

BODY ELECTRICAL SYSTEM

6-2

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1. Body Electrical

Battery	Type		MT model: 55D23L (MF)	AT model: 75D23L (MF)
	Capacity	Reverse capacity	MT model: 100 minutes	AT model: 120 minutes
		Cold cranking ampere	MT model: 430 amperes	AT model: 520 amperes
Combination meter	Speedometer		Electric pulse type	
	Temperature gauge		Thermistor cross coil type	
	Fuel gauge		Resistance cross coil type	
	Tachometer		Electric impulse type	
	Turn signal indicator light		12 V — 1.4 W	
	Charge indicator light		12 V — 1.4 W	
	Oil pressure indicator light		12 V — 1.4 W	
	ABS warning light		12 V — 1.4 W	
	CHECK ENGINE warning light (Malfunction indicator light)		12 V — 1.4 W	
	HI-beam indicator light		12 V — 3.4 W	
	Door open warning light		12 V — 1.4 W	
	Seat belt warning light		12 V — 1.4 W	
	Brake fluid and parking brake warning light		12 V — 3.4 W	
	FWD indicator light		12 V — 1.4 W	
	AIRBAG warning light		12 V — 1.4 W	
	Meter illumination light		12 V — 3.4 W	
	AT OIL TEMP. warning light		12 V — 1.4 W	
Headlight			12 V — 60/55 W (Halogen)	
Front fog light			12 V — 55 W	
Front turn signal light			12 V — 27 W	
Side turn signal light			12 V — 3.8 W	
Side marker/Parking light			12 V — 3.8 W	
Rear combination light		Tail/Stop light	12 V — 8/27 W	
		Turn signal light	12 V — 27 W	
		Back-up light	12 V — 27 W	
License plate light			12 V — 3.8 W	
High-mount stop light			Sedan: 12 V — 18 W	Wagon: 12 V — 13 W
Room light			12 V — 8 W	
Spot light			12 V — 8 W	
Trunk room light			12 V — 5 W	
Luggage room light			12 V — 5 W	
Front wiper motor	Input		12 V — 54 W or less	
Rear wiper motor	Input		12 V — 42 W or less	
Front washer motor	Pump type		Centrifugal	
	Input		12 V — 36 W or less	
Rear washer motor	Pump type		Centrifugal	
	Input		12 V — 36 W or less	
Horn			12 V — 350 Hz	
Accessory socket	Input		12 V — 120 W	
Rear window defogger	Input		12 V — 160 W	
	Indicator light		12 V — 50 mA	
Cargo socket	Input		12 V — 120 W	

1. Precautions

- Before disassembling or reassembling parts, always disconnect battery ground cable. When repairing radio, control units, etc. which are provided with memory functions, record memory contents before disconnecting battery ground cable. Otherwise, these contents are cancelled upon disconnection.
- Reassemble parts in reverse order of disassembly procedure unless otherwise indicated.
- Adjust parts to specifications contained in this manual if so designated.
- Connect connectors and hoses securely during reassembly.
- After reassembly, ensure functional parts operate smoothly.

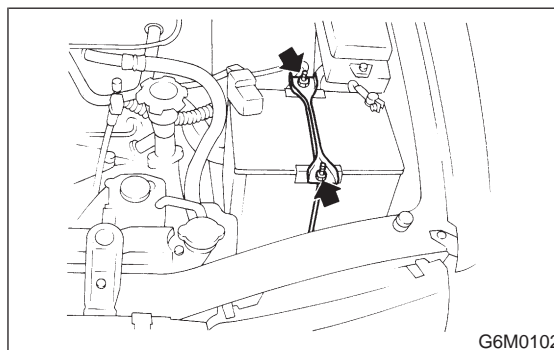
CAUTION:

- Airbag system wiring harness is routed near the electrical parts and switch.
- All Airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuits.
- Be careful not to damage Airbag system wiring harness when servicing the ignition key cylinder.

2. Battery

A: REMOVAL AND INSTALLATION

- 1) Disconnect the positive (+) terminal after disconnecting the negative (–) terminal of battery.
- 2) Remove flange nuts from battery rods and take off battery holder.



- 3) Remove battery.
- 4) Installation is in the reverse order of removal.

Tightening torque:

$3.4 \pm 1.0 \text{ N}\cdot\text{m}$ ($0.35 \pm 0.1 \text{ kg}\cdot\text{m}$, $2.5 \pm 0.7 \text{ ft}\cdot\text{lb}$)

NOTE:

- Clean battery cable terminals and apply grease to retard the formation of corrosion.
- Connect the positive (+) terminal of battery and then the negative (–) terminal of the battery.

B: INSPECTION

WARNING:

- Electrolyte has toxicity; be careful handling the fluid.
- Avoid contact with skin, eyes or clothing. Especially at contact with eyes, flush with water for 15 minutes and get prompt medical attention.
- Batteries produce explosive gasses. Keep sparks, flame, cigarettes away.
- Ventilate when charging or using in enclosed space.
- For safety, in case an explosion does occur, wear eye protection or shield your eyes when working near any battery. Never lean over a battery.
- Do not let battery fluid contact eyes, skin, fabrics, or paint-work because battery fluid is corrosive acid.
- To lessen the risk of sparks, remove rings, metal watch-bands, and other metal jewelry. Never allow metal tools to contact the positive battery terminal and anything connected to it while you are at the same time in contact with any other metallic portion of the vehicle because a short circuit will be caused.

1. BATTERY

1) External parts:

Check for the existence of dirt or cracks on the battery case, top cover, vent plugs, and terminal posts. If necessary, clean with water and wipe with a dry cloth. Apply a thin coat of grease on the terminal posts to prevent corrosion.

2) Electrolyte level:

Check the electrolyte level in each cell. If the level is below MIN LEVEL, bring the level to MAX LEVEL by pouring distilled water into the battery cell. Do not fill beyond MAX LEVEL.

3) Specific gravity of electrolyte:

(1) Measure specific gravity of electrolyte using a hydrometer and a thermometer. Specific gravity varies with temperature of electrolyte so that it must be corrected at 20°C (68°F) using the following Equation:

$$S_{20} = St + 0.0007 \times (t - 20)$$

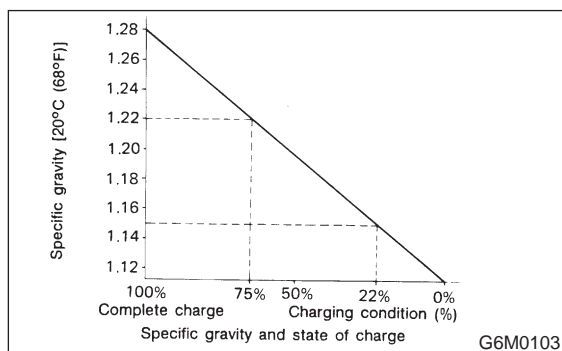
S₂₀: Specific gravity corrected at electrolyte temperature of 20°C

St : Measured specific gravity

t : Measured temperature (°C)

Determine whether or not battery must be charged, according to corrected specific gravity.

Standard specific gravity: 1.220 — 1.290 [at 20°C (68°F)]



(2) Measuring the specific gravity of the electrolyte in the battery will disclose the state of charge of the battery. The relation between the specific gravity and the state of charge is as shown in figure.

C: CHARGING

WARNING:

● Do not bring an open flame close to the battery at this time.

CAUTION:

● Prior to charging, corroded terminals should be cleaned with a brush and common baking soda solution.

● Be careful since battery electrolyte overflows while charging the battery.

● Observe instructions when handling battery charger.

● Before charging the battery on vehicle, disconnect battery ground terminal. Failure to follow this rule may damage alternator's diodes or other electrical units.

1. NORMAL CHARGING

Charge the battery at current value specified by manufacturer or at approximately 1/10 of battery's ampere-hour rating.

2. QUICK CHARGING

Quick charging is a method in which the battery is charged in a short period of time with a relatively large current by using a quick charger. Since a large current flow raises electrolyte temperature, the battery is subject to damage if the large current is used for prolonged time. For this reason, the quick charging must be carried out within a current range that will not increase the electrolyte temperature above 40°C (104°F). It should be also remembered that the quick charging is a temporary means to bring battery voltage up to a fair value and, as a rule, a battery should be charged slowly with a low current.

CAUTION:

● Observe the items in 1. NORMAL CHARGING.

● Never use more than 10 amperes when charging the battery because that will shorten battery life.

3. JUDGMENT OF BATTERY IN CHARGED CONDITION

1) Specific gravity of electrolyte is held at a specific value in a range from 1.250 to 1.290 for more than one hour.

2) Voltage per battery cell is held at a specific value in a range from 2.5 to 2.8 volts for more than one hour.

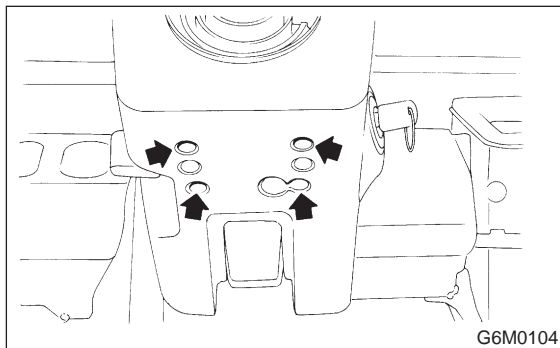
4. CHECK HYDROMETER FOR STATE OF CHARGE

Hydrometer indicator	State of charge	Required action
Green dot	Above 65%	Load test
Dark dot	Below 65%	Charge battery
Clear dot	Low electrolyte	Replace battery* (If cranking complaint)
*: Check electrical system before replacement.		

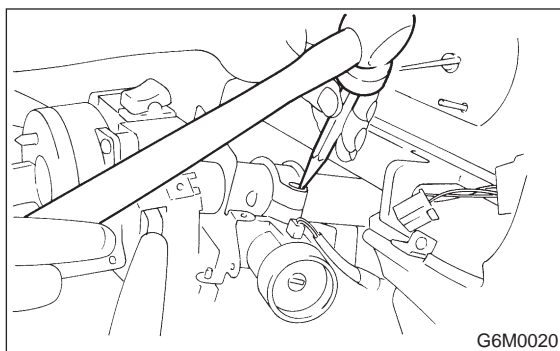
3. Ignition Switch

A: REMOVAL AND INSTALLATION

- 1) Remove screws, separate upper column cover and lower column cover.



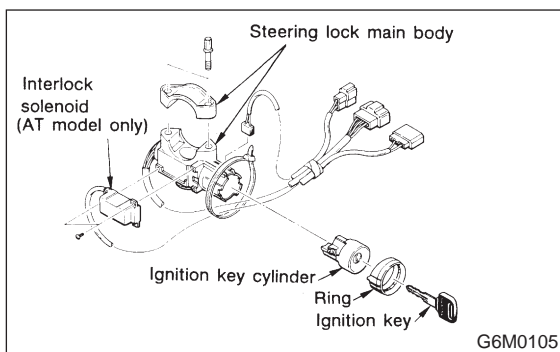
- 2) Remove knee protector.
- 3) Remove meter visor.
- 4) Disconnect ignition switch connector from body harness.
- 5) Using a drift and hammer, hit the torn bolt head to loosen and remove the ignition switch.



- 6) Installation is in the reverse order of removal.

NOTE:

When installing, tighten the connecting bolt until its head twists off.



4. Lighting

A: ADJUSTMENT

1. HEADLIGHT AIMING

- 1) Adjust the headlight aiming by turning the adjusting screws.

