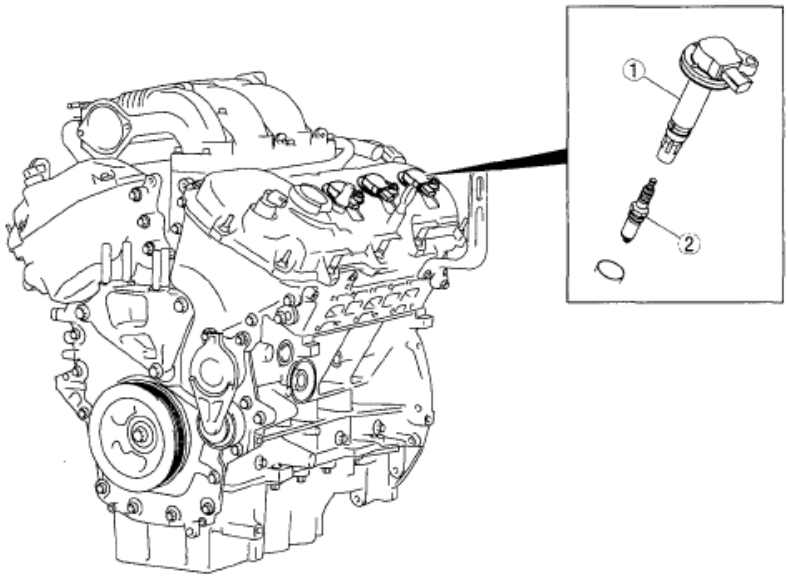
2008 ENGINE PERFORMANCE

Ignition System (MZI-3.7) - Mazda CX-9

IGNITION SYSTEM LOCATION INDEX [MZI-3.7]



1	Ignition coil (See 01-18-2 IGNITION COIL REMOVAL/ INSTALLATION [MZI-3.7].) (See 01-18-2 IGNITION COIL INSPECTION [MZI-3.7].)	2	Spark plug (See 01-18-3 SPARK PLUG REMOVAL/ INSTALLATION [MZI-3.7].) (See 01-18-3 SPARK PLUG INSPECTION [MZI-3.7].)

Fig. 1: Identifying Ignition Coil And Spark Plug
Courtesy of MAZDA MOTORS CORP.

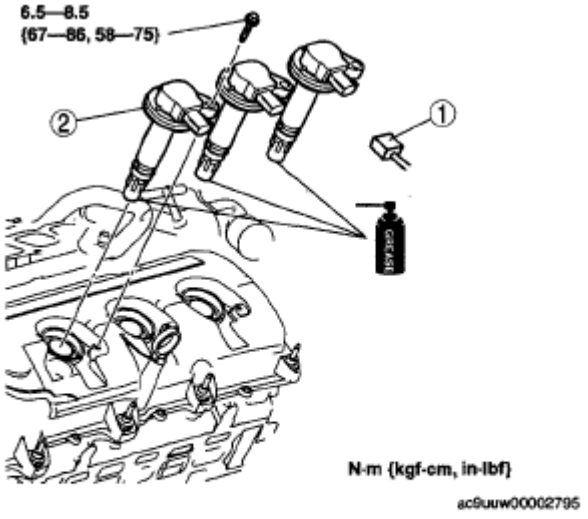
IGNITION COIL REMOVAL/INSTALLATION [MZI-3.7]

1. Disconnect the negative battery cable.
2. Remove the engine cover.
3. Remove the dynamic chamber. (See **INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [MZI-3.7]** .)
4. Remove in the order indicated in the table.

CAUTION:

- **Apply small amount of the specified dielectric grease to the inside of the ignition coils, then install the ignition coils to the spark plugs.**
  - **Specified grease: Motorcraft XG-3A**

5. Install in the reverse order of removal.



1	Connector
2	Ignition coil

Fig. 2: Identifying Connector, Ignition Coil & Torque Specifications
Courtesy of MAZDA MOTORS CORP.

IGNITION COIL INSPECTION [MZI-3.7]

SECONDARY COIL RESISTANCE INSPECTION

1. Remove the ignition coils. (See **IGNITION COIL INSPECTION [MZI-3.7]**.)
2. Using a tester, measure the resistance between the ignition coil terminal A and ignition coil boot socket.
   - If not within the specification, replace the ignition coil.

Ignition coil secondary coil resistance 5-6 kilohms

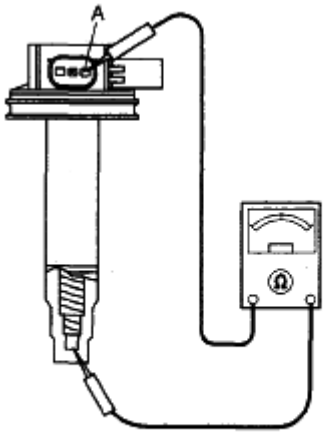


Fig. 3: Measuring Resistance Between Ignition Coil Terminal A And Ignition Coil Boot Socket
Courtesy of MAZDA MOTORS CORP.

