SparkPlugsHowToBroch(New).qxd 7/21/04 7:09 PM Page 1

TROUBLESHOOTING

CONDITION	ACTION
Engine runs rough or will not run:	Check the ignition wires or coil packs for proper connection to the spark plugs. Check the ignition wires or coil packs for proper connection to cylinders.
There is a loud hissing noise:	One or more spark plugs have been improperly tightened – re-check. One or more spark plugs may have double washers – re-check. Spark plug may have been cross-threaded – re-install. If noise persists or if the threads in the engine head are stripped, DO NOT DRIVE THE VEHICLE – have it towed to your Toyota Dealer Service Department for diagnosis and repair.
There is a very loud clicking or tapping noise:	A foreign object may have fallen into one of the cylinders. If the noise persists, DO NOT DRIVE THE VEHICLE – have it towed to your Toyota Dealer Service Department for diagnosis and repair.
Engine has poor performance, runs hot or overheats:	The incorrect plugs may have been installed – re-check. The spark plug gap may be incorrect – re-check. One or more ignition wires may have been damaged. If the problem persists, take the vehicle to your Toyota Dealer Service Department for diagnosis and repair. DO NOT DRIVE THE VEHICLE if the engine overheats.
The "Check Engine" light comes on:	Take the vehicle to your Toyota Dealer Service Department for diagnosis and repair.

REFERENCES

Please refer to the following sources for additional information:

- Your vehicle's Owner's Manual
- Your vehicle's Repair Manual
- Genuine Toyota Spark Plugs Brochure (Available in English and Spanish)

CAUTION

Moving parts like the fan blade and drive belts, as well as extreme heat in the engine compartment or from the exhaust system can result in serious injury.

- Approach with caution and care.
- Never take shortcuts when replacing parts.
- Improper servicing may damage your Toyota and lead to personal injury.
- Unless you have proper knowledge, equipment and tools, you should have your Toyota Dealer Service Department perform the repairs and maintenance.

IMPORTANT SAFETY NOTICE

Proper installation of Genuine Toyota replacement parts is essential for the safe and reliable operation of your vehicle.

Following these instructions will:

- Help to assure your personal safety
- Assist you in the proper replacement of specific parts

There are many variations in the step-by-step procedures used in installing various parts, and varying skill levels of individuals doing the parts replacement. These instructions cannot anticipate all circumstances or provide advice and caution on each. If you are in doubt concerning your ability to replace the part or have any questions, consult your local Toyota Dealer Service Department and have the work performed by an experienced technician.

For further assistance, contact your Toyota dealer.

TOYOTA
GENUINE PARTS

Visit our Web site at www.toyota.com
M/N 00405-HOWTO-SPLUG

How To Replace The SPARK PLUGS



A GUIDE TO ASSIST YOU
IN THE PROPER REPLACEMENT
OF GENUINE TOYOTA PARTS

TOYOTA

DIFFICULTY LEVEL
FROM ONE TO FOUR–FOUR BEING THE MOST DIFFICULT

ESTIMATED TIME INVOLVED
60 MINUTES

TOOLS AND SUPPLIES

- Genuine Toyota Spark Plugs
- Spark plug wrench or socket set with spark plug socket
- Gapping tool and wire feeler gauge
- Rag or paper towels
- Penetrating oil
- Torque wrench
- Pen or pencil

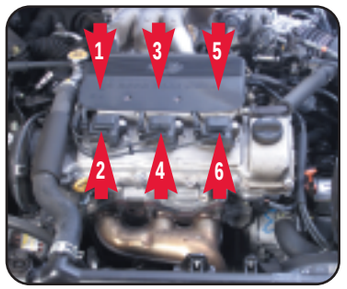
INSTRUCTIONS

1. ALWAYS REMOVE THE KEYS FROM THE IGNITION WHEN WORKING ON THE VEHICLE. SEE **CAUTION** ON BACK PANEL.

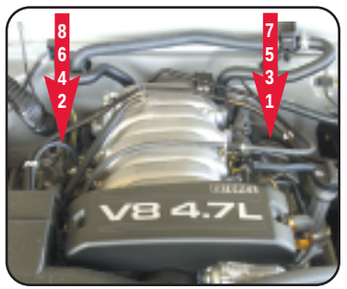
   ⚠**WARNING:** To prevent injuries, allow the engine to cool before starting to work. See CAUTION on back panel.

