

2008 ENGINE

Ignition System - MX-5 Miata

IGNITION SYSTEM LOCATION INDEX [LF]

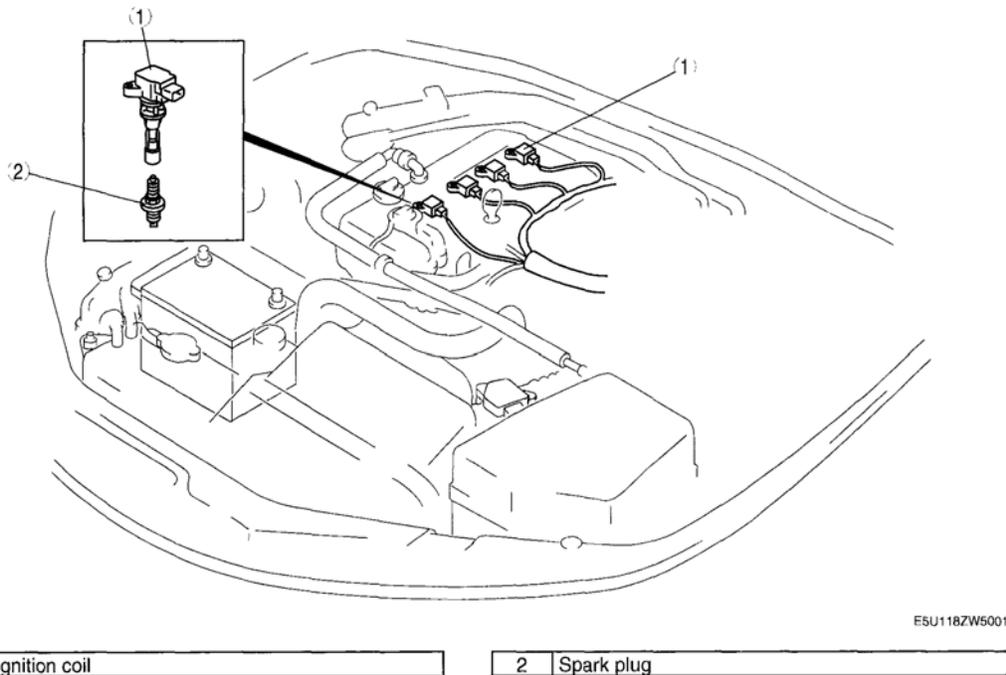
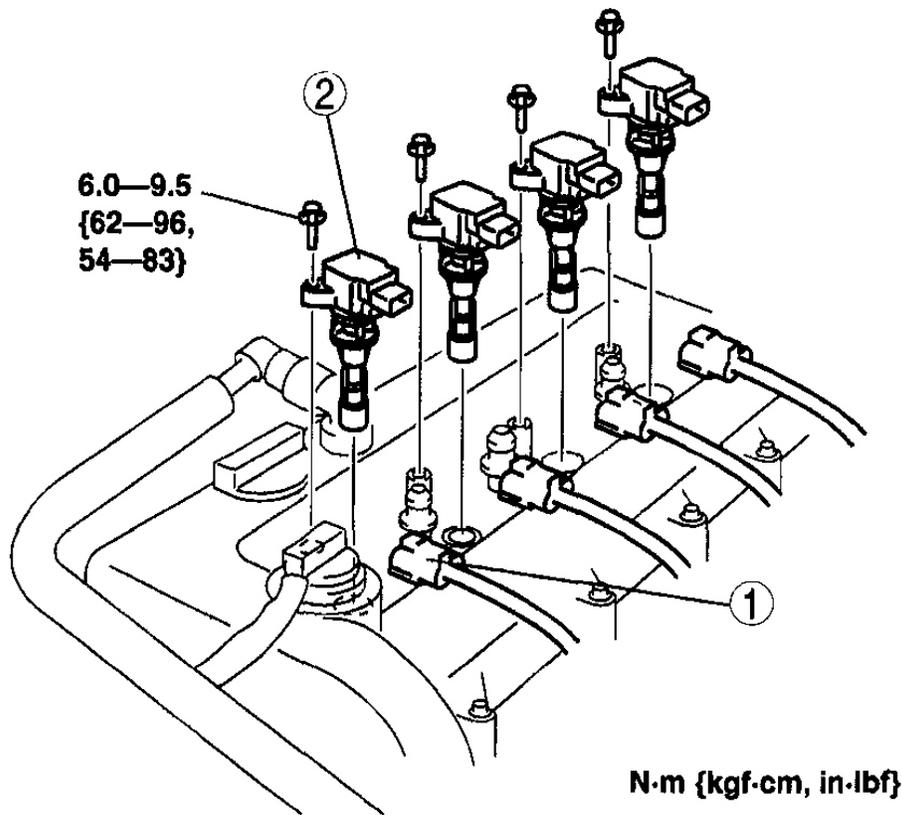


Fig. 1: Identifying Location Of Ignition System Components
Courtesy of MAZDA MOTORS CORP.