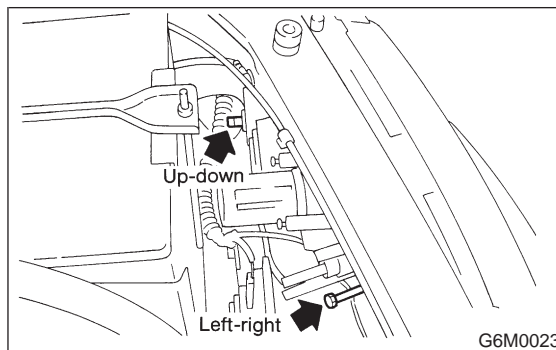
CAUTION:

Before checking the headlight aiming, be sure of the following:

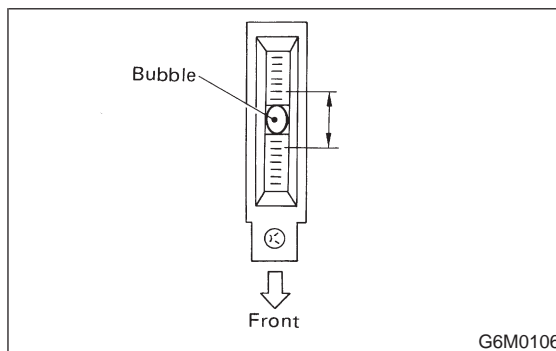
- Turn off the light before adjusting headlight aiming. If the light is necessary to check aiming, do not turn on for more than two minutes.
- The area around the headlight has not sustained any accident, damage or other type of deformation.
- Vehicle is parked on level ground.
- The inflation pressure of tires is correct.
- Vehicle's gas tank is fully charged.
- Bounce the vehicle several times to normalize the suspension.
- Make certain that someone is seated in the driver's seat.

NOTE:

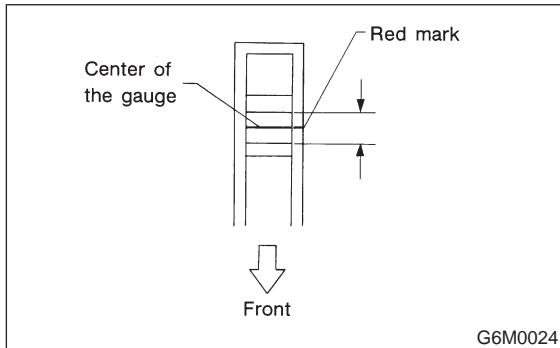
Adjust vertical aim first, then horizontal aim.



- 2) Look at the beam angle gauge (vertical movement). The bubble on the gauge should not deviate from the center of the gauge.



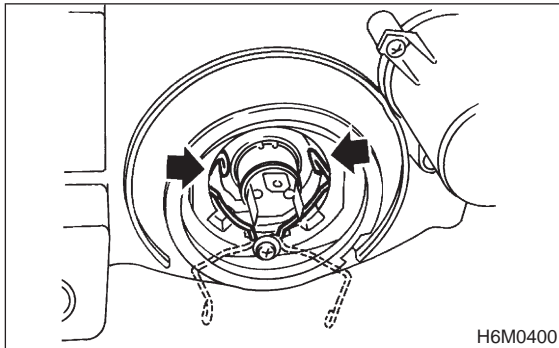
3) Look at the beam angle gauge (horizontal movement). The center mark (the red line on the inner scale) should not deviate from the red line on the outer case.



B: REMOVAL AND INSTALLATION

1. HEADLIGHT BULB

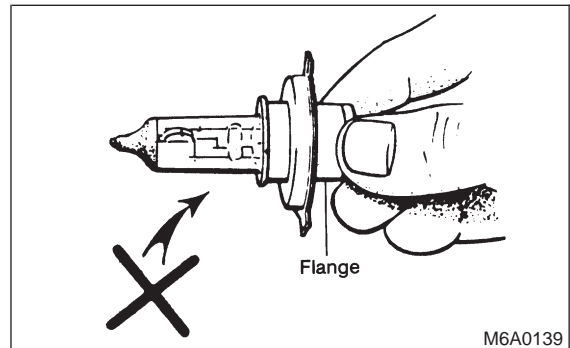
- 1) Disconnect the connector from inside of the engine compartment.
- 2) Remove rubber cap.
- 3) Remove the light bulb retaining spring to remove the bulb.



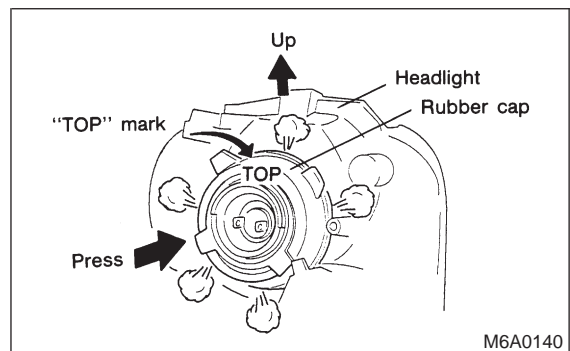
- 4) Replace the bulb with a new one and hook the spring.
- 5) Attach the rubber cap and connect the connector.

CAUTION:

- Since the tungsten halogen bulb operates at high temperature, dirt and oil on the bulb surface decreases the bulb's useful life. When replacing the bulb, hold the flange portion and do not touch the glass portion.



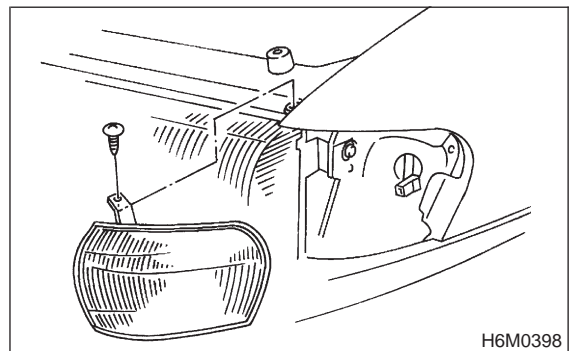
- Attach the rubber cap with letters TOP on the top so that the drain hole will be on the lower side.



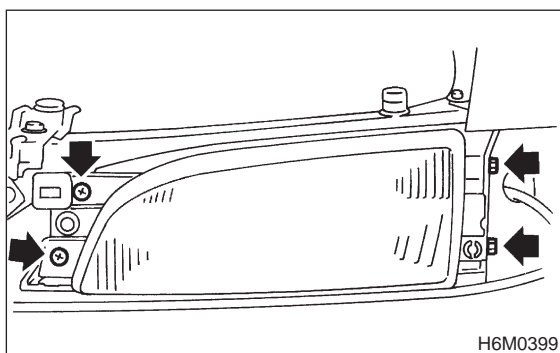
- To keep water out, correctly engage the groove portion of the rubber cap.

2. HEADLIGHT AND SIDE MARKER LIGHT

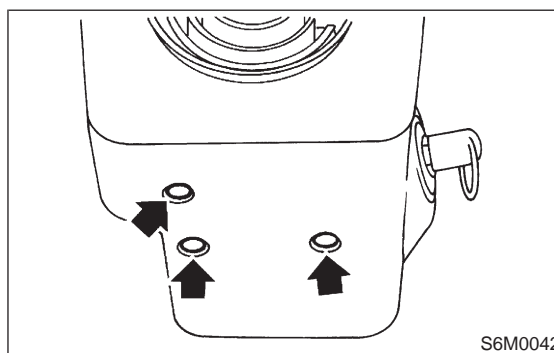
- 1) Remove front grille and disconnect connector from headlight.
- 2) Remove screw then remove side marker light while disconnecting connector.



- 3) Remove screws and bolts which secure headlight and remove headlight.



- 2) Remove screws which secure upper column cover to lower column cover.



- 4) Installation is in the reverse order of removal.

Tightening torque:

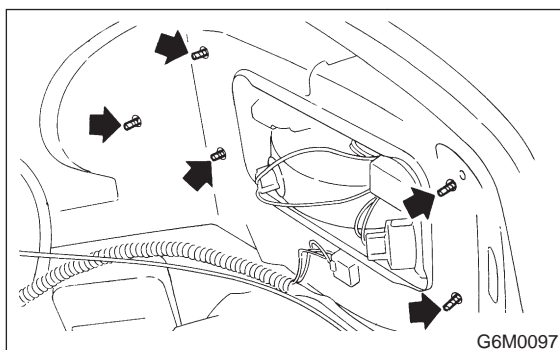
$6.4 \pm 0.5 \text{ N-m}$ ($0.65 \pm 0.05 \text{ kg-m}$, $4.7 \pm 0.4 \text{ ft-lb}$)

NOTE:

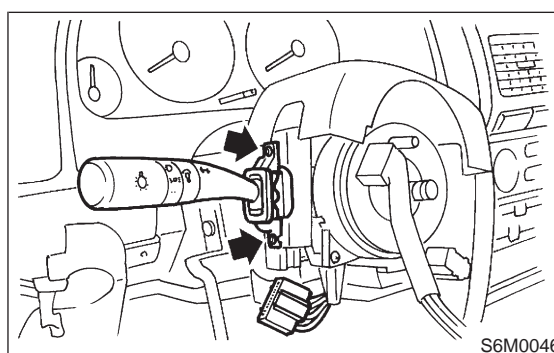
When installing, securely fit clip (on fender side) into locating (on side marker light side).

3. REAR COMBINATION LIGHT

- 1) Remove rear trim.
- 2) Remove nuts and disconnect connector.



- 3) Disconnect connector from combination switch.
- 4) Remove screws which secure switch and remove switch.



- 5) Installation is in the reverse order of removal.

- 3) Attach adhesive cloth tape to body area around rear combination light.

- 4) Using a standard screwdriver, carefully pry rear combination light off and away from the front of vehicle.

- 5) Installation is in the reverse order of removal.

Tightening torque:

$6.4 \pm 0.5 \text{ N-m}$ ($0.65 \pm 0.05 \text{ kg-m}$, $4.7 \pm 0.4 \text{ ft-lb}$)

CAUTION:

- Do not pry rear combination light forcefully as this may scratch vehicle body.
- Remove all traces of adhesive tape from body before installation.
- Attach butyl rubber tape to back of rear combination light before installing rear combination light on body for sealing purposes.

4. COMBINATION SWITCH

- 1) Remove instrument panel lower cover. <Ref. to 5-4 [W1A0].>

C: INSPECTION**1. COMBINATION SWITCH (LIGHTING)**

Move combination switch to respective positions and check continuity between terminals.

• LIGHTING SWITCH

Terminal Switch position	16	14	13
OFF			
Tail	○	○	
Head	○	○	○

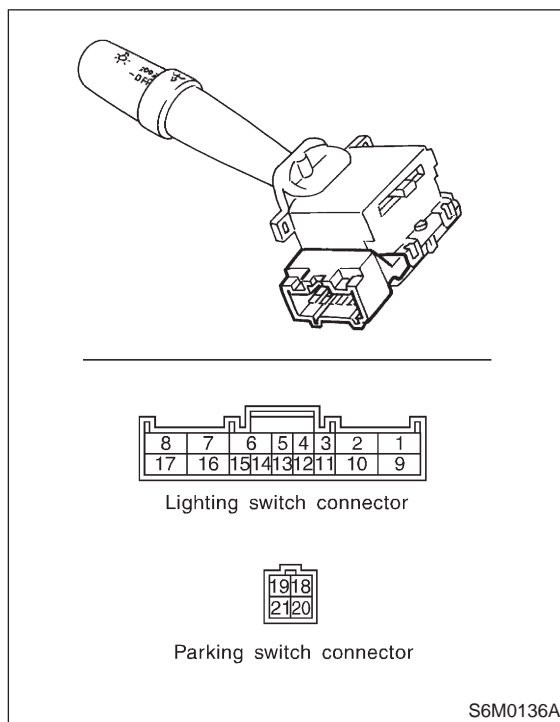
• PARKING SWITCH

Terminal Switch position	19	21	18
OFF	○	○	
ON		○	○

• DIMMER AND PASSING SWITCH

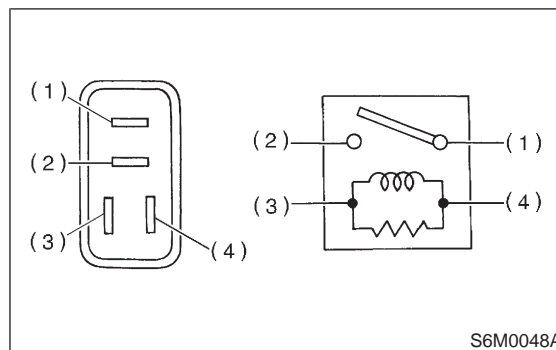
Terminal Switch position	16	17	7	8
Flash	○		○	○
Low beam	○	○		
HI-beam	○		○	

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**2. HEADLIGHT RELAY**

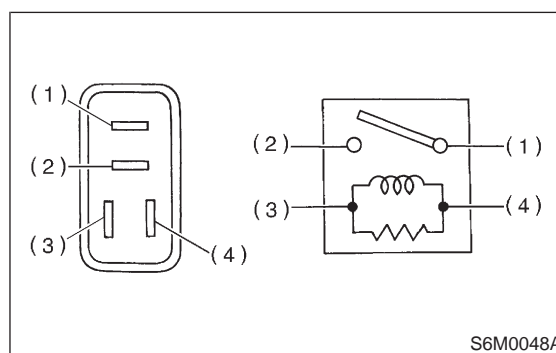
Check continuity between terminals when terminal No. 4 is connected to battery and terminal No. 3 is grounded.

