

**SUBARU**

**SVX**

**1992**

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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 unit, warning light, wiring harness and spiral cable.

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 SVX 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".

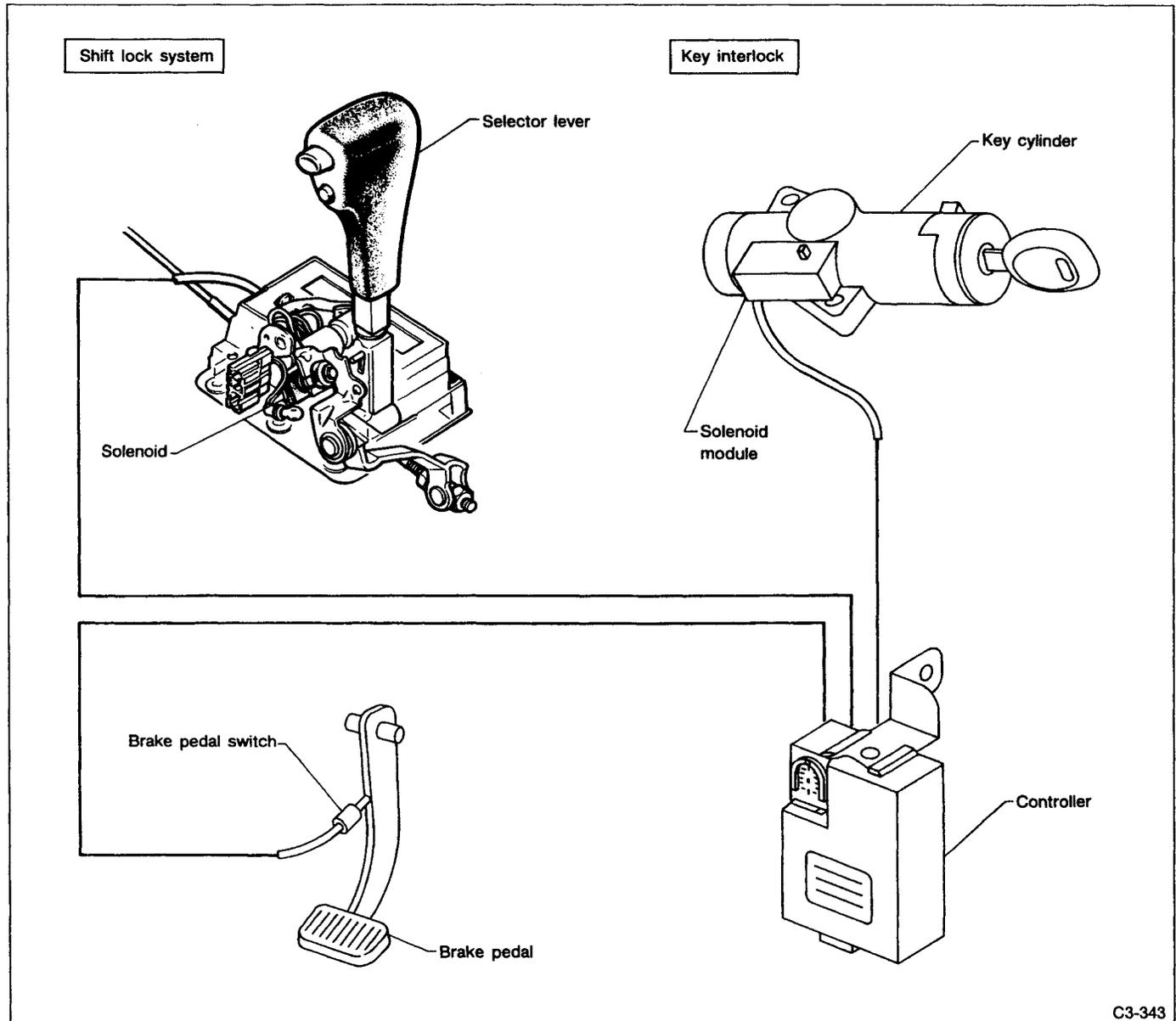


## M MECHANISM AND FUNCTION

### Shift Lock System (With Key Interlock)

#### 1. GENERAL

To increase safety during "standing start", a shift lock system is utilized to prevent shifting of the selector lever from "P" to any other position unless the brake pedal is depressed. This system is also provided with a key interlock which prevents removal of the ignition key from the key cylinder unless the selector lever is set at "P".



C3-343

Fig. 1

**2. SHIFT LOCK SYSTEM**

The selector lever can be moved from "P" to any other position in either of the following cases:

- The brake pedal is depressed with the ignition key set at "ON" or "START".

- The ignition key can be rotated from the "ACC" to the "LOCK" position and then removed from its key cylinder only when the selector lever is set at "P".
- Shift lock is designed to properly release even when shift lever is hard to shift due to current flow interruption, run-down battery, etc.

