

Q: What can I do if my engine simply won't start?

A: CHECK LIST FOR NON-STARTING ENGINES:

1) Close raw water through hull as soon as it's determined that the engine is not starting within the normal time.

2) COMPRESSION: With all spark plugs removed, hold your thumb over each spark plug hole to check compression as someone cranks the engine for a second or two on each cylinder with the starter. An Atomic 4 will usually start if any two cylinders have normal compression as indicated below:

a. Compression sufficient to force past your thumb no matter how hard you press it against the plug hole would confirm normal compression of approximately 85 psi or above.

b. If you can hold your thumb against the compression, but not easily, a compression value of approximately 40 to 50 psi would be indicated, and starting could be problematic.

c. If you feel virtually no compression on any one of the cylinders, the problem is likely a stuck valve.

3) FUEL: Remove the flame arrestor and check for the presence of raw fuel. If the choke is closed completely, there should be raw fuel puddled in the bottom of the intake throat within 15 to 20 seconds of cranking (3 or 4 five-second attempts). If the carburetor intake throat is "bone dry", after this amount of cranking, the reason for the non-starting is either a problem in the fuel supply which prevents fuel from getting to the carburetor, or some problem within the carburetor that prevents the fuel from getting through the carburetor (most likely a blocked main jet).

NOTE 1: Though quite unlikely, a massive manifold or carburetor flange gasket failure could also cause the engine to not draw fuel through the carburetor while cranking on the starter. Assuming a good compression check in step (2) above, remove the flame arrestor housing and hold your hand over the intake throat of the carburetor while someone cranks the engine for a second or two. If you feel good suction on your hand, the manifold gasket and carburetor flange gasket are both OK.

4) IGNITION: Remove the secondary lead from the center of the distributor cap and hold it approximately 1/4" from the cylinder head while someone cranks the starter. You should see a good arc between the end of the coil lead and the head that can be stretched to 1/2" or even 3/4". If you see no spark, the reason for non-starting is clearly within the ignition system, most likely a break down within the primary ignition circuit.

NOTE 2: This quick check of the ignition system does not rule out timing issues. While the Atomic 4 has virtually no history of slipping out of time once the timing has been properly set, if the non-starting follows work that was accomplished on the ignition system, the timing should be rechecked.

5) If all of the above checks prove to be satisfactory and the engine still won't start, the problem is probably somewhere within the secondary ignition system, down stream of the coil. The components within this part of the secondary ignition system are very difficult to inspect, but they are fortunately not very expensive so I recommend replacing them in the following sequence: Plugs, distributor cap, plug wires, and rotor.