IGNITION COIL REMOVAL/INSTALLATION [LF]

1. Remove the battery cover.
2. Disconnect the negative battery cable. (See **BATTERY REMOVAL/INSTALLATION [LF]** .)
3. Remove the plug hole plate. (See **PLUG HOLE PLATE REMOVAL/INSTALLATION [LF]** .)
4. Remove the front suspension tower bar (joint). (See **FRONT SUSPENSION TOWER BAR REMOVAL/INSTALLATION** .)
5. Remove in the order indicated in **Fig. 2** .
6. Install in the reverse order of removal.



E5U118ZW5002

1	Connector
2	Ignition coil

Fig. 2: Identifying Removal Order Of Ignition Coil (With Torque Specifications)
 Courtesy of MAZDA MOTORS CORP.

IGNITION COIL INSPECTION [LF]

IGNITION COIL INSPECTION

1. Perform the spark test and identify the malfunctioning cylinder.
2. Replace the ignition coil of the malfunctioning cylinder with that of a normal cylinder, and re-perform the spark test.
 - If the spark is not normal due to a malfunctioning ignition coil, replace that ignition coil.
 - It is unlikely that all four ignition coils fail to operate properly. To prevent replacing a normal component, perform the above procedure, identify the malfunctioning ignition coil, and replace it.

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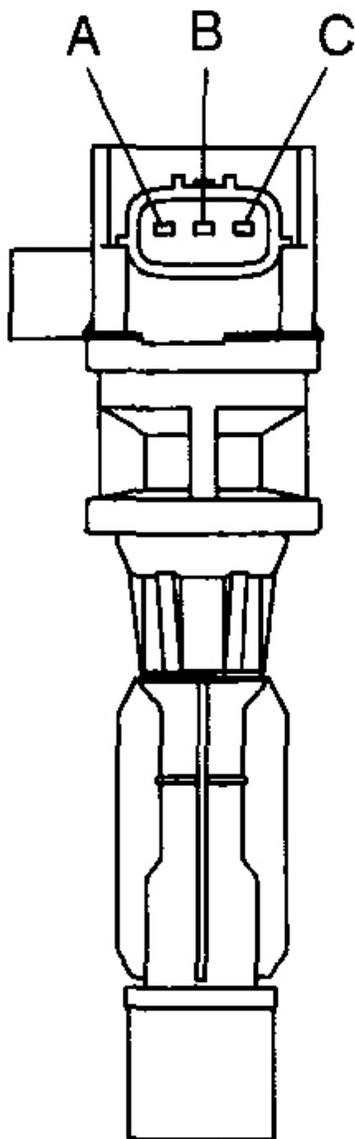
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IGNITION COIL WITH BUILT-IN IGNITER INSPECTION

1. Disconnect the ignition coil connector.
2. Measure the resistance between each terminal on the ignition coil connector using an analog circuit tester.
 - If the measurement corresponds to the table, replace the ignition coil.

TESTER CONNECTION POSITION

Item	Tester Connection Position		Condition
	Positive	Negative	
Terminal	C	A	0 ohm is not normal (Infinity ohm is normal)
	A	C	
	C	B	
	B	C	
	A	B	Infinity or 0 ohm is not normal (several kilohm is normal)
	B	A	



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Fig. 3: Identifying Ignition Coil Connector Terminals
Courtesy of MAZDA MOTORS CORP.

SPARK PLUG REMOVAL/INSTALLATION [LF]

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- 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. Remove the battery cover.
2. Disconnect the negative battery cable. (See **BATTERY REMOVAL/INSTALLATION [LF]** .)
3. Remove the plug hole plate. (See **PLUG HOLE PLATE REMOVAL/INSTALLATION [LF]** .)
4. Remove the front suspension tower bar (joint). (See **FRONT SUSPENSION TOWER BAR REMOVAL/INSTALLATION** .)
5. Remove the ignition coils. (See **IGNITION COIL REMOVAL/INSTALLATION [LF]** .)
6. Remove the spark plugs using a plug-wrench.
7. Install in the reverse order of removal.