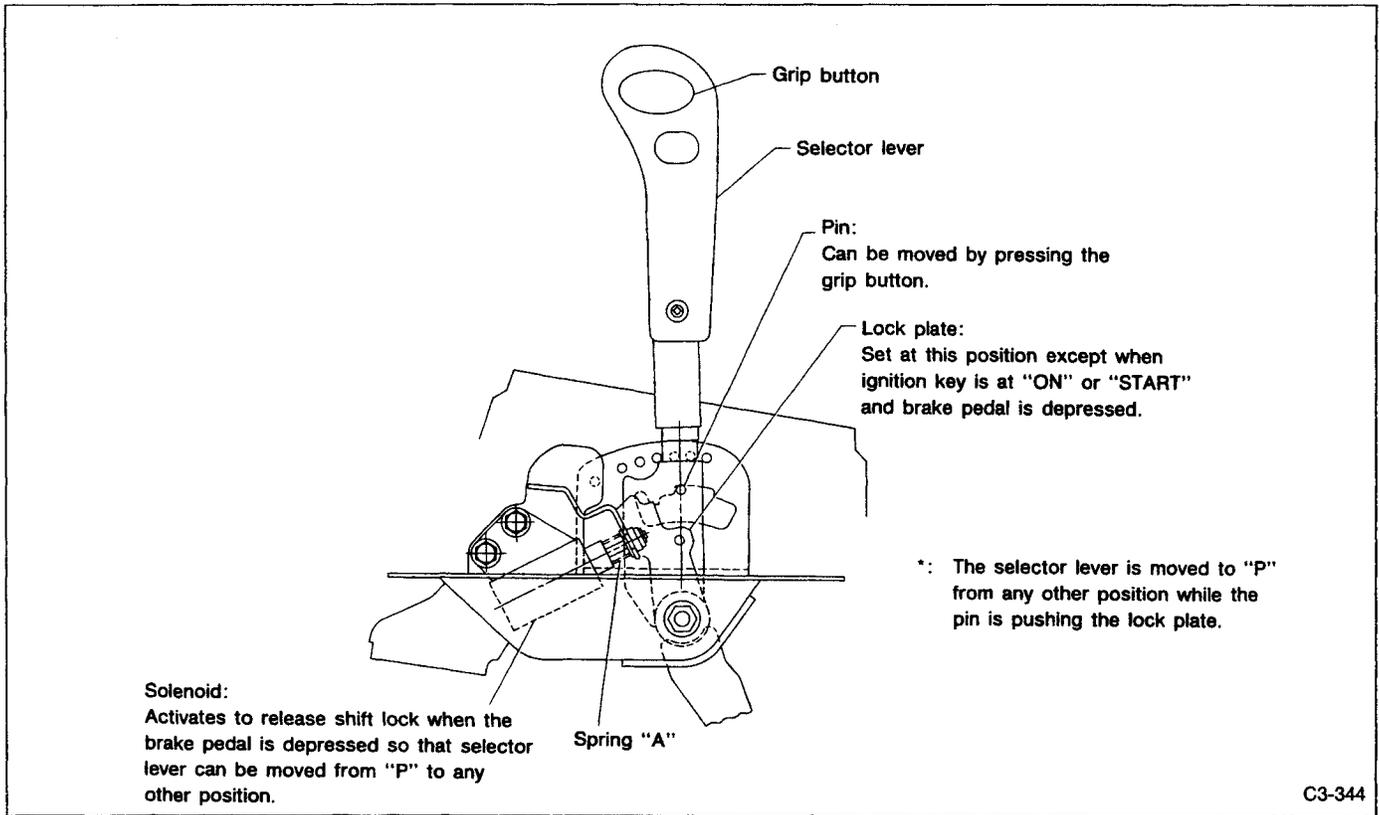


Fig. 2

### 3. KEY INTERLOCK

#### 1) Selector lever in any position other than "P"

- (1) When the selector lever is moved to any position other than "P", the solenoid is energized to moves the solenoid rod to the operation position.
- (2) The interlock lever, which is connected to the end of the solenoid rod, then moves the stopper in the direction of the rotator.

(3) As a result, the key plate can be rotated to the "LOCK" position. The key plate can be inserted into or removed from the "LOCK" position only.

(3) With the key in the "ACC" (key push) position, the key cylinder is held in that position by the stopper.

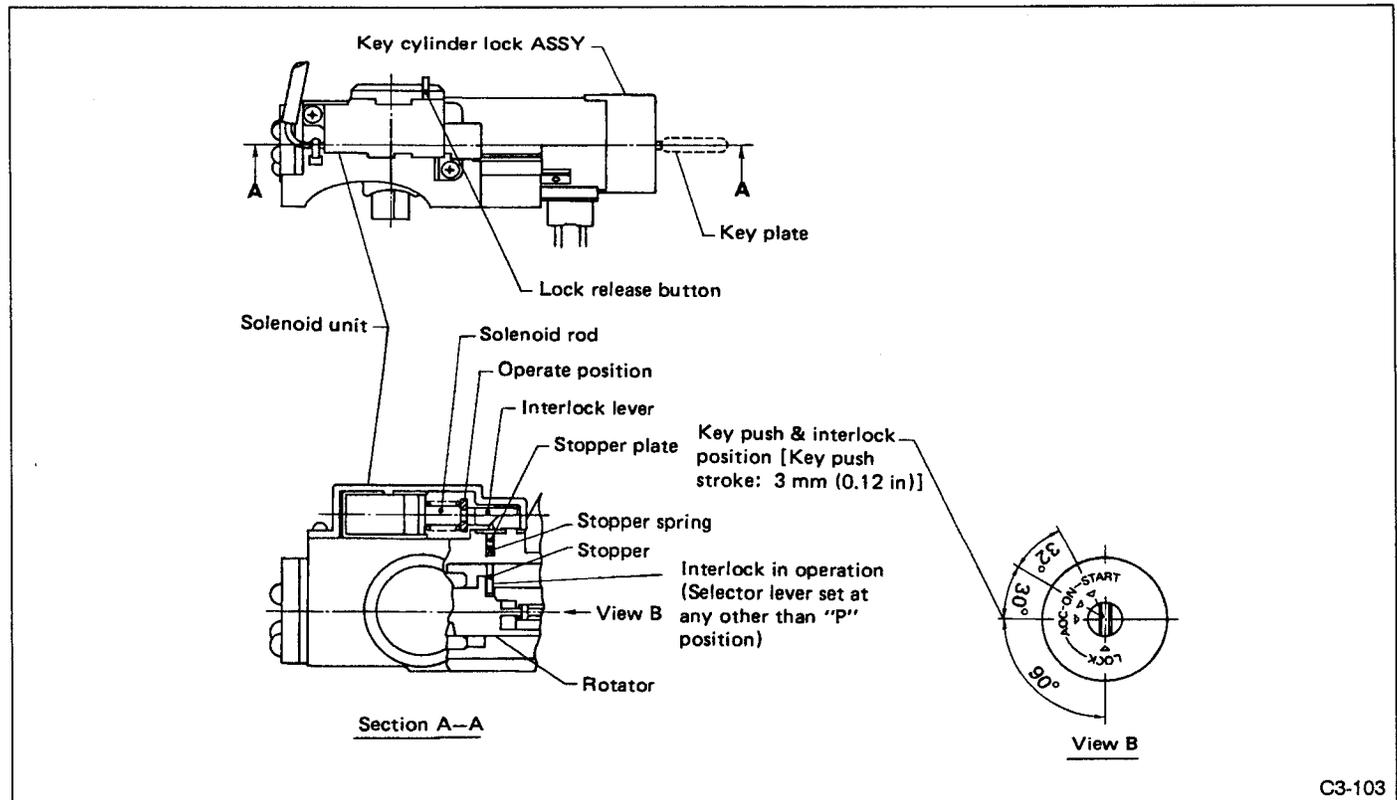


Fig. 3

#### 2) Selector lever in the "P" position

- (1) When the selector lever is moved to "P", the solenoid is energized to moves the solenoid rod to the release position.
- (2) The interlock lever, which is connected to the end of the solenoid rod, also moves so that the tension of the spring overcomes the stopper. The key will then be released (pushed).

(3) As a result, the key plate can be rotated to the "LOCK" position. The key plate can be inserted into or removed from the "LOCK" position only.

- 3) If the key plate is hard to remove, release the key interlock system by pressing the lock release button (located under the steering column cover). The key plate can then be removed.

