MITSUBISHI MOTORS

SERVICE BULLETIN

AFTERSALES SERVICE OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : CORRECTION	ISSUE NO. : MSB-07E13-502	DATE : 2007-03-20
SUBJECT : TECHNICAL INFORMATION MANUAL AND WORKSHOP MANUAL		<MODEL> (EUR) OUTLANDER (GS45X)(CW0W) <M/Y> 07
GROUP : FUEL		

1. Description:

The descriptions in the applicable Technical Information Manual and Workshop Manual are corrected. This Service Bulletin contains the modified descriptions.

2. Applicable Manuals:

Manual	Pub-No.	Page (Info-ID)	Attachment
2007 OUTLANDER Technical Information Manual	CGXE07E1-CD	13A-1	Attachment 1
		13A-2 (M213-30-001-00164-01)	Attachment 2
		13A-7 (M213-30-010-00201-01)	Attachment 3, A
2007 OUTLANDER Workshop Manual		13A-147 (M113-30-042-00171-01)	Attachment 4
		13A-153 (M113-30-045-00150-01)	Attachment 5

3. Corrected Specifications:

See the Attachments 1 to 5, A.

3. Corrected Specifications:

See Attachments 1 to 5, A.

Attachment 1

GROUP 13A

<Incorrect>

~~MULTIPOINT FUEL INJECTION (MPI)~~

<Correct>

DIESEL FUEL

CONTENTS

GENERAL INFORMATION 13A-2
CONTROL SYSTEM 13A-5
SENSOR. 13A-7
ACTUATOR 13A-10
FUEL INJECTION CONTROL 13A-11
BOOST PRESSURE CONTROL 13A-14
INTAKE AIR CONTROL 13A-14
POWER SUPPLY CONTROL. 13A-15
FUEL PUMP RELAY CONTROL 13A-16
A/C COMPRESSOR RELAY CONTROL 13A-17
ALTERNATOR CONTROL. 13A-18
STARTER RELAY CONTROL 13A-19
CONTROLLER AREA NETWORK (CAN) 13A-20

