
INTRODUCTION

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SERVICE INFORMATION

How to Use This Manual

1. General information

This manual includes all the necessary procedures for service operations.

These procedures can be divided into three categories:

- Diagnosis
- Removal and installation, replacement, disassembly and assembly, inspection and adjustment
- Inspection

The following procedures are omitted from this manual. However, they must be performed.

- Use a transmission carrier or lifter to perform the operations.
- Clean all the removed parts.
- Perform a visual check.

This manual includes the following prompt information:

 WARNING	This indicates that injuries to you or other people may happen.
 CAUTION	This indicates that damage to the repairing components may happen.
 ENVIRONMENTAL PROTECTION	Dispose of the waste materials according to local regulations.
HINT	Provide additional information to help you with the service operations.

2. Service procedure

Illustrations attached with the service procedure are used to identify components, show the assembling relevance of parts, and explain the visual check for parts. Removal and installation procedures are explained in words.

Service procedures include:

- Detailed removal and installation instruction
- Illustration
- Torque specifications
- Specifications

Sometimes, the illustrations of similar models are used. In this case, minor details may be different from the actual vehicle.

3. Diagnosis procedure

Diagnosis procedures are divided as below:

- Diagnostic Trouble Code (DTC)
DTC is an important hint when troubleshooting is difficult to simulate. The malfunction can be diagnosed quickly and accurately by performing the specified DTC diagnosis and check.
- Problem symptoms table
The malfunction locations can be determined quickly by troubleshooting in accordance with the symptom type.

4. Specifications

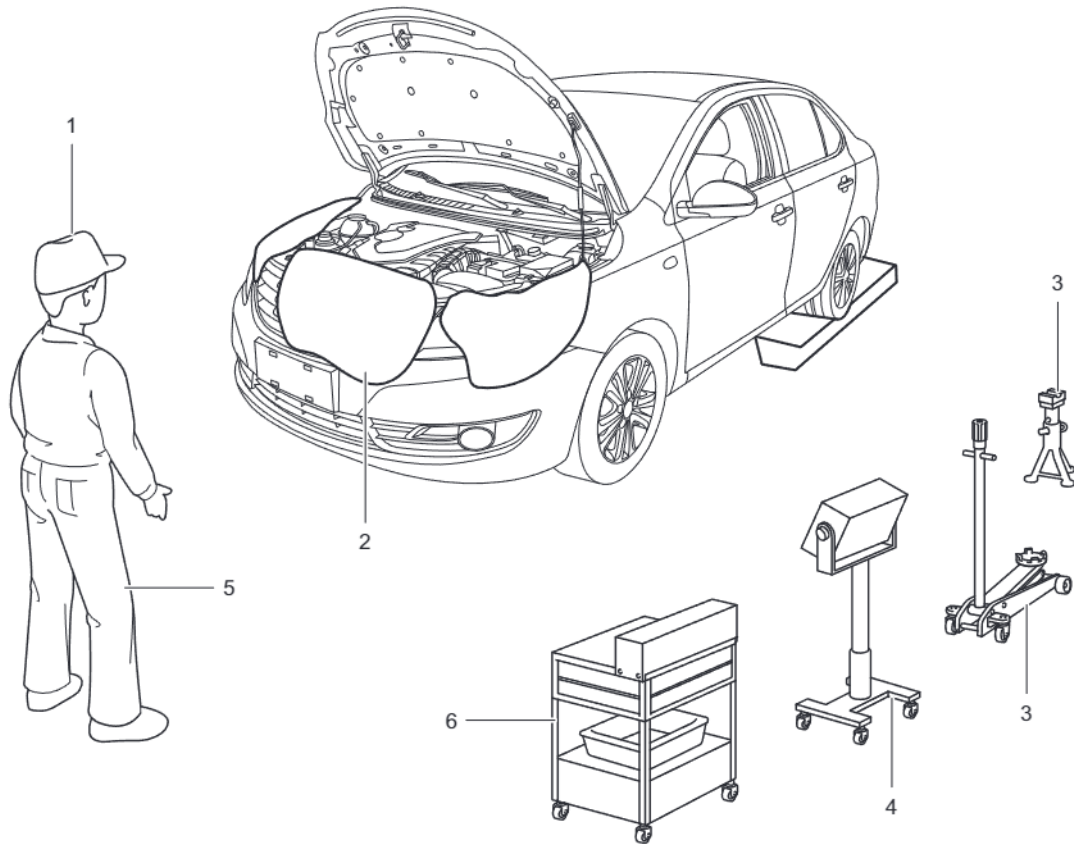
This manual categorizes specifications as below:

- Torque specifications
- Clearance specifications
- Capacity specifications

Preparation

1. Preparation for vehicle service

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1	Attire	• Always wear a clean uniform. • A hat and safety shoes must be worn.
2	Vehicle Protection	Before starting work, prepare a radiator grille cover, fender cover, seat cover and floor mat.
3	Safety Operation	• When working with two or more persons, be sure to check the safety each other. • When working with the engine running, make sure to provide ventilation for exhaust gas in the workshop. • If working on high temperature, high pressure, rotating, moving, or vibrating parts, be sure to wear appropriate safety equipment and take extra care not to injure yourself or others. • When jacking up the vehicle, be sure to support the specified locations with safety stands. • When lifting up the vehicle, use appropriate safety equipment.
4	Preparation for Tools and Measuring Gauge	Before starting work, prepare a tool stand, special tools, gauge, oil and parts for replacement.
5	Removal and Installation, Disassembly and Assembly Operations	• Diagnose after thoroughly understanding the proper service procedures and reported problem. • Before removing the parts, inspect the general condition of the assembly to check for any deformation or damage. • Take notes for the complicated assembly. For example, note the total number of electrical connections, bolts, or hoses that are removed. • Add matchmarks to ensure that each component is assembled to its original position. Temporarily mark the hoses and their joints as necessary. • Clean and wash the removed parts if necessary and assemble them after a thorough inspection.
6	Removed Parts	• Place the removed parts in a separate box to avoid mixing them up with the new parts or contaminating the new parts. • For non-reusable parts such as gaskets, O-rings, and self-locking nuts, replace them with new ones as instructed in this manual. • Retain the removed parts for customer inspection, if requested.