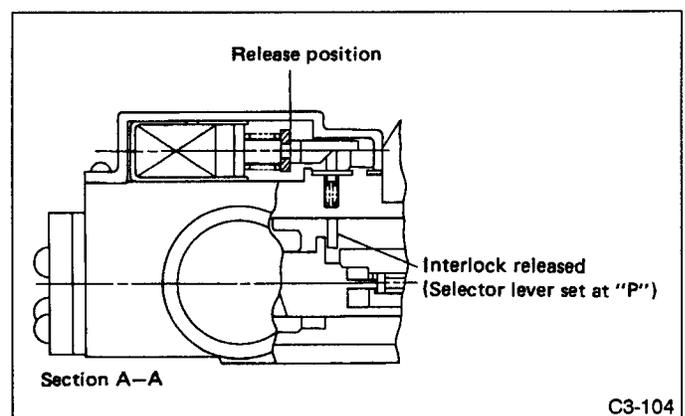
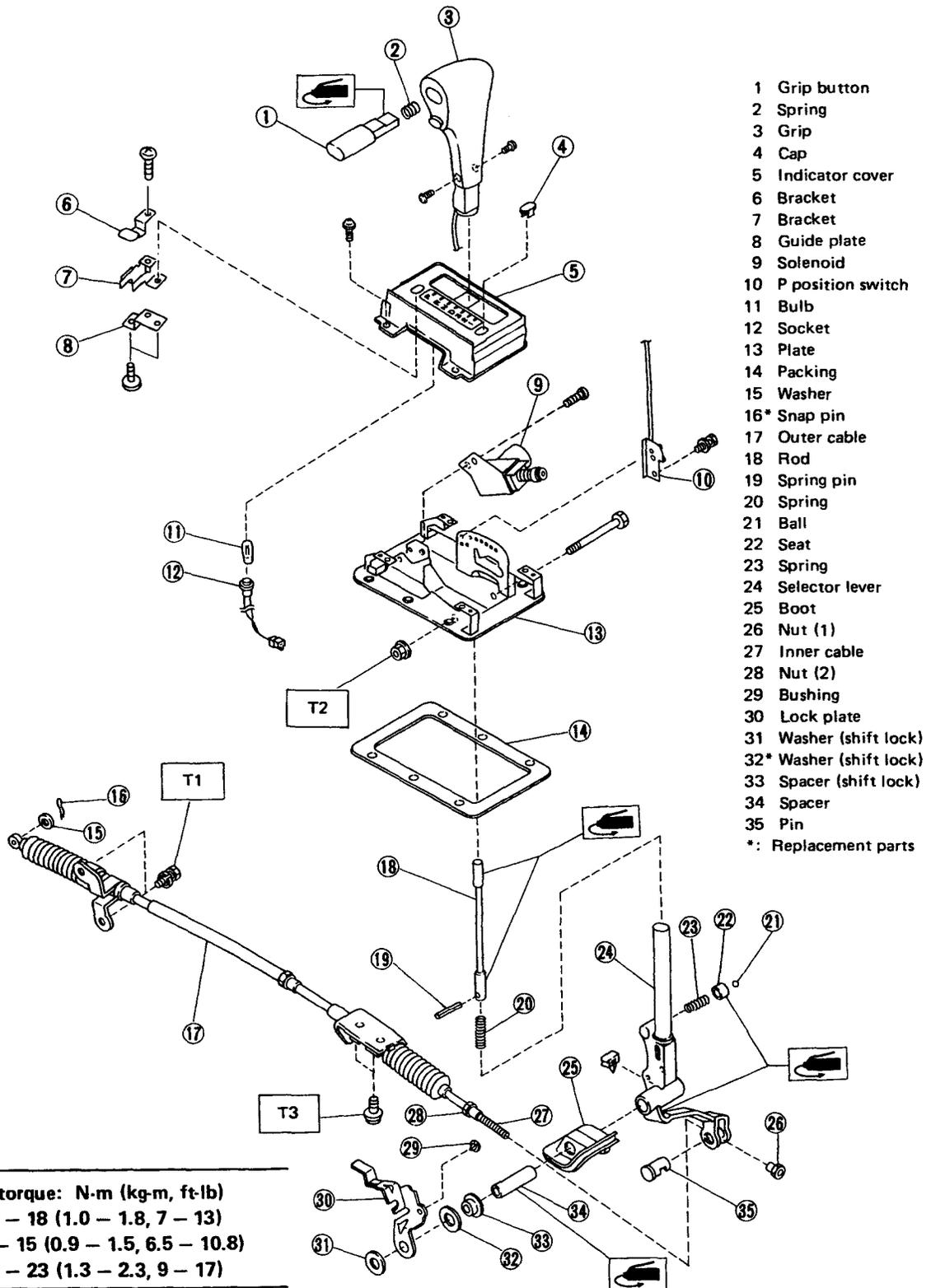


Fig. 4

**C COMPONENT PARTS**  
**Automatic Transmission**



- 1 Grip button
- 2 Spring
- 3 Grip
- 4 Cap
- 5 Indicator cover
- 6 Bracket
- 7 Bracket
- 8 Guide plate
- 9 Solenoid
- 10 P position switch
- 11 Bulb
- 12 Socket
- 13 Plate
- 14 Packing
- 15 Washer
- 16\* Snap pin
- 17 Outer cable
- 18 Rod
- 19 Spring pin
- 20 Spring
- 21 Ball
- 22 Seat
- 23 Spring
- 24 Selector lever
- 25 Boot
- 26 Nut (1)
- 27 Inner cable
- 28 Nut (2)
- 29 Bushing
- 30 Lock plate
- 31 Washer (shift lock)
- 32\* Washer (shift lock)
- 33 Spacer (shift lock)
- 34 Spacer
- 35 Pin
- \*: Replacement parts

**Tightening torque: N-m (kg-m, ft-lb)**  
**T1: 10 – 18 (1.0 – 1.8, 7 – 13)**  
**T2: 9 – 15 (0.9 – 1.5, 6.5 – 10.8)**  
**T3: 13 – 23 (1.3 – 2.3, 9 – 17)**

Fig. 3

# W SERVICE PROCEDURE

## Automatic Transmission

### A: REMOVAL

- 1) Move the selector lever to "N".
- 2) Remove the front exhaust cover.
  - (1) Remove the eight bolts to take off the front exhaust cover.

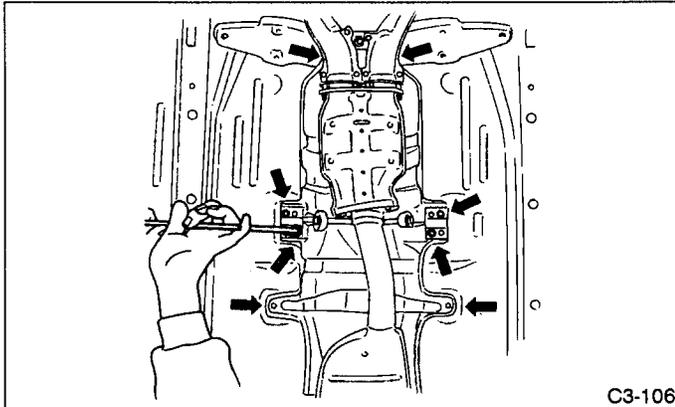


Fig. 6

- (2) Remove the front exhaust cover.

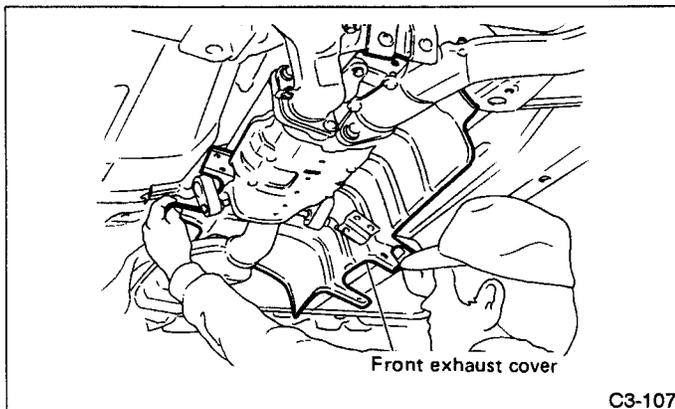


Fig. 7

**Be careful not to bend the front exhaust cover when removing.**

- 3) Remove the cable ASSY.
  - (1) Remove the snap pin to separate the cable from the transmission lever.
  - (2) Remove the clamp from the transmission case.

