

SUZUKI

SUZUKI MOTOR CORPORATION

LIANA

**SUPPLEMENTARY SERVICE MANUAL
FOR AUTOMATIC AIR CONDITIONING SYSTEM**

RH413/RH416

USE THIS MANUAL WITH MANUALS
MENTIONED IN FOREWORD OF THIS
MANUAL.

SUZUKI
Caring for Customers
99501-54G20-01E
(英)

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Condition	Possible Cause	Correction
No cool air comes out (A/C condenser cooling fan motor does not operate)	Fuse blown	Check related fuses and short circuit to ground.
	Wiring or grounding faulty	Check wiring and grounding.
	Condenser cooling fan motor relay faulty	Check condenser cooling fan motor relay referring to “Compressor Relay and Condenser Cooling Fan Relay” in this section.
	Condenser cooling fan motor faulty	Check condenser cooling fan motor referring to “Condenser Cooling Fan” in this section.
	ECM and/or its circuit faulty	Check ECM and/or its circuit referring to “A/C System Inspection of ECM and its Circuits” in this section.
	HVAC control module and/or its circuit faulty	Check HVAC control module and/or its circuit referring to “HVAC Control Module and its Circuits” in this section.
No cool air comes out (Blower motor does not operate)	Fuse blown	Check related fuses and short circuit to ground.
	Blower motor controller faulty	Check blower motor controller referring to “Blower Motor Controller” in this section.
	Blower speed selector faulty	Check blower speed selector referring to “Panel Unit (HVAC Control Module) Inspection” in this section.
	HVAC control module faulty	Check HVAC control module referring to “HVAC Control Module and its Circuits” in this section.
	Wiring or grounding faulty	Check wiring and grounding.
	Blower motor faulty	Check blower motor referring to “Blower Motor” in Section 1A.
	Blower relay faulty	Check blower relay and/or blower high relay referring to “Blower Motor and Blower Motor High Relays” in Section 1A.

Customer complaint analysis

Talk to customer, and then record details of the problem.

CUSTOMER QUESTIONNAIRE (EXAMPLE)

Customer's Name:	Model:	VIN:	
Date of Issue:	Date of Reg:	Date of Problem:	Mileage:

Problem Symptoms	<ul style="list-style-type: none"> ● A/C switch indicator lamp abnormal: fails to turn on/fails to turn off/flashes ● Abnormal noise while A/C compressor is working: from compressor / from condenser fan motor other_____ ● Chattering from A/C compressor: ● Condenser fan motor does not work: ● A/C compressor does not work: ● Other:
Frequency of Occurrence	<ul style="list-style-type: none"> ● Continuous/Intermittent (_____ times a day, a month)/ other_____
Conditions for Occurrence of Problem	<ul style="list-style-type: none"> ● Vehicle at stop & A/C compressor is working: ● For some time after A/C switch is ON: ● When outside air temperature is high: ● When outside air temperature is low: ● All the time:
Environmental Condition	<ul style="list-style-type: none"> ● Weather: fair/cloudy/rain/snow/other_____ ● Temperature: °F (_____ °C)
Diagnostic Trouble Code	<ul style="list-style-type: none"> ● First check: _____ Normal code/malfunctional code (_____) ● Second check after test drive: Normal code/malfunctional code (_____)

Visual inspection

As a preliminary step, be sure to perform visual check of the items that support proper function of the air conditioning referring to "Visual Inspection" in this section.

DTC check

Check DTC referring to "DTC Check" in this section.

Troubleshooting malfunction

Based on the DTC, perform an applicable DTC diagnostic flow and locate the cause of the trouble, namely in a sensor, wire harness, connector, actuator, HVAC control module or other part and repair faulty parts.

A/C system symptom diagnosis

Check any part or system suspected to be a possible cause referring to "General Diagnosis Table" in this section.

