



Technical Service Bulletin

SUBJECT: CORRECTION AND CHANGES TO SERVICE PROCEDURES – SERVICE MANUAL REVISION			No: TSB-23-00-020
			DATE: November 2023
			MODEL: See below
CIRCULATE TO:	<input type="checkbox"/> GENERAL MANAGER	<input checked="" type="checkbox"/> PARTS MANAGER	<input checked="" type="checkbox"/> TECHNICIAN
<input checked="" type="checkbox"/> SERVICE ADVISOR	<input checked="" type="checkbox"/> SERVICE MANAGER	<input checked="" type="checkbox"/> WARRANTY PROCESSOR	<input type="checkbox"/> SALES MANAGER

PURPOSE

This TSB provides correction and changes for the service procedures in the applicable Service Manual sections:

- GENERAL INFORMATION: Correction to description for insulating protective equipment
- PHEV-ECU: Correction to names and inspection procedures for diagnostic codes P1A49-11 and P1A49-15
- BATTERY MANAGEMENT UNIT (BMU) AND TRACTION BATTERY: Correction to the inspection procedure for Battery Module Temperature Sensor
- HEATER & AIR CONDITIONING SYSTEM: Addition of the torque value for Heater Water Pipe mounting bolts
- EXTERIOR LIGHTING SYSTEM: Addition of inspection instructions for diagnostic codes B20A2-87 and B20A4-87
- BODY CONTROL SYSTEM: Correction to the work procedure when replacing BCM
- POWER CONTROL SYSTEM: Correction to the work procedure when replacing IPDM E/R
- DRIVER ASSISTANCE SYSTEM: Correction to the work procedure when replacing the Chassis Control module
- CIRCUIT DIAGRAM: Correction of the circuit diagram for the Rear Window Defogger in the Power Distribution System

AFFECTED VEHICLES

2023 Outlander Plug-in Hybrid

AFFECTED SERVICE MANUAL

- 2023 Outlander Plug-in Hybrid Service Manual

PROCEDURE

Please use the following chart as a guide to replace the indicated pages in the affected Service Manual.



Copyright 2023, Mitsubishi Motors North America, Inc.

The information contained in this bulletin is subject to change. For the latest version of this document, go to the Mitsubishi Dealer Link, MEDIC, or the Mitsubishi Service Information website (www.mitsubishitechinfo.com).

Applicable Manual	Pub. No.	Applicable Title	Content
2023 OUTLANDER (PHEV) Service Manual	MSCD-027B-2023	GENERAL INFORMATION └ GENERAL INFORMATION └ PRECAUTIONS └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	Attached sheet 2
		ELECTRIC POWER TRAIN └ PHEV-ECU └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	
		ELECTRIC POWER TRAIN └ PHEV-ECU └ TROUBLESHOOTING └ DIAGNOSTIC FUNCTION	Attached sheet 3
		ELECTRIC POWER TRAIN └ PHEV-ECU └ TROUBLESHOOTING └ DIAGNOSTIC TROUBLE CODE CHART	Attached sheet 4
		ELECTRIC POWER TRAIN └ PHEV-ECU └ TROUBLESHOOTING └ DIAGNOSTIC TROUBLE CODE PROCEDURES └ DTC No. P1A49-11 Parking Switch (Main) Circuit-low	Attached sheet 5
		ELECTRIC POWER TRAIN └ PHEV-ECU └ TROUBLESHOOTING └ DIAGNOSTIC TROUBLE CODE PROCEDURES └ DTC No. P1A49-15 Parking Switch (Main) Circuit-high	Attached sheet 6
		ELECTRIC POWER TRAIN └ PHEV-ECU └ TROUBLESHOOTING └ DIAGNOSTIC TROUBLE CODE PROCEDURES └ DTC No. P1A4D-9E Parking Switch Stuck	Attached sheet 7
		ELECTRIC POWER TRAIN └ ELECTRIC MOTOR CONTROL UNIT (EMCU) AND MOTOR (ELECTRIC MOTOR UNIT) └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	Attached sheet 2
		ELECTRIC POWER TRAIN └ BATTERY MANAGEMENT UNIT (BMU) AND TRACTION BATTERY └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	
		ELECTRIC POWER TRAIN └ BATTERY MANAGEMENT UNIT (BMU) AND TRACTION BATTERY └ DRIVE BATTERY DISASSEMBLY AND ASSEMBLY └ DRIVE BATTERY INSPECTION └ BATTERY MODULE TEMPERATURE SENSOR CHECK	Attached sheet 8
		ELECTRIC POWER TRAIN └ ON BOARD CHARGER (OBC)/DC-DC CONVERTER └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	Attached sheet 2
		ELECTRIC POWER TRAIN └ AC POWER SUPPLY └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	
		ELECTRIC POWER TRAIN └ QUICK CHARGING SYSTEM └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	
		TRANSMISSION & DRIVELINE └ TRANSAXLE └ SELECTOR LEVER └ DIAGNOSIS └ DIAGNOSTIC TROUBLE CODE CHART	Attached sheet 9
		TRANSMISSION & DRIVELINE └ FRONT AXLE └ PRECAUTION └ PRECAUTIONS └ Precautions on How to Use the High-voltage Vehicle	Attached sheet 2
		TRANSMISSION & DRIVELINE └ REAR AXLE └ PRECAUTION └ PRECAUTIONS └ Precautions on How to Use the High-voltage Vehicle	
SUSPENSION └ FRONT SUSPENSION └ PRECAUTION └ PRECAUTIONS └ Precautions on How to Use the High-voltage Vehicle			

Applicable Manual	Pub. No.	Applicable Title	Content
2023 OUTLANDER (PHEV) Service Manual	MSCD-027B-2023	SUSPENSION <ul style="list-style-type: none"> └ REAR SUSPENSION <ul style="list-style-type: none"> └ PRECAUTION <ul style="list-style-type: none"> └ PRECAUTIONS <ul style="list-style-type: none"> └ Precautions on How to Use the High-voltage Vehicle 	Attached sheet 2
		VENTILATION, HEATER & AIR CONDITIONER <ul style="list-style-type: none"> └ HEATER & AIR CONDITIONING SYSTEM <ul style="list-style-type: none"> └ PRECAUTION <ul style="list-style-type: none"> └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE 	
		VENTILATION, HEATER & AIR CONDITIONER <ul style="list-style-type: none"> └ HEATER & AIR CONDITIONING SYSTEM <ul style="list-style-type: none"> └ REMOVAL AND INSTALLATION <ul style="list-style-type: none"> └ HEATER HOSE <ul style="list-style-type: none"> └ Removal and Installation 	Attached sheet 10
		VENTILATION, HEATER & AIR CONDITIONER <ul style="list-style-type: none"> └ HEATER & AIR CONDITIONING CONTROL SYSTEM <ul style="list-style-type: none"> └ AUTOMATIC AIR CONDITIONING <ul style="list-style-type: none"> └ PRECAUTION <ul style="list-style-type: none"> └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE 	Attached sheet 2
		Added above DRIVER CONTROLS <ul style="list-style-type: none"> └ EXTERIOR LIGHTING SYSTEM <ul style="list-style-type: none"> └ LED HEADLIGHT <ul style="list-style-type: none"> └ DTC/CIRCUIT DIAGNOSIS <ul style="list-style-type: none"> └ B20E2-96 LED HEADLIGHT RH <ul style="list-style-type: none"> └ DTC Description 	Attached sheet 11
		ELECTRICAL & POWER CONTROL <ul style="list-style-type: none"> └ BODY CONTROL SYSTEM <ul style="list-style-type: none"> └ BASIC INSPECTION <ul style="list-style-type: none"> └ ADDITIONAL SERVICE WHEN REPLACING BCM <ul style="list-style-type: none"> └ Description 	Attached sheet 12
		ELECTRICAL & POWER CONTROL <ul style="list-style-type: none"> └ BODY CONTROL SYSTEM <ul style="list-style-type: none"> └ BASIC INSPECTION <ul style="list-style-type: none"> └ ADDITIONAL SERVICE WHEN REPLACING BCM <ul style="list-style-type: none"> └ Work Procedure 	Attached sheet 13
		ELECTRICAL & POWER CONTROL <ul style="list-style-type: none"> └ POWER CONTROL SYSTEM <ul style="list-style-type: none"> └ IPDM E/R <ul style="list-style-type: none"> └ BASIC INSPECTION <ul style="list-style-type: none"> └ ADDITIONAL SERVICE WHEN REPLACING IPDM E/R <ul style="list-style-type: none"> └ Description 	Attached sheet 14
		ELECTRICAL & POWER CONTROL <ul style="list-style-type: none"> └ POWER CONTROL SYSTEM <ul style="list-style-type: none"> └ IPDM E/R <ul style="list-style-type: none"> └ BASIC INSPECTION <ul style="list-style-type: none"> └ ADDITIONAL SERVICE WHEN REPLACING IPDM E/R <ul style="list-style-type: none"> └ Work Procedure 	Attached sheet 15
		CRUISE CONTROL DRIVER ASSISTANCE <ul style="list-style-type: none"> └ DRIVER ASSISTANCE SYSTEM <ul style="list-style-type: none"> └ CHASSIS CONTROL <ul style="list-style-type: none"> └ BASIC INSPECTION <ul style="list-style-type: none"> └ ADDITIONAL SERVICE WHEN REPLACING CHASSIS CONTROL MODULE <ul style="list-style-type: none"> └ Work Procedure [After Replacing Chassis Control Module] 	Attached sheet 16
CIRCUIT DIAGRAM <ul style="list-style-type: none"> └ POWER DISTRIBUTION SYSTEM 	Attached sheet 17		

