MITSUBISHI MOTORS

SERVICE BULLETIN

PUBLICATION GROUP, AFTER SALES SERVICE DEP.
MITSUBISHI MOTOR SALES EUROPE BV

SERVICE BULLETIN	No.: ESB-98E16-501	
	Date: 1999-06-15	<Model> <M/Y>
Subject: CORRECTION TO DESCRIPTIONS OF IGNITION COIL (SECONDARY COIL)		(EC,EXP) CARISMA 98-10
Group: ENGINE ELECTRICAL		
CORRECTION	O. Kai - E.V.P. & G.M. After Sales Service Dept.	

1. Description:

This Service Bulletin informs you of correction to descriptions of the ignition coil (secondary coil) given in each of the following Workshop Manuals.

2. Applicable Manuals:

Manual	Pub. No.	Language	Page(s)
'98 CARISMA GDI Workshop Manual chassis	PWDE9502-C	(English)	16-1, 19, 20
	PWDS9503-C	(Spanish)	
	PWDF9504-C	(French)	
	PWDG9505-C	(German)	
	PWDD9506-C	(Dutch)	
	PWDW9507-C	(Swedish)	
	PWDW9601-C	(Italian)	

ENGINE
ELECTRICAL

CONTENTS

<Incorrect>

Ignition Coil (With Built-in Power Transistor) Check

<Correct>

IGNITION SYSTEM

GENERAL INFORMATION

This system is equipped with four ignition coils with built-in power transistors for each of the cylinders. Interruption of the primary current flowing in the primary side of an ignition coil generates a high voltage in the secondary side of the ignition coil. The high voltage thus generated is applied to the spark plugs to generate sparks. The Engine-ECU turns the power transistors inside the ignition coils alternately on and off. This causes the primary currents in the ignition coils to be alternately interrupted and allowed to flow to fire the cylinders in the order 1 - 3 - 4 - 2.

The Engine -ECU determines which ignition coil should be controlled by means of the signals from the camshaft position sensor and the crank angle sensor . It also detects the crankshaft position, in order to provide ignition at the most appropriate timing in response to the engine operation conditions. When the engine is cold or running at high altitudes, the ignition timing is slightly advanced to provide optimum performance. Furthermore, if knocking occurs, the ignition timing is gradually retarded until knocking ceases