Check for intermittent problem

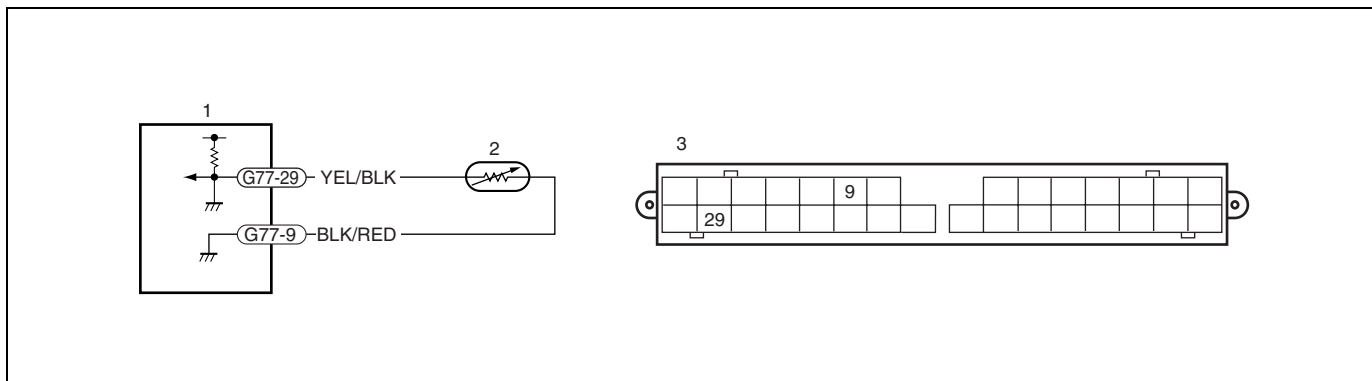
Check any part where an intermittent trouble is easy to occur (e.g., wire harness, connector, etc.), referring to "Intermittent and Poor Connection" in Section 0A and related circuit of trouble cord recorded.

Final confirmation test

Confirm if the problem symptom is troubleshot and the A/C system is free from any abnormal conditions. If there existed DTC, clear the DTC. Then, check if the DTC is still detected and if there is any other DTC.

DTC B1501 (No.01): Outside Air Temperature Sensor and its Circuit Malfunction

WIRING DIAGRAM



1. HVAC control module 2. Outside air temperature sensor 3. HVAC module connector "G77" (viewed from terminal side)

DTC DETECTING CONDITION AND TROUBLE AREA

DTC Detecting Condition	Trouble Area
<ul style="list-style-type: none"> • Outside air temperature signal is less than the specified (0.7 V) (Outside air temperature is less than -44 °C, -111 °F). • Outside air temperature signal is more than the specified (3.3 V) (Outside air temperature is more than 155 °C, 311 °F). 	<ul style="list-style-type: none"> • "YEL/BLK" or "BLK/RED" wire circuit open or short • Outside air temperature sensor malfunction • Board unit in HVAC control module

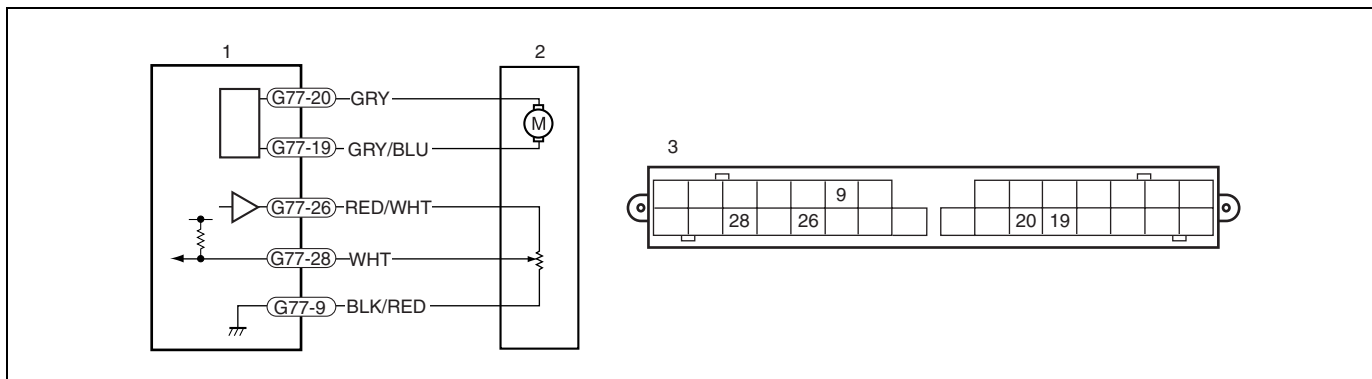
DTC TROUBLESHOOTING

Step	Action	Yes	No
1	1) Remove outside air temperature sensor and HVAC control module referring to "Outside Air Temperature Sensor" and "HVAC Control Module". 2) Check for proper connection of outside air temperature sensor connector at "YEL/BLK" wire and HVAC control module connector at "G77-29" wire terminals. 3) If OK, measure resistance between outside air temperature sensor connector at "YEL/BLK" wire and HVAC control module connector at "G77-29" wire terminals. Is resistance 1 Ω or less?	Go to Step 2.	"YEL/BLK" wire circuit open.
2	1) Check for proper connection of outside air temperature sensor connector at "BLK/RED" wire and HVAC control module connector at "G77-9" wire terminals. 2) If OK, measure resistance between outside air temperature sensor connector at "BLK/RED" wire and HVAC control module connector at "G77-9" wire terminals. Is resistance 1 Ω or less?	Go to Step 3.	"BLK/RED" wire circuit open.