Applicable Manual	Pub. No.	Applicable Title	Content
2024 OUTLANDER (PHEV) Service Manual	MSCD-027B-2024	GENERAL INFORMATION └ GENERAL INFORMATION └ PRECAUTIONS └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	Attached sheet 2
		ELECTRIC POWER TRAIN └ PHEV-ECU └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	
		ELECTRIC POWER TRAIN └ PHEV-ECU └ TROUBLESHOOTING └ DIAGNOSTIC FUNCTION	Attached sheet 3
		ELECTRIC POWER TRAIN └ PHEV-ECU └ TROUBLESHOOTING └ DIAGNOSTIC TROUBLE CODE CHART	Attached sheet 4
		ELECTRIC POWER TRAIN └ PHEV-ECU └ TROUBLESHOOTING └ DIAGNOSTIC TROUBLE CODE PROCEDURES └ DTC No. P1A49-11 Parking Switch (Main) Circuit-low	Attached sheet 5
		ELECTRIC POWER TRAIN └ PHEV-ECU └ TROUBLESHOOTING └ DIAGNOSTIC TROUBLE CODE PROCEDURES └ DTC No. P1A49-15 Parking Switch (Main) Circuit-high	Attached sheet 6
		ELECTRIC POWER TRAIN └ PHEV-ECU └ TROUBLESHOOTING └ DIAGNOSTIC TROUBLE CODE PROCEDURES └ DTC No. P1A4D-9E Parking Switch Stuck	Attached sheet 7
		ELECTRIC POWER TRAIN └ ELECTRIC MOTOR CONTROL UNIT (EMCU) AND MOTOR (ELECTRIC MOTOR UNIT) └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	Attached sheet 2
		ELECTRIC POWER TRAIN └ BATTERY MANAGEMENT UNIT (BMU) AND TRACTION BATTERY └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	
		ELECTRIC POWER TRAIN └ BATTERY MANAGEMENT UNIT (BMU) AND TRACTION BATTERY └ DRIVE BATTERY DISASSEMBLY AND ASSEMBLY └ DRIVE BATTERY INSPECTION └ BATTERY MODULE TEMPERATURE SENSOR CHECK	Attached sheet 8
		ELECTRIC POWER TRAIN └ ON BOARD CHARGER (OBC)/DC-DC CONVERTER └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	Attached sheet 2
		ELECTRIC POWER TRAIN └ AC POWER SUPPLY └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	
		ELECTRIC POWER TRAIN └ QUICK CHARGING SYSTEM └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE	
		TRANSMISSION & DRIVELINE └ TRANSAXLE └ SELECTOR LEVER └ DIAGNOSIS └ DIAGNOSTIC TROUBLE CODE CHART	Attached sheet 9
		TRANSMISSION & DRIVELINE └ FRONT AXLE └ PRECAUTION └ PRECAUTIONS └ Precautions on How to Use the High-voltage Vehicle	Attached sheet 2
		TRANSMISSION & DRIVELINE └ REAR AXLE └ PRECAUTION └ PRECAUTIONS └ Precautions on How to Use the High-voltage Vehicle	
		SUSPENSION └ FRONT SUSPENSION └ PRECAUTION └ PRECAUTIONS └ Precautions on How to Use the High-voltage Vehicle	

Applicable Manual	Pub. No.	Applicable Title	Content
2024 OUTLANDER (PHEV) Service Manual	MSCD-027B-2024	SUSPENSION <ul style="list-style-type: none"> └ REAR SUSPENSION └ PRECAUTION <ul style="list-style-type: none"> └ PRECAUTIONS <ul style="list-style-type: none"> └ Precautions on How to Use the High-voltage Vehicle 	Attached sheet 2
		VENTILATION, HEATER & AIR CONDITIONER <ul style="list-style-type: none"> └ HEATER & AIR CONDITIONING SYSTEM <ul style="list-style-type: none"> └ PRECAUTION <ul style="list-style-type: none"> └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE 	
		VENTILATION, HEATER & AIR CONDITIONER <ul style="list-style-type: none"> └ HEATER & AIR CONDITIONING SYSTEM <ul style="list-style-type: none"> └ REMOVAL AND INSTALLATION <ul style="list-style-type: none"> └ HEATER HOSE <ul style="list-style-type: none"> Removal and Installation 	Attached sheet 2
		VENTILATION, HEATER & AIR CONDITIONER <ul style="list-style-type: none"> └ HEATER & AIR CONDITIONING CONTROL SYSTEM <ul style="list-style-type: none"> └ AUTOMATIC AIR CONDITIONING <ul style="list-style-type: none"> └ PRECAUTION <ul style="list-style-type: none"> └ PRECAUTIONS <ul style="list-style-type: none"> └ PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE 	Attached sheet 11
		Added above DRIVER CONTROLS <ul style="list-style-type: none"> └ EXTERIOR LIGHTING SYSTEM <ul style="list-style-type: none"> └ LED HEADLIGHT <ul style="list-style-type: none"> └ DTC/CIRCUIT DIAGNOSIS <ul style="list-style-type: none"> └ B20E2-96 LED HEADLIGHT RH <ul style="list-style-type: none"> └ DTC Description 	Attached sheet 12
		ELECTRICAL & POWER CONTROL <ul style="list-style-type: none"> └ BODY CONTROL SYSTEM <ul style="list-style-type: none"> └ BASIC INSPECTION <ul style="list-style-type: none"> └ ADDITIONAL SERVICE WHEN REPLACING BCM <ul style="list-style-type: none"> └ Description 	Attached sheet 13
		ELECTRICAL & POWER CONTROL <ul style="list-style-type: none"> └ BODY CONTROL SYSTEM <ul style="list-style-type: none"> └ BASIC INSPECTION <ul style="list-style-type: none"> └ ADDITIONAL SERVICE WHEN REPLACING BCM <ul style="list-style-type: none"> └ Work Procedure 	Attached sheet 14
		ELECTRICAL & POWER CONTROL <ul style="list-style-type: none"> └ POWER CONTROL SYSTEM <ul style="list-style-type: none"> └ IPDM E/R <ul style="list-style-type: none"> └ BASIC INSPECTION <ul style="list-style-type: none"> └ ADDITIONAL SERVICE WHEN REPLACING IPDM E/R <ul style="list-style-type: none"> └ Description 	Attached sheet 15
		ELECTRICAL & POWER CONTROL <ul style="list-style-type: none"> └ POWER CONTROL SYSTEM <ul style="list-style-type: none"> └ IPDM E/R <ul style="list-style-type: none"> └ BASIC INSPECTION <ul style="list-style-type: none"> └ ADDITIONAL SERVICE WHEN REPLACING IPDM E/R <ul style="list-style-type: none"> └ Work Procedure 	Attached sheet 16
		CRUISE CONTROL DRIVER ASSISTANCE <ul style="list-style-type: none"> └ DRIVER ASSISTANCE SYSTEM <ul style="list-style-type: none"> └ CHASSIS CONTROL <ul style="list-style-type: none"> └ BASIC INSPECTION <ul style="list-style-type: none"> └ ADDITIONAL SERVICE WHEN REPLACING CHASSIS CONTROL MODULE <ul style="list-style-type: none"> └ Work Procedure [After Replacing Chassis Control Module] 	Attached sheet 17

