

H - TESTS W/O CODES - TURBO

1996 Toyota Supra

1996 ENGINE PERFORMANCE
Toyota Trouble Shooting - No Codes

Supra - Turbo

Before diagnosing symptoms or intermittent faults, perform steps in the F - BASIC TESTING - TURBO and perform testing procedures in the G - TESTS W/CODES - TURBO articles. Use this article to diagnose driveability problems existing when a hard fault code is not present.

Symptom checks can direct the technician to malfunctioning component(s) for further diagnosis. A symptom should lead to a specific component, system test or adjustment.

Use intermittent test procedures to locate driveability problems that DO NOT occur when the vehicle is being tested. These test procedures should also be used if a soft (intermittent) trouble code was present, but no problem was found during self-diagnostic testing.

NOTE: For specific testing procedures, see the I - SYSTEM/COMPONENT TESTS article.
For specifications, see the D - ADJUSTMENTS or the C - SPECIFICATIONS article.

SYMPTOMS

SYMPTOM DIAGNOSIS

Symptom checks cannot be used properly unless the problem occurs while the vehicle is being tested. To reduce diagnostic time, ensure that steps in the F - BASIC TESTING - TURBO article and in the G - TESTS W/CODES - TURBO articles were performed before diagnosing a symptom. Symptoms available for diagnosis include:

- * Engine Cranking Or Starting Problems
- * Engine Idling Problems
- * Engine Driveability Problems
- * Engine Stalling Problems

ENGINE CRANKING OR STARTING PROBLEMS

ENGINE FAILS TO CRANK

- * Check battery, cables, charging system and fusible links.
- * Check ignition switch.
- * Check starter and wiring connections.
- * Check clutch switch (M/T) or park/neutral position switch (A/T).
- * Check starter relay (if equipped).
- * Check theft deterrent system (if equipped).

ENGINE CRANKS BUT FAILS TO START

- * Ensure proper spark exists from ignition system.
- * Ensure ignition timing is correct.
- * Ensure fuel system performs properly (fuel pump, fuel filter, fuel injector, fuel pressure regulator).
- * Check engine compression, valve clearance, valve timing and timing belt (if equipped).

- * Check airflow meter or MAP sensor and wiring.
- * Check idle air control valve (if equipped) and wiring.
- * Check circuit opening relay and EFI main relay.
- * Check STA signal at Engine Control Module (ECM).
- * Check Engine Control Module (ECM) and wiring.

ENGINE DIFFICULT TO START UNDER NORMAL CONDITIONS

- * Ensure fuel system performs properly (fuel pump, fuel filter, fuel injector and fuel pressure regulator).
- * Ensure proper spark exists from ignition system.
- * Ensure ignition timing is correct.
- * Check STA signal at Engine Control Module (ECM).
- * Check engine compression, valve clearance, valve timing and timing belt (if equipped).
- * Check idle air control valve (if equipped) and wiring.
- * Check EGR system.
- * Check cold start injector system (if equipped).

ENGINE DIFFICULT TO START UNDER COLD CONDITIONS

- * Ensure fuel system performs properly (fuel pump, fuel filter, fuel injector and fuel pressure regulator).
- * Check STA signal at Engine Control Module (ECM).
- * Check idle air control valve (if equipped) and wiring.
- * Check cold start injector system (if equipped).

ENGINE DIFFICULT TO START UNDER HOT CONDITIONS

- * Ensure fuel system performs properly (fuel pump, fuel filter, fuel injector and fuel pressure regulator).
- * Ensure ignition timing is correct.
- * Check fuel pressure control vacuum switching valve (if equipped) and wiring.
- * Check idle air control valve (if equipped) and wiring.
- * Check cold start injector system (if equipped).
- * Check STA signal at Engine Control Module (ECM).

ENGINE IDLING PROBLEMS

INCORRECT IDLE AT ENGINE START-UP

- * Check for defective throttle linkage or cable.
- * Check throttle opener or dashpot (if equipped).
- * Check idle-up vacuum switching valve (if equipped) and wiring.
- * Check idle air control valve (if equipped) and wiring.
- * Check Engine Control Module (ECM) and wiring.
- * Check Throttle Position (TP) sensor and wiring.
- * Check A/C signal circuit to Engine Control Module (ECM).
- * Check park/neutral position switch signal to Engine Control Module (ECM).
- * Ensure dipstick and oil filler cap are properly seated.

ENGINE IDLE SPEED REMAINS HIGH

- * Check for defective throttle linkage or cable.
- * Check dashpot or throttle opener (if equipped).
- * Check idle-up vacuum switching valve (if equipped) and wiring.
- * Check idle air control valve (if equipped) and wiring.
- * Check Throttle Position (TP) sensor and wiring.
- * Check A/C signal circuit to Engine Control Module (ECM).

- * Check park/neutral position switch signal to Engine Control Module (ECM).
- * Check cold start injector system (if equipped).
- * Check fuel injectors.
- * Check Engine Control Module (ECM) and wiring.

ENGINE IDLE SPEED REMAINS LOW

- * Check idle air control valve (if equipped) and wiring.
- * Check airflow meter or MAP sensor and wiring.
- * Check fuel injectors.
- * Check Engine Control Module (ECM) and wiring.

ROUGH ENGINE IDLE

- * Check for vacuum leaks.
- * Check EGR system.
- * Ensure proper spark exists from ignition system.
- * Ensure ignition timing is correct.
- * Ensure fuel system performs properly (fuel pump, fuel filter, fuel injector and fuel pressure regulator).
- * Check engine compression, valve clearance, valve timing and timing belt (if equipped).
- * Check airflow meter or MAP sensor and wiring.
- * Check Engine Control Module (ECM) and wiring.
- * Ensure dipstick and oil filler cap are properly seated.