When current flows.	Between terminals No. 1 and No. 2	Continuity exists.
When current does not flow.	Between terminals No. 1 and No. 2	Continuity does not exist.
	Between terminals No. 3 and No. 4	Continuity exists.

**3. TAIL AND ILLUMINATION RELAY**

Check continuity between terminals (indicated in table below) when terminal No. 4 is connected to battery and terminal No. 3 is grounded.

When current flows.	Between terminals No. 1 and No. 2	Continuity exists.
When current does not flow.	Between terminals No. 1 and No. 2	Continuity does not exist.
	Between terminals No. 3 and No. 4	Continuity exists.



5. Front Wiper and Washer

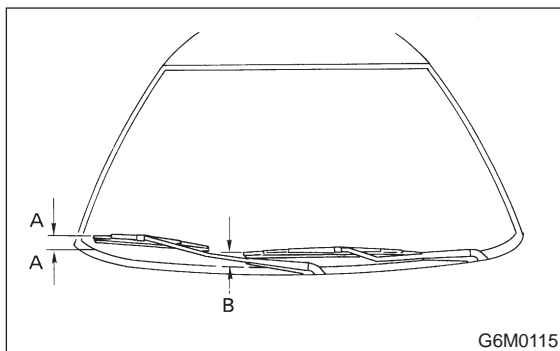
A: ADJUSTMENT

- 1) Turn the wiper switch to OFF position.
- 2) Adjust blades in original position as shown in figure by changing wiper arm installation.

Original position:

A: 22.5 ± 7.5 mm (0.886 ± 0.295 in)

B: 32.5 ± 7.5 mm (1.280 ± 0.295 in)



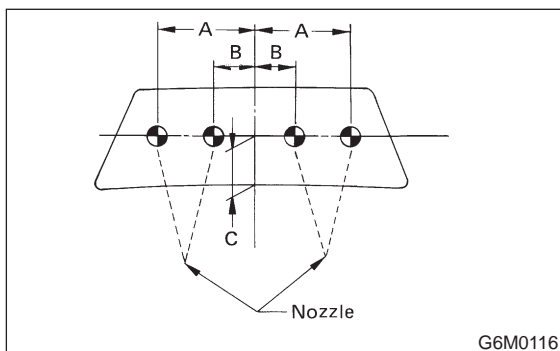
- 3) Adjust washer ejecting point on windshield glass as shown in figure when car stops.

Ejecting point:

A: 375 mm (14.76 in)

B: 150 mm (5.91 in)

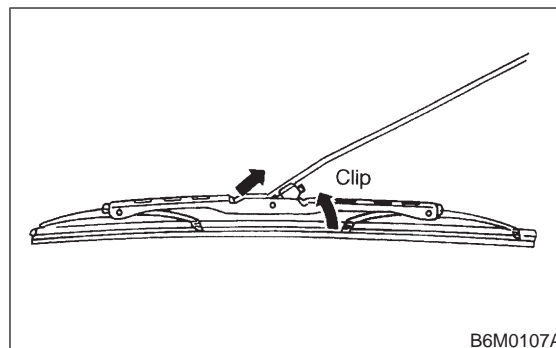
C: 350 mm (13.78 in)



B: REMOVAL AND INSTALLATION

1. BLADE

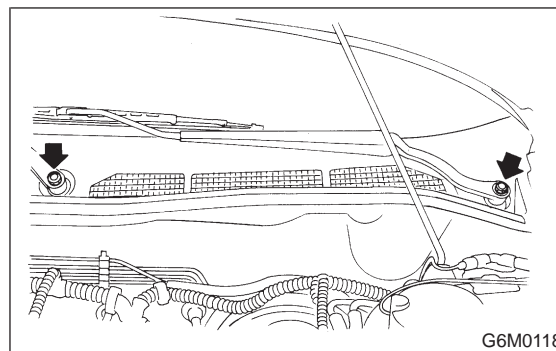
- 1) Pull out blade following the arrow direction, from arm while pushing up locking clip.



- 2) Installation is in the reverse order of removal.

2. WIPER ARM

- 1) Open front hood.
- 2) Remove cap. Remove the nut which secure wiper arm, and remove wiper arm.



- 3) Installation is in the reverse order of removal.

Tightening torque:

14 ± 2 N·m (1.4 ± 0.2 kg·m, 10.1 ± 1.4 ft·lb)

3. WIPER MOTOR AND LINK

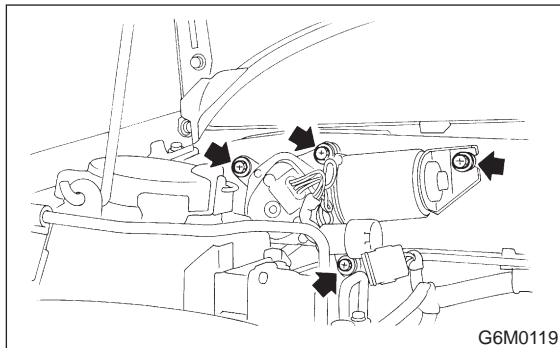
- 1) Detach weatherstrip and cowl panel. <Ref. to 5-1 [W11A0].>

NOTE:

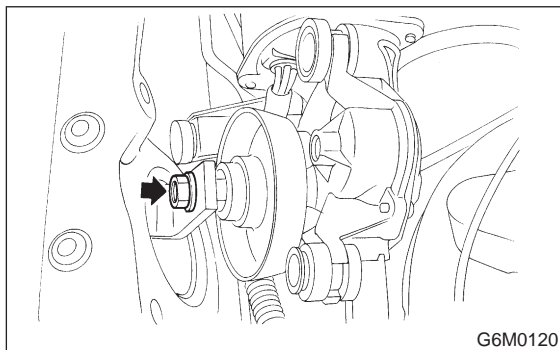
Apply silicone oil or soap water to both sides of cowl net to facilitate removal.

5. Front Wiper and Washer

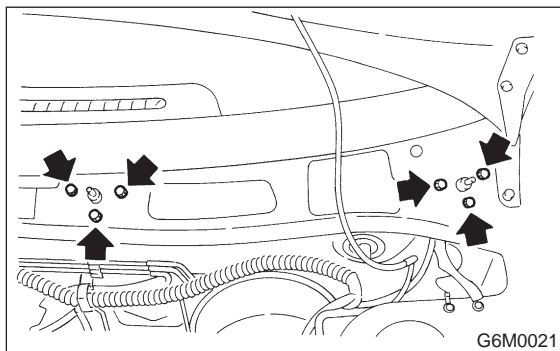
- 2) Disconnect electric connector, and remove motor attaching bolts.

Tightening torque: **$5.9 \pm 1.5 \text{ N}\cdot\text{m}$ ($0.6 \pm 0.15 \text{ kg}\cdot\text{m}$, $4.3 \pm 1.1 \text{ ft}\cdot\text{lb}$)**

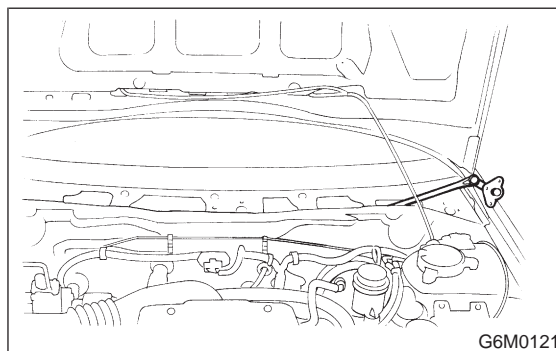
- 3) Remove nut securing motor link on the back side of motor.

Tightening torque: **$15 \pm 3 \text{ N}\cdot\text{m}$ ($1.5 \pm 0.3 \text{ kg}\cdot\text{m}$, $10.8 \pm 2.2 \text{ ft}\cdot\text{lb}$)**

- 4) Remove nuts which secure sleeve unit.

Tightening torque: **$5.9 \pm 1.5 \text{ N}\cdot\text{m}$ ($0.6 \pm 0.15 \text{ kg}\cdot\text{m}$, $4.3 \pm 1.1 \text{ ft}\cdot\text{lb}$)**

- 5) Remove wiper link from service hole in front panel.



- 6) Installation is in the reverse order of removal.

C: INSPECTION

1. COMBINATION SWITCH (ON-CAR)

Set wiper switch to each position and check continuity between terminals.

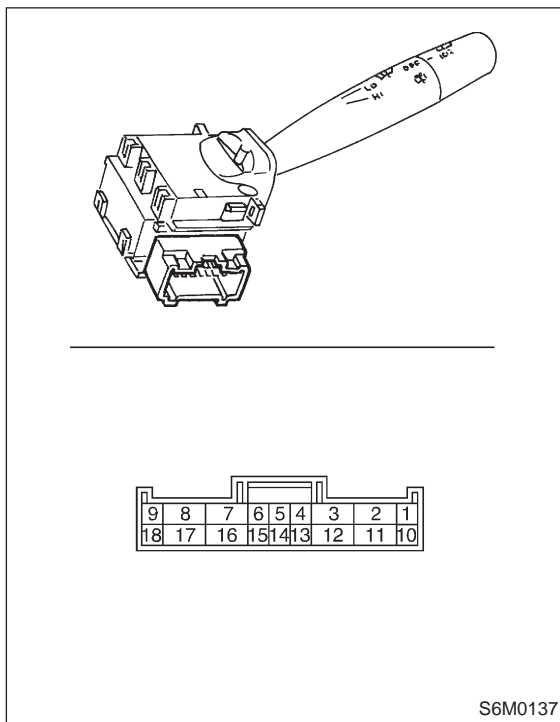
• Wiper switch

Terminal Switch position		16	7	17	8	INT1	INT2
OFF	OFF	○—○					
	MIST	×	○—○	×			
INT	OFF	○—○				○—○	
	MIST	×	○—○	×		○—○	
		×		×			
LO	OFF		○—○				
	MIST		○—○				
HI	OFF			○—○			
	MIST		○—○	○—○			

• Washer switch

Terminal Switch position	11	2
OFF		
ON	○—○	○—○

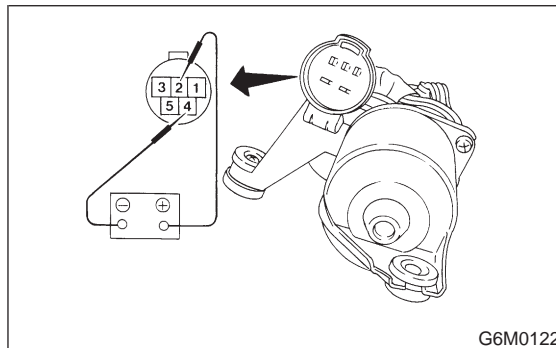
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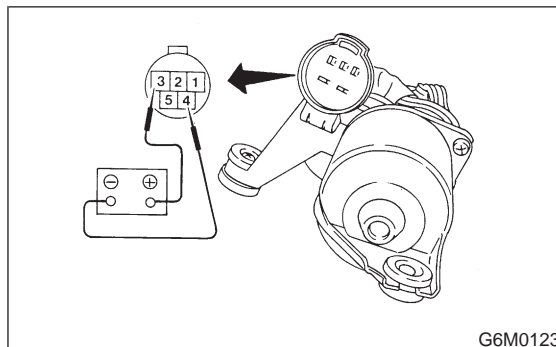
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2. WIPER MOTOR

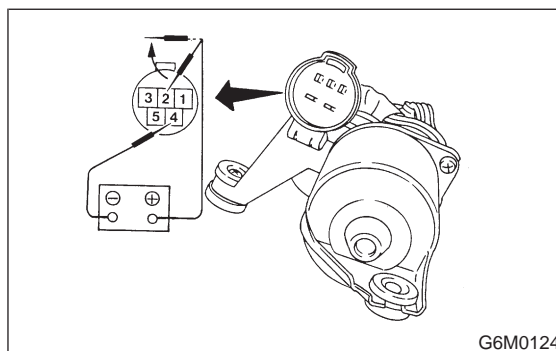
1) Check wiper motor operation at low speed: Connect battery to wiper motor. Check wiper motor for proper operation at low speed.



