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PRECAUTION FOR SUPPLEMENTAL RESTRAINT SYSTEM "AIRBAG"

The Supplemental Restraint System "Airbag" helps to reduce the risk or severity of injury to the driver in a frontal collision.

The Supplemental Restraint System consists of an airbag module (located in the center of the steering wheel), sensors, a control module, warning light, wiring harness and roll connector.

Information necessary to service the safety is included in the "5-5. SUPPLEMENTAL RESTRAINT SYSTEM" of this Service Manual.

WARNING:

- To avoid rendering the Airbag system inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all maintenance must be performed by an authorized SUBARU dealer.
- Improper maintenance, including incorrect removal and installation of the Airbag system, can lead to personal injury caused by unintentional activation of the Airbag system.
- All Airbag system electrical wiring harnesses and connectors are covered with yellow outer insulation. Do not use electrical test equipment on any circuit related to the Supplemental Restraint System "Airbag".

1. Body Electrical

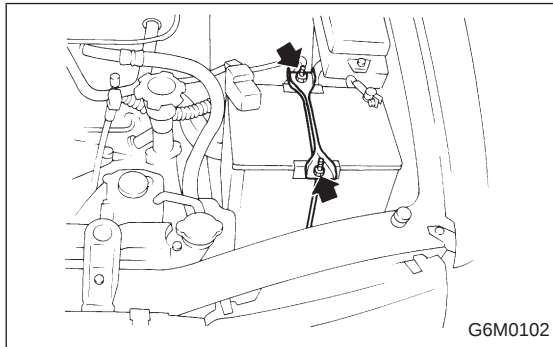
Battery	Type		MT model: 55D23L (MF)	AT model: 75D23L (MF)
	Capacity	Reverse capacity	MT model: 100 minutes	AT model: 120 minutes
		Cold cranking ampere	MT model: 430 amperes	AT model: 520 amperes
Combination meter	Speedometer		Eddy current type	
	Temperature gauge		Thermistor cross coil type	
	Fuel gauge		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 — 1.4W	
	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 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 — 27W	
		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	
Cigarette lighter	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. Precaution

- 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 circuit.
- 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:**

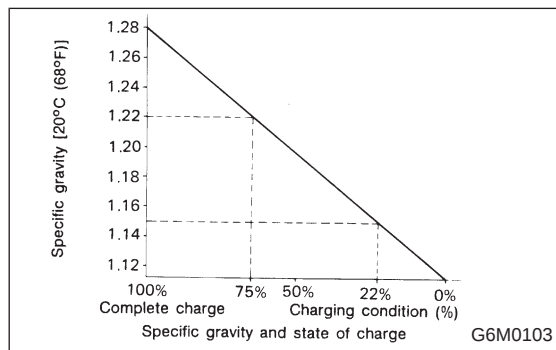
- Electrolyte has toxicity; be careful handling the fluid.
- Avoid contact with skin, eyes or clothing. Especially at contact with eyes, flush with water for 15 minutes and get prompt medical attention.
- Batteries produce explosive gasses. Keep sparks, flame, cigarettes away.
- Ventilate when charging 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:

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

S_{20} : Specific gravity corrected at electrolyte temperature of 20°C

S_t : 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.

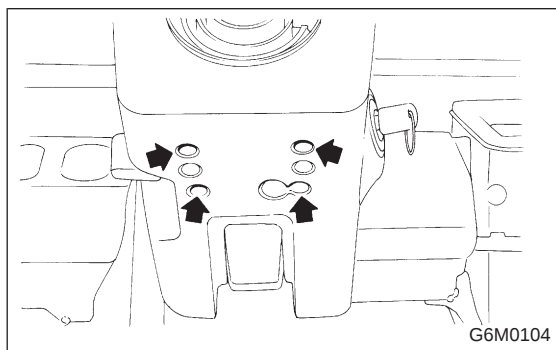
3. JUDGMENT OF BATTERY IN CHARGED CONDITION

- 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)

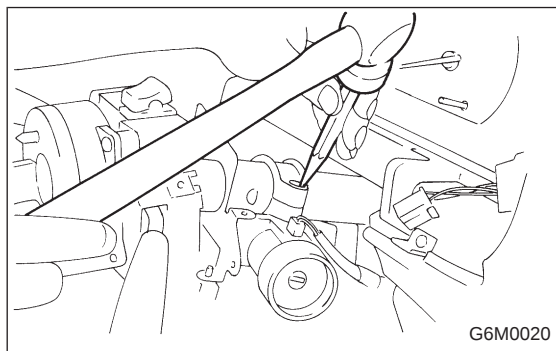
*: Check electrical system before replacement.



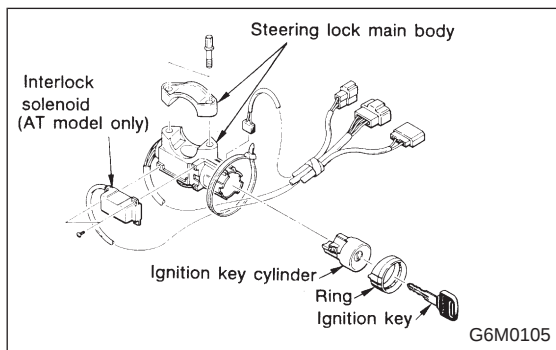
3. Ignition Switch

A: REMOVAL AND INSTALLATION

- 1) Remove screws, separate upper column cover and lower column cover.
- 2) Remove knee protector.
- 3) Remove meter visor.



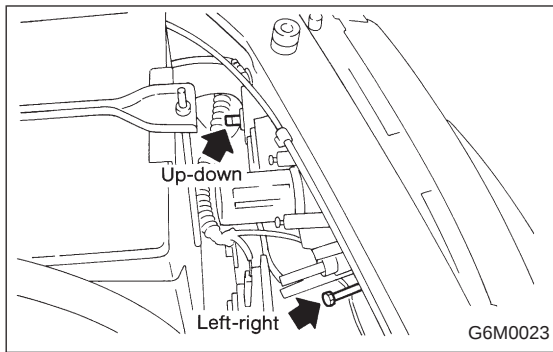
- 4) Disconnect ignition switch connector from body harness.
- 5) Using a drift and hammer, hit the torn bolt head to loosen and remove the ignition switch.



- 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.

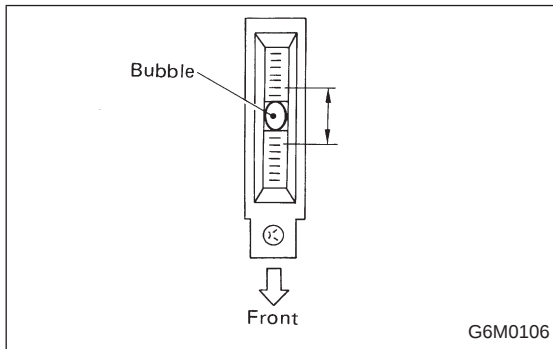
CAUTION:

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

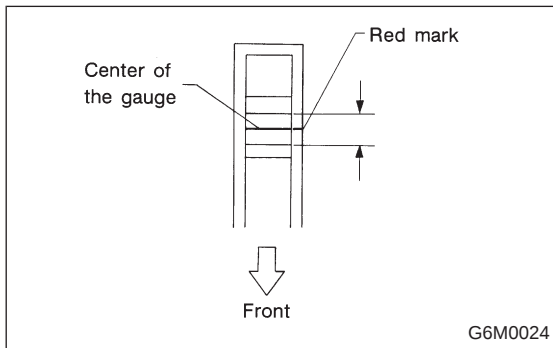
- Turn off the light before adjusting headlight aiming. If the light is necessary to check aiming, do not turn on for more than two minutes.
- The area around the headlight has not sustained any accident, damage or other type of deformation.
- Vehicle is parked on level ground.
- The inflation pressure 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:

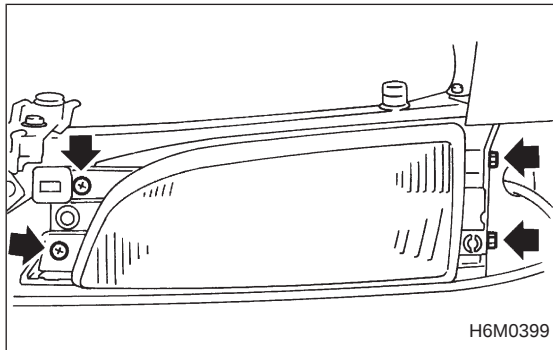
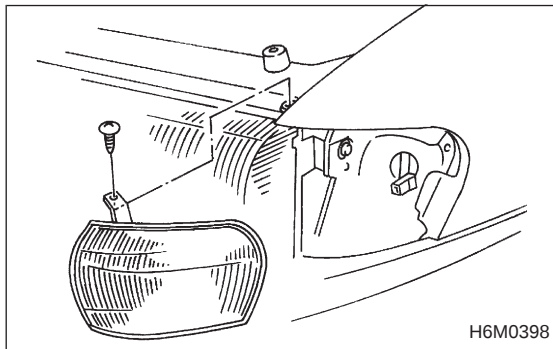
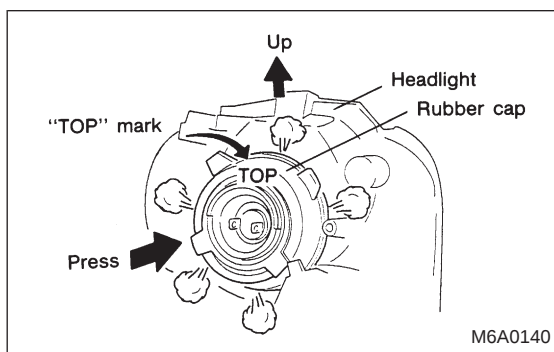
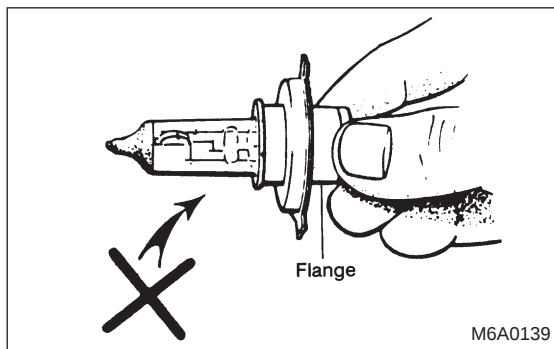
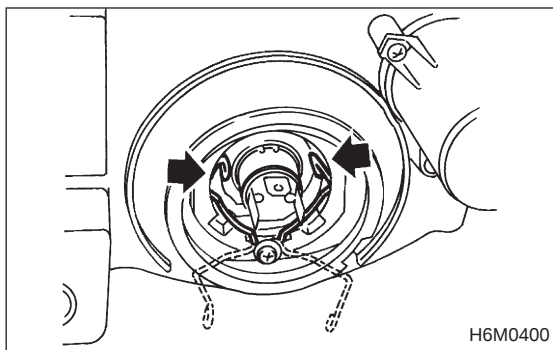
Adjust vertical aim first, then horizontal aim.



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 screws which secure side marker light.
- 3) Remove side marker light while disconnecting connector.

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

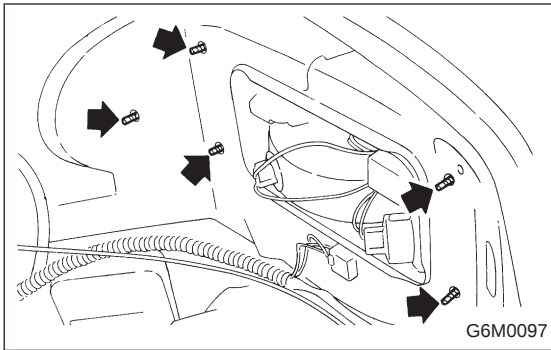
Tightening torque:

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

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

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.

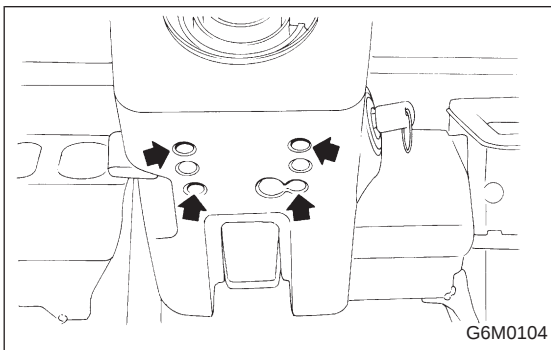
Tightening torque:

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

- 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.

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 (WITHOUT AIRBAG MODEL)

NOTE:

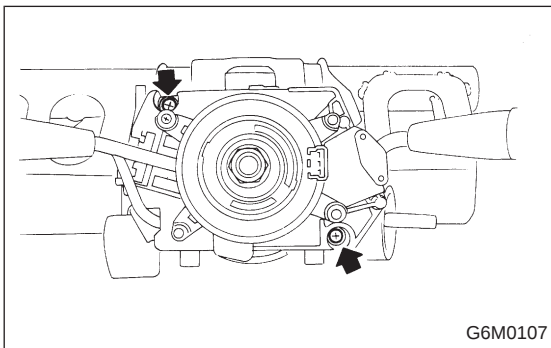
For the removal procedure of combination switch, refer to procedure for removal of combination switch on airbag equipped model. <Ref. to 5-5 [W6A0].>

- 1) Remove steering wheel.
- 2) Remove screws which secure upper column cover to lower column cover.
- 3) Remove screws which secure knee protector and remove knee protector.

CAUTION:

When installing knee protector, ensure that harness is not caught by adjacent parts.

- 4) Disconnect connector from body harness and undo holddown band.

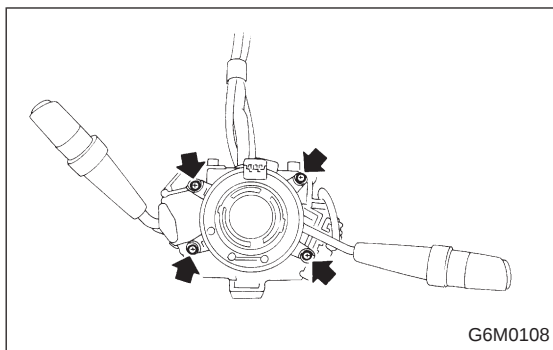


- 5) Remove screws which secure switch and remove switch.
- 6) Installation is in the reverse order of removal.

CAUTION:

During installation (with key interlock):

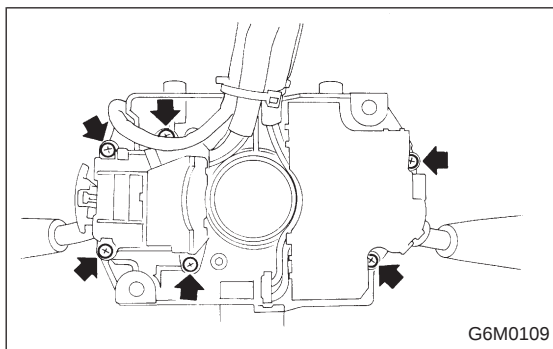
- When routing combination switch harness around steering system, do not place it over key interlock release knob.
- After installing lower column cover, ensure that key interlock release knob is accessible.



C: DISASSEMBLY AND ASSEMBLY

1. COMBINATION SWITCH

1) Remove screws which secure slip ring to combination switch, and remove slip ring.



2) Remove screws which secure lighting switch, wiper and washer switch. Remove both switches.

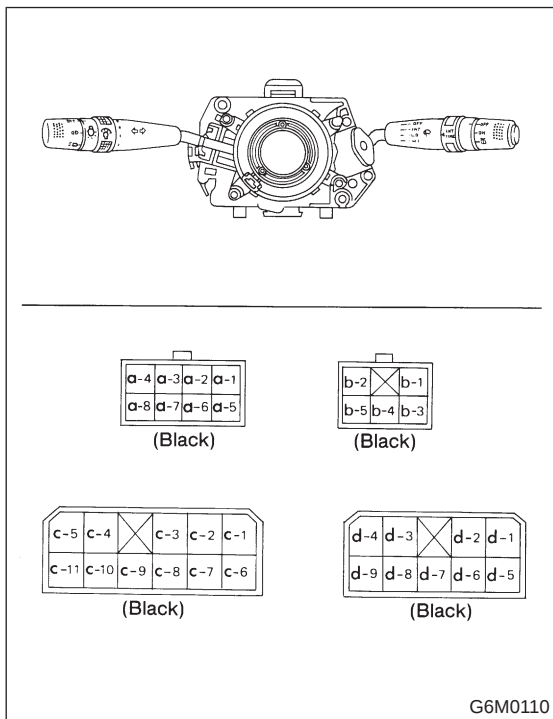
3) Assembly is in the reverse order of disassembly.

D: INSPECTION

1. COMBINATION SWITCH (ON-CAR)

1) Remove instrument panel lower cover.

2) Remove lower column cover.



3) Unfasten holddown clip which secures harness, and disconnect connectors from body harness.

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

LIGHTING SWITCH

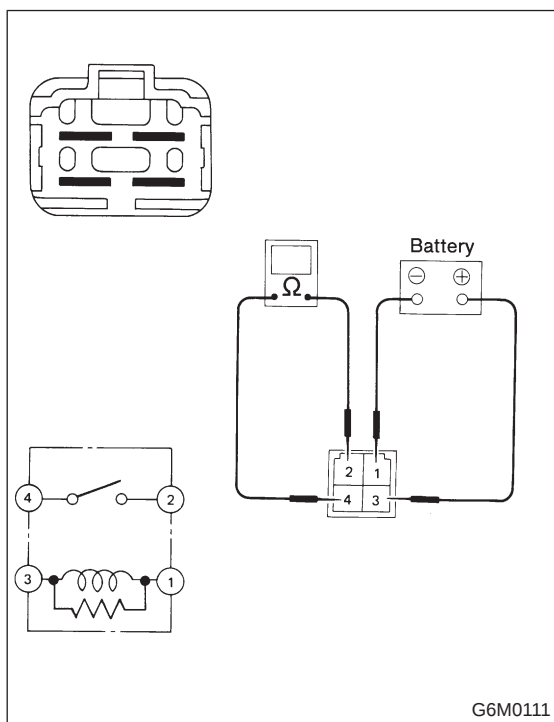
Terminal (Wire color)	c-1 (W)	c-2 (W)	c-3 (R)
Switch position			
OFF			
Tail	○	○	
Head	○	○	○

PARKING SWITCH

Terminal (Wire color)	c-10 (R)	c-11 (RG)	c-9 (RW)
Switch position			
OFF	○	○	
ON		○	○

DIMMER AND PASSING SWITCH

Terminal (Wire color)	a-3 (B)	a-2 (RB)	a-1 (RY)	a-4 (YR)
Switch position				
Flash	○		○	○
Low beam	○	○		
HI-beam	○		○	

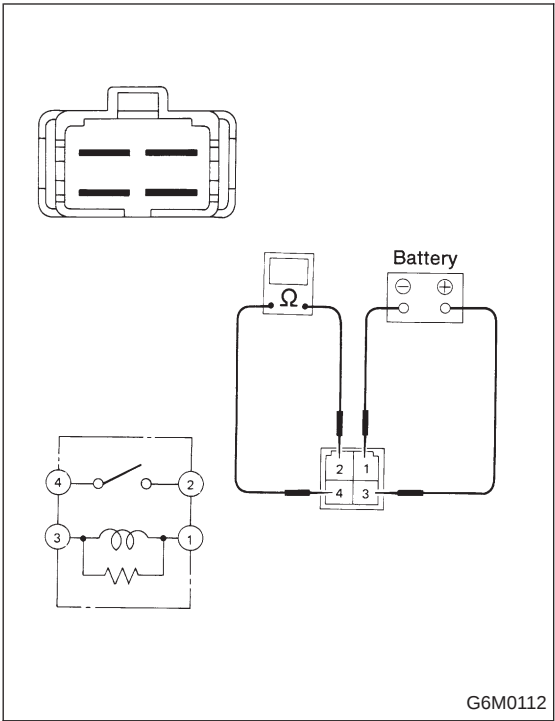


G6M0111

2. HEADLIGHT RELAY

Check continuity between terminals when terminal No. 3 is connected to battery and terminal No. 1 is grounded.

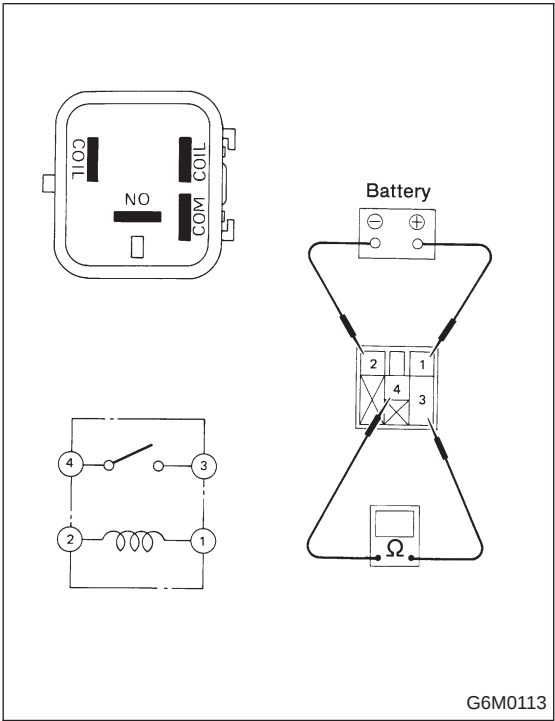
When current flows.	Between terminals No. 2 and No. 4	Continuity exists.
When current does not flow.	Between terminals No. 2 and No. 4	Continuity does not exist.
	Between terminals No. 1 and No. 3	Continuity exists.



3. TAIL AND ILLUMINATION RELAY

Check continuity between terminals (indicated in table below) when terminal No. 3 is connected to battery and terminal No. 1 is grounded.

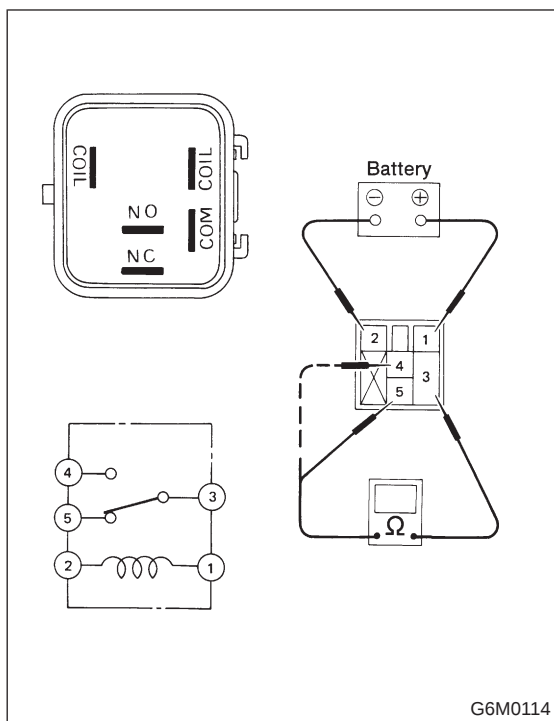
When current flows.	Between terminals No. 2 and No. 4	Continuity exists.
When current does not flow.	Between terminals No. 2 and No. 4	Continuity does not exist.
	Between terminals No. 1 and No. 3	Continuity exists.



4. DAYTIME RUNNING LIGHT RELAY

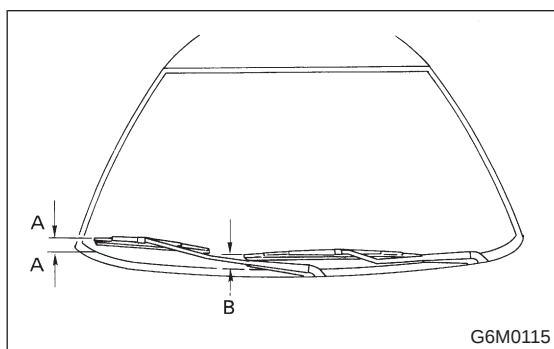
1) Check continuity between terminals when terminal No. 1 is connected to battery and terminal No. 2 is grounded.

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



2) Check continuity between terminals when terminal No. 1 is connected to battery and terminal No. 2 is grounded.

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



5. Front Wiper and Washer

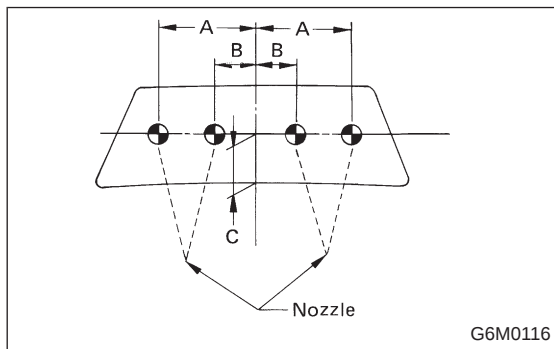
A: ADJUSTMENT

- 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)



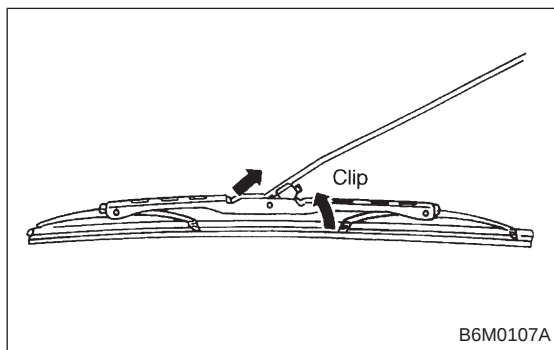
- 3) Adjust washer ejecting point on windshield glass as shown in figure when car stops.

Ejecting point:

A: 375 mm (14.76 in)

B: 150 mm (5.91 in)

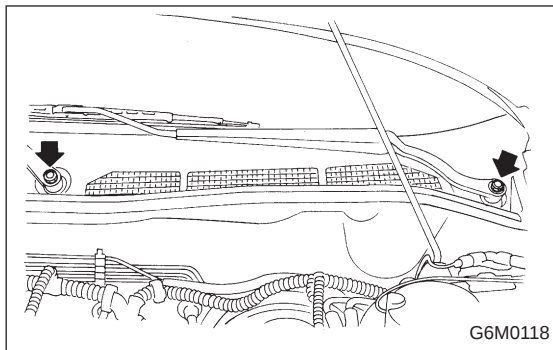
C: 350 mm (13.78 in)



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:

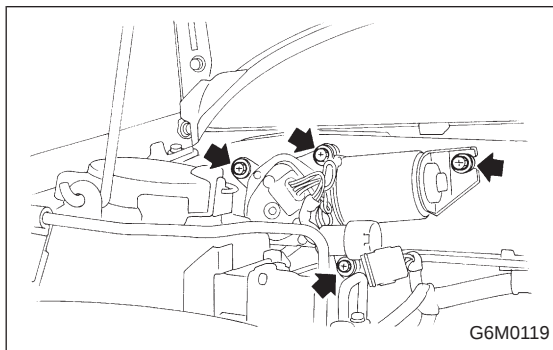
14 ± 4 N·m (1.4 ± 0.4 kg·m, 10.1 ± 2.9 ft·lb)

3. WIPER MOTOR AND LINK

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

NOTE:

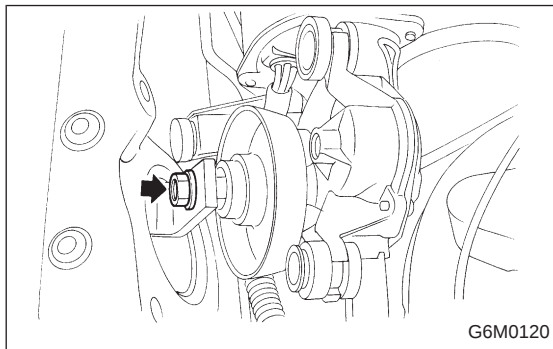
Apply silicone oil or soap water to both sides of cowl net to facilitate removal.



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

Tightening torque:

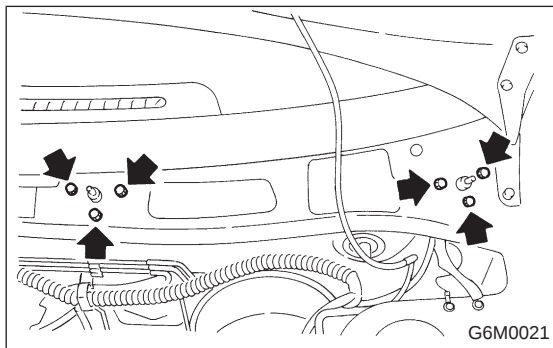
5.9 ± 1.5 N·m (0.6 ± 0.15 kg·m, 4.3 ± 1.1 ft·lb)



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

Tightening torque:

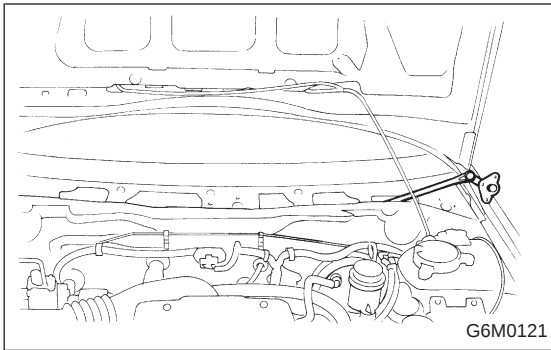
15 ± 3 N·m (1.5 ± 0.3 kg·m, 11 ± 2.2 ft·lb)



- 4) Remove nuts which secure sleeve unit.

Tightening torque:

5.9 ± 1.5 N·m (0.6 ± 0.15 kg·m, 4.3 ± 1.1 ft·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)

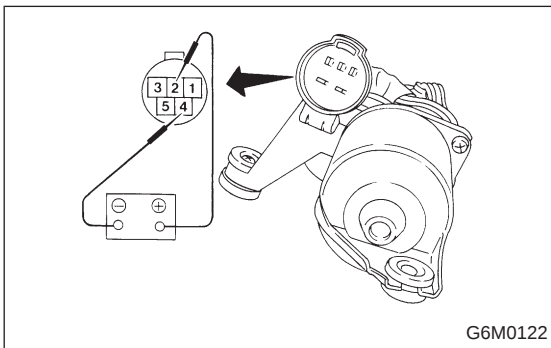
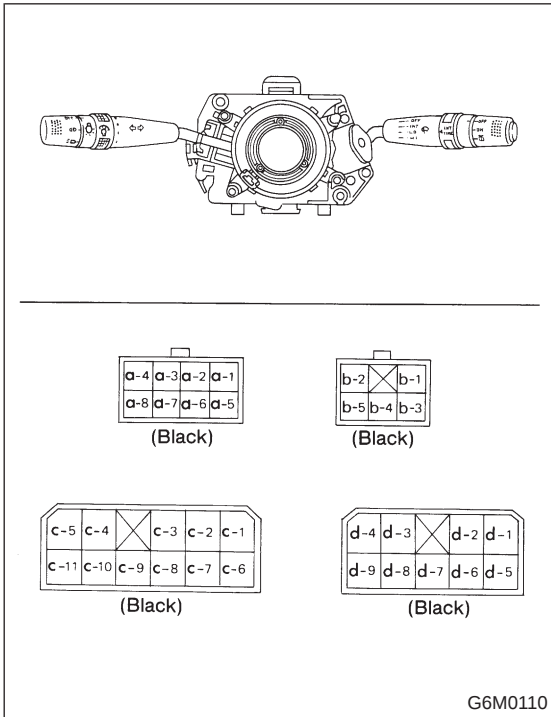
Set wiper switch to each position and check continuity between terminals.

Wiper switch

Terminal (Wire color)		d-9 (Y)	d-8 (L)	d-6 (LY)	d-7 (LW)	INT1	INT2
Switch position							
OFF	OFF						
		x		x			
	MIST						
INT	OFF						
		x		x			
	MIST						
		x		x			
LO	OFF						
	MIST						
HI	OFF						
	MIST						

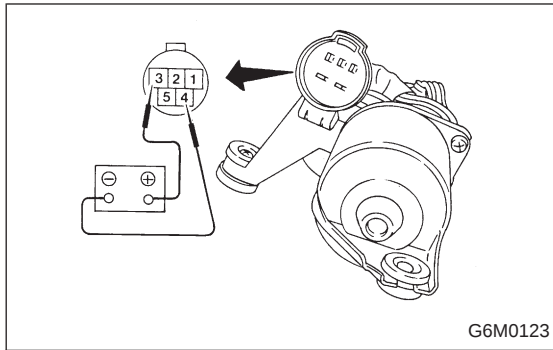
Washer switch

Terminal (Wire color)	d-5 (B)	d-2 (W)
Switch position		
OFF		
ON		

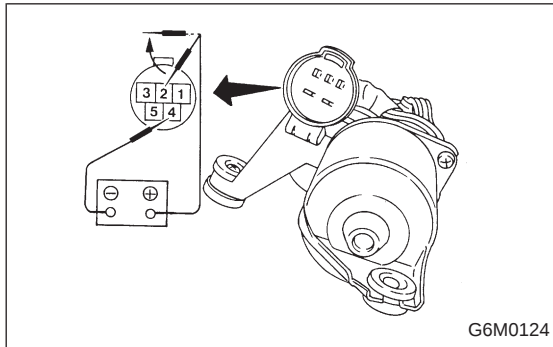


2. WIPER MOTOR

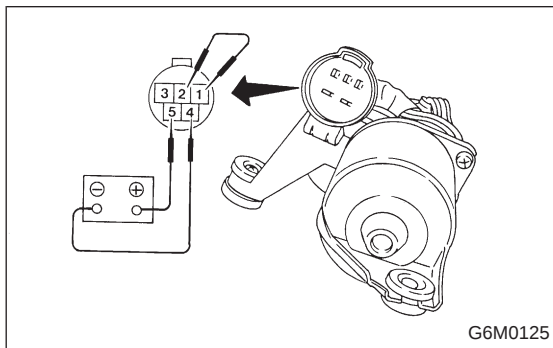
- 1) Check wiper motor operation at low speed:
Connect battery to wiper motor. Check wiper motor for proper operation at low speed.



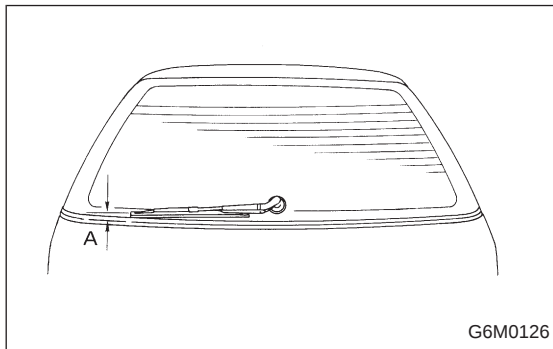
2) Check wiper motor operation at high speed:
Connect battery wiper motor. Check wiper motor for proper operation at high speed.



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.



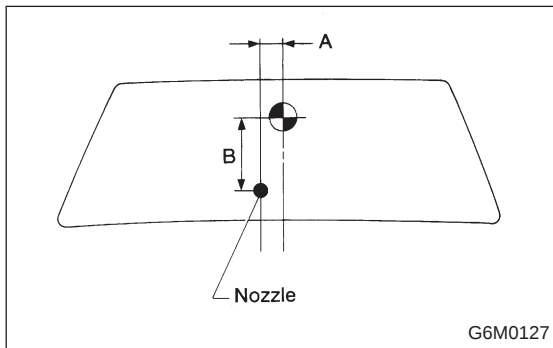
6. Rear Wiper and Washer

A: ADJUSTMENT

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

Original position:

A: $30 \pm 5 \text{ mm}$ ($1.18 \pm 0.20 \text{ in}$)

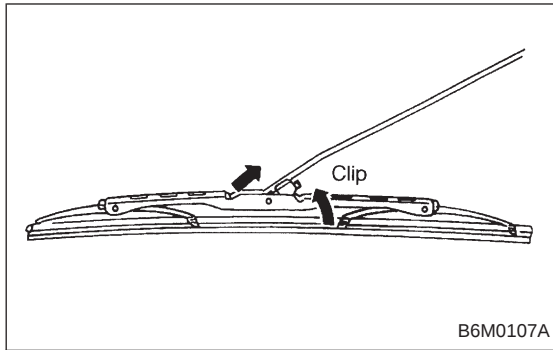


2) Adjust washer ejecting point on rear gate window as shown in figure when the vehicle stops.

Ejecting point:

A: 25 mm (0.98 in)

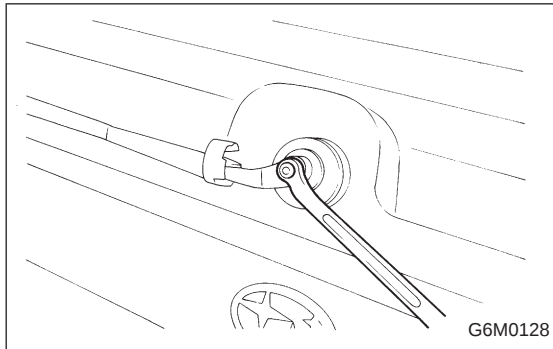
B: $200 - 300 \text{ mm}$ ($7.87 - 11.81 \text{ in}$)



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.

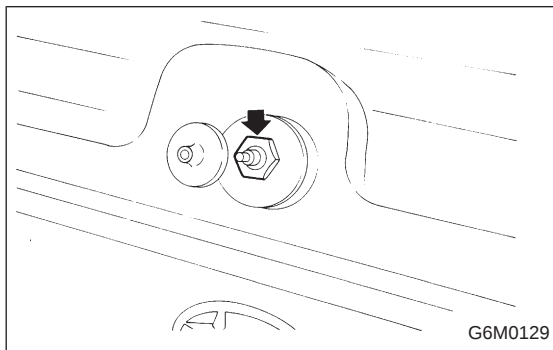


2. WIPER ARM

- 1) Remove head cover.
- 2) Remove nut and wiper arm.
- 3) Installation is in the reverse order of removal.

Tightening torque:

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



3. WIPER MOTOR

- 1) Remove cap and special nut.

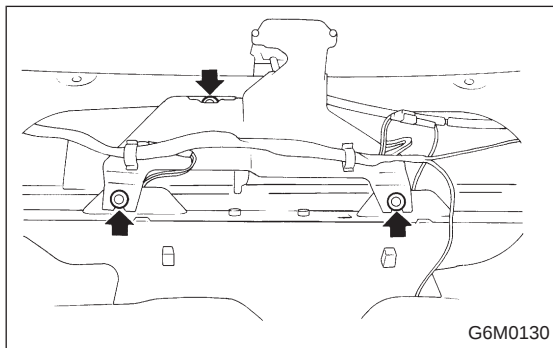
CAUTION:

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

Tightening torque:

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

- 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:

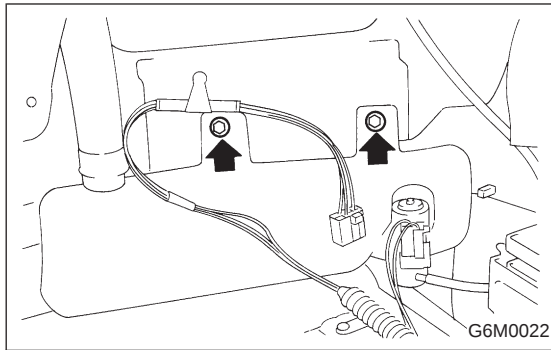
Be careful not to damage O-ring when removing wiper motor assembly.

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

Tightening torque:

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

6. Rear Wiper and Washer



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:

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

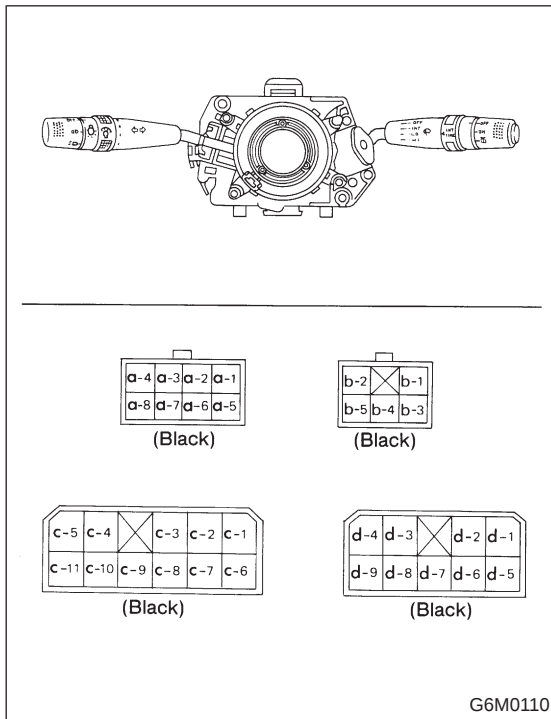
C: INSPECTION

1. COMBINATION SWITCH (ON-CAR)

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

WITHOUT INTERMITTENT REAR WIPER

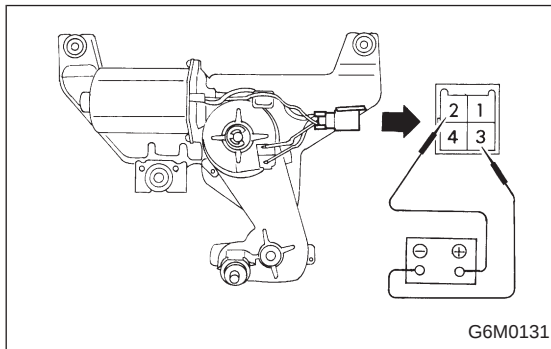
Terminal Switch position	d-2	d-1		d-3
WASH	○	○		○
OFF				
ON	○			○
WASH	○	○		○



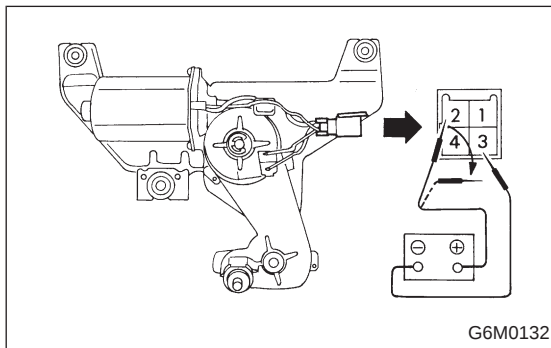
2. WIPER MOTOR

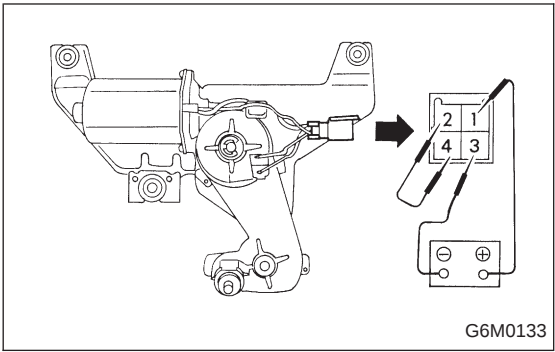
- 1) Operational check:

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

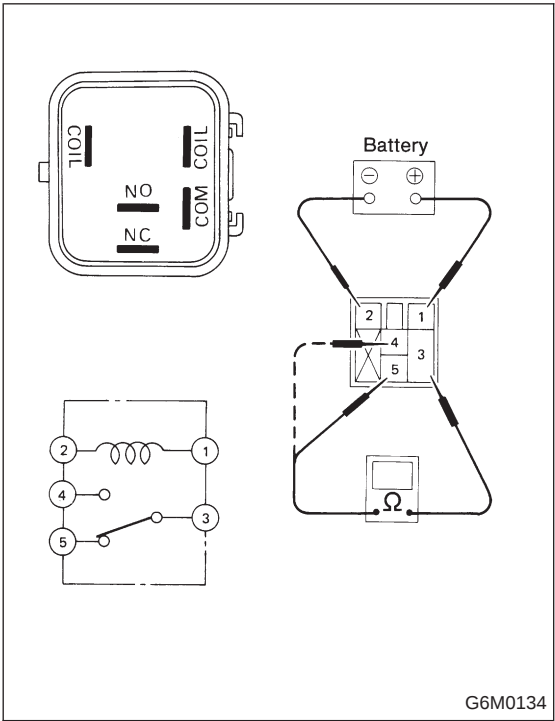


- 2) Check wiper motor for proper stoppage:
After operating wiper motor, disconnect battery from wiper motor.





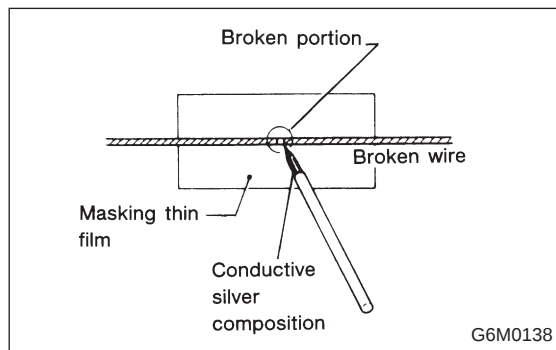
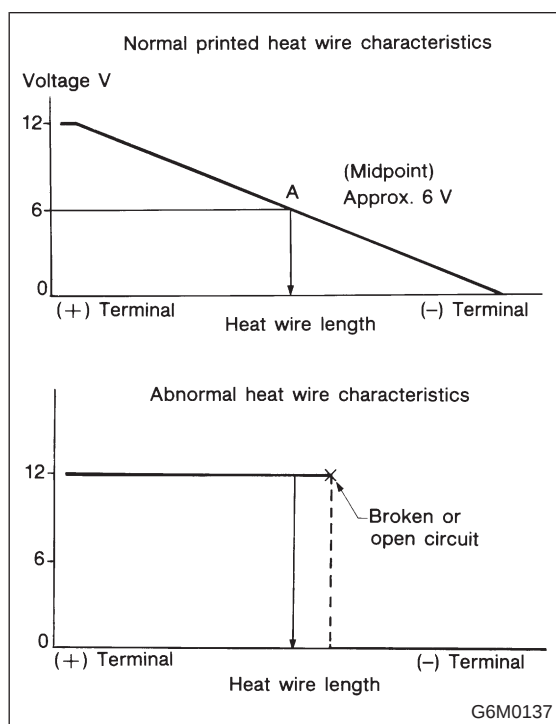
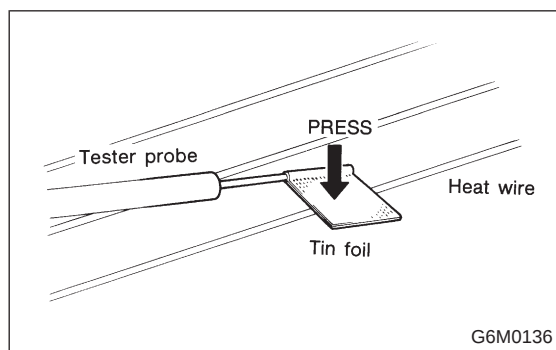
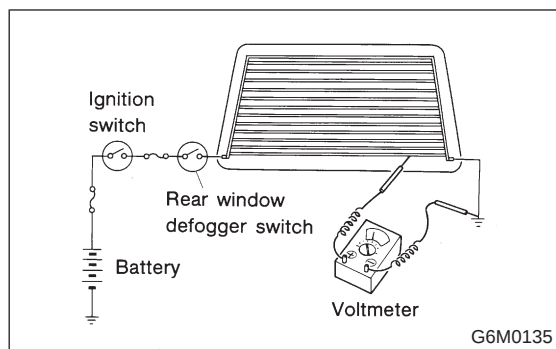
3) Reconnect battery and ensure that wiper motor stops at “AUTO STOP” after it has been operated.



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

NOTE:

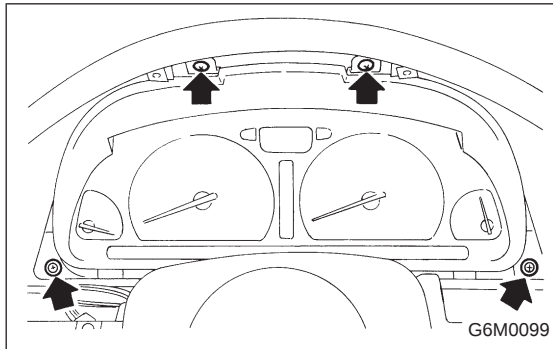
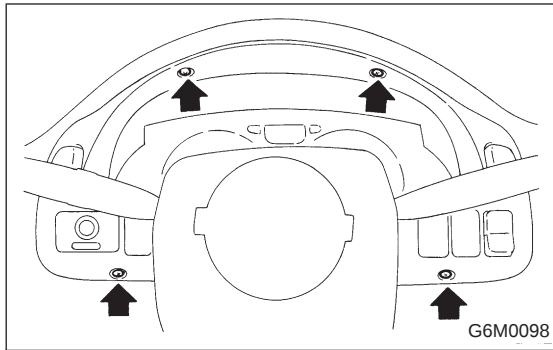
When measuring voltage, wind a piece of tin foil around the tip of the tester probe and press the foil against the wire with your finger.

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.

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.
- 5) Inspect the repaired wire for continuity.



8. Combination Meter

A: REMOVAL AND INSTALLATION

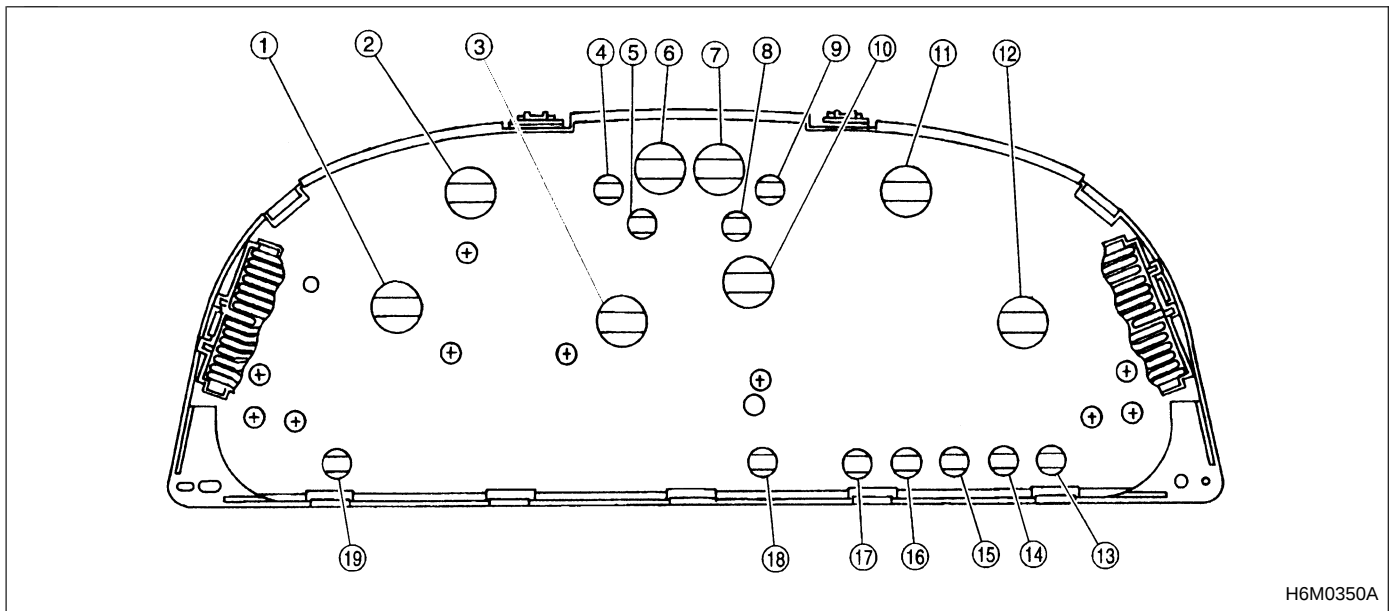
- 1) Move steering wheel down.
- 2) Remove screws which secure visor and remove visor.
- 3) Disconnect switch connectors.

- 4) Remove screws which secure combination meter, and pull combination meter out.
- 5) Disconnect connector and speedometer cable from back of combination meter.
- 6) Installation is in the reverse order of removal.

CAUTION:

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

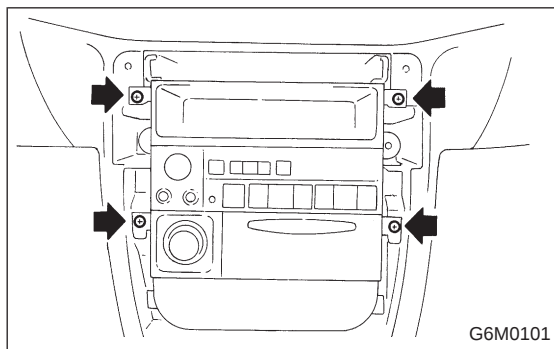
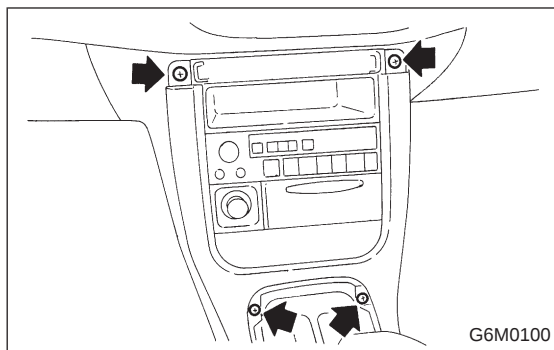
B: BULB REPLACEMENT



- ① Speedometer and fuel gauge
- ② Speedometer
- ③ Speedometer
- ④ Turn RH
- ⑤ Door open
- ⑥ HI-beam
- ⑦ Brake

- ⑧ Seat belt
- ⑨ Turn LH
- ⑩ Tachometer
- ⑪ Tachometer
- ⑫ Tachometer and temperature gauge
- ⑬ Check engine

- ⑭ Charge
- ⑮ Oil pressure
- ⑯ AT oil temp.
- ⑰ ABS
- ⑱ Rear defogger
- ⑲ FWD



9. Radio, Speaker and Antenna

A: REMOVAL AND INSTALLATION

1. RADIO BODY

- 1) Remove cup holder.
- 2) Remove AT cover (AT model).
- 3) Remove screws which secure center panel. Remove center panel.
- 4) Remove fitting screws, and slightly pull radio out of instrument panel.
- 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 (WAGON)

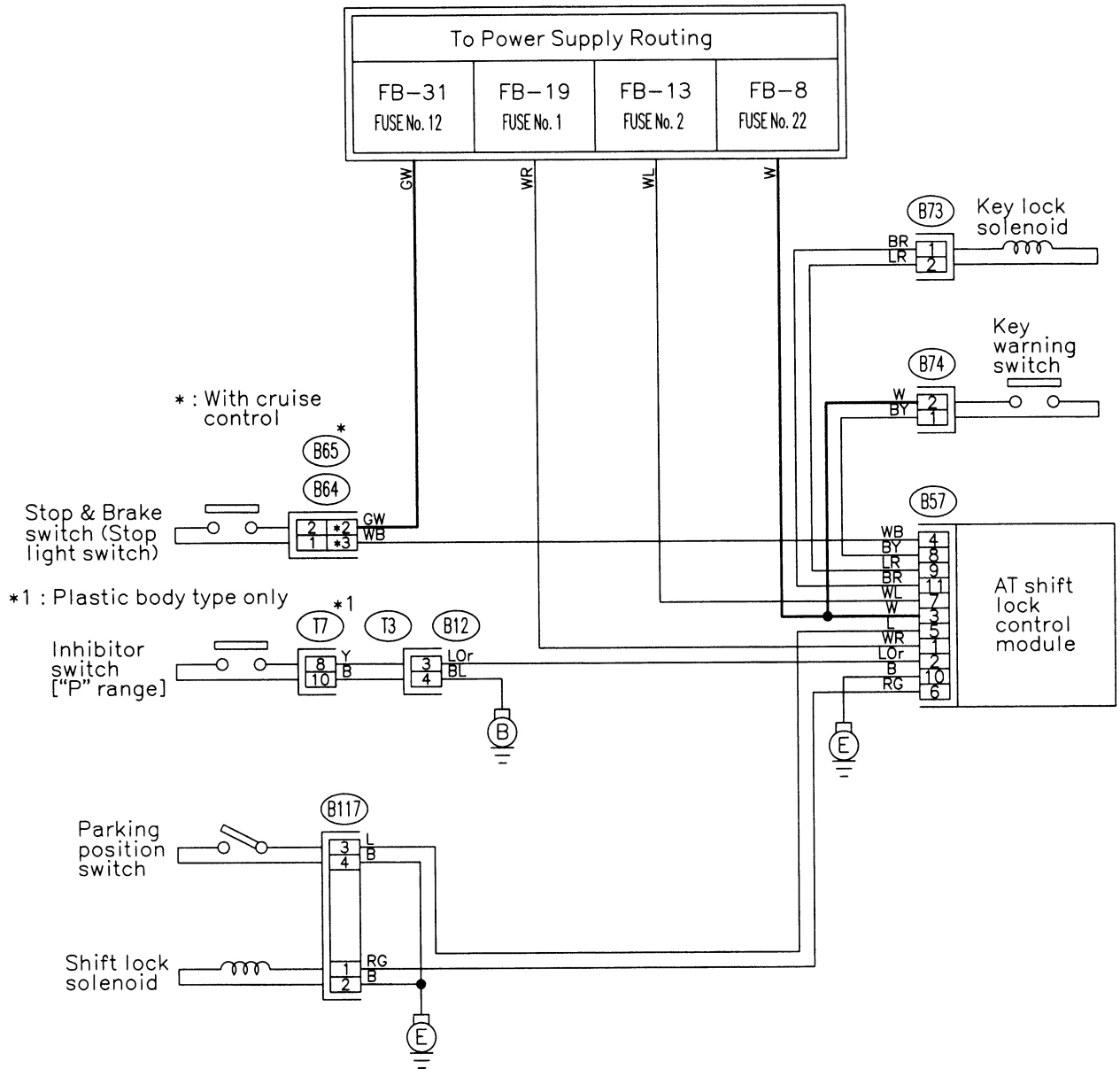
- 1) Remove rear door trim and disconnect connector. <Ref. to 5-2 [W2A2].>
- 2) Remove screws which secure rear speaker.
- 3) Remove speaker and disconnect connector.
- 4) Installation is in the reverse order of removal.