GENERAL INFORMATION

PRECAUTIONS ON HOW TO USE THE HIGH-VOLTAGE VEHICLE

This vehicle has a high-voltage circuit of 350 V (nominal value) (Depending on the remaining capacity of the battery, generate a maximum operating voltage of 650 V). If the vehicle is handled incorrectly, electric leakage or shock may result. Also, the service technicians/engineers who perform inspection and service related to the high-voltage circuit of the electric vehicles are obligated to observe the legal requirements of your country/local area.



INSPECTION/TEST OF PROTECTIVE EQUIPMENT, BLOTTER STORAGE

Check and store the protective equipment in accordance with the legal requirements of your country/local area.

PROTECTIVE EQUIPMENT

CAUTION:

- Use protective equipment that complies with the legal requirements of your country/local area. <Corrected>
- Use insulating protective equipment which meets the requirements to withstand DC 650 V and AC 510 V. (Insulating protective equipment for low-voltage can be used.)

Protective equipment	Name	Use
	Electric insulation helmet (with shield)	<ul style="list-style-type: none"> • When you may contact with the exposed live wirings while handling the damaged vehicle • Alternatively, when you prevent the electric shock according to need
	Electric insulation jacket	<ul style="list-style-type: none"> • When you may contact with the exposed live wirings while handling the damaged vehicle • Alternatively, when you prevent the electric shock according to need

PHEV-ECU

DTC No.	Diagnostic item	Plug-in Hybrid EV system warning light and warning display	12V battery charging warning light	Electric shift control system warning light	Electric shift control system warning display	Malfunction indicator light (Service engine soon or check engine light)
P1A2F-92	DC/DC Converter fault	-	X	-	-	-
P1A30-96	Battery Charger Coupler Lock/Unlock actuator Malfunction	-	-	-	-	-
P1A31-96	Fan Control Module 1 failure 1	-	-	-	-	X
P1A32-96	Fan Control Module 2 failure 1	-	-	-	-	X
P1A33-12	Charge-Discharge connector 12V relay circuit high	-	-	-	-	-
P1A33-14	Charge-Discharge connector 12V relay circuit low	-	-	-	-	-
P1A35-61	ACC Wheel to Driving torque calculation value error	-	-	-	-	-
P1A36-92	PHEV Engine fail	X	-	-	-	-
P1A37-12	Gear Lever Position Sensor 1 Circuit-high	-	-	-	-	X
P1A38-11	Gear Lever Position Sensor 1 Circuit-low	-	-	-	-	X
P1A39-12	Gear Lever Position Sensor 2 Circuit-high	-	-	-	-	X
P1A3A-11	Gear Lever Position Sensor 2 Circuit-low	-	-	-	-	X
P1A3B-12	Gear Lever Position Sensor 3 Circuit-high	-	-	-	-	X
P1A3C-11	Gear Lever Position Sensor 3 Circuit-low	-	-	-	-	X
P1A3D-12	Gear Lever Position Sensor 4 Circuit-high	-	-	-	-	X
P1A3E-11	Gear Lever Position Sensor 4 Circuit-low	-	-	-	-	X
P1A3F-12	Gear Lever Position Sensor 5 Circuit-high	-	-	-	-	X
P1A40-11	Gear Lever Position Sensor 5 Circuit-low	-	-	-	-	X
P1A41-12	Gear Lever Position Sensor 6 Circuit-high	-	-	-	-	X
P1A42-11	Gear Lever Position Sensor 6 Circuit-low	-	-	-	-	X
P1A43-12	Gear Lever Position Sensor 7 Circuit-high	-	-	-	-	X
P1A44-11	Gear Lever Position Sensor 7 Circuit-low	-	-	-	-	X
P1A45-12	Gear Lever Position Sensor 8 Circuit-high	-	-	-	-	X
P1A46-11	Gear Lever Position Sensor 8 Circuit-low	-	-	-	-	X
P1A48-92	Gear Lever Position Sensor System - Single Sensor Correlation	-	-	-	X	X
P1A49-11	Parking Switch (Main) Circuit-high	<Corrected>	-	-	-	-
P1A49-15	Parking Switch (Main) Circuit-low	-	-	-	-	-
P1A4B-11	Parking Switch (Sub) Circuit-low	-	-	-	-	-
P1A4B-15	Parking Switch (Sub) Circuit-high	-	-	-	-	-
P1A4D-9E	Parking Switch Stuck	-	-	X	X	-
P1A4F-9E	OBC Wake-up Signal Latching Circuit Stuck ON	-	-	-	-	X
P1A51-9E	BMU Wake-up Signal Latching Circuit Stuck ON	-	-	-	-	X
P1A53-9E	ENGINE ECU Wake-up Signal Latching Circuit Stuck ON	-	-	-	-	-
P1A56-12	IGCT relay Control Circuit High	-	-	-	-	-
P1A5F-61	Control Module Processor (Discrimination of ASCD Cruise Flag)	-	-	-	-	-
P1A60-11	Quick Charger Inlet Voltage Monitoring Circuit Low	X	-	-	-	-
P1A60-15	Quick Charger Inlet Voltage Monitoring Circuit High/Open	X	-	-	-	-
P1A61-55	Configuration not Completed	X	-	-	-	-
P2122-00	Accelerator Pedal Position Sensor 1 Circuit Low	X	-	-	-	X
P2123-00	Accelerator Pedal Position Sensor 1 Circuit High	X	-	-	-	X