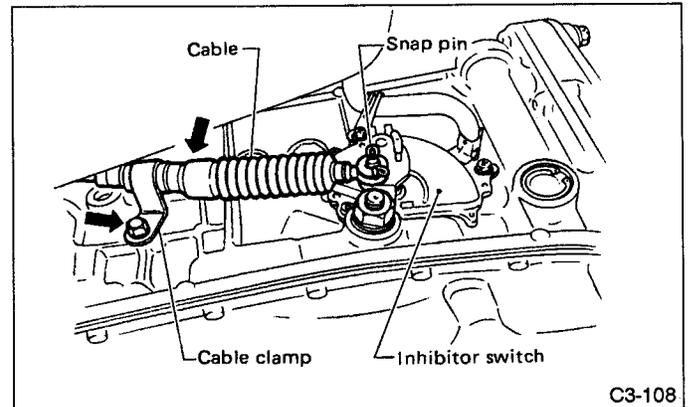


Fig. 8

- (3) Disconnect the cable from the selector lever.

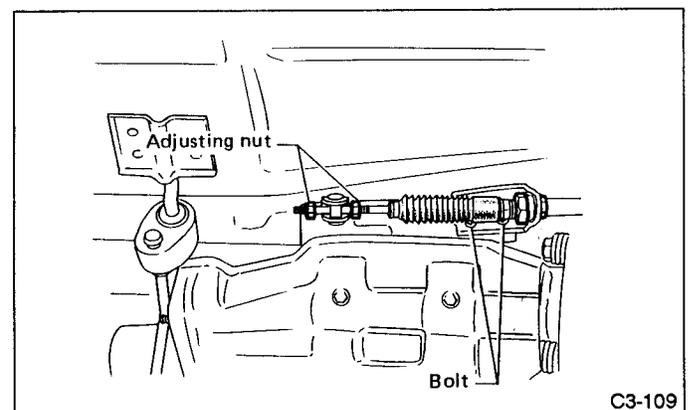


Fig. 9

- 4) Remove the console box.
 

For removal of the console box, refer to "5-4 INSTRUMENT PANEL" [W1A0].

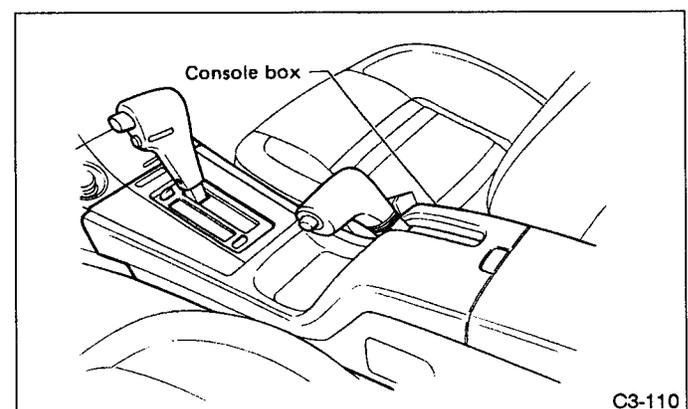


Fig. 10

5) Disconnect the connector.

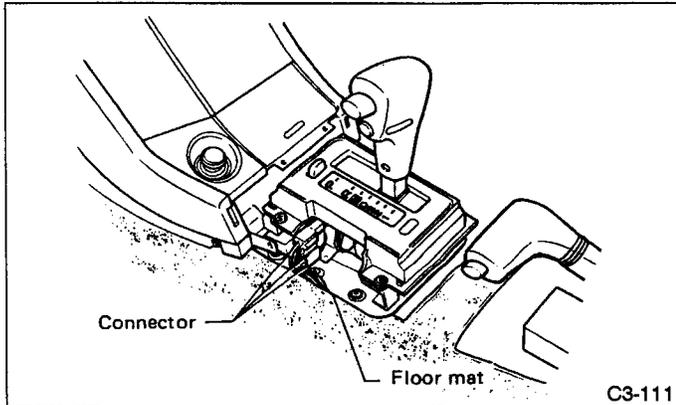


Fig. 11

2) Remove the indicator cover from the plate.

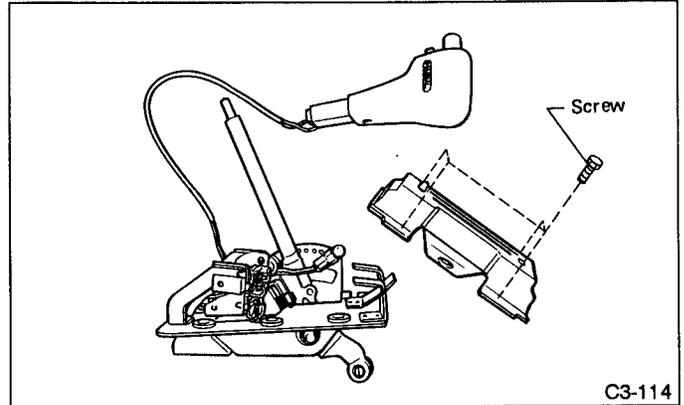


Fig. 14

6) Remove the selector lever ASSY  
 (1) Prior to removal, set the lever to "N".  
 (2) Remove the screws to take off the plate from the body.

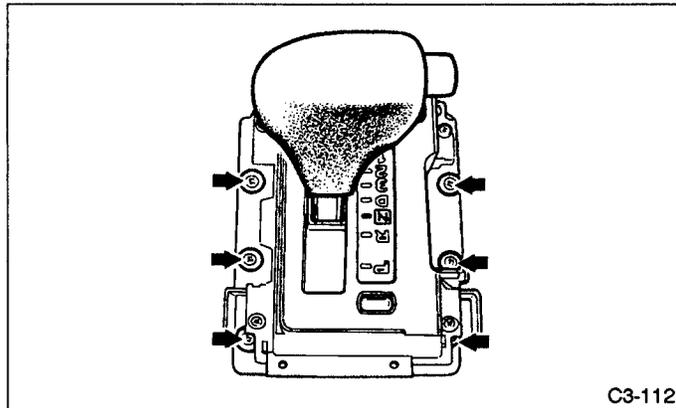


Fig. 12

3) Remove the following parts from the grip.  
 ① Grip button  
 ② Spring

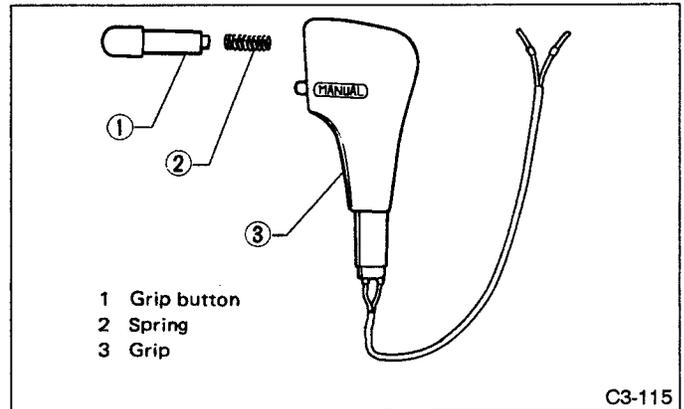


Fig. 15

7) Remove the selector lever ASSY.

**B: DISASSEMBLY**

1) Remove the grip from the selector lever CP.  
 (1) Remove the screw to take off the grip from the selector lever CP.