Attachment 2

<Incorrect> <Change all pages of GROUP 13A>

DIESEL FUEL

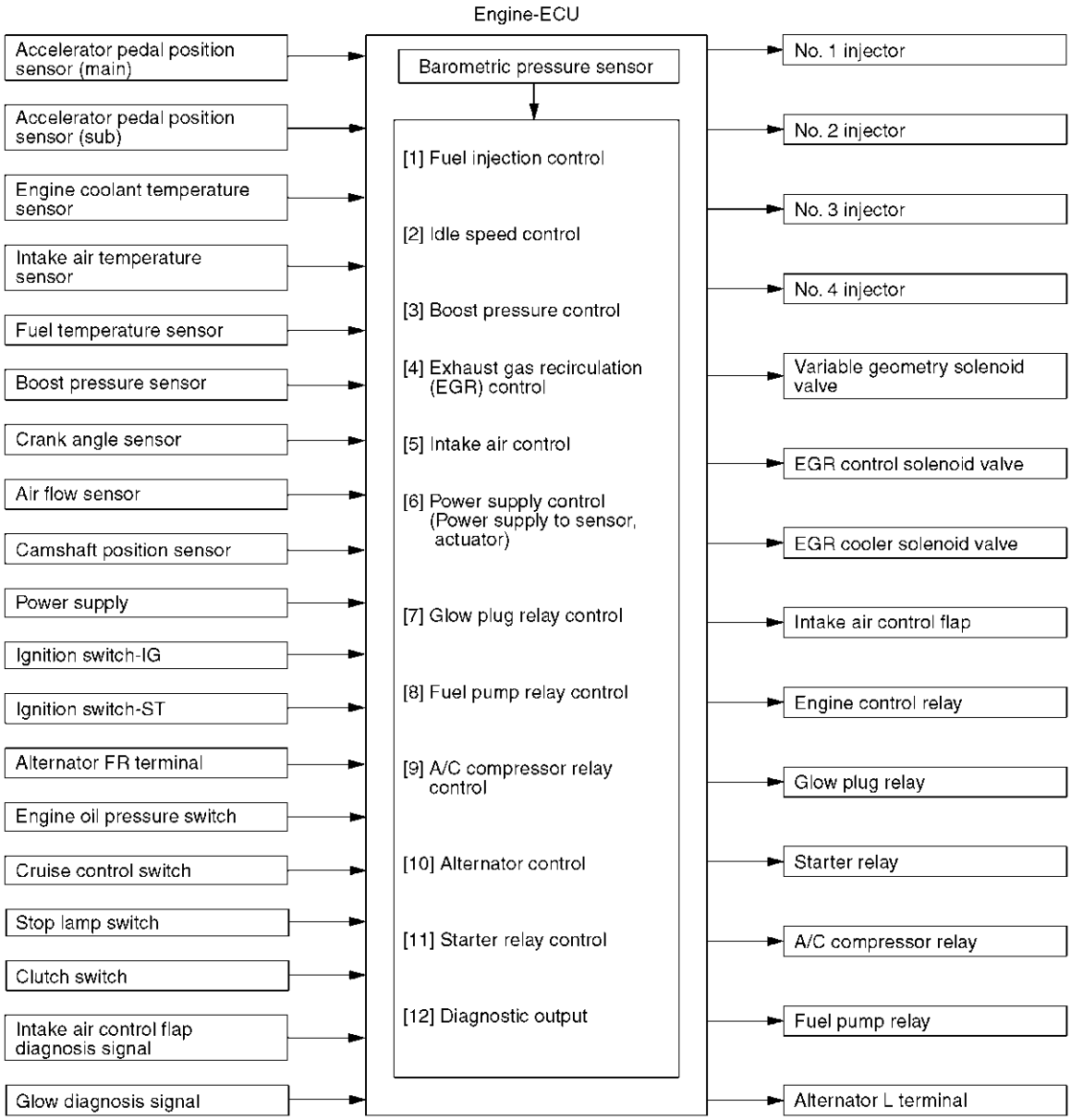
<Correct>

GENERAL INFORMATION

M2133000100164

The unit injection engine control system is adopted for the fuel injection system. The unit injection engine control system consists of sensors that detect the conditions of the engine and the actuators that operate under the control of the engine-ECU, which calculates and determines the engine control contents based on the signals provided by the sensors. The engine-ECU effects the fuel injection control, boost pressure control and exhaust gas recirculation (EGR) control. In addition, the engine-ECU contains a self-diagnosis system to facilitate the diagnosis of malfunctions in the major sensors and actuators.