PHEV-ECU

DTC No.	Diagnostic item	Reference page
P1572-9E	Brake Pedal Switch for ASCD	DTC No. P1572-9E Brake Pedal Switch for ASCD
P1574-62	Vehicle Speed Sensor "ASCD"	DTC No. P1574-62 Vehicle Speed Sensor "ASCD"
P1805-9F	Brake Pedal Switch (OFF Failure)	DTC No. P1805-9F Brake Pedal Switch (OFF Failure)
P1A22-92	Engine/Generator Control System RPM - Lower Than Expected	DTC No. P1A22-92 Engine/Generator Control System RPM - Lower Than Expected
P1A23-92	Engine/Generator Control System RPM - Higher Than Expected	DTC No. P1A23-92 Engine/Generator Control System RPM - Higher Than Expected
P1A25-9A	Crash detection	DTC No. P1A25-9A Crash detection
P1A26-13	PHEV-ECU Memory Power Circuit Open	DTC No. P1A26-13 PHEV-ECU Memory Power Circuit Open
P1A29-49	PHEV-ECU AD converter Malfunction	DTC No. P1A29-49 PHEV-ECU AD converter Malfunction DTC No. P1A2A-45 PHEV-ECU Non-Volatile Random Access Memory Malfunction
P1A2A-45	PHEV-ECU Non-Volatile Random Access Memory Malfunction	
P1A2B-97	Fan Control Module 1 Blocked	DTC No. P1A2B-97 Fan Control Module 1 Blocked
P1A2C-97	Fan Control Module 2 Blocked	DTC No. P1A2C-97 Fan Control Module 2 Blocked
P1A2D-11	Clutch Solenoid Circuit Low	DTC No. P1A2D-11 Clutch Solenoid Circuit Low
P1A2E-15	Clutch Solenoid Circuit High/Open	DTC No. P1A2E-15 Clutch Solenoid Circuit High/Open
P1A2F-92	DC/DC Converter fault	DTC No. P1A2F-92 DC/DC Converter fault
P1A30-96	Battery Charger Coupler Lock/Unlock actuator Malfunction	DTC No. P1A30-96 Battery Charger Coupler Lock/Unlock actuator Malfunction
P1A31-96	Fan Control Module 1 failure 1	DTC No. P1A31-96 Fan Control Module 1 failure 1
P1A32-96	Fan Control Module 2 failure 1	DTC No. P1A32-96 Fan Control Module 2 failure 1
P1A33-12	Charge-Discharge connector 12V relay circuit high	DTC No. P1A33-12 Charge-Discharge connector 12V relay circuit high
P1A33-14	Charge-Discharge connector 12V relay circuit low	DTC No. P1A33-14 Charge-Discharge connector 12V relay circuit low
P1A35-61	ACC Wheel to Driving torque calculation value error	DTC No. P1A35-61 ACC Wheel to Driving torque calculation value error
P1A36-92	PHEV Engine fail	DTC No. P1A36-92 PHEV Engine fail
P1A37-12	Gear Lever Position Sensor 1 Circuit-high	DTC No. P1A37-12 Gear Lever Position Sensor 1 Circuit-high
P1A38-11	Gear Lever Position Sensor 1 Circuit-low	DTC No. P1A38-11 Gear Lever Position Sensor 1 Circuit-low
P1A39-12	Gear Lever Position Sensor 2 Circuit-high	DTC No. P1A39-12 Gear Lever Position Sensor 2 Circuit-high
P1A3A-11	Gear Lever Position Sensor 2 Circuit-low	DTC No. P1A3A-11 Gear Lever Position Sensor 2 Circuit-low
P1A3B-12	Gear Lever Position Sensor 3 Circuit-high	DTC No. P1A3B-12 Gear Lever Position Sensor 3 Circuit-high
P1A3C-11	Gear Lever Position Sensor 3 Circuit-low	DTC No. P1A3C-11 Gear Lever Position Sensor 3 Circuit-low
P1A3D-12	Gear Lever Position Sensor 4 Circuit-high	DTC No. P1A3D-12 Gear Lever Position Sensor 4 Circuit-high
P1A3E-11	Gear Lever Position Sensor 4 Circuit-low	DTC No. P1A3E-11 Gear Lever Position Sensor 4 Circuit-low
P1A3F-12	Gear Lever Position Sensor 5 Circuit-high	DTC No. P1A3F-12 Gear Lever Position Sensor 5 Circuit-high
P1A40-11	Gear Lever Position Sensor 5 Circuit-low	DTC No. P1A40-11 Gear Lever Position Sensor 5 Circuit-low
P1A41-12	Gear Lever Position Sensor 6 Circuit-high	DTC No. P1A41-12 Gear Lever Position Sensor 6 Circuit-high
P1A42-11	Gear Lever Position Sensor 6 Circuit-low	DTC No. P1A42-11 Gear Lever Position Sensor 6 Circuit-low
P1A43-12	Gear Lever Position Sensor 7 Circuit-high	DTC No. P1A43-12 Gear Lever Position Sensor 7 Circuit-high
P1A44-11	Gear Lever Position Sensor 7 Circuit-low	DTC No. P1A44-11 Gear Lever Position Sensor 7 Circuit-low
P1A45-12	Gear Lever Position Sensor 8 Circuit-high	DTC No. P1A45-12 Gear Lever Position Sensor 8 Circuit-high
P1A46-11	Gear Lever Position Sensor 8 Circuit-low	DTC No. P1A46-11 Gear Lever Position Sensor 8 Circuit-low
P1A48-92	Gear Lever Position Sensor System - Single Sensor Correlation	DTC No. P1A48-92 Gear Lever Position Sensor System - Single Sensor Correlation
P1A49-11	Parking Switch (Main) Circuit-high	DTC No. P1A49-11 Parking Switch (Main) Circuit-high
P1A49-15	Parking Switch (Main) Circuit-low	DTC No. P1A49-15 Parking Switch (Main) Circuit-low
P1A4B-11	Parking Switch (Sub) Circuit-low	DTC No. P1A4B-11 Parking Switch (Sub) Circuit-low
P1A4B-15	Parking Switch (Sub) Circuit-high	DTC No. P1A4B-15 Parking Switch (Sub) Circuit-high
P1A4D-9E	Parking Switch Stuck	DTC No. P1A4D-9E Parking Switch Stuck
P1A4F-9E	OBC Wake-up Signal Latching Circuit Stuck ON	DTC No. P1A4F-9E OBC Wake-up Signal Latching Circuit Stuck ON
P1A51-9E	BMU Wake-up Signal Latching Circuit Stuck ON	DTC No. P1A51-9E BMU Wake-up Signal Latching Circuit Stuck ON

<Corrected>

DTC No. P1A49-11 Parking Switch (Main) Circuit-high**DTC SET CONDITION****Check Condition**

- The power supply mode of the electric motor switch is ON.

Judgment Criterion

- The voltage of shift sensor 9 is high.

TROUBLESHOOTING HINTS

- Damaged wiring harness and connectors
- Malfunction of the selector lever
- Malfunction of the PHEV-ECU

DIAGNOSIS**Required Special Tools:**

- MB992744: Vehicle communication interface-Lite (V.C.I.-Lite)
- MB992745: V.C.I.-Lite main harness A
- MB992747: V.C.I.-Lite USB cable short
- MB992748: V.C.I.-Lite USB cable long
- MB991223: Wiring harness set
- MB992006: Extra fine probe

1. Check of continuity at selector lever connector (SFG1 terminal)

(2) Disconnect the connector, and measure at the wiring harness side.

(3) Check the continuity between the selector lever connector (SFG1 terminal) and body ground.

OK: Continuity exists (2 Ω or less)

Is the check result normal?

YES >>

[Go to Step 3.](#)

NO >>

[Go to Step 2.](#)

4. Check of open circuit in SFG1 line between PHEV-ECU and selector lever

Is the check result normal?

YES >>

[Go to Step 7.](#)

NO >>

Repair the connector(s) or wiring harness.

PHEV-ECU

<Corrected>

5. Voltage measurement at selector lever connector (SF09 terminal)

- (6) Disconnect the connector, and measure at the wiring harness side.
- (7) Change the power supply mode of the electric motor switch to ON (READY indicator: OFF).
- (8) Measure the voltage between the selector lever connector (SF09 terminal) and body ground.

OK: Approximately 5 V

Is the check result normal?

YES >>

[Go to Step 6.](#)

NO >>

[Go to Step 4.](#)**9. Check of open circuit in SF09 line between PHEV-ECU and selector lever**Is the check result normal?

YES >>

[Go to Step 5.](#)

NO >>

Repair the connector(s) or wiring harness.

10. Check wiring harness and connectors for damage.

Check the wiring harness and connectors in SF09 line between the PHEV-ECU connector and selector lever connector for damage.

Is the check result normal?

YES >>

[Go to Step 7.](#)

NO >>

Repair the connector(s) or wiring harness.

11. Voltage measurement at selector lever connector (SF09 terminal)

- (12) Measure the selector lever connector side by backprobing.
- (13) Change the power supply mode of the electric motor switch to ON (READY indicator: OFF).
- (14) Measure the voltage between the selector lever connector (SF09 terminal) and body ground.