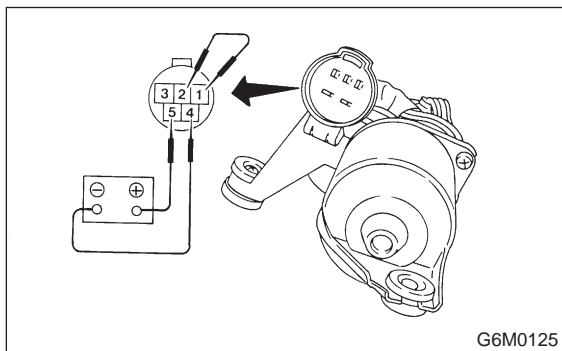
2) Check wiper motor operation at high speed: Connect battery wiper motor. Check wiper motor for proper operation at high speed.



3) Check wiper motor for proper stoppage: Connect battery to wiper motor. After operating wiper motor at low speed, disconnect battery to stop it.



- 4) Reconnect battery and ensure that wiper motor stops at "AUTO STOP" after operating at low speed.



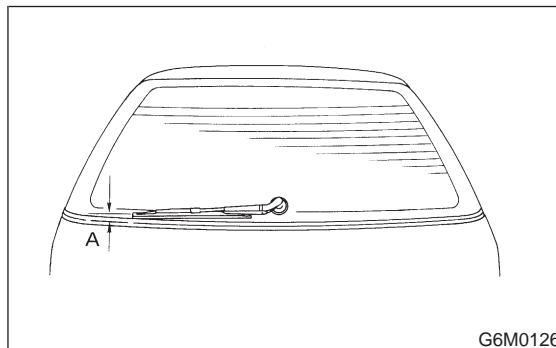
6. Rear Wiper and Washer

A: ADJUSTMENT

- 1) Adjust wiper blade in original position as shown in figure by changing wiper arm installation.

Original position:

A: 30 ± 5 mm (1.18 ± 0.20 in)

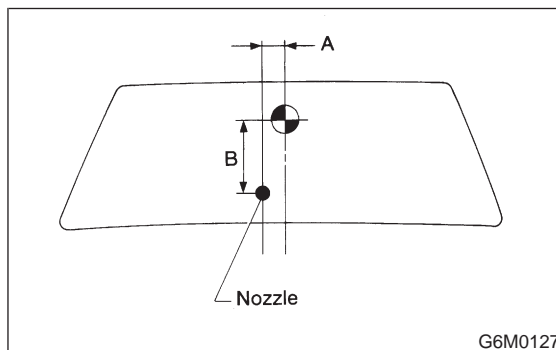


- 2) Adjust washer ejecting point on rear gate window as shown in figure when the vehicle stops.

Ejecting point:

A: 25 mm (0.98 in)

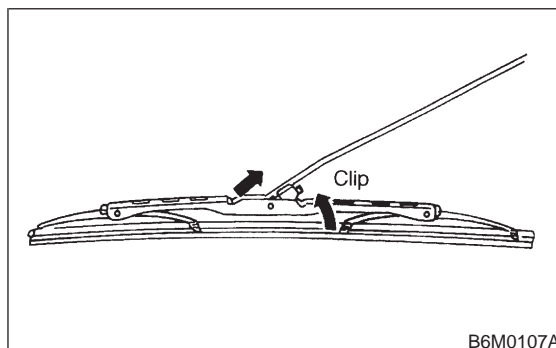
B: 200 — 300 mm (7.87 — 11.81 in)



B: REMOVAL AND INSTALLATION

1. BLADE

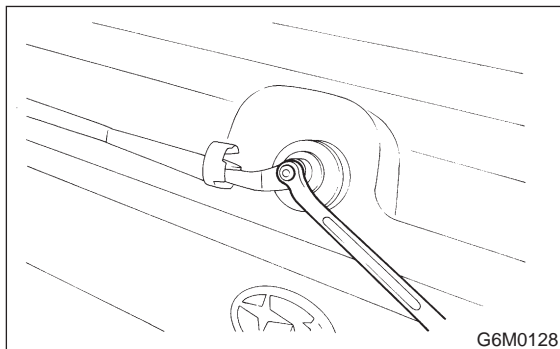
- 1) Pull out blade following the arrow direction, from arm while pushing up locking clip.



- 2) Installation is in the reverse order of removal.

2. WIPER ARM

- 1) Remove head cover.
- 2) Remove nut and wiper arm.



- 3) Installation is in the reverse order of removal.

Tightening torque:

$5.9 \pm 1.5 \text{ N-m}$ ($0.6 \pm 0.15 \text{ kg-m}$, $4.3 \pm 1.1 \text{ ft-lb}$)

3. WIPER MOTOR

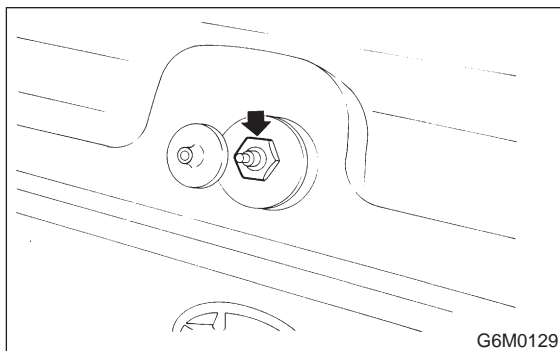
- 1) Remove cap and special nut.

CAUTION:

Be careful not to strike service tool against nozzle during removal.

Tightening torque:

$7.4 \pm 1.5 \text{ N-m}$ ($0.75 \pm 0.15 \text{ kg-m}$, $5.4 \pm 1.1 \text{ ft-lb}$)

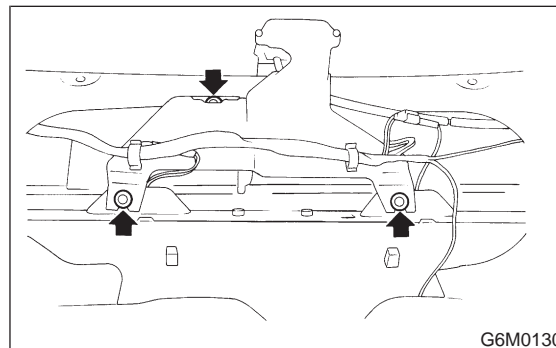


- 2) Remove rear gate trim. <Ref. to 5-2 [W3A0].>
- 3) Undo clips which secure harness, and disconnect connector of wiper motor.
- 4) Separate washer hoses at joint.

- 5) Remove attaching screws and take out wiper motor assembly.

CAUTION:

Be careful not to damage O-ring when removing wiper motor assembly.



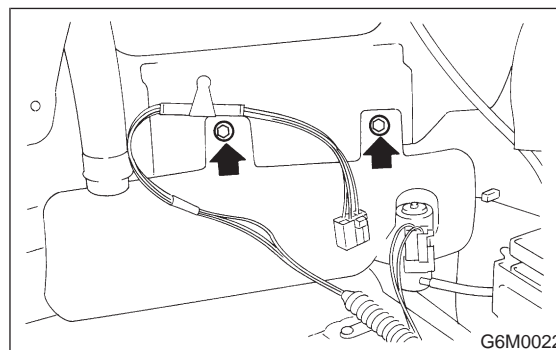
- 6) Installation is in the reverse order of removal.

Tightening torque:

$5.9 \pm 1.5 \text{ N-m}$ ($0.6 \pm 0.15 \text{ kg-m}$, $4.3 \pm 1.1 \text{ ft-lb}$)

4. WASHER TANK

- 1) Remove rear quarter trim.
- 2) Disconnect washer hose and connector.
- 3) Remove attaching bolts.



- 4) Installation is in the reverse order of removal.

Tightening torque:

$5.9 \pm 1.5 \text{ N-m}$ ($0.6 \pm 0.15 \text{ kg-m}$, $4.3 \pm 1.1 \text{ ft-lb}$)

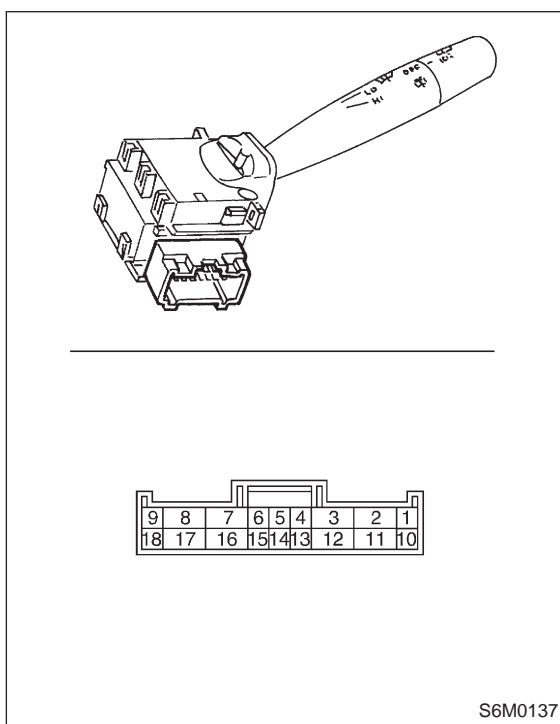
C: INSPECTION**1. COMBINATION SWITCH (ON-CAR)**

Set rear wiper and washer switch to each position and check continuity between terminals.

• WITHOUT INTERMITTENT REAR WIPER

Terminal Switch position	10	12		2
WASH	○	○	—	○
OFF				
ON	○		—	○
WASH	○	○	—	○

H6M0502B

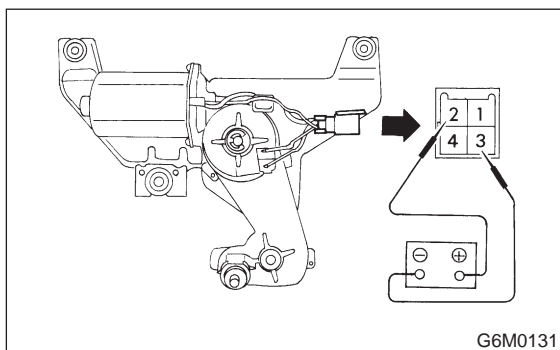


S6M0137

2. WIPER MOTOR

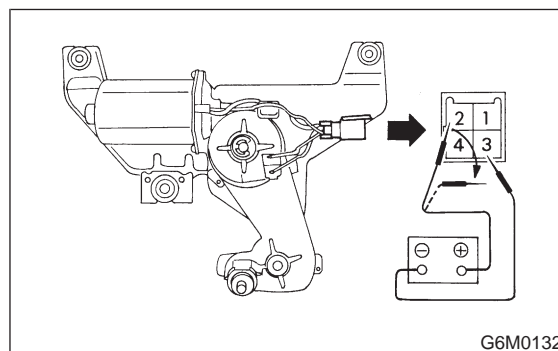
1) Operational check:

Connect battery to wiper motor and check operation of wiper motor.