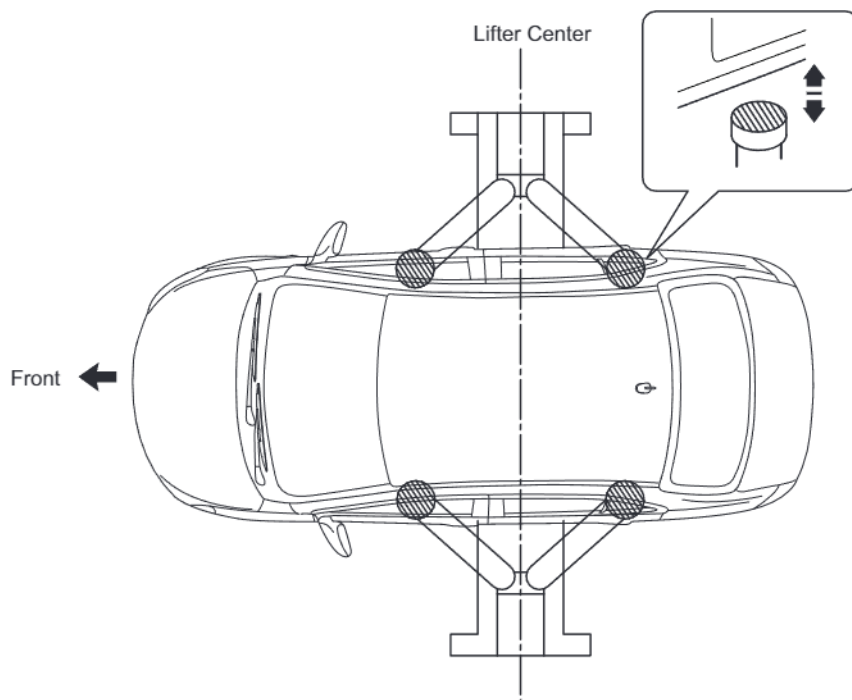
2. Jacking up and supporting vehicle

Care must be taken when jacking up and supporting the vehicle. Be sure to jack up and support the vehicle at proper locations.

a. Precautions for using a swing arm type lifter

- Follow the safety procedures described in the operation manual.
- Keep the vehicle stable when using a lifter to prevent the vehicle from tilting during operation. Stabilize the vehicle by adjusting the length of lifter arm and vehicle position.

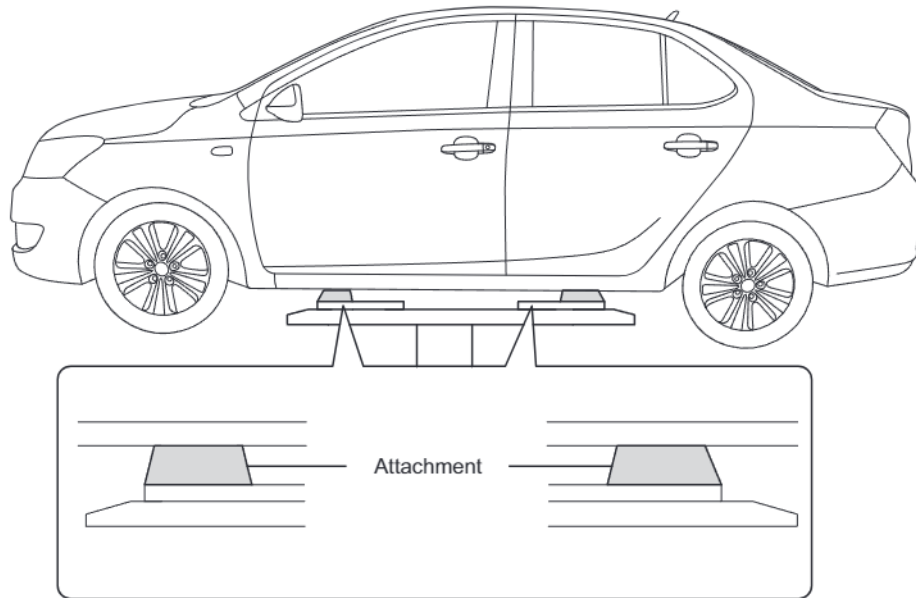
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b. Precautions for using a plate type lifter

- Follow the safety procedures described in the operation manual.
- Use plate type lifter attachments (rubber lifting blocks) on the plate surface.



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Service Operation

1. How to use fasteners

⚠ WARNING

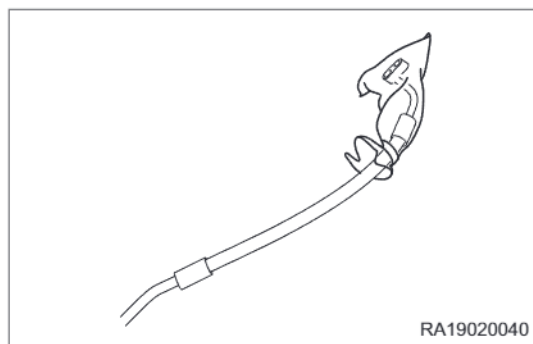
- Using incorrect fasteners may cause damage to the components. Injury and death may occur without observing the instructions below.

- The reference values of fasteners and torque specifications in this service manual use metric unit.
- Recycling all the fasteners (nuts and bolts, etc.) during maintenance and service operation is important for assembly.

If it's impossible to recycle fasteners, be sure to use other fasteners with the same specifications.

2. Remove parts

When repairing the malfunction, try to determine the cause. Before starting work, parts or sub-assemblies that have to be removed and replaced should be confirmed first. After removing the parts, block all the holes and ports to prevent foreign objects from entering.



3. Disassemble components

If the disassembly procedures are complicated and multiple parts need to be disassembled, make sure that the disassembly methods won't affect the performance or appearance of parts. Identify each part for assembly.

4. Check parts

After removal, check each part for deformation, damage or other problems.

5. Arrange parts

Carefully arrange all the disassembled parts to make the assembly easier.

Always separately arrange the replaced parts and reusable parts, and make marks on them.

6. Clean parts

Make a thorough and careful cleaning for reusable parts.

⚠ WARNING

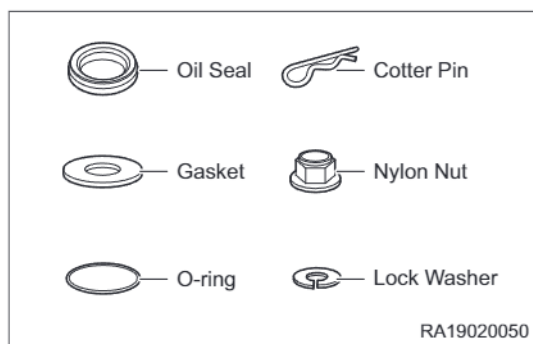
- Blowing out the dirt or other particles with compressed air may hurt your eyes, and be sure to wear goggles during operation.

7. Assemble components

When assembling the parts, always strictly use the standard values (tightening torque and clearance value, etc.).

If the following parts need to be replaced, replace them with new ones.

- Oil seal
- Gasket
- O-ring
- Lock washer
- Cotter Pin
- Nylon nut



8. Lubrication and seal

Use seal gum and gasket based on the position.

If seal gum is applied, install the components before the seal gum dries to prevent leakage.

Apply lubricant to movable area and friction area of the components.

During assembly, apply permitted lubricant or grease to the specified area (such as oil seal).

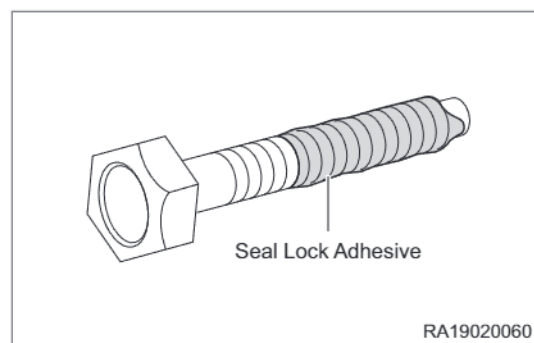
9. Adjustment

Use proper meter and tester for adjustment.