4. 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.

1. AT Shift Lock System

A: WIRING DIAGRAM



(B74) (Black)



(B73) (Black)



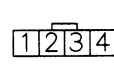
(B64) (Black)



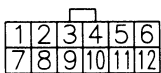
(B65) (Black)



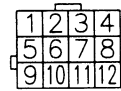
(B117)



(T7) (B57) (Black)

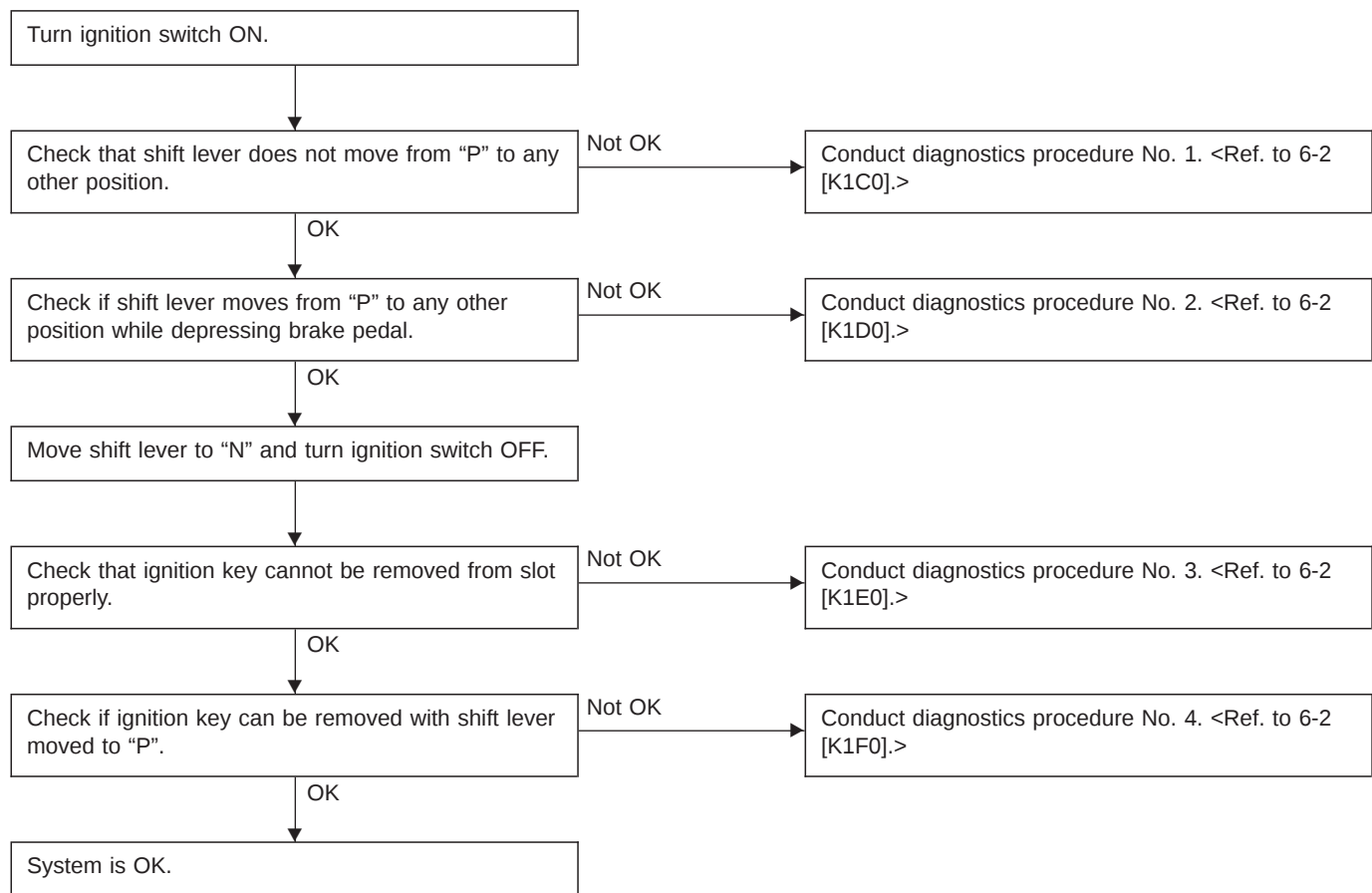


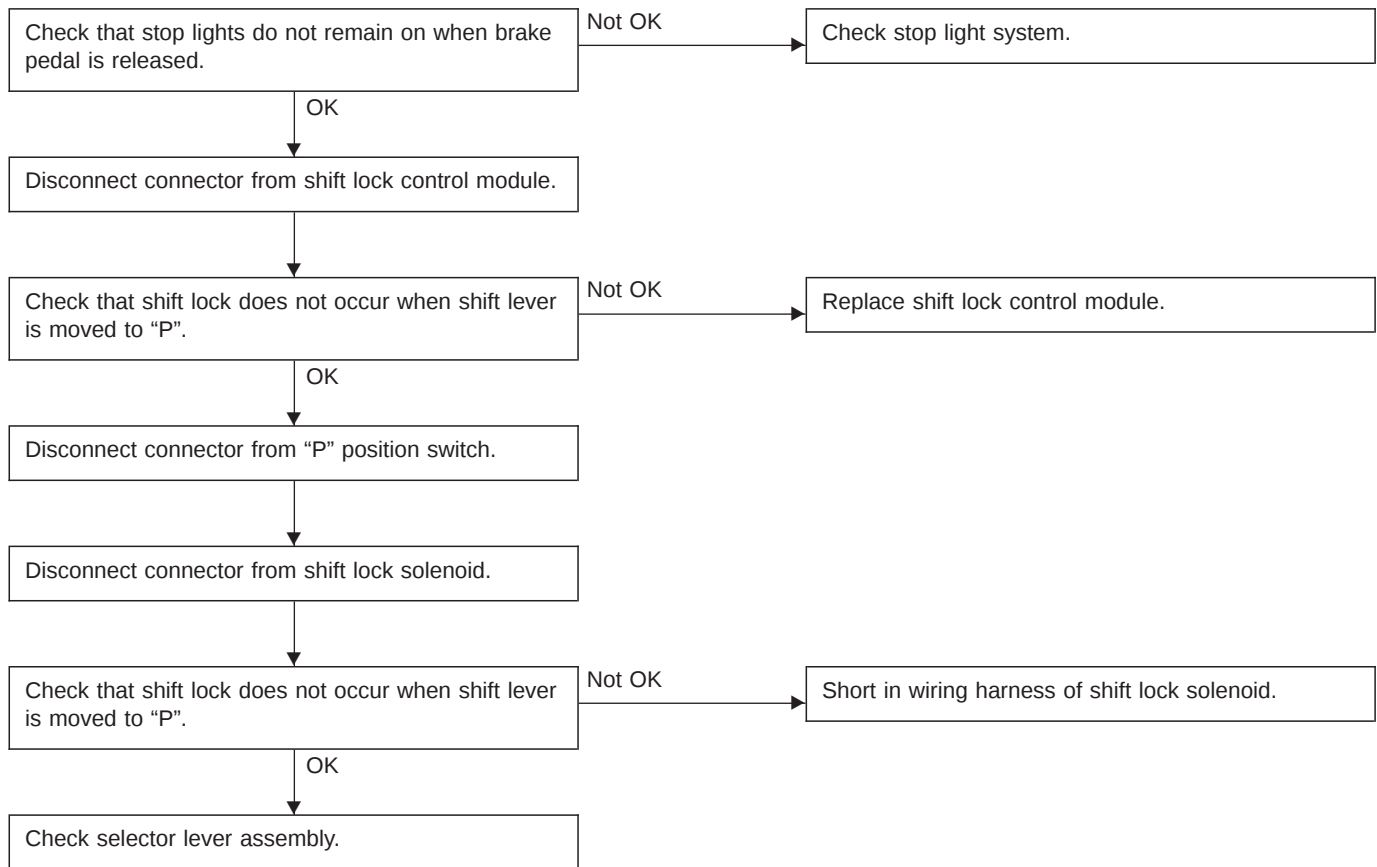
(B12) (Gray)



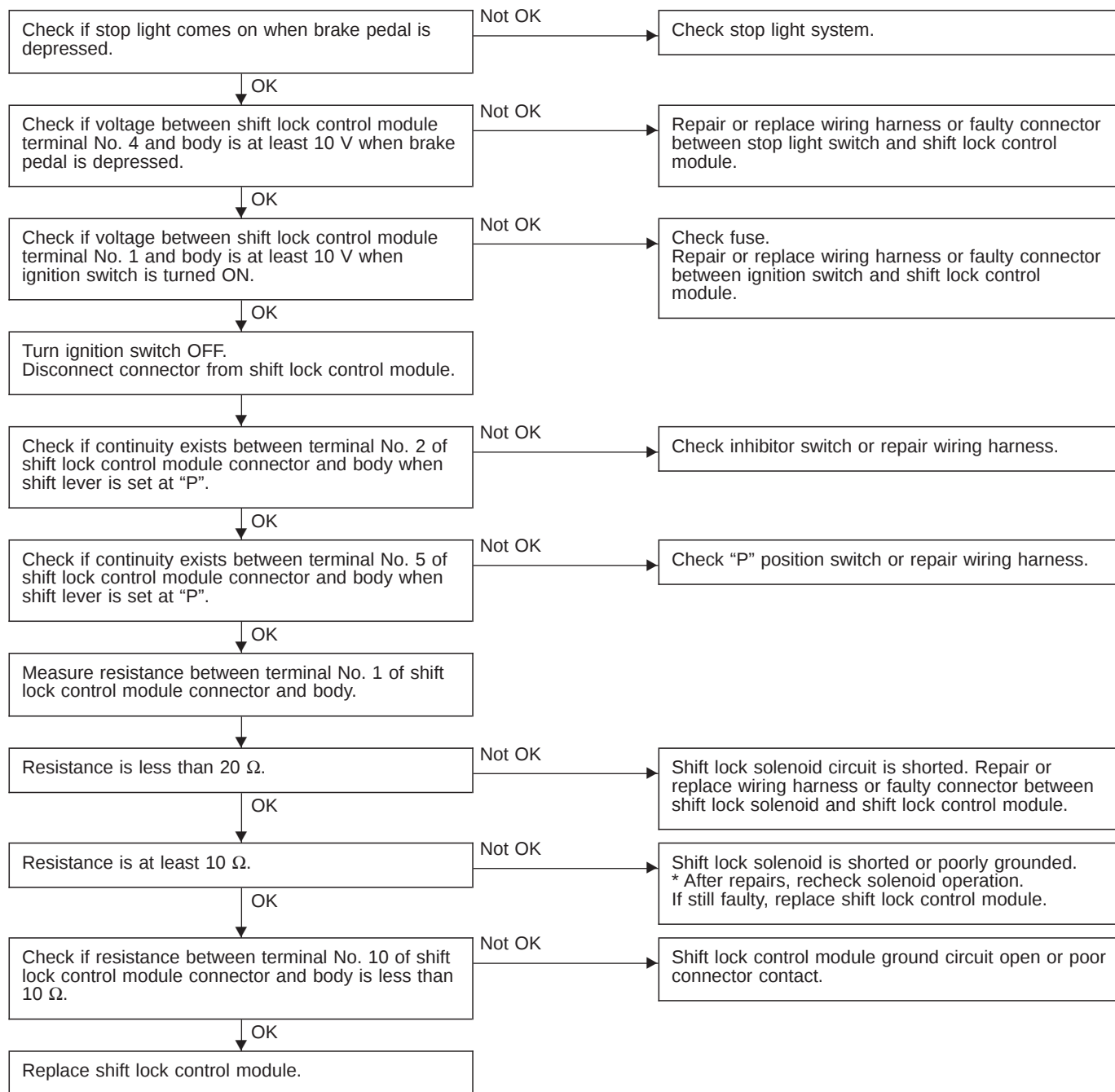
GU42-03

B: BASIC DIAGNOSTICS CHART

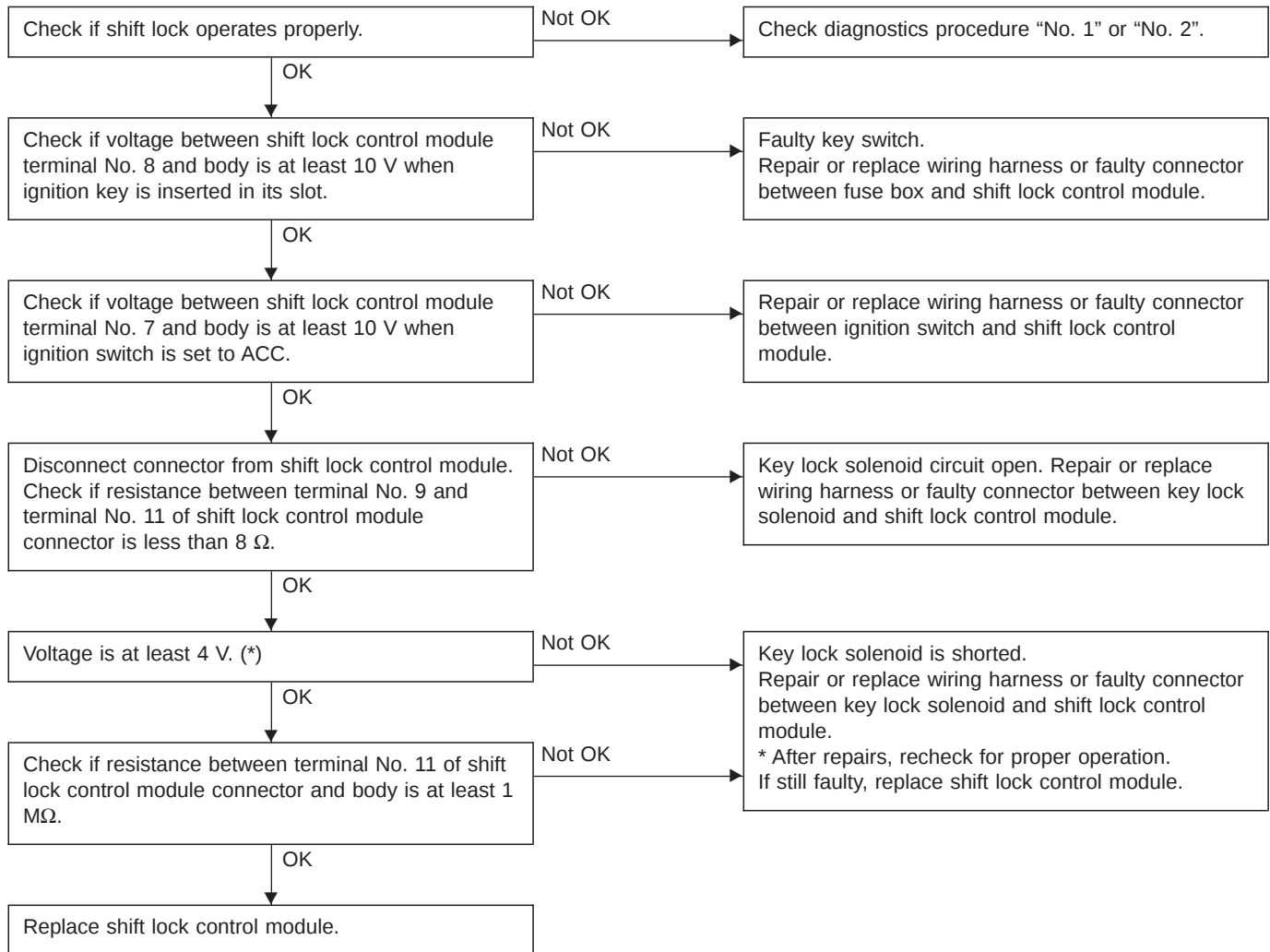


C: DIAGNOSTICS PROCEDURE No. 1

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

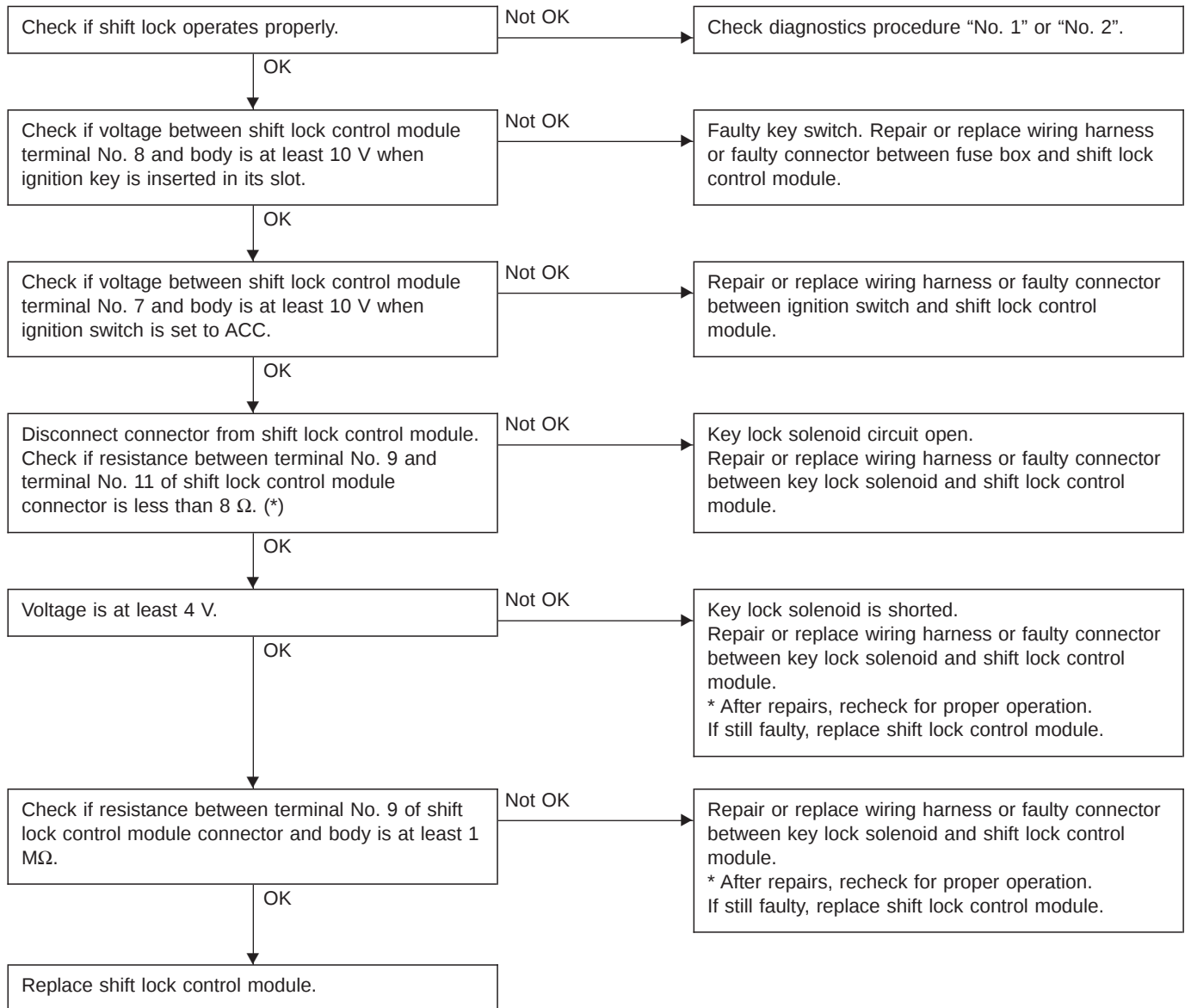


E: DIAGNOSTICS PROCEDURE No. 3 (KEY INTERLOCK DOES NOT OPERATE.)



***: 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.**

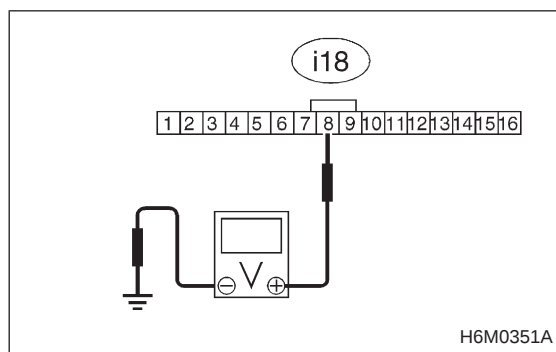
2. Combination Meter

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.

CHECK : **Connector & terminal**
(i18) No. 8 (+) — Chassis ground (-):
Is the voltage more than 10 V?

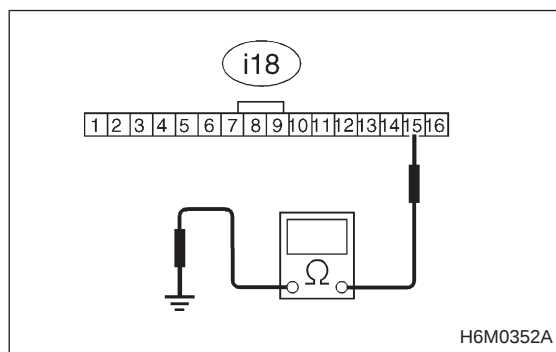
YES : Go to step 2A2.

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 (i18) and combination meter connector. <Ref. to FOREWORD [T3C1].>



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.

CHECK : **Connector & terminal**
(i18) No. 15 (+) — Chassis ground (-):
Is the resistance less than 10 Ω?

YES : Go to step 2A3.

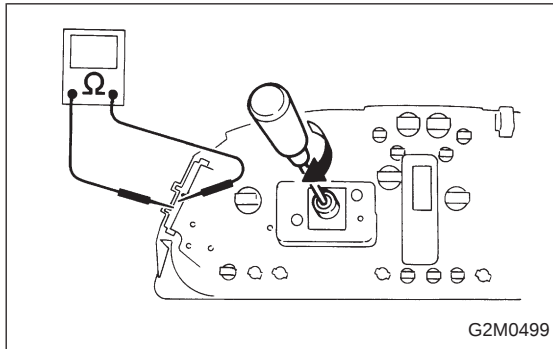
NO : Repair harness and connector.

2A3

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, mechanical trouble may be present in combination meter, speedometer cable and speedometer drive/driven gears in transmission.



- 1) Remove combination meter.
- 2) Measure resistance between terminals of combination meter by rotating rotor of speedometer cable hole with screwdriver.

CHECK

: **Terminals****No. 8 — No. 15:**

**Is the resistance between 10 Ω and 1 M Ω
(Four times per rotation)?**

YES

: Repair or replace combination meter.

NO

: Replace speedometer.

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 of 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

1. Important Safety Notice

- Providing appropriate service and repair is a matter of great importance in the serviceman's safety maintenance and safe operation, function and performance which the SUBARU vehicle possesses.
- In case the replacement of parts or replenishment of consumables is required, genuine SUBARU parts whose parts numbers are designated or their equivalents must be utilized.
- It must be made well known that the safety of the serviceman and the safe operation of the vehicle would be jeopardized if he used any service parts, consumables, special tools and work procedure manuals which are not approved or designated by SUBARU.

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2. How to Use this Manual

● This Service Manual is divided into four volumes by section so that it can be used with ease at work. Refer to the Table of Contents, select and use the necessary section.

- GENERAL INFORMATION SECTION
- REPAIR SECTION
- DIAGNOSTICS SECTION
- WIRING DIAGRAM SECTION

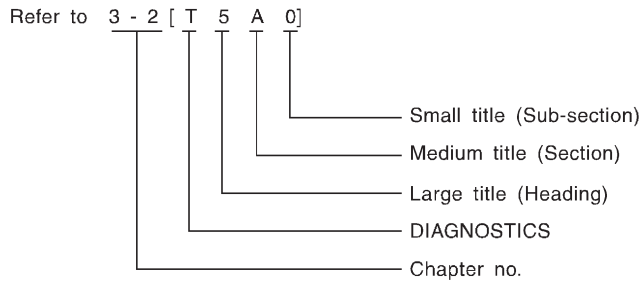
● The description of each area is provided with four types of titles different in size as shown below. The Title No. or Symbol prefixes each title in order that the construction of the article and the flow of explanation can be easily understood.

[Example of each title]

● Area title:	T. DIAGNOSTICS
● Large title (Heading):	1. Diagnostics Chart with Select Monitor (to denote the main item of explanation.)
● Medium title (Section):	A: BASIC DIAGNOSTICS CHART (to denote the type of work in principle.)
● Small title (Sub-section):	1. CHECK INPUT SIGNAL FOR ECM (to denote a derivative item of explanation.)

- The Title Index No. is indicated on the top left (or right) side of the page as the book is opened. This is useful for retrieving the necessary portion.

(Example of usage)



Example of title placement

Title index No.

AUTOMATIC TRANSMISSION AND DIFFERENTIAL [T5A1] 3-2

5. Diagnostic Chart with Trouble Code

5. Diagnostic Chart with Trouble Code

A: TROUBLE CODE 11
— DUTY SOLENOID A —

DIAGNOSIS:
Output signal circuit of duty solenoid A or resistor is open or shorted

TROUBLE SYMPTOM:
Excessive shift shock

1 Measure signal voltage output emitted from TCM. Not OK → Repair TCM terminal poor contact. (Replace TCM.)

OK →

2 Check harness and connectors between TCM and duty solenoid A and TCM and resistor. Not OK → Repair or replace harness/connector.

OK →

Repair TCM terminal poor contact. (Replace TCM.)

1. MEASURE SIGNAL VOLTAGE OUTPUT EMITTED FROM TCM.

1) Warm-up the engine and transmission.
2) Ignition switch ON (Engine OFF)
3) Move shift lever to "N"
4) While opening and closing throttle valve, measure voltage between TCM connector and body.

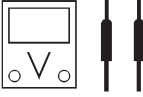
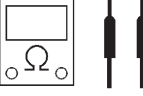
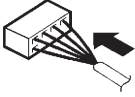
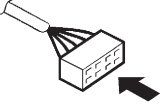
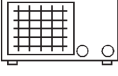
Connector & terminal / Specified resistance:
(B52) No. 11—No. 13 /
1.5—4.0 V (Throttle is fully closed.)
0.5 V, max. (Throttle is fully open.)

B52

G3M0106

Small title

- In this manual, the following symbols are used.

Character	Description
 B0M0002	Circuit tester ● Voltage measurement
 B0M0003	Circuit tester ● Resistance measurement
 B0M0004	The arrow indicates that insertion of the probe or numbering of the connector pins is made from the side.
 B0M0005	The arrow indicates that insertion of the probe or numbering of the connector pins is made from the side.
 B0M0006	Oscilloscope
 B0M0007	Oscilloscope positive probe
 B0M0008	Oscilloscope earth head

- **WARNING, CAUTION, NOTE**

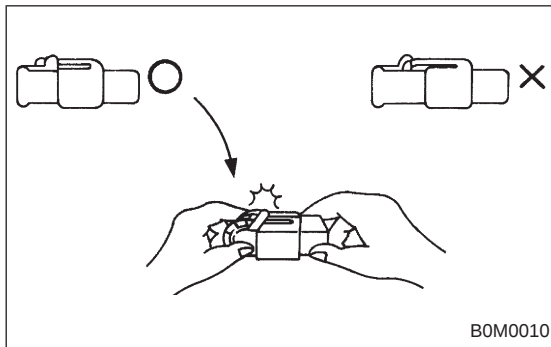
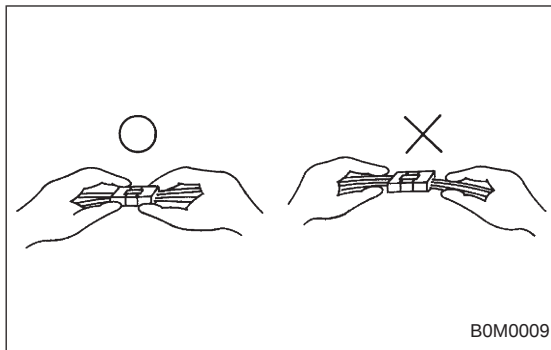
- **WARNING:** Indicates the item which must be observed precisely during performance of maintenance services in order to avoid injury to the mechanics and other persons.
- **CAUTION:** Indicates that item which must be followed precisely during performance of maintenance services so as to avoid damage and breakage to the vehicle and its parts and components.
- **NOTE:** Indicates the hints, knacks, etc. which make the maintenance job easier.

3. Basic Checks

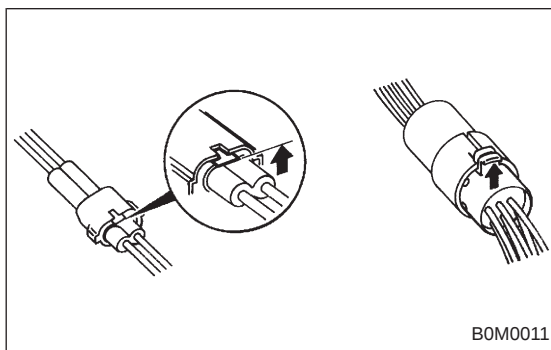
A: DISCONNECTING CONNECTORS

- Always hold the connector itself.

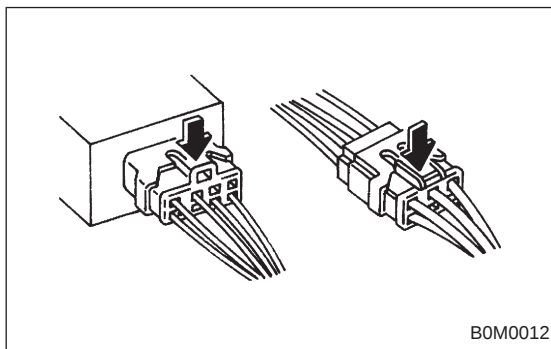
CAUTION:
Don't pull the harness.



- Inspect a connector by pushing it all the way in. If the connector is equipped with a locking device, push it in until a clicking sound is heard.



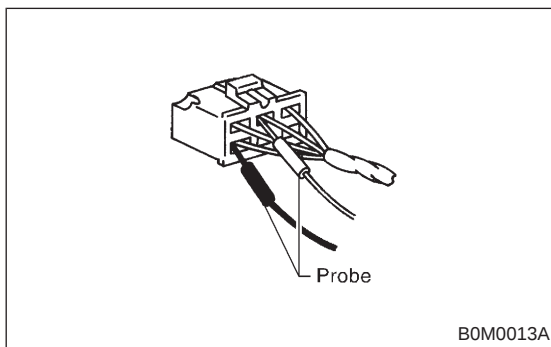
- To disconnect a locking connector, first release the lock, then pull the connector off.
<Unlock by pulling the locking tab.>

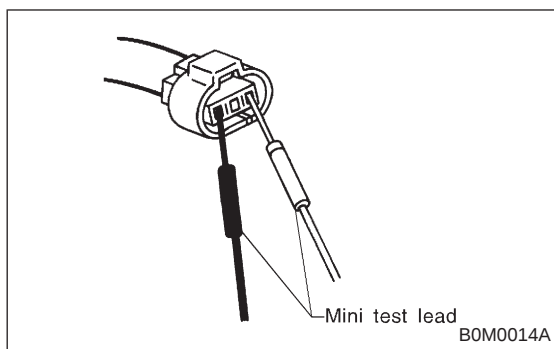


<Unlock by pushing the locking tab.>

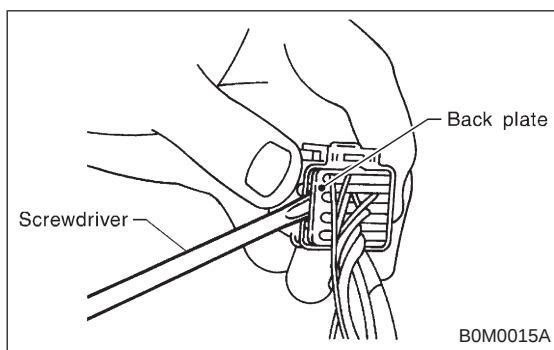
B: INSERTING A PROBE

- Generally, probes are inserted into connectors from the rear side (wire side).
- When removing the shock protector take care not to deform it; this also applies to waterproof connectors, which cannot be tested from the wire side.

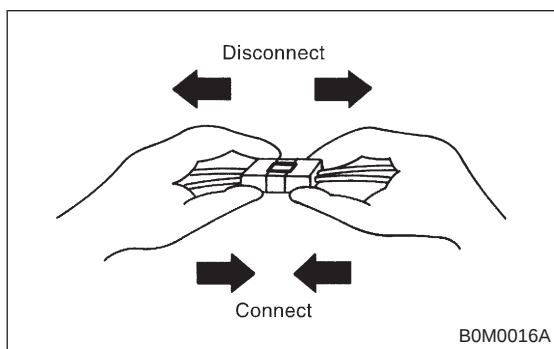




- Connectors equipped with shock protectors must be checked with a mini probe (thin), or it will be necessary to remove the shock protector.



- When the connector has a back plate, remove the plate after removing the projection of the plate first. (Be careful not to use excessive force, since the terminals might brake off.)



C: CHECKING FOR POOR CONTACT ON PLUG-IN CONNECTORS

1. POOR CONTACT

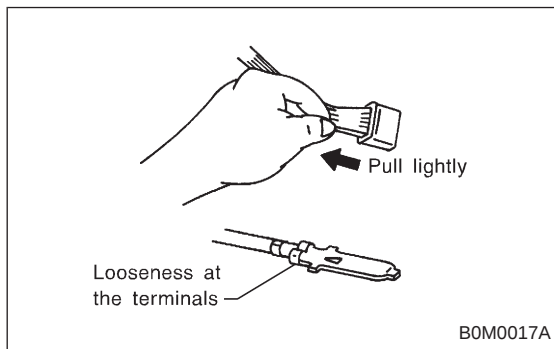
Poor contact is frequently caused by corroded terminals, dirt, foreign substances, weak contact points between male and female connectors, etc. Quite often a plug with poor contact will work perfectly again after it has been pulled off and reconnected. If harness and connector checks do not reveal any defect, it can be assumed that an intermittent contact in a connector is the source of trouble.

2. VISUAL INSPECTION

- 1) Disconnect the two connector halves.
- 2) Check the connector pins for signs of corrosion or foreign material.
- 3) Check the connector for loose and damaged terminals, and make sure they are set correctly in the connector.

NOTE:

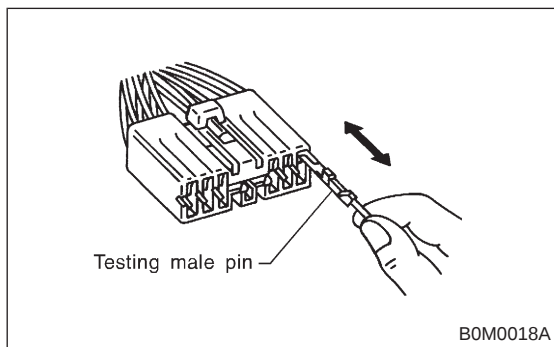
When the harness is pulled lightly, the terminals should not come out.

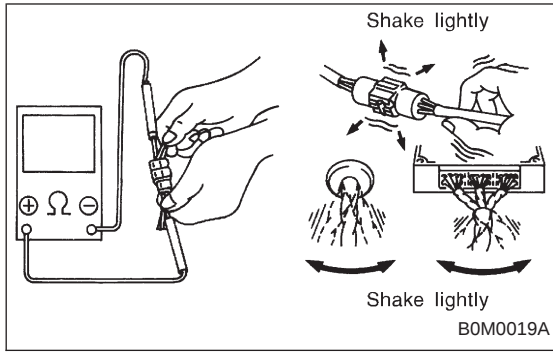


- 4) Insert the male pin of the connector into the female pin, then pull it out.

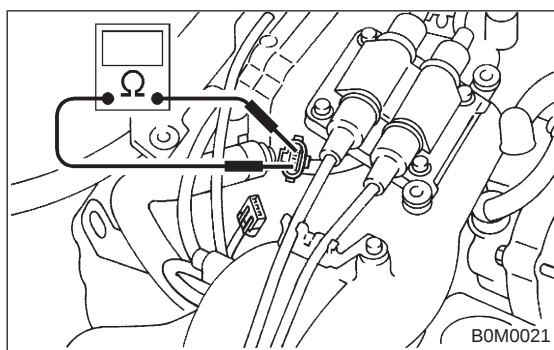
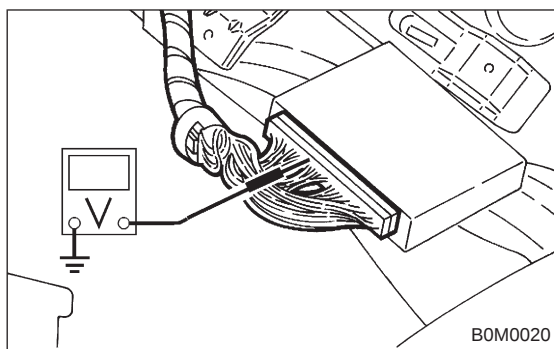
NOTE:

If one of the pins allows to pull out easily, it is a likely source of a malfunction.





5) Shake lightly the connector and the harness, and check for sudden changes in voltage or resistance.



4. Diagnosis and Checking Procedure Using Instruments

A: USING A CIRCUIT TESTER

1. VOLTAGE CHECK (range set to DC V)

Connect the positive probe to the terminal to be tested, and the negative probe to body ground. (or the ground terminal of the ECM)

2. CHECKING THE CONNECTION (range set to Ω)

Measure the resistance and check for open or shorted wire in the harness or the connector.

NOTE:

This check must be carried out with both connectors disconnected.

(This avoids by-passing the connection through other circuits.)

1) Check for open circuit. (range: $\Omega \times 1K$)

Measure the resistance between the respective pins in both connectors.

Specified resistance:

More than 1 M Ω (No continuity) Open circuit

Less than 10 Ω (Continuity) O.K.

2) Check for correct insulation value. (range: $\Omega \times 1K$)

Measure the resistance between the pins in both connectors, as well as between the suspected pin and the body. (body short)

Specified resistance:

More than 1 M Ω (No continuity) O.K.

Less than 10 Ω (Continuity) Short circuit

3) Resistance measurement (range set to Ω)

Measuring the internal resistance of sensors, solenoid valves etc. to check the operating condition of components.

NOTE:

- Select the appropriate range for measuring the internal resistance, or the measurement will result in an incorrect reading.
- Before changing the measurement range the gauge must be reset to zero.

B: USING A SUBARU SELECT MONITOR

With this testing procedure the defective component can be determined by directly monitoring input/output signals of the ECM or the trouble codes.

1. FEATURES

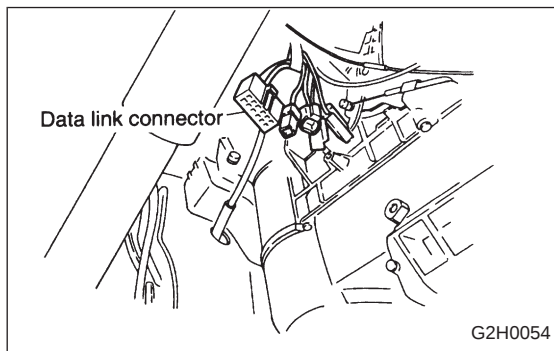
- A variety of data can be checked without movements from the drivers seat, passenger's seat or from outside the vehicle.
- This unit allows the identification of the type of malfunction, for example whether the cause is an open or shorted wire in the input/output signal line, or whether the breakdown of a component is caused by a lack of maintenance.

2. DIAGNOSIS

- Refer to the reference values for input/output and control data to determine whether the malfunction is caused by a worn out component, an open wire, a short etc.
- Perform the diagnostics procedure as described in chapter "Check based on trouble codes" by monitoring the trouble codes.

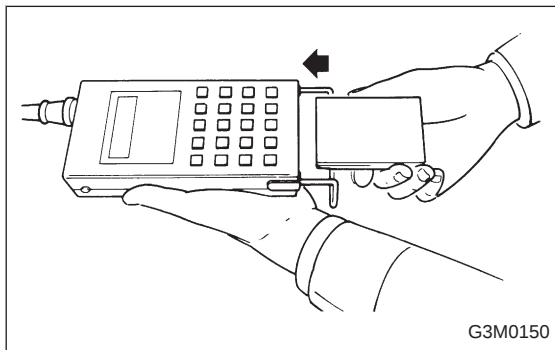
NOTE:

It will be easier to determine a malfunction if the vehicle data for normal conditions are available for comparison.

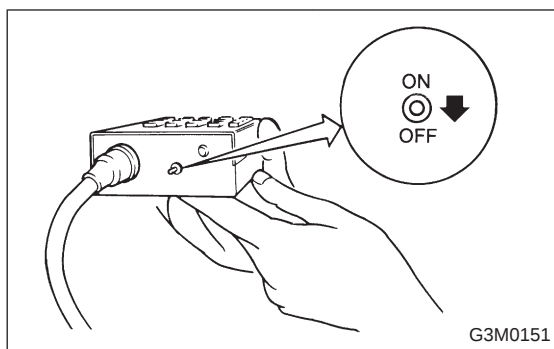


3. CONNECT SELECT MONITOR.

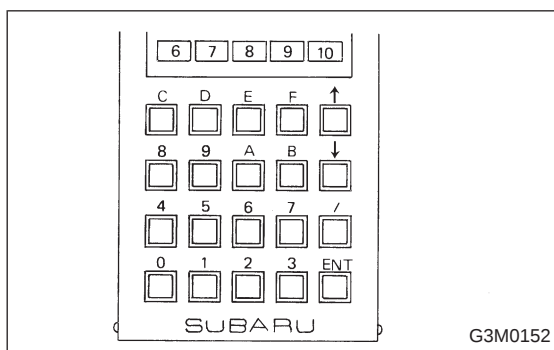
- 1) Connect select monitor to data link connector located under instrument panel. (on driver's side)



- 2) Insert cartridge into select monitor.

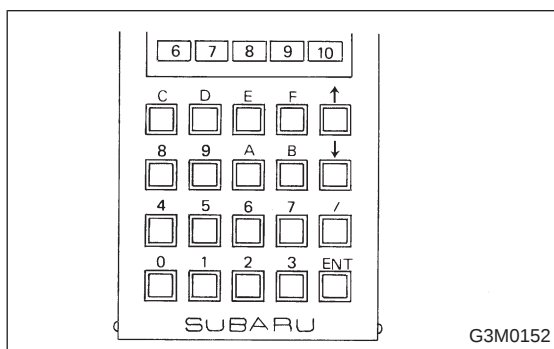


- 3) Turn ignition switch and select monitor switch ON.
- 4) After display is shown, press slash "/" key.
- 5) After AT mode is displayed, press function "[0]".
(Display returns to AT mode when slash "/" is pressed during on-board diagnostic operation.)



4. READ TROUBLE CODE SHOWN ON DISPLAY.

- 1) Connect select monitor.
- 2) Designate mode using function key.
Press [F] [B] [0] [ENT] in that order.
- 3) Ensure trouble code(s) is shown.



5. PREVIOUS TROUBLE CODE READING

- 1) Connect select monitor.
- 2) Designate mode using function key.
Press [F] [B] [1] [ENT] in that order.
- 3) Ensure displayed trouble code(s).

C: USING AN OSCILLOSCOPE

A malfunction can be determined by displaying the waveforms of input/output signals on the oscilloscope.

1. DIAGNOSIS

A simple comparison of the waveforms may lead to an incorrect diagnosis. To exactly determine the sources of the malfunction it will be necessary to determine them under consideration about information other than waveforms.

2. APPLYING INPUT/OUTPUT SIGNALS

Connect the probe directly with the terminal of the signal.

5. Table of Contents

DIAGNOSTICS SECTION	2-5	Engine Cooling System
	2-7	On-Board Diagnostics II System
	3-2	Automatic Transmission and Differential
	4-4	Brakes
	5-5	Supplemental Restraint System

ENGINE ELECTRICAL SYSTEM

6-1

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1. Specifications

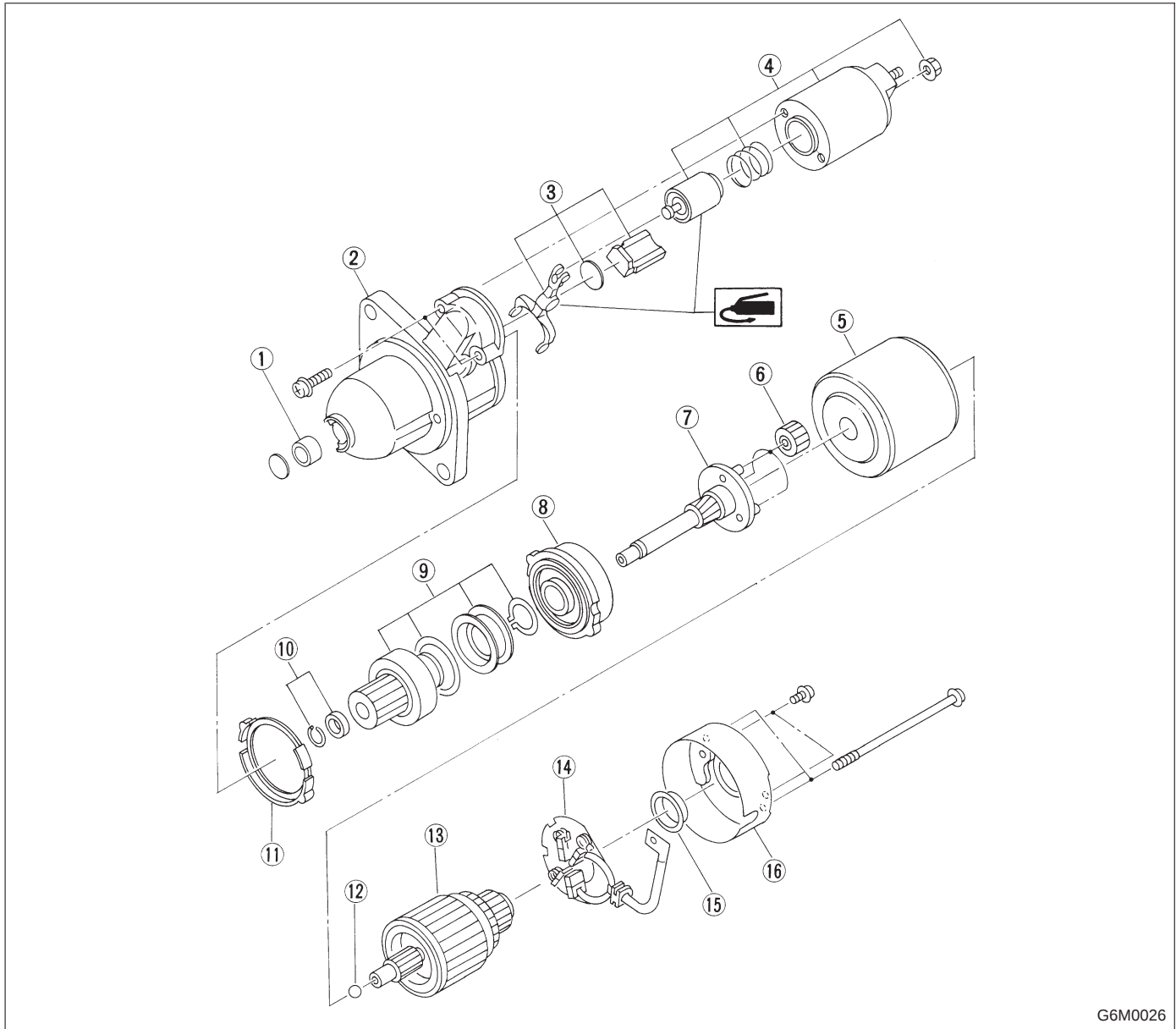
A: 1800 cc MODEL

Item		Designation
Starter	Type	Reduction type
	Model	MT M001T77181
	Manufacturer	MITSUBISHI
	Voltage and output	12 V — 1.0 kW
	Direction of rotation	Counterclockwise (when observed from pinion)
	Number of pinion teeth	8
	No-load characteristics	Voltage 11 V
		Current 90 A or less
		Rotating speed 3,000 rpm or more
	Load characteristics	Voltage 8 V
		Current 280 A or less
		Torque 8.5 N·m (0.87 kg-m, 6.3 ft-lb)
		Rotating speed 980 rpm or more
	Lock characteristics	Voltage 4 V
		Current 780 A or less
		Torque 17.6 N·m (1.80 kg-m, 13.0 ft-lb) or more
Generator	Type	Rotating-field three-phase type, Voltage regulator built-in type
	Model	A2T39091
	Manufacturer	Mitsubishi Electric
	Voltage and output	12 V — 75 A
	Polarity on ground side	Negative
	Rotating direction	Clockwise (when observed from pulley side)
	Armature connection	3-phase Y-type
	Output current	1,500 rpm — 30 A or more 2,500 rpm — 64 A or more 5,000 rpm — 76 A or more
	Regulated voltage	14.5 ^{+0.3} _{-0.4} V [20°C (68°F)]
Ignition coil	Model	CM12-100
	Manufacturer	HITACHI
	Primary coil resistance	0.63 — 0.77 Ω
	Secondary coil resistance	10.4 — 15.6 kΩ
	Insulation resistance between primary terminal and case	More than 10 MΩ
Spark plug	Type and manufacturer	BKR6E-11 NGK RC8YC4 CHAMPION
	Thread size mm	14, P = 1.25
	Spark gap mm (in)	1.0 — 1.1 (0.039 — 0.043)

B: 2200 cc MODEL

Item		Designation	
Starter	Type	Reduction type	
	Model	MT M001T77181	AT M001T75681
	Manufacturer	MITSUBISHI	
	Voltage and output	12 V — 1.0 kW	12 V — 1.4 kW
	Direction of rotation	Counterclockwise (when observed from pinion)	
	Number of pinion teeth	8	9
	No-load characteristics	Voltage	11 V
		Current	90 A or less
		Rotating speed	3,000 rpm or more
	Load characteristics	Voltage	8 V
		Current	280 A or less
		Torque	8.5 N·m (0.87 kg-m, 6.27 ft-lb)
		Rotating speed	980 rpm or more
	Lock characteristics	Voltage	4 V
		Current	780 A or less
		Torque	17.6 N·m (1.80 kg-m, 13.0 ft-lb) or more
Generator	Type	Rotating-field three-phase type, Voltage regulator built-in type	
	Model	A2T39091	
	Manufacturer	MITSUBISHI	
	Voltage and output	12 V — 75 A	
	Polarity on ground side	Negative	
	Rotating direction	Clockwise (when observed from pulley side)	
	Armature connection	3-phase Y-type	
	Output current	1,500 rpm — 30 A or more 2,500 rpm — 64 A or more 5,000 rpm — 76 A or more	
	Regulated voltage	14.5 ^{+0.3} _{-0.4} V [20°C (68°F)]	
Ignition coil	Model	FH0047-01R	
	Manufacturer	DEMCO	
	Primary coil resistance	0.73 Ω±10%	
	Secondary coil resistance	12.8 kΩ±15%	
	Insulation resistance between primary terminal and case	More than 10 MΩ	
Spark plug	Type and manufacturer	RC8YC4, RC10YC4 CHAMPION Alternate (BKR6E-11 NGK K20PR-U11 NIPPONDENSO)	
	Thread size mm	14, P = 1.25	
	Spark gap mm (in)	1.0 — 1.1 (0.039 — 0.043)	

1. Starter



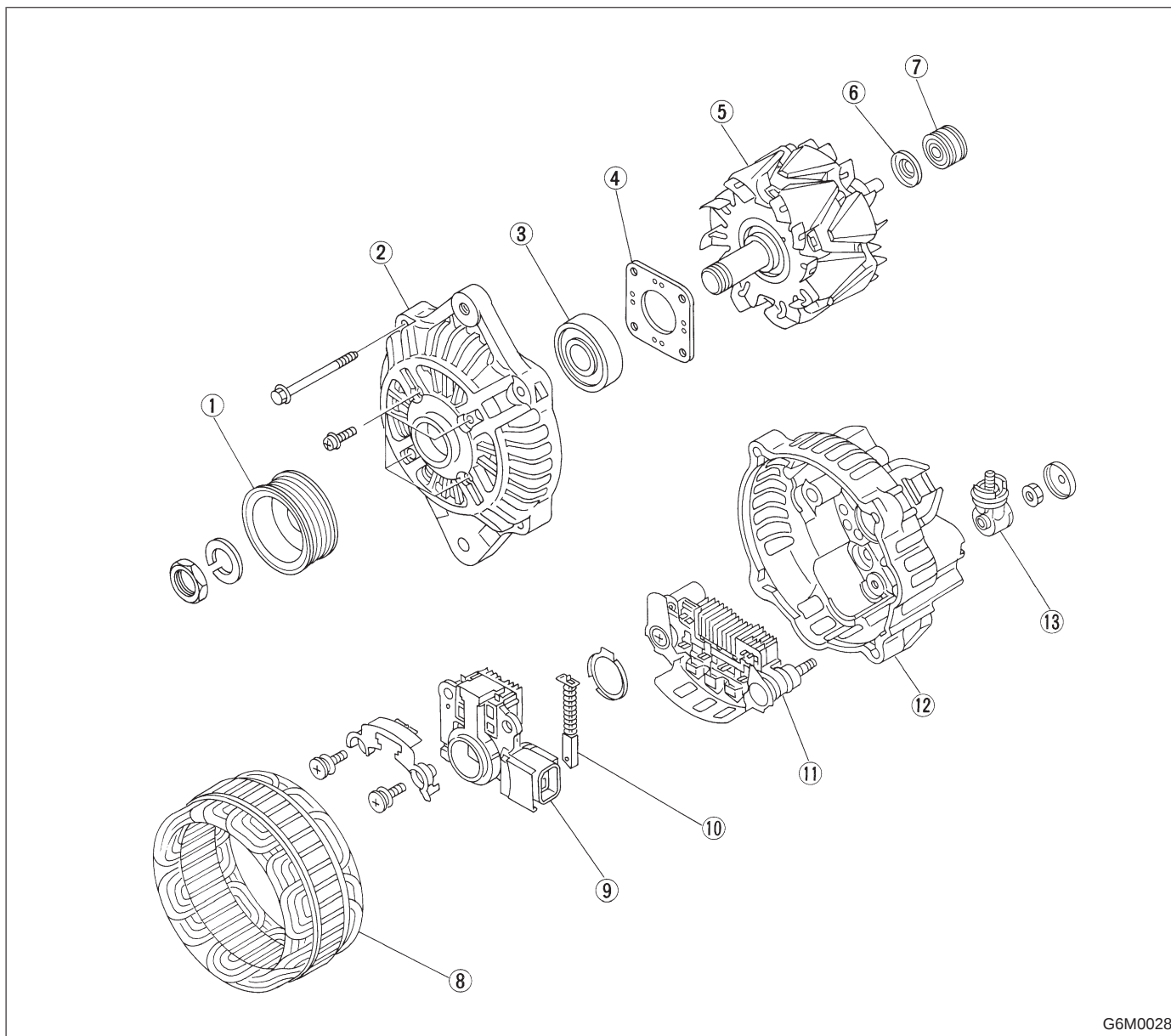
G6M0026

- ① Sleeve bearing
- ② Front bracket
- ③ Lever set
- ④ Magnet switch Assy
- ⑤ Yoke
- ⑥ Gear ASSY

- ⑦ Shaft ASSY
- ⑧ Internal gear ASSY
- ⑨ Over running clutch
- ⑩ Stopper set
- ⑪ Packing

- ⑫ Ball
- ⑬ Armature
- ⑭ Brush holder
- ⑮ Bearing
- ⑯ Rear bracket

2. Generator

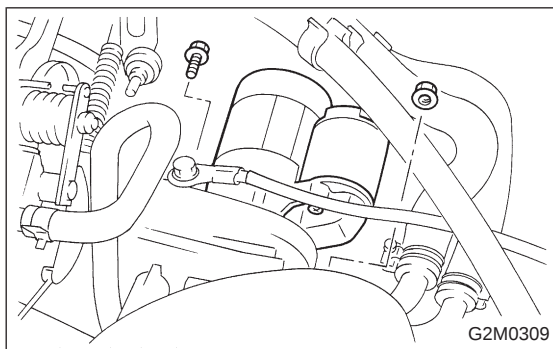
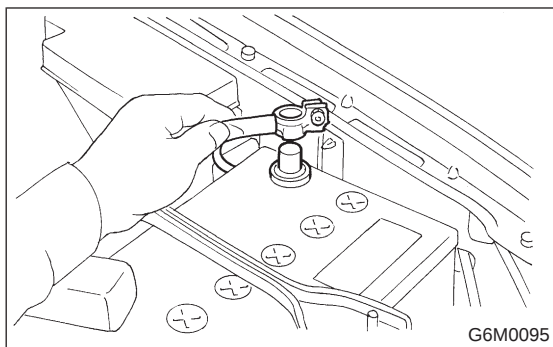


G6M0028

- ① Pulley
- ② Front cover
- ③ Ball bearing
- ④ Bearing retainer
- ⑤ Rotor

- ⑥ Holder
- ⑦ Bearing
- ⑧ Stator coil
- ⑨ Brush holder

- ⑩ Brush
- ⑪ IC regulator
- ⑫ Rear cover
- ⑬ Terminal



1. Starter

A: REMOVAL AND INSTALLATION

- 1) Disconnect battery ground cable.
- 2) Remove air intake chamber. <Ref. to 2-7 [W18A0].>

- 3) Disconnect connector and terminal from starter.
- 4) Remove starter from transmission.
- 5) Installation is in the reverse order of removal.