Check condition	Normal condition
Parking lock switch: ON	1.6 ± 0.5 V
Parking lock switch: OFF	2.98 ± 0.3 V

Is the check result normal?

YES >>

[Go to Step 7.](#)

NO >>

Replace the selector lever (Refer to Transaxle - Selector Lever).

15. Check whether the DTC is set again.Is the DTC set?

YES >>

Replace the PHEV-ECU.

NO >>

The trouble can be an intermittent malfunction (Refer to General Information - How to Use Troubleshooting/Inspection Service Points, How to Cope with Intermittent Malfunctions).

DTC No. P1A49-15 Parking Switch (Main) Circuit-low**DTC SET CONDITION****Check Condition**

- The power supply mode of the electric motor switch is ON.

Judgment Criterion

- The voltage of shift sensor 9 is low.

TROUBLESHOOTING HINTS

- Damaged wiring harness and connectors
- Malfunction of the selector lever
- Malfunction of the PHEV-ECU

DIAGNOSIS**Required Special Tools:**

- MB992744: Vehicle communication interface-Lite (V.C.I.-Lite)
- MB992745: V.C.I.-Lite main harness A
- MB992747: V.C.I.-Lite USB cable short
- MB992748: V.C.I.-Lite USB cable long
- MB991223: Wiring harness set
- MB992006: Extra fine probe

1. Voltage measurement at selector lever connector (SF09 terminal)

(2) Disconnect the connector, and measure at the wiring harness side.

(3) Change the power supply mode of the electric motor switch to ON (READY indicator: OFF).

(4) Measure the voltage between the selector lever connector (SF09 terminal) and body ground.

OK: Approximately 5 V

Is the check result normal?

YES >>

[Go to Step 3.](#)

NO >>

[Go to Step 2.](#)

5. Check of short to ground circuit in SF09 line between PHEV-ECU and selector lever

Is the check result normal?

YES >>

[Go to Step 4.](#)

NO >>

Repair the connector(s) or wiring harness.

PHEV-ECU

<Corrected>

6. Voltage measurement at selector lever connector (SF09 terminal)

- (7) Measure the selector lever connector side by backprobing.
- (8) Change the power supply mode of the electric motor switch to ON (READY indicator: OFF).
- (9) Measure the voltage between the selector lever connector (SF09 terminal) and body ground.

Check condition	Normal condition
Parking lock switch: ON	1.6 ± 0.5 V
Parking lock switch: OFF	2.98 ± 0.3 V

Is the check result normal?

YES >>

[Go to Step 4.](#)

NO >>

Replace the selector lever (Refer to Transaxle - Selector Lever).

10. Check whether the DTC is set again.

Is the DTC set?

YES >>

Replace the PHEV-ECU.

NO >>

The trouble can be an intermittent malfunction (Refer to General Information - How to Use Troubleshooting/Inspection Service Points, How to Cope with Intermittent Malfunctions).

DTC No. P1A4D-9E Parking Switch Stuck

DTC SET CONDITION

Check Condition

- The power supply mode of the electric motor switch is ON.

Judgment Criterion

Any of the following conditions are met.

- Mismatch between the parking lock switch signals (main, sub) is detected for 5 times or more.
- The ON condition of the parking lock switch signal is detected for 5 times or more.

TROUBLESHOOTING HINTS

- Damaged wiring harness and connectors
- Malfunction of the selector lever
- Malfunction of the PHEV-ECU

DIAGNOSIS

Required Special Tools:

- MB992744: Vehicle communication interface-Lite (V.C.I.-Lite)
- MB992745: V.C.I.-Lite main harness A
- MB992747: V.C.I.-Lite USB cable short
- MB992748: V.C.I.-Lite USB cable long
- MB991223: Wiring harness set
- MB992006: Extra fine probe

1. M.U.T.-IIISE other DTC check

Check whether the PHEV-ECU sets the following DTCs.

- DTC No. P1A49-11 Parking Switch (Main) Circuit-high
- DTC No. P1A49-15 Parking Switch (Main) Circuit-low
- DTC No. P1A4B-11 Parking Switch (Sub) Circuit-low
- DTC No. P1A4B-15 Parking Switch (Sub) Circuit-high

<Corrected>

Are the DTCs set?

YES >>

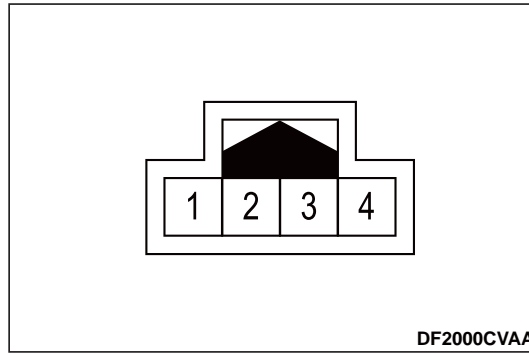
Troubleshoot the set DTCs.

NO >>

[Go to Step 2.](#)

BATTERY MANAGEMENT UNIT (BMU) AND TRACTION BATTERY

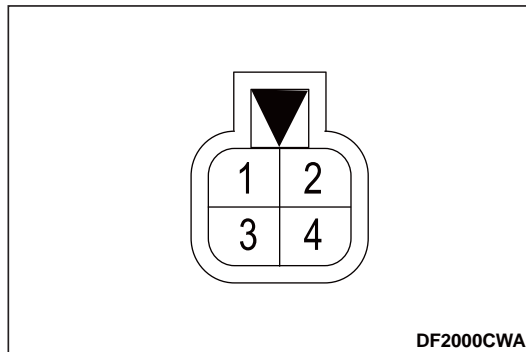
- (1) Measure the resistance between the following terminals of the battery module temperature sensor No. 1 connector.



<Corrected>

Terminal	Standard value
1	At -10°C (14°F): 17.76 to 18.68 k Ω At 25°C (77°F): 3.96 to 4.04 k Ω At 60°C (140°F): 1.135 to 1.187 k Ω

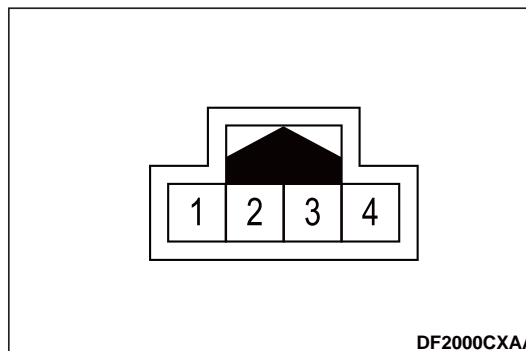
- (2) Measure the resistance between the following terminals of the battery module temperature sensor No. 2 connector.



<Corrected>

Terminal	Standard value
2	At -10°C (14°F): 17.76 to 18.68 k Ω At 25°C (77°F): 3.96 to 4.04 k Ω At 60°C (140°F): 1.135 to 1.187 k Ω

- (3) Measure the resistance between the following terminals of the battery module temperature sensor No. 3 connector.

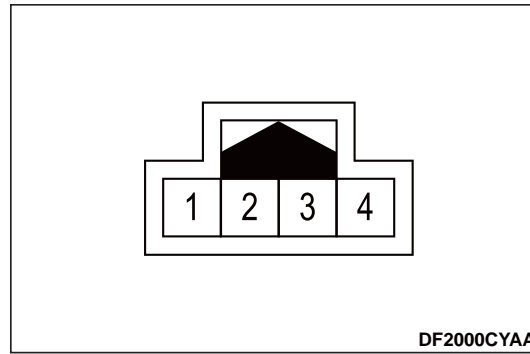


<Corrected>

Terminal	Standard value
1	At -10°C (14°F): 17.76 to 18.68 k Ω At 25°C (77°F): 3.96 to 4.04 k Ω At 60°C (140°F): 1.135 to 1.187 k Ω

BATTERY MANAGEMENT UNIT (BMU) AND TRACTION BATTERY

- (4) Measure the resistance between the following terminals of the battery module temperature sensor No. 4 connector.