10. Pre-coated parts

Pre-coated parts are bolts and nuts that are coated with seal lock adhesive in the factory.

If a pre-coated part is retightened, loosened, or moved in any way, be sure to reapply the specified adhesive.



11. Rubber parts and rubber hoses

Avoid gasoline or oil dripping on the rubber parts or rubber hoses.

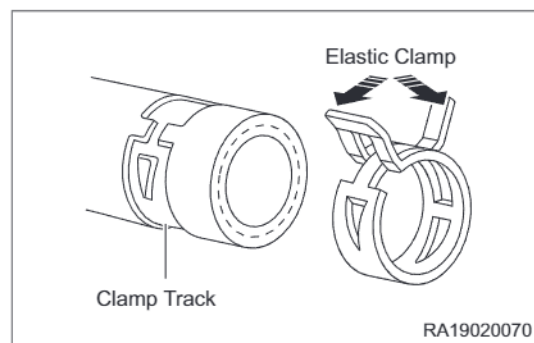
12. Hose clamp

Before removing a hose, observe the position of the clamp so as to reinstall it to the same position.

Replace the deformed or dented clamps with new ones.

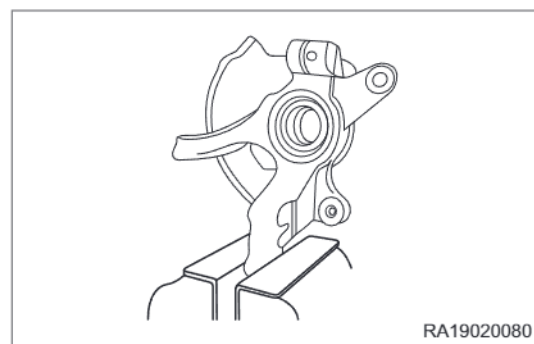
When reusing a hose, fix the clamp on the clamp track portion of hose.

For elastic clamp, push tabs in the direction of arrow as shown in the illustration after installation to widen the tabs slightly.



13. Vise

When using vise, install protective plates on the jaws of vise to prevent the parts from being damaged.



14. Dynamometer

When testing vehicle on the dynamometer, pay attention to the following:

- Place a fan in front of the vehicle. It's best to use a fan of which the power changes in proportion to the vehicle speed.
- Connect an exhaust gas ventilator.

WARNING

- Exhaust gas may cause injury and death. There is odorless, colorless Carbon Oxide (CO) in the exhaust gas. People will faint and get poisoned after inhaling it.

- Cool the exhaust pipe with a fan.
- Keep the area around vehicle clean and tidy.
- Monitor the engine coolant thermometer.

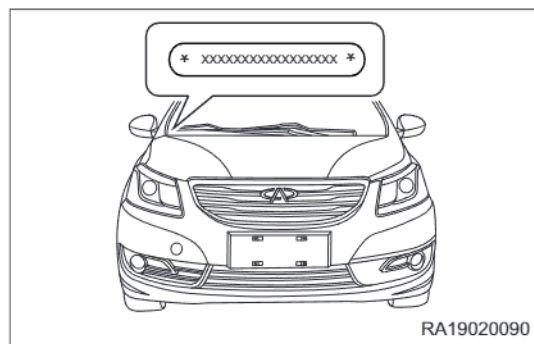
VEHICLE INFORMATION

Vehicle Identification Information

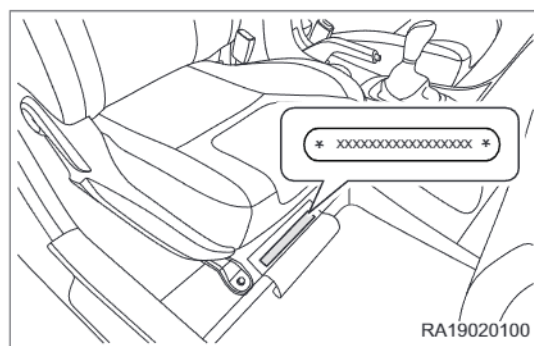
1. Vehicle Identification Number (VIN)

VIN is located on the front left part of instrument panel.

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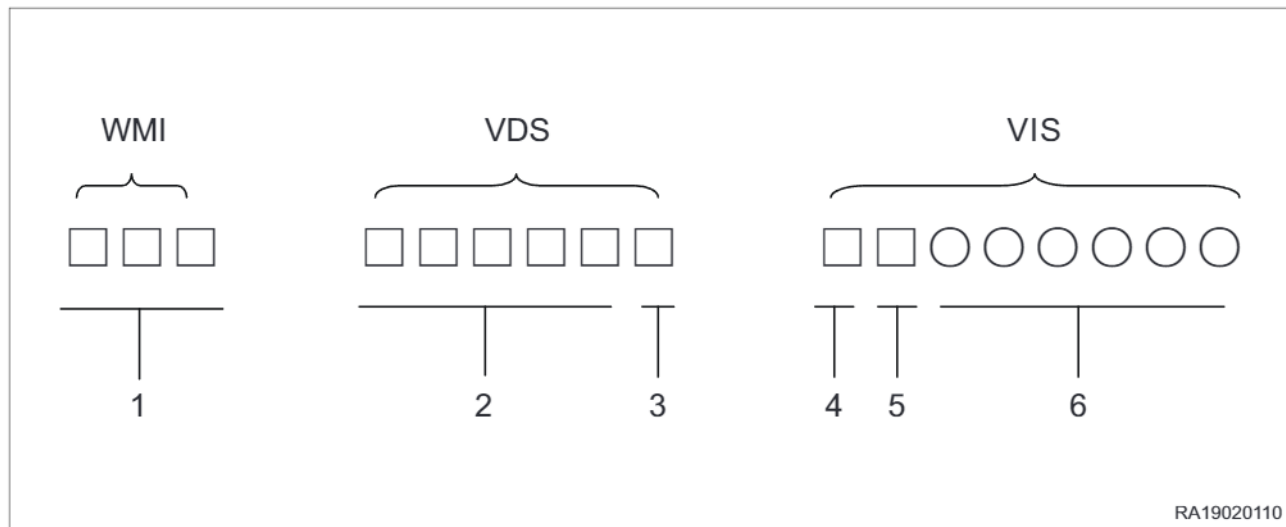


The code can also be found on the body bottom board under the front right seat.



Vehicle Identification Number (VIN)

The Vehicle Identification Number (VIN) consists of World Manufacturer Identifier (WMI), Vehicle Descriptor Section (VDS) and Vehicle Indicator Section (VIS), with a total of 17-digit characters. The specifications are as follows:



□: represents a letter or a number (letters I, O and Q cannot be used); ○: represents a number.