System Block Diagram



AK603467AB

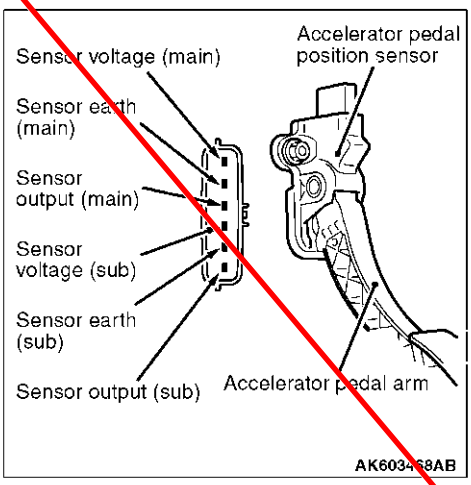
Attachment 3

SENSOR

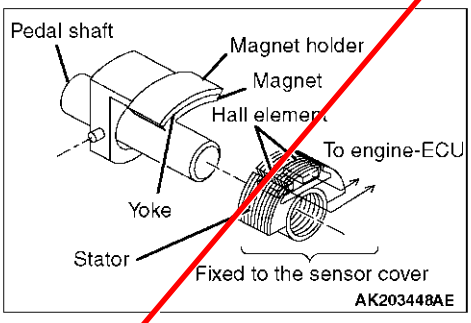
DIESEL FUEL <Correct>

M213300100013

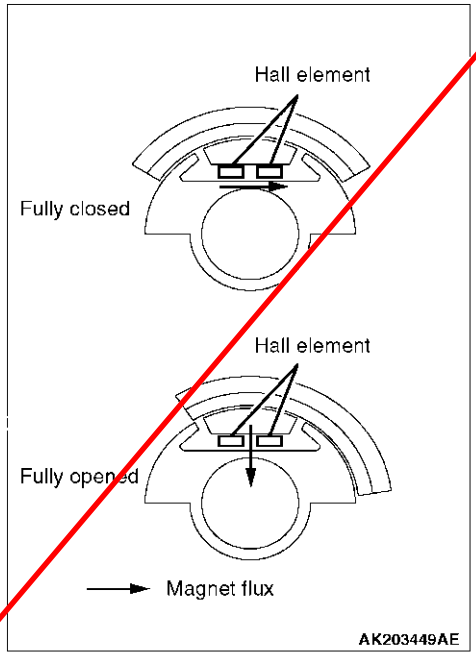
ACCELERATOR PEDAL POSITION SENSOR



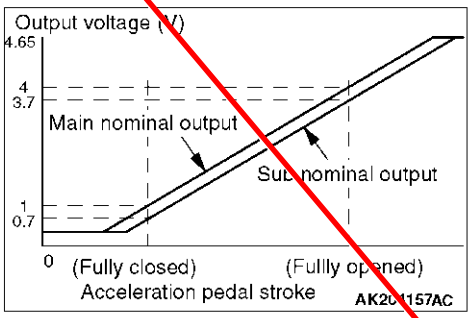
The accelerator pedal position sensor detects the amount of travel of the accelerator pedal. Mounted on the accelerator pedal arm, this sensor outputs a voltage signal, which corresponds to the amount of pedal travel, to the engine-ECU. The engine-ECU uses the output voltage of the accelerator pedal position sensor for calculating the fuel injection amount. This accelerator pedal position sensor uses a non-contact Hall element to enhance its reliability.



The accelerator pedal position sensor consists of a permanent magnet fixed to the pedal shaft, a Hall element that outputs electrical voltage in accordance with the magnetic flux density, and a stator that effectively guides the magnetic flux from the permanent magnet into the Hall element.



The magnetic flux density that passes into the Hall element when the accelerator pedal is fully closed is kept to a minimum.
As the result of this, the electrical voltage is minimal output.
The magnetic flux density that passes into the Hall element when the accelerator pedal is fully opened is kept to a maximum.
As the result of this, the electrical voltage is maximal output.



The accelerator pedal position sensor outputs through two systems (main and sub). This improves the accuracy of the system to detect malfunctions and reinforces the failsafe function in order to ensure reliability.