Tightening torque

10-14 N.m {1.1-1.4 kgf.m. 8-10 ft.lbf}

SPARK PLUG INSPECTION [LF]

SPECIFICATION

Spark plug type

L3G2 18 110, L3Y1 18 110

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 it exceeds the specification, replace the spark plug.

Spark plug gap

1.25-1.35 mm {0.050-0.053 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

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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 shift lever to neutral (MT), or the selector lever to P position (AT) to prevent an accident and serious injury.
- To avoid possible damage to the spark plug tip, do not use a wire brush for cleaning.

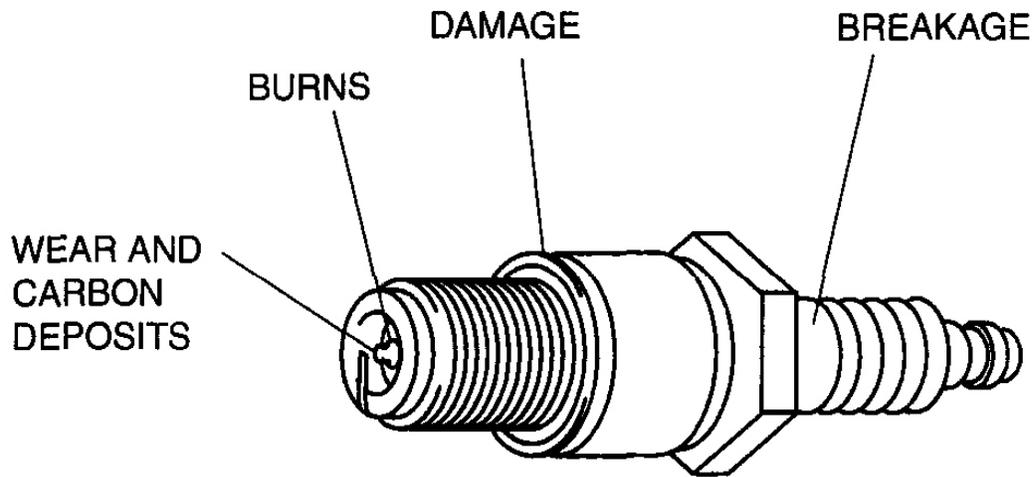
NOTE:

- 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 due to the fuel cut control operation, which prevents overheating, and it does not indicate a malfunction.
- Do not perform no-load racing at high engine speed continuously for 10s 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 malfunction are indicated, replace the spark plug.
 - Insulator breakage
 - Worn electrode
 - Damaged gasket
 - Badly burned insulator (sparking side)



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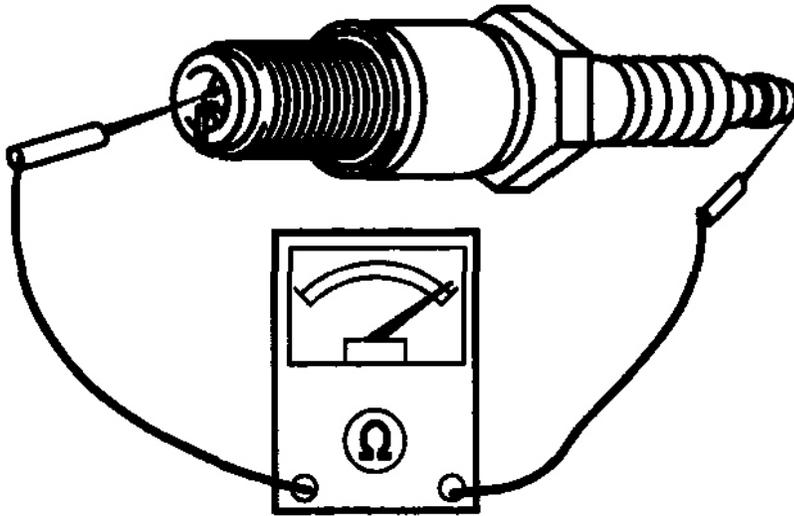
Fig. 4: Inspecting Spark Plug
Courtesy of MAZDA MOTORS CORP.

RESISTANCE INSPECTION

1. Measure the resistance of the spark plug using a tester as shown in **Fig. 5**.
 - If not within the specification, replace the spark plug.

Spark plug resistance [25°C {77°F}]

3.0-7.5 kilohms



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