No.	Definition
1	World Manufacturer Identifier
2	Vehicle Features
3	Accuracy Check Digit
4	Model Year
5	Production Plant
6	Sequential Number

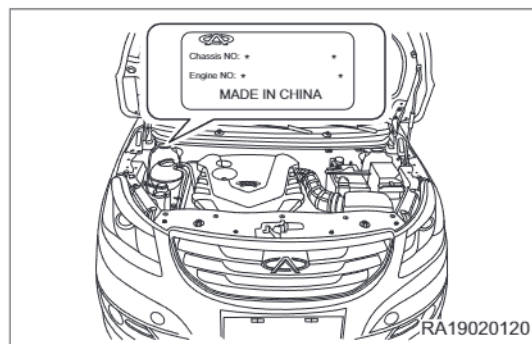
- The first three digits of VIN represent world manufacturer identifier.

No.	WMI Code	Vehicle Category
1	LVV	Category M1 (for vehicle type number started with 7)

- The fourth digit of VIN represents vehicle type.
 - Letter "D" means all vehicles in the category M1.
- The fifth digit of VIN represents vehicle body type and drive type.
 - Letter "C" means 4-door sedan 4 × 2 type.
- The sixth digit of VIN represents transmission type.
 - "1" means manual transmission.
- The seventh digit of VIN represents dynamic characteristics.
 - "1" means the gasoline engine that is 1.5 L - 2.0 L (2.0 L excluded).
- The eighth digit of VIN represents restraints system.
 - "B" means seat belt and airbag.
- The ninth digit of VIN represents check digit.
 - It is used to check the accuracy of VIN record, and made out through computation after confirming the other sixteen digits of the VIN.
- The tenth digit of VIN represents model year:
 - "E" represents 2014.
- The eleventh digit of VIN represents assembly plant code.
 - "D" represents "Chery Automobile Co., Ltd."
- The last six digits of VIN represent production sequence number.
 - The number means the real production serial number of this model.

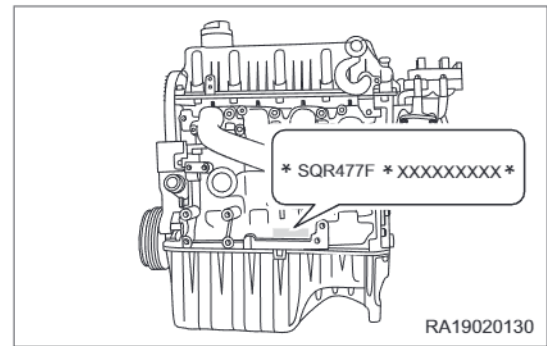
2. Vehicle data plate

The vehicle data plate is located on the upper part of right shock absorber seat in the engine compartment, and it is marked with chassis number and engine number.



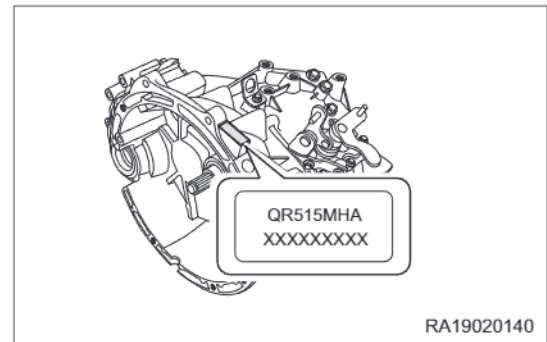
3. Engine number

The engine number is located between the engine exhaust manifold and generator.



4. Transmission number

The transmission number is stamped on the transmission case near the transmission shift mechanism.



Symbols

The symbols below are instrument cluster display symbols and some international standard symbols.

					
1	2	3	4	5	6
					
7	8	9	10	11	12
					
13	14	15	16	17	18
					
19	20	21	22	23	24
EPC				WIN	
25	26	27	28	29	30
				SRS	
31	32	33	34	35	36

1 - Seat Belt Reminder Light	2 - ABS Warning Light
3 - Door Open Warning Light	4 - Brake System Warning Light
5 - High Coolant Temperature Warning Light	6 - Turn Signal Indicator
7 - Low Fuel Level Warning Light	8 - SRS Warning Light (if equipped)
9 - Low Beam Indicator	10 - Position Light Indicator
11 - Rear Fog Indicator	12 - Engine Malfunction Warning Light
13 - Low Engine Oil Pressure Warning Light	14 - Charging System Warning Light
15 - Maintenance Indicator	16 - Daytime Running Light Indicator
17 - High Beam Indicator	18 - Automatic Cruise
19 - Front Fog Indicator	20 - Transmission Malfunction Warning Light
21 - Courtesy Dome Light	22 - Electronic Steering Assist Warning Light
23 - ESP Warning Light	24 - ESP OFF Indicator
25 - EPC Warning Light	26 - Parking Brake Warning Light
27 - Front Seat Belt Reminder Light	28 - Immobilizer System Warning Light
29 - Snow Mode Indicator	30 - Hazard Flasher Warning light
31 - Horn	32 - Cigarette Lighter
33 - Hood Open	34 - Rear Windshield Heater Indicator
35 - Airbag	36 - Windshield Washer

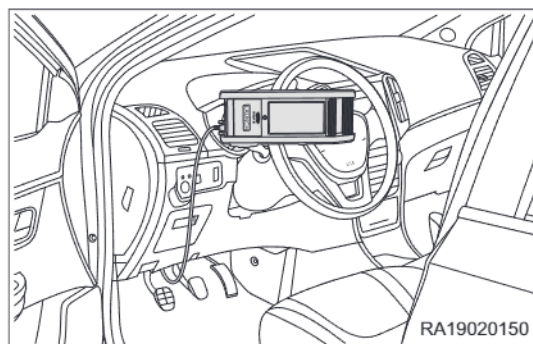
CIRCUIT DIAGNOSIS INFORMATION

How to Use Tester

Connect the tester cable to DLC, turn the ignition switch to ON and try to use the tester. If communication malfunction appears on the display, it indicates that the vehicle or tester is defective.

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- If the communication is normal when the tester is connected to another vehicle, inspect the DLC on the original vehicle.
- If the communication is still not possible when the tester is connected to another vehicle, the tester itself is probably defective.



ECM Control System Troubleshooting

This model uses the ECM control system. Most malfunction inspection procedures only involve in checking the circuits of ECM control system one by one. An adequate understanding of the system and a basic knowledge of electricity are enough to perform effective troubleshooting, accurate diagnosis and necessary repairs.

Diagnosis and Troubleshooting

1. Diagnosis basis and troubleshooting methods

Procedure Types	Details	Troubleshooting Methods
Diagnosis based on DTC	Diagnosis procedure is based on stored DTC.	Use eliminating methods to determine malfunctioning parts in accordance with DTC detection conditions. Inspect relevant parts with the tester and eliminate possible malfunctions one by one.
Diagnosis based on symptoms (no DTCs stored)	Diagnosis procedure is based on problem symptoms.	Use eliminating methods to determine malfunctioning parts in accordance with symptoms. Inspect relevant parts with the tester and eliminate possible malfunctions one by one.