SPARK PLUG REMOVAL/INSTALLATION [MZI-3.7]

CAUTION:
- **If a spark plug that is not as specified is installed, engine performance will be deteriorated. Install only the specified spark plug when replacing.**

1. Disconnect the negative battery cable.
2. Remove the engine cover. |j]
3. Remove the dynamic chamber. (See **INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [MZI-3.7]** .)
4. Remove the ignition coils. (See **IGNITION COIL REMOVAL/INSTALLATION [MZI-3.7]**.)
5. Remove the spark plugs using a plug-wrench.

CAUTION:
- **Apply small amount of the specified dielectric grease to the inside of the ignition coils, then install the ignition coils to the spark plugs.**
  - **Specified grease: Motorcraft XG-3A**

6. Install in the reverse order of removal.

Tightening torque

9-20 N.m {91-204 kgf.cm, 79-177 in.lbf}

SPARK PLUG INSPECTION [MZI-3.7]

SPECIFICATION

Spark plug type

CY01 18110

SPARK PLUG GAP INSPECTION

CAUTION:
- **To avoid possible damage to the tip, do not adjust the plug gap.**
- **To prevent damaging the tip, use a wire type plug gap gauge when inspecting the plug gap.**

1. Measure the spark plug gap using a wire type plug gap gauge.
   - If not within the specification, replace the spark plug.

Spark plug gap

1.29-1.45 mm {0.051-0.057 in}

CLEANING

CAUTION:

- **Carbon may adhere to the tip of the spark plug during vehicle delivery or repeated short distance driving during the winter time. If there is any malfunction such as rough idling or start difficulty due to carbon adhesion causing plug fouling, burn off the carbon by performing no-load racing of the engine.**
- **When performing the no-load racing, apply the side brake and foot brake, move the selector lever to P position to prevent an accident and serious injury.**
- **To avoid possible damage to the spark plug tip, do not use a wire brush for cleaning.**

NOTE:

- **To avoid possible damage to the tip, use gasoline to clean the spark plugs after removing dirt.**
- **If the accelerator pedal is depressed continuously for a specified time, the engine speed may decrease to the idle speed. This is does not indicate a malfunction.**
- **Do not perform no-load racing at high engine speed continuously for 10 s or more .**

1. If there is carbon adhering to the spark plug, perform no-load racing at **4,000 rpm** for **2 min, 2 times** .

VISUAL INSPECTION

1. Inspect the following items:
   - If any of the following malfunctions are indicated, replace the spark plug.
     - Insulator breakage
     - Worn electrode
     - Damaged gasket
     - Badly burned insulator (sparking side)

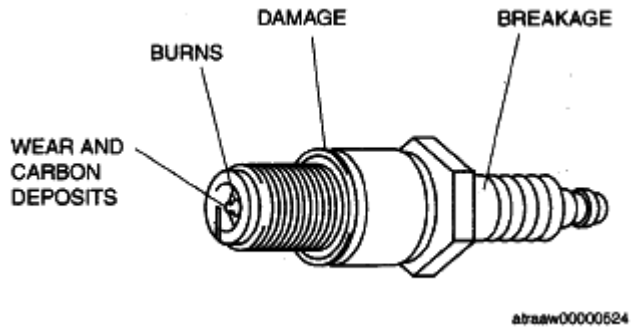


Fig. 4: Identifying Spark Plug Damage And Breakage
Courtesy of MAZDA MOTORS CORP.

RESISTANCE INSPECTION

1. Measure the resistance of the spark plug using a tester as shown in the figure.
    - If not within the specification, replace the spark plug.

    Spark plug resistance

    2-20 kilohms

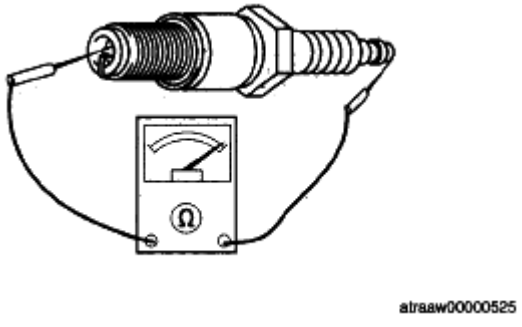


Fig. 5: Measuring Resistance Of Spark Plug With Tester
Courtesy of MAZDA MOTORS CORP.