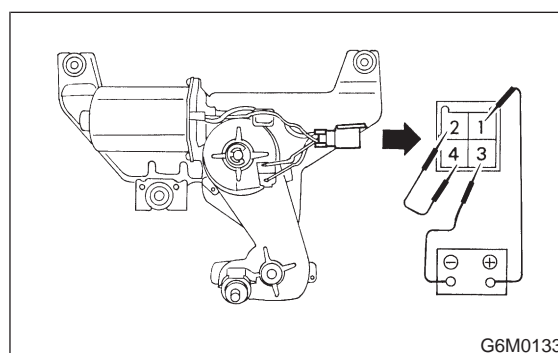
G6M0131

2) Check wiper motor for proper stoppage:
After operating wiper motor, disconnect battery from wiper motor.



G6M0132

3) Reconnect battery and ensure that wiper motor stops at "AUTO STOP" after it has been operated.



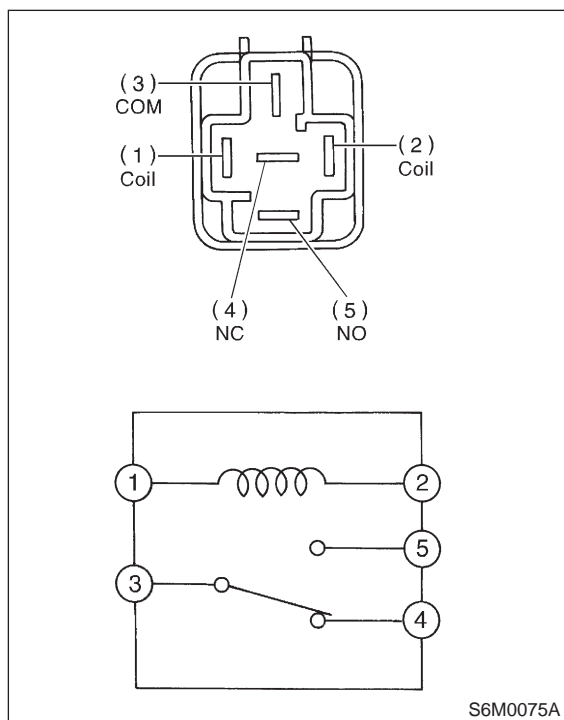
G6M0133

3. REAR WIPER RELAY

1) Connect battery to terminal No. 1 and ground terminal No. 2.

2) Check continuity between terminals.

When current flows.	Between terminals No. 3 and No. 4	Continuity does not exist.
	Between terminals No. 3 and No. 5	Continuity exists.
When current does not flow.	Between terminals No. 3 and No. 4	Continuity exists.
	Between terminals No. 3 and No. 5	Continuity does not exist.
	Between terminals No. 1 and No. 2	Continuity exists.



7. Rear Window Defogger

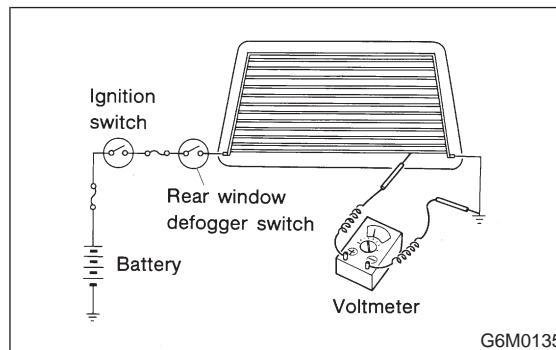
A: INSPECTION

1. HEAT WIRES

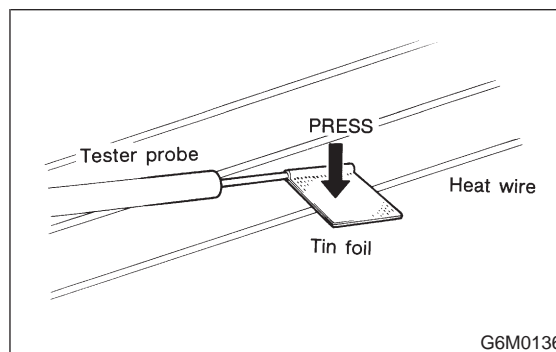
- 1) Start the engine so that battery is being charged.
- 2) Turn defogger switch ON.
- 3) Check each heat wire at its center position for discontinuity by setting direct current voltmeter.

NOTE:

- Normal indication is about 6 volts.

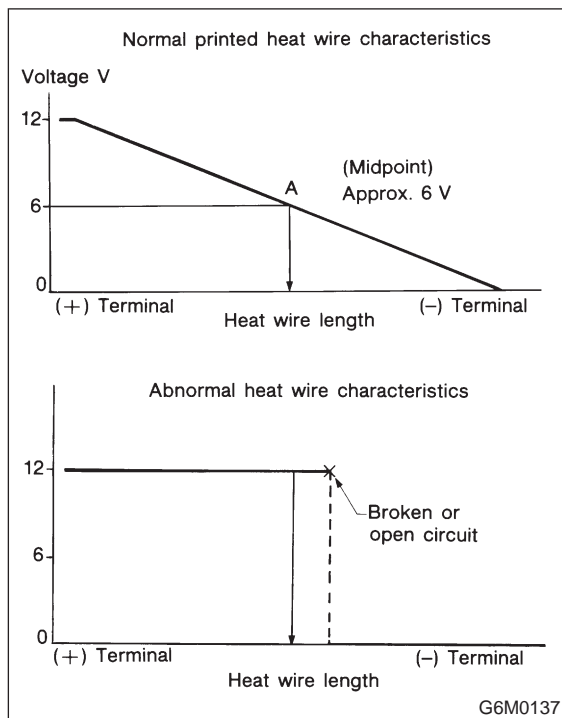


- When measuring voltage, wind a piece of tin foil around the tip of the tester probe and press the foil against the wire with your finger.



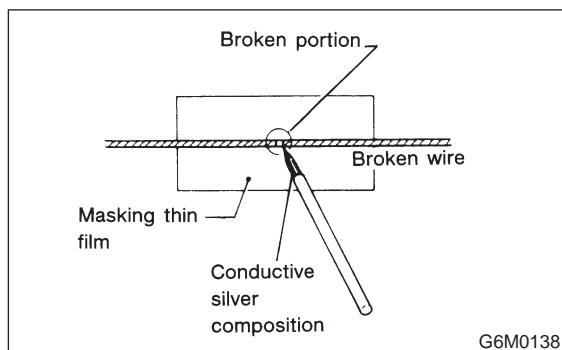
4) When tester indicates 12 volts when its probe reaches point "A", a broken circuit occurs between point "A" and the negative terminal. Slowly move tester probe toward the negative terminal while contacting it on heat wire to locate point where tester indication changes abruptly (0 volts). This is the point where a broken circuit occurs. When tester indicates 0 volts when its probe reaches point "A", a broken circuit occurs between point "A" and the positive terminal. Locate a point where tester indication changes abruptly (12 volts) while slowly moving tester probe toward the positive terminal.

5) Inspect the repaired wire for continuity.



B: REPAIR

- 1) Clean broken wire and its surrounding area.
- 2) Cut off slit on (used) thin film by 0.5 mm (0.020 in) width and 10 mm (0.39 in) length.
- 3) Place the slit on glass along the broken wire, and deposit conductive silver composition (DUPONT No. 4817) on the broken portion.

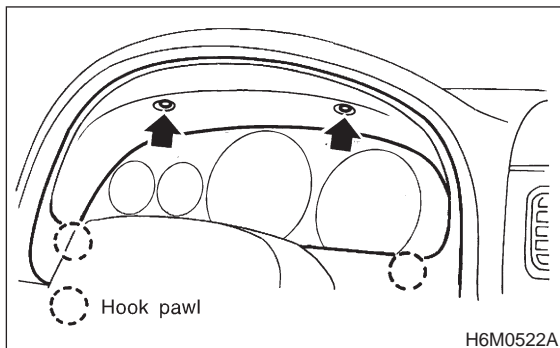


- 4) Dry out the deposited portion.

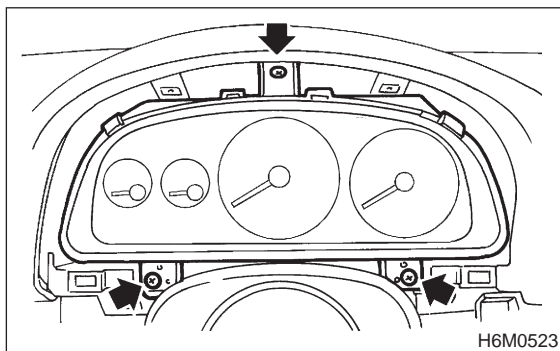
8. Combination Meter

A: REMOVAL AND INSTALLATION

- 1) Move steering wheel most down.
- 2) Remove screws which secure visor and remove visor.



- 3) Remove screws which secure combination meter, and pull combination meter out.

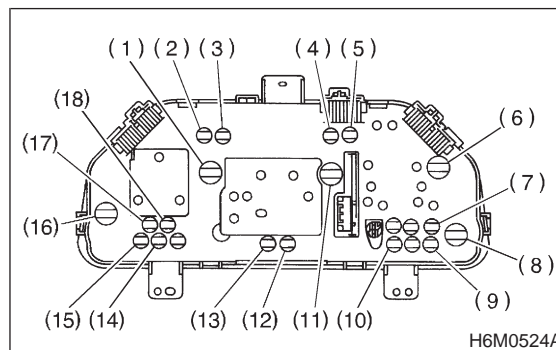


- 4) Disconnect connector from back of combination meter.
- 5) Installation is in the reverse order of removal.

CAUTION:

When installing combination meter, be sure to connect connectors to backside of combination meter.

B: BULB REPLACEMENT



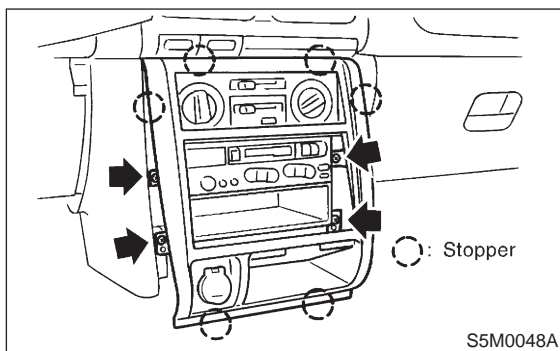
- (1) Speedometer and tachometer
- (2) HI-beam
- (3) Turn RH
- (4) Turn LH
- (5) Airbag
- (6) Temperature gauge
- (7) ABS
- (8) Low fuel
- (9) FWD
- (10) AT oil temp.
- (11) Speedometer and temperature gauge
- (12) Seat belt
- (13) Door open
- (14) Check engine
- (15) Charge
- (16) Tachometer
- (17) Brake
- (18) Oil pressure

9. Radio, Speaker and Antenna

A: REMOVAL AND INSTALLATION

1. RADIO BODY

- 1) Remove console box. <Ref. to 5-4 [W1A0].>
- 2) Remove AT cover (AT model).
- 3) Remove center panel.
- 4) Remove fitting screws, and slightly pull radio out from center console.



- 5) Disconnect electric connectors and antenna feeder cord.
- 6) Installation is in the reverse order of removal.

2. FRONT SPEAKER

- 1) Remove front door trim and disconnect connector. <Ref. to 5-2 [W2A2].>
- 2) Remove screws which secure front speaker.
- 3) Remove speaker and disconnect connector.
- 4) Installation is in the reverse order of removal.