SYSTEM DIAGRAM

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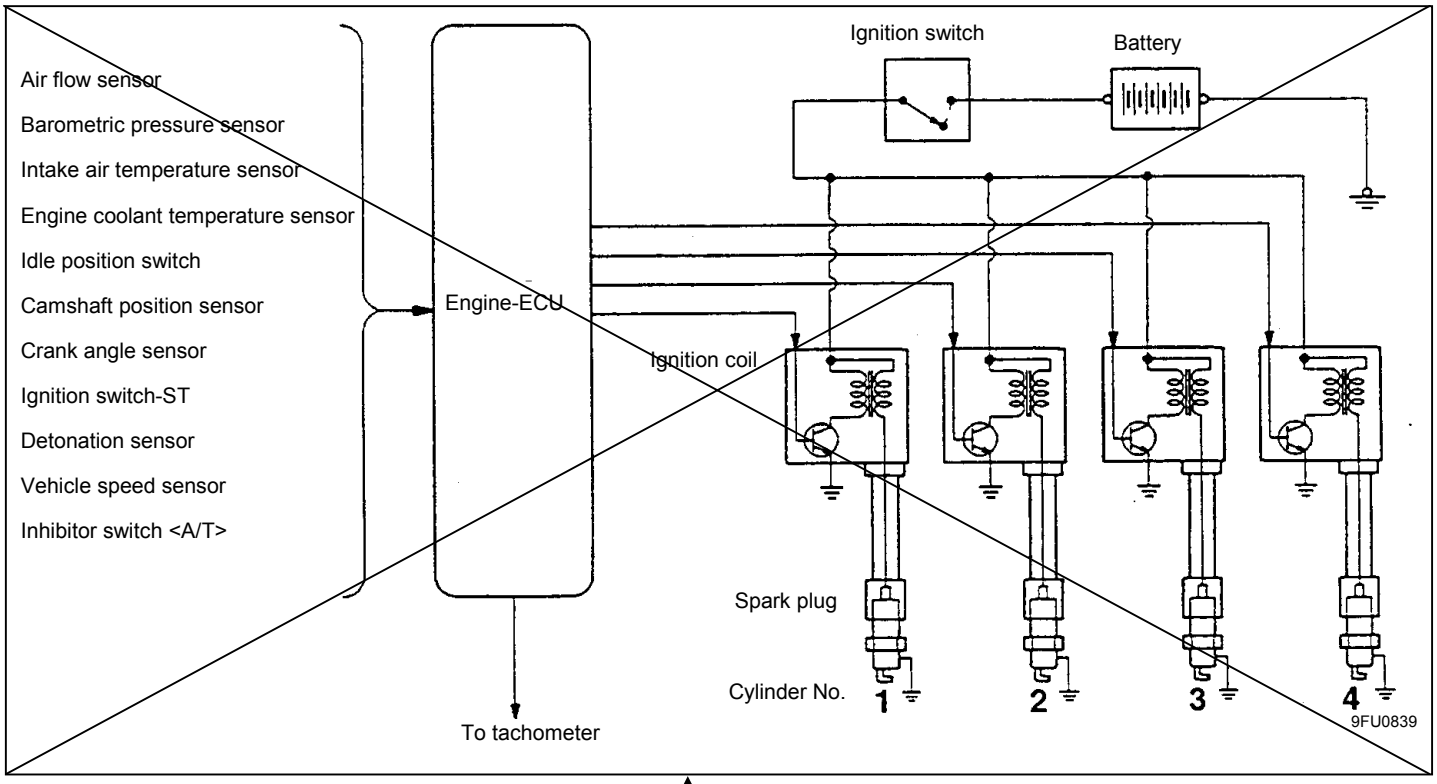

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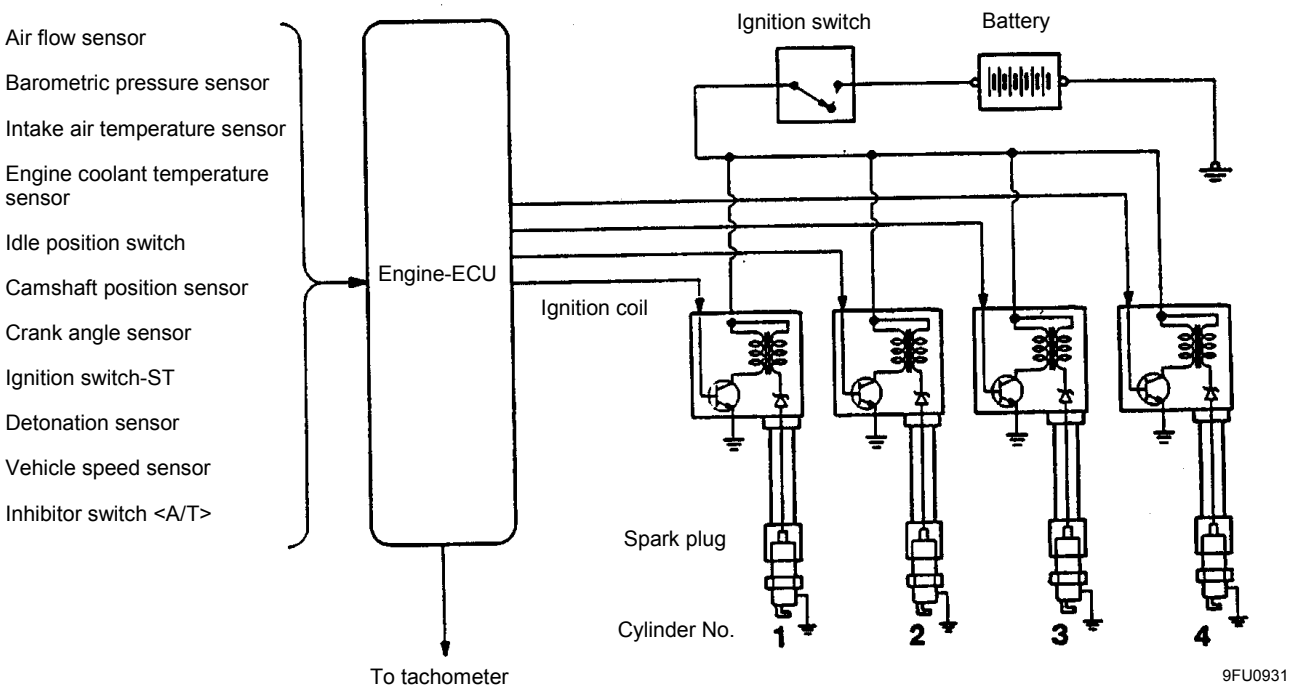
IGNITION COIL SPECIFICATION