2. Detailed troubleshooting steps

Step	Description
1	Obtain detailed information when electrical malfunction occurs.
2	Operate affected system, and perform a road test as necessary. Confirm malfunction parameter. If it is impossible to duplicate malfunction, refer to "Electrical Malfunction Simulation Test".

Step	Description
3	Collect proper diagnosis materials, which includes: • Circuit Diagram • System Schematic Diagram • Relevant Chapter in the Service Manual • Service Bulletin Perform diagnosis according to the mastered system operation knowledge and customer's feedback.
4	Check if there is any bonding, loose connector or damaged wire harness in the system. Determine related circuits and components, and diagnose according to the circuit diagram and wire harness layout diagram.
5	Repair circuit and replace component as necessary.
6	Operate system in all modes. Confirm that the system can operate normally in all conditions. Confirm that you have not inadvertently created new malfunctions during your diagnosis or repair steps.

Circuit Simulation Test

The non-regular malfunctions and other malfunctions that cannot be detected through a road test can be detected by circuit simulation test. The possible vehicle malfunction can be determined efficiently by simulating the condition/environment when the malfunction occurs.

Simulation test can be classified into the following 7 types:

- Vehicle vibration test
- Thermosensitive test
- Freezing test
- Leakage test
- Load test
- Cold/hot start test
- Voltage drop test

HINT:

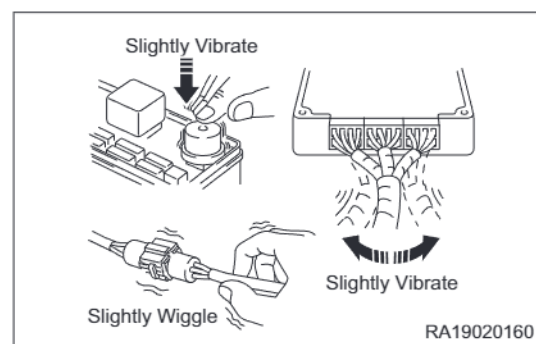
It is extremely important to listen carefully to customer's description about the malfunction for simulating the conditions when the symptoms occur.

1. Vehicle vibration test

When the vehicle is running on an uneven road or the engine is vibrating (A/C is on and engine is idling), malfunctions may occur. In this case, check the conditions related to the vibration. Check the following areas on the vehicle:

a. Connector and wire harness

Determine the connectors and wire harnesses that may affect the electrical system being inspected. When monitoring whether the system has malfunctions that are being simulated, vibrate or wiggle each connector and wire harness slightly. This test may show loose or poor electrical connections.



HINT:

When the connector is exposed to humid environment, a layer of corrosive film may be formed on its terminals. With the connector connected, this condition may not be found by visual check. If an intermittent malfunction occurs, it may be caused by corrosion. It is recommended that the terminals of the relevant connectors in the system should be checked and cleaned after disconnecting the connectors.

b. Sensors and relays

Vibrate the sensors and relays in the system being checked slightly. The sensors or relays that are loose or poorly installed may be found through this test.

c. Engine compartment

- There are many reasons for the electrical malfunction that occurred due to vehicle vibration, and it is necessary to check the following conditions:
 - Connectors are not installed correctly.
 - Wire harness is not long enough, so it is extended when the engine is vibrating or shaking.
 - Wire harness hangs over the bracket or movable components.
 - Ground wire is loose, dirty or corrosive.
 - Wire harness is too close to the high temperature components.
- To inspect the components under the engine hood, first confirm that the ground connection is in perfect condition (refer to the grounding inspection described below). First confirm that the system is correctly grounded. Then slightly vibrate the wire harness or components as previously instructed to check if the connection is loose. Refer to the circuit diagram to check the continuity of wire harness.

d. Backside of instrument panel

- Improper wire clamping will cause the wire harnesses to twist together when installing the accessories. The vibration of vehicle will cause the wire harnesses near the bracket or mounting screw to wind excessively.
- When the vehicle vibrates, unclamped or loose wire harness will be stuck in the seat components (such as slide guide). If the wire harness passes through the underside of the mounting area, check if the wire harness is damaged or stuck.

2. Thermosensitive test

In hot weather or after the vehicle is parked for a short time, the user may worry about the vehicle condition. At this time, it is necessary to perform thermosensitive test.

Perform the test by heating the components with a heat gun or equivalent.

 CAUTION

- DO NOT heat the components to a temperature higher than 60°C (140°F).
- If malfunction occurs when performing heating test on the components, replace or properly insulate the components as necessary.

3. Freezing test

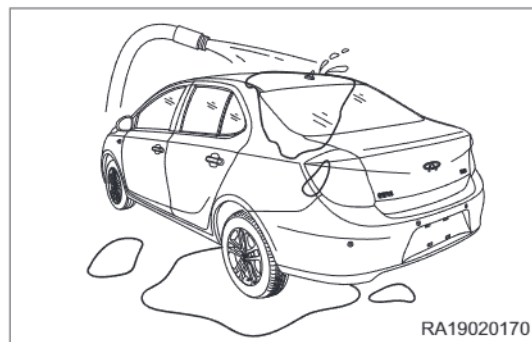
If the malfunction disappears after warming up the vehicle in winter, it may be caused by freezing of some parts in the wire harness/electrical system. Use the following two methods to check this condition:

Method 1: Put the vehicle outdoors overnight. Make sure that the temperature is low enough to duplicate the malfunction. Perform a quick and thorough diagnosis on the component that may be affected in the morning.

Method 2: Put the suspected part in the refrigerating room and wait until it is frozen. Reinstall the component to the vehicle and check if the malfunction reoccurs. If the malfunction occurs, repair or replace the component.

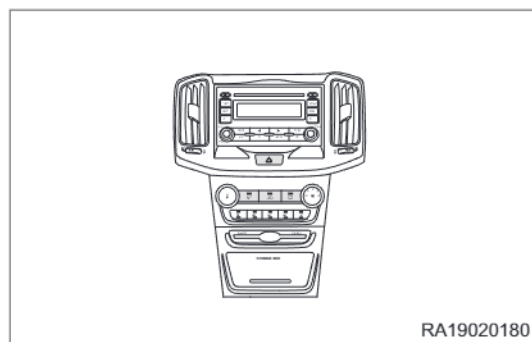
4. Leakage test

The malfunction may occur only during high humidity or in rainy or snowy weather. In this case, the malfunction may occur due to water entering the electrical parts. The leakage can be checked by spraying water to the vehicle (similar to car wash).



5. Load test

The malfunction occurs only when the electrical device is turned on. Turn on the electrical equipment (including A/C, rear window defogger, radio and fog light, etc.) one by one and determine the relationship between electrical equipment and malfunction. Confirm the malfunction by a load test.



6. Cold/hot start test

Some malfunctions occur in cold start and disappear when the engine warms up. In this case, park the vehicle without operation for a whole night and restart it the next day, perform the test and determine the cause quickly.