Tightening torque:

$50 \pm 4 \text{ N}\cdot\text{m}$ ($5.1 \pm 0.4 \text{ kg}\cdot\text{m}$, $37 \pm 2.9 \text{ ft}\cdot\text{lb}$)

B: TEST

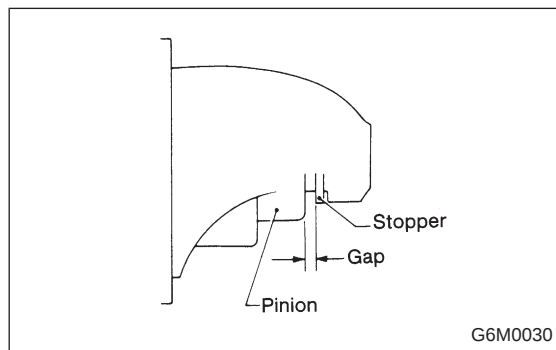
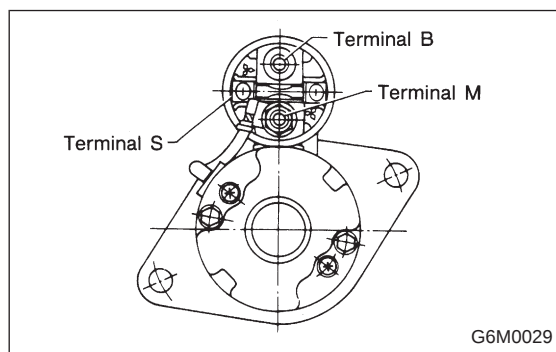
1. SWITCH ASSEMBLY OPERATION

- 1) Connect terminal S of switch assembly to positive terminal of battery with a lead wire, and starter body to ground terminal of battery. Pinion should be forced endwise on shaft.

CAUTION:

With pinion forced endwise on shaft, starter motor can sometimes rotate because current flows, through pull-in coil, to motor. This is not a problem.

- 2) Disconnect connector from terminal M, and connect positive terminal of battery and terminal M using a lead wire and ground terminal to starter body. In this test set up, pinion should return to its original position even when it is pulled out with a screwdriver.



2. PINION GAP

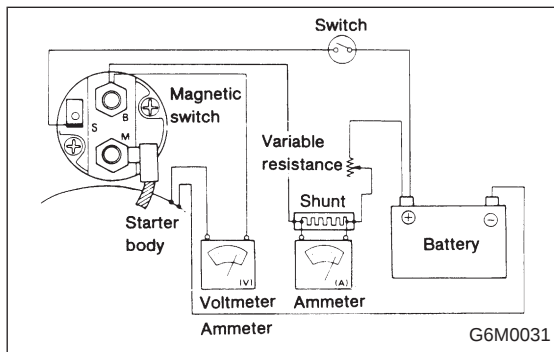
- 1) With pinion forced endwise on shaft, as outlined in step 1) above, measure pinion gap.

Pinion gap:

$0.5 - 2.0 \text{ mm}$ ($0.020 - 0.079 \text{ in}$)

If motor is running with the pinion forced endwise on the shaft, disconnect connector from terminal M of switch assembly and connect terminal M to ground terminal (–) of battery with a lead wire. Next, gently push pinion back with your fingertips and measure pinion gap.

2) If pinion gap is outside specified range, remove or add number of adjustment washers used on the mounting surface of switch assembly until correct pinion gap is obtained.



3. PERFORMANCE TEST

The starter should be submitted to performance tests whenever it has been overhauled, to assure its satisfactory performance when installed on the engine.

Three performance tests, no-load test, load test, and lock test, are presented here; however, if the load test and lock test cannot be performed, carry out at least the no-load test.

For these performance tests, use the circuit shown in figure.

1) No-load test

With switch on, adjust the variable resistance to obtain 11 V, take the ammeter reading and measure the starter speed. Compare these values with the specifications.

No-load test (Standard):

Voltage / Current

11 V / 90 A or less

Rotating speed

3,000 rpm or more

2) Load test

Apply the specified braking torque to starter. The condition is satisfactory if the current draw and starter speed are within specifications.

Load test (Standard):

● MT vehicles

Voltage / Load

8 V / 8.5 N·m (0.87 kg-m, 6.27 ft-lb)

Current / Speed

280 A / 980 rpm or more

- **AT vehicles**

Voltage / Load

7.7 V / 9.81 N·m (1.00 kg-m, 7.24 ft-lb)

Current / Speed

300 A max. / 1,000 rpm or more

3) Lock test

With starter stalled, or not rotating, measure the torque developed and current draw when the voltage is adjusted to the specified voltage.

Lock test (Standard):

- **MT vehicles**

Voltage / Load

4 V / 780 A or less

Torque

17.6 N·m (1.80 kg-m, 13.0 ft-lb) or more

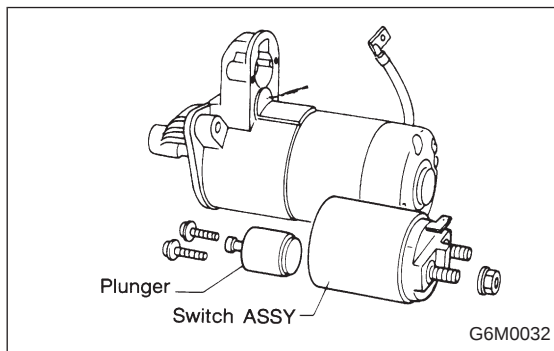
- **AT vehicles**

Voltage / Current

4 V / 980 A or less

Torque

23 N·m (2.3 kg-m, 17 ft-lb) or more



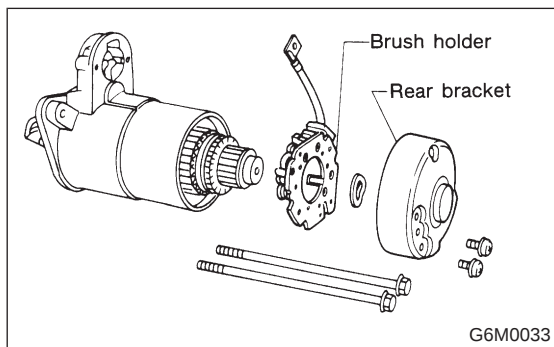
C: DISASSEMBLY

1) Loosen nut which holds terminal M of switch assembly, and disconnect connector.

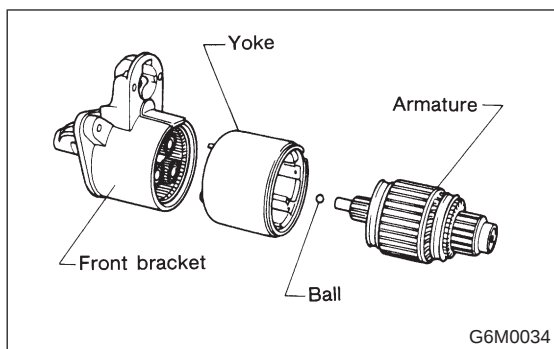
2) Remove bolts which hold switch assembly, and remove switch assembly, plunger and plunger spring from starter as a unit.

CAUTION:

Be careful because pinion gap adjustment washer may sometimes be used on the mounting surface of switch assembly.



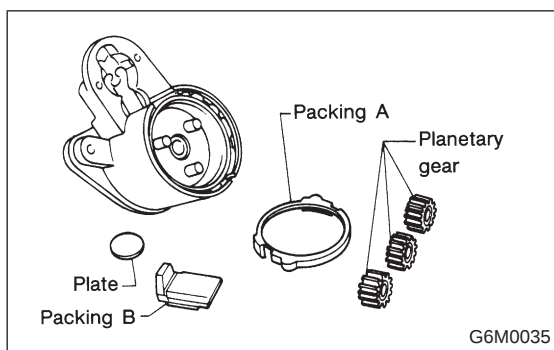
3) Remove both through-bolts and brush holder screws, and detach rear bracket and brush holder.



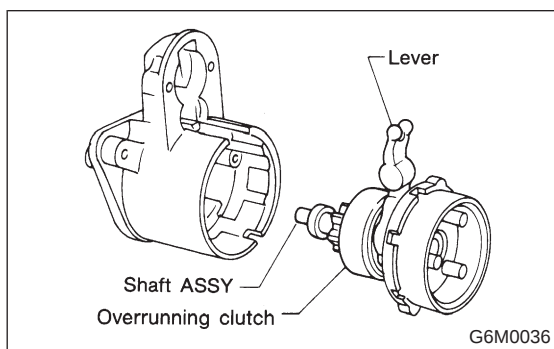
4) Remove armature and yoke. Ball used as a bearing will then be removed from the end of armature.

CAUTION:

Be sure to mark an alignment mark on yoke and front bracket before removing yoke.



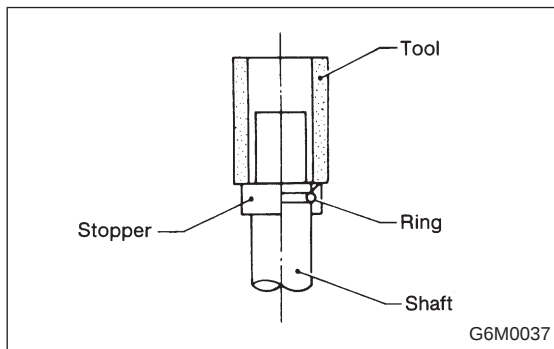
5) Remove packing A, three planetary gears, packing B and plate.



6) Remove shaft assembly and overrunning clutch as a unit.

CAUTION:

Record the direction of lever before removing.

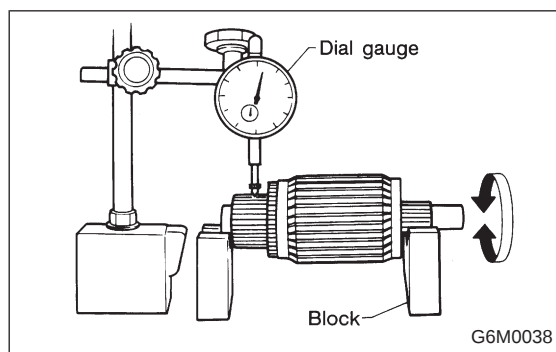


7) Remove overrunning clutch from shaft assembly as follows:

- (1) Remove stopper from ring by lightly tapping a fit tool placed on stopper.
- (2) Remove ring, stopper and clutch from shaft.

D: INSPECTION**1. ARMATURE**

1) Check commutator for any sign of burns or rough surfaces or stepped wear. If wear is of a minor nature, correct it by using sand paper.

**2) Run-out test**

Check the commutator run-out and replace if it exceeds the limit.

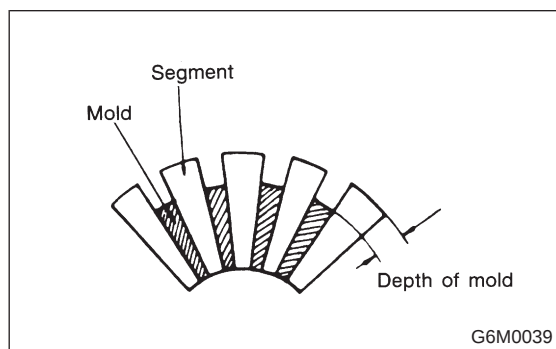
Commutator run-out:

Standard

0.05 mm (0.0020 in)

Service limit

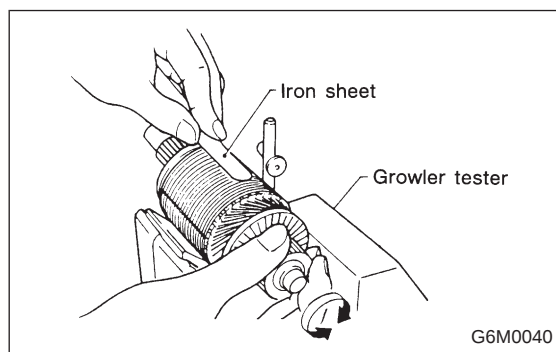
Less than 0.10 mm (0.0039 in)

**3) Depth of segment mold**

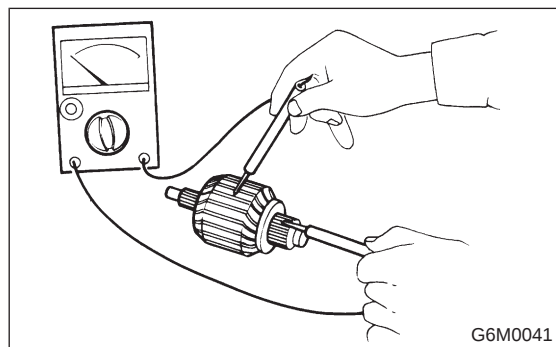
Check the depth of segment mold.

Depth of segment mold:

0.5 — 0.8 mm (0.020 — 0.031 in)

**4) Armature short-circuit test**

Check armature for short-circuit by placing it on growler tester. Hold a hacksaw blade against armature core while slowly rotating armature. A short-circuited armature will cause the blade to vibrate and to be attracted to core. If the hacksaw blade is attracted or vibrates, the armature, which is short-circuited, must be replaced or repaired.

**5) Armature ground test**

Using circuit tester, touch one probe to the commutator segment and the other to shaft. There should be no continuity. If there is a continuity, armature is grounded. Replace armature if it is grounded.

2. YOKE

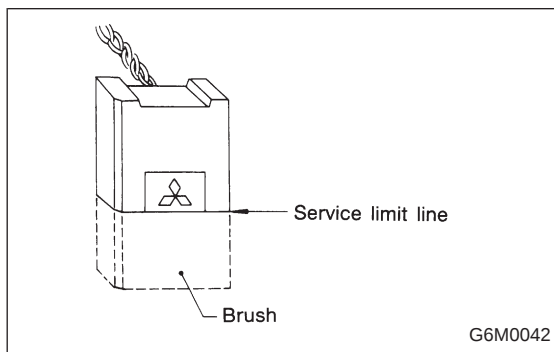
Make sure pole is set in position.

3. OVERRUNNING CLUTCH

Inspect teeth of pinion for wear and damage. Replace if it damaged. Rotate pinion in direction of rotation (clockwise). It should rotate smoothly. But in opposite direction, it should be locked.

CAUTION:

Do not clean overrunning clutch with oil to prevent grease from flowing out.



4. BRUSH AND BRUSH HOLDER

1) Brush length

Measure the brush length and replace if it exceeds the service limit.

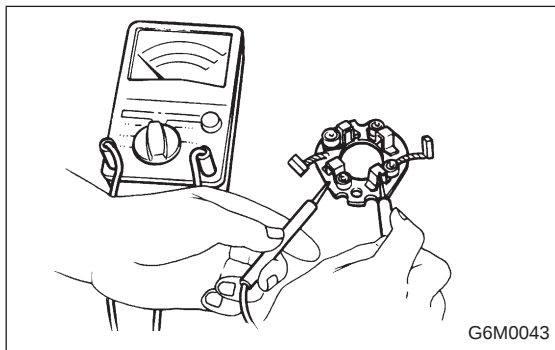
Replace if abnormal wear or cracks are noticed.

Brush length:

Standard	17.0 mm (0.669 in)
Service limit	11.5 mm (0.453 in)

2) Brush movement

Be sure brush moves smoothly inside brush holder.



3) Insulation resistance of brush holder

Be sure there is no continuity between brush holder and its plate.

4) Brush spring force

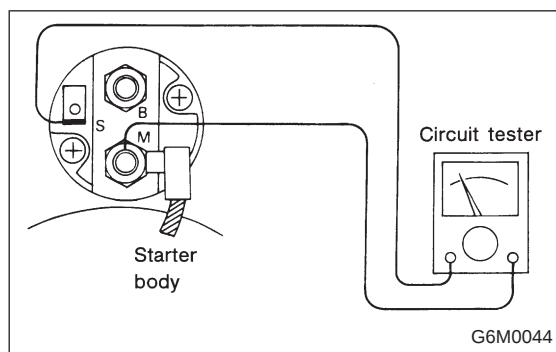
Measure brush spring force with a spring scale. If it is less than the service limit, replace brush spring.

Brush spring force:**Standard**

18.6 N (1.9 kg, 4.2 lb) (when new)

Service limit

6.9 N (0.7 kg, 1.5 lb)

**5. SWITCH ASSEMBLY**

Be sure there is continuity between terminals S and M, and between terminal S and ground. Use a circuit tester (set in "ohm").

Also check to be sure there is no continuity between terminal M and B.

Terminal / Specified resistance:

S — M / 10 Ω or less

S — Ground / 10 Ω or less

M — B / 1 M Ω or more

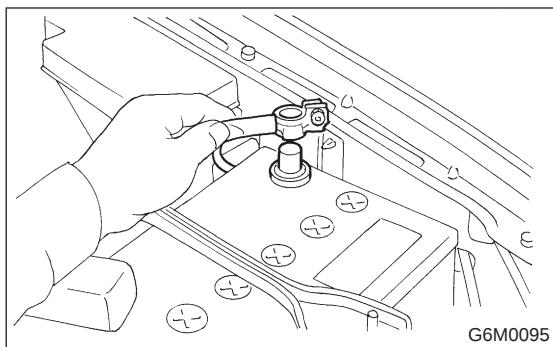
E: ASSEMBLY

Assembly is in the reverse order of disassembly procedures. Observe the following:

- 1) Carefully assemble all parts in the order of assembly and occasionally inspect nothing has been overlooked.
- 2) Apply grease to the following parts during assembly.

- Front bracket sleeve bearing
- Armature shaft gear
- Outer periphery of plunger
- Mating surface of plunger and lever
- Gear shaft splines
- Mating surface of lever and clutch
- Ball at the armature shaft end
- Internal and planetary gears

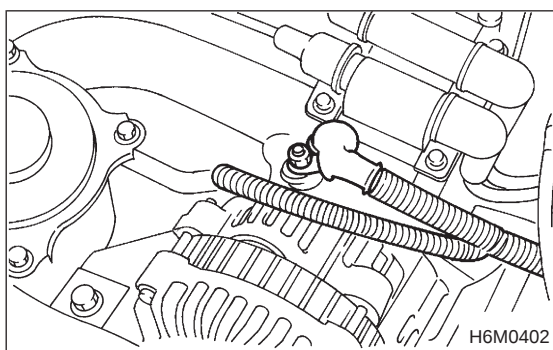
- 3) After assembling parts correctly, check to be sure starter operates properly.



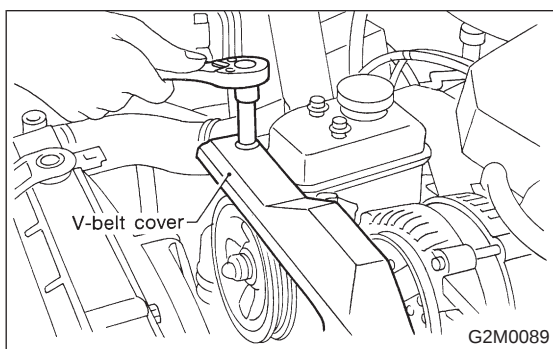
2. Generator

A: REMOVAL AND INSTALLATION

1) Disconnect battery ground cable.

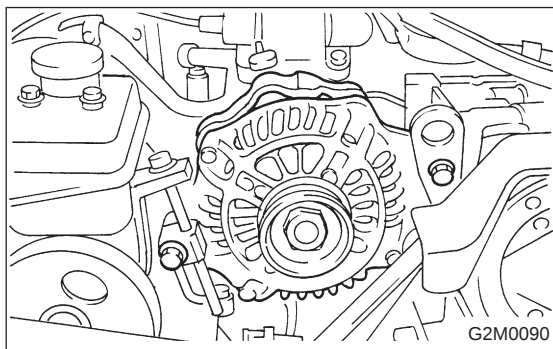


2) Disconnect connector and terminal from generator.

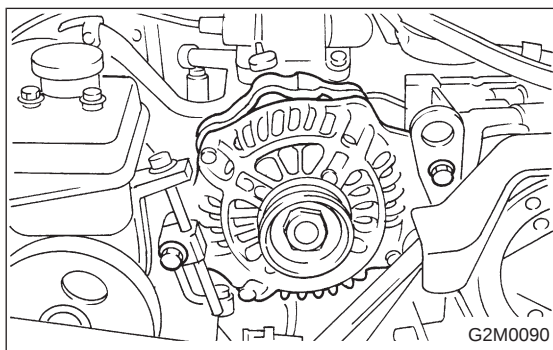


3) Remove V-belt cover.

4) Remove front side V-belt.



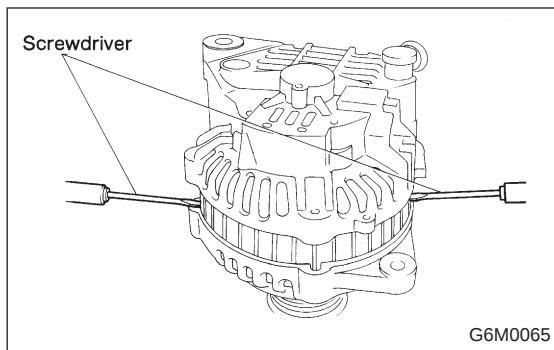
5) Remove bolts which install generator onto bracket.



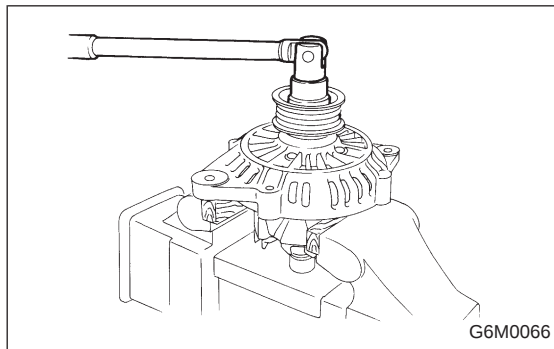
6) Installation is in the reverse order of removal.

CAUTION:

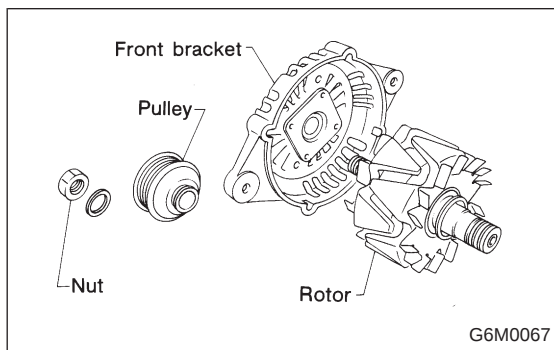
Check and adjust V-belt tension. <Ref. to 1-5 [W1A0].>

**B: DISASSEMBLY**

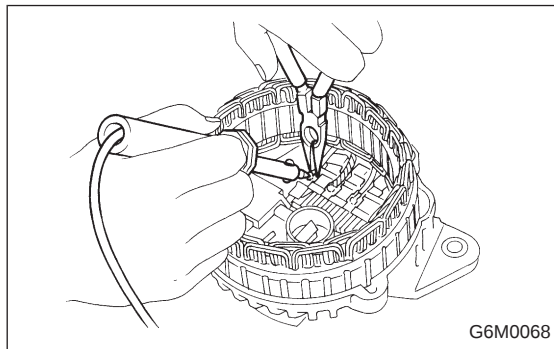
1) Remove the four through bolts. Then insert the tip of a flat-head screwdriver into the gap between the stator core and front bracket. Pry them apart to disassemble.



2) Hold rotor with a vise and remove pulley nut.

**CAUTION:**

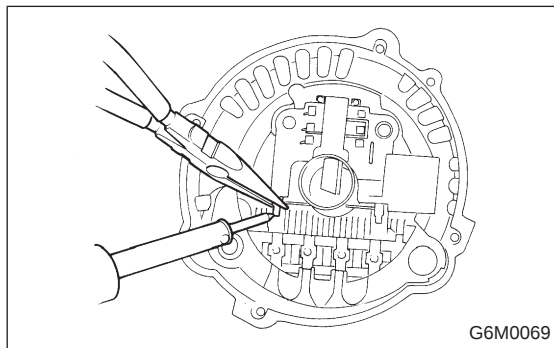
When holding rotor with vise, insert aluminum plates or wood pieces on the contact surfaces of the vise to prevent rotor from damage.



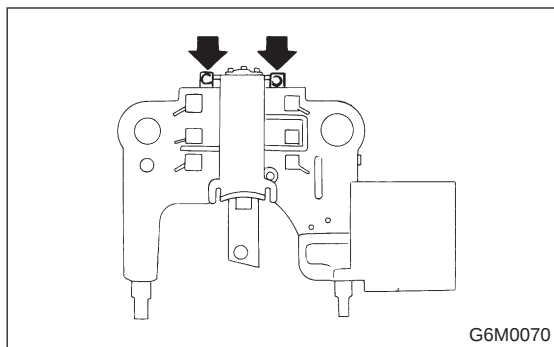
3) Unsolder connection between rectifier and stator coil to remove stator coil.

CAUTION:

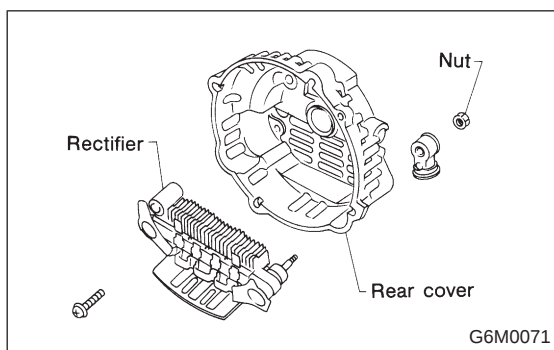
Finish the work rapidly (less than three seconds) because the rectifier cannot withstand heat very well.



4) Remove screws which secure IC regulator to rear cover, and unsolder connection between IC regulator and rectifier to remove IC regulator.



5) Remove the brushes by unsoldering at the pigtails.



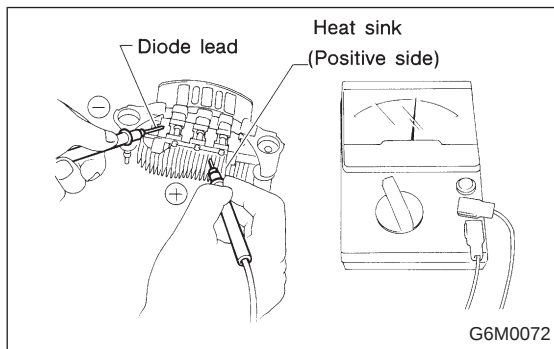
6) Remove the nut and insulating bushing at terminal B. Remove rectifier.

C: INSPECTION AND REPAIR

1. DIODE

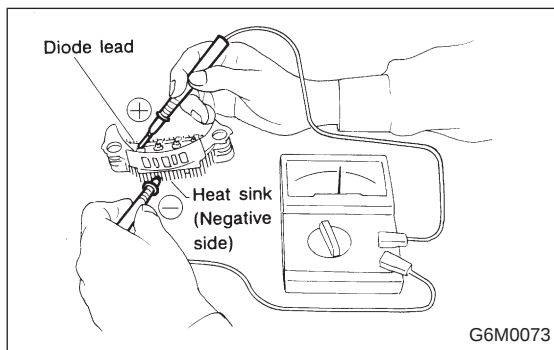
CAUTION:

Never use a megger tester (measuring use for high voltage) or any other similar measure for this test; otherwise, the diodes may be damaged.



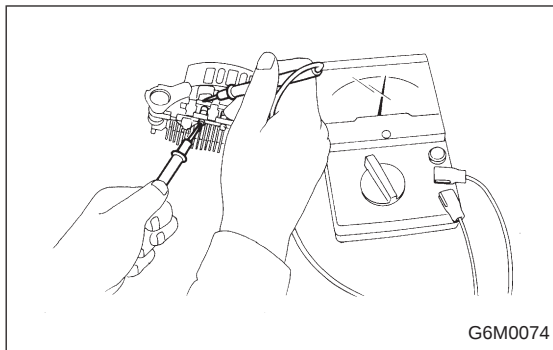
1) Checking positive diode

Check for continuity between the diode lead and the positive side heat sink. The positive diode is in good condition if continuity exists only in the direction from the diode lead to the heat sink.



2) Checking negative diode

Check for continuity between the negative side heat sink and diode lead. The negative diode is in good condition if continuity exists only in the direction from the heat sink to the diode lead.



3) Checking trio diode

Check the trio diode using a circuit tester. It is in good condition if continuity exists only in one direction.

2. ROTOR

1) Slip ring surface

Inspect slip rings for contamination or any roughness of the sliding surface. Repair slip ring surface using a lathe or sand paper.

2) Slip ring outer diameter

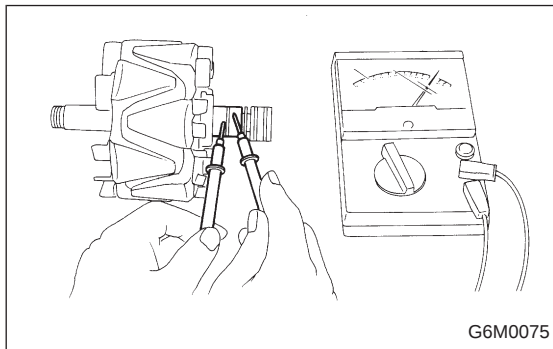
Measure slip ring outer diameter. If slip ring is worn replace rotor assembly.

Slip ring outer diameter:**Standard**

22.7 mm (0.894 in)

Limit

22.1 mm (0.870 in)

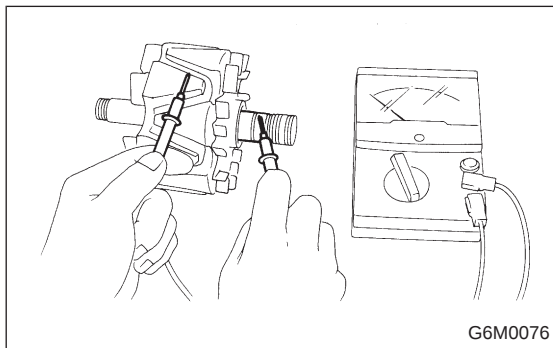


3) Continuity test

Check resistance between slip rings using circuit tester. If the resistance is not within specification, replace rotor assembly.

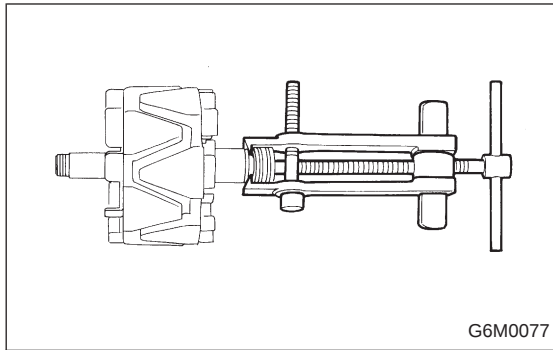
Specified resistance:

Approx. 3 Ω (A2T39091)



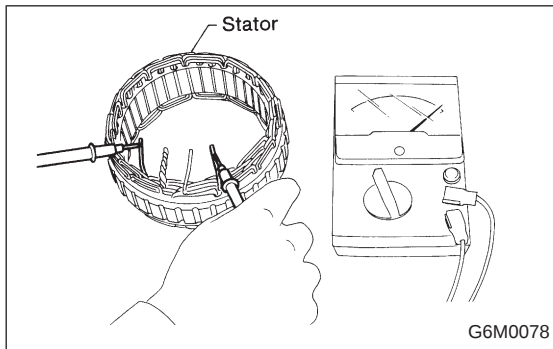
4) Insulation test

Check continuity between slip ring and rotor core or shaft. If continuity exists, the rotor coil is short-circuited, and so replace rotor assembly.



5) Ball bearing (rear side)

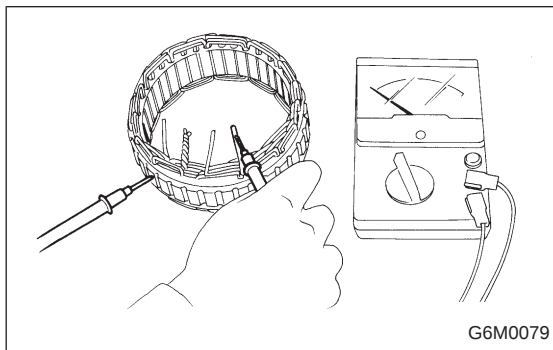
- (1) Check rear ball bearing. Replace if it is noisy or if rotor does not turn smoothly.
- (2) The rear bearing can be removed by using common bearing puller.



3. STATOR

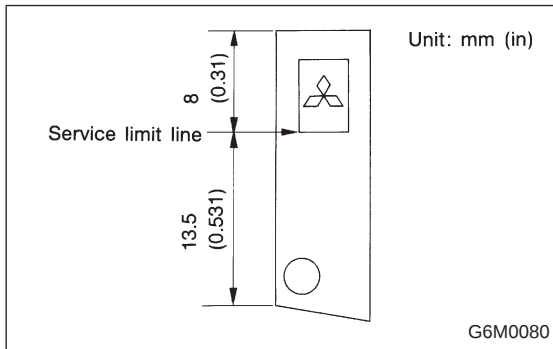
1) Continuity test

Inspect stator coil for continuity between each end of the lead wires. If there is no continuity between individual lead wires, the lead wire is broken, and so replace stator assembly.



2) Insulation test

Inspect stator coil for continuity between stator core and each end of the lead wire. If there is continuity, the stator coil is short-circuited, and so replace stator assembly.



4. BRUSH

- 1) Measure the length of each brush. If wear exceeds the service limit, replace the brush. Each brush has the service limit mark on it.

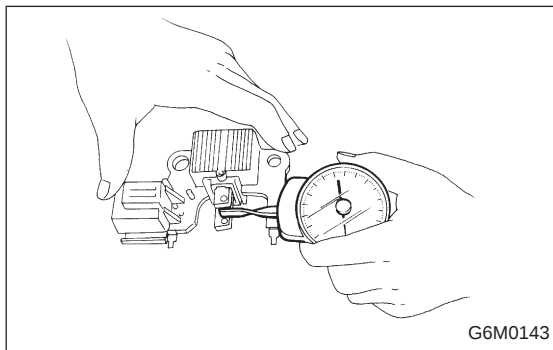
Brush length:

Standard

21.5 mm (0.846 in)

Service limit

8.0 mm (0.315 in)

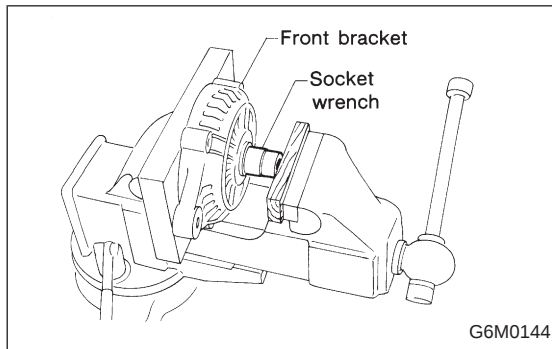


2) Checking brush spring for proper pressure

Using a spring pressure indicator, push the brush into the brush holder until its tip protrudes 2 mm (0.08 in). Then measure the pressure of the brush spring. If the pressure is less than 3.236 N (330 g, 11.64 oz), replace the brush spring with a new one. The new spring must have a pressure of 5.786 to 6.963 N (590 to 710 g, 20.81 to 25.04 oz).

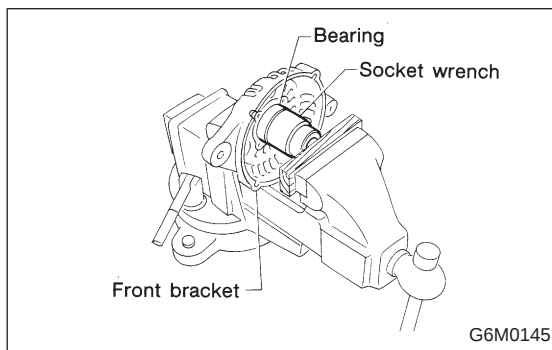
5. BEARING (FRONT SIDE)

1) Check front ball bearing. If resistance is felt while rotating, or if abnormal noise is heard, replace the ball bearing.



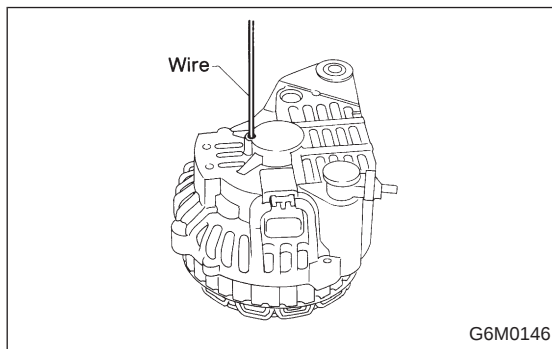
2) Replacing front bearing

- (1) Remove front bearing retainer.
- (2) Closely install a fit tool on the bearing inner race. Press the bearing down out of front bracket with a hand press or vise. A socket wrench can serve as the tool.



- (3) Set a new bearing and closely install a fit tool on the bearing outer race. Press the bearing down into place with a hand press or vise. A socket wrench can serve as the tool.

- (4) Install front bearing retainer.



D: ASSEMBLY

To assemble, reverse order of disassembly.

1) Pulling up brush

Before assembling, press the brush down into the brush holder with your finger and secure in that position by passing a [2 mm (0.08 in) dia. length 4 to 5 cm (1.6 to 2.0 in)] wire through the hole shown in the figure.

CAUTION:

Be sure to remove the wire after reassembly.

2) Heat the rear bracket [50 to 60°C (122 to 140°F)] and press the rear bearing into the rear bracket. Then lubricate the rear bracket.

3) After reassembly, turn the pulley by hand to check that the rotor turns smoothly.

3. Spark Plug

A: REMOVAL AND INSTALLATION

CAUTION:

All spark plugs installed on an engine, must be of the same heat range.

Spark plug:

- 1800 cc model

NGK: BKR6E-11

CHAMPION: RC8YC4

- 2200 cc model

CHAMPION: RC8YC4, RC10YC4

(Alternate)

NGK: BKR6E-11

NIPPONDENSO: K20PR-U11

- 1) Remove spark plug cords by pulling boot, not cord itself.
- 2) Remove spark plugs.
- 3) When installing spark plugs on cylinder head, use spark plug wrench.

Tightening torque (Spark plug):

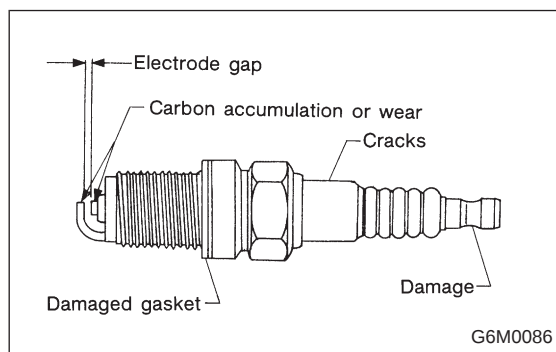
21 ± 3 N·m (2.1 ± 0.3 kg·m, 15.2 ± 2.2 ft·lb)

CAUTION:

The above torque should be only applied to new spark plugs without oil on their threads.

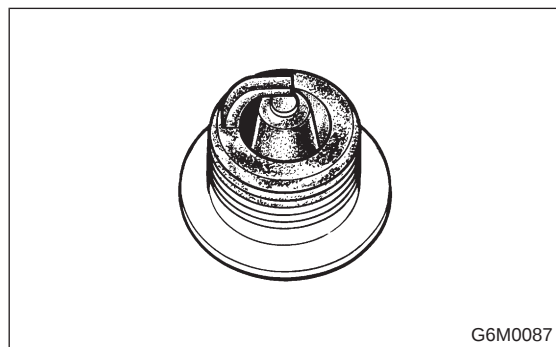
In case their threads are lubricated, the torque should be reduced by approximately 1/3 of the specified torque in order to avoid their over-stressing.

- 4) Connect spark plug cords.



B: INSPECTION

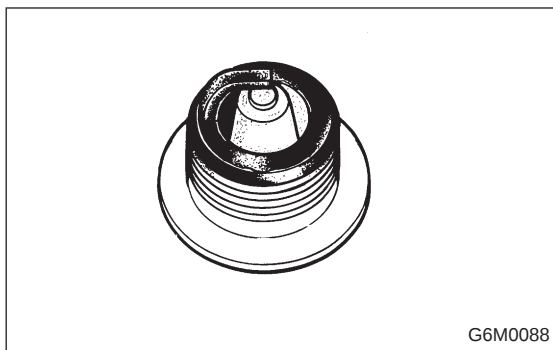
Check electrodes and inner and outer porcelain of plugs, noting the type of deposits and the degree of electrode erosion.



- 1) Normal

Brown to grayish-tan deposits and slight electrode wear indicate correct spark plug heat range.

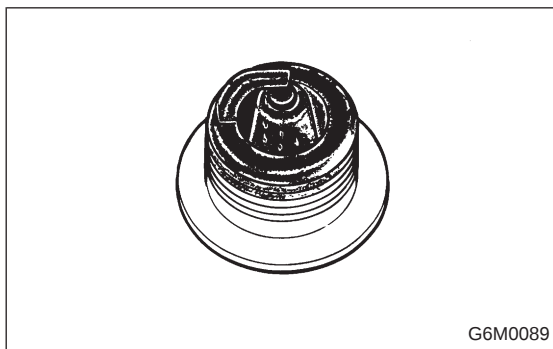
3. Spark Plug



2) Carbon fouled

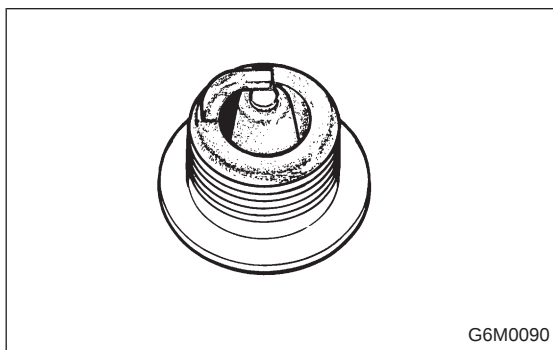
Dry fluffy carbon deposits on insulator and electrode are mostly caused by slow speed driving in city, weak ignition, too rich fuel mixture, dirty air cleaner, etc.

It is advisable to replace with plugs having hotter heat range.



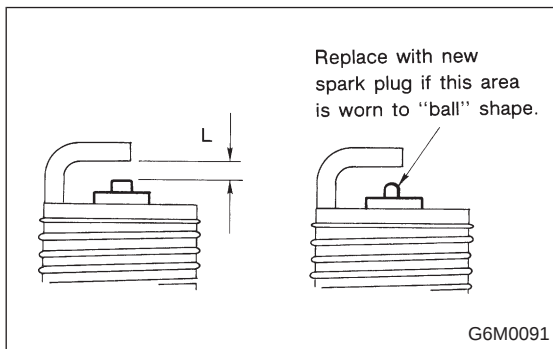
3) Oil fouled

Wet black deposits show excessive oil entrance into combustion chamber through worn rings and pistons or excessive clearance between valve guides and stems. If same condition remains after repair, use a hotter plug.



4) Overheating

White or light gray insulator with black or gray brown spots and bluish burnt electrodes indicate engine overheating. Moreover, the appearance results from incorrect ignition timing, loose spark plugs, wrong selection of fuel, hotter range plug, etc. It is advisable to replace with plugs having colder heat range.

**C: CLEANING AND REGAPPING**

Clean spark plugs in a sand blast type cleaner.

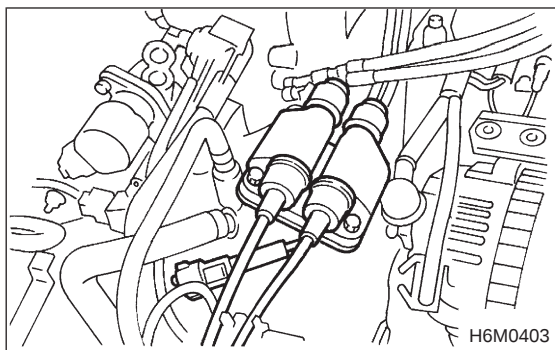
Avoid excessive blasting. Clean and remove carbon or oxide deposits, but do not wear away porcelain.

If deposits are too stubborn, discard plugs.

After cleaning spark plugs, recondition firing surface of electrodes with file. Then correct the spark plug gap using a gap gauge.

Spark plug gap: L

1.0 — 1.1 mm (0.039 — 0.043 in)



4. Ignition Coil

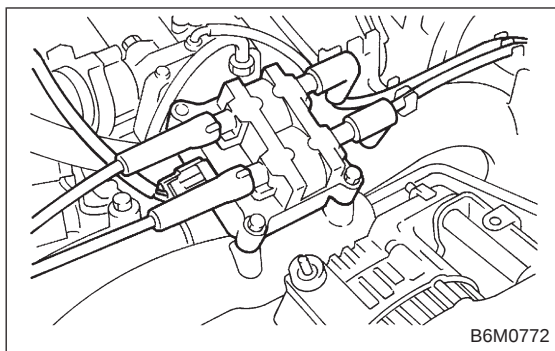
A: REMOVAL AND INSTALLATION

1. 1800 cc MODEL

- 1) Disconnect battery ground cable.
- 2) Disconnect connector from ignition coil.
- 3) Remove ignition coil.
- 4) Installation is in the reverse order of removal.

CAUTION:

Be sure to connect wires to their proper positions. Failure to do so will damage unit.

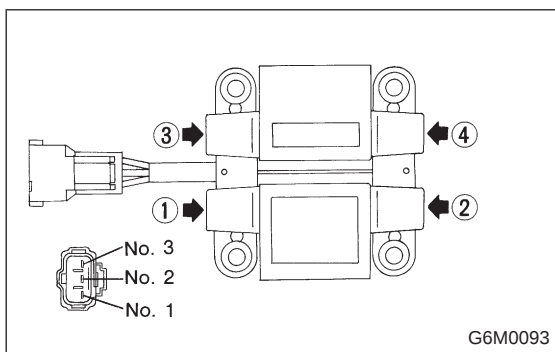


2. 2200 cc MODEL

- 1) Disconnect battery ground cable.
- 2) Disconnect connector from ignition coil.
- 3) Disconnect spark plug cords from ignition coil.
- 4) Remove ignition coil.
- 5) Installation is in the reverse order of removal.

CAUTION:

Be sure to connect wires to their proper positions. Failure to do so will damage unit.



B: INSPECTION

1. 1800 cc MODEL

Using accurate tester, inspect the following items, and replace if defective.

- 1) Primary resistance
- 2) Secondary coil resistance

CAUTION:

If the resistance is extremely low, this indicates the presence of a short-circuit.

Specified resistance:

[Primary side]

Between terminal No. 1 and No. 2

Between terminal No. 2 and No. 3

0.62 — 0.76 Ω

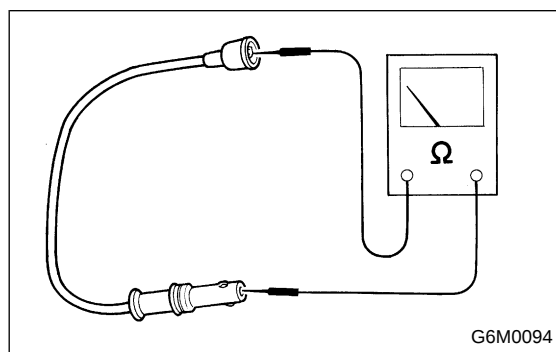
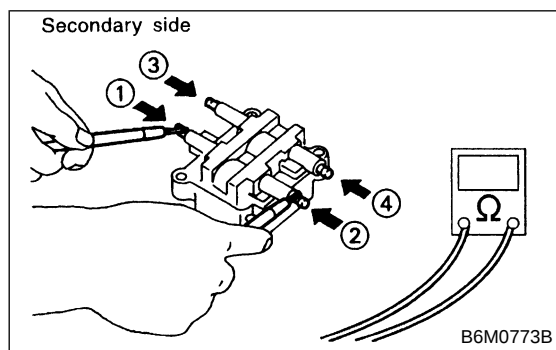
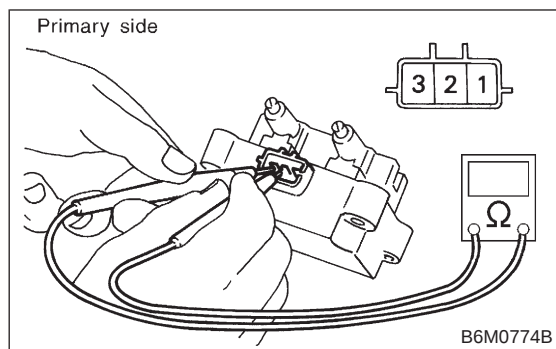
[Secondary side]

Between ① and ②

Between ③ and ④

17.9 — 24.5 k Ω

- 3) Insulation between primary terminal and case: 10 M Ω or more.



2. 2200 cc MODEL

Using accurate tester, inspect the following items, and replace if defective.

- 1) Primary resistance
- 2) Secondary coil resistance

CAUTION:

If the resistance is extremely low, this indicates the presence of a short-circuit.

Specified resistance:

[Primary side]

Between terminal No. 1 and No. 2

Between terminal No. 2 and No. 3

0.73 Ω ±10%

[Secondary side]

Between ① and ②

Between ③ and ④

12.8 k Ω ±15%

- 3) Insulation between primary terminal and case: 10 M Ω or more.

5. Spark Plug Cord

A: INSPECTION

Check for:

- 1) Damage to cords, deformation, burning or rust formation of terminals
- 2) Resistance values of cords

Resistance value:

● 1800 cc model

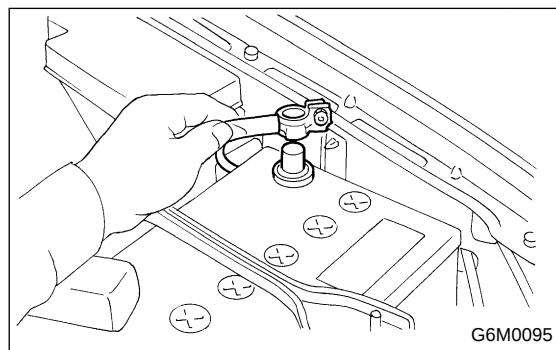
#1 and #3 cords 4.95 — 11.56 k Ω

#2 cord 4.86 — 11.33 k Ω

#4 cord 5.24 — 12.23 k Ω

● 2200 cc model

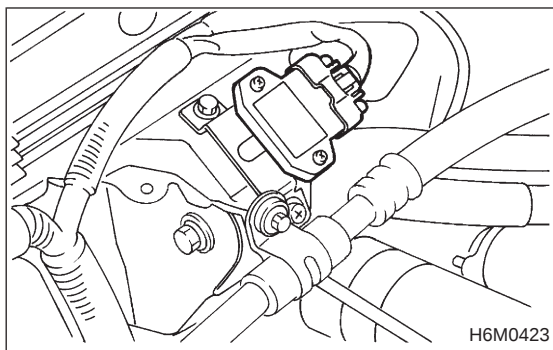
5.12 — 12.34 k Ω



6. Ignitor

A: REMOVAL AND INSTALLATION

- 1) Disconnect battery ground cable.
- 2) Remove intake air chamber. <Ref. to 2-7 [W18A0].>

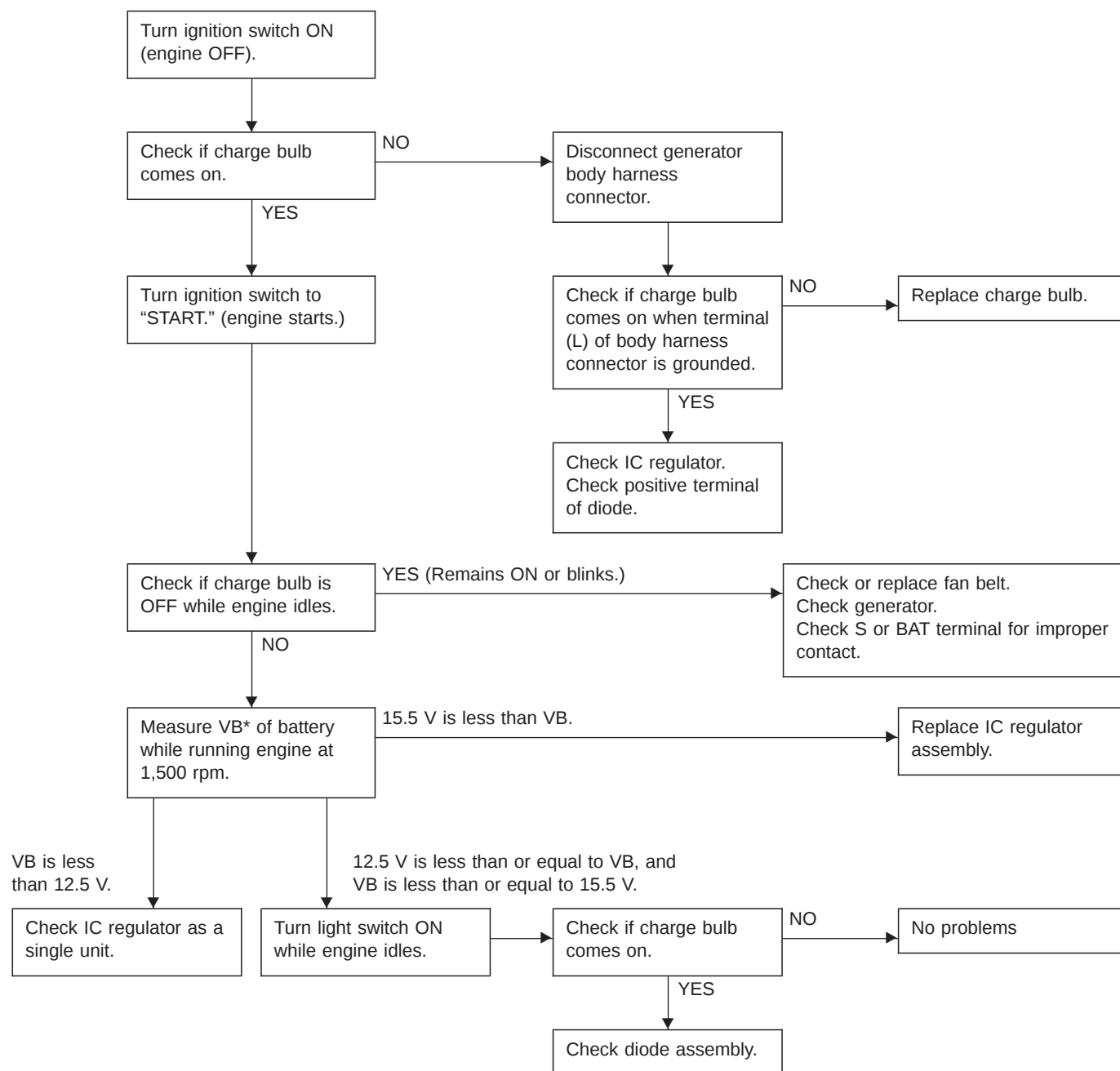


- 3) Disconnect connector from ignitor.
- 4) Remove screws which hold ignitor onto body.
- 5) Installation is in the reverse order of removal.

1. General Diagnostics

A: STARTER

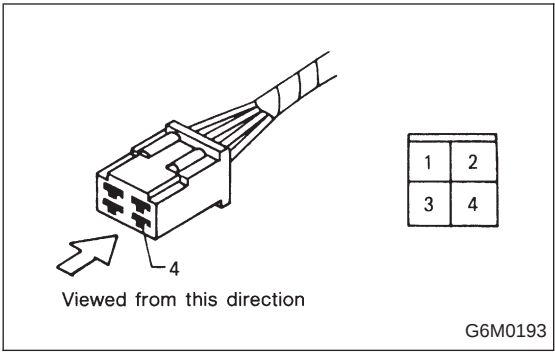
Trouble		Probable cause
Starter does not start.	Magnet switch does not operate. (no clicks are heard.)	Magnet switch poor contact or discontinuity of pull-in coil circuit
		Improper sliding of magnet switch plunger
	Magnet switch operates. (clicks are issued.)	Poor contact of magnet switch's main contact point
		Layer short of armature
		Contaminants on armature commutator
		High armature mica
		Improper grounding of yoke field coil
		Insufficient carbon brush length
		Insufficient brush spring pressure
Starter starts but does not crank engine.	Failure of pinion gear to engage ring gear	Worn pinion teeth
		Improper sliding of overrunning clutch
		Improper adjustment of stud bolt
	Clutch slippage	Faulty clutch roller spring
Starter starts but engine cranks too slowly.		Poor contact of magnet switch's main contact point
		Layer short of armature
		Discontinuity, burning or wear of armature commutator
		Poor grounding of yoke field coil
		Insufficient brush length
		Insufficient brush spring pressure
		Abnormal brush wear
Starter overruns.		Magnet switch coil is a layer short.

B: GENERATOR

*: Terminal voltage

WIRING DIAGRAM 6-3

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1. General Description

1. WIRING DIAGRAM

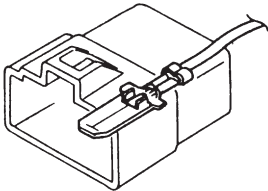
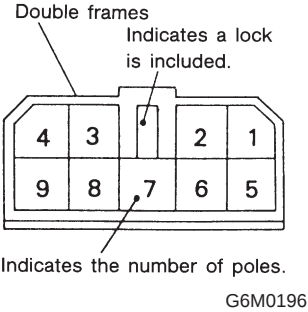
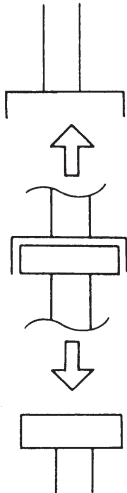
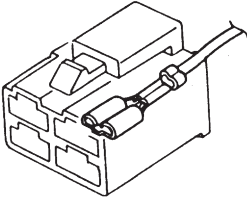
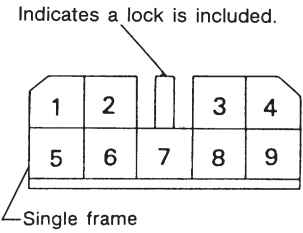
The wiring diagram of each system is illustrated so that you can understand the path through which the electric current flows from the battery.