3. REAR SPEAKER (SEDAN)

- 1) Remove rear shelf trim panels.
- 2) Remove screws which secure rear speakers.
- 3) Disconnect connector and remove speakers.
- 4) Installation is in the reverse order of removal.

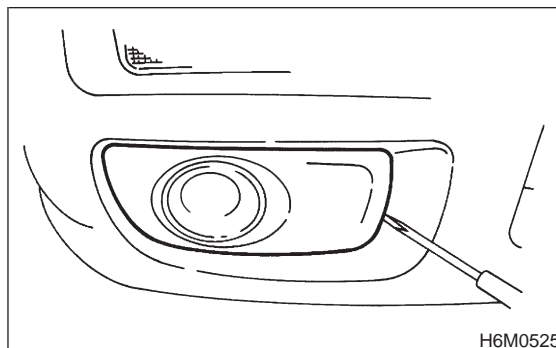
4. REAR SPEAKER (WAGON)

- 1) Remove rear door trim and disconnect connector. <Ref. to 5-2 [W2A2].>
- 2) Remove screws which secure rear speaker.
- 3) Remove speaker and disconnect connector.
- 4) Installation is in the reverse order of removal.

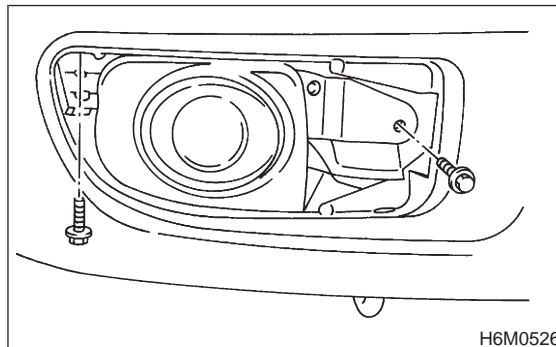
10. Front Fog Light

A: REMOVAL AND INSTALLATION

- 1) Disconnect ground cable from battery.
- 2) Remove front fog light cover.



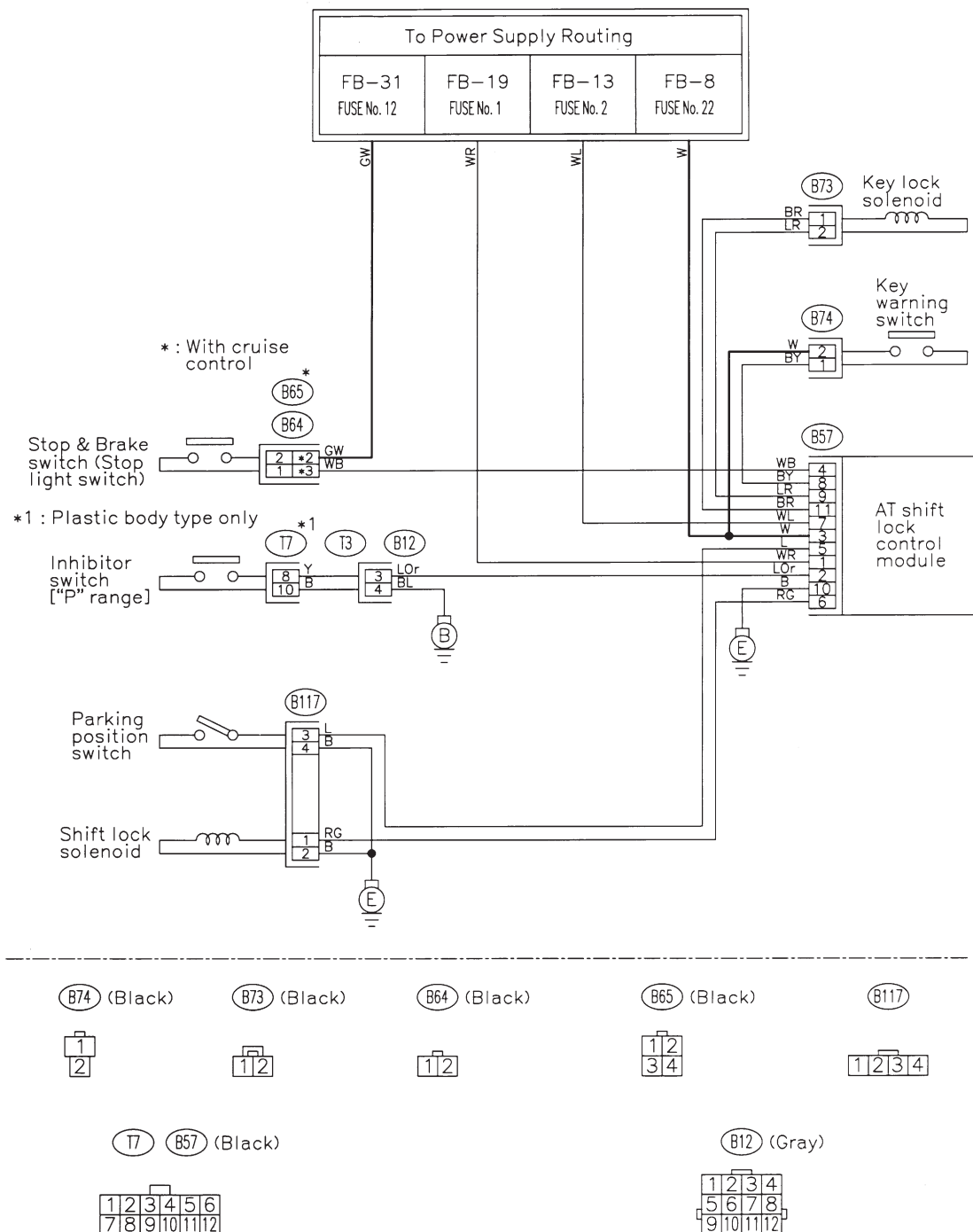
- 3) Remove the two screws, then draw out the front fog light from front bumper.



- 4) Disconnect the connector.
- 5) Installation is in the reverse order of removal.