7. Voltage drop test

Generally the voltage drop test is used to find out the possible causes that affect the normal function of the electrical components or circuits.

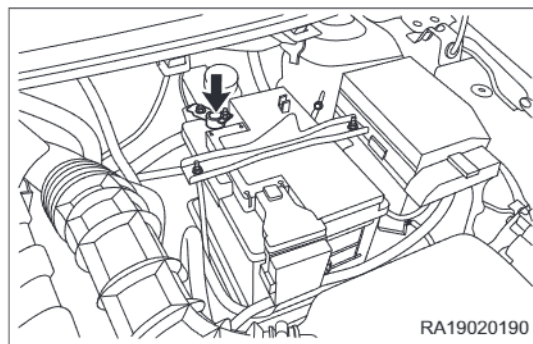
Check the circuit with a digital multimeter.

If the resistance of single wire harness measured by a digital multimeter is very low ($0\ \Omega$ or close to $0\ \Omega$), the wire harness or circuit is normal.

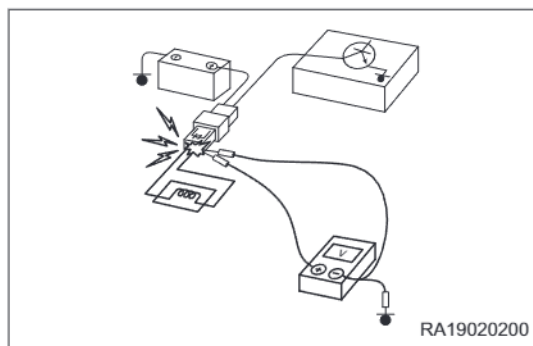
The unnecessary resistance in the circuit may be caused by poor, loose grounding, corrosive switch contact and loose wire connector or adapter.

Precautions for Control Module and Electrical Components Inspection

- Before performing electrical operations, turn the ignition switch to LOCK and disconnect the negative battery cable, then wait for 2 minutes until the backup power supply of the airbag module is depleted (w/ airbag system).



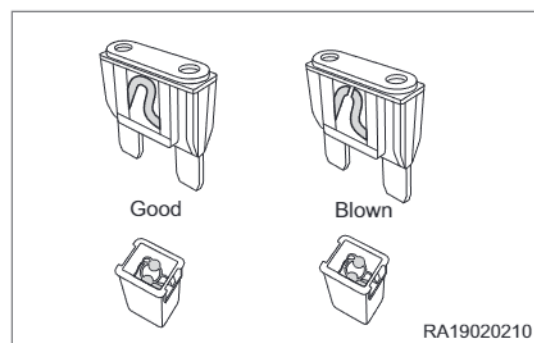
- Disconnecting the battery cable will delete the clock, audio and DTC records. Therefore, it is necessary to confirm these records before disconnecting the cable.
 - Never connect the electrodes of the battery terminals reversely.
 - Only install components that meet the vehicle specifications.
1. Inspect input and output conditions of components and their functions before replacing control module
 - When disconnecting the components:
 - Do not use excessive force when disconnecting the connector.
 - If the connector is installed by tightening the bolt, loosen the mounting bolt and then disconnect the connector by hand.
 - When connecting the components:
 - Before installing the connector, make sure that the terminals are not bent or damaged, and then connect it correctly.
 - When installing the connector by tightening the bolt, tighten the mounting bolt until the painted area of the connector is flush with the surface.
 - Never drop or hit the control module to prevent excessive impact.
 - Note that the condensation is not formed on the control module due to extreme change of temperature and keep it free from water drop or rain. If water is found on the control module, dry it thoroughly and then install it to the vehicle.
 - Be careful not to allow the fluid to adhere to the control module connector.
 - Avoid cleaning the control module with volatile fluid.
 - When using the digital multimeter, be careful not to get the testing probes to contact with each other to result in a short circuit. Avoid damaging the battery due to short circuit in the power transistor inside the control module.



- Use the specified test adapter to check the input and output signals of the control module.

2. Check fuse

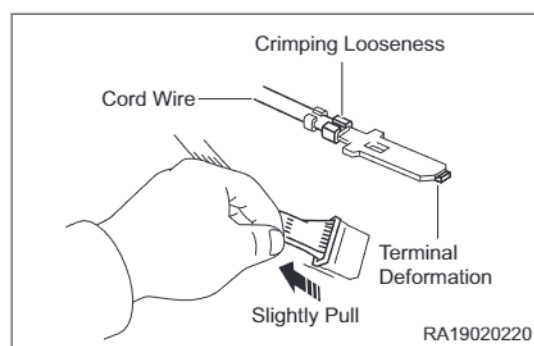
- Check that the fuse wire is connected.



- If the fuse wire is blown, confirm that there is no short in the circuit.
- A fuse with the same rated amperage must be used for replacing.

How to Check Connector

Many electrical malfunctions are caused by electrical connections or wire malfunctions, and also may be caused by the bonding of components or relays. Before determining if the malfunction is caused by components or wire harness assembly, check if the connection of the connectors is good.



1. Check connector with a digital multimeter

- Damaged connectors and poor connections are caused by incorrect connector detection during the circuit inspection.
- The probe of digital multimeter may be connected incorrectly with the socket of connector. To detect the connector correctly, use a "T" shaped needle and follow the procedures below. To obtain the optimal connection, clamp the "T" shaped needle with a spring clamp.
 - a. Detect from wire harness side
 - If there is a back cover for the connector, remove the back cover before detecting the terminal.
 - Do not detect the water-proof connector from the wire harness side. Failure to do this may damage the seal between wire harness and connector.
 - b. Detect from terminal side
 - Female terminal
Do not insert any object that is bigger than the male terminal into the female connector.
 - Male terminal
Carefully detect the contact surfaces of each terminal with a "T" shaped needle. Do not bend the terminal.

2. Check for proper tension of terminal contact spring

- The contact spring on the terminal may produce intermittent signals in the circuit.
- If intermittent open circuit occurs, follow the procedures below to check the open wire harness and contact spring on the female terminal.
 - Use a male terminal matched with the female terminal.
 - Disconnect the suspected defective connector and secure the terminal side upward.

- When securing the wire harness of male terminal, try to insert the male terminal into the female terminal.
- Move the connector and check if the male terminal can be inserted easily.

HINT:

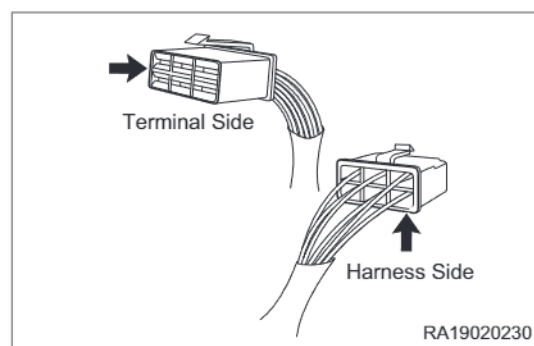
If the male terminal can be inserted into the female terminal easily, replace the female terminal.