Terminal		Standard value
1	2	At -10°C (14°F): 17.76 to 18.68 kΩ
		At 25°C (77°F): 3.96 to 4.04 kΩ
		At 60°C (140°F): 1.135 to 1.187 kΩ

- 2.If the check result deviates from the standard value, replace the failed battery module temperature sensor.

TRANSAXLE

SELECTOR LEVER

DIAGNOSIS

DIAGNOSTIC TROUBLE CODE CHART

This classification table has selected diagnostic trouble codes output from PHEV-ECU dealing with the selector lever, so for troubleshooting, refer to Electric Power Train – PHEV-ECU, Troubleshooting

DTC No.	Diagnostic item
P08A6-00	Gear Lever Position Sensor System - Multiple Sensor Correlation
P1A37-12	Gear Lever Position Sensor 1 Circuit-high
P1A38-11	Gear Lever Position Sensor 1 Circuit-low
P1A39-12	Gear Lever Position Sensor 2 Circuit-high
P1A3A-11	Gear Lever Position Sensor 2 Circuit-low
P1A3B-12	Gear Lever Position Sensor 3 Circuit-high
P1A3C-11	Gear Lever Position Sensor 3 Circuit-low
P1A3D-12	Gear Lever Position Sensor 4 Circuit-high
P1A3E-11	Gear Lever Position Sensor 4 Circuit-low
P1A3F-12	Gear Lever Position Sensor 5 Circuit-high
P1A40-11	Gear Lever Position Sensor 5 Circuit-low
P1A41-12	Gear Lever Position Sensor 6 Circuit-high
P1A42-11	Gear Lever Position Sensor 6 Circuit-low
P1A43-12	Gear Lever Position Sensor 7 Circuit-high
P1A44-11	Gear Lever Position Sensor 7 Circuit-low
P1A45-12	Gear Lever Position Sensor 8 Circuit-high
P1A46-11	Gear Lever Position Sensor 8 Circuit-low
P1A48-92	Gear Lever Position Sensor System - Single Sensor Correlation
P1A49-11	Parking Switch (Main) Circuit-high
P1A49-15	Parking Switch (Main) Circuit-low
P1A4B-11	Parking Switch (Sub) Circuit-low
P1A4B-15	Parking Switch (Sub) Circuit-high
P1A4D-9E	Parking Switch Stuck

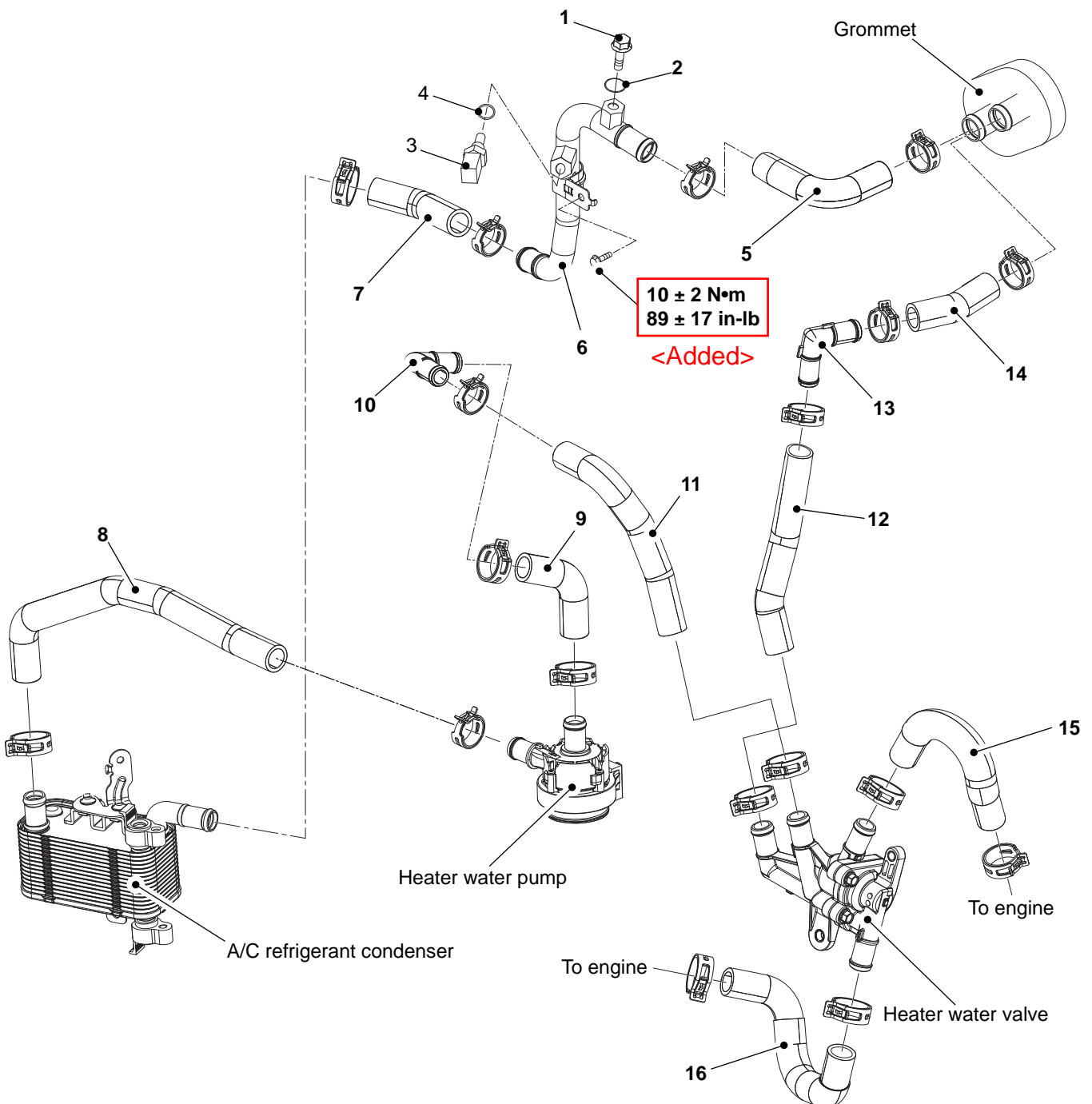
<Corrected>

HEATER & AIR CONDITIONING SYSTEM

Removal and Installation

Pre-removal and post-installation operation

- Engine coolant replacement (Refer to Engine coolant replacement)
- Air cleaner intake duct removal and installation(Refer to Air cleaner)
- Dash panel heat protector removal and installation(Refer to loose panel)



DF2002PVAV

EXTERIOR LIGHTING SYSTEM

B20A2-87 HEADLAMP RH LIN COMMUNICATION

DTC Description

DTC DETECTION LOGIC

DTC No.	M.U.T.-III SE screen items (Trouble diagnosis content)		DTC detection condition	
	B20A2-87	HEADLIGHT (RH) LIN communication [Headlight (right hand) local interconnect network communication]	[MISSING MESSAGE]	Diagnosis condition
Signal (terminal)				Headlight RH LIN communication
Threshold				Detected headlight RH LIN communication error
Diagnosis delay time				1 second or less

POSSIBLE CAUSE


- Harness or connector
- Headlight RH
 - LED headlight control module
 - Harness
- IPDM E/R

FAIL-SAFE

-

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

 With M.U.T.-III SE

1. Electric motor switch ON.
2. Select "Self-diagnosis" mode of "IPDM E/R" using M.U.T.-III SE.
3. Check DTC.

Is DTC detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END


<Added>

EXTERIOR LIGHTING SYSTEM

B20A2-87 HEADLAMP RH LIN COMMUNICATION

Diagnosis Procedure

1. CHECK SELF-DIAGNOSIS RESULT

 With M.U.T.-III SE

1. Electric motor switch ON.
2. Select "Self-diagnosis" mode of "IPDM E/R" using M.U.T.-III SE.
3. Check DTC.

Is applicable DTC detected?

