

Roadside Troubleshooting the Model A

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Engine Fails to Start Although engine turns over freely

Culprits include:

1. Ignition switch is off
2. No gasoline is in the tank
3. Gasoline line valve is off (needs to point down for on)
4. If engine is cold, mixture may not be rich enough.
5. If the engine is warm-Mixture is too rich, over choking
6. Breaker points too close together. The correct adjustment is .018 to .022
7. The spark plug gap is incorrect. The correct gap is .035
8. Water in filter bowl or carburetor

Starter Fails to Turn the Engine Over

Culprits include:

1. Battery run down
2. Loose or dirty Battery Connections.

Missing at Low Speeds:

Culprits include:

1. Gas Mixture too rich or too lean
2. The spark plug gap is incorrect. The correct gap is .035.
3. Breaker points improperly adjusted, badly burnt or pitted.
4. Fouled spark plug-Spark plugs should occasionally be cleaned and the gaps checked.
5. Water in gasoline

Missing at High Speeds:

1. Insufficient gasoline, flowing to carburetor due to gasoline line or filter screen being partly clogged
2. Gas Mixture too rich or too lean
3. Water in gasoline

Backfiring Under Load (throttle wide open at relatively low rpm's) often indicates a problem in electrical/ignition/timing.

Culprits include:

1. Insufficient point gap (should be set at .018 to .020)
2. Timing
3. Bad condenser
4. Bad distributor body
5. Frayed wire between upper plate and lower plate on the distributor
6. Intermittent connection of the ignition switch

Backfiring With No-Load (example: shifting between gears and coasting downhill). Often indicates too little fuel in combustion chamber for proper ignition. (During the exhaust stroke, raw gas is expelled into the muffler where it ignites)

Culprits include:

1. GAV adjusted to lean
2. Intake vacuum leak
3. Low carburetor float

Backfiring Around 45 mph indicates insufficient fuel to supply to the carburetor.

Engine Stops Suddenly:

1. Gasoline tank empty
2. Dirt in fuel line or carburetor
3. Gas mixture too lean

Engine Overheats:

1. Lack of water
2. Lack of oil
3. Fan belt loose or slipping
4. Excessive carbon deposit on piston heads and combustion chamber
5. Incorrect spark timing
6. Gas mixture too rich
7. Water circulation retarded, by sediment/grease in radiator.

Quick Fuel Check:

Crank engine fully choke for seven or eight revolutions. If gas leaks from the back of the carburetor your line of fuel is not blocked.

If Fuel Line is Blocked

1. Use a stick to check the fuel level in the gas tank.
2. Repeat the above Quick Check for Fuel with the gas cap off.
3. Remove fuel line at carburetor. Test for fuel flow using the gas shut off valve for means of controlling flow. If blocked blow into fuel line to temporarily clear blockage.
4. If gas flows from the fuel line reattach it to the carburetor making sure the line does not extend

more than 1/8 of an inch from the ferrule into the carburetor, repeat the above Quick Check for Fuel.

5. Detach the choke lever and remove the center bolt of the carburetor and separate the two halves. Check for fuel flow.
6. Remove valve and check for fuel flow. If no flow check screen for blockage
7. Clean and blow through float valve

Quick Check: Ignition (Primary)

With ignition on, turn the engine over and observe the ammeter. If the needle jiggles the primary side of the electrical system is working. This includes: ignition switch, pop-out cable, points, condenser, primary side of coil, and the hidden wire in the distributor connecting the upper plate to the lower plate. *(Paraphrased from Tom Endy's article "Model A Ford Ignition Diagnostics")*

Note: For early Model A's up until November 1929 the ammeter was not wired into the primary ignition circuit. To convert:

Disconnect the battery. Open the terminal box on the firewall. Locate the black wire leading from the coil to the terminal on the passenger side, move this wire to the terminal on the driver side. The Ammeter Needle will now jiggle to help with diagnostics.

(Paraphrased from Tom Endy's article "Model A Ford Ignition Diagnostics")

Quick Check: Ignition (Secondary)

To check the secondary side of the electrical system, remove one brass spark plug connector from the distributor and position it approximately a 1/4 of an inch above its terminal on the distributor. Using the key turn the engine over and observe the gap to see if a bright yellowish-blue spark, with a loud snapping sound is being created

No spark/poor spark; Culprits include:

1. Failed condenser
2. Lower plate wire broke or shorted
3. Point gap closing up
4. Pop-out cable too tight and grounding out in distributor