1. AT Shift Lock System

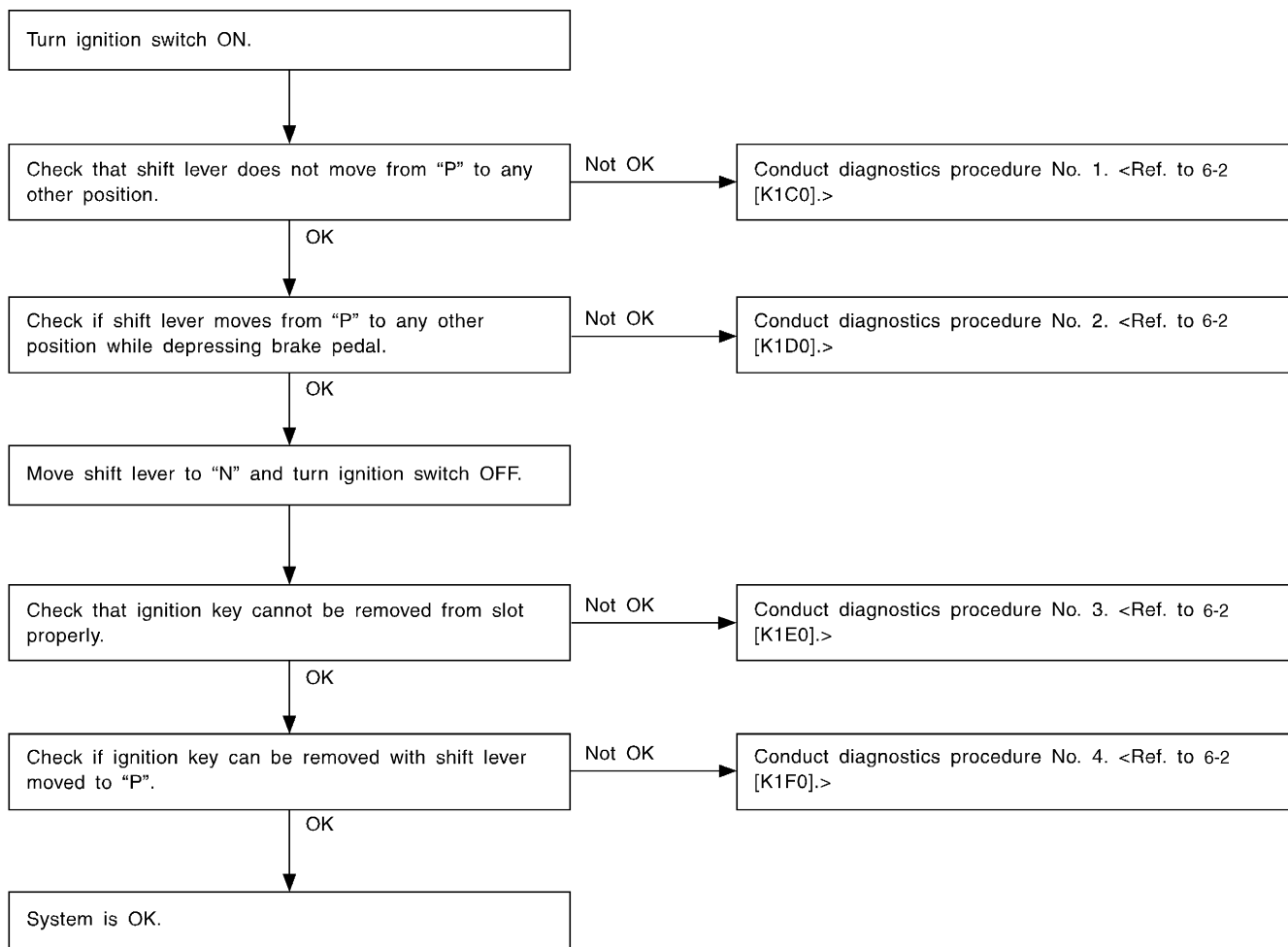
A: WIRING DIAGRAM

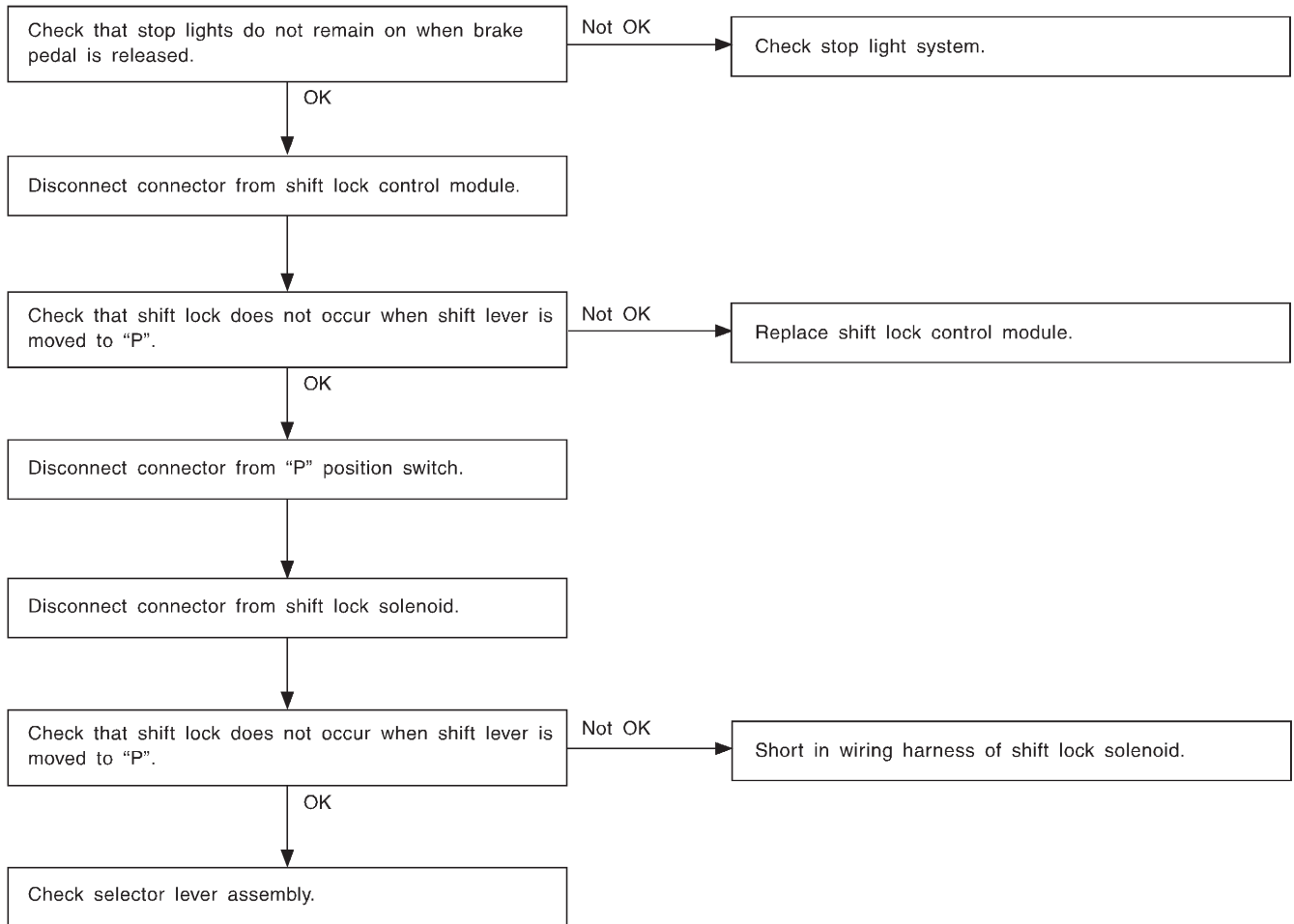


GU42-03

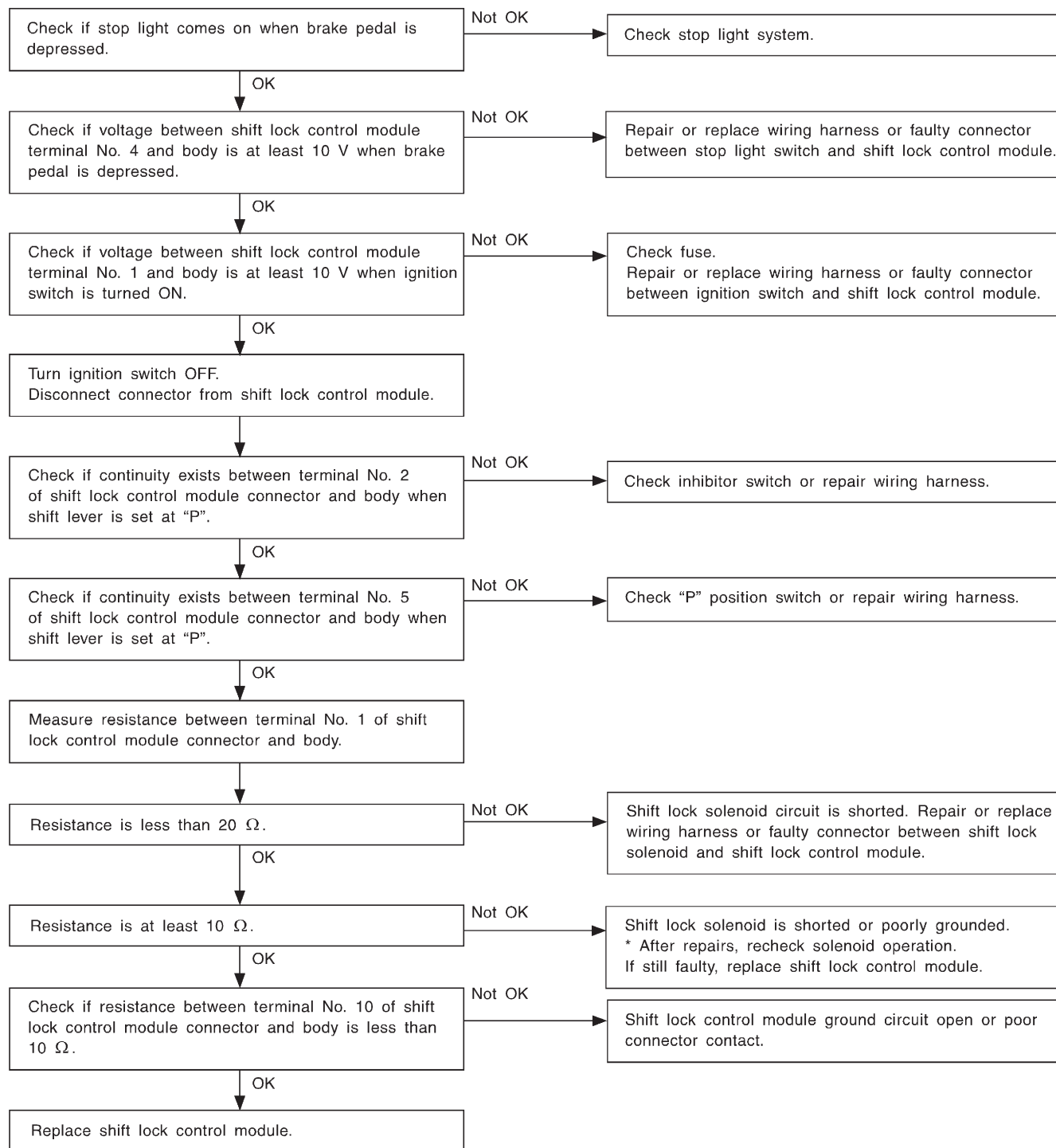
H6M0503

B: BASIC DIAGNOSTICS CHART

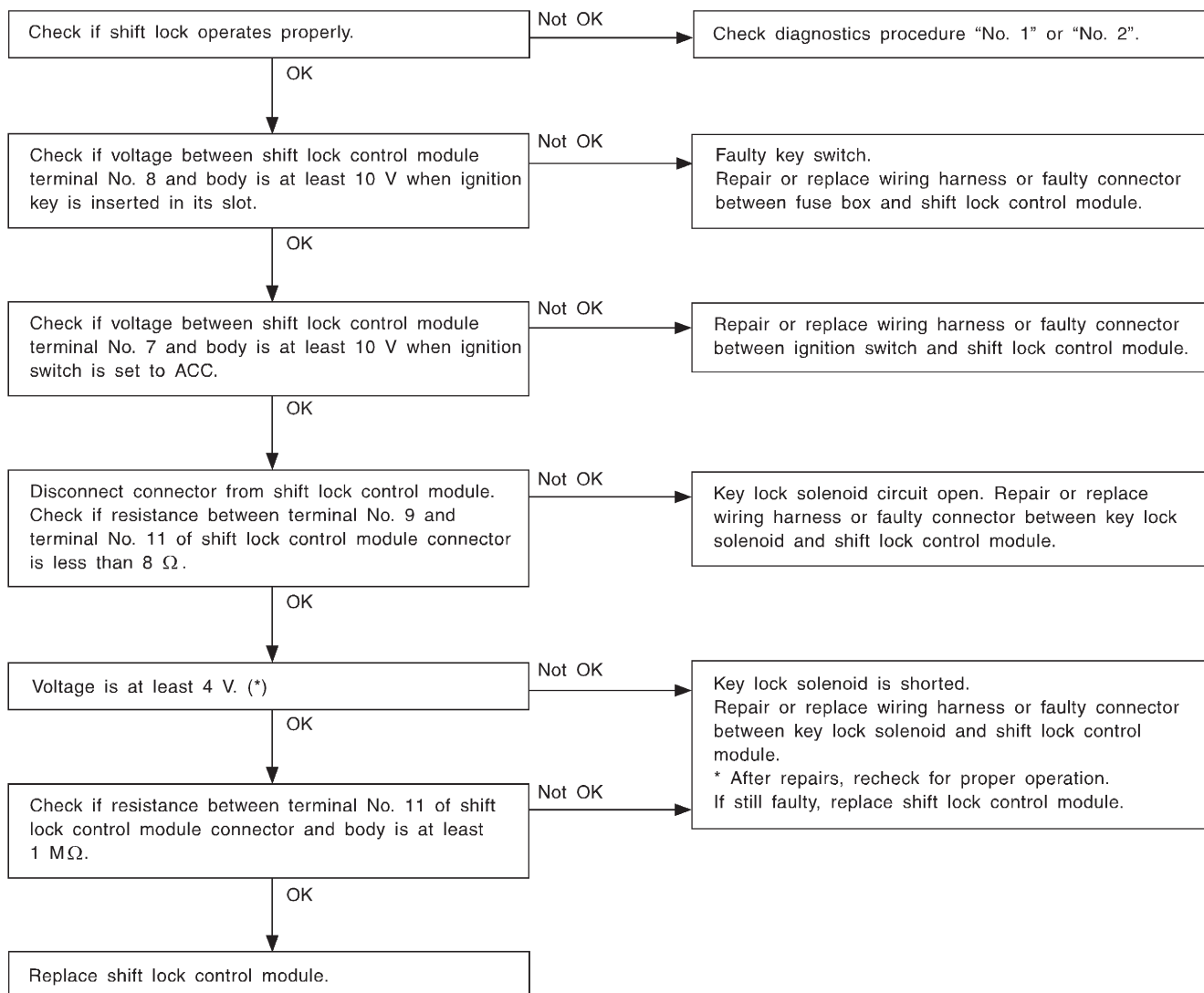


C: DIAGNOSTICS PROCEDURE NO. 1

H6M0505

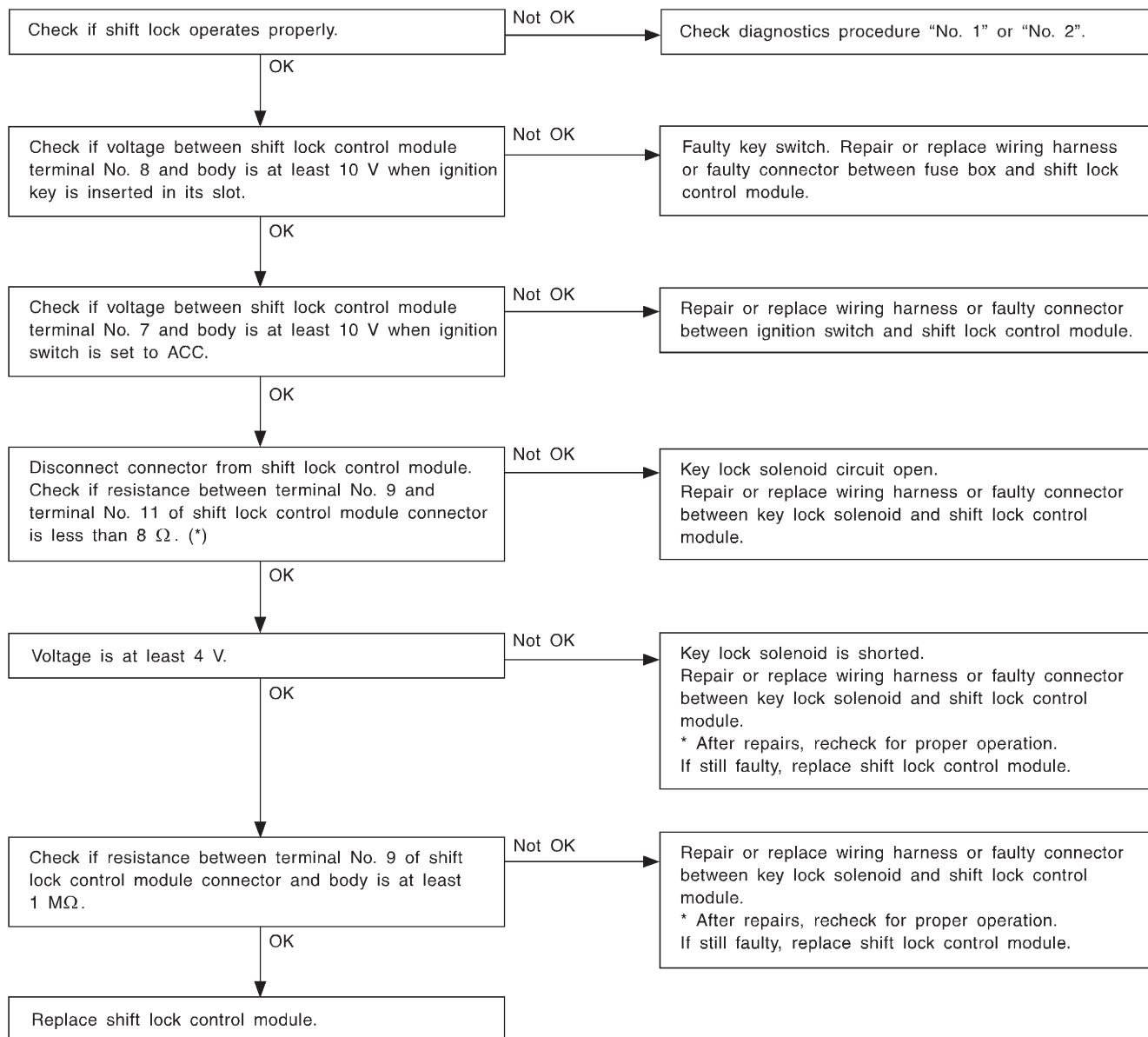
D: DIAGNOSTICS PROCEDURE NO. 2 (SHIFT LOCK DOES NOT RELEASE.)

