



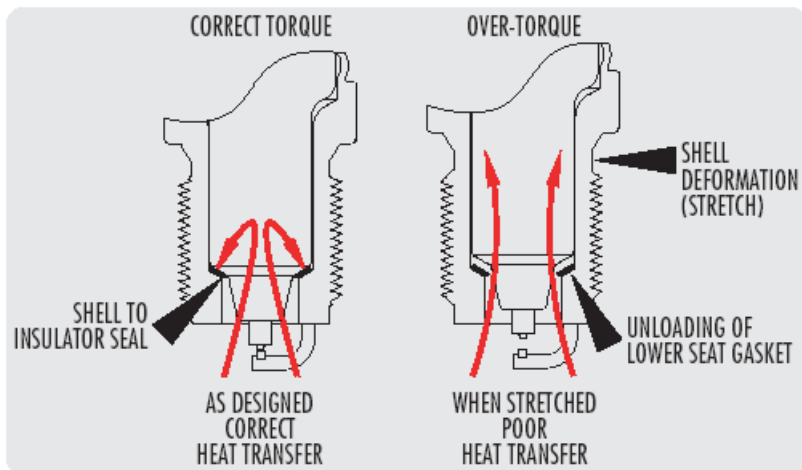
SPARK PLUG REMOVAL AND INSTALLATION PROCEDURE

A spark plug that is installed improperly will not function to its capacity.

The most critical step in spark plug installation is tightening with the use of a torque wrench. Please torque your spark plugs according to Table #1 recommendations for optimum performance and spark plug life.

Proper spark plug installation is a good maintenance practice. It should be performed each time spark plugs are installed in an engine.

Figure #1



As shown in Figure #1 it is important to properly torque a spark plug for proper heat flow and optimum life.

Under torque: Affects the heat flow from the spark plug into the cylinder head. Spark plug may loosen in the cylinder head during operation and allowing combustion gases to leak past seat gasket. Spark plug will run hot.

Over torque: the shell thread portion can be stretched lifting the insulator off the shell seat. Result: No heat flow path and possible combustion leakage through the spark plug. This could cause the ceramic to become separated from the shell.

Both of these improper installation procedures can result in poor spark plug life and have the potential to injure someone or damage an engine.



SPARK PLUG REMOVAL:

- 1) Remove any debris from around the spark plug seating area.
- 2) Loosen the spark plug with a properly sized socket wrench.
- 3) If spark plug is difficult to remove, use penetrating oil on the gasket area of the spark plug.
- 4) After removal, inspect the threaded end for damaged threads. Make sure gasket is on spark plug.
- 5) Inspect secondary leads and all terminals. Look for signs of wear or contamination. Clean and/or replace components as needed.

INSTALLATION OF NEW SPARK PLUGS:

- 1) Remove the new spark plug from its packaging.
 - a) Install new gasket.
 - b) Check the gap setting of the electrodes.
- 2) Thread the spark plug into the cylinder head. It should thread all the way to the external seat gasket.
- 4) After threading the spark plug to the gasket, allow it to heat up to engine temperature before applying final torque.
- 5) Torque the spark plug into the cylinder head.

TABLE #1

| | | |
|----------------------|----------------------------|------------------------------|
| 14mm X 1.25mm | 26 - 30 foot pounds | 35 - 40 Newton meters |
| 18mm X 1.5mm | 32 - 38 foot pounds | 43 - 53 Newton meters |
| 7/8" - 18 | 50 - 60 foot pounds | 68 - 81 Newton meters |

Torque values above are DRY torque values. If anti-seize/thread lubricant is used, torque should be reduced by 20%.

- 6) After torque is applied to all of the spark plugs, insure all secondary components are clean and then make the attachments to the spark plug and transformer coil. The engine is now ready to start.