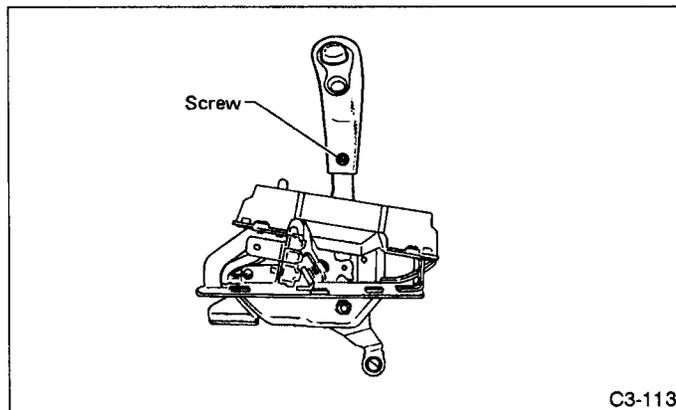


Fig. 13

4) Remove the shift lock release button from the indicator cover.

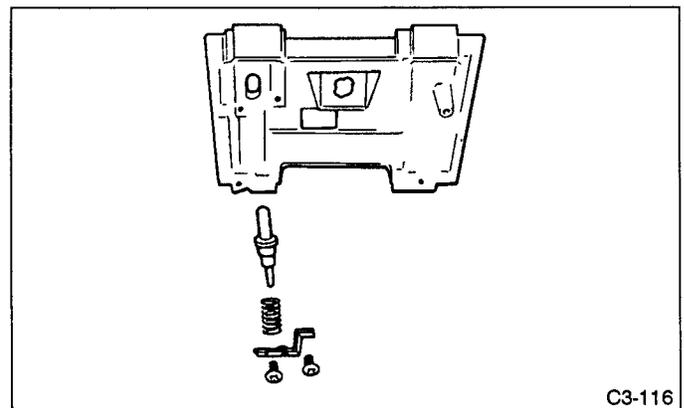


Fig. 16

5) Remove the solenoid.

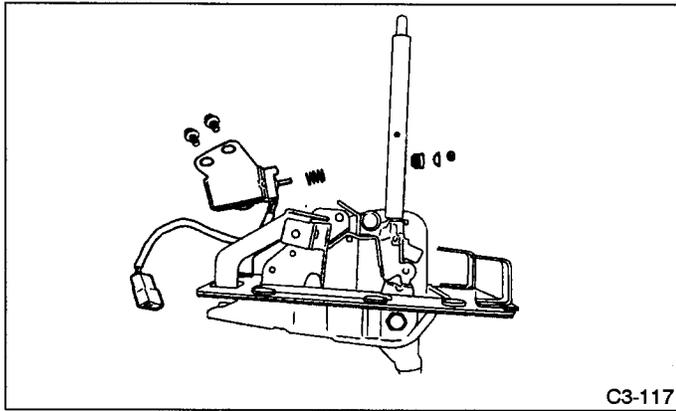


Fig. 17

- 6) Remove the screw to take off the "P" position switch CP.

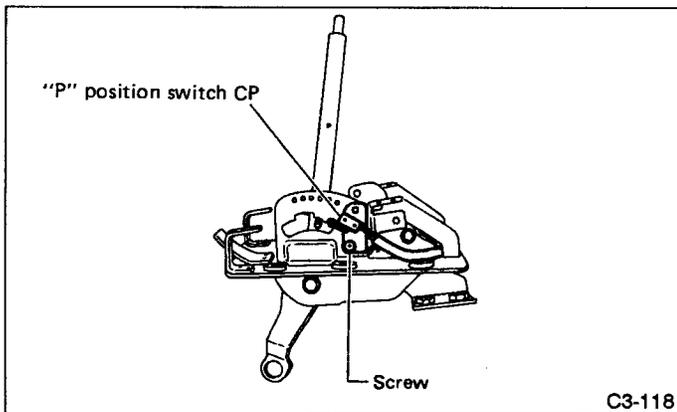


Fig. 18

- 7) Remove the bolt to take off the selector lever CP from the plate.

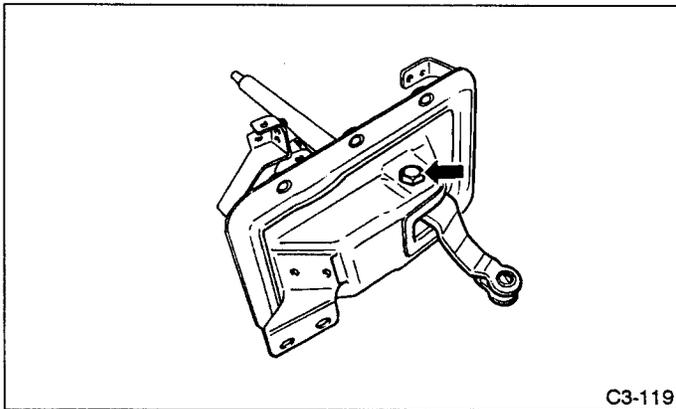


Fig. 19

- 8) Remove the lock plate.  
9) Remove the selector lever CP from the plate.

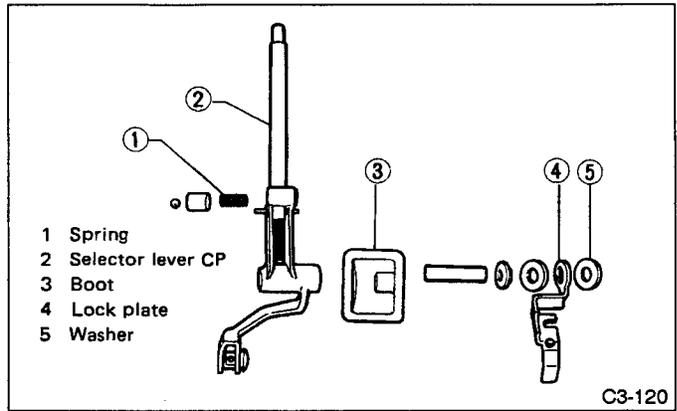


Fig. 20

### C: INSPECTION

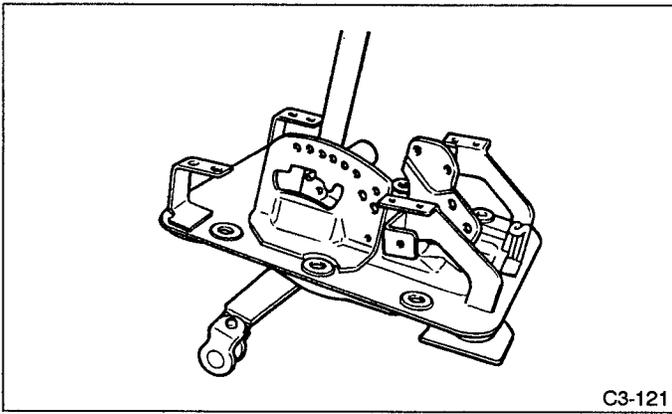
- 1) Inspect the removed parts by comparing with new ones for deformation, damage and wear. Correct or replace if defective.
- 2) Confirm the following parts for operating condition before ASSY.
  - (1) Sliding condition of the grip button in the grip ... it should move smoothly.
  - (2) Insertion of the grip on the selector lever ... when pushing the grip on the selector lever by hand, the screw holes should be aligned.
  - (3) Operation of the selector lever and rod ... they should move smoothly.
  - (4) Insertion of the spacer into the selector lever ... it should be inserted lightly by finger pressure.

### D: ASSEMBLY

- 1) Clean all parts before assembly.
- 2) Assemble the selector lever CP and the lock plate to the plate.
- 3) Insert the bolt and tighten the flange nut to the specified torque.