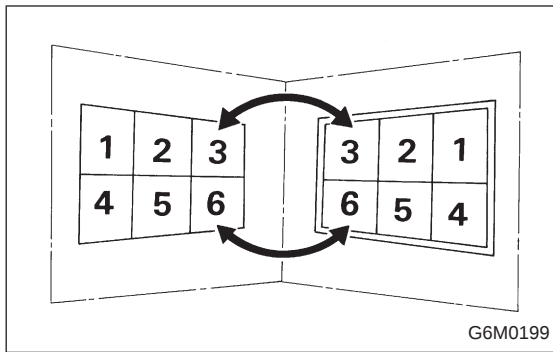
Sketches and codes are used in the diagrams. They should read as follows:

1) Each connector and its terminal position are indicated by a sketch of the connector in a disconnected state which is viewed from the front, as shown in figure.

2) The number of poles or pins, presence of a lock, and pin number of each terminal are indicated in the sketch of each connector.

In the sketch, the highest pole number refers to the number of poles which the connector has. For example, the sketch of the connector shown in figure indicates the connector has 9 poles.

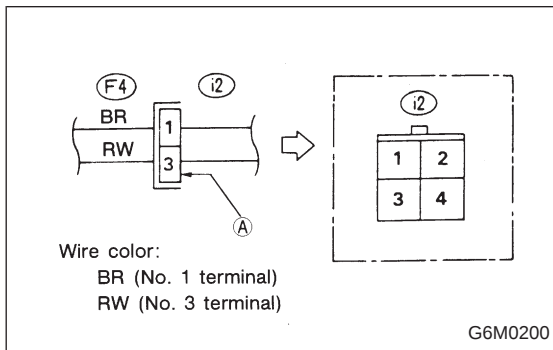
Connector used in vehicle	Connector shown in wiring diagram		
	Sketch	Symbol	Number of poles
 G6M0194	 G6M0196	 G6M0198	Numbered in order from upper right to lower left.
 G6M0195	 G6M0197		Numbered in order from upper left to lower right.



When one set of connectors is viewed from the front side, the pole numbers of one connector are symmetrical to those of the other. When these two connectors are connected as a unit, the poles which have the same number are joined.

3) Electrical wiring harness

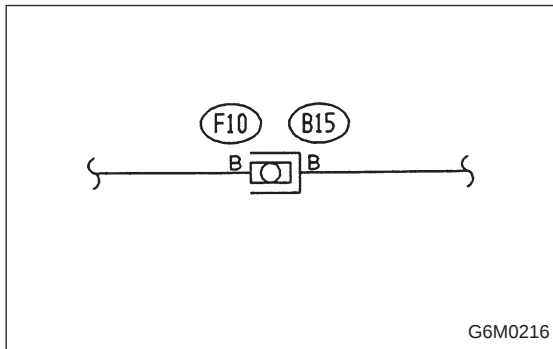
The connectors are numbered along with the number of poles, external colors, and mating connections in the accompanying list.



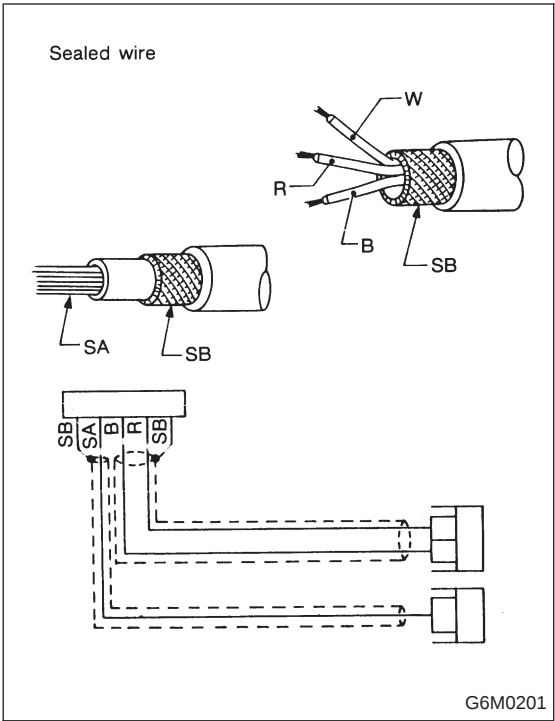
4) The sketch of each connector in the wiring diagram usually shows the "A" side of the connector. The relationship between the wire color, terminal number and connector is described in figure.

NOTE:

A wire which runs in one direction from a connector terminal sometimes may have a different color from that which runs in the other direction from that terminal.

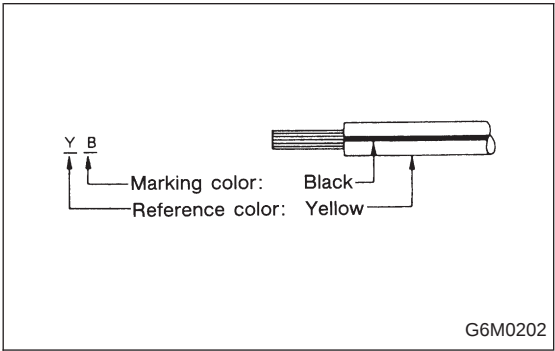


5) In wiring diagram, connectors which have no terminal number refer to one-pole types. Sketches of these connectors are omitted intentionally.



6) The following color codes are used to indicate the colors of the wires used.

Color code	Color
L	Blue
B	Black
Y	Yellow
G	Green
R	Red
W	White
Br	Brown
Lg	Light green
Gr	Gray
P	Pink
Or	Orange
Lb	Light Blue
V	Violet
SA	Sealed (Inner)
SB	Sealed (Outer)



7) The wire color code, which consists of two letters (or three letters including Br or Lg), indicates the standard color (base color of the wire covering) by its first letter and the stripe marking by its second letter.

8) The table below lists the nominal sectional areas and allowable currents of the wires.

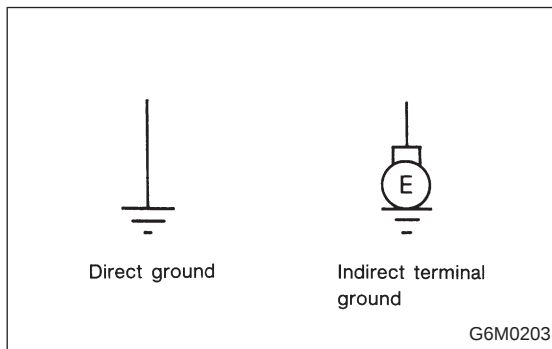
Nominal sectional area mm ²	No. of strands/ strand diameter	Outside diameter of finished wiring mm	Allowable current Amps/40°C
0.3	7/0.26	1.8	7
0.5	7/0.32	2.2 (or 2.0)	12
0.75	30/0.18	2.6 (or 2.4)	16
0.85	11/0.32	2.4 (or 2.2)	16
1.25	16/0.32	2.7 (or 2.5)	21
2	26/0.32	3.1 (or 2.9)	28
3	41/0.32	3.8 (or 3.6)	38
5	65/0.32	4.6 (or 4.4)	51
8	50/0.45	5.5	67

CAUTION:

● When replacing or repairing a wire, be sure to use the same size and type of the wire which was originally used.

NOTE:

- The allowable current in the above table indicates the tolerable amperage of each wire at an ambient temperature of 40°C (104°F).
- The allowable current changes with ambient temperature. Also, it changes if a bundle of more than two wires is used.



9) Each unit is directly grounded to the body or indirectly grounds through a harness ground terminal. Different symbols are used in the wiring diagram to identify the two grounding systems.

The ground points shown in the wiring diagram refer to the following:

(GB) Body ground

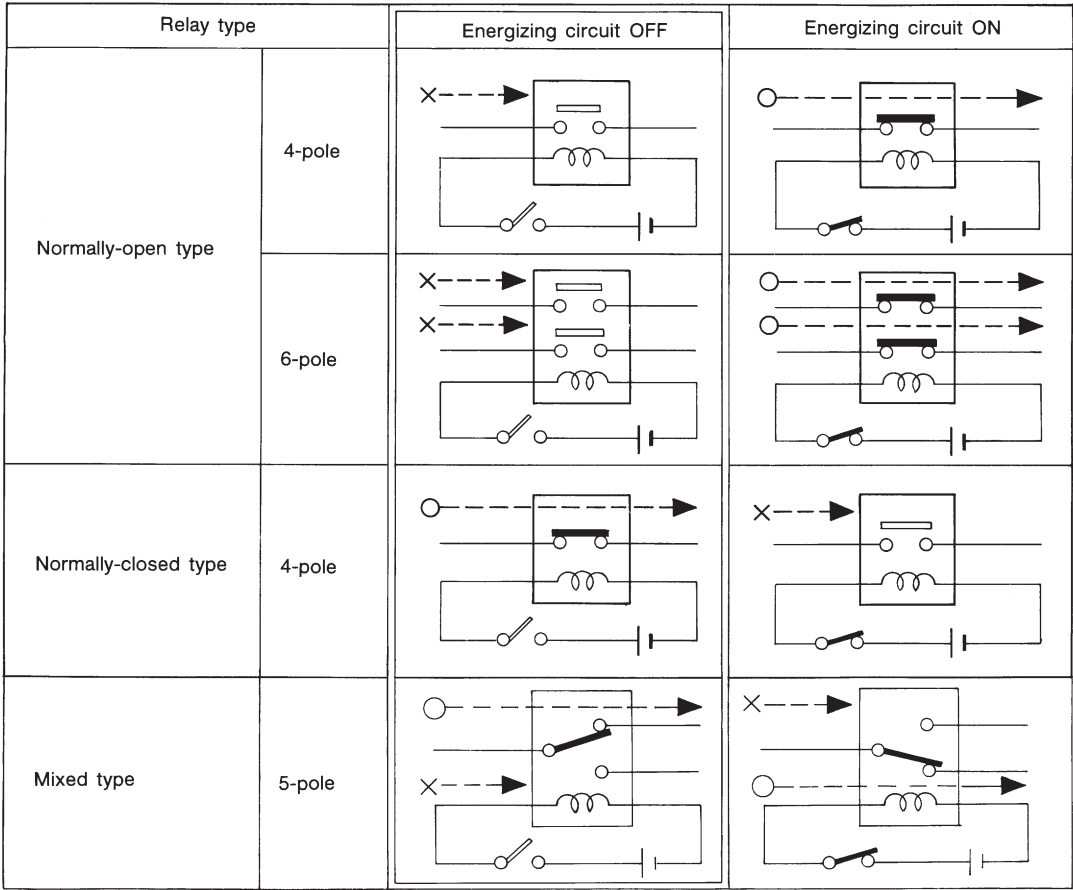
(GE) Engine ground

(GR) Radio ground

(GD) Rear defogger ground

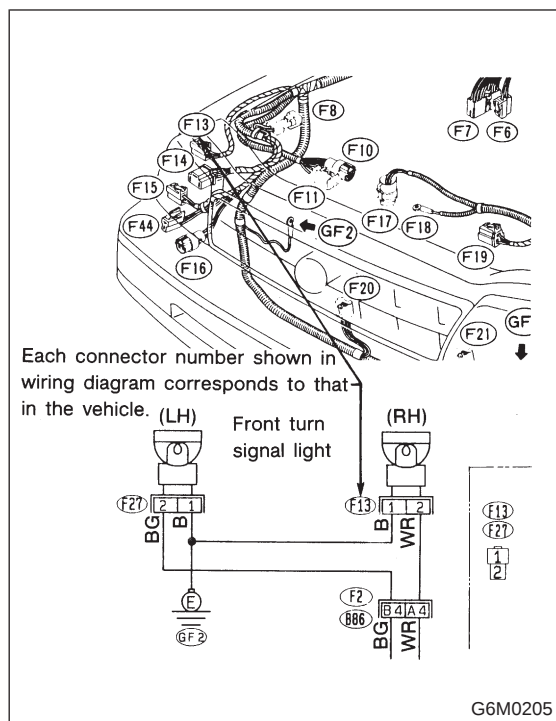
All wiring harnesses are provided with a ground point which should be securely connected.

10) Relays are classified as normally-open or normally-closed.
The normally-closed relay has one or more contacts.
The wiring diagram shows the relay mode when the energizing circuit is OFF.



G6M0204

Key to symbols:
○ → : Current flows.
X → : Current does not flow.



11) Each connector number shown in the wiring diagram corresponds to that in the wiring harness. The location of each connector in the actual vehicle is determined by reading the first character of the connector (for example, a “F” for F8, “i” for i16, etc.) and the type of wiring harness. The first character of each connector number refers to the area or system of the vehicle, as indicated in table below.

Symbol	Wiring harness and Cord
F	Front wiring harness
B	Bulkhead wiring harness
E	Engine wiring harness
T	Transmission cord, Rear oxygen sensor cord
D	Door cord LH & RH, Rear door adapter cord LH & RH
I	Instrument panel wiring harness
R	Rear wiring harness, Rear defogger cord (Ground) Fuel tank cord, Roof cord, Rear gate cord, Rear gate lock adapter cord

2. Basic Diagnostics Procedures

The most important purpose of diagnostics is to determine which part is malfunctioning quickly, to save time and labor.

A: IDENTIFICATION OF TROUBLE SYMPTOM

Determine what the problem is based on the symptom.

B: PROBABLE CAUSE OF TROUBLE

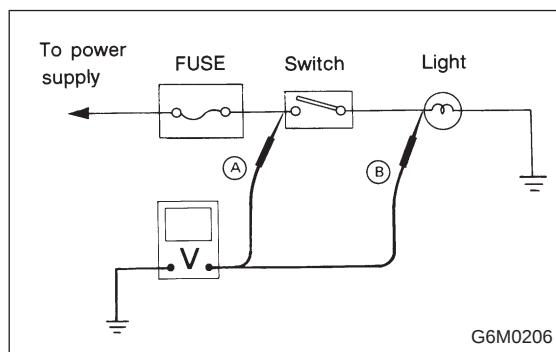
Look at the wiring diagram and check the system's circuit. Then check the switch, relay, fuse, ground, etc.

C: LOCATION AND REPAIR OF TROUBLE

- 1) Using the diagnostics narrow down the causes.
- 2) If necessary, use a voltmeter, ohmmeter, etc.
- 3) Before replacing certain component parts (switch, relay, etc.), check the power supply, ground, for open wiring harness, poor connectors, etc. If no problems are encountered, check the component parts.

D: CONFIRMATION OF SYSTEM OPERATION

After repairing, ensure that the system operates properly.



E: INSPECTION

1. VOLTAGE MEASUREMENT

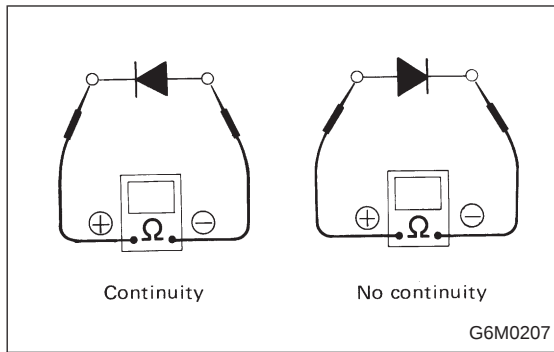
- 1) Using a voltmeter, connect the negative lead to a good ground point or negative battery terminal and the positive lead to the connector or component terminal.
- 2) Contact the positive probe of the voltmeter on connector (A).

The voltmeter will indicate a voltage.

- 3) Shift the positive probe to connector (B). The voltmeter will indicate no voltage.

With test set-up held as it is, turn switch ON. The voltmeter will indicate a voltage and, at the same time, the light will come on.

- 4) The circuit is in good order. If a problem such as a lamp failing to light occurs, use the procedures outlined above to track down the malfunction.



2. CIRCUIT CONTINUITY CHECKS

1) Disconnect the battery terminal or connector so there is no voltage between the check points. Contact the two leads of an ohmmeter to each of the check points.

If the circuit has diodes, reverse the two leads and check again.

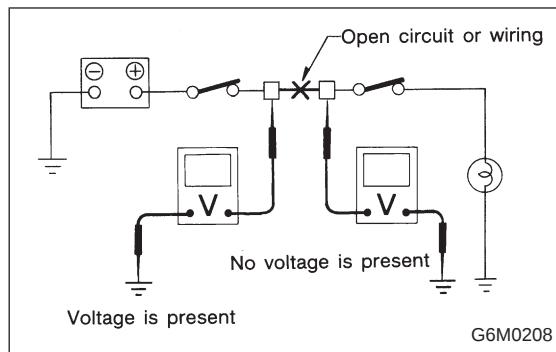
2) Use an ohmmeter to check for diode continuity.

When contacting the negative lead to the diode positive side and the positive lead to the negative side, there should be continuity.

When contacting the two leads in reverse, there should be no continuity.

3) Symbol “o—o” indicates that continuity exists between two points or terminals. For example, when a switch position is “3”, continuity exists among terminals 1, 3 and 6, as shown in table below.

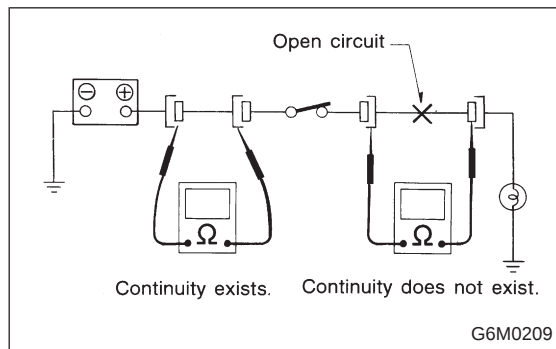
Terminal	1	2	3	4	5	6
Switch Position						
OFF						
1	○				○	○
2	○			○		○
3	○		○			○
4	○	○				○



3. HOW TO DETERMINE AN OPEN CIRCUIT

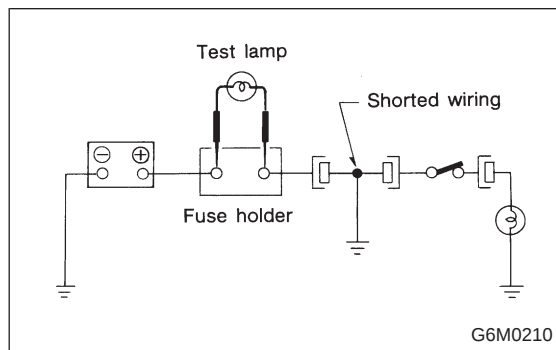
1) Voltmeter Method

An open circuit is determined by measuring the voltage between respective connectors and ground using a voltmeter, starting with the connector closest to the power supply. The power supply must be turned ON so that current flows in the circuit. If voltage is not present between a particular connector and ground, the circuit between that connector and the previous connector is open.



2) Ohmmeter method

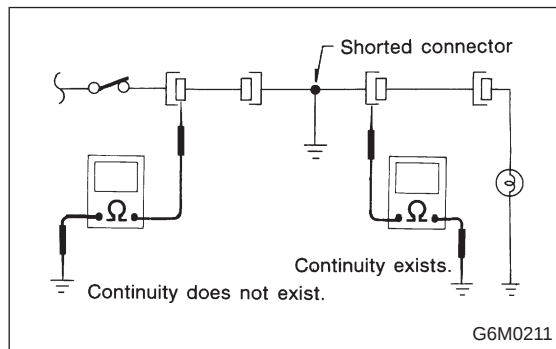
Disconnect all connectors affected, and check continuity in the wiring between adjacent connectors. When the ohmmeter indicates "infinite", the wiring is open.



4. HOW TO DETERMINE A SHORTCIRCUIT

1) Test lamp method

Connect a test lamp (rated at approximately 3 watts) in place of the blown fuse and allow current to flow through the circuit. Disconnect one connector at a time from the circuit, starting with the one located farthest from the power supply. If the test lamp goes out when a connector is disconnected, the wiring between that connection and the next connector (farther from the power supply) is shorted.



2) Ohmmeter method

Disconnect all affected connectors, and check continuity between each connector and ground. When ohmmeter indicates continuity between a particular connector and ground, that connector is shorted.

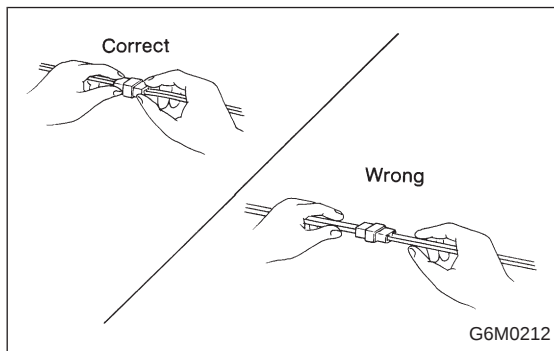
3. Working Precautions

1. PRECAUTIONS WHEN WORKING WITH THE PARTS MOUNTED ON THE VEHICLE

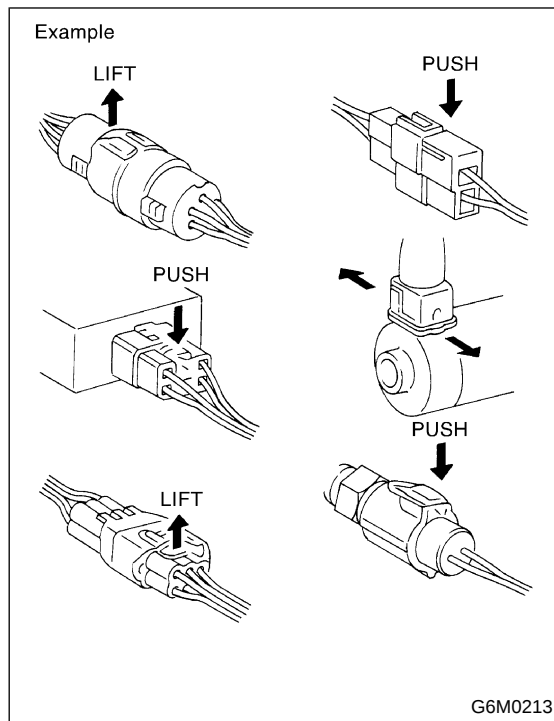
- 1) When working under a vehicle which is jacked-up, always be sure to use safety stands.
- 2) The parking brake must always be applied during working. Also, in automatic transmission vehicles, keep the select lever set to the P (Parking) range.
- 3) Be sure the workshop is properly ventilated when running the engine. Further, be careful not to touch the belt or fan while the engine is operating.
- 4) Be careful not to touch hot metal parts, especially the radiator and exhaust system immediately after the engine has been shut off.

2. PRECAUTIONS IN TROUBLE DIAGNOSIS AND REPAIR OF ELECTRIC PARTS

- 1) The battery cable must be disconnected from the battery's (-) terminal, and the ignition switch must be set to the OFF position, unless otherwise required by the diagnostics.
- 2) Securely fasten the wiring harness with clamps and slips so that the harness does not interfere with the body end parts or edges and bolts or screws.
- 3) When installing parts, be careful not to catch them on the wiring harness.

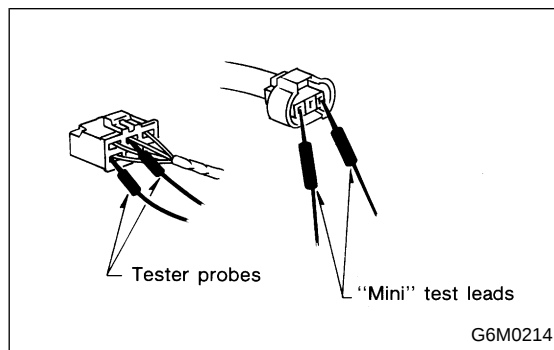


- 4) When disconnecting a connector, do not pull the wires, but pull while holding the connector body.



5) Some connectors are provided with a lock. One type of such a connector is disconnected by pushing the lock, and the other, by moving the lock up. In either type the lock shape must be identified before attempting to disconnect the connector.

To connect, insert the connector until it snaps and confirm that it is tightly connected.



6) When checking continuity between connector terminals, or measuring voltage across the terminal and ground, always contact tester probe(s) on terminals from the wiring connection side. If the probe is too thick to gain access to the terminal, use "mini" test leads.

To check water-proof connectors (which are not accessible from the wiring side), contact test probes on the terminal side being careful not to bend or damage the terminals.

7) Sensors, relays, electrical unit, etc., are sensitive to strong impacts.

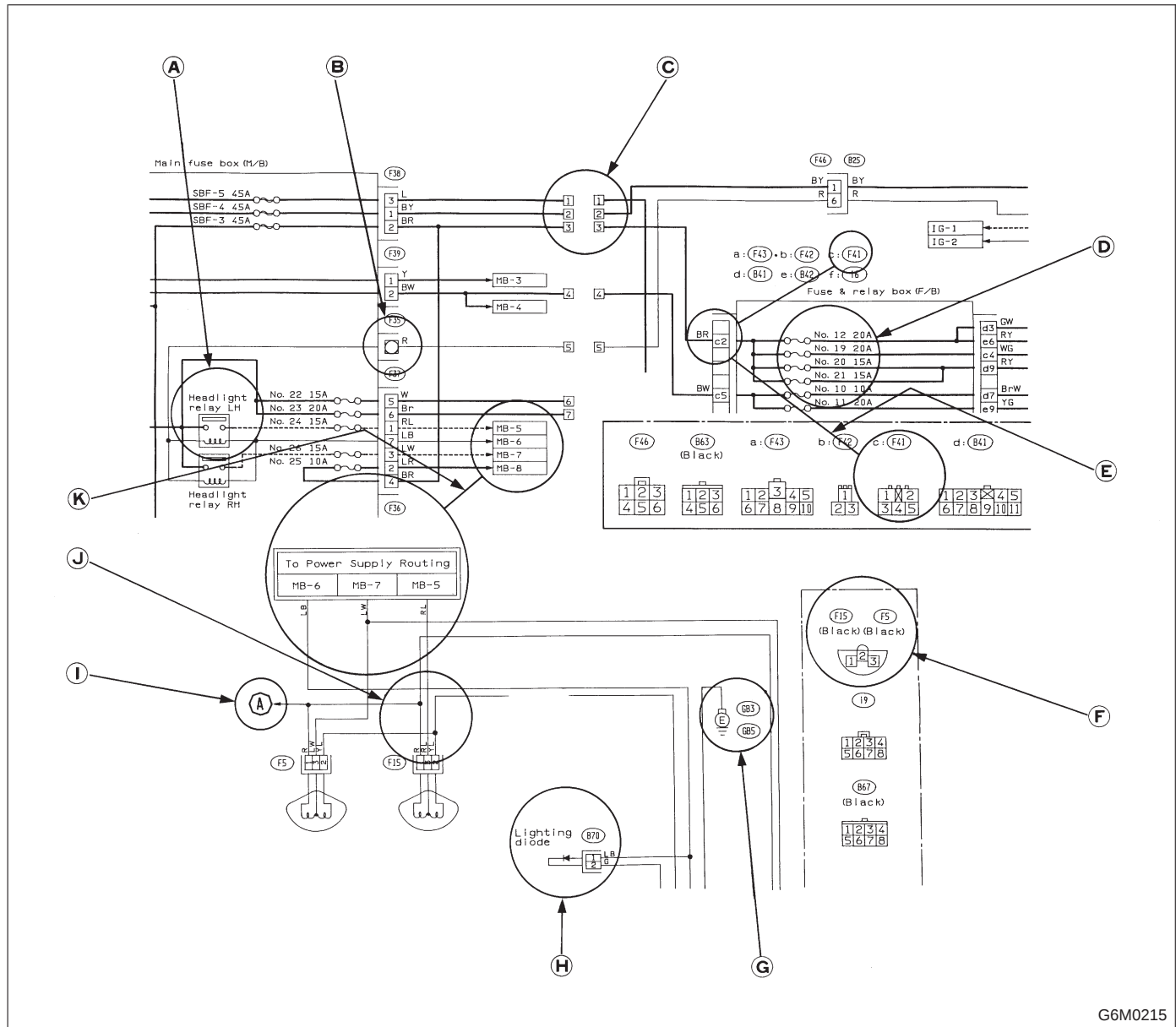
Handle them with care so that they are not dropped or mishandled.

ABBREVIATION LIST

Abbr.	Full name
ABS	Antilock Brake System
ACC	Accessory
A/C	Air Conditioning
AD	Auto Down
AT	Automatic Transmission
AU	Auto Up
+B	Battery
DN	Down
E	Ground
F/B	Fuse & Joint Box
FL1.5	Fusible link 1.5 mm ²
IG	Ignition
Illumi.	Illumination

Abbr.	Full name
LH	Left Hand
Lo	Low
M	Motor
M/B	Main Fuse Box
MG	Magnet
Mi	Middle
OP	Optional Parts
PASS	Passing
RH	Right Hand
SBF	Slow Blow Fuse
ST	Starter
SW	Switch
UP	Up
WASH	Washer

4. How to Use Wiring Diagram



G6M0215

A: RELAY

A symbol used to indicate a relay.

B: CONNECTOR-1

The sketch of the connector indicates the one-pole types.

C: WIRING CONNECTION

Some wiring diagrams are indicated in foldouts for convenience. Wiring destinations are indicated where necessary by corresponding symbols (as when two pages are needed for clear indication).

D: FUSE NO. & RATING

The "FUSE No. & RATING" corresponds with that used in the fuse box (main fuse box, fuse and joint box.)

E: CONNECTOR-2

1. Each connector is indicated by a symbol.
2. Each terminal number is indicated in the corresponding wiring diagram in an abbreviated form.
3. For example, terminal number "C2" refers to No. 2 terminal of connector (C:F41) shown in the connector sketch.

F: CONNECTOR SKETCH

1. Each connector sketch clearly identifies the shape and color of a connector as well as terminal locations. Non-colored connectors are indicated in natural color.
2. When more than two types of connector number are indicated in a connector sketch, it means that the same type connectors are used.

G: GROUND

Each grounding point can be located easily by referring to the corresponding wiring harness.

H: DIODE

A symbol is used to indicate a diode.

I: WIRE TRACING ON EXTENDED WIRING DIAGRAMS

For a wiring diagram extending over at least two pages, a symbol (consisting of the same characters with arrows), as shown below, facilitates wire tracing from one page to the next.

A ↔ A, B ↔ B

J: SYMBOLS OF WIRE CONNECTION AND CROSSING

Symbol

Refers to wires which are connected and branched at the "dot" point.



Symbol

Refers to wires which are crossed but not connected.

K: POWER SUPPLY ROUTING

A symbol is used to indicate the power supply in each wiring diagram.

"MB-5", "MB-6", etc., which are used as power-supply symbols throughout the text, correspond with those shown in the POWER SUPPLY ROUTING in the wiring diagram.

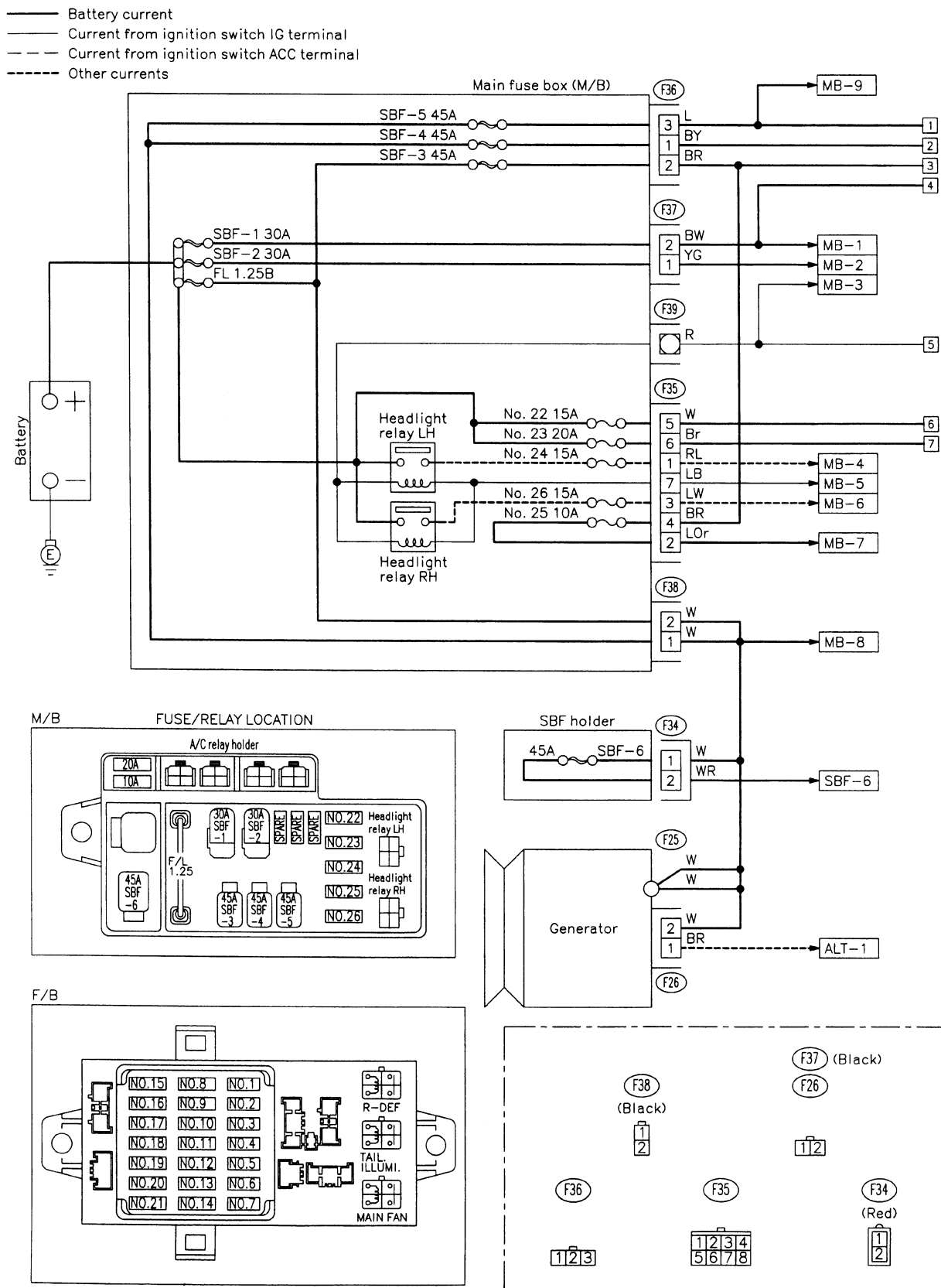
Accordingly, using the POWER SUPPLY ROUTING and wiring diagrams permits service personnel to understand the entire electrical arrangement of a system.

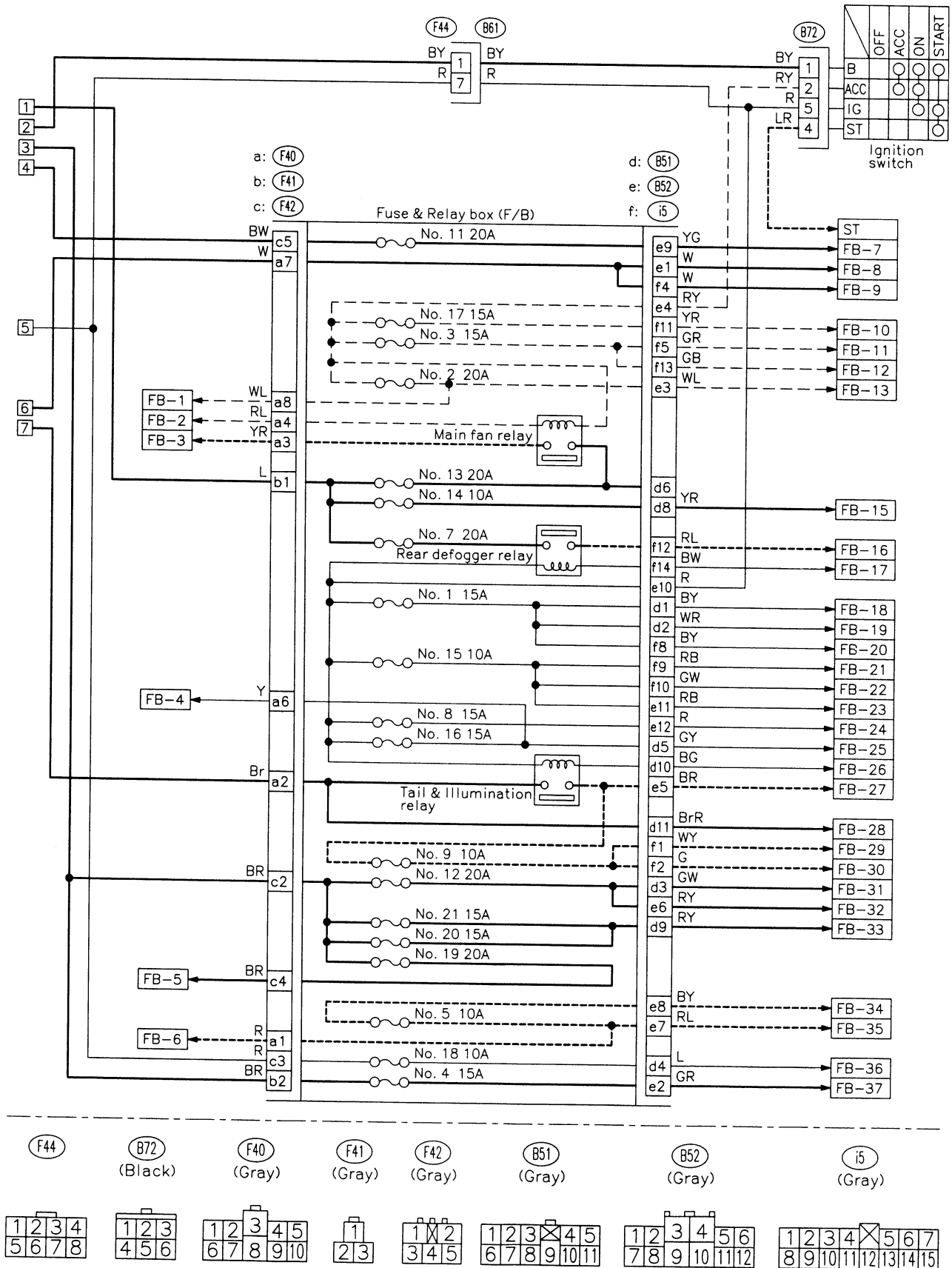
L: SYMBOLS AND ABBREVIATIONS

A number of symbols and abbreviations are used in each wiring diagram to easily identify parts or circuits.

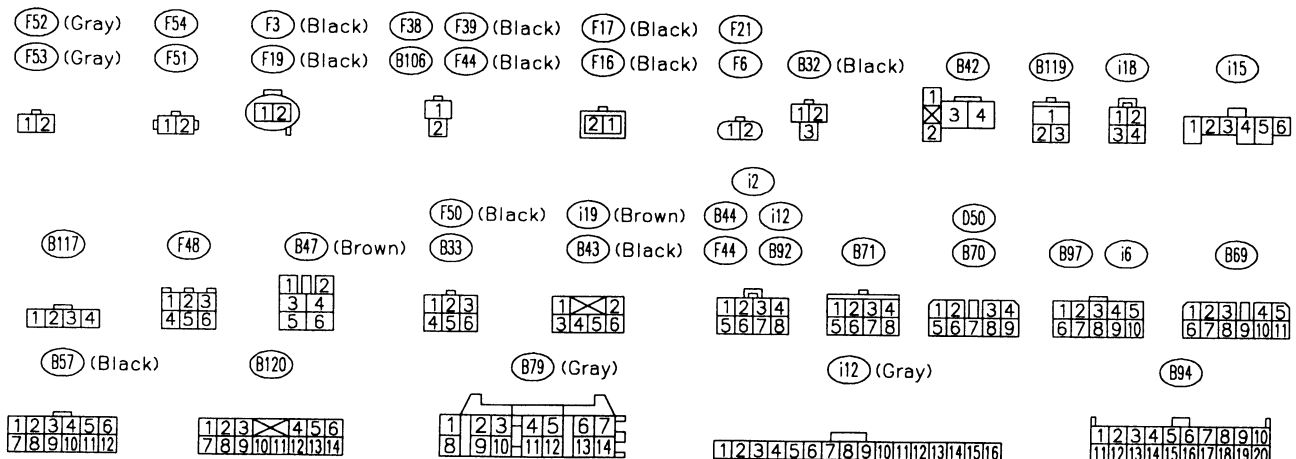
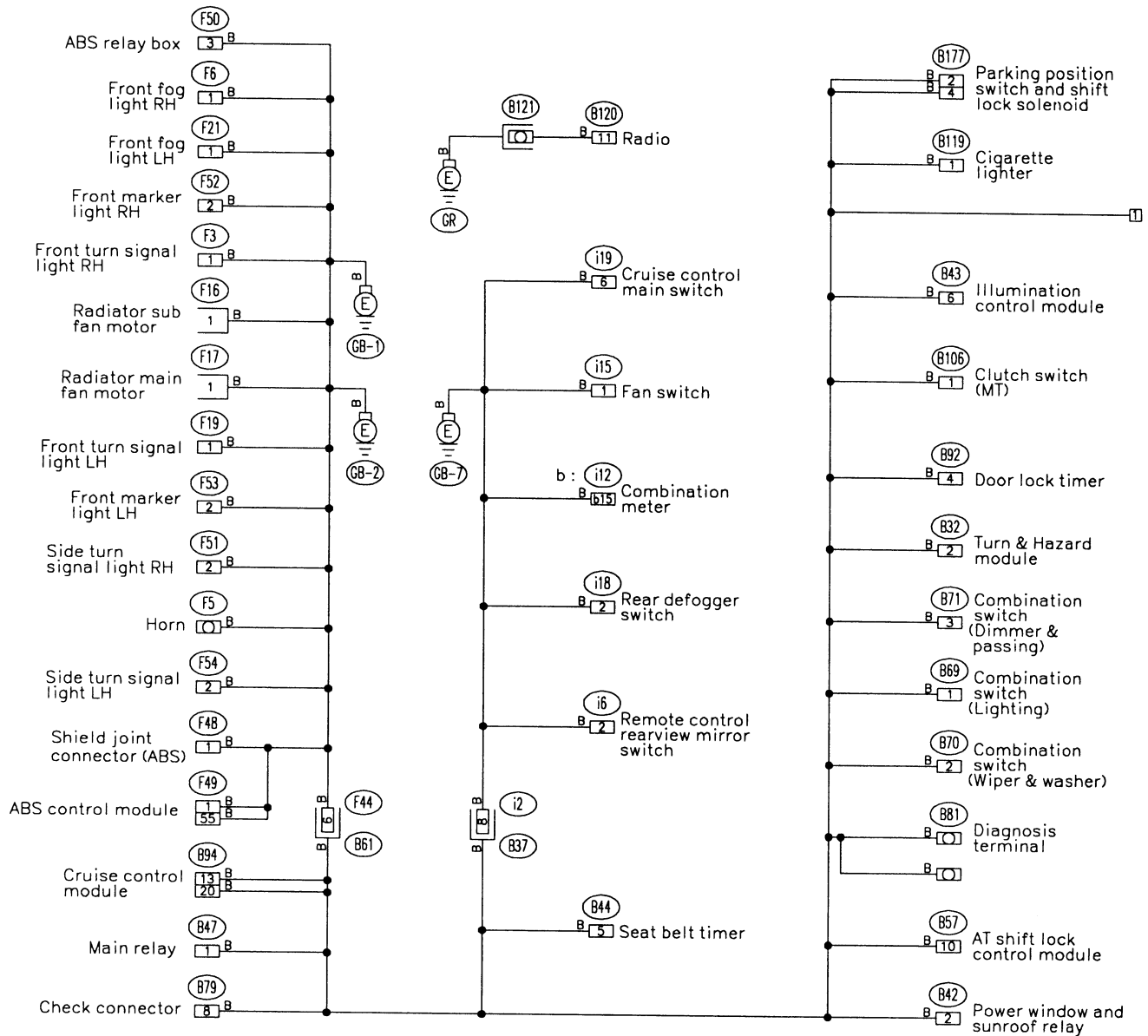
5. Wiring Diagram

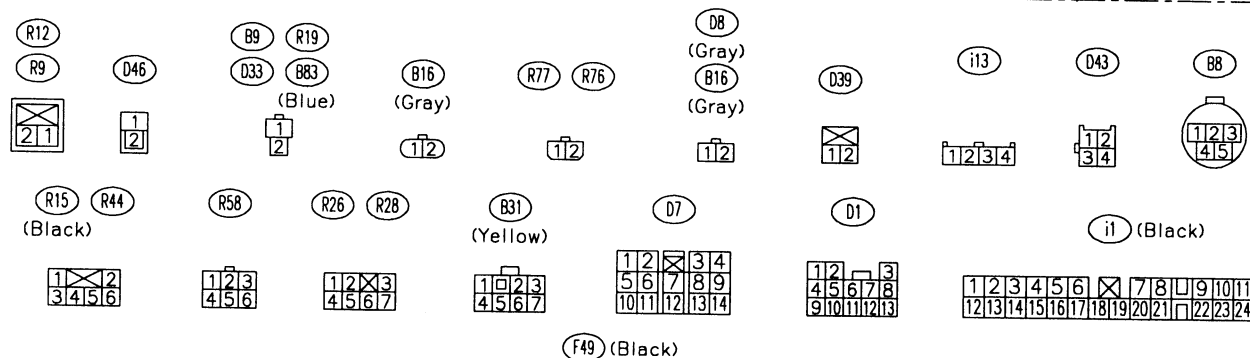
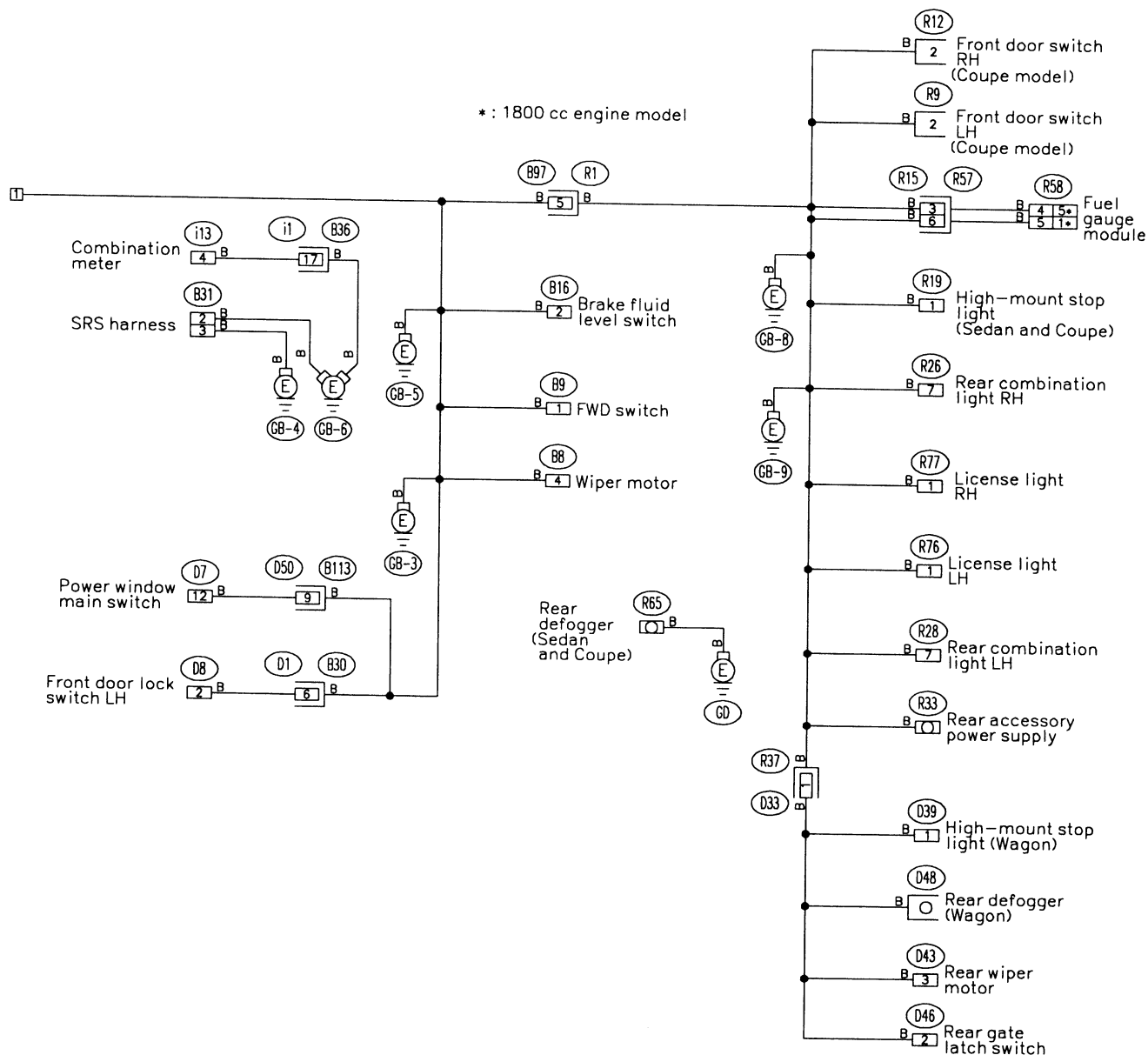
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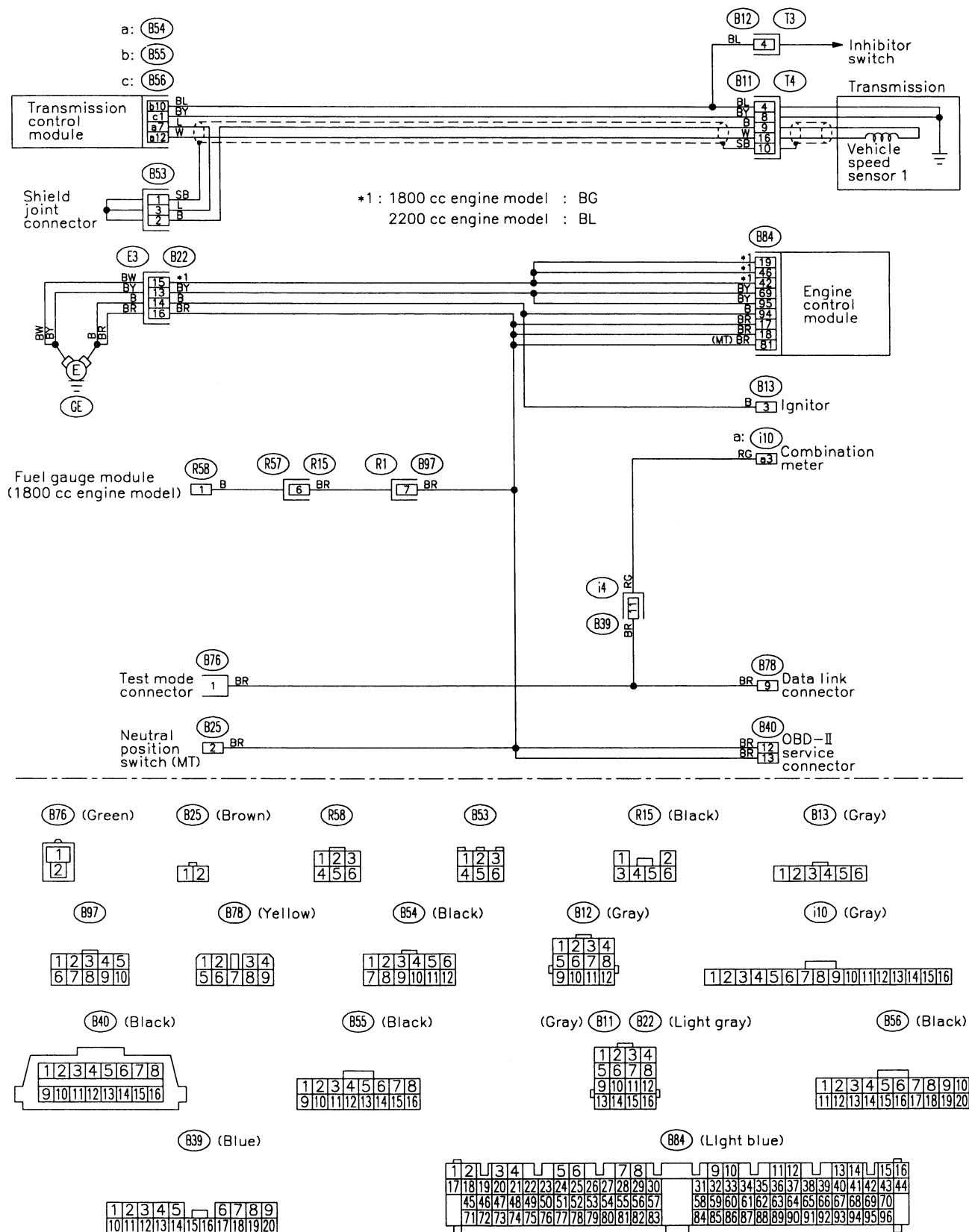




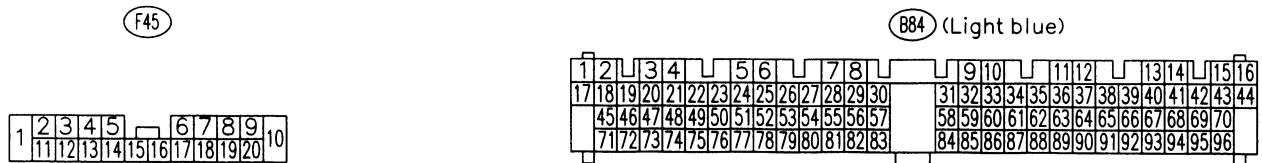
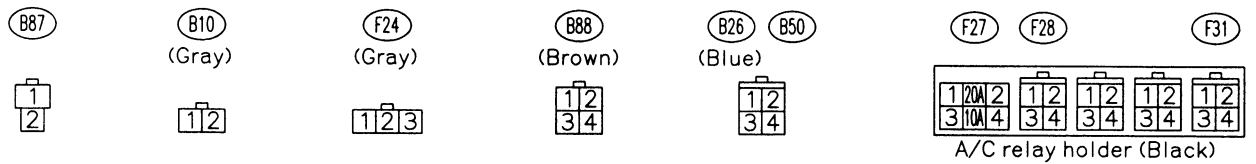
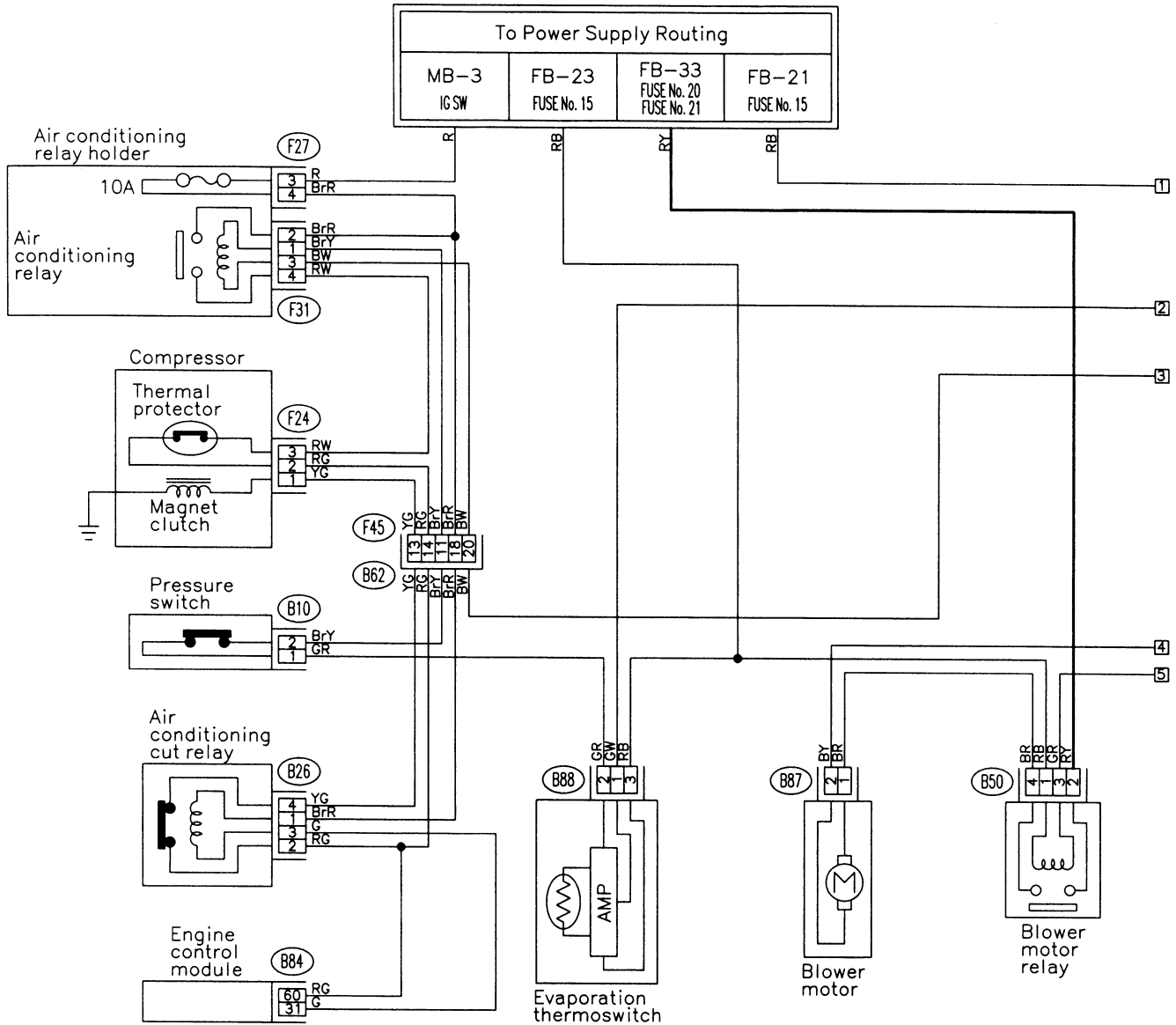
2. GROUND DISTRIBUTION