YES >>

[GO TO 2](#)

.

NO >>

[GO TO 3](#)

.

2. CHECK HEADLIGHT RH LIN COMMUNICATION CIRCUIT 1

1. Electric motor switch OFF.
2. Disconnect following connectors.
 - Headlight RH
 - Headlight LH
 - IPDM E/R
3. Check continuity between headlight RH harness connector and IPDM E/R harness connector.

Headlight RH		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E405	12	E120	38	Existed

4. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		—	Continuity
Connector	Terminal		
E120	38	Ground	Not existed

Is the inspection result normal?

YES >>

Replace IPDM E/R.

NO >>

Repair or replace harness.

<Added>

EXTERIOR LIGHTING SYSTEM

3. CHECK HEADLIGHT RH FUSIBLE LINK

1. Electric motor switch OFF.
2. Check that the following fusible link is not blown (open).

Unit	Fusible link No.	Capacity
Headlight RH	19	15A

Is the fuse blown (open)?

YES >>

Replace the blown (open) fusible link after repairing the affected circuit if a fuse is blown (open).

NO >>

[GO TO 4](#)

4. CHECK HEADLIGHT RH POWER SUPPLY

1. Disconnect headlight RH connector
2. Check voltage between headlight RH harness connector and ground.

(+)		(-)	Voltage
Headlight RH			
Connector	Terminal		
E405	14	Ground	9 - 16 V

Is the inspection result normal?

YES >>

[GO TO 5](#)

NO >>

Repair or replace harness.

5. CHECK HEADLIGHT RH GROUND CIRCUIT

Check continuity between headlight RH harness connector and ground.

Headlight RH		—	Continuity
Connector	Terminal		
E405	13	Ground	Existed

Is the inspection result normal?

YES >>

[GO TO 6](#)

NO >>

Repair or replace harness.

<Added>

EXTERIOR LIGHTING SYSTEM

6. CHECK HEADLIGHT RH CONTROL SIGNAL

1. Electric motor switch ON.
2. Check voltage between headlight RH harness connector and ground.

Headlight RH		(-)	Voltage
Connector	Terminal		
E405	11	Ground	6 – 16 V

Is the inspection result normal?

YES >>

[GO TO 8](#)

.

NO >>

[GO TO 7.](#)

7. CHECK HEADLIGHT RH CONTROL SIGNAL CIRCUIT

1. Electric motor switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between headlight RH harness connector and IPDM E/R harness connector.

Headlight RH		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E405	11	E218	62	Existed

Is the inspection result normal?

YES >>

Replace IPDM E/R.

NO >>

Repair or replace harness.

8. CHECK HEADLIGHT RH LIN COMMUNICATION CIRCUIT 2

1. Electric motor switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between headlight RH harness connector and IPDM E/R harness connector.

Headlight RH		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E405	12	E120	38	Existed

Is the inspection result normal?

YES >>

Replace headlight RH.

NO >>

Repair or replace harness.

<Added>

EXTERIOR LIGHTING SYSTEM

B20A4-87 HEADLAMP LH LIN COMMUNICATION

DTC Description

DTC DETECTION LOGIC

DTC No.	M.U.T.-III SE screen items (Trouble diagnosis content)		DTC detection condition	
	B20A4-87	HEADLIGHT (LH) LIN communication	[MISSING MESSAGE]	Diagnosis condition
[Headlight (left hand) local interconnect network communication]		Signal (terminal)		Headlight LH LIN communication
		Threshold		Detected headlight LH LIN communication error
		Diagnosis delay time		1 second or less

POSSIBLE CAUSE

- Harness or connector
- Headlight LH
 - LED headlight control module
 - Harness
- IPDM E/R

FAIL-SAFE

-

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE



With M.U.T.-III SE

1. Electric motor switch ON.
2. Select "Self-diagnosis" mode of "IPDM E/R" using M.U.T.-III SE.
3. Check DTC.

Is DTC detected?

YES >>

Refer to Diagnosis Procedure.

NO-1 >>

To check malfunction symptom before repair: Refer to Intermittent Incident .

NO-2 >>

Confirmation after repair: INSPECTION END


<Added>

EXTERIOR LIGHTING SYSTEM

B20A4-87 HEADLAMP LH LIN COMMUNICATION

Diagnosis Procedure

1. CHECK SELF-DIAGNOSIS RESULT

 With M.U.T.-III SE

1. Electric motor switch ON
2. Select "Self-diagnosis" mode of "IPDM E/R" using M.U.T.-III SE.
3. Check DTC.

Is applicable DTC detected?

YES >>

[GO TO 2](#)

.

NO >>

[GO TO 3](#)

.

2. CHECK HEADLIGHT LH LIN COMMUNICATION CIRCUIT 1

1. Electric motor switch OFF.
2. Disconnect following connectors.
 - Headlight RH
 - Headlight LH
 - IPDM E/R
3. Check continuity between Headlight LH harness connector and IPDM E/R harness connector.

Headlight LH		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E415	12	E120	38	Existed

4. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		—	Continuity
Connector	Terminal		
E120	38	Ground	Not existed

Is the inspection result normal?

YES >>

Replace IPDM E/R.

NO >>

Repair or replace harness.

<Added>

EXTERIOR LIGHTING SYSTEM

3. CHECK HEADLIGHT LH FUSE

1. Electric motor switch OFF.
2. Check that the following fuse is not blown (open).

Unit	Fuse No.	Capacity
Headlight LH	18	15 A

Is the fuse blown (open)?

YES >>

Replace the blown (open) fuse after repairing the affected circuit if a fuse is blown (open).

NO >>

[GO TO 4](#)

4. CHECK HEADLIGHT LH POWER SUPPLY

1. Disconnect headlight LH connector
2. Check voltage between headlight LH harness connector and ground.

(+)		(-)	Voltage
Headlight LH			
Connector	Terminal		
E415	14	Ground	9 - 16 V

Is the inspection result normal?

YES >>

[GO TO 5](#)

NO >>

Repair or replace harness.

5. CHECK HEADLIGHT LH GROUND CIRCUIT

Check continuity between headlight LH harness connector and ground.

Headlight LH		—	Continuity
Connector	Terminal		
E415	13	Ground	Existed

Is the inspection result normal?

YES >>

[GO TO 6](#)

NO >>

Repair or replace harness.

<Added>

EXTERIOR LIGHTING SYSTEM

6. CHECK HEADLIGHT LH CONTROL SIGNAL

1. Electric motor switch ON.
2. Check voltage between headlight LH harness connector and ground.

(+)		(-)	Voltage
Headlight LH			
Connector	Terminal		
E415	11	Ground	6 – 16 V

Is the inspection result normal?

YES >>

[GO TO 8](#)

.

NO >>

[GO TO 7](#)

.

7. CHECK HEADLIGHT LH CONTROL SIGNAL CIRCUIT

1. Electric motor switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between headlight LH harness connector and IPDM E/R harness connector.

Headlight LH		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E415	11	E217	50	Existed

Is the inspection result normal?

YES >>

Replace IPDM E/R.

NO >>

Repair or replace harness.

8. CHECK HEADLIGHT LH LIN COMMUNICATION CIRCUIT 2

1. Electric motor switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between headlight LH harness connector and IPDM E/R harness connector.

Headlight LH		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E415	12	E120	38	Existed

Is the inspection result normal?

YES >>

Replace headlight LH.

NO >>

Repair or replace harness.

<Added>

BODY CONTROL SYSTEM

Description

CAUTION:

- When replacing the BCM, always replace it with a new one. The functions controlled by the BCM does not operate properly in case of reuse of the BCM from another vehicle.
- When before pairing of BCM and Keyless operation key unit, always writing the BCM configuration. Or not doing so, BCM control function does not operate normally.

Perform the following operations when replacing BCM. For details, refer to Work Procedure.