CIRCUIT INFORMATION

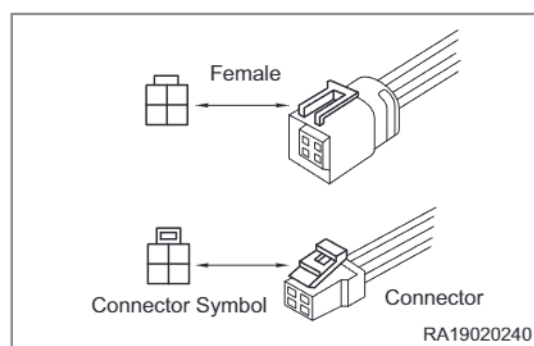
How to Read Circuit Diagram

1. Connector symbols

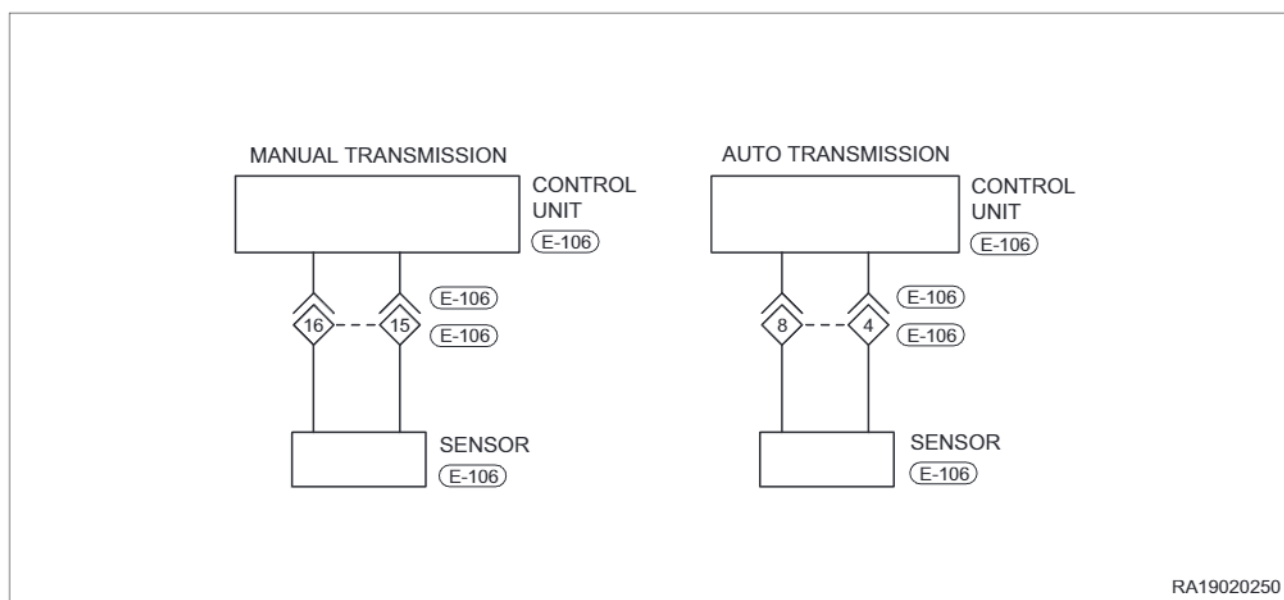
- Most of connector symbols in circuit diagrams indicate the terminal side.



- The terminal side view in the circuit diagram is shown at the bottom of the circuit diagram.



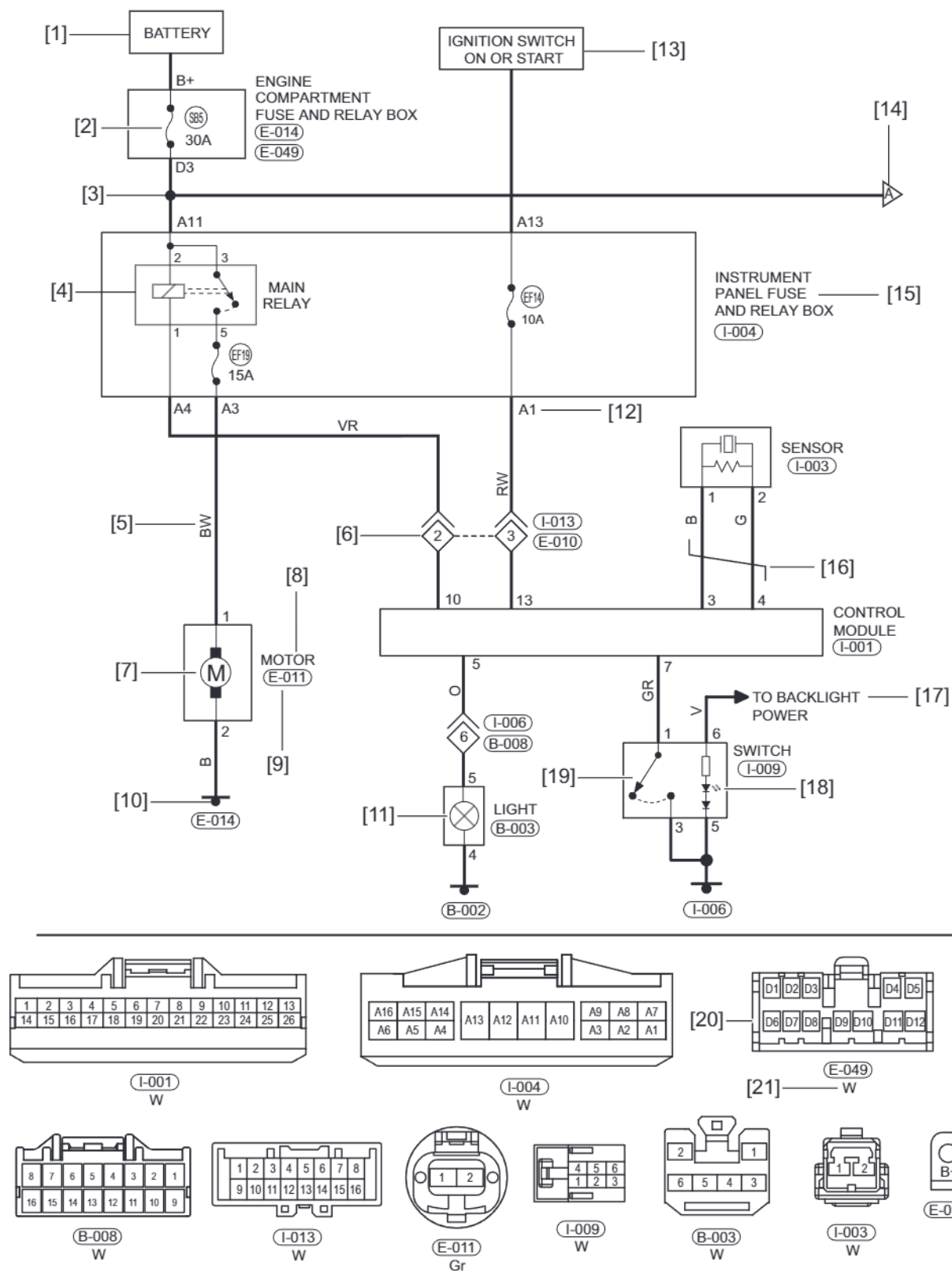
2. Option splices



Option splice is indicated by diamonds (solid line), and marked with pin number inside.