#### Tightening torque (Flange nut):

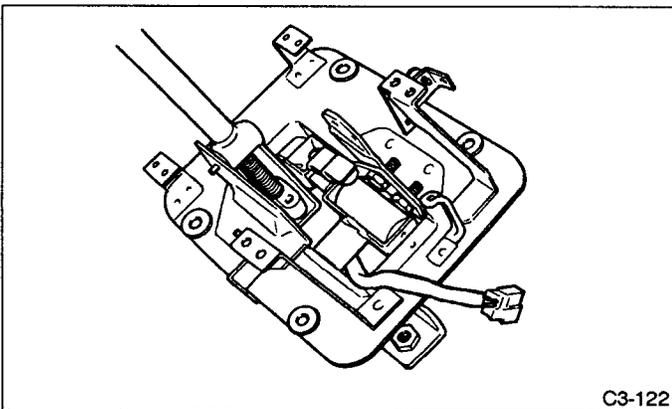
11 — 17 N•m (1.1 — 1.7 kg-m, 8 — 12 ft-lb)



C3-121

Fig. 21

- 4) Assemble the solenoid.
- 5) Adjust the position of the solenoid.



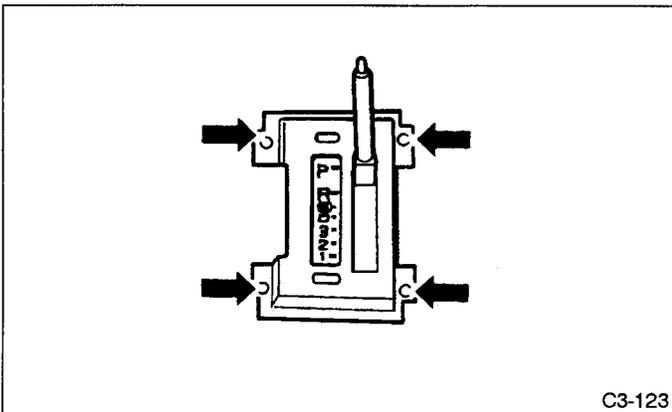
C3-122

Fig. 22

- 6) Make sure you tighten the bolts when installing the solenoid.
- 7) Assemble the "P" position switch CP to the plate.
- 8) Assemble the shift lock release button to the indicator cover.
- 9) Assemble the indicator cover to the plate.

**Tightening torque:**

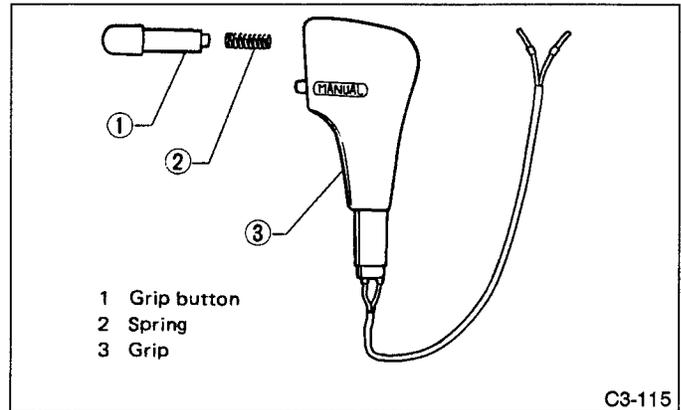
1.3 — 2.6 N·m (0.13 — 0.27 kg-m, 0.9 — 2.0 ft-lb)



C3-123

Fig. 23

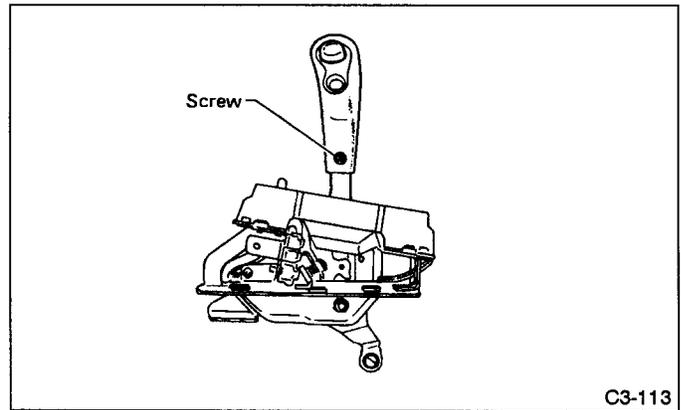
- 10) Assemble the following parts to the grip.  
Apply grease on the sliding surfaces of the following parts.



C3-115

Fig. 24

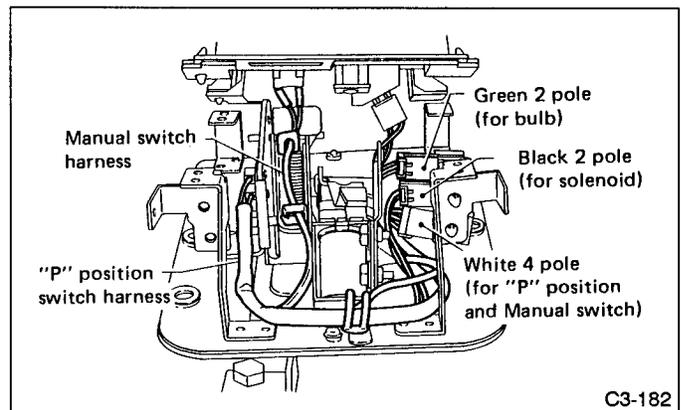
- 11) Assemble the grip to the selector lever CP.



C3-113

Fig. 25

- 12) Route bulb, solenoid and switch harnesses as shown in Fig. 26.



C3-182

Fig. 26

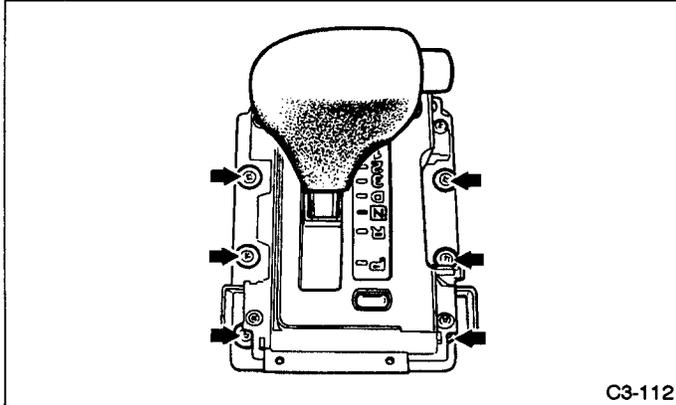
- 13) After the completion of fitting, transfer the selector lever to range "P" — "1", pressing the grip button of the grip; then check whether the indicator and select lever agree, whether the pointer and position mark agree and what the operating force is.

**E: INSTALLATION**

- 1) Mount the selector lever ASSY onto the car body.
- 2) Tighten the six screws to install the selector lever ASSY to the car body.

