have power when key is on. PCM grounds other side of injector circuit to pulse the injectors.

Major vacuum leak (An open EGR valve, disconnected vacuum hose, PCV valve, etc, can create a large vacuum leak and allow too much air to be sucked into the engine. This will make the air/fuel mixture too lean and make the engine hard to start. Engine will usually idle rough if it does start.



✔ IGNITION RELATED CAUSES OF A NO START

Bad [crankshaft position sensor](#) or distributor pickup (Sends pulse signal to ignition module and/or PCM that is necessary to trigger the ignition coil(s)).

Bad ignition module (controls firing of ignition coil(s), may have an intermittent open in circuitry that causes loss of spark, hard starting or sudden stalling, usually when hot)

Bad ignition coil(s). Ignition coil creates high voltage to fire the spark plugs. On engines with a distributor, a bad coil will prevent spark at all the spark plugs. On engines with a distributorless ignition system or coil-on-plug ignition, a bad coil will only affect one or two cylinders depending on the application. This may make the engine hard to start, but it will run on the remaining cylinders that are firing.

Cracks or carbon tracks inside distributor cap or on rotor (on older engines with distributors, cracks or carbon tracks allow spark to short to ground before it reaches the spark plugs). Same thing can happen in coil-on-plug ignition systems if cracks or carbon tracks inside coil tube.

Bad spark plug wires (if wet, cracked, burned or internal resistance exceeds specifications, can interfere with good spark and make engine hard to start).

Fouled spark plugs (if the electrodes are contaminated with deposits, spark may short

to ground before jumping gap causing misfires. Can make engine hard to start and run poorly. If plugs are wet when removed, it means they are not firing or engine is flooded).

COMMON CAUSES OF NO COMPRESSION

Broken timing belt or chain (Belt failure will prevent the valves from opening. The engine will NOT run if the belt has broken, and it may have bent valves or other damage as a result of the belt breaking).

Broken camshaft (This can happen on an overhead cam engine if the engine has overheated, warped the head and seized the camshaft).

Plugged catalytic converter (Creates a restriction that causes exhaust backpressure to back up. Engine may start but usually dies within a minute or two).



Troubleshooting an Engine that Won't Crank or Start

[Engine Won't Start, No Spark](#)

[Diagnose Ignition Switch Problems](#)

[Key fob Won't Start Car](#)

[Start Engine Push Button Diagnosis](#)

[Troubleshoot Anti-Theft System](#)

[Fuel Pump Diagnosis](#)

[Bad Gasoline Can Cause Performance Problems](#)

[Battery Safety & Jump Starting \(Read First!!!\)](#)

[Battery Testing](#)

[Starting & Charging System Troubleshooting](#)

[Starter Diagnosis & Charging System Checks \(alternator testing\)](#)

[Crankshaft Position CKP Sensors](#)

[Timing Belts & Chains](#)