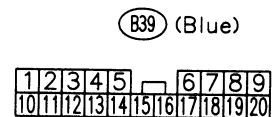
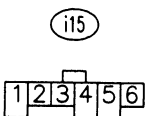
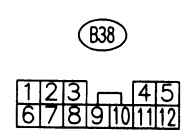
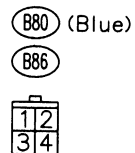
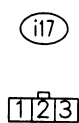
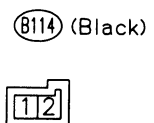
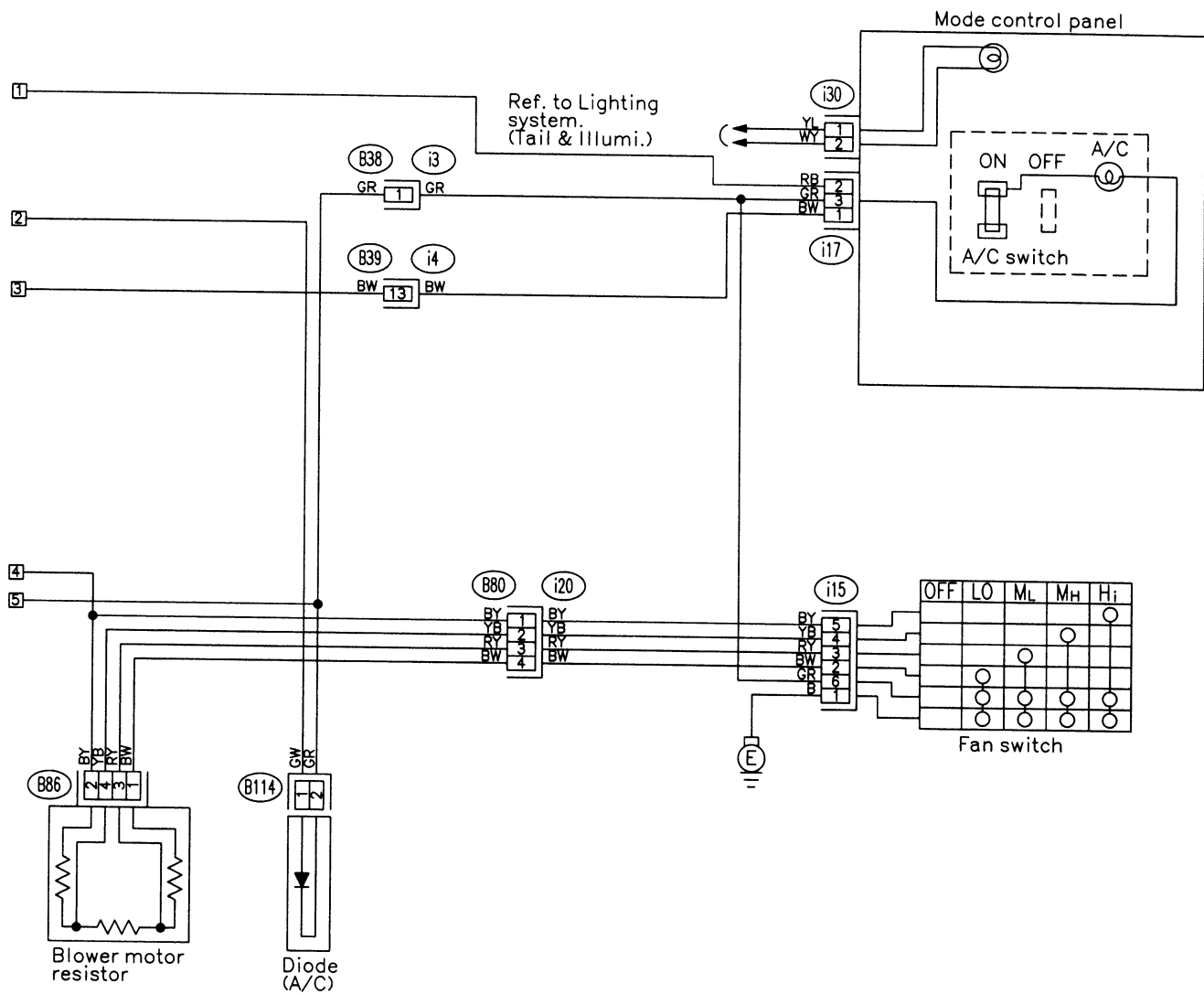




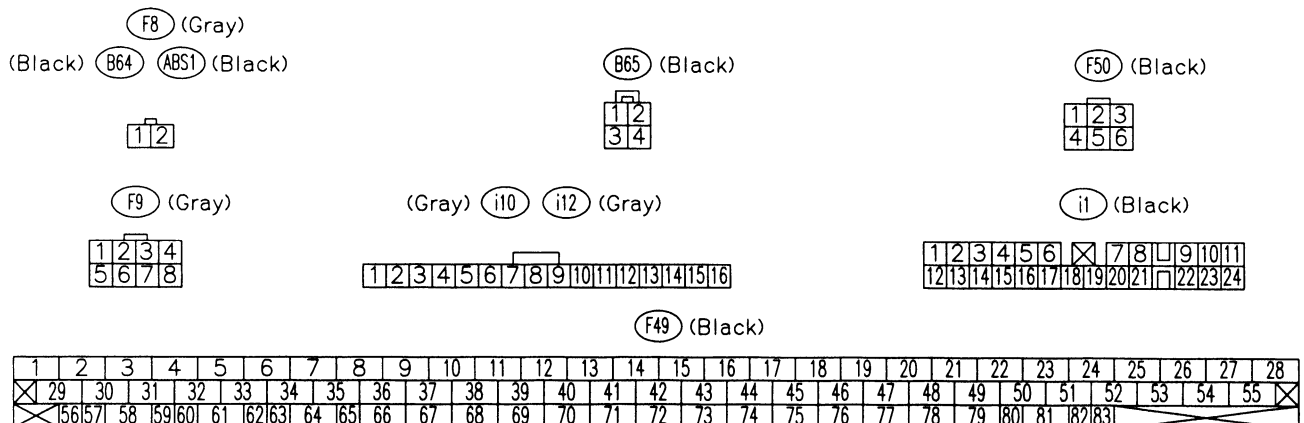
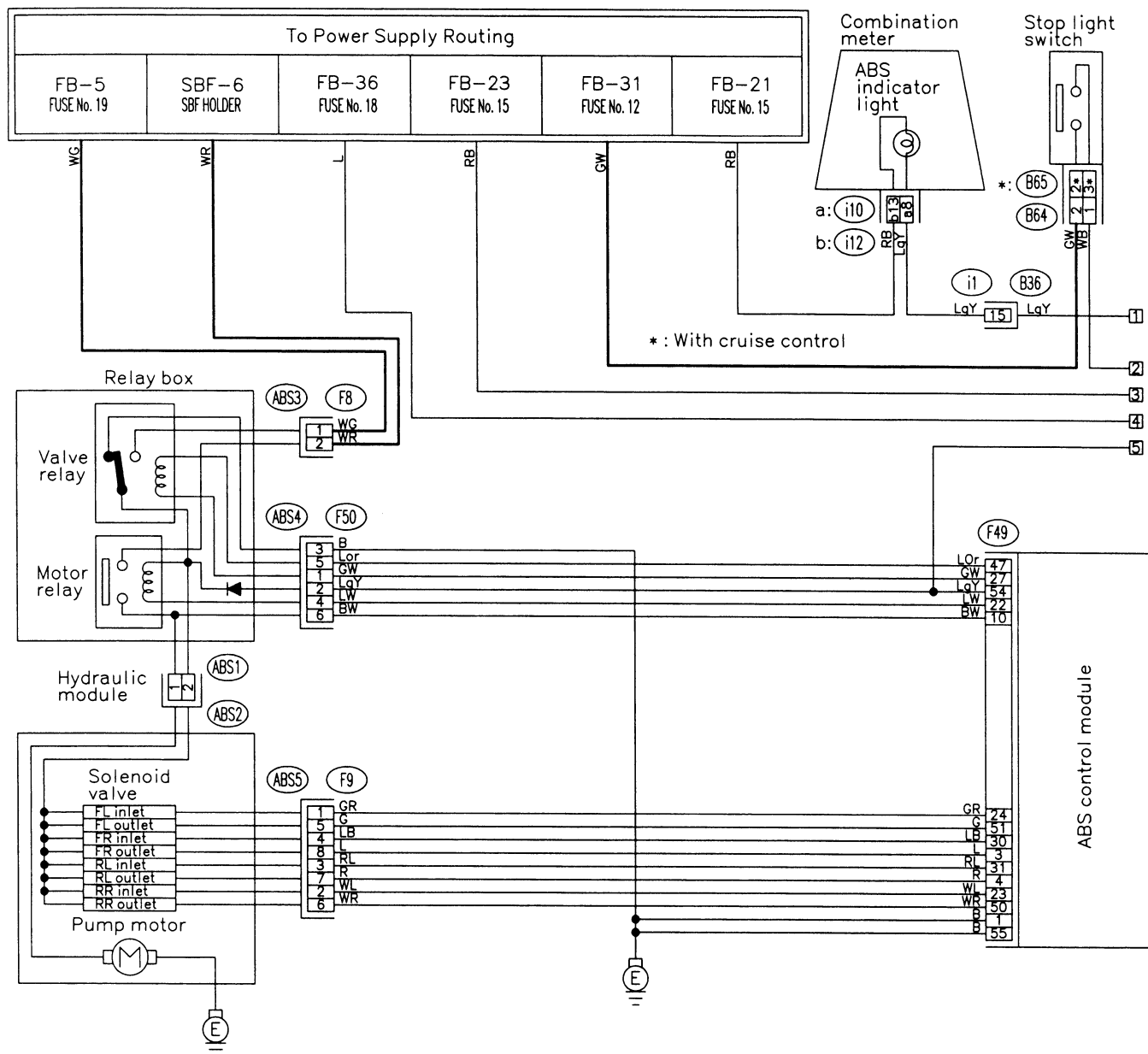


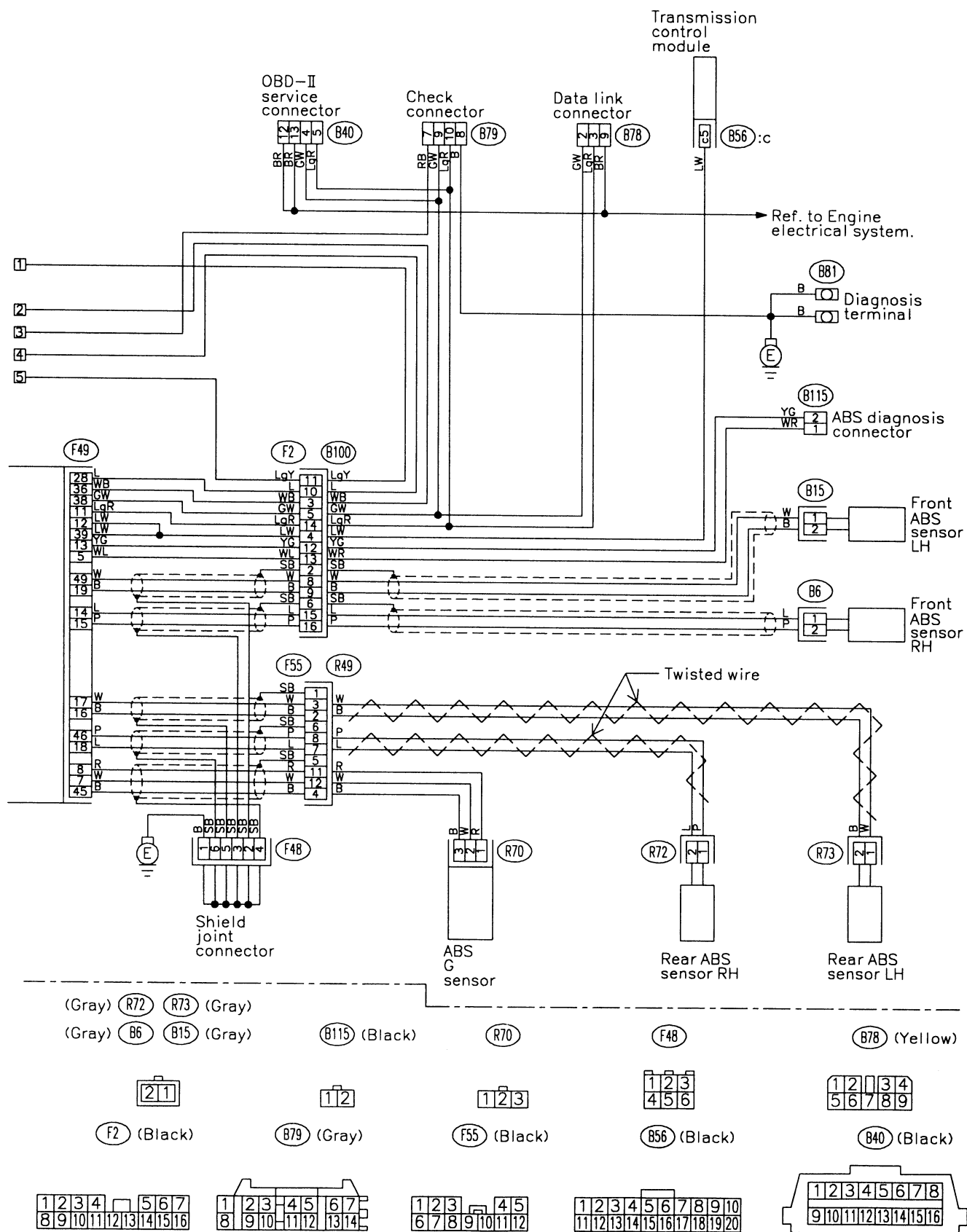
3. AIR CONDITIONING SYSTEM



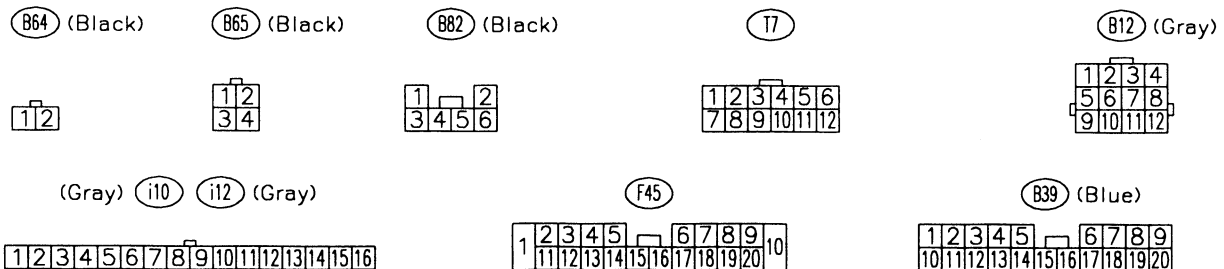
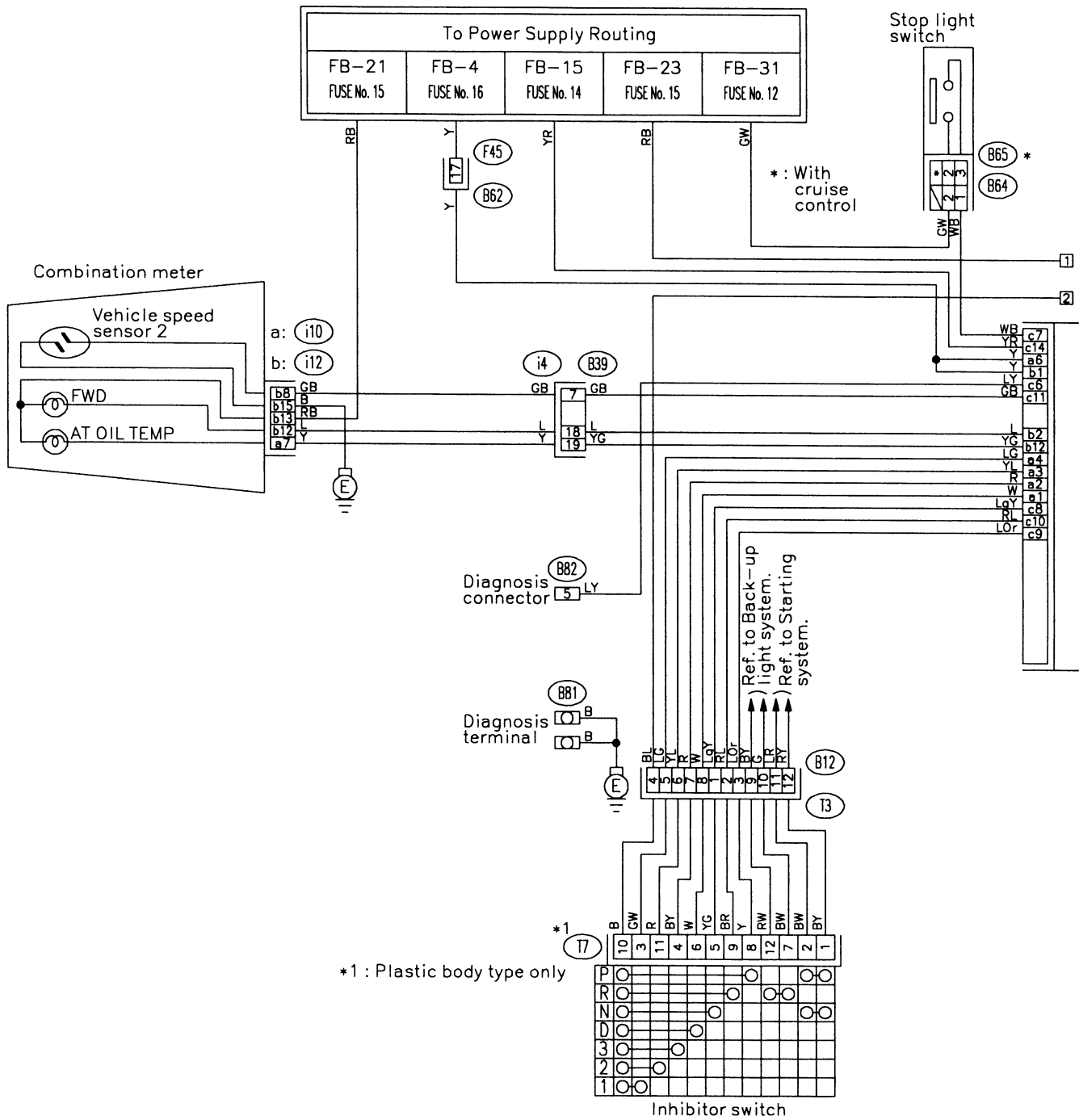


4. ANTI-LOCK BRAKE SYSTEM

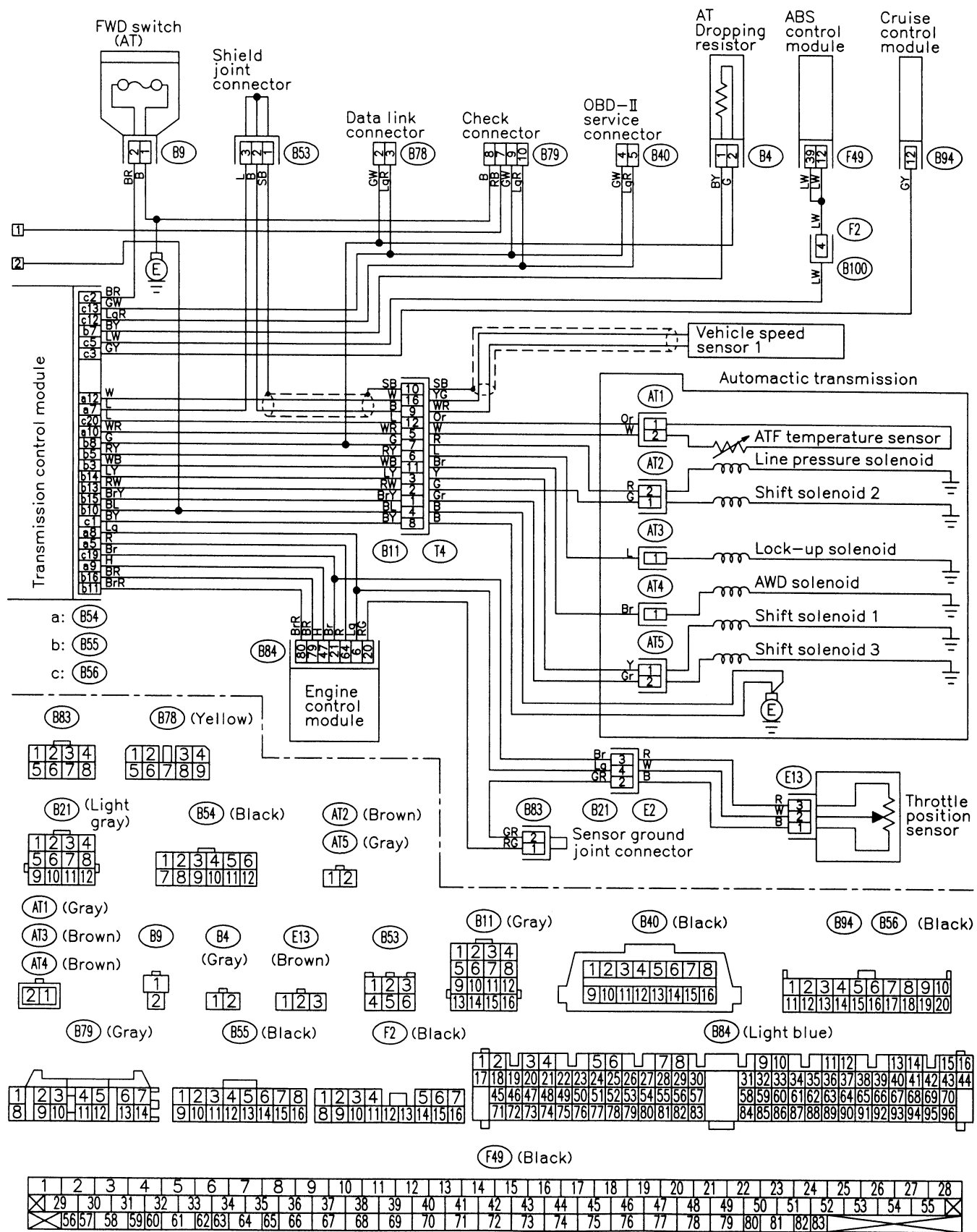




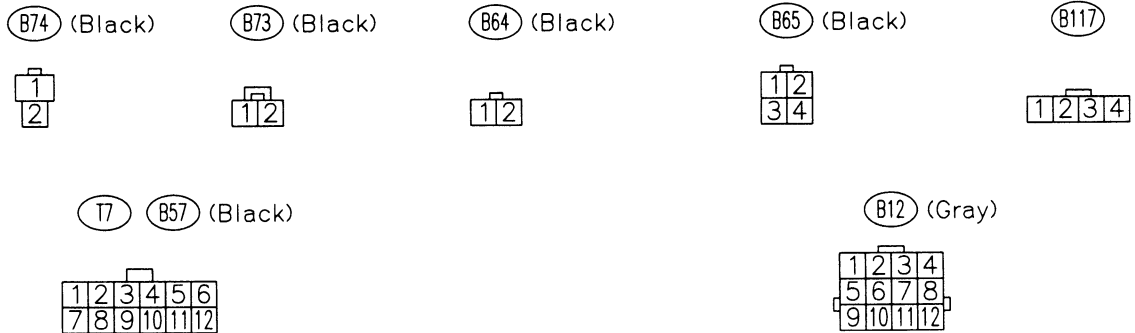
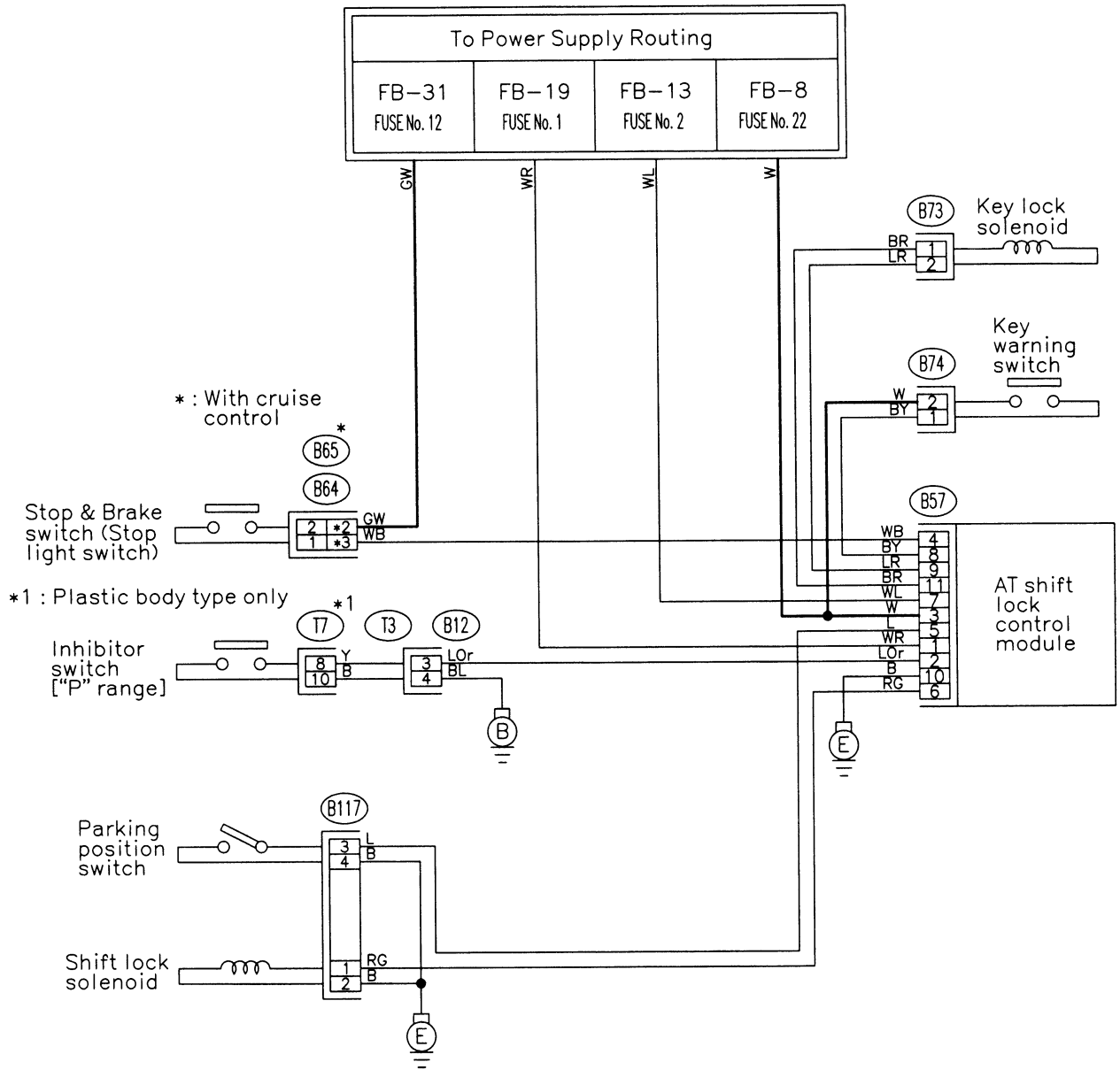
5. A/T CONTROL SYSTEM



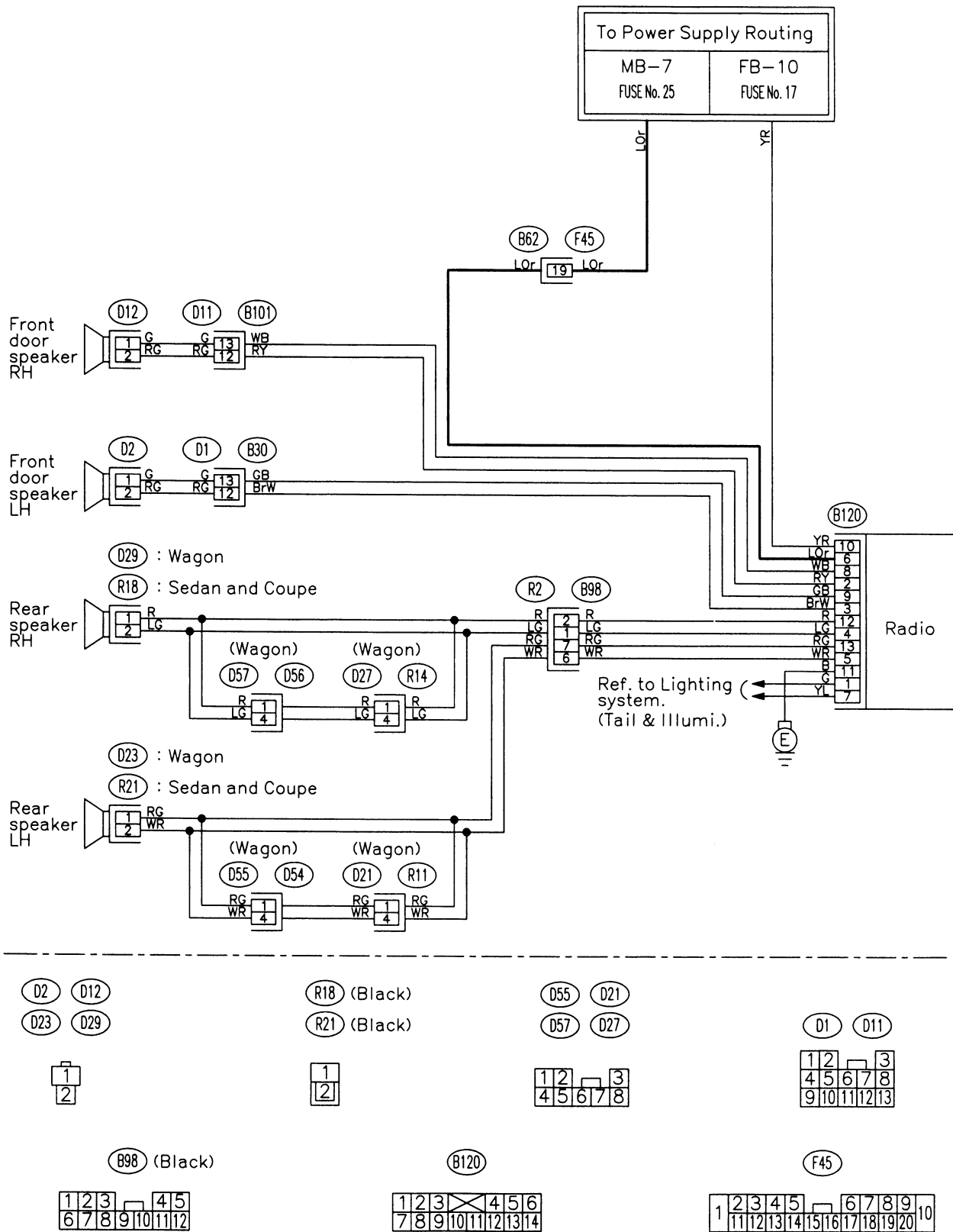
5. Wiring Diagram



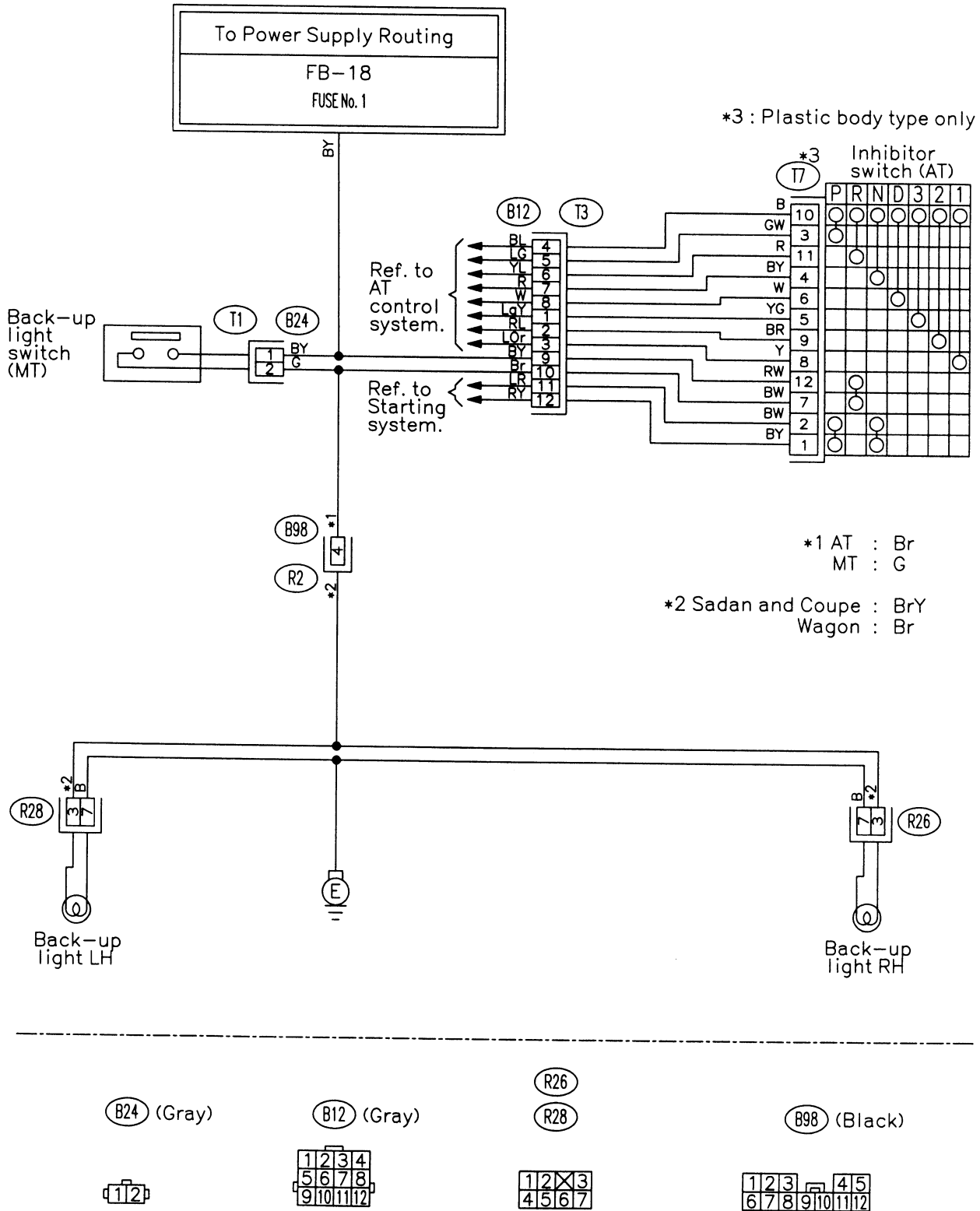
6. A/T SHIFT LOCK SYSTEM



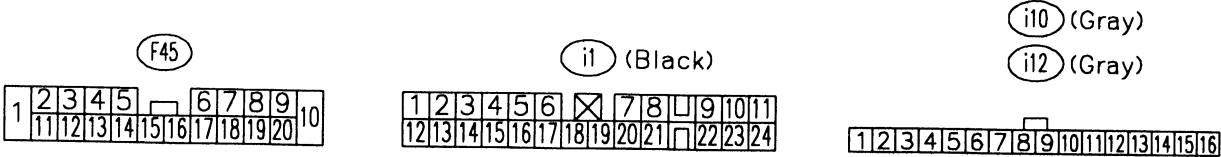
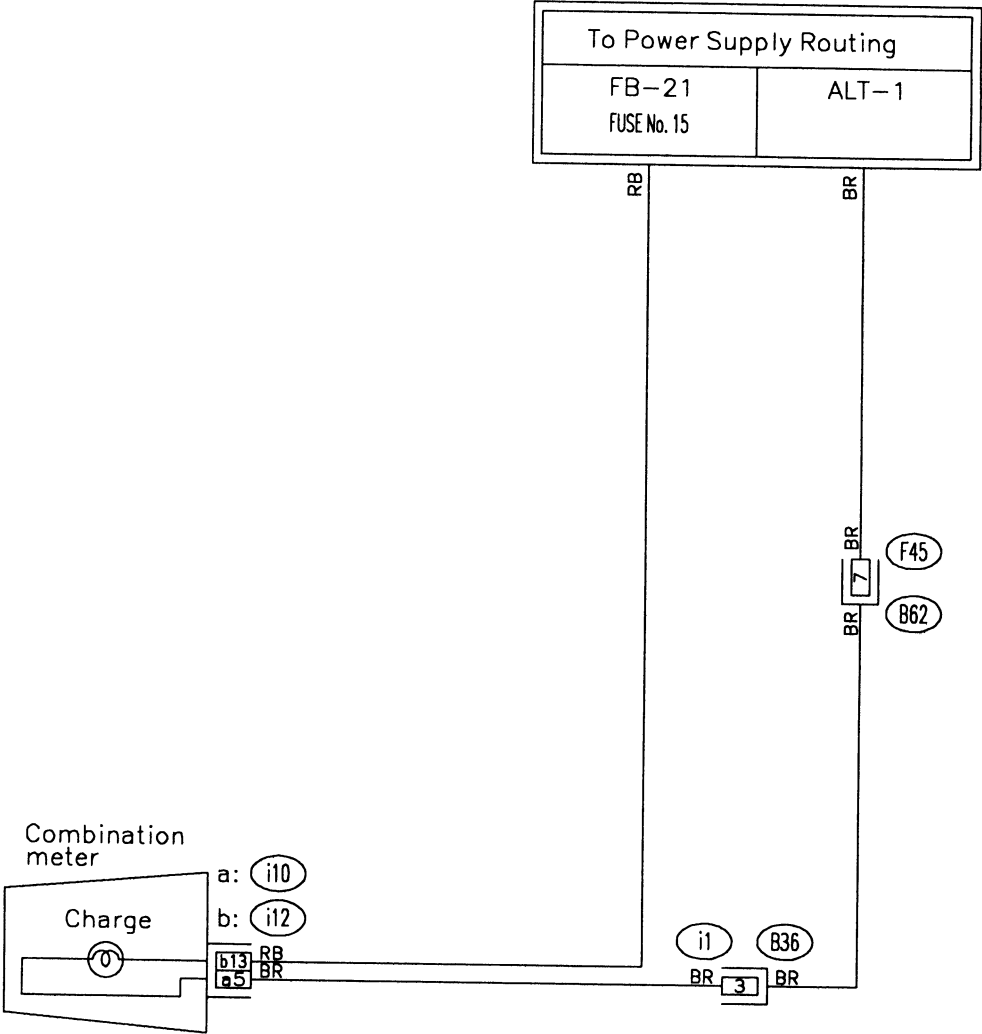
7. AUDIO SYSTEM



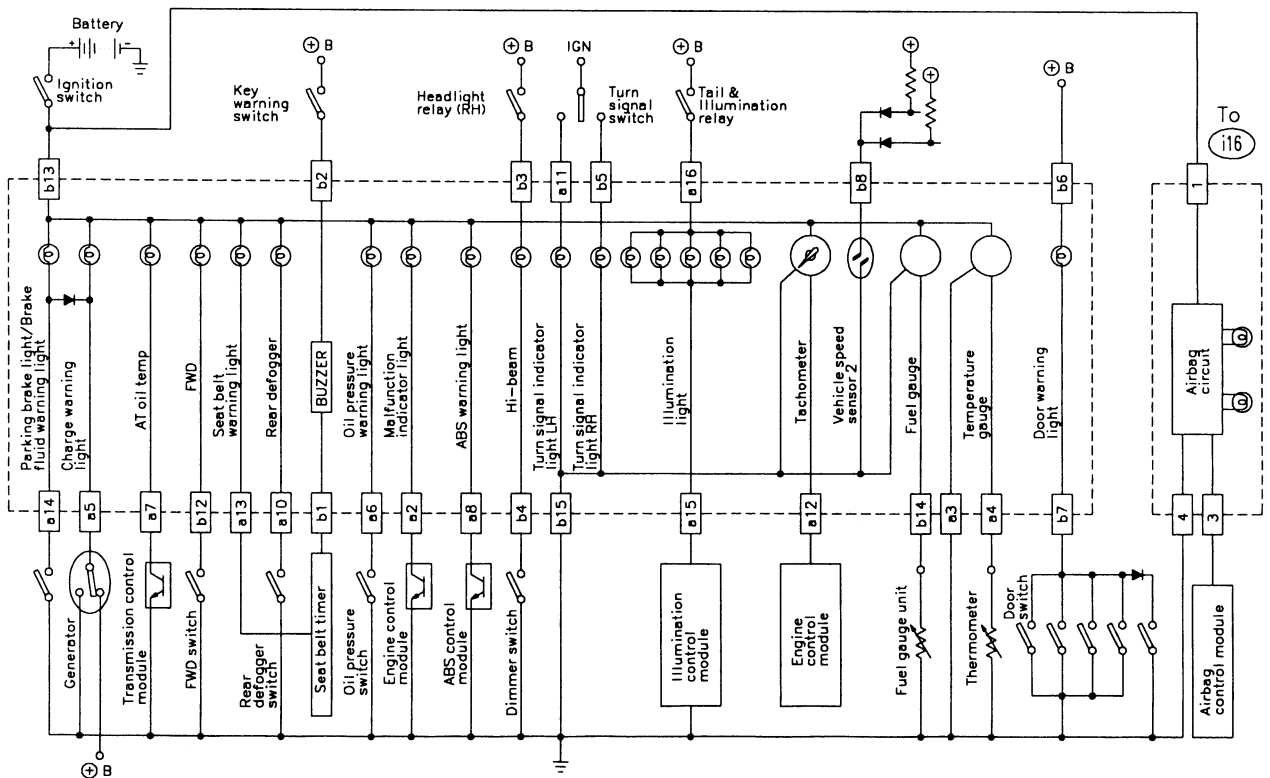
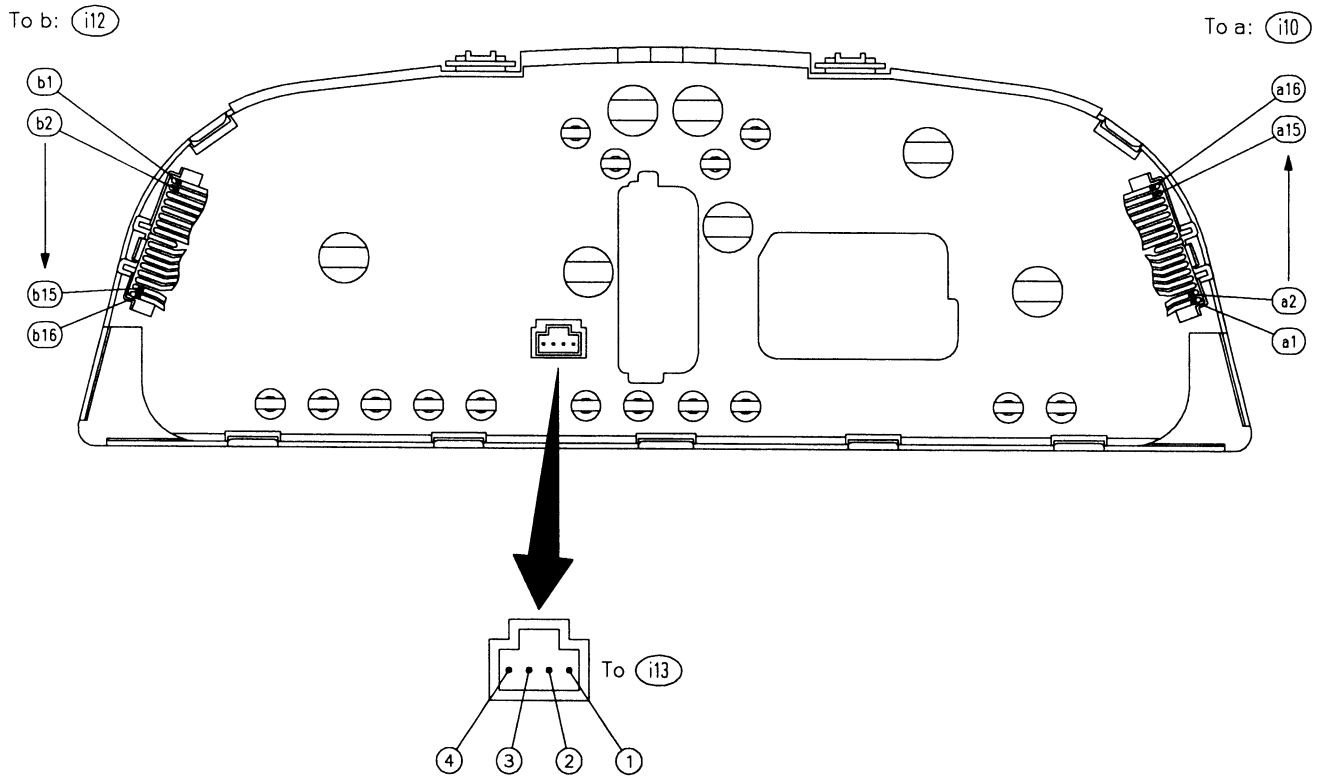
8. BACK-UP LIGHT SYSTEM



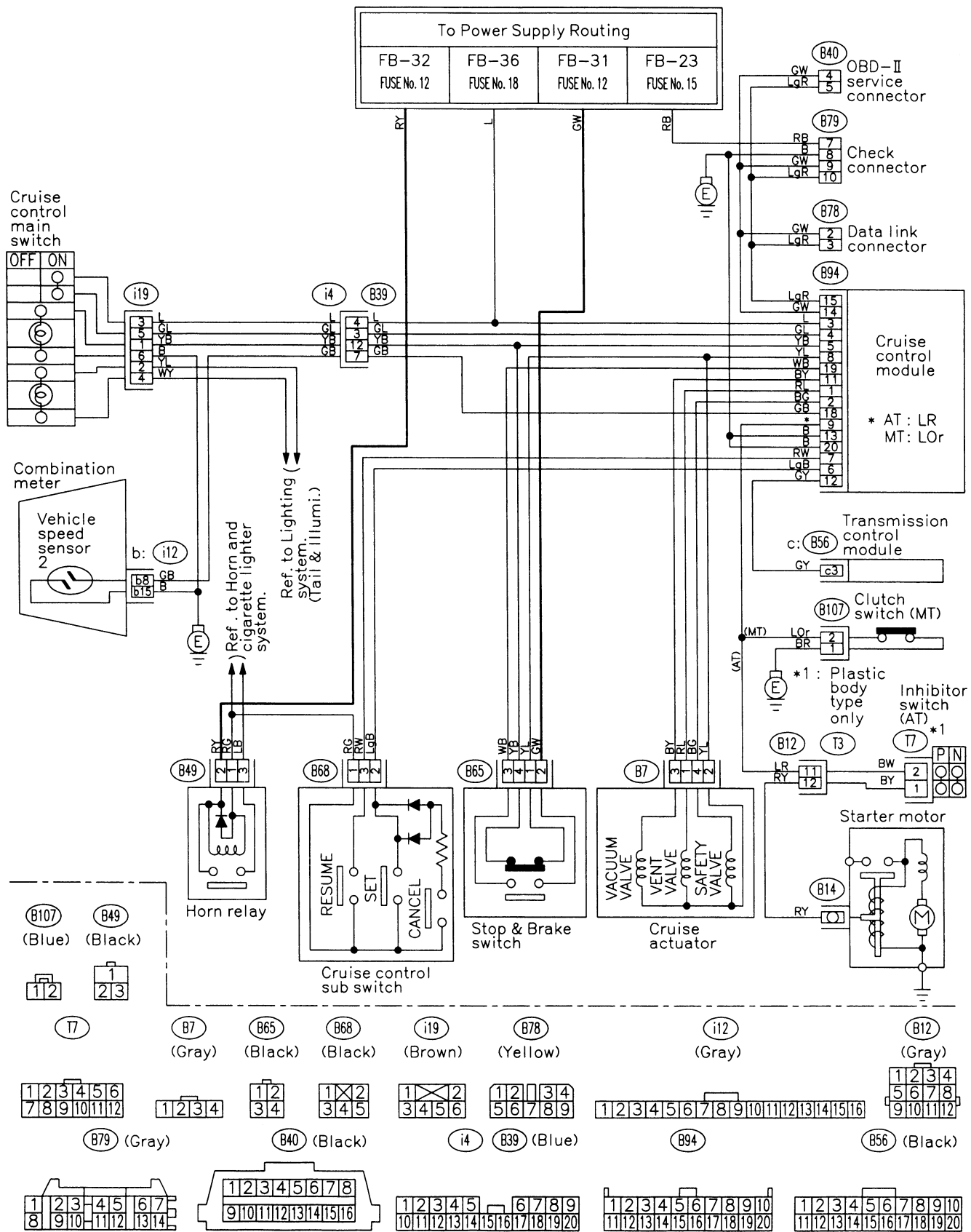
9. CHARGING SYSTEM



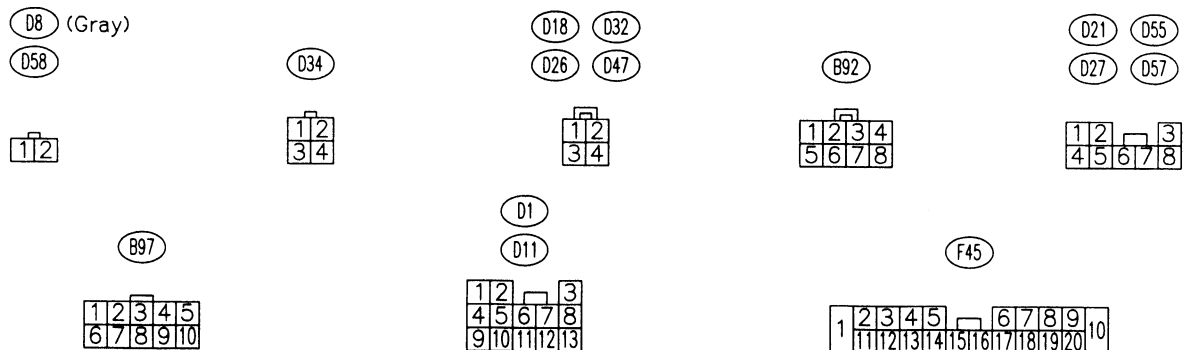
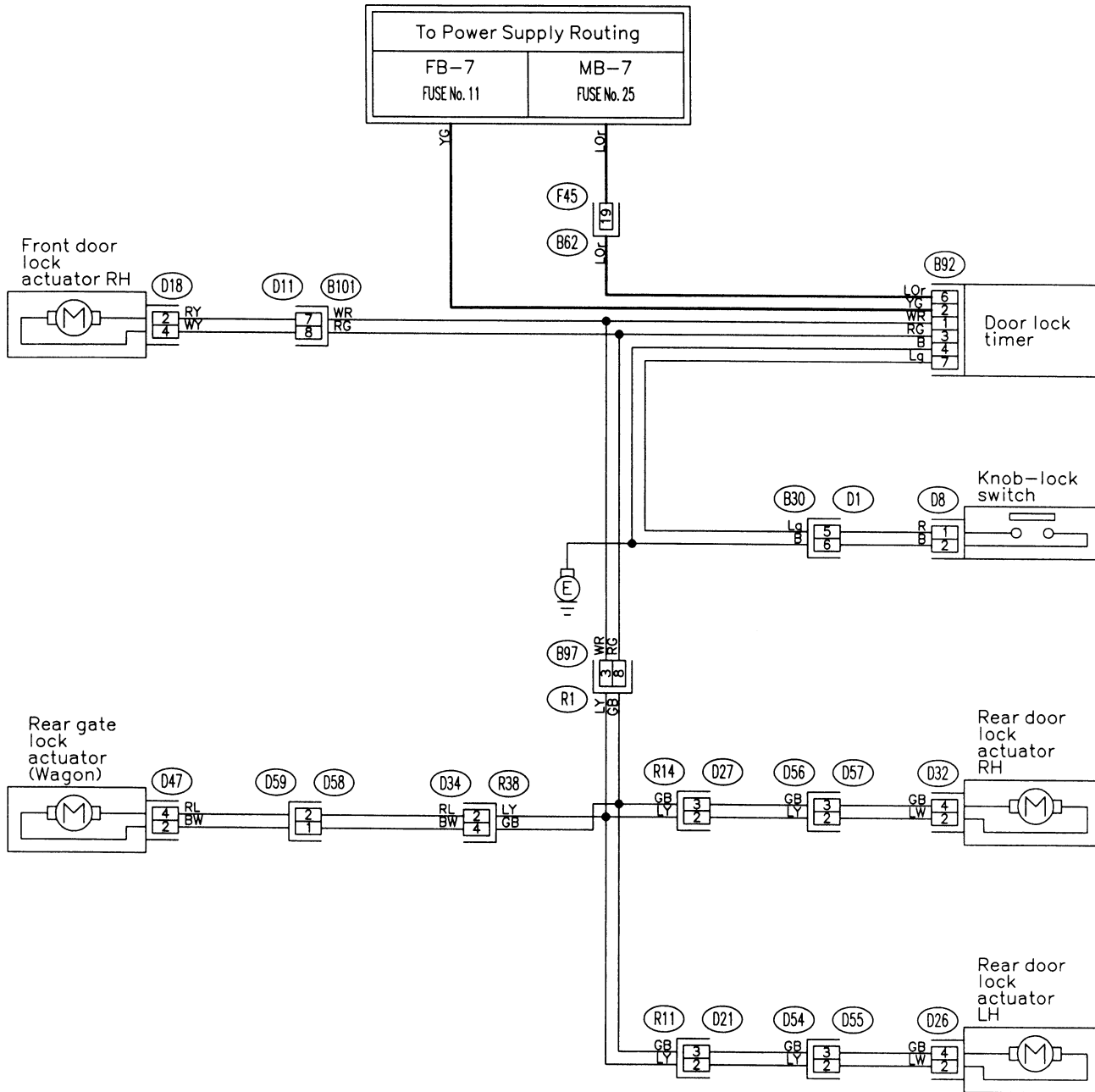
10. COMBINATION METER