**Tightening torque:**

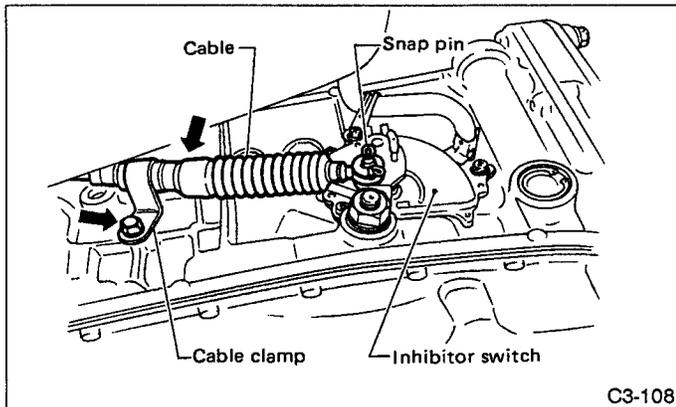
4.4 — 7.4 N•m (0.45 — 0.75 kg-m, 3.3 — 5.4 ft-lb)



C3-112

Fig. 27

- 3) Set the location of the selector lever at "N".
- 4) Set the location of the selector arm of the transmission at "N".
- 5) Pass the inner cable through the selector arm pin and then connect it using a washer and snap pin.



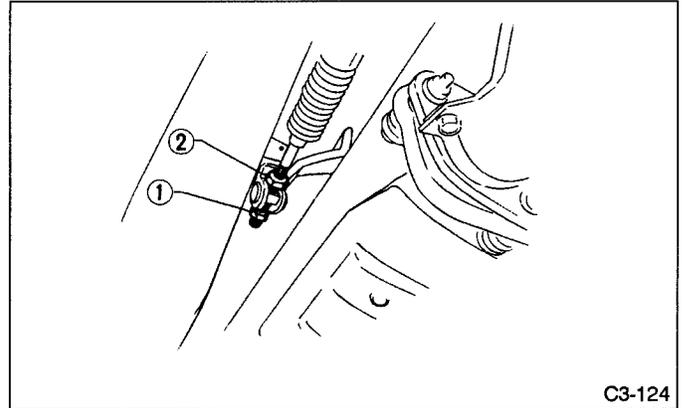
C3-108

Fig. 28

- 6) Attach the outer cable to the transmission case with the bolts.
- 7) Insert the thread portion of the other inner cable and into the connector hole of the selector lever, and fix the other outer cable end to the bracket.
- 8) Adjust the inner cable length.
  - (1) Put connector into contact with nut ②.
  - (2) Return nut ② to rotate 1/2.
  - (3) Tighten nut ①.

**Tightening torque:**

13 — 23 N•m (1.3 — 2.3 kg-m, 9 — 17 ft-lb)



C3-124

Fig. 29

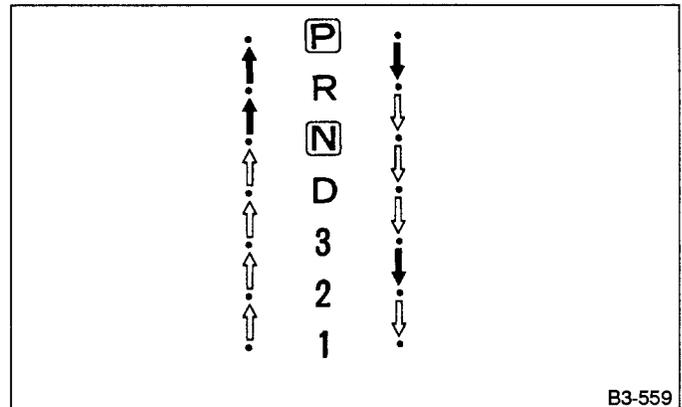
- 9) After completion of fitting, make sure that the selector lever operates smoothly all across the operating range.
- 10) Connect the harnesses and check the following items.

- (1) The engine starts operating when the selector lever is in position "P", but not in other positions.
- (2) The back-up light is lit when the selector lever is in position "R", but not in other positions.

- 11) Check selector lever operation.

**Stop the engine while checking the operation of the selector lever.**

- (1) Check that the selector lever does not move from "N" to "R" without pushing the grip button.
- (2) Check that the selector lever does not move from "R" to "P" without pushing the grip button.
- (3) Check that the selector lever does not move from "P" to "R" without pushing the grip button.
- (4) Check that the selector lever does not move from "3" to "2" without pushing the grip button.



B3-559

Fig. 30

- 12) Check shift lock system.
  - (1) Ensure the ignition switch rotates from "ACC" to "LOCK" when the selector lever is set at "P". Also check that the ignition key can be removed from the "LOCK" position only.
  - (2) Ensure the selector lever moves from "P" to any other position when the brake pedal is depressed with ignition key set at "ON" or "START".
- 13) Install the front exhaust cover.  
**Ensure that the exhaust system is completely cooled off before installation.**
- 14) Install the console box.

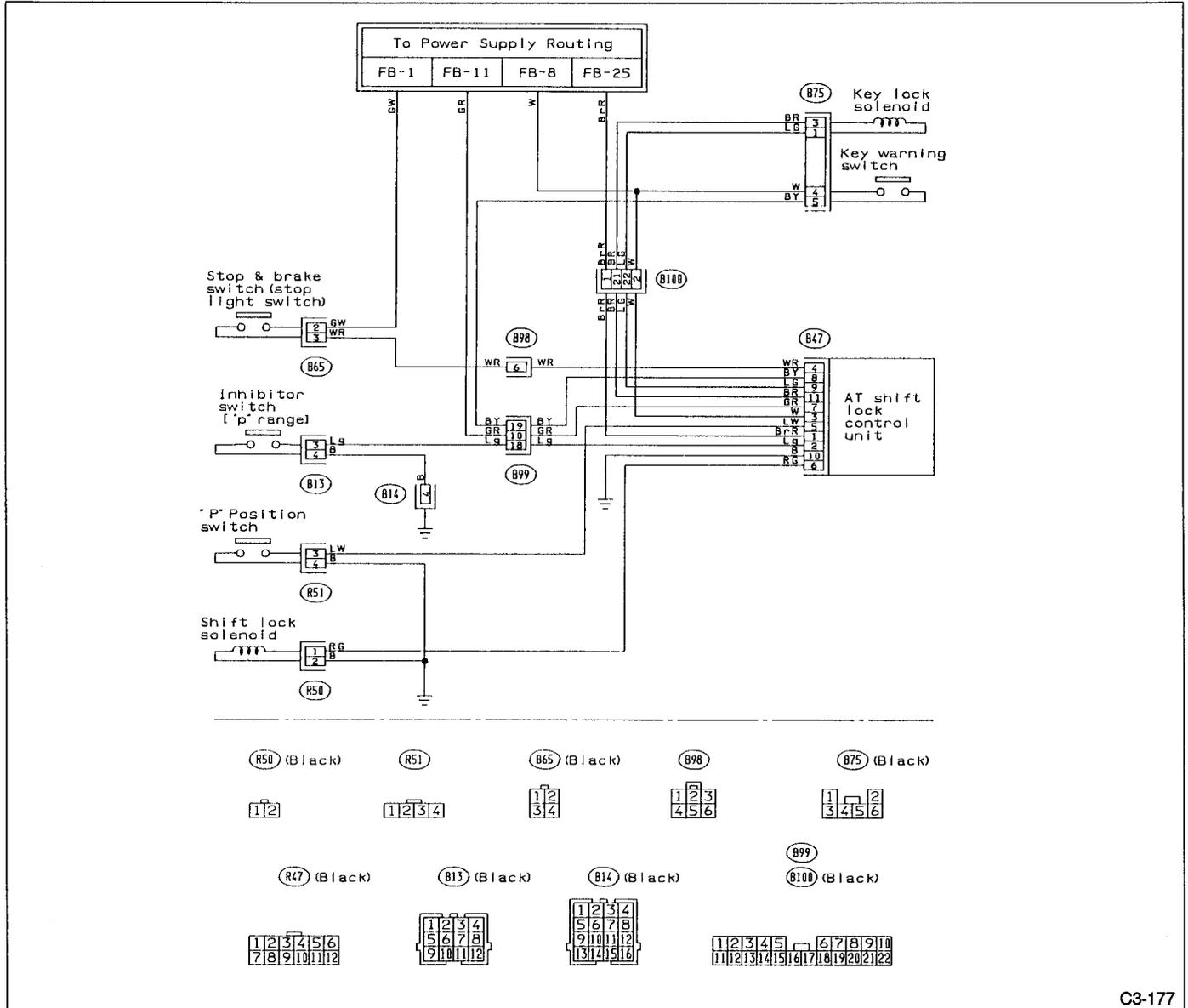
# T TROUBLESHOOTING **AIRBAG**

## 1. Supplemental Restraint System "Airbag"

Airbag system wiring harness is routed near the steering shaft ASSY.