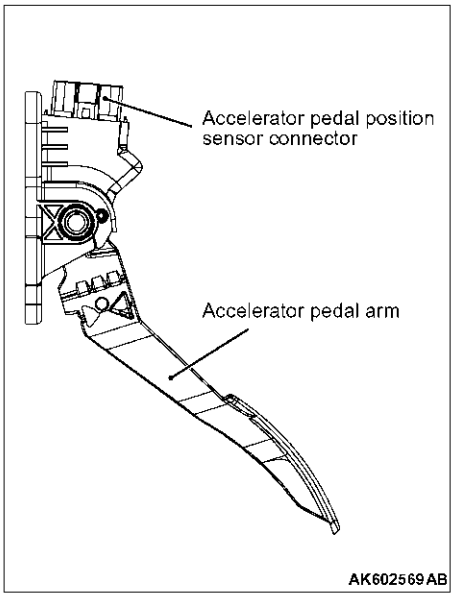
<Incorrect>

Replace with the Attachments A (1/2) and A (2/2). <Correct>

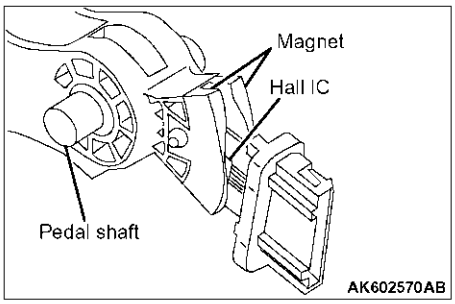
Attachment A (1/2)

<Correct>

ACCELERATOR PEDAL POSITION SENSOR



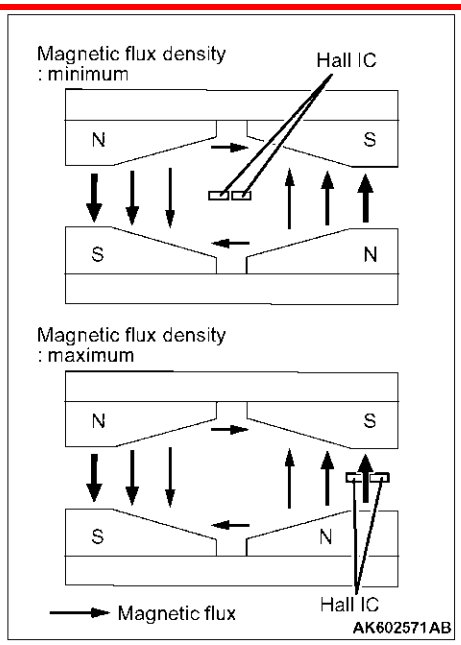
Accelerator pedal position sensor is integrated with accelerator pedal, and detects accelerator opening angle. Engine-ECU uses the output voltage of this sensor to control appropriate throttle valve opening angle and fuel injection volume. This accelerator pedal position sensor uses Hall IC and is a non-contact type.



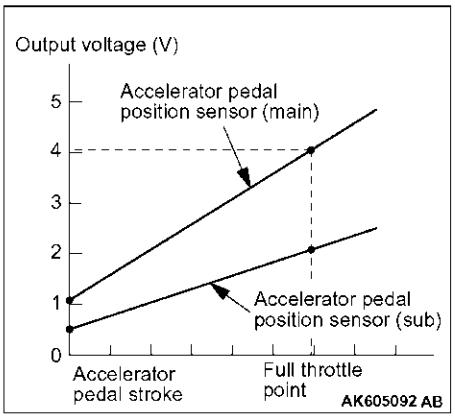
Accelerator pedal position sensor is composed of a permanent magnet fixed on the magnet carrier of the pedal shaft, Hall IC outputs voltage according to magnetic flux density and a stator that efficiently introduces magnetic flux from the permanent magnet to Hall IC.

TSB Revision

<Correct>



Magnetic flux density at Hall IC is proportional to the output voltage. The accelerator pedal position sensor has 2 output systems – accelerator pedal position sensor (main) and accelerator pedal position sensor (sub), and the output voltage is output to engine-ECU. According to depression of the accelerator pedal, output voltage of the accelerator pedal position sensor (main) and accelerator pedal position sensor (sub) changes. This allows engine-ECU to detect the actual accelerator pedal depression amount. Engine-ECU uses accelerator pedal position sensor (main) output voltage for appropriate throttle valve opening angle control and fuel injection volume control. Also, engine-ECU compares output voltage of the accelerator pedal position sensor (main) and accelerator pedal position sensor (sub) to check for abnormality in sensor.



The relationship between accelerator opening angle and output voltage of the accelerator pedal position sensor (main) and accelerator pedal position sensor (sub) is as shown in the figure.