Items	Specification
Type	Molded 4-coil

SPARK PLUG SPECIFICATION

Items	Specification
NGK	PZFR6B



SERVICE SPECIFICATIONS

SPARK PLUG

Items	Specification	Limit
Spark plug gap mm	0.5 - 0.6	0.75
Spark plug insulation resistance MΩ	-	1

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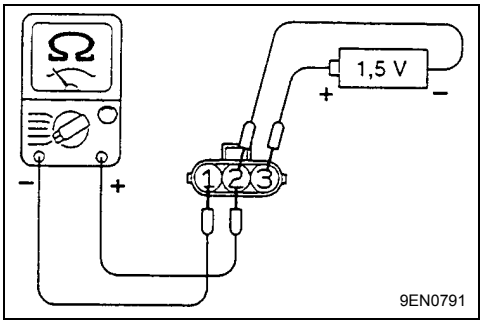

ON-VEHICLE SERVICE

~~POWER TRANSISTOR CONTINUITY CHECK~~

<Incorrect>

NOTE

1. An analogue-type circuit tester should be used.
2. Connect the negative (-) prove of the circuit tester to terminal 1.

CAUTION

This test must be performed quickly (in less than 10 seconds) to prevent coil from burning and power transistor from breakage

Voltage: 1.5V	Terminal No.		
	1	2	3
When current is flowing		⊖ ○	⊕
When current is not flowing			

< ② on the following page added>

SPARK PLUG CHECK AND CLEANING

Caution

1. **The spark plug gap for iridium plugs should not be adjusted.**
2. **Cleaning iridium plugs may result in damage to the iridium tip. Therefore, if cleaning is necessary because the plug is sooty, use a plug cleaner, and do not clean the plug for more than 20 seconds in order to preserve the electrodes. A wire brush should never be used.**
3. **The spark plugs in GDI engines are special iridium plugs in which the electrodes can become black even when the plugs are working normally. Carbon which may become deposited on these plugs burns off more readily than with conventional plugs, and so should not cause any problems with spark plug performance. Judgement of whether a spark plug is operating normally or not should be made by checking the insulation resistance.**

① **<Correct>**

IGNITION COIL (WITH BUILT-IN POWER TRANSISTOR) CHECK
PRIMARY COIL AND POWER TRANSISTOR CONTINUITY CHECK

② **<Added>**

SECONDARY COIL CHECK
NOTE
The ignition coil (secondary coil) circuit has a built-in diode. This makes it difficult to tell whether the secondary coil is good or bad through resistance inspection. Therefore, the secondary coil inspection should be performed using the following procedures.

1. Remove the ignition coil and the spark plug. Connect the spark plug followed by the ignition coil connector to the ignition coil.
2. Ground the spark plug outer electrode (body), and crank the engine.
3. Check to ensure that the spark plug creates a spark.
4. If the spark plug creates no spark, a defective secondary coil is suspected. In this event, use a new ignition coil and a new spark plug to check whether a spark is created or not. When the new ignition coil and the new spark plug are used, if a spark is created, the original ignition coil is defective and should be replaced. Even when the new ignition coil and the new spark plug are used, if no spark is created, a defective ignition circuit is suspected. Check the circuit to be sure if it is operating properly.