Step	Action	Yes	No
3	1) Check for proper connection or air flow control actuator connector at "BLK/RED" wire and HVAC control module connector at "G77-9" wire terminals. 2) If OK, measure resistance between air flow control actuator connector at "BLK/RED" wire and HVAC control module connector at "G77-9" wire terminals. Is resistance 1 Ω or less?	Go to Step 4.	"BLK/RED" wire circuit open.
4	1) Turn ignition switch to ON position. 2) Check voltage between HVAC control module connector at "G77-9" wire terminal and body ground. Is voltage 0 V?	Go to Step 5.	"BLK/RED" wire shorted to power circuit.
5	1) Turn ignition switch to OFF position. 2) Connect HVAC control module connector. 3) With ignition switch ON, check voltage between air flow control actuator connector at "RED/WHT" wire terminal and body ground. Is voltage about 4 – 5 V?	Go to Step 7.	"RED/WHT" wire shorted to ground circuit or shorted power circuit. If OK, replace board unit in HVAC control module.
6	1) Check voltage between air flow control actuator connector at "WHT/BLU" wire terminal and body ground. Is voltage about 4 – 5 V?	Go to Step 7.	"WHT/BLU" wire shorted to ground circuit or shorted power circuit. If OK, replace board unit in HVAC control module.
7	1) Check air flow control actuator referring to "Air Flow Control Actuator" in this section. Is it in good condition?	Replace board unit in HVAC control module.	Replace air flow control actuator.

DTC B1513 (No.13): Temperature Control Actuator and its Circuit Malfunction

WIRING DIAGRAM

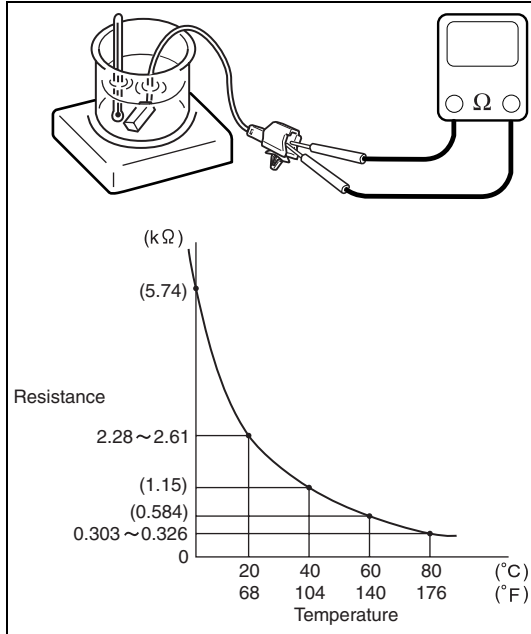


1. HVAC control module 2. Temperature control actuator 3. HVAC control module connector "G77" (viewed from terminal side)

INSPECTION

Warm up water temperature sensor. Then, make sure that its resistance is decreased as its temperature increases. If check result is not satisfactory, replace water temperature sensor with new one.

Water temperature sensor resistance
Approximately 315 Ω at 80 °C (176 °F)

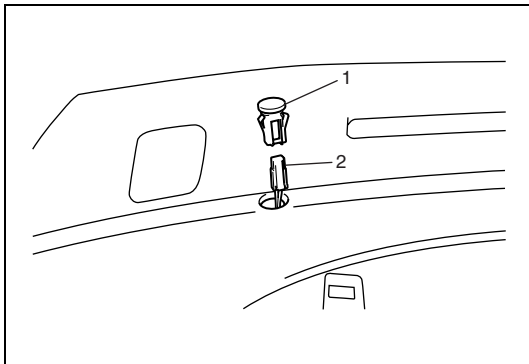


INSTALLATION

Reverse removal procedure for installation.

Sunload Sensor

REMOVAL



- 1) Disconnect negative (-) cable at battery.
- 2) Remove combination meter referring to "Combination Meter" in Section 8.
- 3) Remove sunload sensor (1) from instrument panel.
- 4) Disconnect sunload sensor connector (2).