E: DIAGNOSTICS PROCEDURE NO. 3 (KEY INTERLOCK DOES NOT OPERATE.)



*: When conducting operational checks of the key lock solenoid, do not apply 12 V to solenoid for more than one second, since this may break solenoid circuit.

F: DIAGNOSTICS PROCEDURE NO. 4 (KEY INTERLOCK DOES NOT RELEASE.)



*: When conducting operational checks of the key lock solenoid, do not apply 12 V to solenoid for more than one second, since this may break solenoid circuit.

2. Combination Meter

A: DIAGNOSTICS PROCEDURE

If speedometer does not operate, or operates abnormally, check combination meter circuit.

CAUTION:

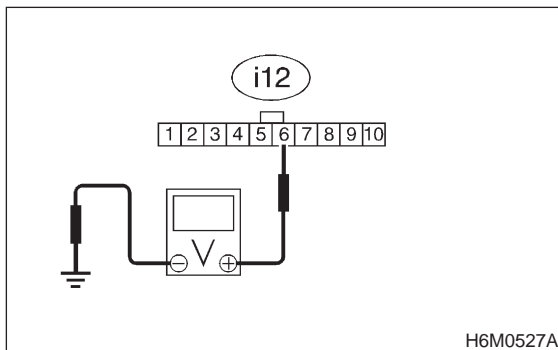
Make sure that trouble code of vehicle speed sensor 2 system appears in electrical system on-board diagnosis.

2A1 : CHECK POWER SUPPLY FOR COMBINATION METER.

- 1) Remove combination meter.
- 2) Turn ignition switch to ON.
- 3) Measure voltage between combination meter connector and chassis ground.

Connector & terminal

(i12) No. 6 (+) — Chassis ground (-):



- CHECK** : Is the voltage more than 10 V?
- YES** : Go to step 2A2.
- NO** : Repair harness and connector.

NOTE:

In this case, repair the following:

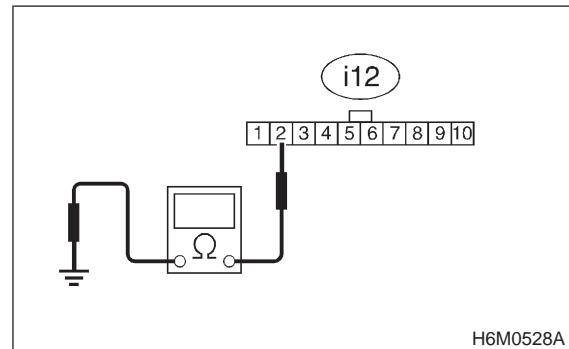
- Open circuit in harness between combination meter and battery.
- Poor contact in coupling connectors (i12) and combination meter connector. <Ref. to FOREWORD [T3C0].>

2A2 : CHECK GROUND CIRCUIT OF COMBINATION METER.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance of harness between combination meter connector and chassis ground.

Connector & terminal

(i12) No. 2 (+) — Chassis ground (-):



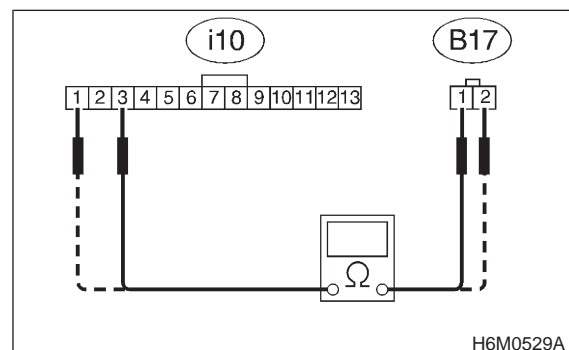
- CHECK** : Is the resistance less than 10 Ω?
- YES** : Go to step 2A3.
- NO** : Repair harness and connector.

2A3 : CHECK HARNESS CONNECTOR BETWEEN COMBINATION METER AND VEHICLE SPEED SENSOR 2.

- 1) Disconnect connector from vehicle speed sensor 2.
- 2) Measure resistance between combination meter connector and vehicle speed sensor 2 connector.

Connector & terminal

(B17) No. 1 — (i10) No. 3:



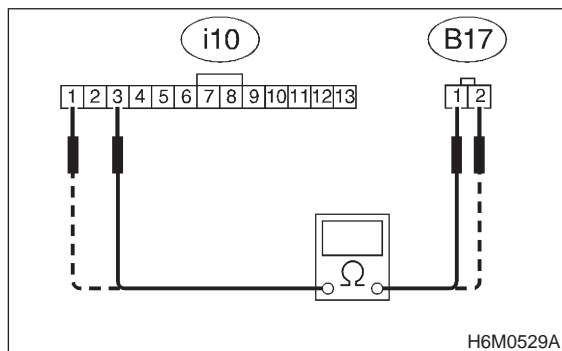
- CHECK** : Is the resistance less than 10 Ω?
- YES** : Go to step 2A4.
- NO** : Repair or replace wiring harness between combination meter and vehicle speed sensor 2.

2A4 : CHECK HARNESS CONNECTOR BETWEEN COMBINATION METER AND VEHICLE SPEED SENSOR 2.

Measure resistance between vehicle speed sensor 2 connector and combination meter connector.

Connector & terminal

(B17) No. 2 — (i10) No. 1:



CHECK : Is the resistance less than 10 Ω?

YES : Go to step 2A5.

NO : Repair or replace wiring harness between combination meter and vehicle speed sensor 2.

2A5 : CHECK VEHICLE SPEED SENSOR 2.

NOTE:

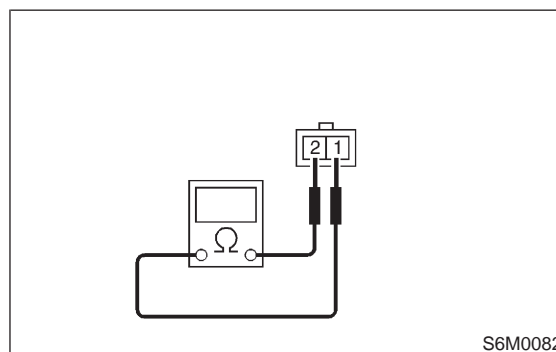
- If resistance between terminals of vehicle speed sensor 2 is out of specification, the sensor may have a failure.
- If resistance is OK and voltage between terminals of vehicle speed sensor 2 is out of specification, mechanical trouble may be present between vehicle speed sensor 2 and speedometer shaft in transmission.

1) Disconnect connector from vehicle speed sensor 2.

2) Measure resistance between terminals of vehicle speed sensor 2.

Terminals

No. 1 — No. 2:



CHECK : Is the resistance between 350 Ω and 450 Ω?

YES : Go to step 2A6.

NO : Replace vehicle speed sensor 2.

2A6 : CHECK VEHICLE SPEED SENSOR 2.

1) Set the vehicle on free roller, or lift-up the vehicle and support with safety stands.

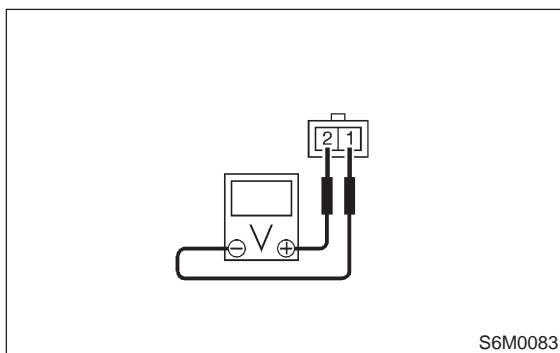
WARNING:

Be careful not to be caught up by the running wheels.

- 2) Drive the vehicle at speed greater than 20 km/h (12 MPH).
- 3) Measure voltage between terminals of vehicle speed sensor 2.

Terminals

No. 1 — No. 2:



CHECK : *Is the voltage more than 5 V? (AC range)*

YES : Repair or replace speedometer.

NO : Replace vehicle speed sensor 2.

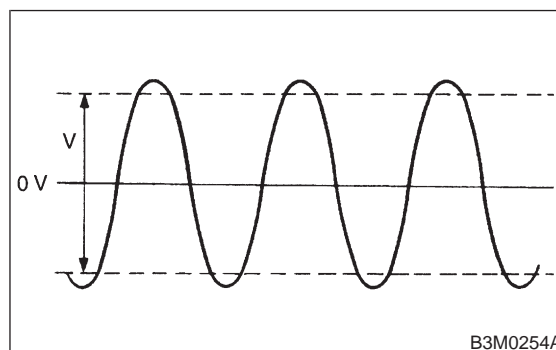
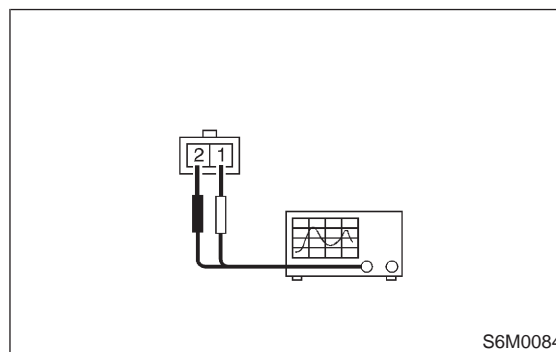
2A7 : CHECK VEHICLE SPEED SENSOR 2.**NOTE:**

Using an oscilloscope:

- 1) Turn ignition switch to OFF.
- 2) Set oscilloscope to vehicle speed sensor 2.
- 3) Drive the vehicle at speed greater than 20 km/h (12 MPH).
- 4) Measure signal voltage.

Terminals

No. 1 — No. 2:



CHECK : *Is the voltage more than 5 V?*

YES : Repair or replace speedometer.

NO : Replace vehicle speed sensor 2.

MEMO:

DIAGNOSTICS SECTION

FOREWORD

This portion of the service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

The diagnostics relating to the Electronic Control System which is made up of various electronic components (ECM's etc.) are explained in this manual.

For the repair or exchange of defective parts, please refer to the SERVICE MANUAL (Repair Section).

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

FUJI HEAVY INDUSTRIES LTD.

ENGINE COOLING SYSTEM	2-5
ON-BOARD DIAGNOSTICS II SYSTEM	2-7
AUTOMATIC TRANSMISSION AND DIFFERENTIAL	3-2
BRAKES	4-4
SUPPLEMENTAL RESTRAINT SYSTEM	5-5

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