TSB Revision

Attachment 4

Item No.	Inspection item	Inspection condition		Normal condition
133	Accelerator pedal position sensor (sub)	Ignition switch: ON	Release the accelerator pedal	~~500 - 900 mV~~ <Incorrect>
		400 - 600 mV <Correct>	Depress the accelerator pedal gradually	Increases in response to the pedal depression stroke
		<Correct> **2,000 mV or more**	Depress the accelerator pedal fully	~~3,500 mV or more~~ <Incorrect>
134	Intake air temperature sensor	Ignition switch: ON or engine running	Intake air temperature: Approximately 25 C	1,500 - 2,500 mV
139	Engine coolant temperature sensor	Ignition switch: ON or engine running	Engine coolant temperature: Approximately 90 C	Approximately 400 mV
148	A/C compressor relay output	Engine: Idling after warming up	A/C switch: OFF (A/C compressor clutch not in operation)	0
			A/C switch: ON (A/C compressor clutch in operation)	1
154	Main injection	Engine: Idling after warming up		Approximately 7 us
159	Ambient air temperature	Ignition switch: ON		Equal to ambient temperature
198	Starter state (Immobi. unlock)	Ignition switch: ON		1
		Engine: Cranking		1
		Engine: Idling		1
199	Charge lamp	Ignition switch: ON	Charge lamp: OFF	0
			Charge lamp: ON	1
207	Starter state (starter switch on)	Ignition switch: ON		0
		Engine: Cranking		1 (momentally)
		Engine: Idling		0
208	Starter state (below start speed)	Ignition switch: ON		1
		Engine: Cranking		1
		Engine: Idling		0
209	Starter state (Lo activat'n time)	Ignition switch: ON		1
		Engine: Cranking		1
		Engine: Idling		1
217	Shut off req. immo (no injection)	Ignition switch: ON		0
		Engine: Cranking		0
		Engine: Idling		0

Attachment 5

Terminal No.	Check item	Check condition (Engine condition)		Normal condition
64	Engine-ECU earth	Ignition switch: ON		0 – 0.2 V
65				
66				
70	Boost pressure sensor earth	Ignition switch: ON		0 – 0.2 V
72	Boost pressure sensor	Ignition switch: ON	Altitude: 0 m	Approximately 1.6 V
		Engine: Racing		Voltage increases
76	Air flow sensor	Ignition switch: ON		0.2 – 1.8 V
		Engine: Idling after warning up		1.1 – 2.8 V
77	Accelerator pedal position sensor (main)	Ignition switch: ON	Release the accelerator pedal	0.9 – 1.1 V
			Depres the accelerator pedal fully	4.0 V or more
78	Accelerator pedal position sensor (main) supply voltage	Ignition switch: ON		4.9 – 5.1 V
80	Ignition switch-ST	Engine: Cranking		8 V or more
81	Stop lamp switch	Depress the brake pedal		8 V or more
		Release the brake pedal		1 V or less
85	A/C compressor relay	• Engine: Idling • A/C switch: OFF fi ON (A/C compressor is operating)		System voltage fi 1 V or less
86	Starter relay	Ignition switch: ON		System voltage
		Engine: Cranking		1 V or less
		Engine: Idling		System voltage
90	Fuel pump relay	Ignition switch: ON		System voltage
		Engine: Cranking		1 V or less
		Engine: Idling		1 V or less
98	Air flow sensor earth	Ignition switch: ON		0 – 0.2 V
99	Accelerator pedal position sensor (sub)	Ignition switch: ON	Release the accelerator pedal	~~0.5 – 0.9 V~~ <Incorrect>
		0.4 - 0.6 V <Correct>	Depress the accelerator pedal fully	~~3.5 V or more~~ <Incorrect>
100	Accelerator pedal position sensor (sub) supply voltage	Ignition switch: ON	**2.0 mV or more** <Correct>	4.9 – 5.1 V
101	Glow diagnostic signal	Ignition switch: ON		6 V or more