11. CRUISE CONTROL SYSTEM

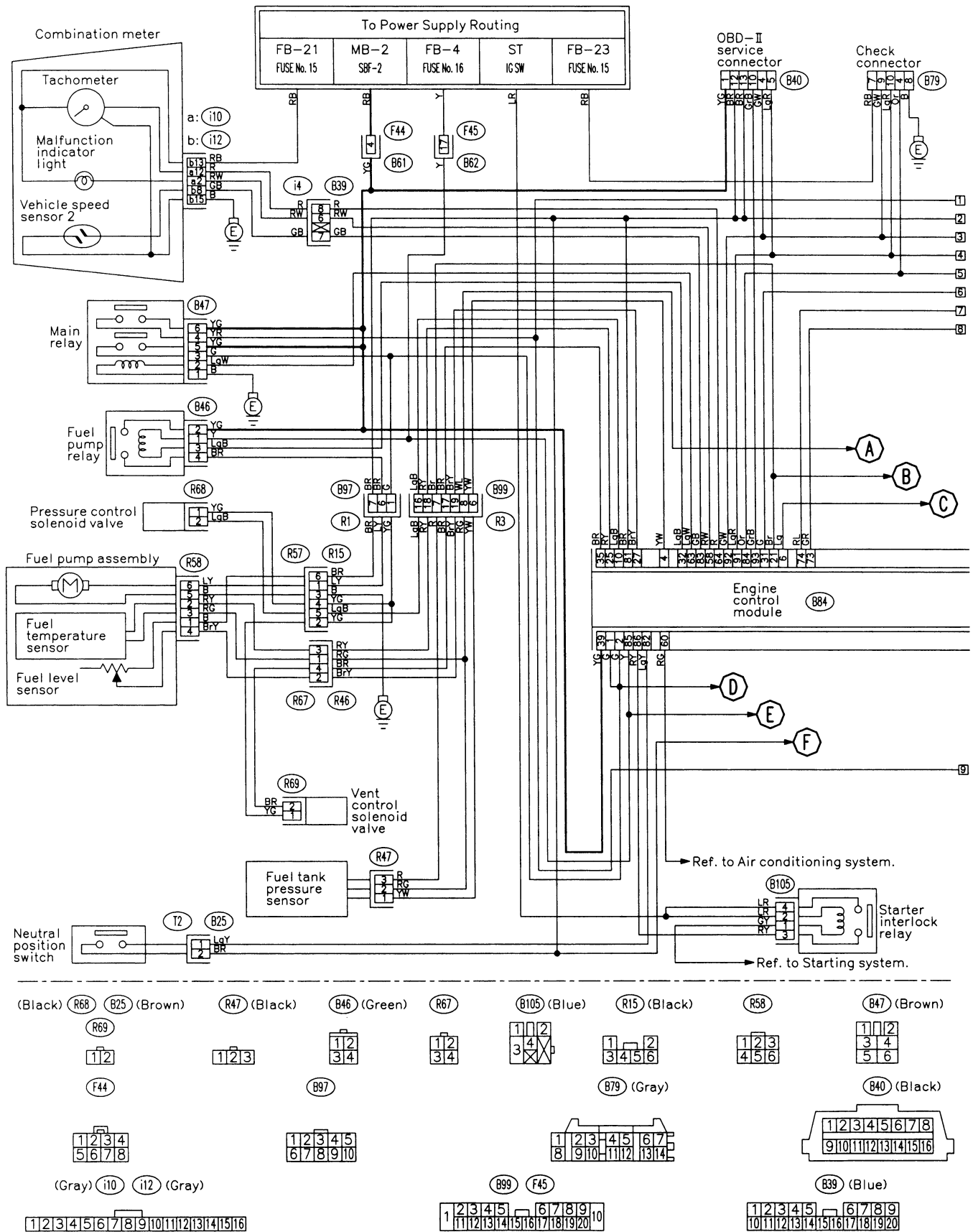


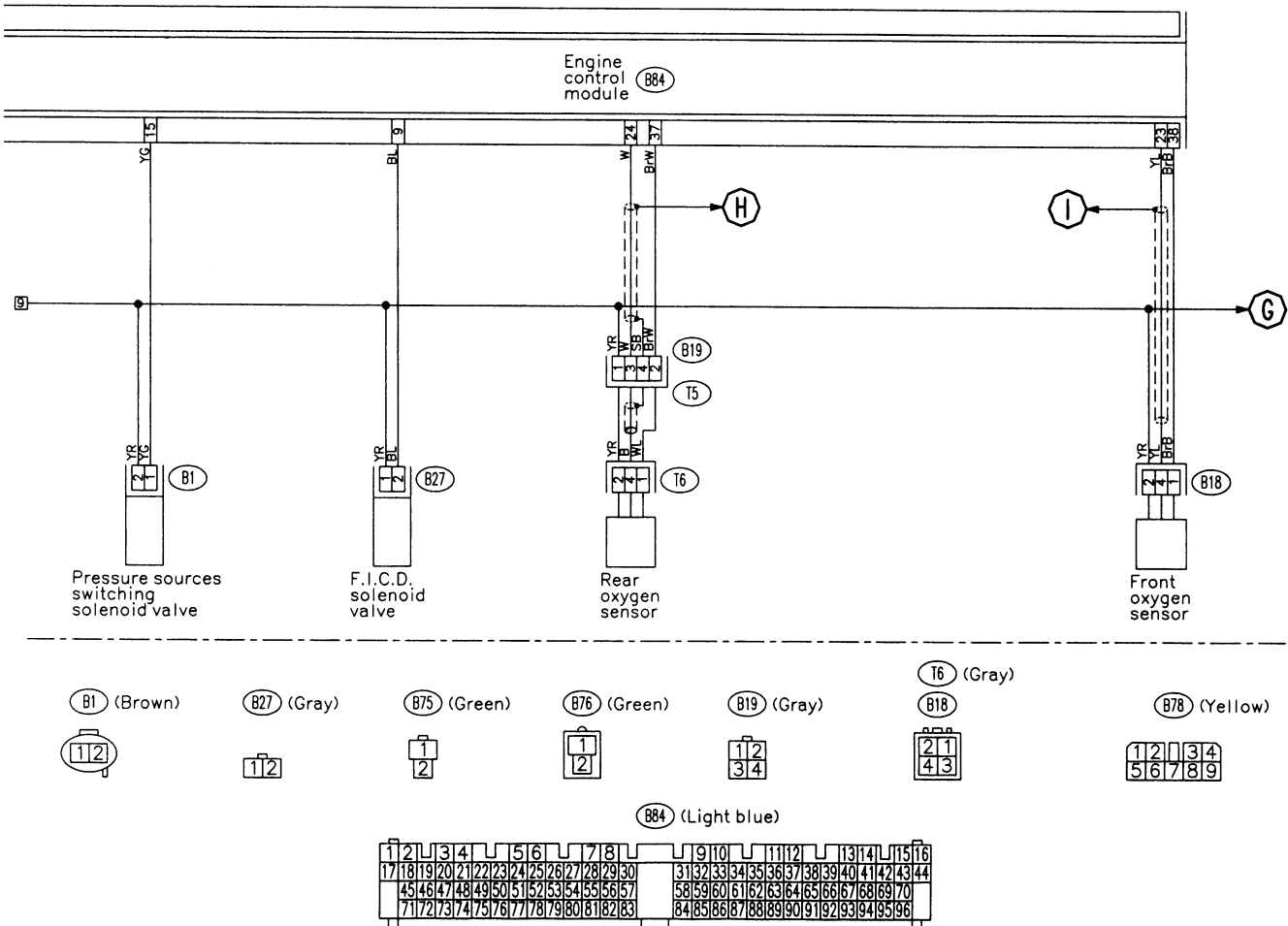
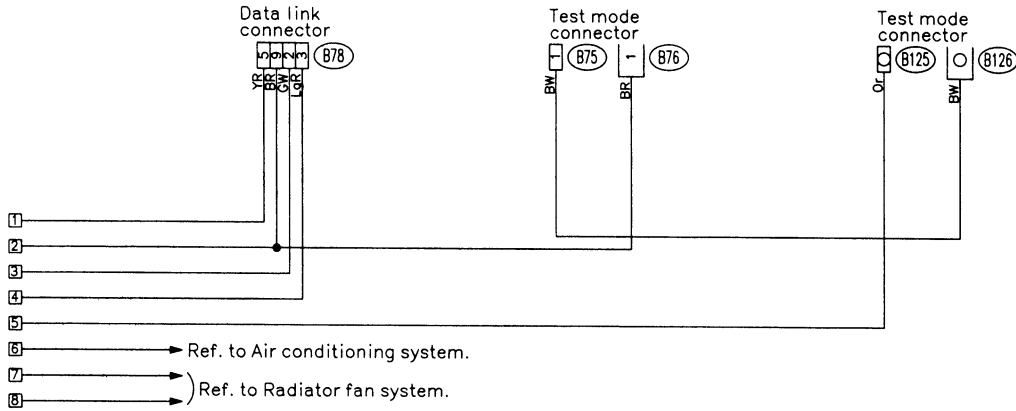
12. DOOR LOCK SYSTEM

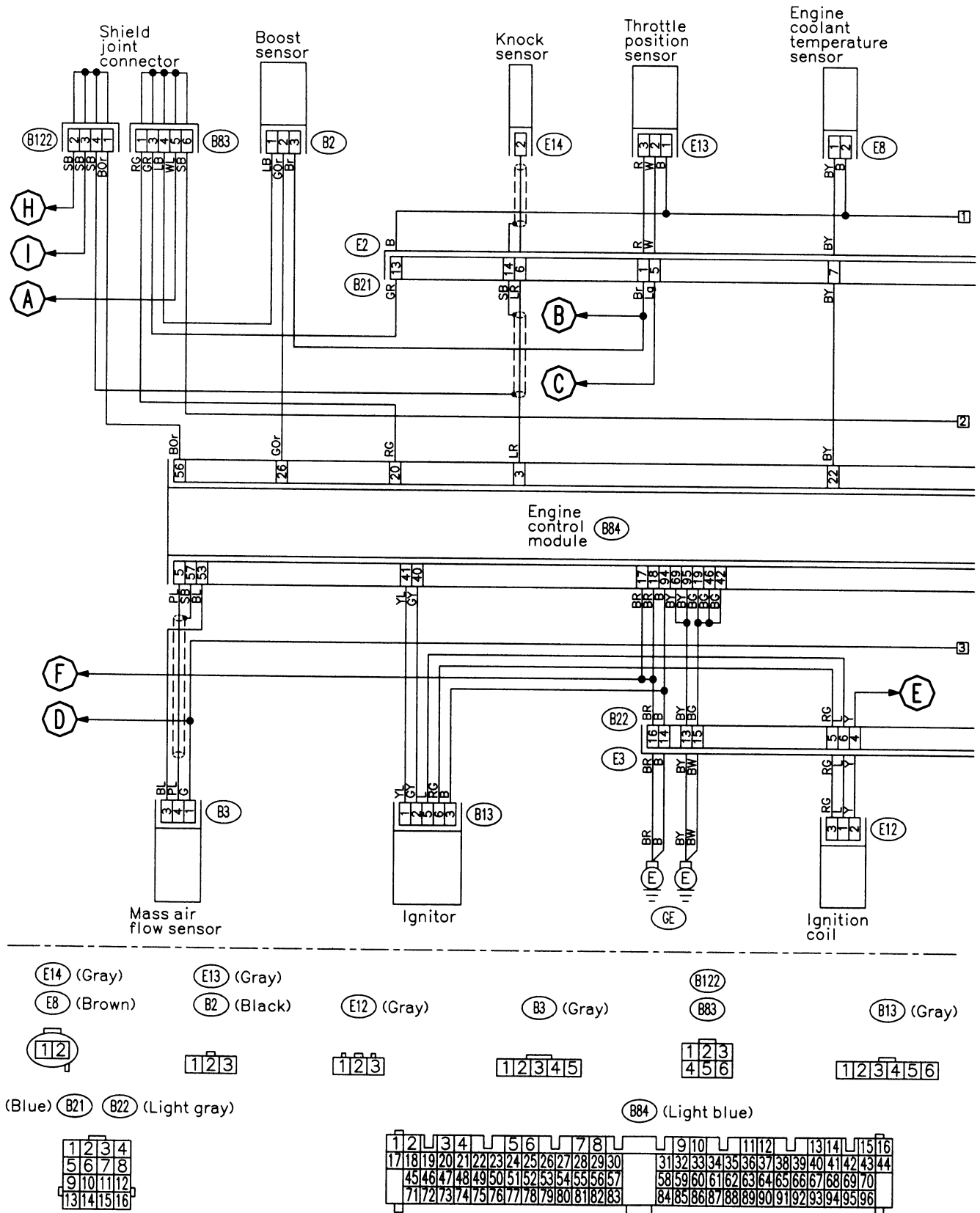


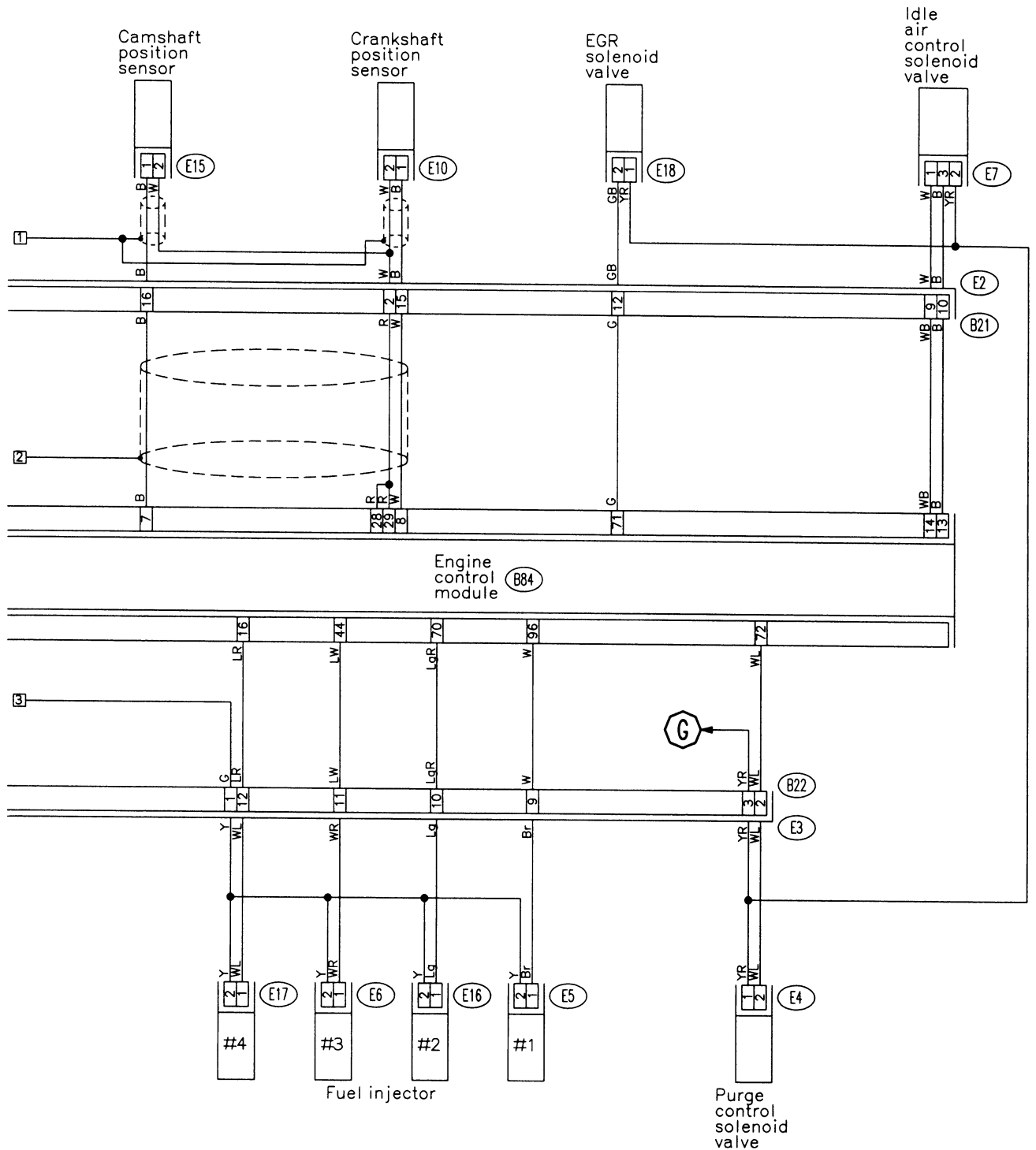
13. ENGINE ELECTRICAL SYSTEM

● 1800 cc engine model





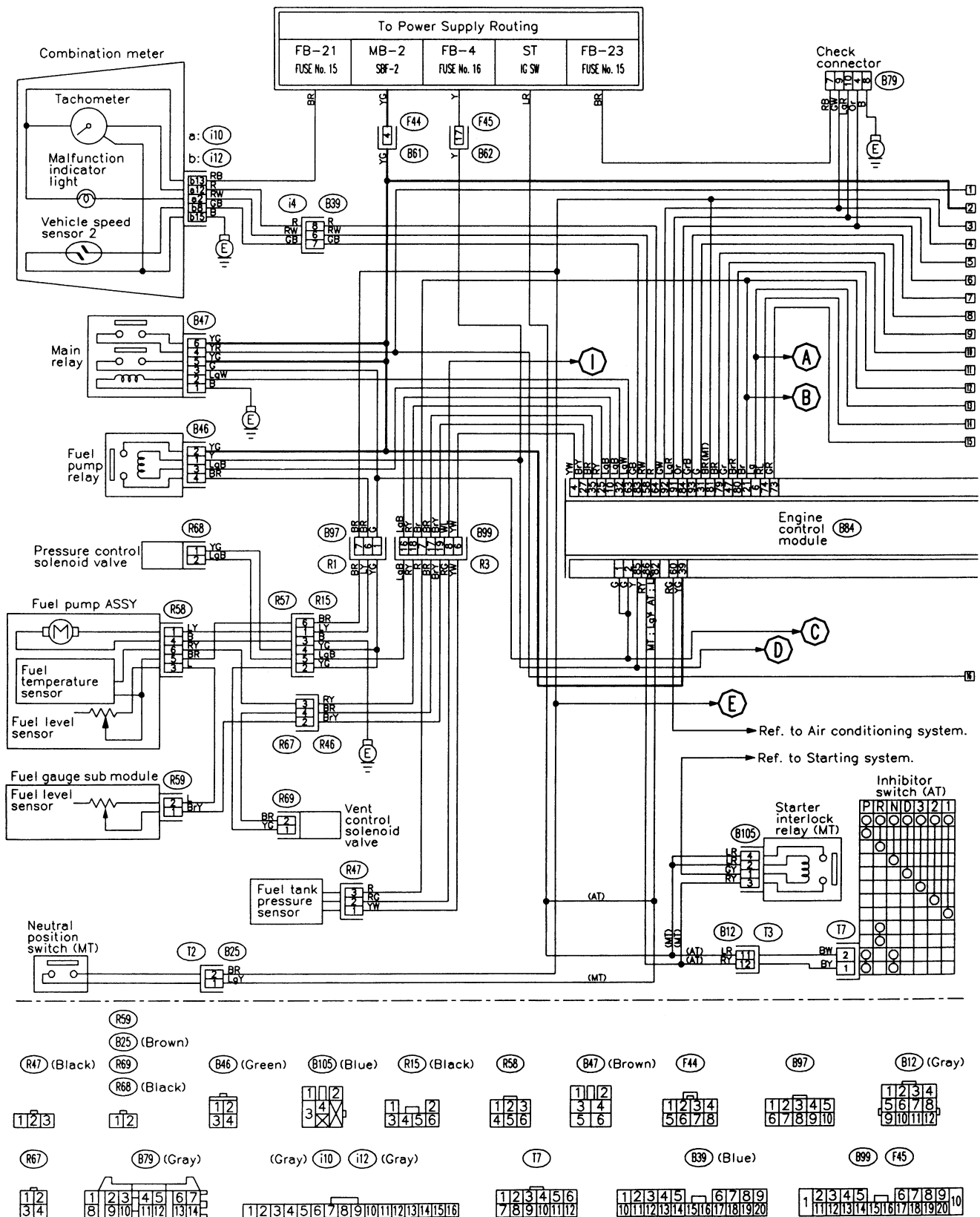


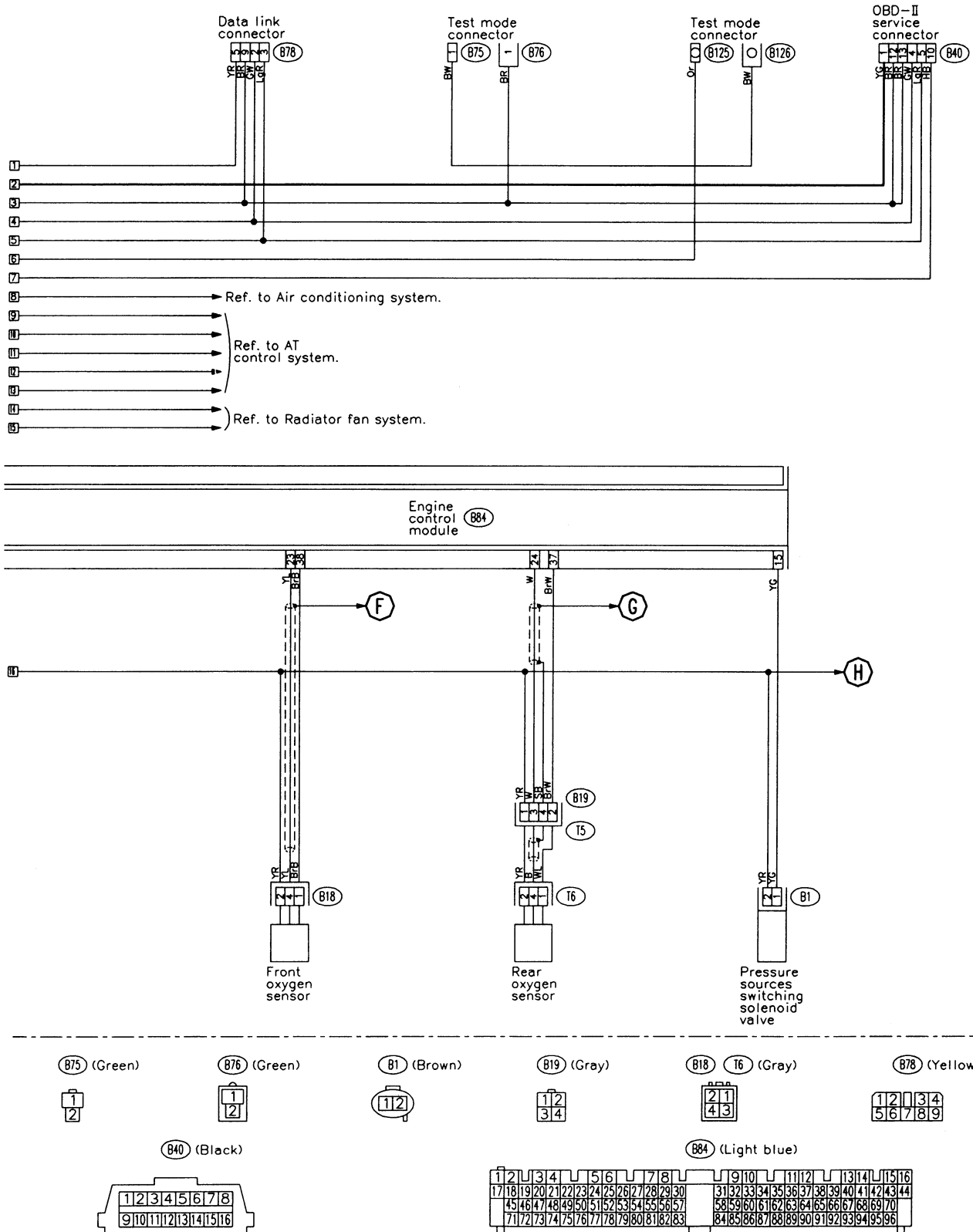


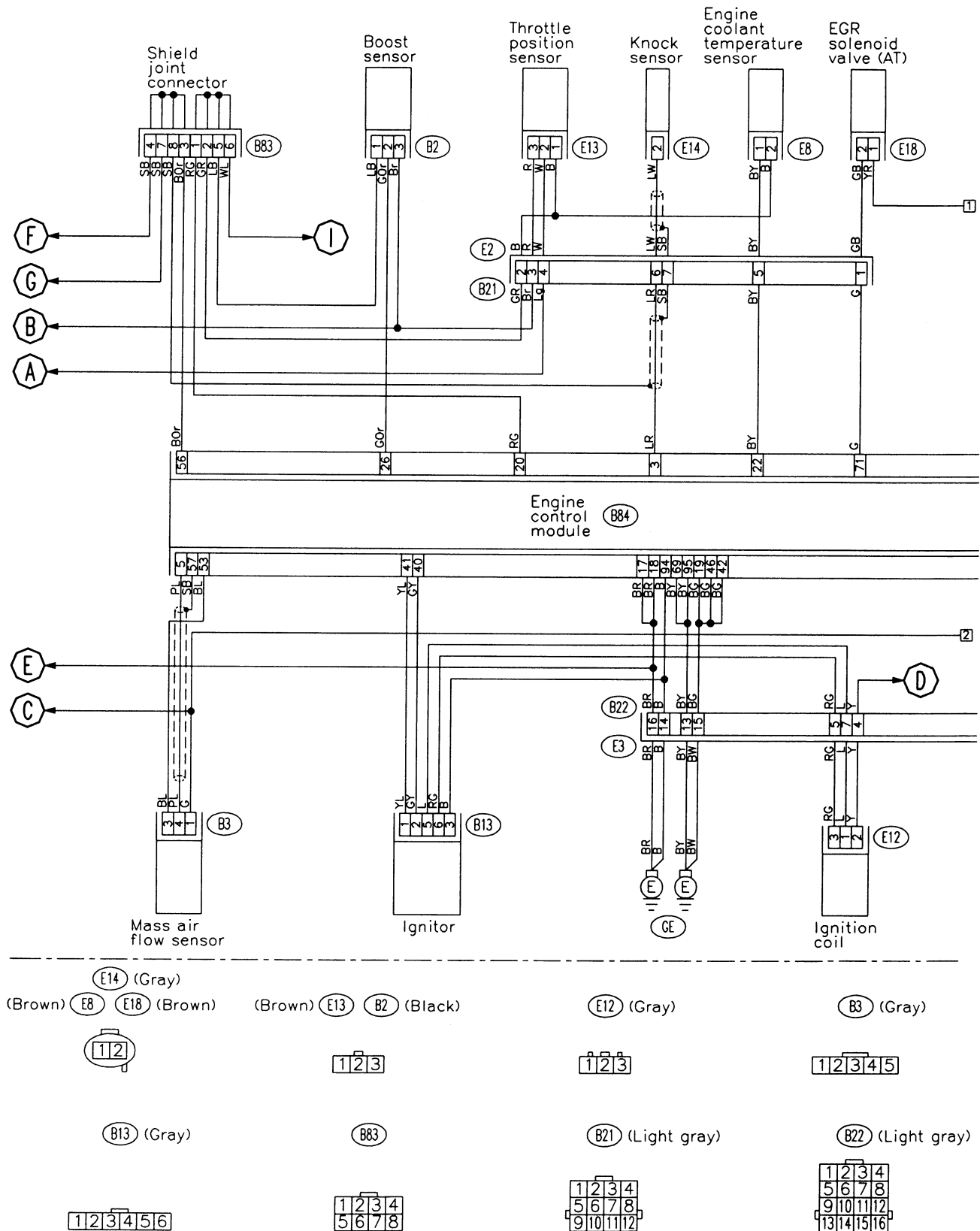
- | | | | | | | |
|--------------|--------|-------------|--------------|---------------|-------------|-------------|
| (E15) (Gray) | (Gray) | (E5) (Gray) | (E16) (Gray) | (E18) (Brown) | (E4) (Blue) | (E7) (Gray) |
| (E10) (Gray) | (Gray) | (E6) (Gray) | (E17) (Gray) | | | |
-
- | | | | | | |
|--|--|--|--|--|--|
| | | | | | |
|--|--|--|--|--|--|

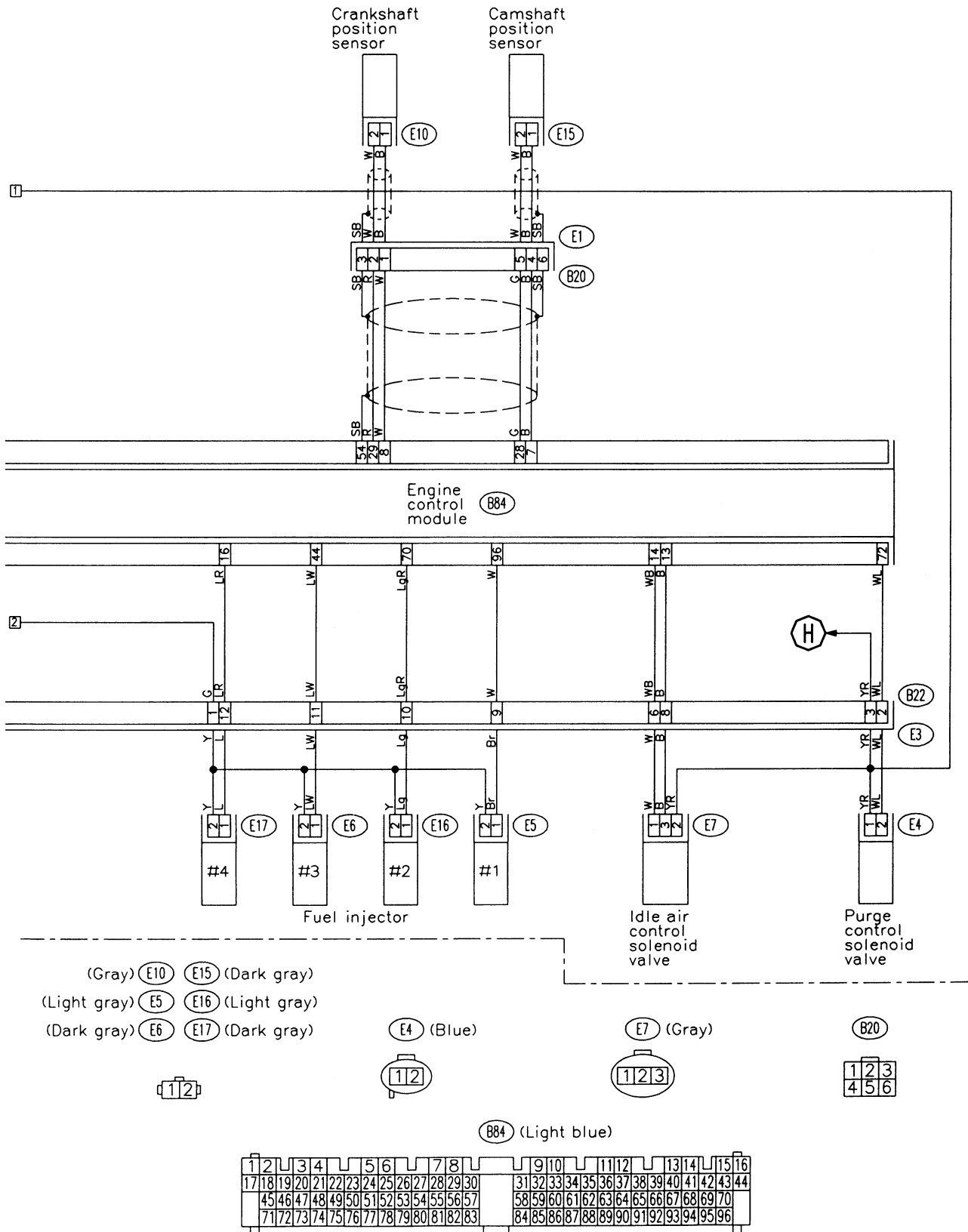
13. ENGINE ELECTRICAL SYSTEM

● 2200 cc engine model

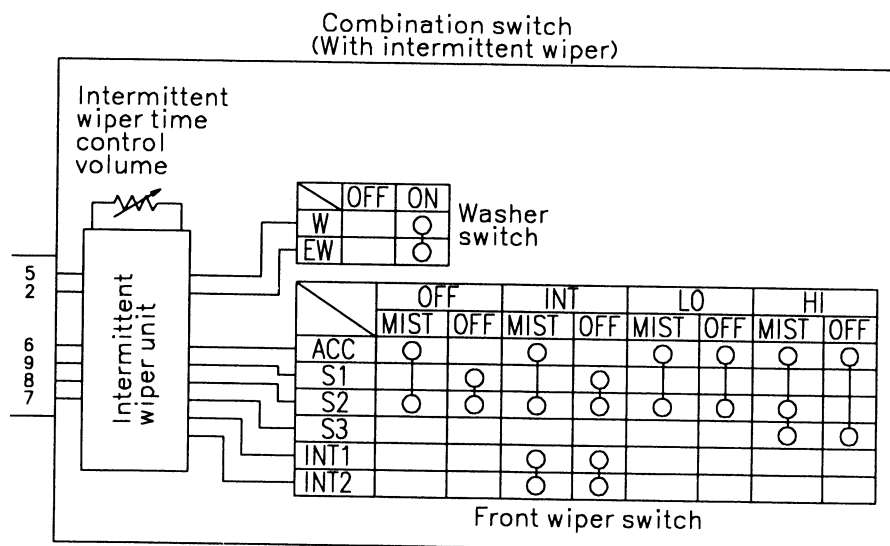
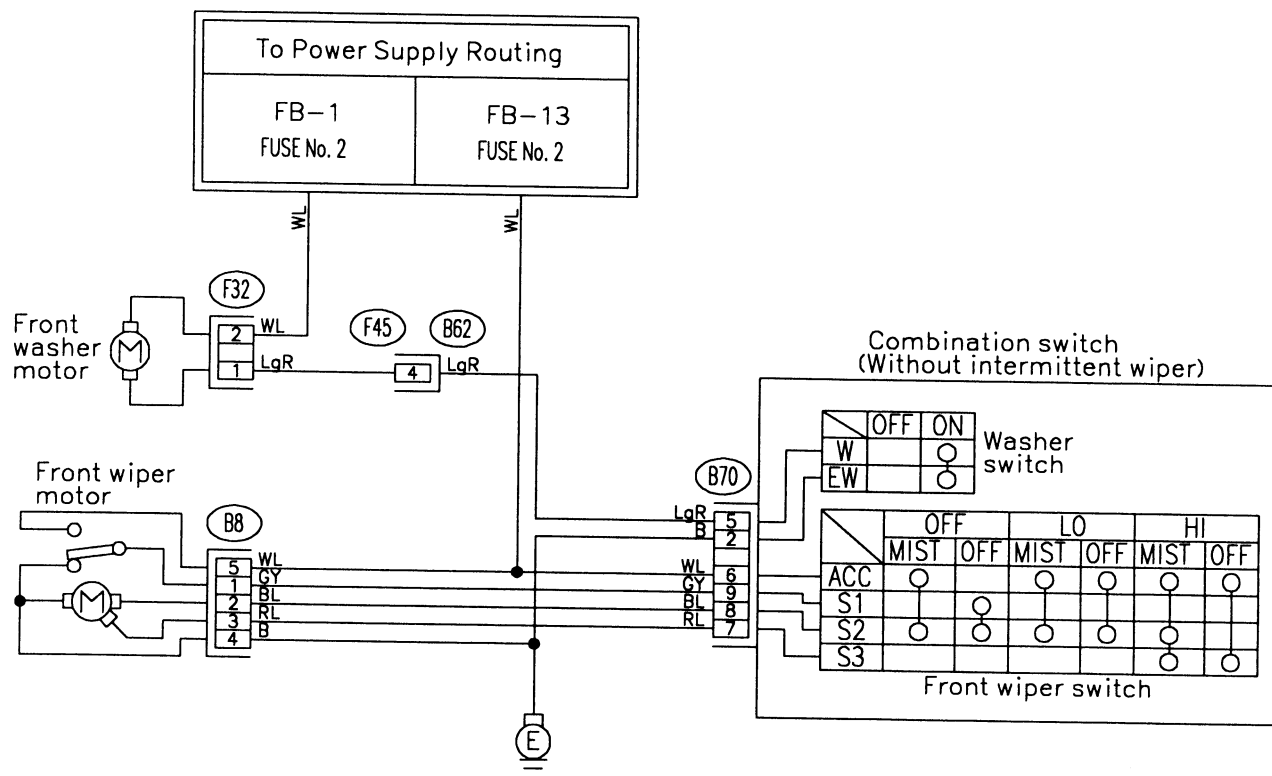








14. FRONT WIPER AND WASHER SYSTEM

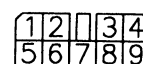
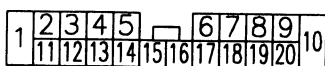


(F32) (Green)

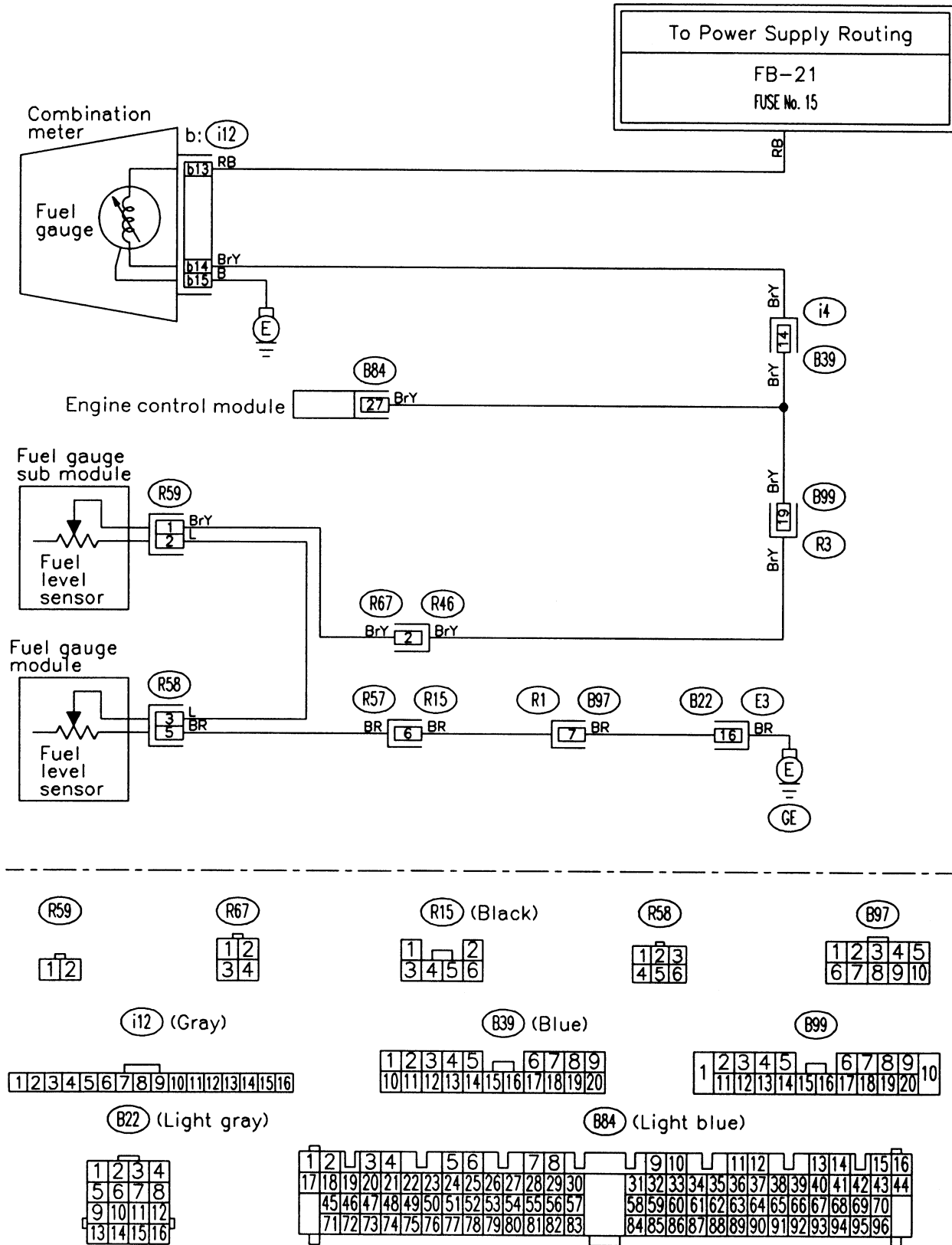
(F45)

(B8)

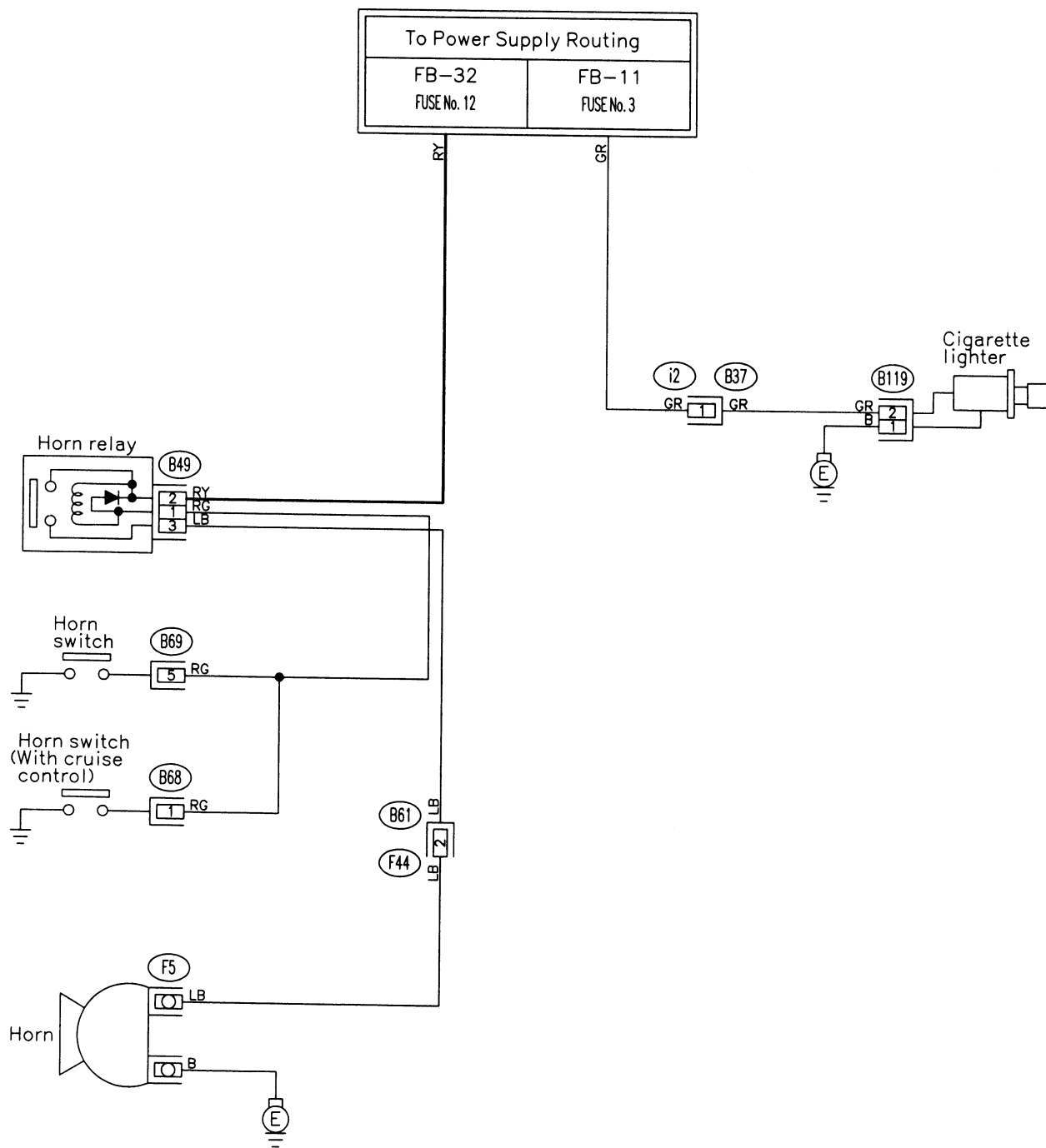
(B70)



15. FUEL GAUGE SYSTEM



16. HORN AND CIGARETTE LIGHTER SYSTEM



(B119)

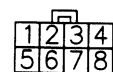
(B49) (Black)



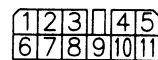
(B68) (Black)



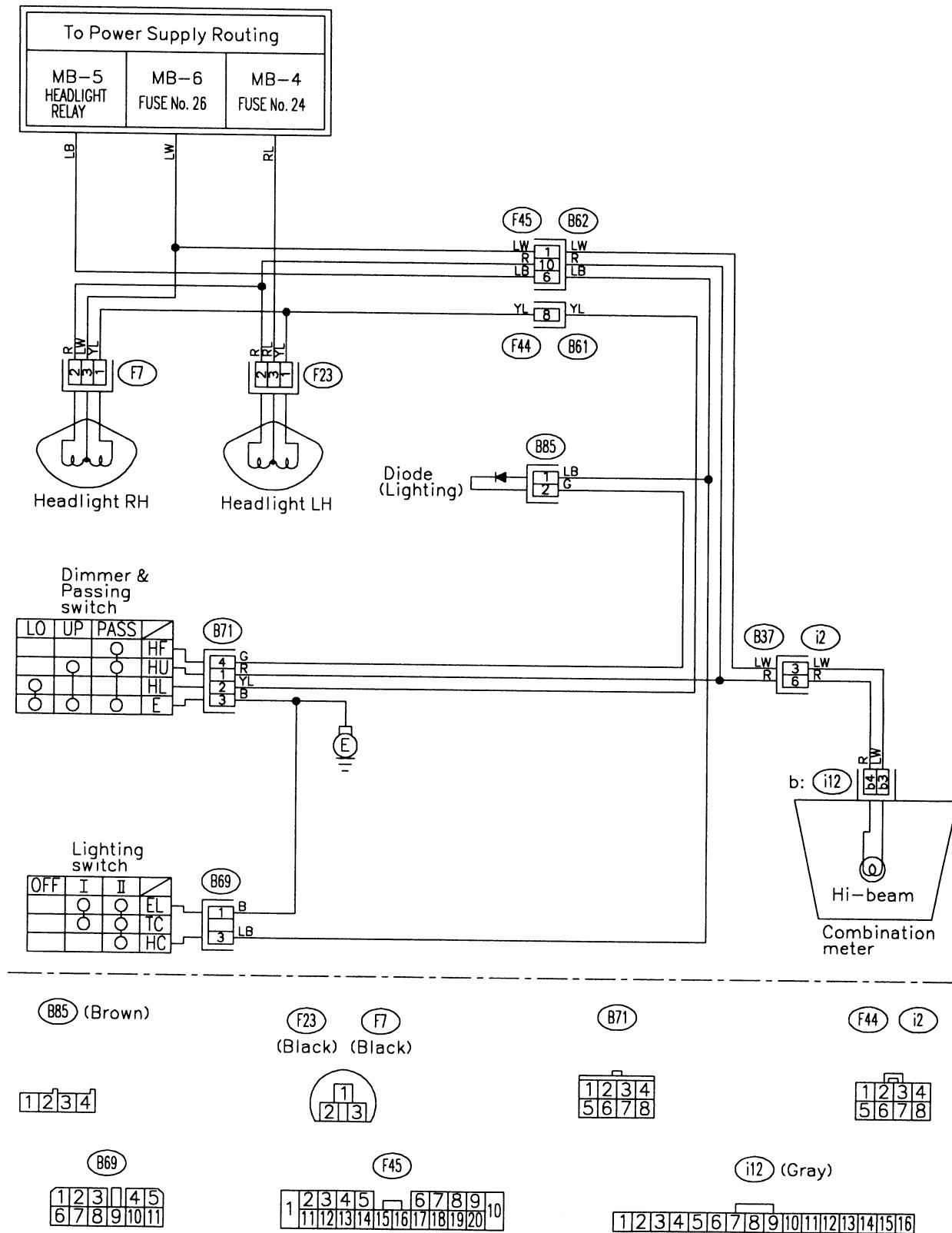
i2 (F44)



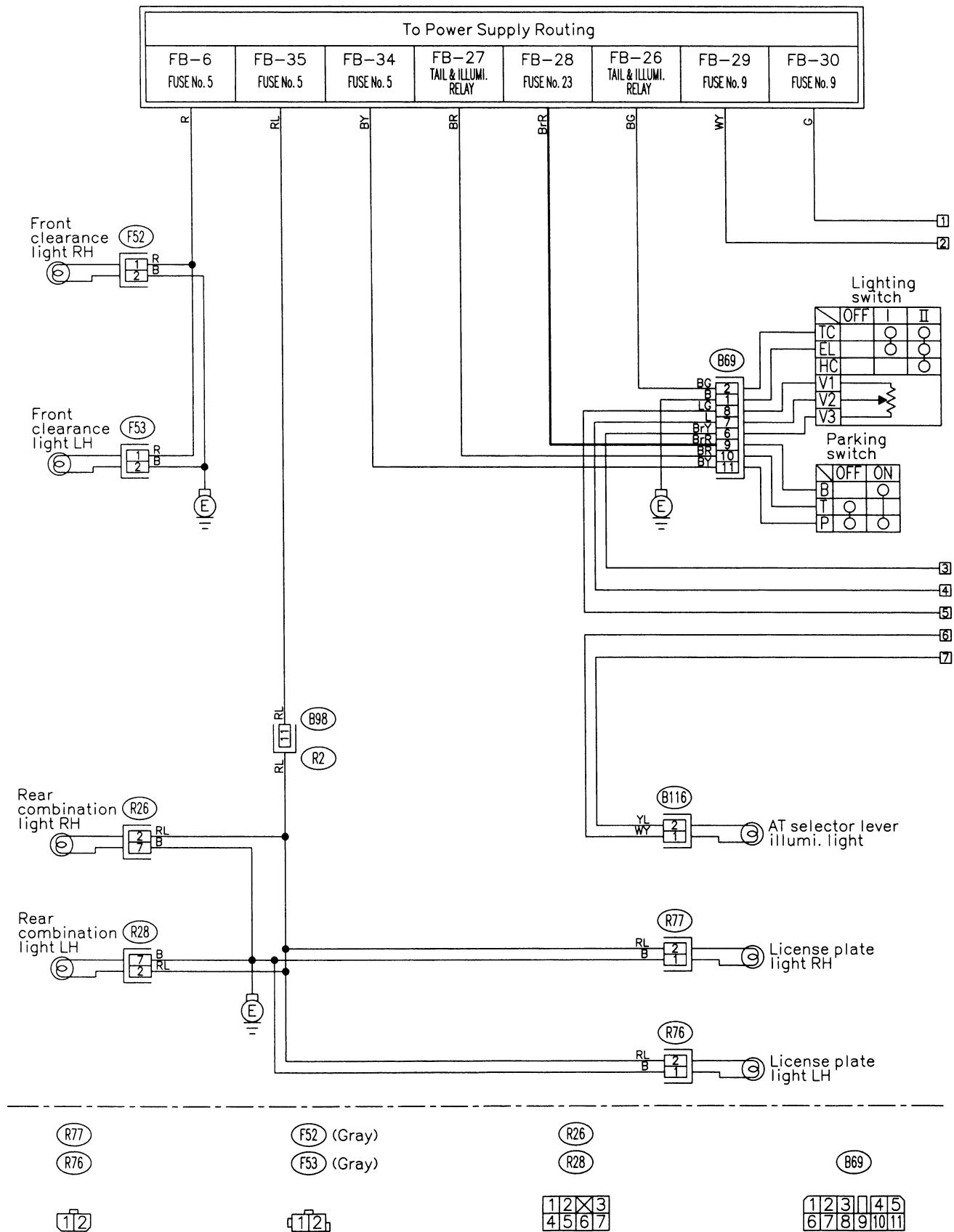
(B69)

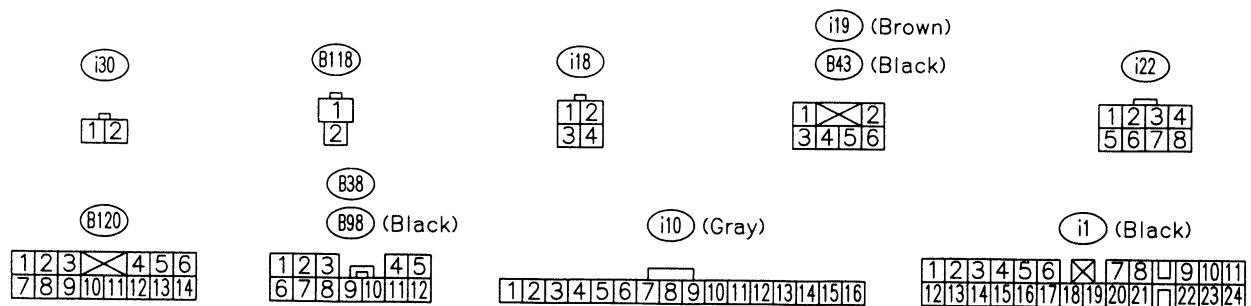
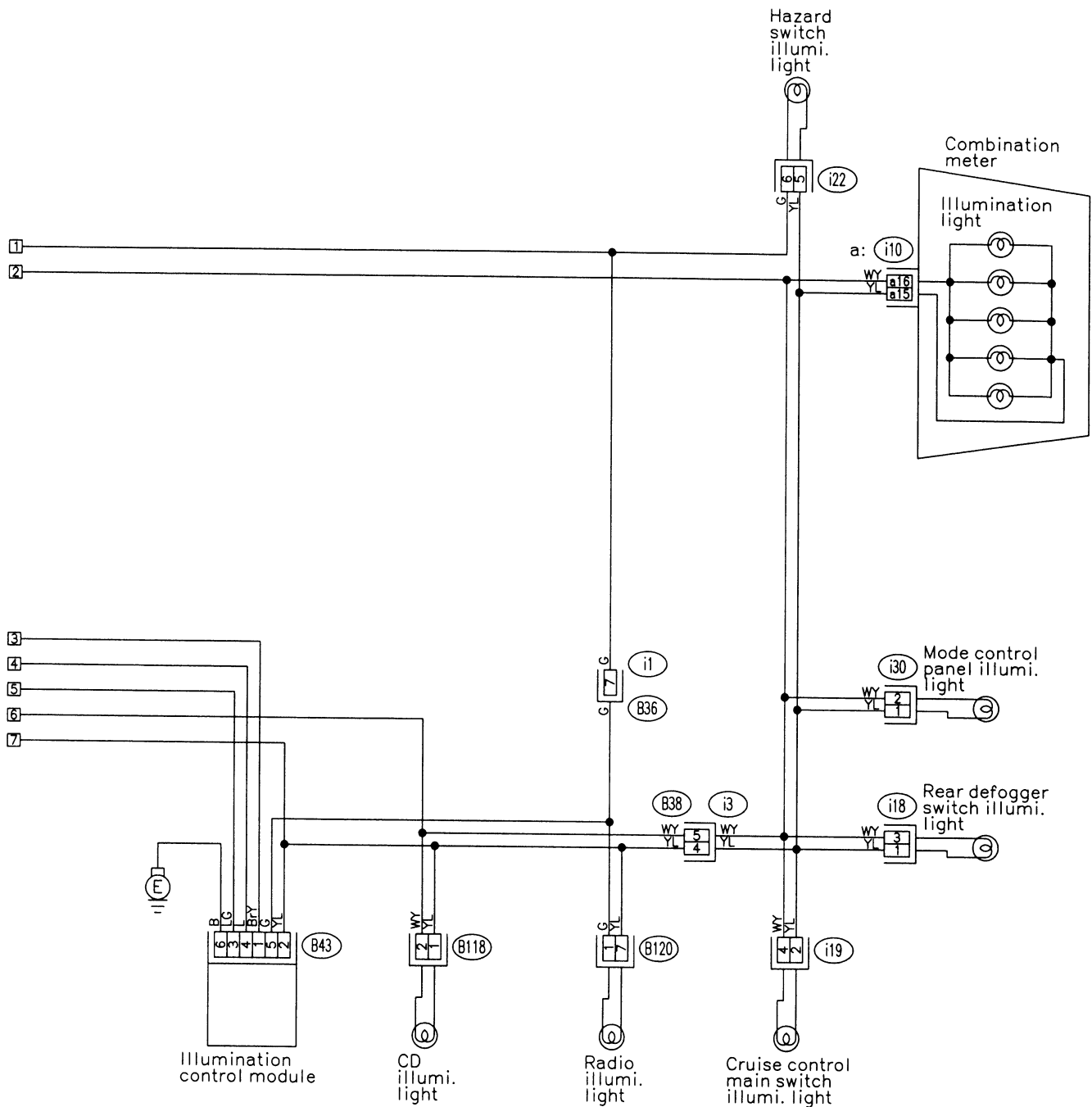


17. LIGHTING (HEADLIGHT) SYSTEM

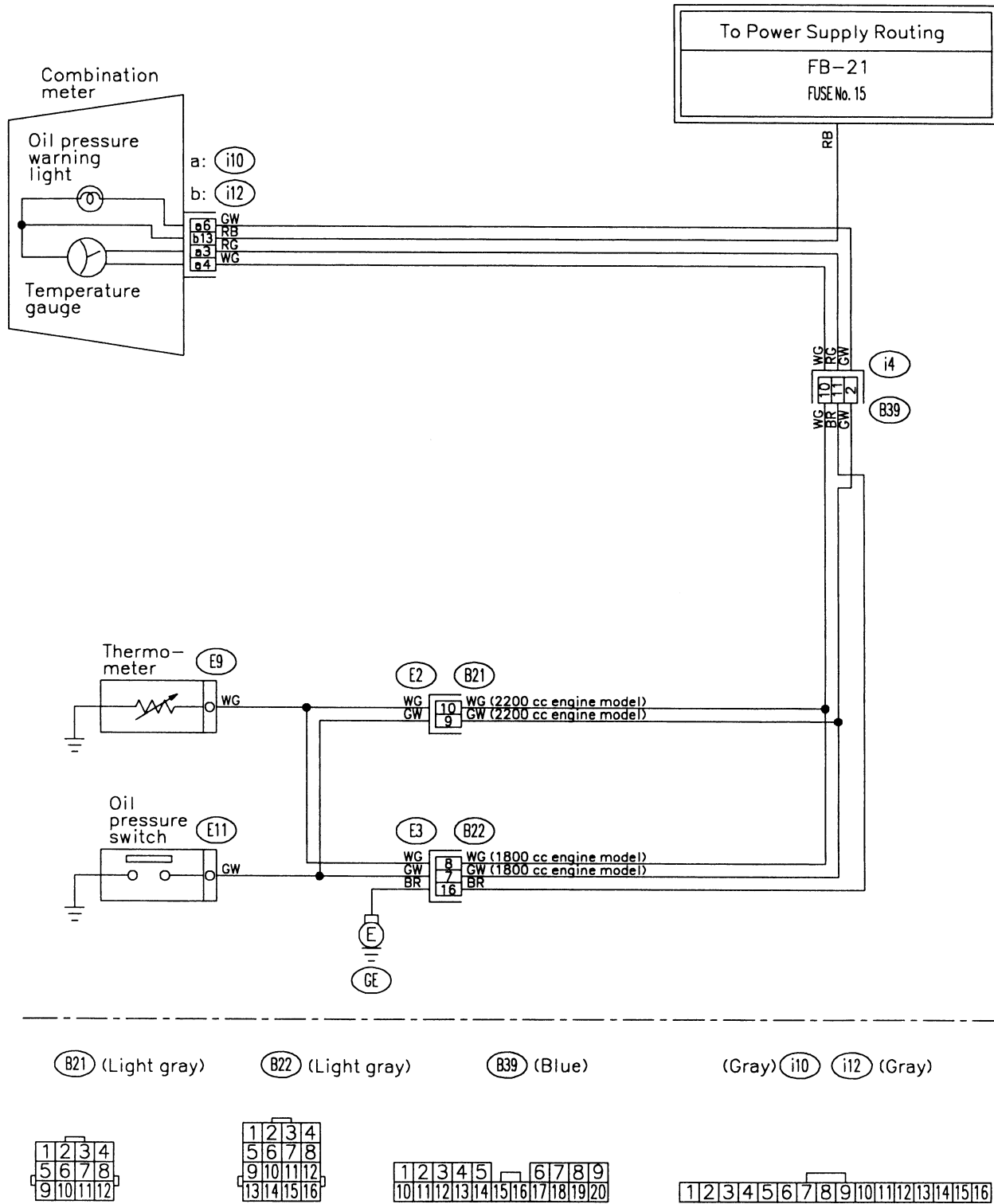


18. LIGHTING (TAIL LIGHT-ILLUMINATION LIGHT-ETC.) SYSTEM

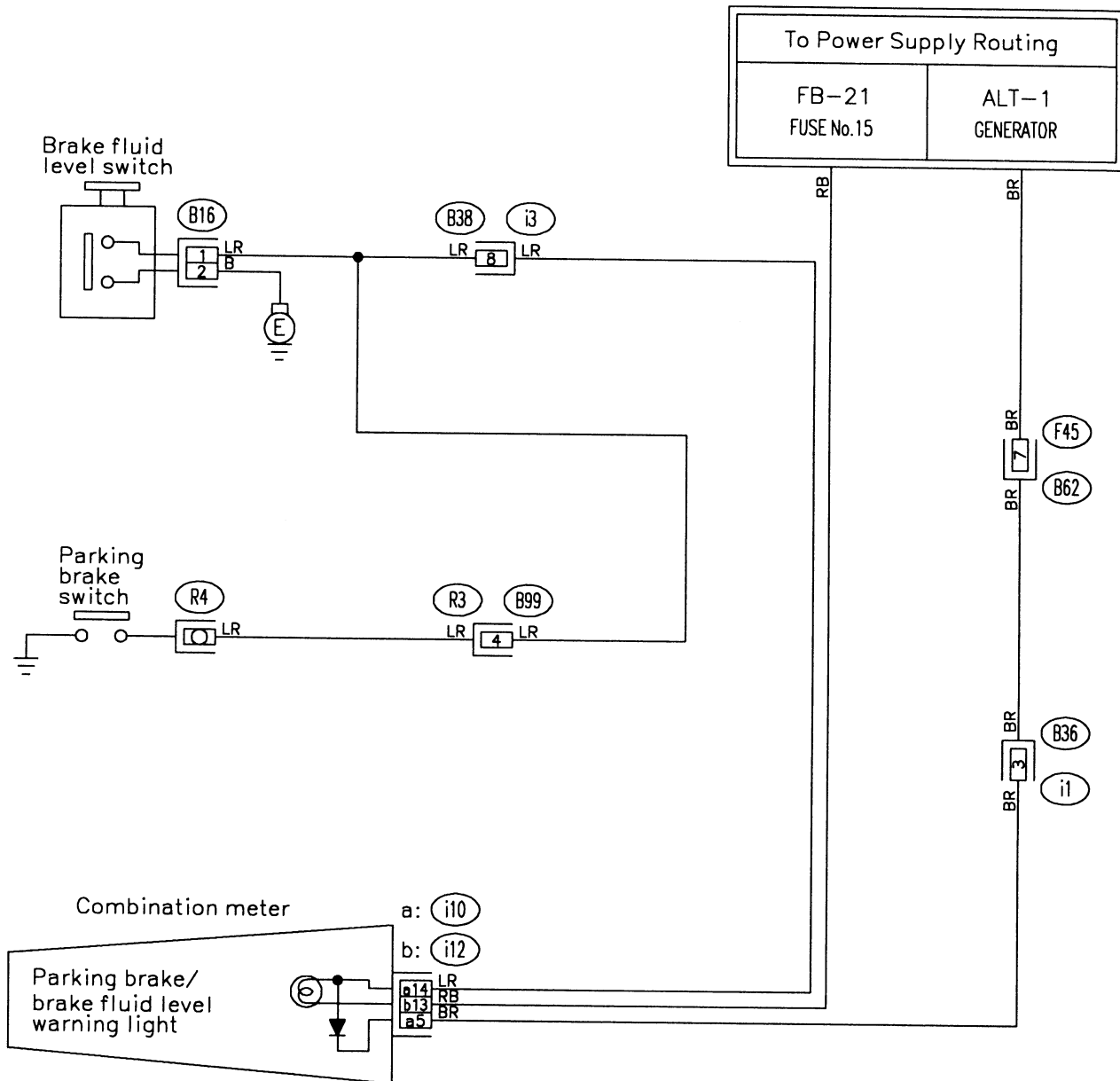




19. OIL PRESSURE AND TEMPERATURE GAUGE SYSTEM



20. PARKING BRAKE AND BRAKE FLUID LEVEL WARNING SYSTEM



B16 (Gray)