3. Circuit diagram example

EXAMPLE



EA19490000

The connector pin layout is shown at the bottom of the circuit diagram.

The following is a list of symbols defined in the circuit diagram.

No.	Definition	Description
1	Battery	It indicates the power supply from battery positive to electrical equipment.
2	Fuse	This symbol indicates a fuse; "SB5" indicates the fuse number; "30A" indicates the rated amperage of fuse.
3	Splice Point	The solid circle indicates that each intersecting wire is interconnected.
4	Relay	This symbol indicates a relay; "MAIN RELAY" indicates the relay name; "1, 2, 3 and 5" indicate the terminal numbers of relay.
5	Color	It indicates the color of this wire. The color codes are as follows: B = Black; W = White; R = Red; G = Green; L = Blue; Y = Yellow; Br = Brown; O = Orange; Gr = Gray; P = Pink; V = Violet; Lg = Light Green. For example: "BrR" indicates that the main color is brown in the wire color, and the second color is red.
6	Connector	It indicates the plug-in connector. "A" is the female connector, and "I-013" is the applicable number; "◇" is the male connector, and "E-010" is the applicable number. The number "2" inside the male connector symbol indicates the terminal number. "----" indicates different terminals come from the same junction connectors.
7	Motor	This symbol indicates a motor.
8	Component Name	It indicates the name of component.
9	Connector No.	E-011 indicates the connector number of this component. Letter "E" indicates the wire harness code in which the connector is located. Connector codes are as follows: E = Engine Wire Harness, Engine Compartment Wire Harness; I = Instrument Panel Wire Harness; B = Body Wire Harness; F = Front Left Door Wire Harness; H = Front Right Door Wire Harness; L = Rear Left Door Wire Harness; R = Rear Right Door Wire Harness; T = Rear Bumper Wire Harness; K = A/C Wire Harness; P = Battery Positive, Negative Wire Harness; C = Roof Wire Harness.
10	Ground Point	It indicates the ground connection.

No.	Definition	Description
11	Bulb	This symbol indicates a bulb.
12	Terminal No.	It indicates the terminal number in the connector of this component.
13	Ignition Switch	It indicates the power supply from ignition switch to electrical equipment.
14	Connected to...	It indicates that the wire harness is connected to the circuit diagram on next page. Letter "A" is connected with "A" in the circuit diagram on the next page.
15	Fuse and Relay Box Name	It indicates the name of fuse and relay box.
16	Twisted-pair	It indicates that the two wires are twisted.
17	Backlight Power Supply	It indicates the illumination power supply output from the fuse of front position light.
18	LED	It is used for indicators, warning lights or illuminations in the switches or instrument cluster.
19	Switch	This symbol indicates a switch.
20	Connector View	It indicates the cross section of connector and description of the terminal number.
21	Connector Color	Letter "W" indicates the color of connector. The color codes are the same as above.

Circuit Diagram Index

Use the table below to find the location of components or vehicle systems in the circuit diagram. It is easy to find the circuit diagrams throughout the service manual based on components or vehicle systems.

It has been marked under "If There Is Any Circuit Diagram" column to tell you that if there is any circuit diagram in the components or vehicle systems.

Service Manual Chapter	If There Is Any Circuit Diagram
Foreword	-
Introduction	-
Preparation	-
Service Specifications	-
Maintenance	-
SQR477F Engine Management System	Yes
SQR477F Engine Mechanical	-
SQR477F Fuel Supply System	Yes
SQR477F Emission Control System	Yes
SQR477F Intake System	Yes
SQR477F Exhaust System	-
SQR477F Cooling System	Yes
SQR477F Lubrication System	-
SQR477F Ignition System	Yes
SQR477F Starting System	Yes

Service Manual Chapter	If There Is Any Circuit Diagram
SQR477F Charging System	Yes
QR515MHA Transmission	-
Clutch	-
Drive Shaft	-
Differential	-
Axle	-
Suspension	-
Tire and Wheel	-
Brake Control System	Yes
Brake	Yes
Parking Brake	Yes
Steering Column	-
Hydraulic Assist Steering	-
Air Conditioning	Yes
Supplemental Restraint System	Yes
Seat Belt	Yes
Engine Immobilizer	Yes
Lighting System	Yes
Wiper and Washer	Yes
Door Lock	Yes
Instrument Cluster	Yes
Audio System	Yes
Reversing Radar System	Yes
Horn	Yes
Other System	Yes
Windshield/Window Glass	Yes
Rear View Mirror	Yes
Instrument Panel	-
Seat	-
Engine Hood/Door	-
Exterior	-
Interior	-
Body Dimensions	-
Wire Harness	Yes

ABBREVIATION TABLE

Abbreviation Table

02

Term	Abbreviation
Anti-lock Brake System	ABS
Acceleration Sensor	AES
Accelerator Pedal Position Sensor	APS
Automatic Temperature Control	ATC
Automatic Transmission Fluid	ATF
Body Control Module	BCM
Brake Pressure Sensor	BPS
Camshaft Position Sensor	CMP
Clutch Pedal Position Switch	CPP Switch
Crankshaft Position Sensor	CKP
Data Link Connector	DLC
Diagnostic Trouble Code	DTC
Engine Control Module	ECM
Engine Coolant Temperature	ECT
Engine Speed	RPM
Evaporative Emission	EVAP
Evaporative Emission Canister	EVAP Canister
Evaporative Emission System	EVAP System
Exhaust Gas Recirculation Valve	EGR Valve
Front Left Wheel Speed Sensor	FLS
Front Right Wheel Speed Sensor	FRS
Rear Left Wheel Speed Sensor	RLS
Rear Right Wheel Speed Sensor	RRS
Ground	GND
Heated Oxygen Sensor	O2S
Idle Air Control	IAC
Intake Temperature	IAT
Ignition	IGN
Ignition Control	IC
Immobilizer Control Module	ICM
Injector	INJ
Input Shaft Speed Sensor	ISS Sensor
Knock Sensor	KS
Manifold Absolute Pressure	MAP

Term	Abbreviation
Mass Air Flow	MAF
Malfunction Indicator Light	MIL
Oil Pressure Switch	OPS
Output Shaft Speed Sensor	OSS Sensor
Positive Crankcase Ventilation Valve	PCV Valve
Power Supply	PWR
Supplemental Restraint System	SRS
Throttle Position Sensor	TPS
Transaxle Control Module	TCM
Turbine Speed Sensor	TSS
Vehicle Identification Number	VIN
Vehicle Speed Sensor	VSS