INSTALLATION

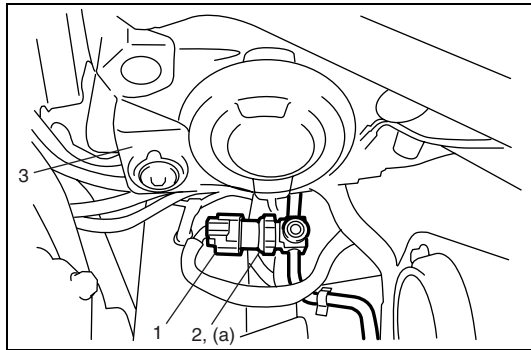
Reverse removal procedure to install A/C refrigerant pressure switch noting the following instruction.

- Tighten A/C refrigerant pressure switch as specified torque.

Tightening torque

A/C refrigerant pressure switch (a):

11 N·m (1.1 kg-m, 8.0 lb-ft)



3. RH head light

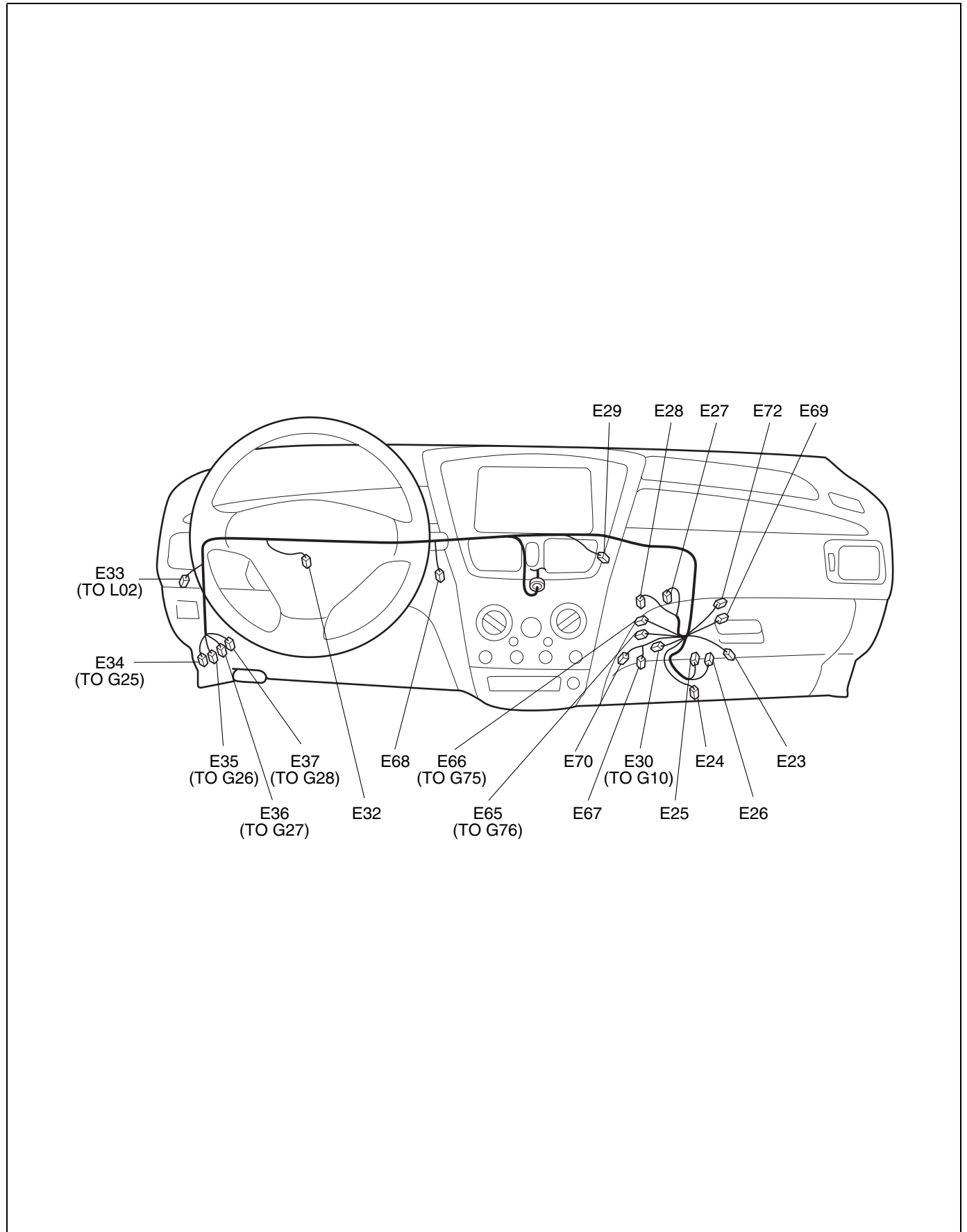
E: Main harness

E: Hauptkabelbaum

E: Faisceau de fils électriques principal

E: Mazo de cables principal

LHD



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