

# Engine Cranks but will not start –sample

Does starter turn engine over at a normal speed ? Or does it crank faster than normal ? (like no compression) - Or is it slow or doesn't crank at all? Is it an uneven speed, fast, then slow?

TOO FAST- If maybe fast or definitely too fast-check timing belt. Different methods to see if it's OK: 1.Check cam through oil filler cap 2. Check rotor in distributor . Is camshaft spinning?

YES: Possible HEAD GASKET Is it full of water? Look underneath for leaks- Put hand or pressure tester over radiator (or fill with water and look for bubbles) while cranking . Is there pressure or bubbles in the radiator?

NO- timing belt is broken. Have to replace it. If interference fit, may need valves too. Check cam and aux. shafts for freedom of movement to be sure they did not seize and cause break.

NO- still could be head gasket blown- RE-EVAUATE cranking speed question. Take another route or continue.

YES- blown head gasket- optionally confirm it with compression test, big job-repair it or buy a car

Do compression test. Is compression even and at least 100psi in all cylinders?

NO- Engine is damaged, disassemble and repair or replace, or buy a car

YES- Cam may be turning but belt may have slipped. View timing marks. Check cam and crank gear marks behind timing belt cover- some have a hole with a plug covering it, others you have to pull or remove the timing cover to access. Are timing marks correct? Is valve timing is OK?

YES- You may have misjudged the cranking speed issue. Continue with no start diagnosis

NO- Install timing belt or chain.

NO-Diagnose relays , fuses. Grounds, etc....

BAD- Check primary and secondary ignition... etc...

UNEVEN- Check spark on all cylinders.

good

NORMAL- you probably have a good battery/ starter. Now, hold the gas pedal at part throttle and try to start it- just crack the throttle a very little. Does it start?

SLOWER OR NOT AT ALL- SEE Won't Crank DVD

YES- clean the throttle plate and try again without holding at part throttle. Does it start normally?

YES- the cleaning fixed it

NO- You still need to hold at part throttle to start. Probably have IAC problems, but try cleaning the throttle and see if that improves it. If not SEE Beyond the Tune-up DVD to diagnose it. Or replace the IAC motor as a good guess. Depending on the car, you may can adjust the base idle speed for now

NO- Listen for pump in fuel tank- should buzz while cranking (and most cars for 1 or 2 seconds with key on even without cranking)- May need stethoscope or long screwdriver on tank. Do you hear it?

YES- it's getting too much fuel and is "flooding" SEE Beyond the Tune-UP DVD, black smoke/rich chapter

NO- Check spark first - some imports require ckp signal to turn pump on.- HAVE Spark?

NO- test CKP sensor: Good Signal?

YES- Check fuel pressure. You must know what your pressure is and what it is supposed to be!! You must buy a gauge, it's worth it!! A little off shouldn't keep it from starting. You CANNOT go by how far it squirts or how much you get in your eye!! *The diagnosis goes on from here.....etc.....etc.....*

NO- Test sensor power supply and ground. Good?

YES- Replace CKP sensor.

YES- Start with power supply... Test Primary Ignition...etc... etc...

YES- Fuel pump circuit testing- For most cars, the pump comes on a couple of seconds when you first turn the key on, even without cranking. Use test connector or crank it to get a steady voltage reading for the test. You have to be testing while the pump is supposed to be running. ....etc.....etc.....