12

B38

1	2	3	4	5
6	7	8	9	10

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

i10 (Gray)

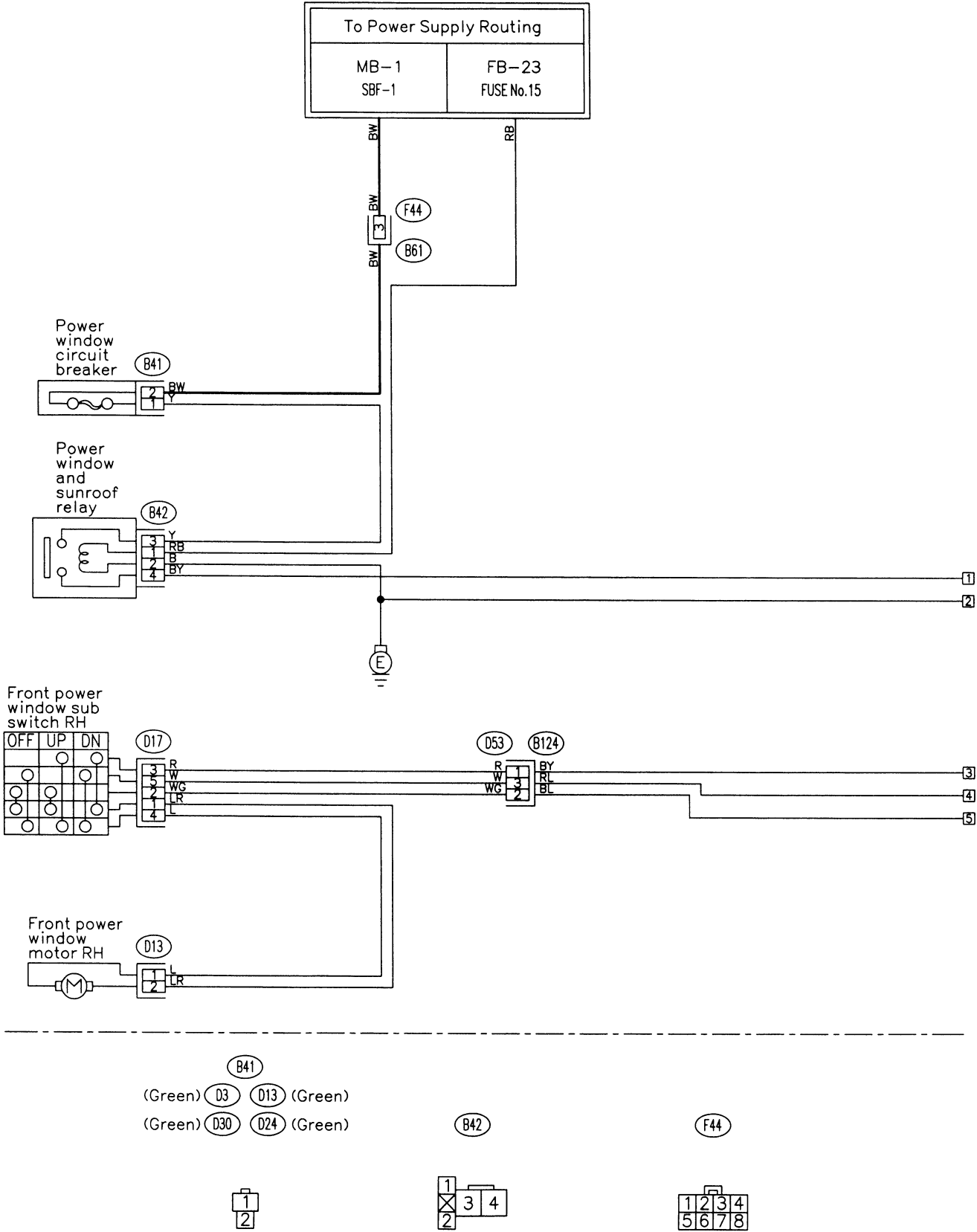
i12 (Gray)

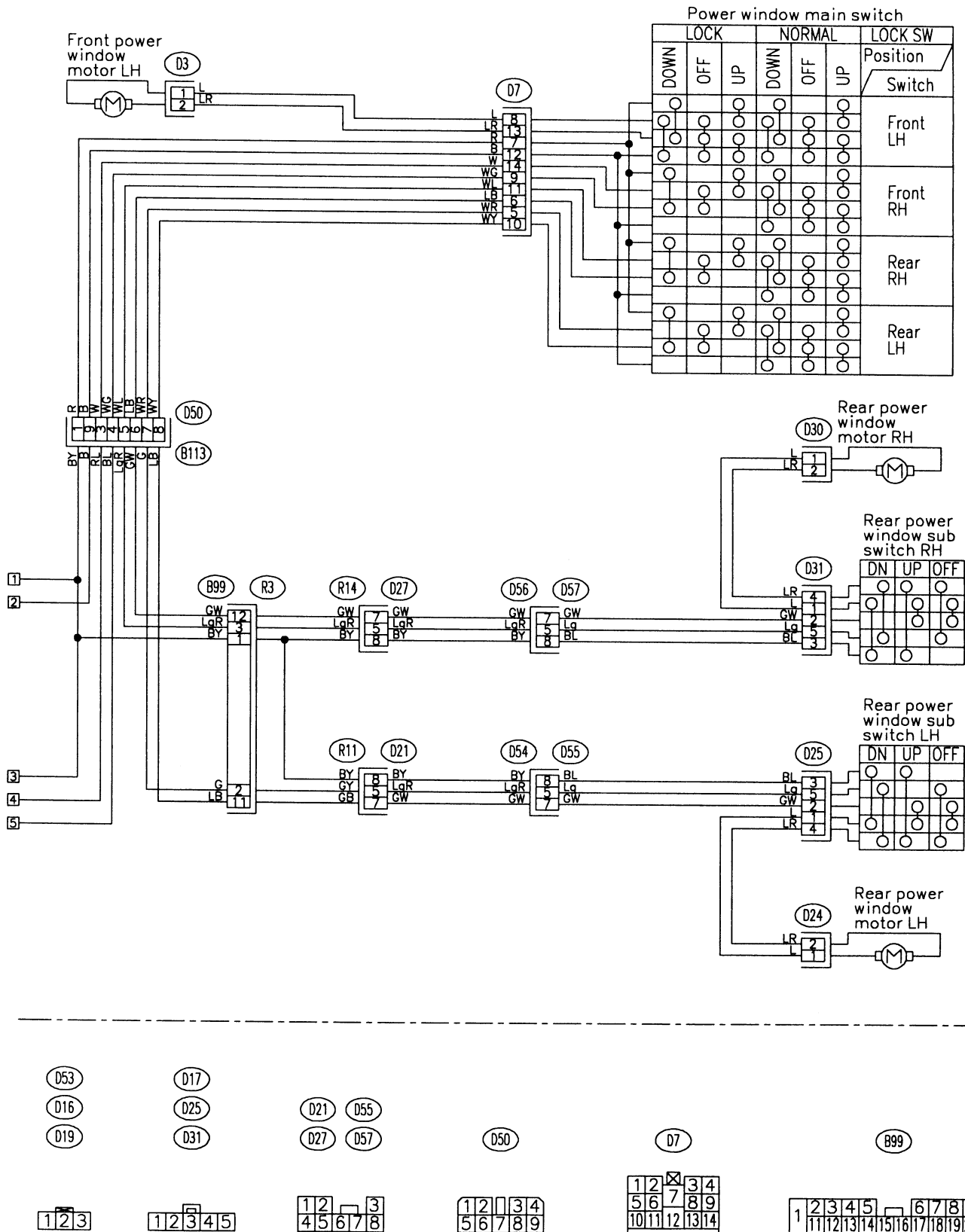
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

i1 (Black)

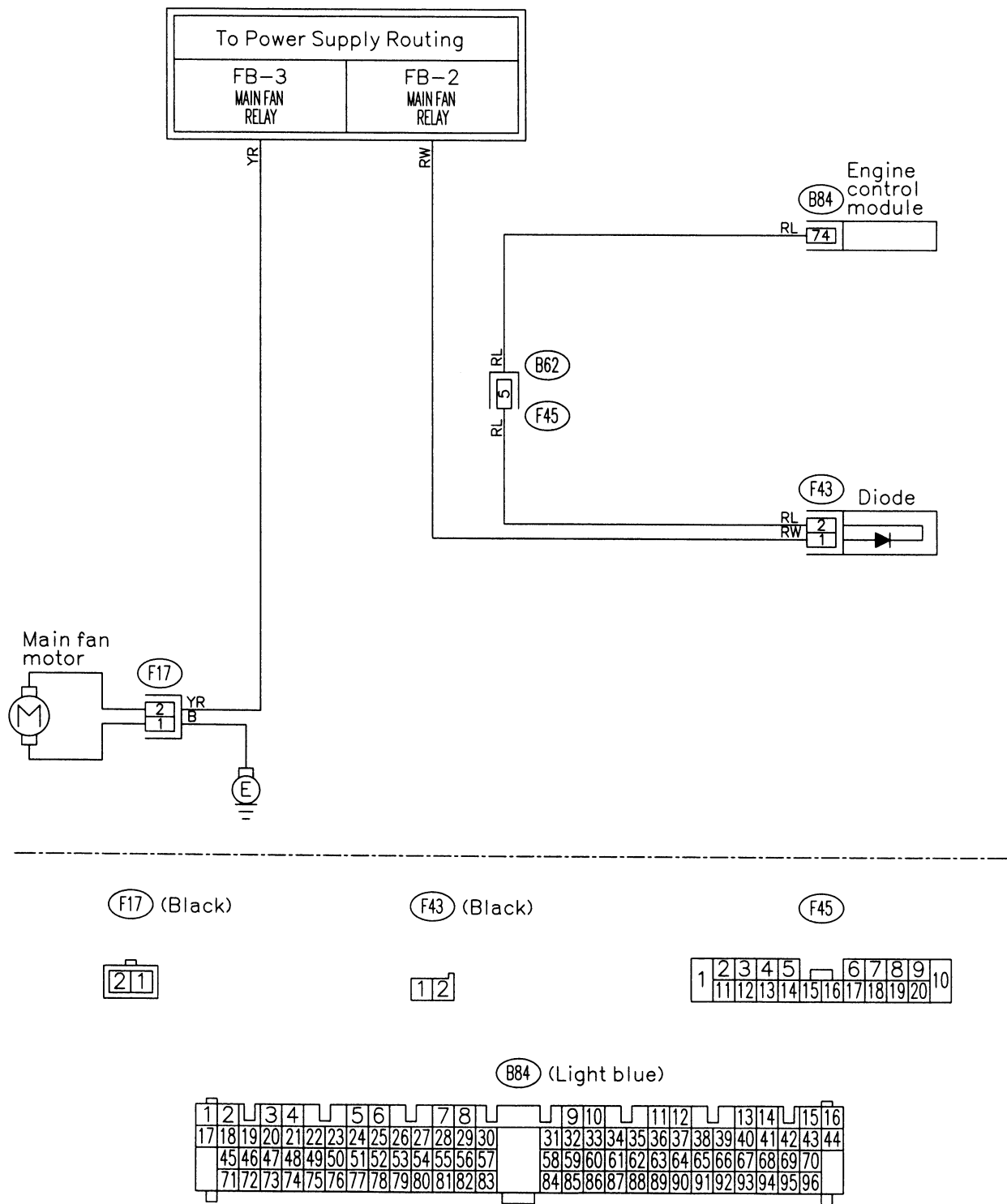
1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22

21. POWER WINDOW SYSTEM



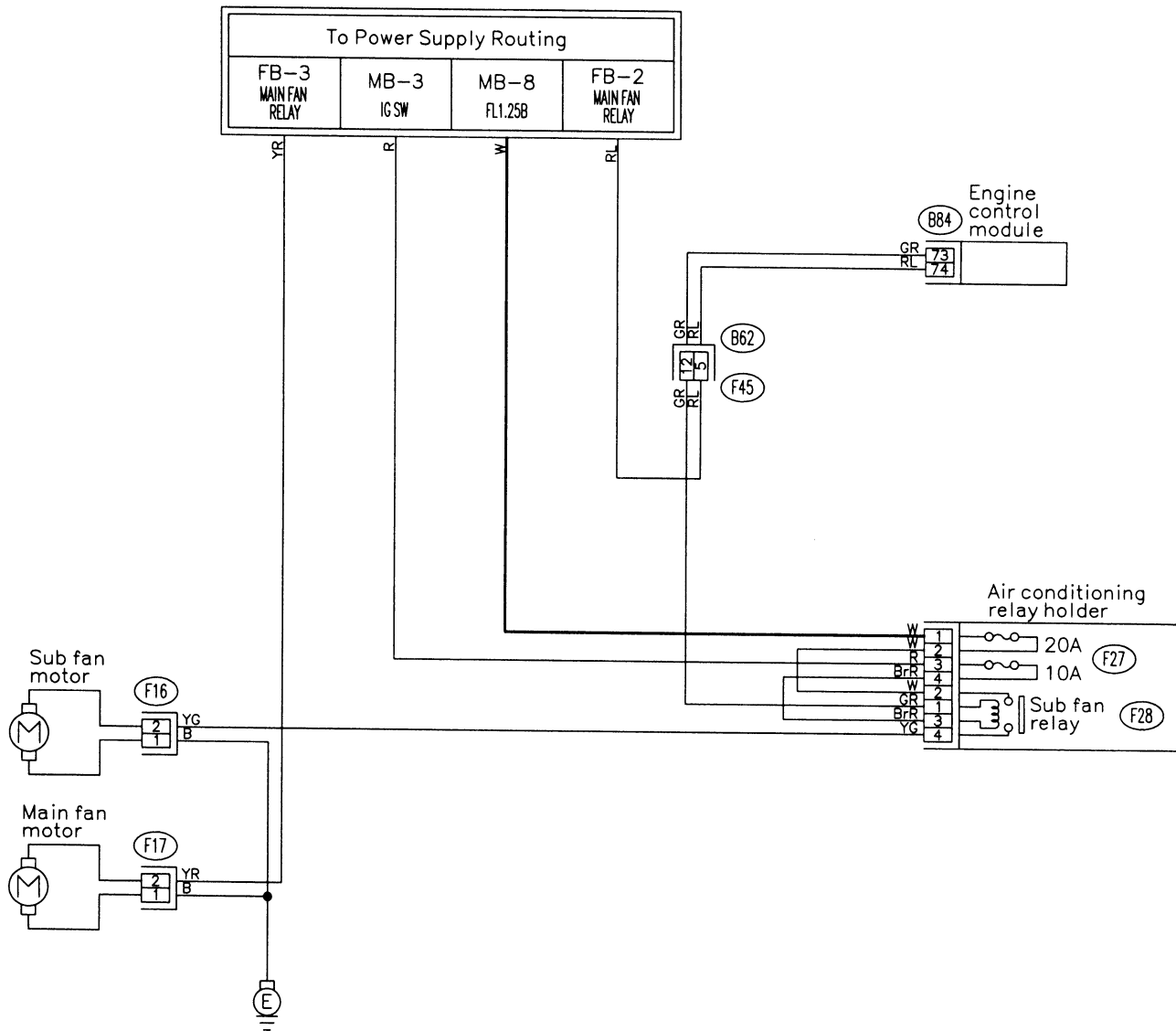


22. RADIATOR FAN SYSTEM
● Without A/C



22. RADIATOR FAN SYSTEM

• With A/C



(F16) (Black)

(F17) (Black)



(F27) (F28)

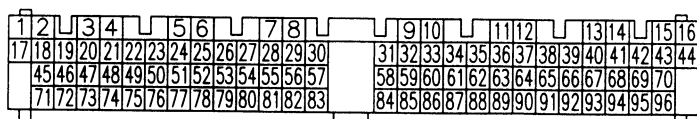
(F31)



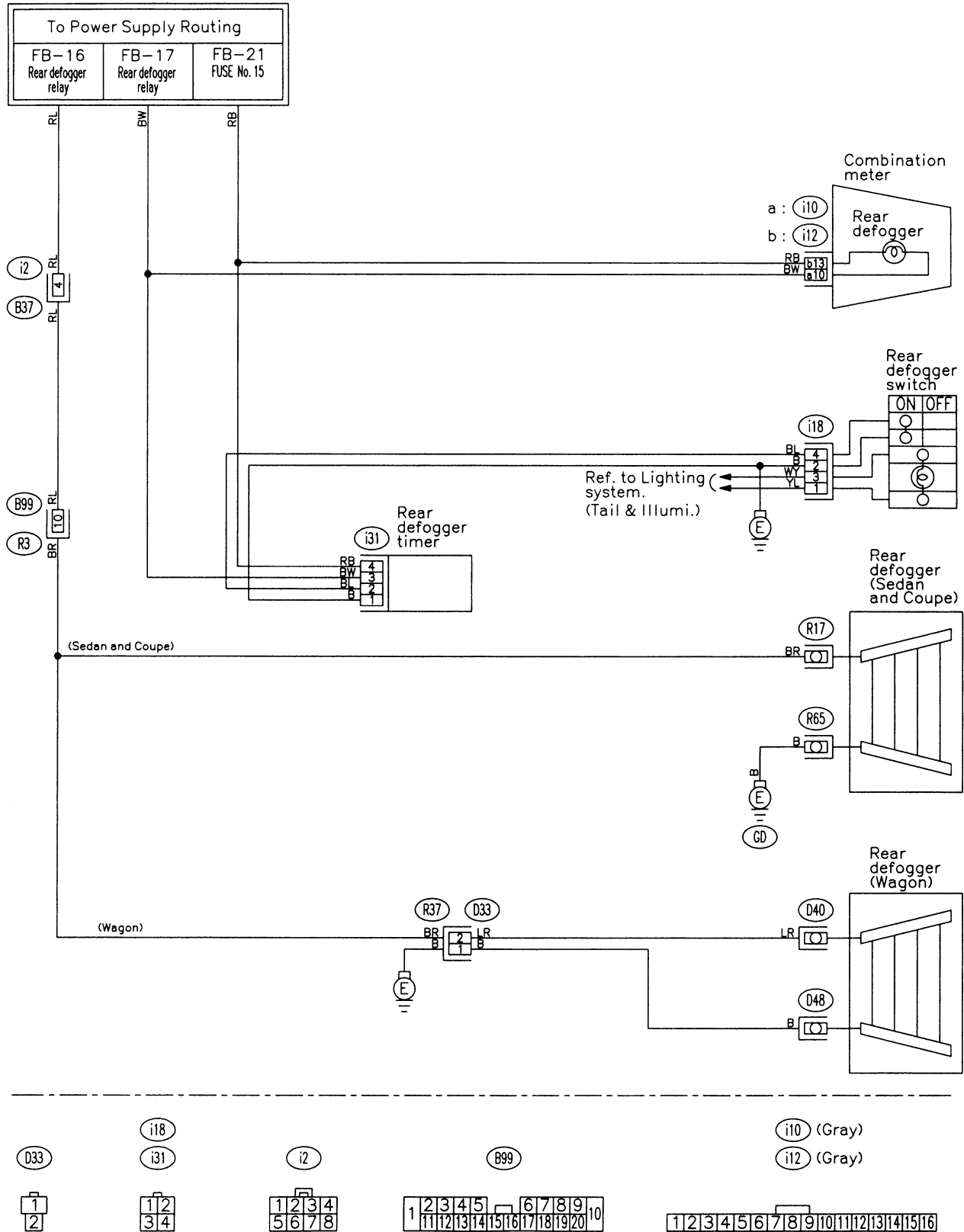
A/C relay holder (Black)

(F45)

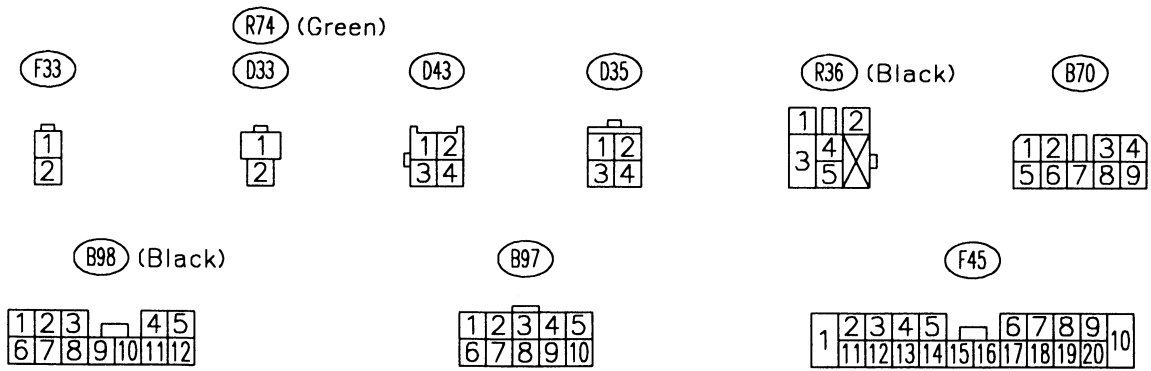
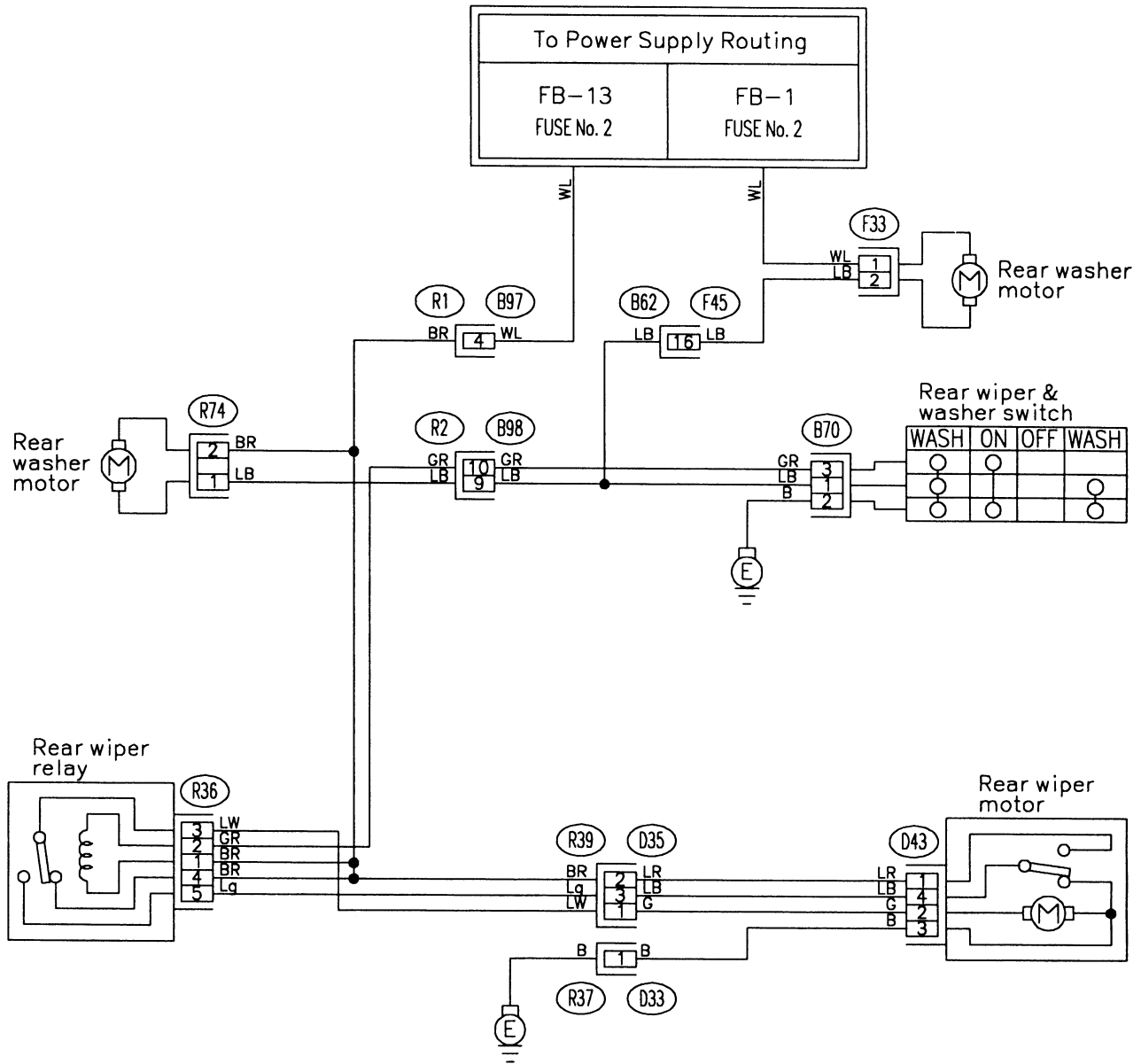
(B84) (Light blue)



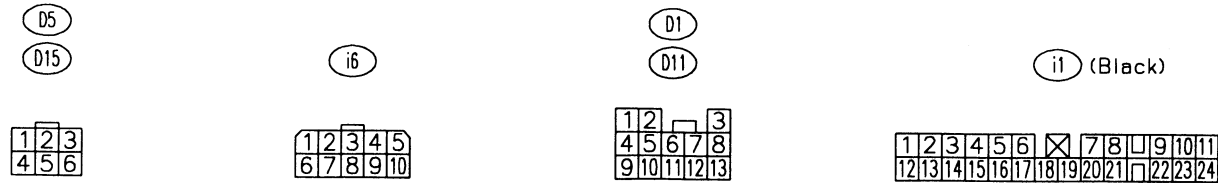
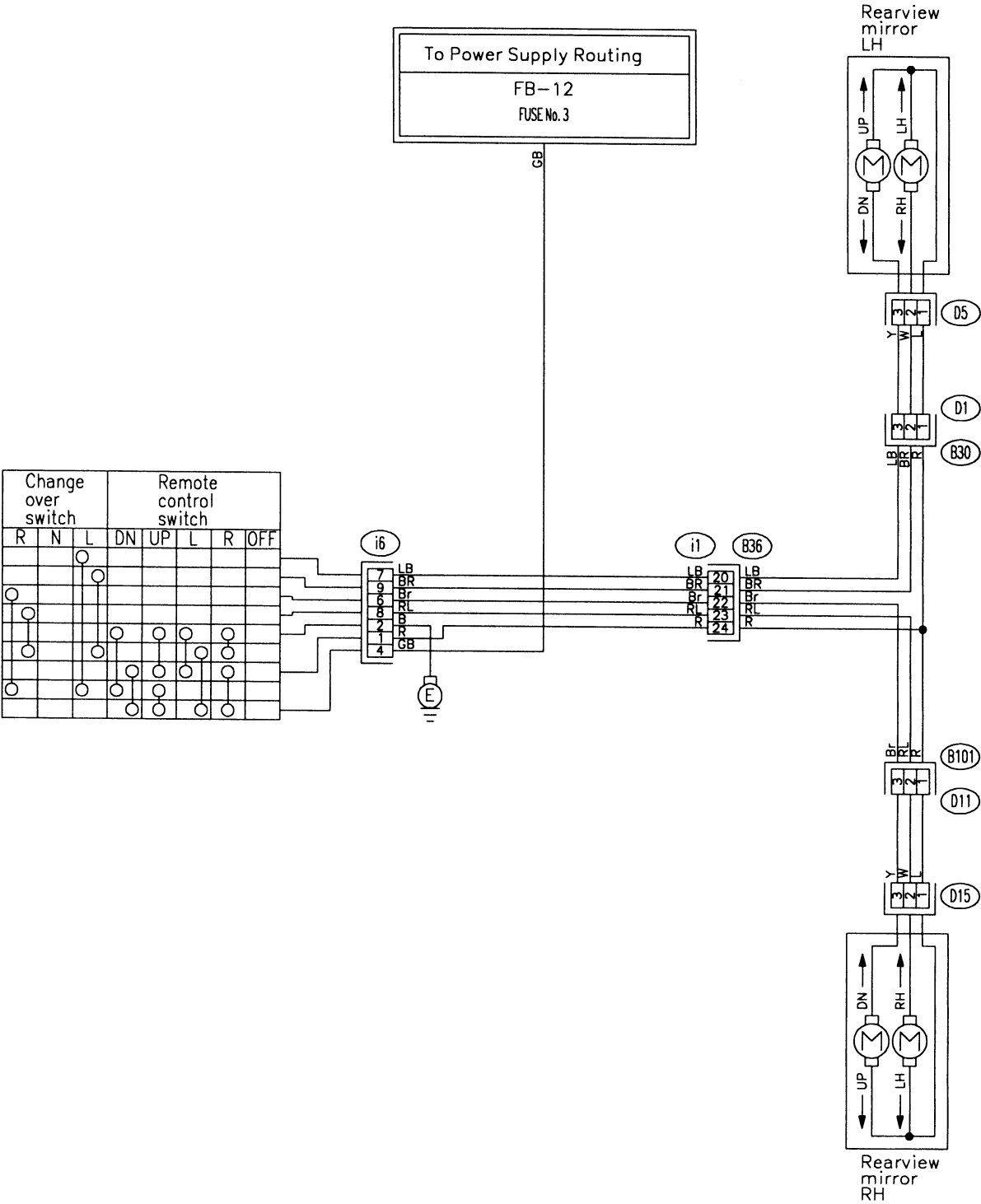
23. REAR WINDOW DEFOGGER SYSTEM



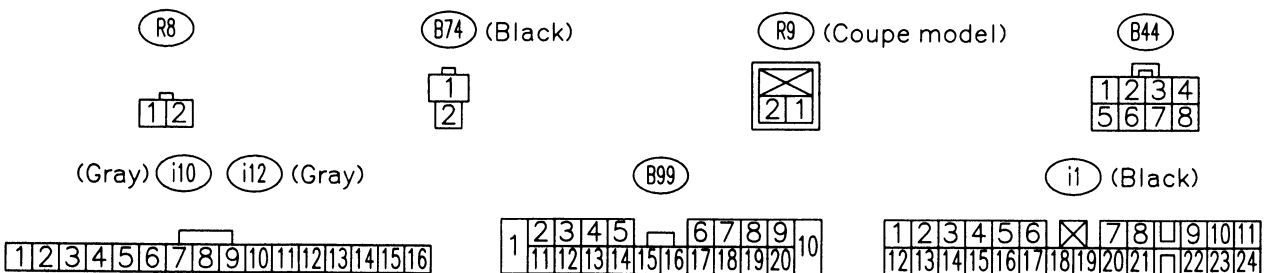
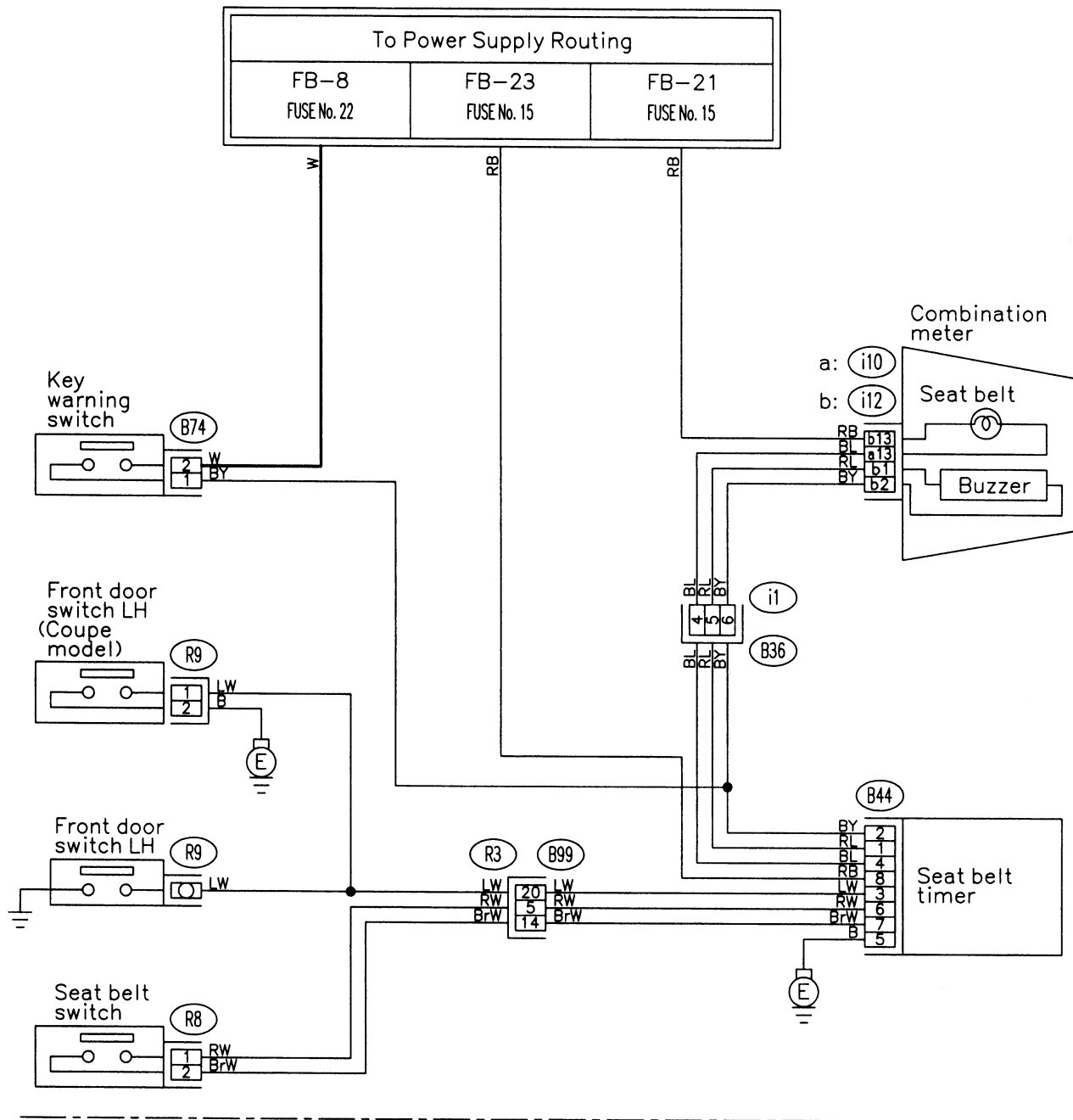
24. REAR WIPER AND WASHER SYSTEM



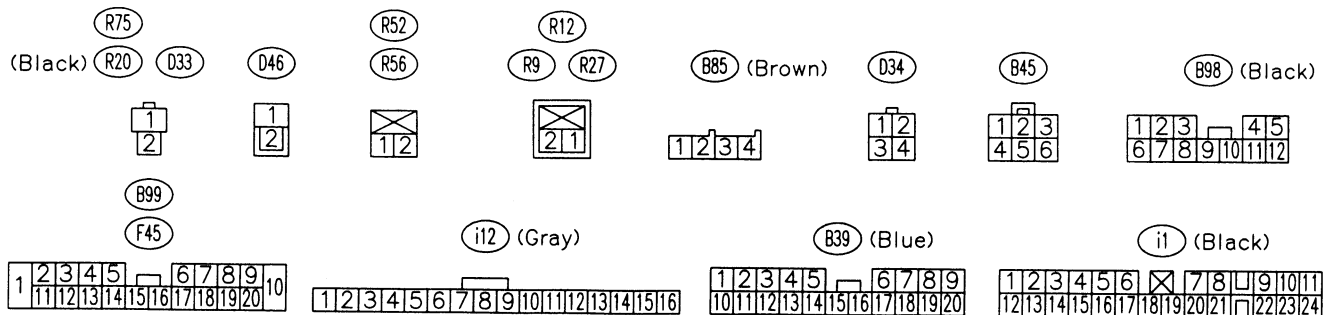
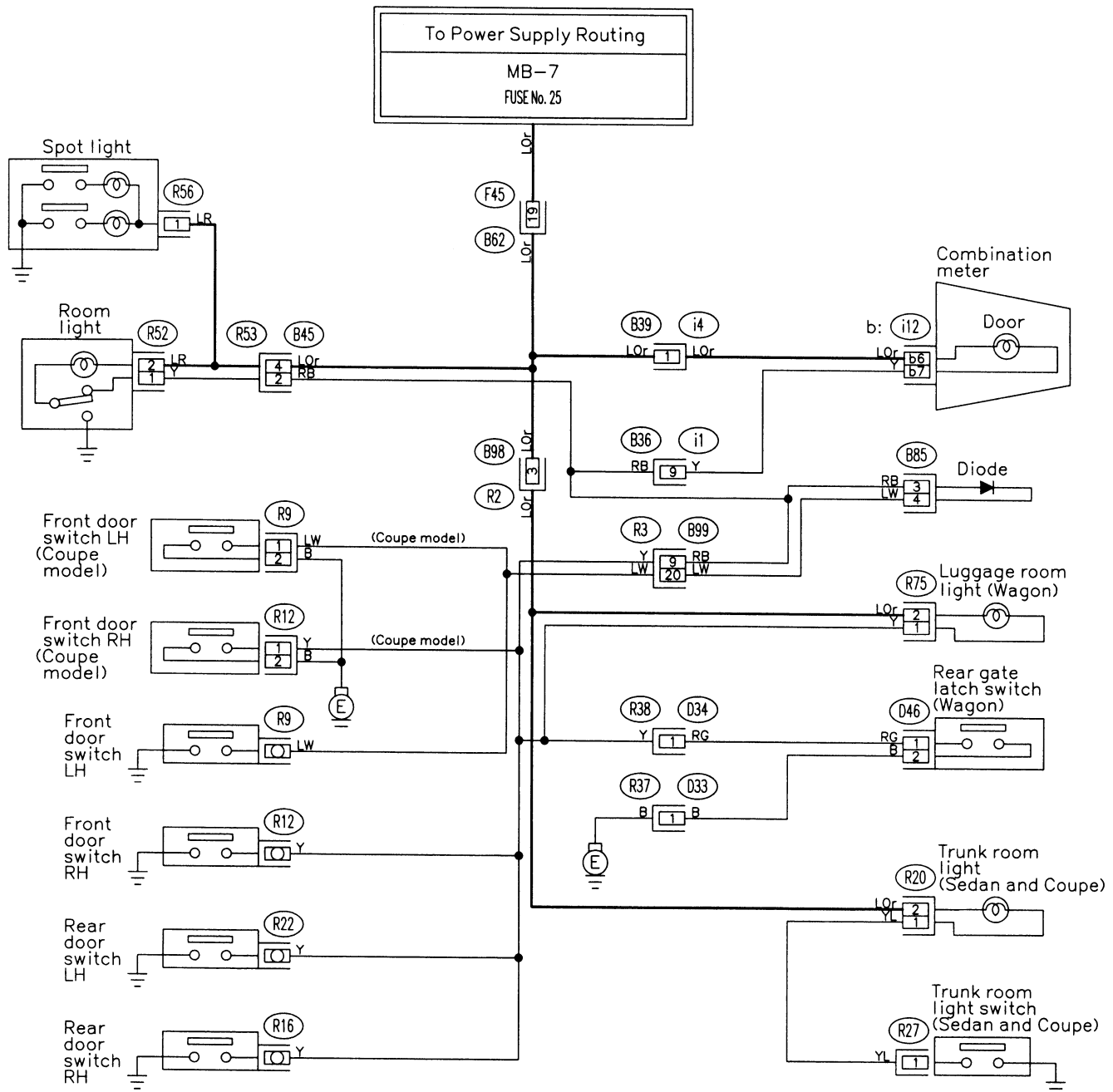
25. REMOTE CONTROL REARVIEW MIRROR SYSTEM



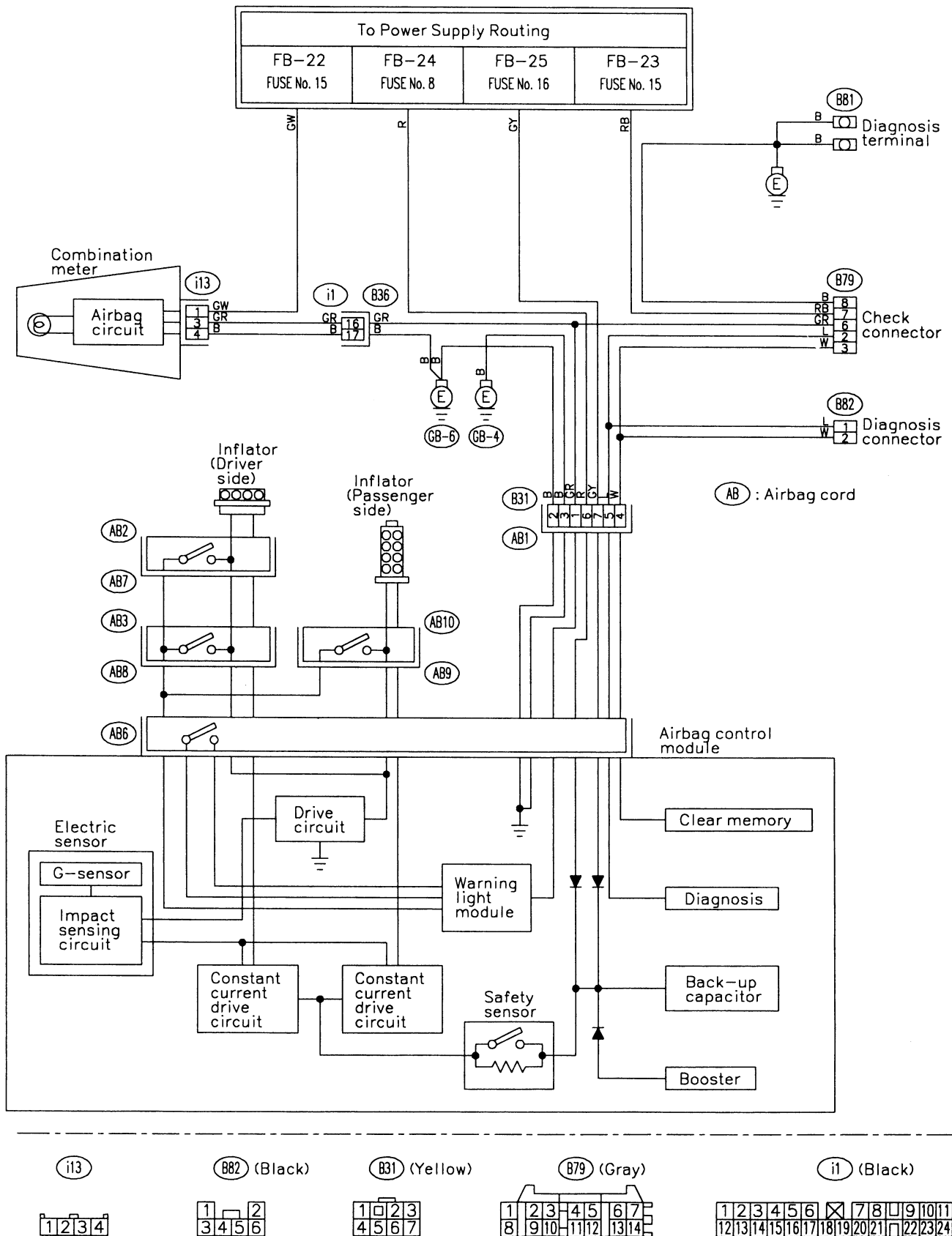
26. SEAT BELT WARNING AND KEY WARNING SYSTEM



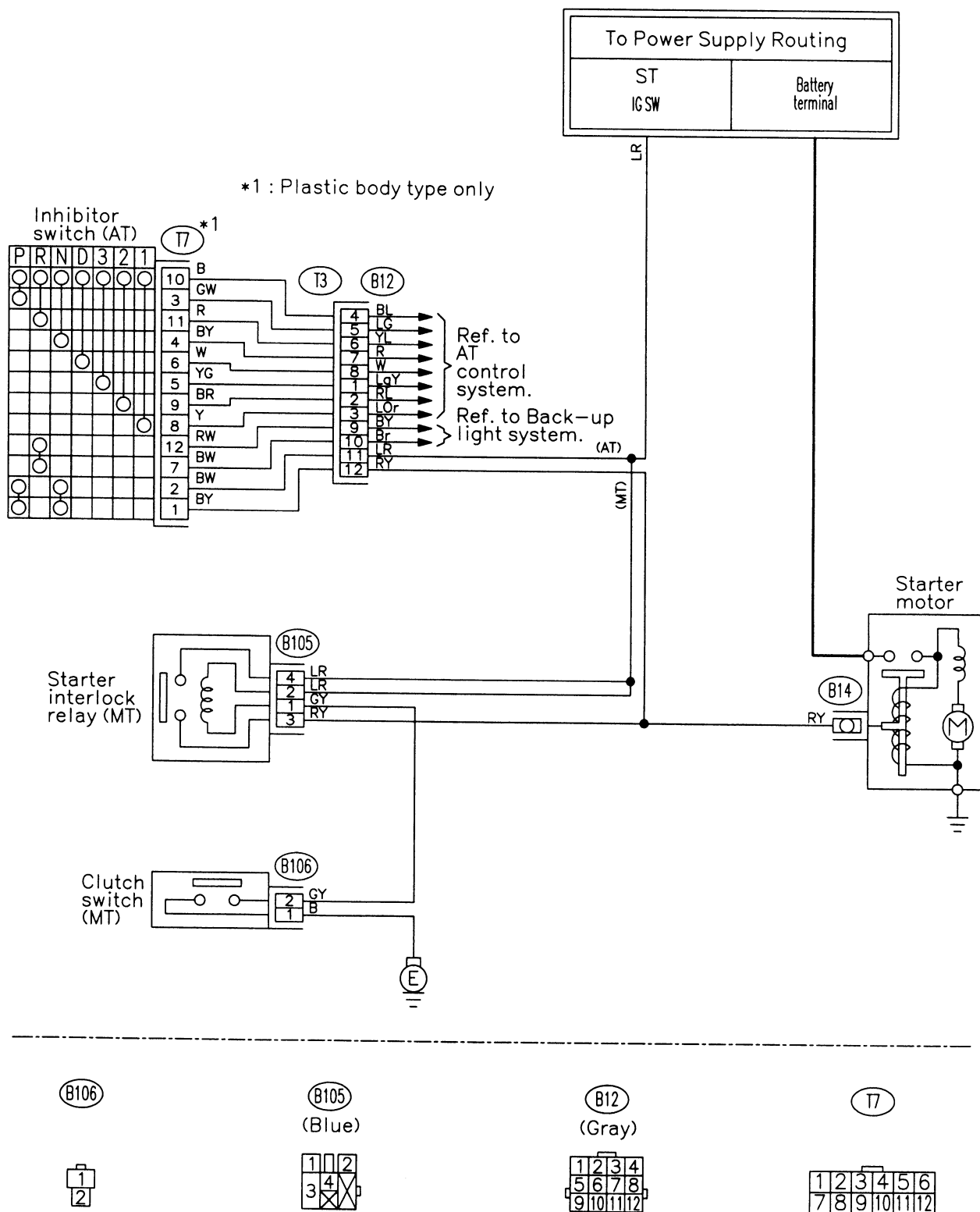
27. SPOT LIGHT, ROOM LIGHT, LUGGAGE AND TRUNK ROOM LIGHT SYSTEM



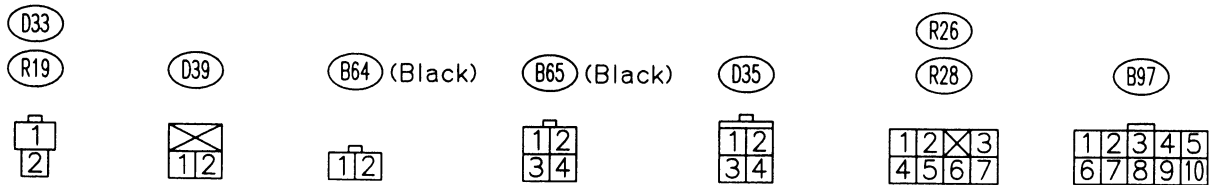
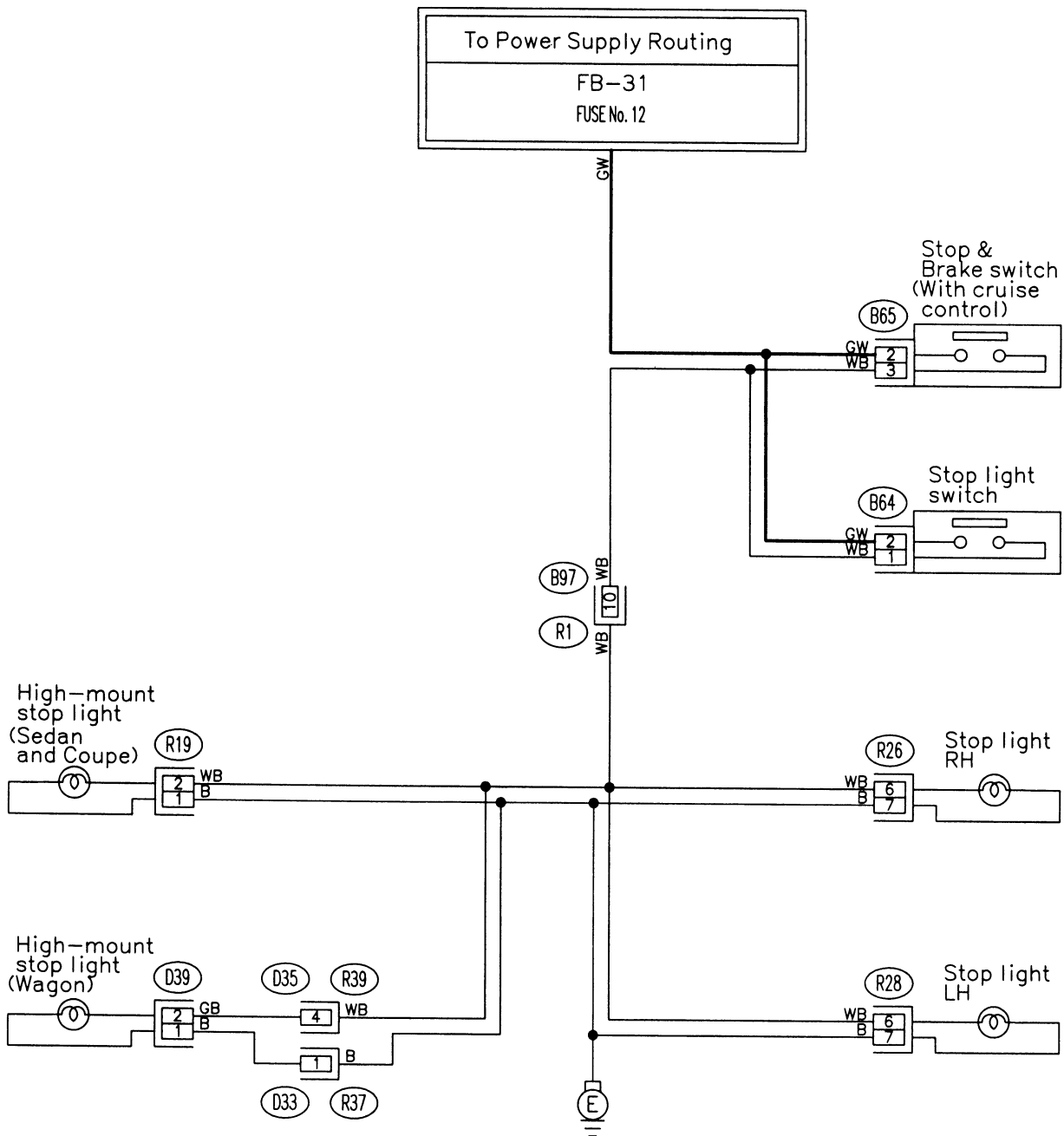
28. SRS (AIRBAG SYSTEM)



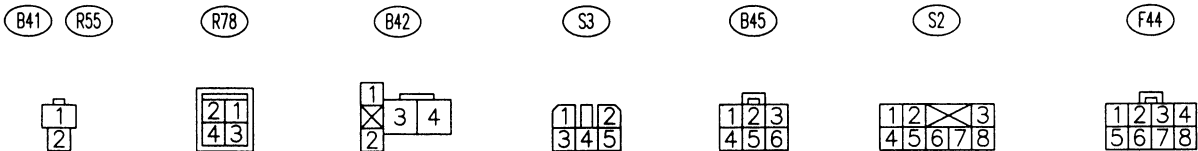
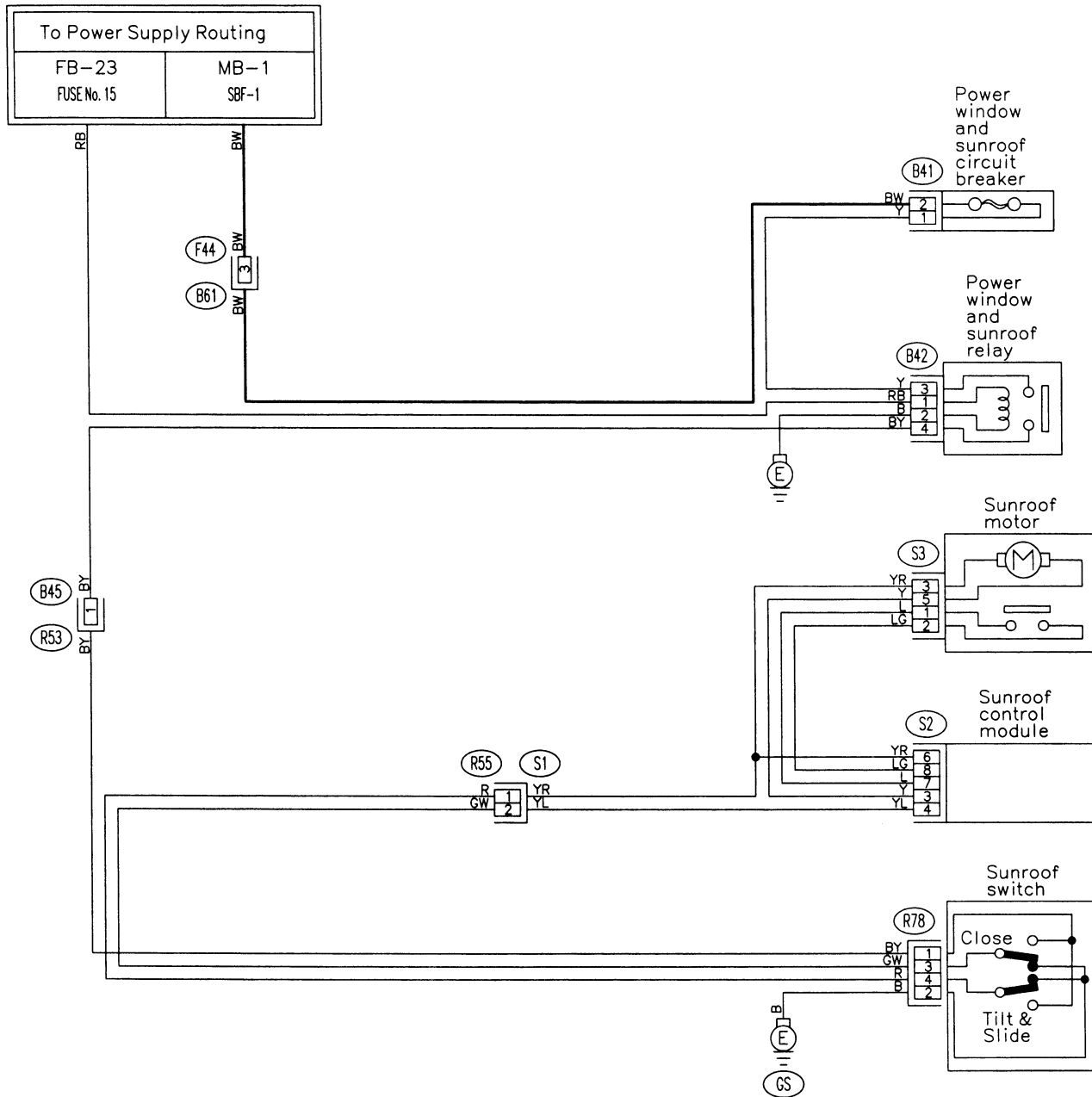
29. STARTING SYSTEM