AFTER REPLACEMENT

CAUTION:

After the following procedures are performed, it is necessary to perform the IPDM/ER configuration.

When after replacing BCM, the following items must be performed. Or not doing so, BCM control function does not operate normally.

<Added>

- Writing vehicle specification
- Pairing of BCM and Keyless operation key unit
- Register of vehicle identification number
- Writing MAC key
- Tire pressure sensor ID registration (if equipped)

BODY CONTROL SYSTEM

Work Procedure**1. REPLACE BCM**

Replace BCM.

>>

[GO TO 2.](#)

2. WRITING VEHICLE SPECIFICATION

Perform configuration (BCM).

>>

[GO TO 3.](#)

3. PAIRING OF BCM AND INTELLIGENT KEY UNIT**CAUTION:**

When before pairing of BCM and Keyless operation key unit, always writing the BCM configuration. Or not doing so, BCM control function does not operate normally.

Perform the pairing of BCM and Keyless operation key unit. Press UNLOCK button of Keyless operation key.

>>

[GO TO 4.](#)

4. REGISTER OF VEHICLE IDENTIFICATION NUMBER

With M.U.T.-III SE

1. Select "VIN REGISTRATION" of BCM work support item.
2. Refer to M.U.T.-III SE and follow the on-screen instructions.

>>

[GO TO 5](#)

5. WRITING MAC KEY**CAUTION:**

When replacing BCM in relation with ECM replacement, replace ECM before writing MAC KEY. Refer to Description.

Perform MAC key writing.

>>

[GO TO 6](#)

6. TIRE PRESSURE SENSOR ID REGISTRATION (IF EQUIPPED)

Perform the initialization and registration of tire pressure sensor ID.

>>

[GO TO 7](#)

7. WRITING IPDM E/R VEHICLE SPECIFICATION

Perform configuration (IPDM E/R).

>>

WORK END

<Added>

POWER CONTROL SYSTEM

After replaced IPDM E/R, it is necessary to perform control unit configuration with M.U.T.-III SE. (For details, refer to Work Procedure)

AFTER REPLACEMENT

CAUTION:

After the IPDM/ER configuration is performed, it is necessary to perform the BCM configuration.

When replacing IPDM E/R, write vehicle specification with M.U.T.-III SE vehicle configuration.

<Added>

Never perform vehicle configuration other than performing with new IPDM E/R or the control function may not operate normally.

POWER CONTROL SYSTEM

Work Procedure**1. REPLACE IPDM E/R**

Replace IPDM E/R.

>>

[GO TO 2.](#)

2. WRITING VEHICLE SPECIFICATION

Perform configuration (IPDM E/R).

>>

[GO TO 3.](#)

3. WRITING BCM VEHICLE SPECIFICATION

Perform configuration (BCM). Refer to .


>>

WORK END

<Added>

DRIVER ASSISTANCE SYSTEM

Work Procedure [After Replacing Chassis Control Module]**1. WRITING MAC KEY**

 With M.U.T.-III SE

Perform MAC key writing.

>>

[GO TO 2](#) <Corrected>

2. PERFORM PROGRAMMING

 With M.U.T.-III SE

Perform chassis control module programming according to the procedure of "Programming" in M.U.T.-III SE User's Manual. Refer to M.U.T.-III SE User's Manual.

CAUTION:


During programming, maintain the following conditions:

- Electric motor switch: ON
- Electric load: OFF
- Brake pedal: Not depressed
- 12V battery voltage: 12 – 13.5 V (Check the value displayed on the M.U.T.-III SE screen.)

>>

[GO TO 3](#) <Corrected>

3. PERFORM CONFIGURATION

 With M.U.T.-III SE

Perform configuration.

>>

[GO TO 4](#) <Corrected>

4. PERFORM NECESSARY WORK

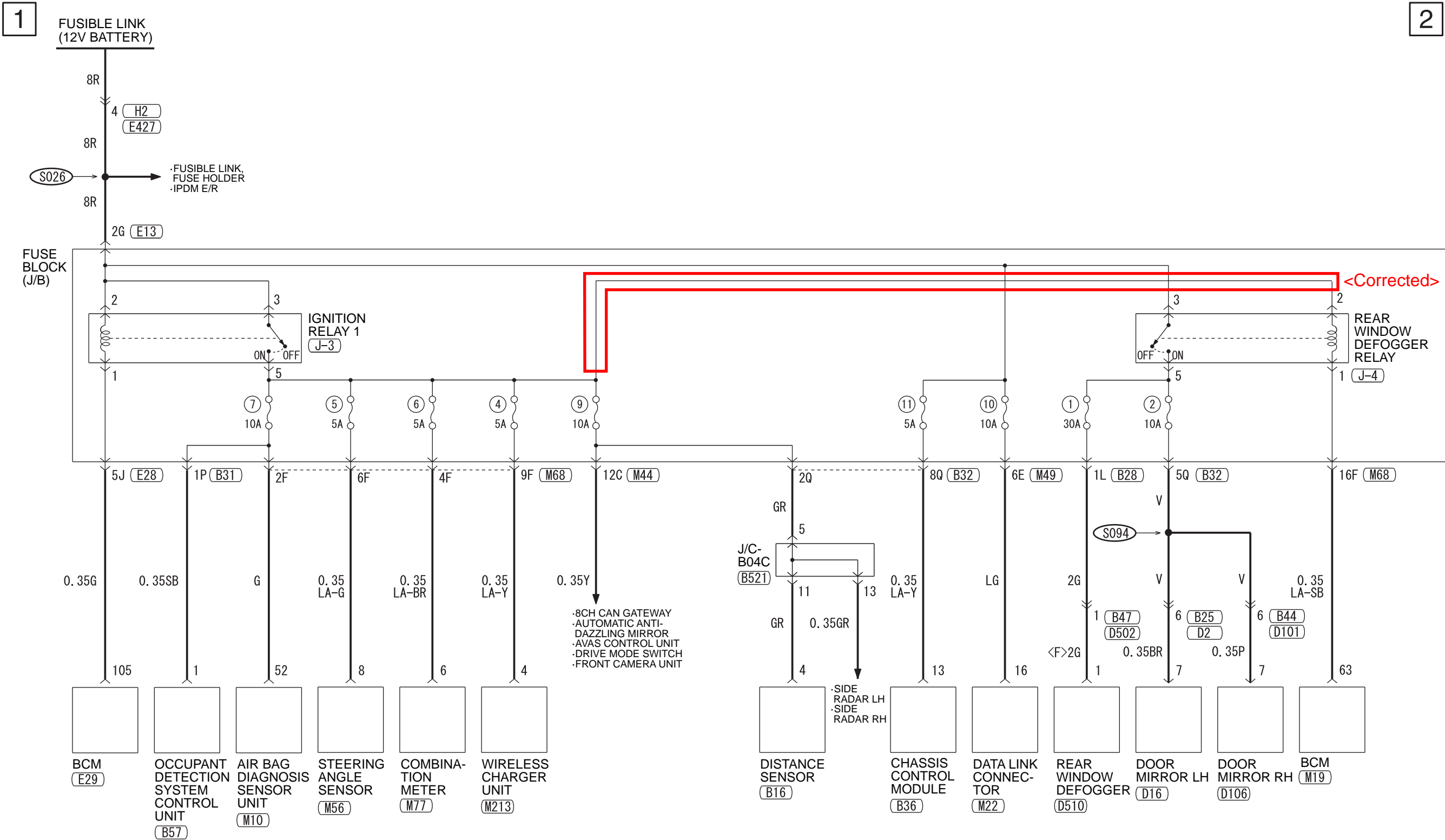
1. Perform Diagnostic Trouble Code for "CHASSIS CONTROL".
2. Erase the memory of Diagnostic Trouble Code results.

>>

End of work.

CIRCUIT DIAGRAM

POWER DISTRIBUTION SYSTEM



DF4001XCAD