ENGINE MISFIRES

- * Check EGR system.
- * Ensure proper spark exists from ignition system.
- * Ensure ignition timing is correct.
- * Check engine compression, valve clearance, valve timing and timing belt (if equipped).
- * Check fuel injectors and cold start injector (if equipped).

ENGINE DRIVEABILITY PROBLEMS

HESITATION & POOR ACCELERATION

- * Ensure proper spark exists from ignition system.
- * Ensure ignition timing is correct.
- * Ensure fuel system performs properly (fuel pump, fuel filter, fuel injector and fuel pressure regulator).
- * Check EGR system.
- * Check engine compression, valve clearance, valve timing and timing belt (if equipped).
- * Check Throttle Position (TP) sensor and wiring.
- * Check airflow meter or MAP sensor and wiring.
- * Check oxygen sensor and wiring.
- * Check cold start injector system (if equipped).
- * Check Engine Control Module (ECM) and wiring.

ENGINE BACKFIRES

- * Ensure proper spark exists from ignition system.
- * Ensure ignition timing is correct.
- * Check valve timing and timing belt (if equipped).
- * Ensure fuel system performs properly (fuel pump, fuel filter, fuel injector and fuel pressure regulator).
- * Check EGR system.
- * Check Throttle Position (TP) sensor and wiring.

- * Check oxygen sensor and wiring.

ENGINE SURGES

- * Ensure fuel system performs properly (fuel pump, fuel filter, fuel injector and fuel pressure regulator).
- * Ensure proper spark exists from ignition system.
- * Ensure ignition timing is correct.
- * Check Engine Control Module (ECM) and wiring.

ENGINE KNOCKS

- * Ensure ignition timing is correct.
- * Check knock sensor (if equipped) and wiring.
- * Check EGR system.
- * Check valve timing and timing belt (if equipped).
- * Check Engine Control Module (ECM) and wiring.

MUFFLER EXPLOSION

- * Ensure ignition timing is correct.
- * Check fuel-cut system.
- * Check cold start injector system (if equipped).
- * Ensure fuel injectors and fuel pressure regulator operate correctly.
- * Check Throttle Position (TP) sensor and wiring.
- * Check oxygen sensor and wiring.
- * Check Engine Control Module (ECM) and wiring.

ENGINE STALLING PROBLEMS

ENGINE STALLS SOON AFTER START-UP

- * Ensure fuel system performs properly (fuel pump, fuel filter, fuel injector and fuel pressure regulator).
- * Ensure proper spark exists from ignition system.
- * Check EGR system.
- * Check idle air control valve (if equipped) and wiring.
- * Check Engine Control Module (ECM) and wiring.

ENGINE STALLS AFTER ACCELERATOR IS DEPRESSED

- * Ensure fuel system performs properly (fuel pump, fuel filter, fuel injector and fuel pressure regulator).
- * Ensure proper spark exists from ignition system.
- * Check EGR system.
- * Check Throttle Position (TP) sensor and wiring.
- * Check Engine Control Module (ECM) and wiring.

ENGINE STALLS AFTER ACCELERATOR IS RELEASED

- * Check idle air control valve (if equipped) and wiring.
- * Check EGR system.
- * Check Engine Control Module (ECM) and wiring.

ENGINE STALLS DURING A/C OPERATION

- * Check A/C signal circuit to Engine Control Module (ECM).
- * Check idle air control valve (if equipped) and wiring.
- * Check Engine Control Module (ECM) and wiring.

ENGINE STALLS WHEN SHIFTING FROM NEUTRAL INTO DRIVE (A/T MODELS)

- * Check idle air control valve (if equipped) and wiring.
- * Check park/neutral position switch signal to Engine Control Module (ECM).

INTERMITTENTS

INTERMITTENT PROBLEM DIAGNOSIS

Intermittent fault testing requires duplicating circuit or component failure to identify the problem. These procedures may lead to the computer setting a fault code, which may help in diagnosis.

If problem vehicle does not produce fault codes, use DVOM to help pinpoint faults. Monitor voltage or resistance values while attempting to reproduce conditions causing intermittent fault. A status change on DVOM indicates area of fault.

When monitoring voltage, ensure ignition switch is in ON position or engine is running. Ensure ignition switch is in OFF position or negative battery cable is disconnected when monitoring circuit resistance.

TEST PROCEDURES

Intermittent Simulation

To reproduce the conditions creating an intermittent fault, use the following methods:

- * Lightly vibrate component. See VIBRATION METHOD.
- * Wiggle or bend wiring harness. See VIBRATION METHOD.

Monitor circuit/component voltage or resistance while simulating intermittent. If engine is running, monitor for self-diagnostic codes. Use test results to identify a faulty component or circuit.

VIBRATION METHOD

Wiring Harness Testing

Using DVOM, monitor suspected circuit or component. Lightly shake wiring harness while noting fluctuation in DVOM reading. Inspect component connector harness for stretched areas. Inspect wiring harness at area where it goes through the body.

Component, Relay & Sensor Testing

Using DVOM, monitor suspected circuit or component. Lightly vibrate suspect component, relay or sensor while noting fluctuation in DVOM reading.

Electrical Connector Testing

Using DVOM, monitor suspected circuit or component. Lightly shake electrical connector while noting fluctuation in DVOM reading. Visually inspect electrical connector for damage.