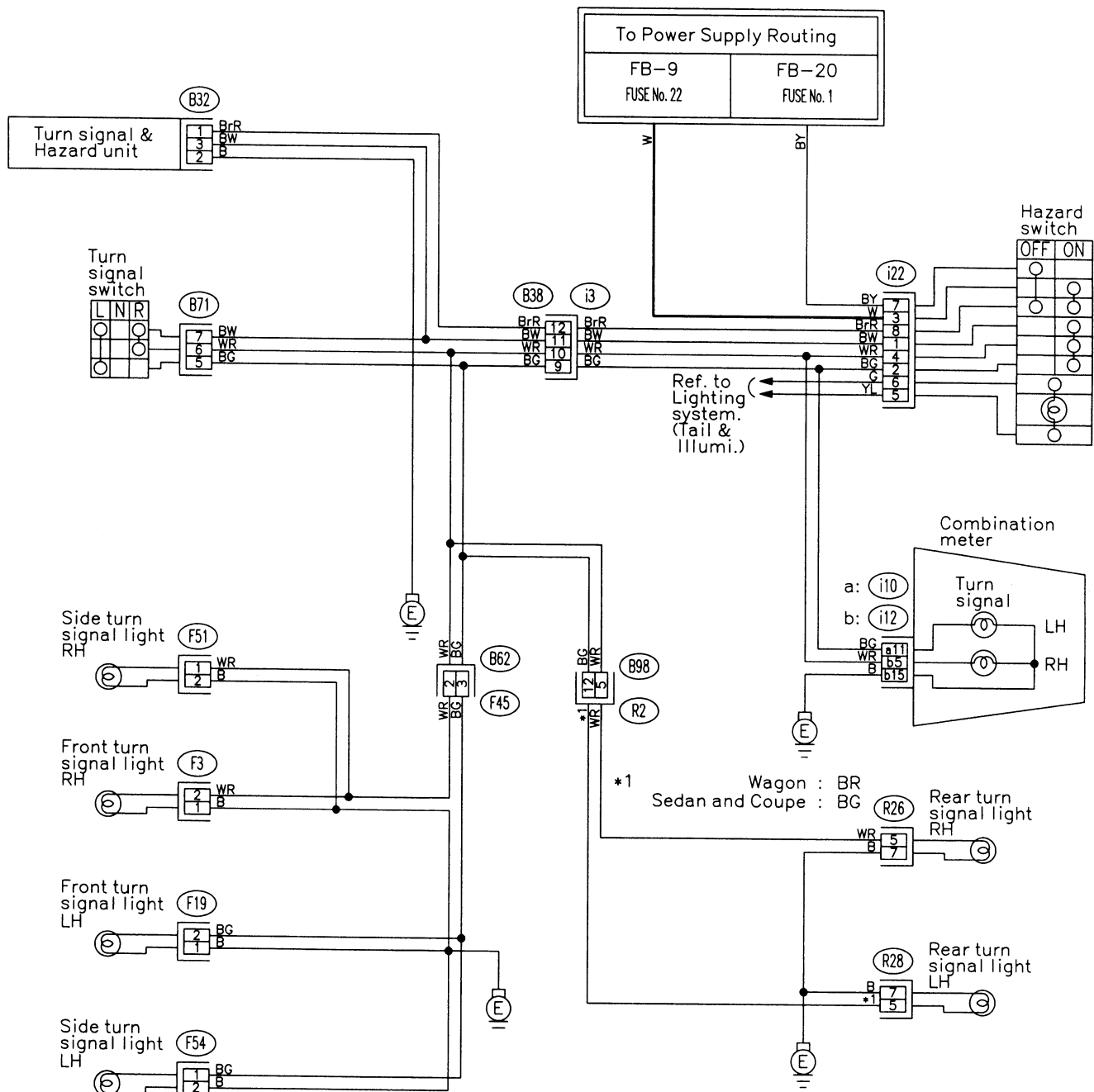
30. STOP LIGHT SYSTEM



31. SUNROOF SYSTEM



32. TURN SIGNAL AND HAZARD SYSTEM



(Black) (F3) (F19) (Black)

(F54) (F51)

(B32) (Black)

(R26) (R28)

(i22) (B71)

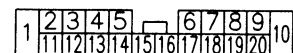
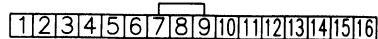
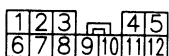
(B98) (Black)

(B38)

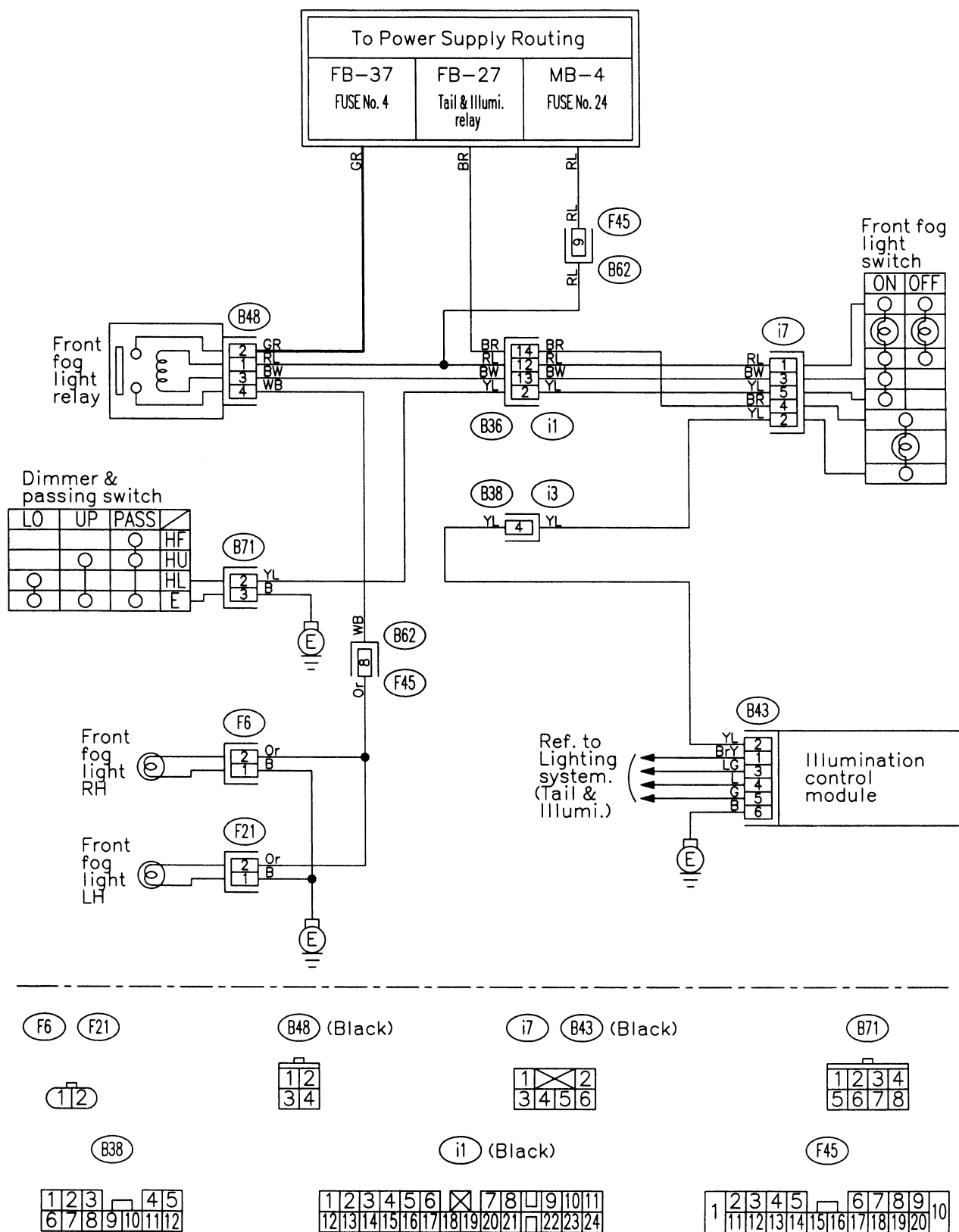
(i10) (Gray)

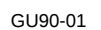
(i12) (Gray)

(F45)

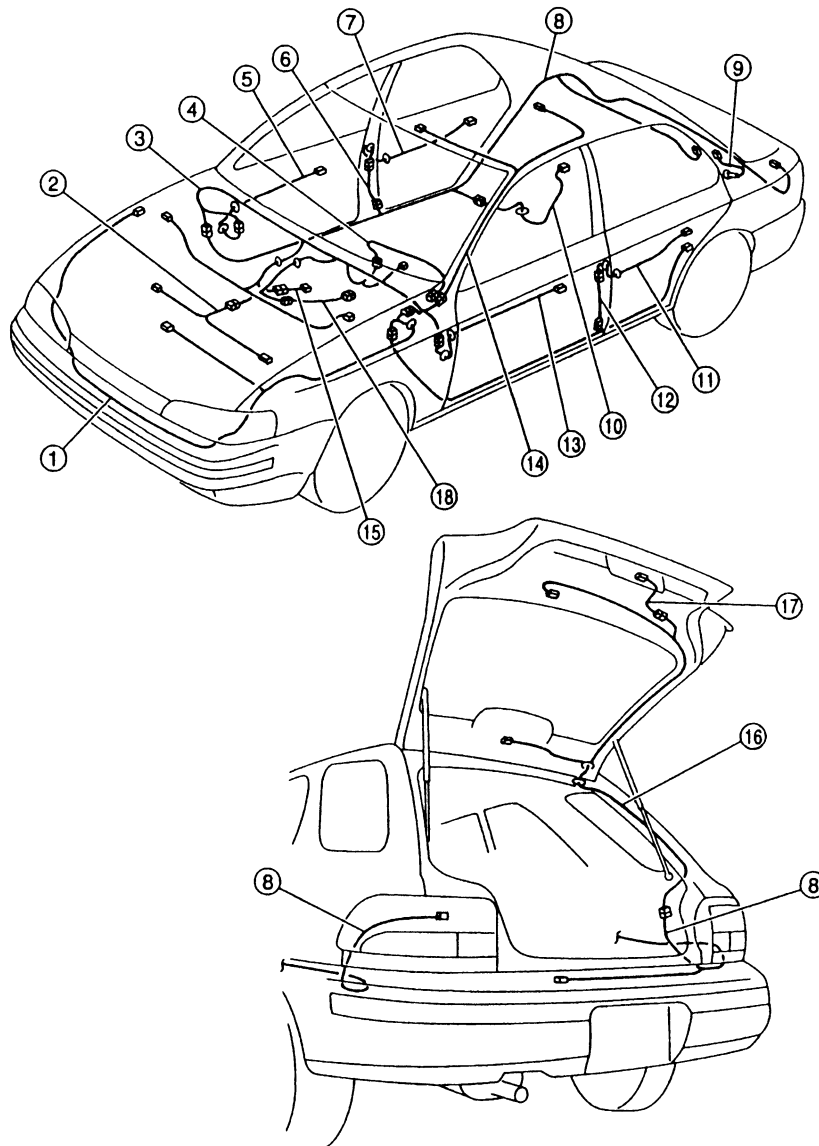


33. FRONT FOG LIGHT SYSTEM



[illegible]

6. Electrical Wiring Harness and Ground Point



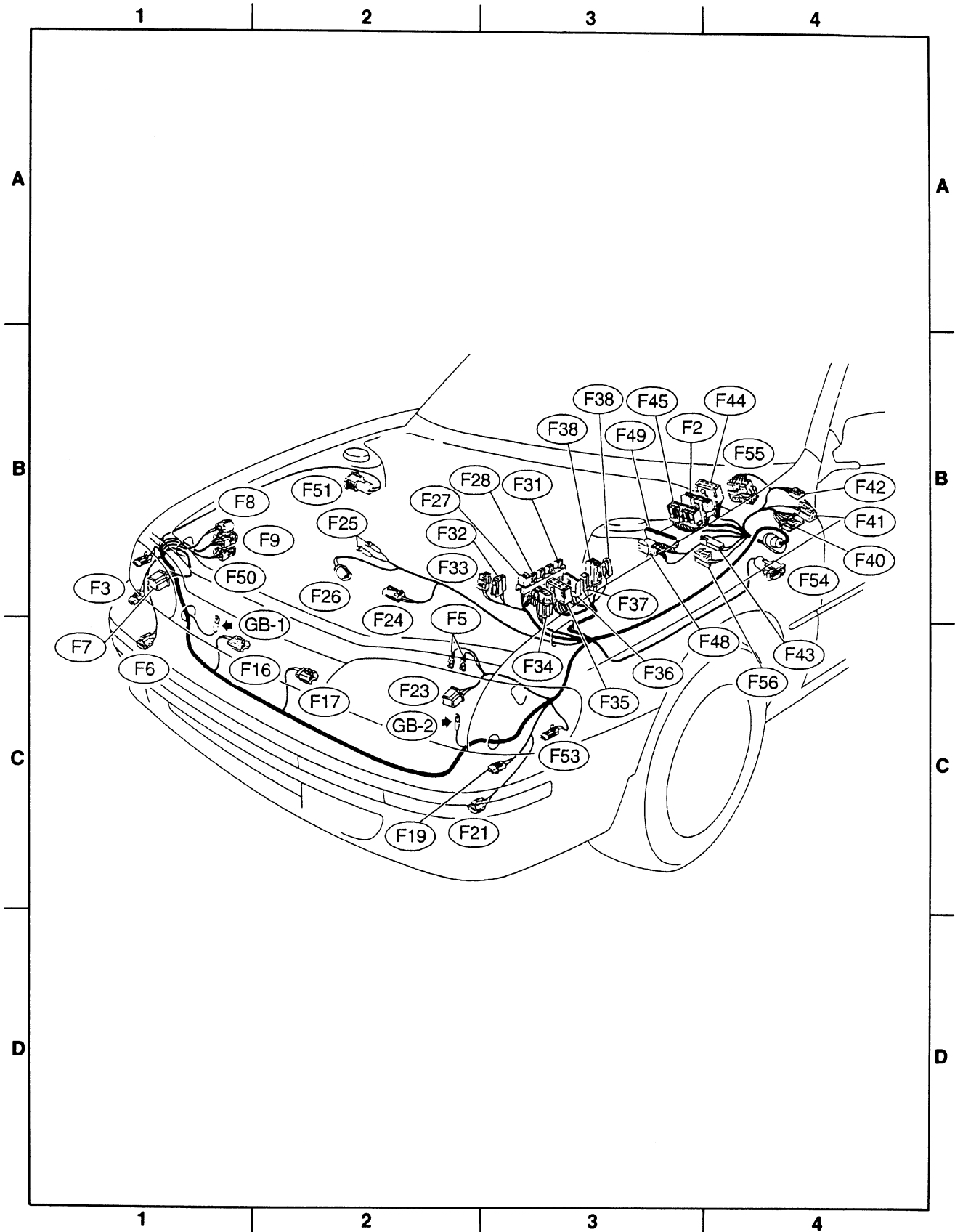
H6M0414A

- | | |
|-----------------------------------|-------------------------------|
| ① Front wiring harness | ⑩ Fuel tank cord |
| ② Engine wiring harness | ⑪ Rear door cord LH |
| ③ Bulkhead wiring harness | ⑫ Rear door adapter cord LH |
| ④ Instrument panel wiring harness | ⑬ Front door cord LH |
| ⑤ Front door cord RH | ⑭ Roof cord |
| ⑥ Rear door adapter cord RH | ⑮ Transmission cord |
| ⑦ Rear door cord RH | ⑯ Rear gate cord |
| ⑧ Rear wiring harness | ⑰ Rear gate lock adapter cord |
| ⑨ Rear defogger cord (Ground) | ⑱ Rear oxygen sensor cord |

Connector			Connecting to	
No.	Pole	Color	No.	Name
F2	16	Black	B100	Bulkhead wiring harness
F3	2	Black		Front turn signal light RH
F5	1 x 2	★		Horn
F6	2	★		Front fog light RH
F7	3	Black		Headlight RH
F8	2	Gray		Hydraulic module (ABS)
F9	8	Gray		
F16	2	Black		Sub fan motor
F17	2	Black		Radiator main fan motor
F19	2	Black		Front turn signal light LH
F21	2	★		Front fog light LH
F23	3	Black		Headlight LH
F24	3	Gray		A/C compressor
F25	1 x 2	★		Generator
F26	2	★		
F27	4	Black		A/C fuse (Relay holder)
F28	4	Black		A/C sub fan relay (Relay holder)
F31	4	Black		A/C relay (Relay holder)
F32	2	Green		Front washer motor
F33	2	★		Rear washer motor
F34	2	Red		SBF holder
F35	8	★		M/B
F36	3	★		
F37	2	Black		
F38	2	Black		
F39	1	Brown		
F40	10	Gray		F/B
F41	3	Gray		
F42	5	Gray		
F43	2	Black		A/C diode
F44	8	★	B61	Bulkhead wiring harness
F45	20	★	B62	
F48	6	★		Shield joint connector (ABS)
F49	83	Black		ABS control module
F50	6	Black		ABS relay box
F51	2	★		Side turn signal light RH
F52	2	Gray		Front marker light RH
F53	2	Gray		Front marker light LH
F54	2	★		Side turn signal light LH
F55	12	Black	R49	Rear wiring harness (ABS)
F56	2	Black		Fuse holder

★: Non-colored

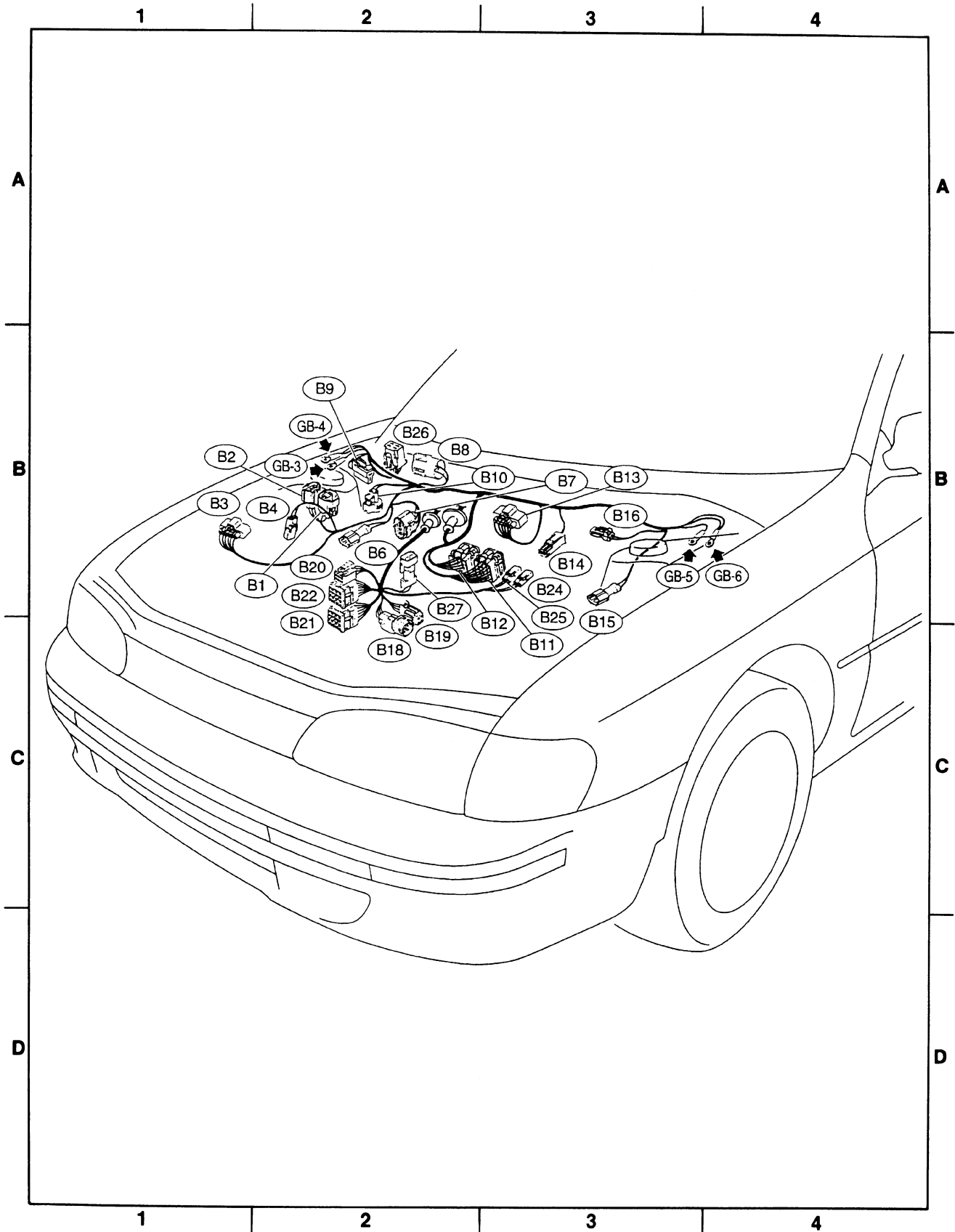
1. FRONT WIRING HARNESS AND GROUND POINT



Connector			Connecting to	
No.	Pole	Color	No.	Name
B1	2	Blown		Pressure source switching solenoid
B2	3	Black		Pressure sensor
B3	5	Gray		Mass air flow sensor
B4	2	Gray		AT dropping resistor
B6	2	Gray		ABS front sensor RH
B7	4	Gray		Cruise control actuator
B8	5	★		Front wiper motor
B9	2	★		FWD switch (AT)
B10	2	Gray		A/C pressure switch
B11	16	Gray	T4	Transmission (AT)
B12	12	Gray	T3	
B13	6	Gray		Ignitor
B14	1	Black		Starter (Magnet)
B15	2	Gray		ABS front sensor LH
B16	2	Gray		Brake fluid level switch
B18	4	★		Front oxygen sensor
B19	4	Gray	T5	Rear oxygen sensor cord
B20	6	★	E1	Engine wiring harness (2200 cc engine model)
B21	12	Light gray	E2	Engine wiring harness (2200 cc engine model)
	16	Blue	E2	Engine wiring harness (1800 cc engine model)
B22	16	Light gray	E3	Engine wiring harness
B24	2	Gray	T1	Back-up light switch (MT)
B25	2	Brown	T2	Neutral position switch (MT)
B26	4	Blue		A/C cut relay
B27	2	Gray		FICD solenoid (1800 cc engine model)

★: Non-colored

2. BULKHEAD WIRING HARNESS AND GROUND POINT (IN ENGINE ROOM)

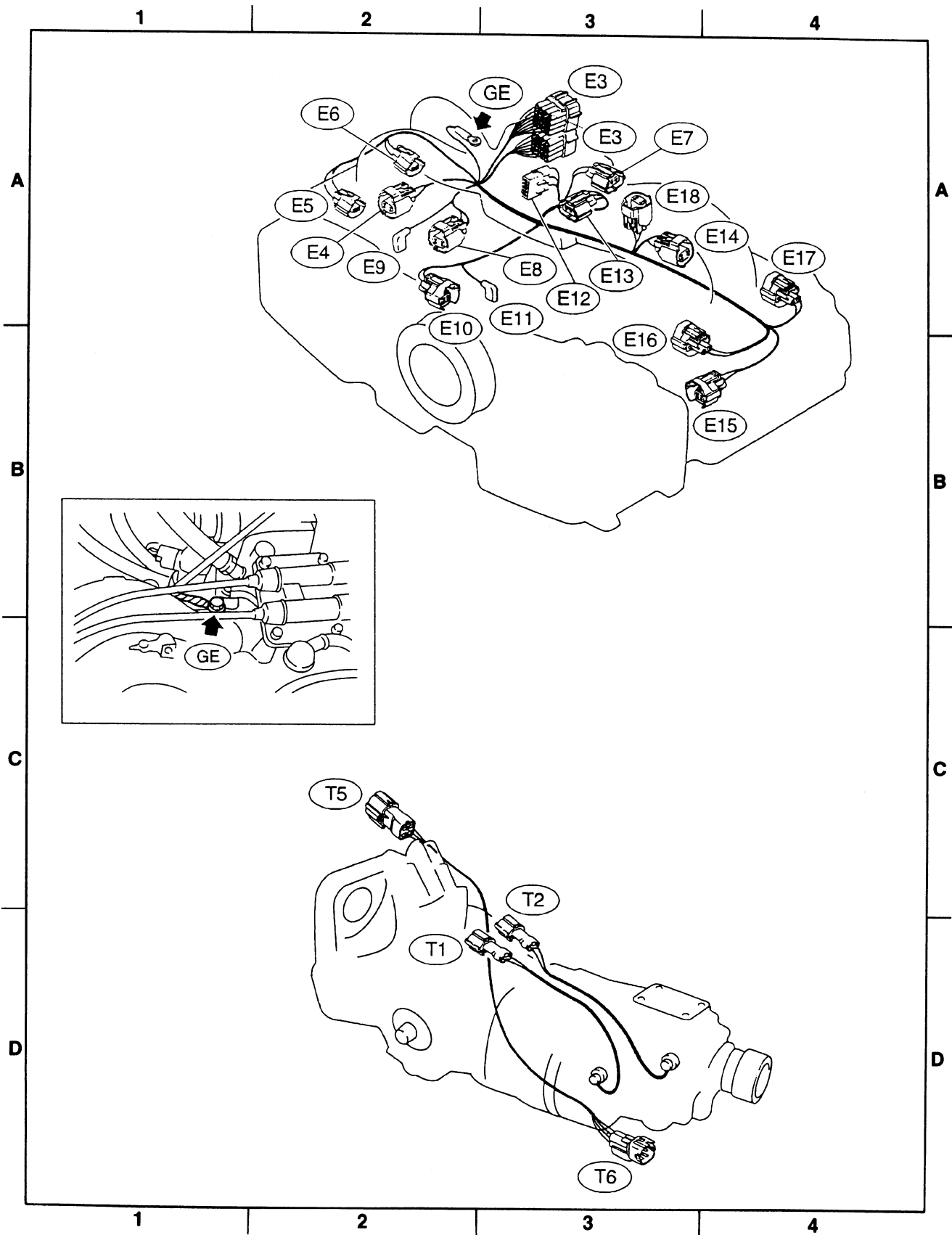


Connector			Connecting to	
No.	Pole	Color	No.	Name
E2	16	Blue	B21	Bulkhead wiring harness
E3	16	Gray	B22	
E4	2	Black		Purge control solenoid valve
E5	2	Gray		Injector #1
E6	2	Gray		Injector #3
E7	3	Gray		Idle air control solenoid
E8	2	Brown		Engine coolant temperature sensor
E9	1	★		Thermometer
E10	2	Gray		Crankshaft position sensor
E11	1	★		Oil pressure switch
E12	3	Gray		Ignition coil
E13	3	Gray		Throttle position sensor
E14	2	Gray		Knock sensor
E15	2	Gray		Camshaft position sensor
E16	2	Gray		Injector #2
E17	2	Gray		Injector #4
E18	2	Brown		EGR solenoid valve

Connector			Connecting to	
No.	Pole	Color	No.	Name
T1	2	Gray	B24	Bulkhead wiring harness (Back-up light switch)
T2	2	Brown	B25	Bulkhead wiring harness (Neutral position switch)
T5	4	Gray	B19	Bulkhead wiring harness
T6	4	Gray		Rear oxygen sensor

★: Non-colored

3. ENGINE WIRING HARNESS · TRANSMISSION CORD AND GROUND POINT (1800 cc engine model)

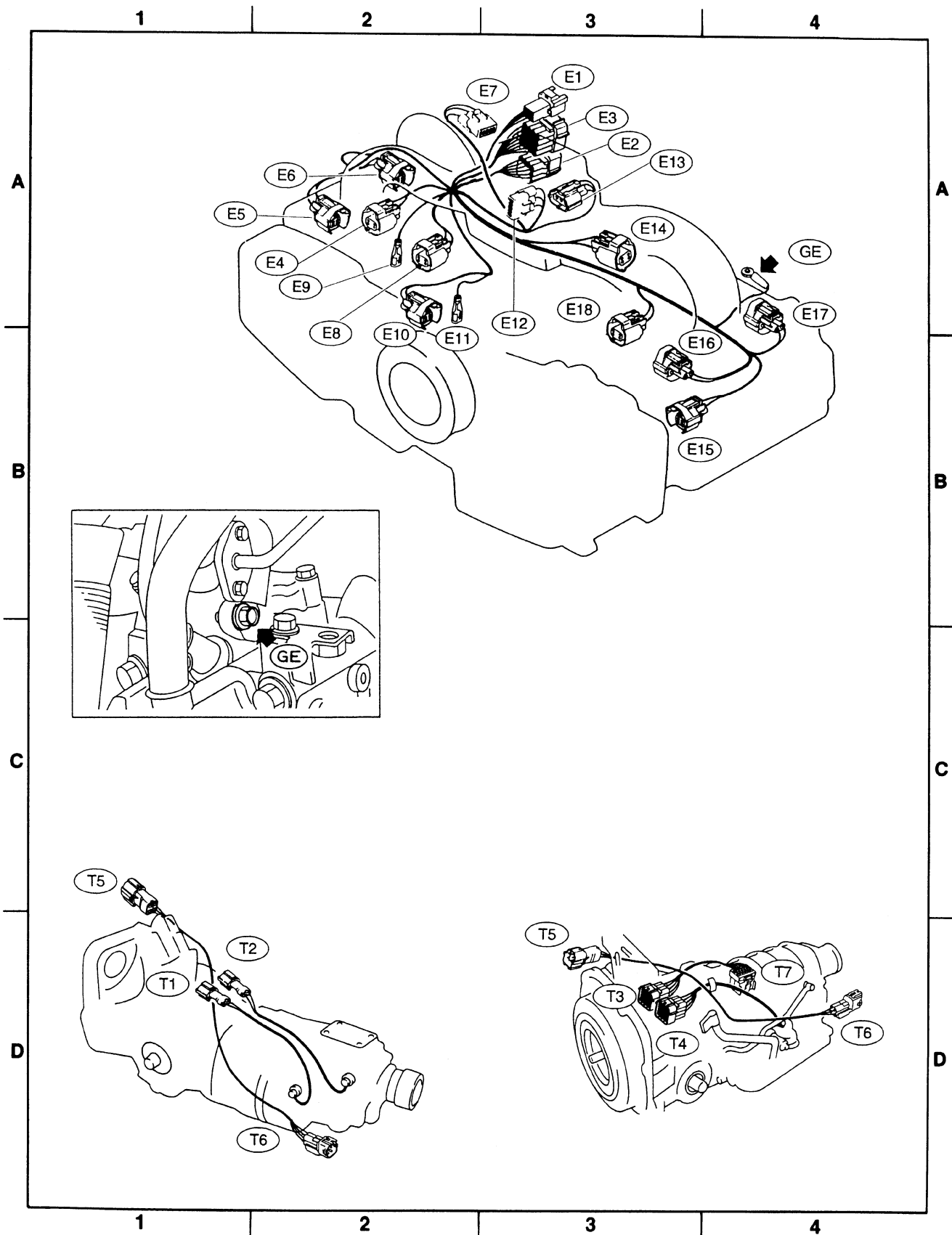


Connector			Connecting to	
No.	Pole	Color	No.	Name
E1	6	★	B20	Bulkhead wiring harness
E2	12	Light gray	B21	
E3	16	Light gray	B22	
E4	2	Blue		Purge control solenoid valve
E5	2	Light gray		Injector #1
E6	2	Dark gray		Injector #3
E7	3	Gray		Idle air control solenoid valve
E8	2	Brown		Engine coolant temperature sensor
E9	1	★		Thermometer
E10	2	Gray		Crankshaft position sensor
E11	1	★		Oil pressure switch
E12	3	Gray		Ignition coil
E13	3	Brown		Throttle position sensor
E14	2	Gray		Knock sensor
E15	2	Dark gray		Camshaft position sensor
E16	2	Light gray		Injector #2
E17	2	Dark gray		Injector #4
E18	2	Brown		EGR solenoid (AT)

Connector			Connecting to	
No.	Pole	Color	No.	Name
T1	2	Gray	B24	Bulkhead wiring harness (MT)
T2	2	Brown	B25	
T3	12	Gray	B12	Bulkhead wiring harness (AT)
T4	16	Gray	B11	
T5	4	Gray	B19	Bulkhead wiring harness
T6	4	Gray		Rear oxygen sensor
T7	12	★		Inhibitor switch (AT)

★: Non-colored

3. ENGINE WIRING HARNESS, TRANSMISSION CORD AND GROUND POINT (2200 cc engine model)



Connector			Connecting to	
No.	Pole	Color	No.	Name
B30	13	★	D1	Front door cord LH
B31	7	Yellow	AB1	SRS (Airbag) harness
B32	3	Black		Turn & hazard module
B36	24	Black	i1	Instrument panel wiring harness
B37	8	★	i2	
B38	12	★	i3	
B39	20	Blue	i4	
B40	16	Black		OBD-II service connector
B41	2	★		Power window circuit breaker
B42	4	★		Power window and sunroof relay
B43	6	Black		Illumination control module
B44	8	★		Seat belt timer
B45	6	★	R53	Roof cord
B46	4	Green		Fuel pump relay
B47	6	Brown		Main relay
B48	4	Black		Front fog light relay
B49	3	Black		Horn relay
B50	4	★		Blower relay
B51	11	Gray		F/B
B52	12	Gray		
B53	6	★		Shield joint connector (AT)
B54	12	Black		Transmission control module
B55	16	Black		
B56	20	Black		
B57	12	Black		Shift lock control module
B61	8	★	F44	Front wiring harness
B62	20	★	F45	
B64	2	Black		Stop light switch
B65	4	Black		Stop & brake switch (With cruise control)
B68	5	Black		Cruise control sub switch
B69	11	★		Combination switch
B70	9	★		
B71	8	★		
B72	6	Black		Ignition switch
B73	2	Black		Key lock solenoid (AT)
B74	2	Black		Key warning switch
B75	2	Green	B76	Test mode connector
B76	2	Green	B75	
B78	9	Yellow		Data link connector

Connector			Connecting to	
No.	Pole	Color	No.	Name
B79	14	Gray		Check connector
B80	4	Blue	i20	Instrument panel wiring harness
B81	1 x 2	★		Diagnosis terminal (Ground)
B82	6	Black		Diagnosis connector
B83	6	★		Shield joint connector (E/G) (1800 cc engine model)
	8	★		Shield joint connector (E/G) (2200 cc engine model)
B84	96	Light blue		Engine control module
B85	4	Brown		Diode (Lighting)
B86	4	★		Blower motor resistor
B87	2	★		Blower motor
B88	4	Brown		Evaporator thermostswitch
B92	8	★		Door lock timer
B94	20	★		Cruise control module
B97	10	★	R1	Rear wiring harness
B98	12	Black	R2	
B99	20	★	R3	
B100	16	Black	F2	Front wiring harness (With ABS model)
B101	13	★	D11	Front door cord RH
B105	4	Blue		Starter interlock relay (MT)
B106	2	★		Clutch switch (MT)
B107	2	Blue		Clutch switch (Cruise control)
B113	9	★	D50	Front door cord LH
B114	2	Black		Diode (A/C)
B115	2	Black		Check connector (ABS)
B116	4	Black		Select level illumination light (AT)
B117	4	★		Parking position switch & shift lock solenoid (AT)
B118	2	★		CD player illumination light
B119	3	★		Cigarette lighter
B120	14	★		Radio
B121	1	Black		Ground (Radio)
B122	6	★		Sensor ground joint connector
B123	4	★	R48	Rear wiring harness
B124	3	★		Front door cord RH
B125	1	Green	B126	Test mode connector
B126	1	Green	B125	

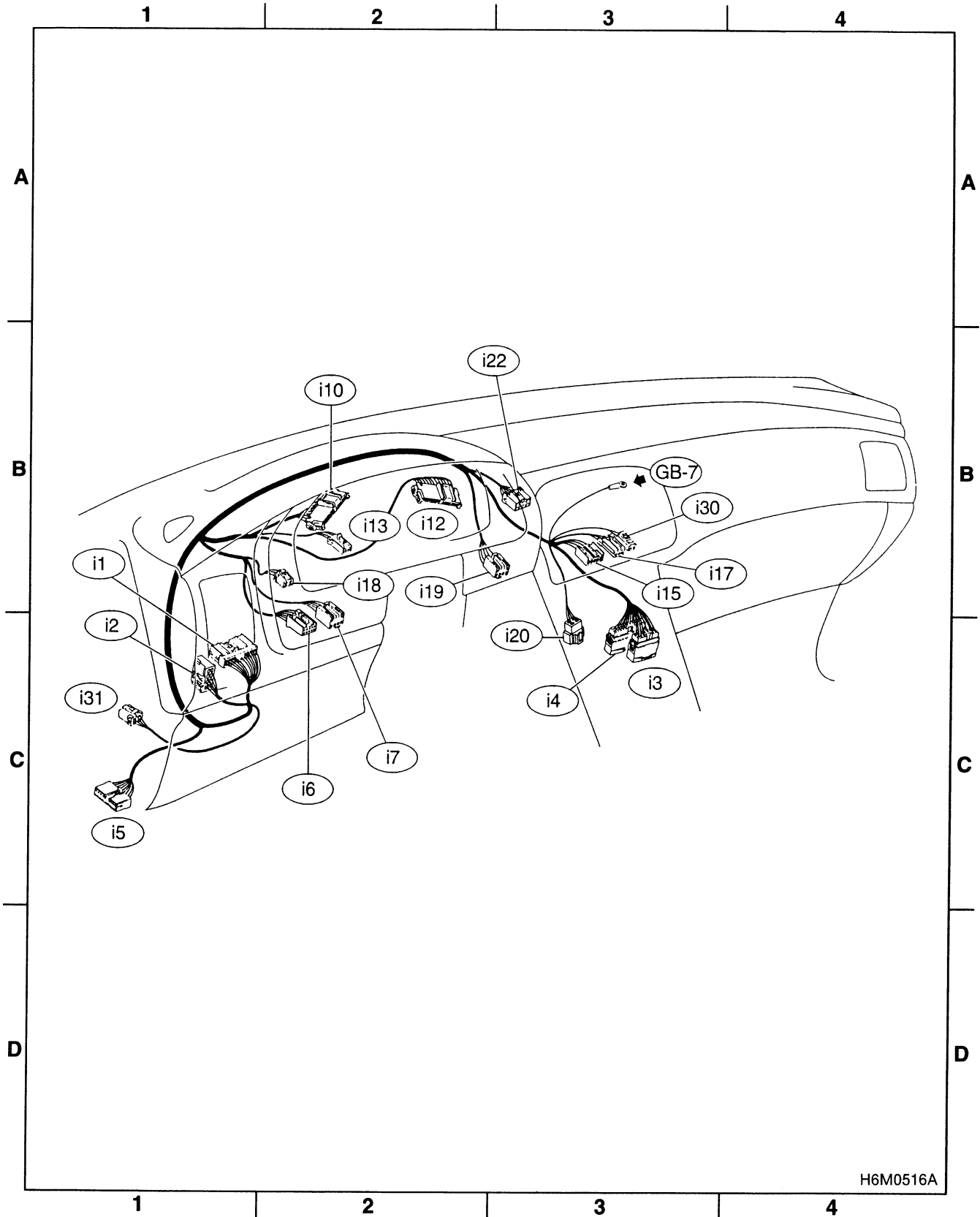
★: Non-colored

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Connector			Connecting to	
No.	Pole	Color	No.	Name
i1	24	Black	B36	Bulkhead wiring harness
i2	8	★	B37	
i3	12	★	B38	
i4	20	Blue	B39	
i5	15	Gray		F/B
i6	10	★		Remote control rearview mirror switch
i7	6	★		Front fog light switch
i10	16	Gray		Combination meter
i12	16	Gray		
i13	4	★		Combination meter (Airbag warning)
i15	6	★		Fan switch
i17	3	★		Mode control panel
i18	4	★		Rear defogger switch
i19	6	Brown		Cruise control main switch
i20	4	Blue	B80	Bulkhead wiring harness
i22	8	★		Hazard switch
i30	2	★		Mode control panel illumination light
i31	4	★		Rear window deffogger timer

★: Non-colored

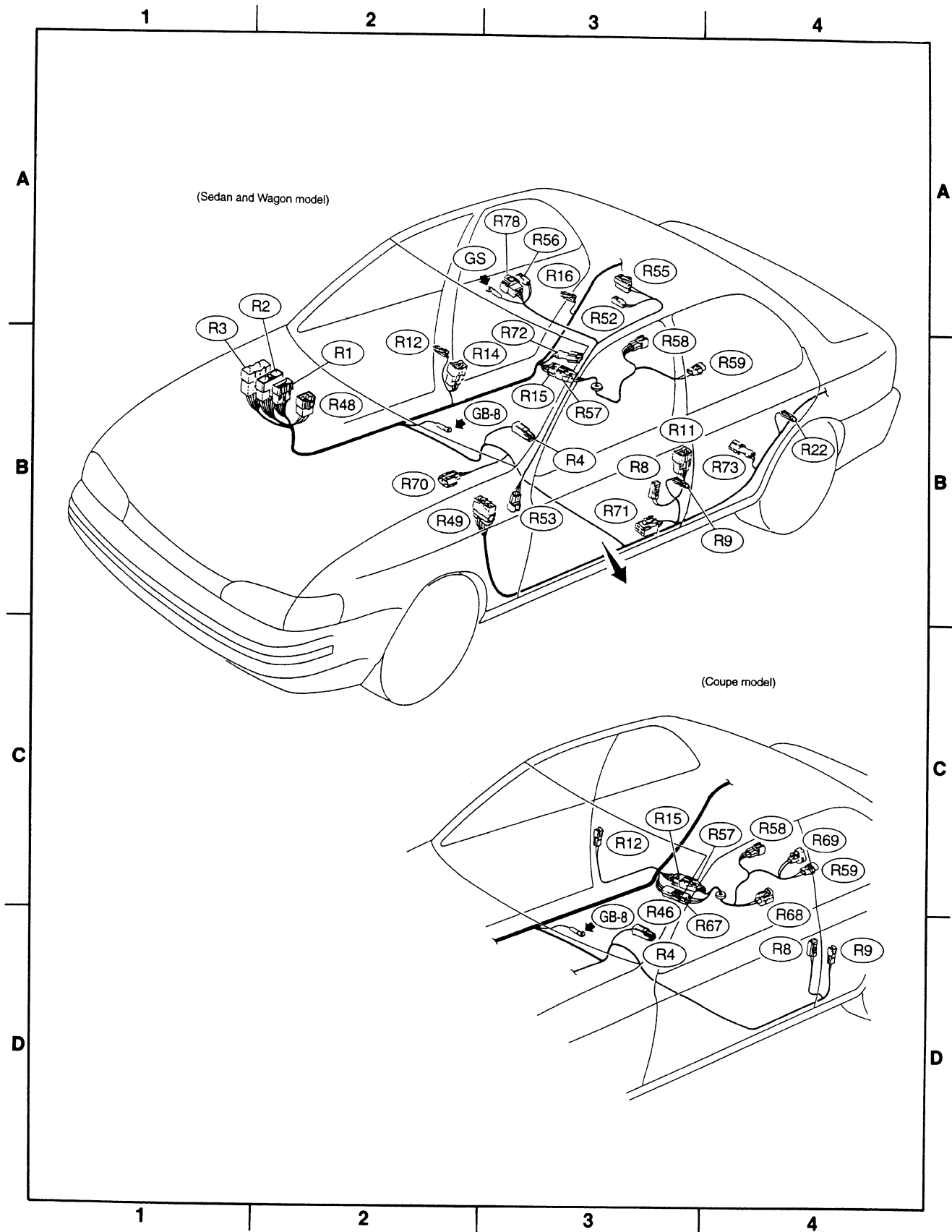
5. INSTRUMENT PANEL WIRING HARNESS AND GROUND POINT



Connector			Connecting to	
No.	Pole	Color	No.	Name
R1	10	★	B97	Bulkhead wiring harness
R2	12	Black	B98	
R3	20	★	B99	
R4	1	Black		Parking brake switch
R8	2	★		Seat belt switch
R9	1	Brown		Front door switch LH (Sedan and Wagon model)
	2	★		Front door switch LH (Coupe model)
R11	8	★	D21	Rear door adapter cord LH
R12	1	Brown		Front door switch RH (Sedan and Wagon model)
	2	★		Front door switch RH (Coupe model)
R14	8	★	D27	Rear door adapter cord RH
R15	6	Black	R57	Fuel tank cord
R16	1	Brown		Rear door switch RH
R22	1	Brown		Rear door switch LH
R46	4	★	R67	Fuel tank cord (1800 cc engine model)
R48	4	★	B123	Bulkhead wiring harness (Wagon model)
R49	12	Black	F55	Front wiring harness (With ABS model)
R52	2	★		Room light
R53	6	★	B45	Bulkhead wiring harness
R55	2	★		Sunroof control module and sunroof motor
R56	2	★		Spot light
R57	6	Black	R15	Rear wiring harness
R58	6	★		Fuel gauge module & fuel pump assembly
R59	2	★		Fuel gauge sub module
R67	4	★	R46	Rear wiring harness
R68	2	Black		Pressure control solenoid valve
R69	2	★		Vent control solenoid valve
R70	3	★		ABS G sensor
R71	4	Red		Rear accessory power supply relay
R72	2	Gray		Rear ABS sensor RH
R73	2	Gray		Rear ABS sensor LH

★: Non-colored

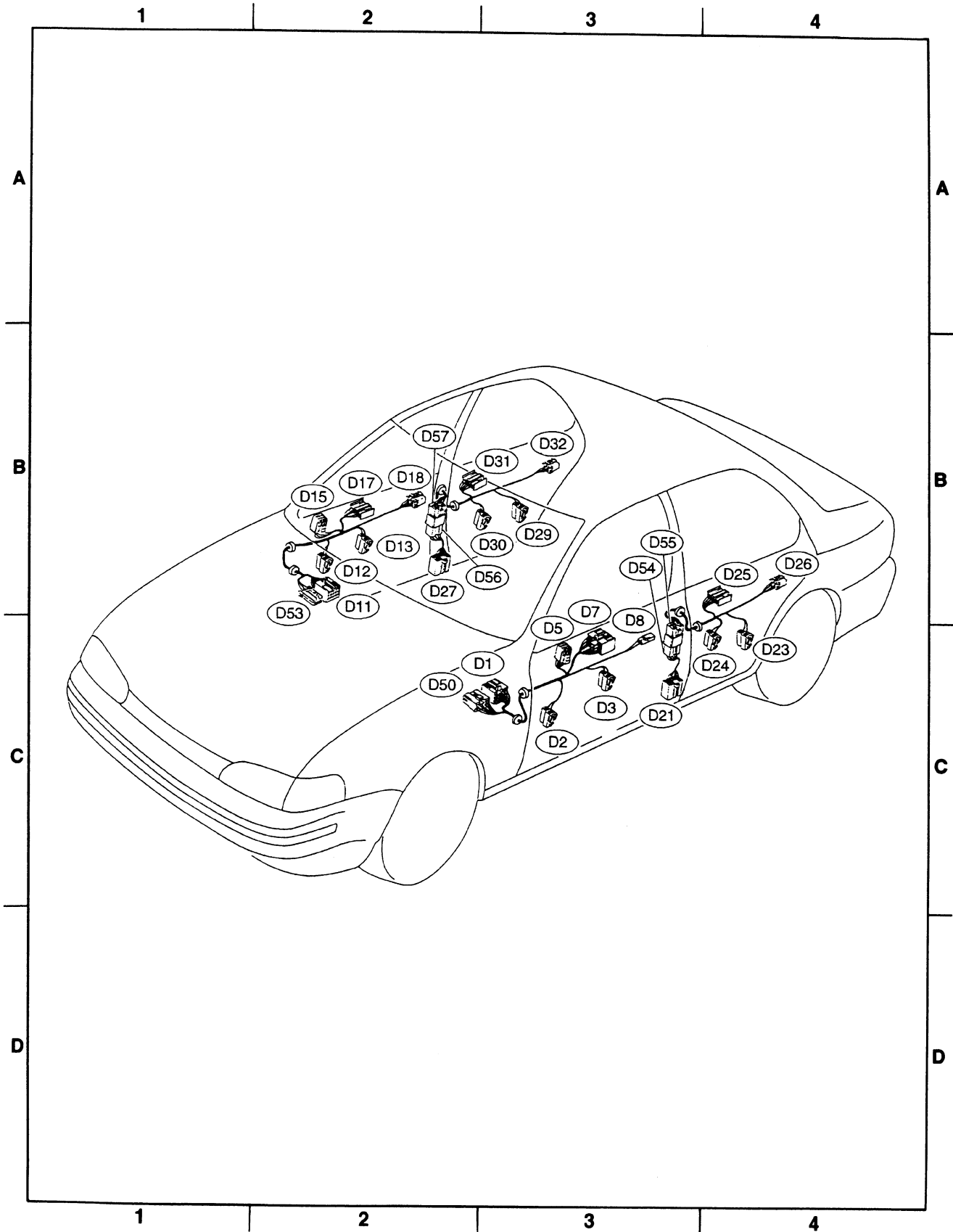
6. REAR WIRING HARNESS AND GROUND POINT



Connector			Connecting to	
No.	Pole	Color	No.	Name
D1	13	★	B30	Bulkhead wiring harness
D2	2	★		Front speaker LH
D3	2	Green		Front power window motor LH
D5	6	★		Remote control rearview mirror LH
D7	14	★		Power window main switch
D8	2	Gray		Front door lock switch LH
D11	13	★	B101	Bulkhead wiring harness
D12	2	★		Front speaker RH
D13	2	Green		Front power window motor RH
D15	6	★		Remote control rearview mirror RH
D17	5	★		Front power window sub switch RH
D18	4	★		Front door lock actuator RH
D21	8	★	R11	Rear wiring harness
D23	2	★		Rear door speaker LH
D24	2	Green		Rear power window motor LH
D25	5	★		Rear power window sub switch LH
D26	4	★		Rear door lock actuator LH
D27	8	★	R14	Rear wiring harness
D29	2	★		Rear door speaker RH
D30	2	Green		Rear power window motor RH
D31	5	★		Rear power window sub switch RH
D32	4	★		Rear door lock actuator RH
D50	9	★	B113	Bulkhead wiring harness
D53	3	★	B124	Bulkhead wiring harness
D54	8	★	D55	Rear door cord LH
D55	8	★	D54	Rear door adapter cord LH
D56	8	★	D57	Rear door cord RH
D57	8	★	D56	Rear door adapter cord RH

★: Non-colored

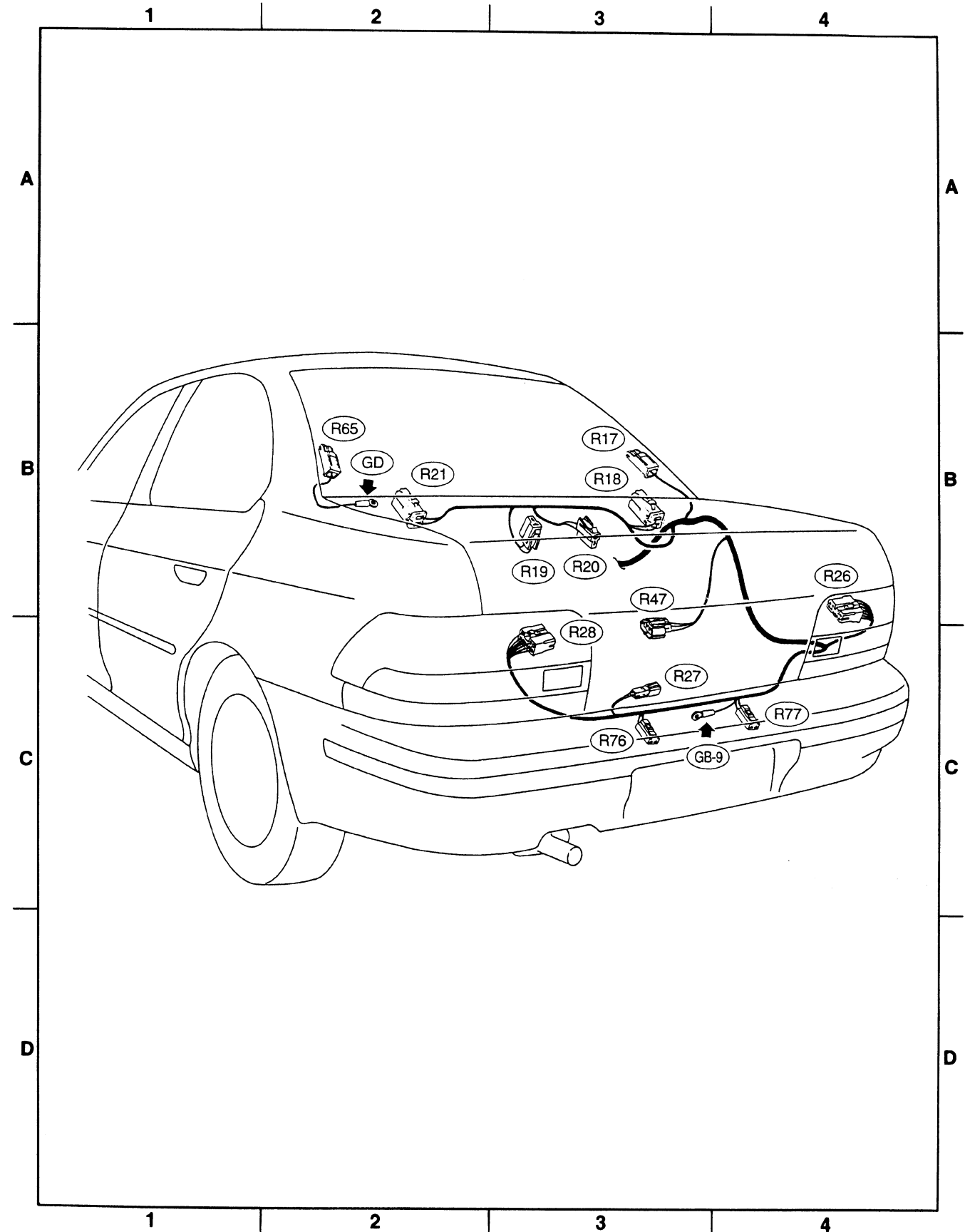
7. DOOR CORD



Connector			Connecting to	
No.	Pole	Color	No.	Name
R17	1	Black		Rear defogger (Power)
R18	2	Black		Rear speaker RH
R19	2	★		High-mount stop light
R20	2	Black		Trunk room light
R21	2	Black		Rear speaker LH
R26	7	★		Rear combination light RH
R27	2	★		Trunk room light switch
R28	7	★		Rear combination light LH
R47	3	Black		Fuel tank pressure sensor (1800 cc engine model)
R65	1	Black		Rear defogger (Ground)
R76	2	★		License plate light LH
R77	2	★		License plate light RH

★: Non-colored

8. REAR END WIRING HARNESS AND GROUND POINT OF SEDAN AND COUPE



Connector			Connecting to	
No.	Pole	Color	No.	Name
R26	7	★		Rear combination light RH
R28	7	★		Rear combination light LH
R32	1	★		Rear accessory power supply (Power)
R33	1	Black		Rear accessory power supply (Ground)
R36	5	Black		Rear wiper relay
R37	2	★	D33	Rear gate cord
R38	4	★	D34	
R39	4	★	D35	
R74	2	Green		Rear washer motor
R75	2	★		Luggage room light
R76	2	★		License plate light LH
R77	2	★		License plate light RH

Connector			Connecting to	
No.	Pole	Color	No.	Name
D33	2	★	R37	Rear wiring harness
D34	4	★	R38	
D35	4	★	R39	
D39	2	★		High-mount stop light
D40	1	★		Rear defogger (Power)
D43	4	★		Rear wiper motor
D46	2	★		Rear gate latch switch
D47	4	★		Rear gate lock actuator
D48	1	★		Rear defogger (Ground)
D58	2	★	D59	Rear gate lock adapter cord
D59	2	★	D58	Rear gate cord

★: Non-colored

9. REAR END WIRING HARNESS AND GROUND POINT OF WAGON