   NOTE: Mark each ignition wire and corresponding spark plug location (if so equipped) with a number on a piece of masking tape. For in-line engines, start #1 at the front of the engine and mark the wires in order to the rear. The front of the engine is always where the drive belts are located. For "V" engine configurations, mark as follows:

   V6 – When facing the engine with the drive belts closest to you, the left side of the engine has cylinders 1-3-5. The right side has cylinders 2-4-6. This also applies to transversely mounted engines.



   V8 (2VZ-FE) – When facing the engine with the drive belts closest to you, the left side of the engine has cylinders 2-4-6-8. The right side has cylinders 1-3-5-7.

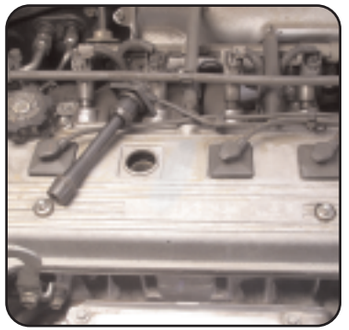


INSTRUCTIONS (continued)

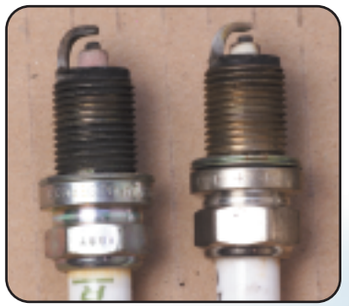
2. DISCONNECT THE IGNITION WIRES OR COIL PACKS – Pull the plug cable boot straight out to disconnect each cable. On models with individual ignition coil packs, pull the coil pack straight out. Some engines may require the removal of the top cover to access the plugs.

   CAUTION: Do not pull on the wire itself. This may damage the carbon conductor inside, which may affect engine performance. Also, do not pull the cable out from the distributor cap (if so equipped).

3. REMOVE SPARK PLUGS – If you can reach the base of the spark plug, apply penetrating oil where it seats to the cylinder head. This will protect the threading in the cylinder head. Remove each spark plug and its metal washer with a spark plug wrench or spark plug socket. Keep the plugs in order as you remove them.



4. INSPECT OLD SPARK PLUGS – If the plugs have anything other than brown to light tan or gray deposits, save them, and speak to your Toyota dealer's service department advisor. Check repair manual for description of bad spark plugs. Spark plugs are good diagnostic indicators of engine performance problems.



   NOTE: Platinum tip spark plugs with a service life of more than 50,000 miles and iridium tip plugs with a service life exceeding 100,000 miles are installed on some Toyota models. Refer to your Owner's Manual or the Toyota Spark Plug Application Chart for the correct type of spark plugs for your vehicle.

INSTRUCTIONS (continued)

5. CHECK THAT OLD WASHERS ARE REMOVED FROM THE SPARK PLUG HOLES – Remove any old spark plug washers from spark plug holes.

   CAUTION: Be sure that no dirt or foreign object falls into the spark plug holes.

6. SET SPARK PLUG GAP – Using the wire feeler gauge, check the gap between the electrodes to the correct clearance. Carefully bend the outer electrode as required to feel a slight drag on the wire gage. See the repair manual for correct spark plugs and the gap clearance specification.



7. INSTALL SPARK PLUGS – Be sure that each new spark plug has a new metal washer. Install each plug as far as possible by hand. Make sure the plug is correctly threaded. Tighten firmly with the spark plug wrench or socket but **DO NOT OVER-TIGHTEN.** See the repair manual for proper torque specification.

   CAUTION: NEVER re-use old washers. ALWAYS screw in the plug several turns by hand to avoid cross threading the spark plugs.

   NOTE: Spark plug threading on aluminum cylinder heads is easily damaged. DO NOT FORCE THE PLUG.

8. CONNECT THE IGNITION WIRES OR COIL PACK – Install the wires or coil packs in the correct order. Push the spark plug boot (if so equipped) firmly over the plug end.

9. TEST DRIVE THE VEHICLE – Remove masking tape from the ignition wires. Start the engine and listen for any unusual noises. Test drive the vehicle. Record the date and mileage that the plugs were changed in your service maintenance log. Check the scheduled maintenance guide to assure all maintenance is performed at the appropriate time for the mileage.

   CAUTION: Make sure that all tools and supplies are removed from the engine compartment.