- 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 steering shaft ASSY.

## 2. Wiring Diagram

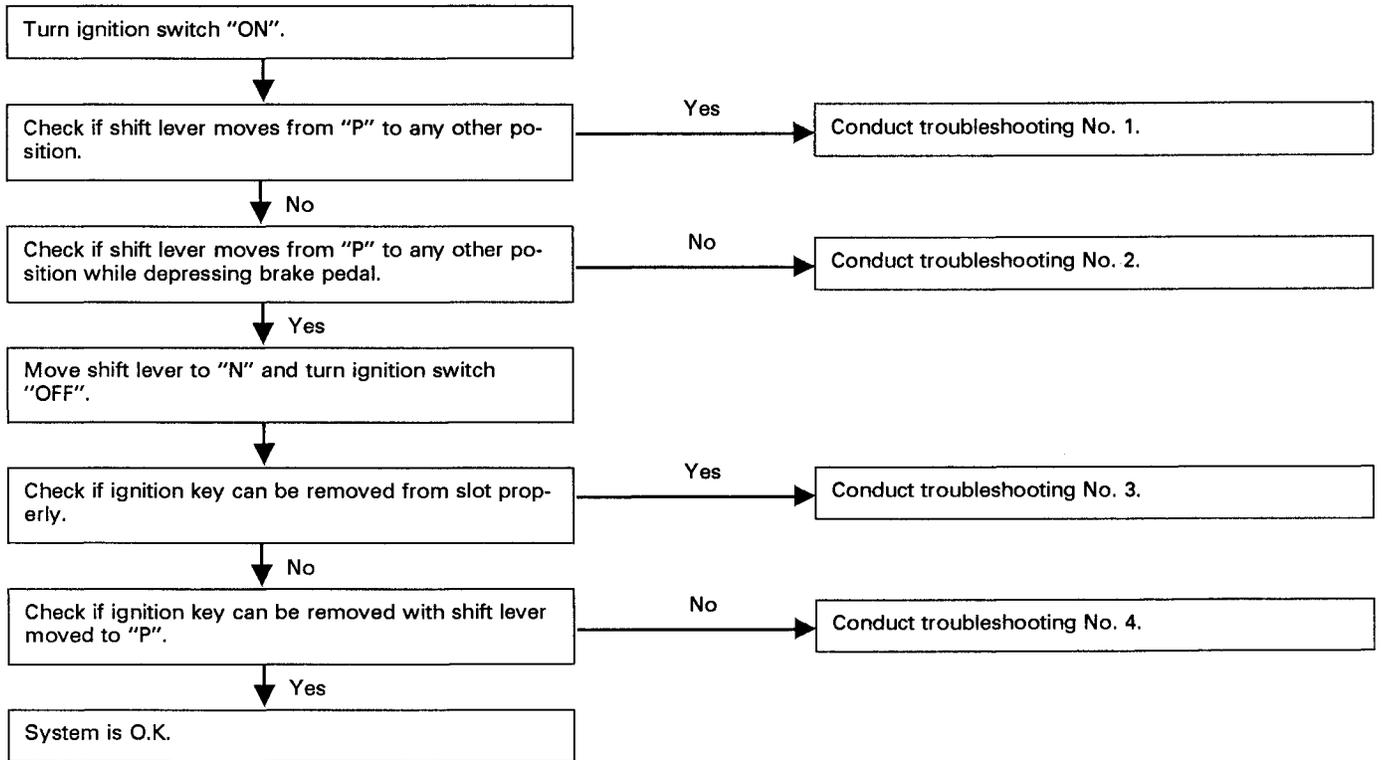


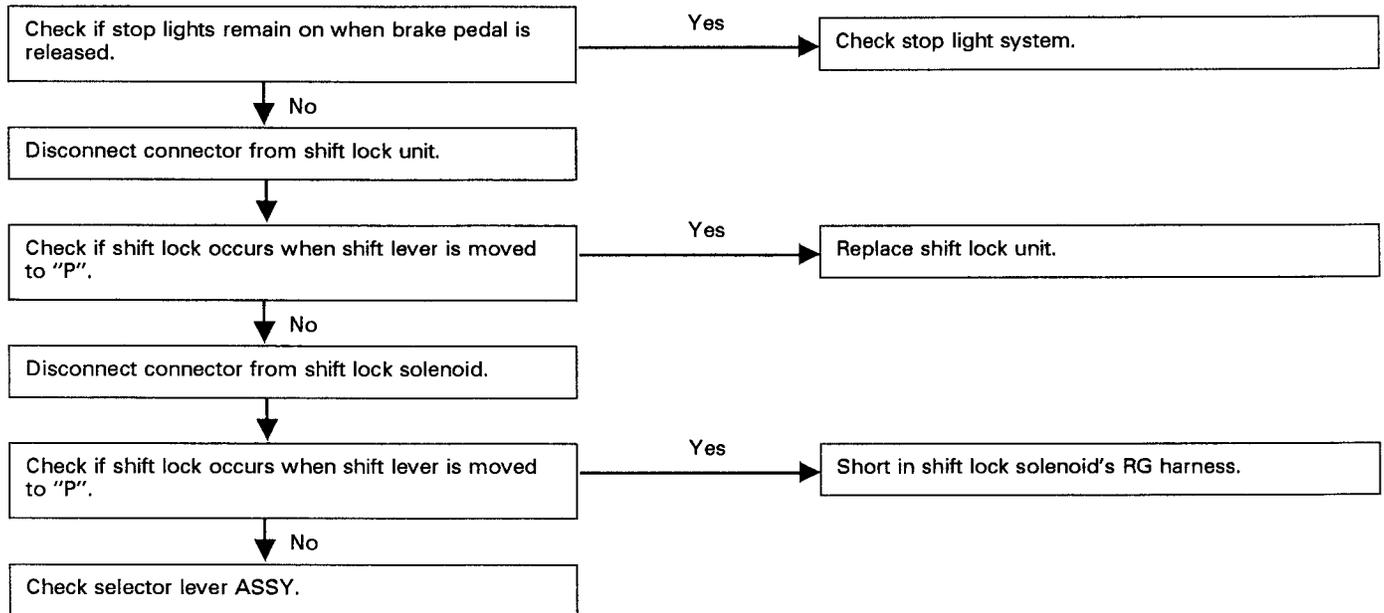
C3-177

Fig. 31

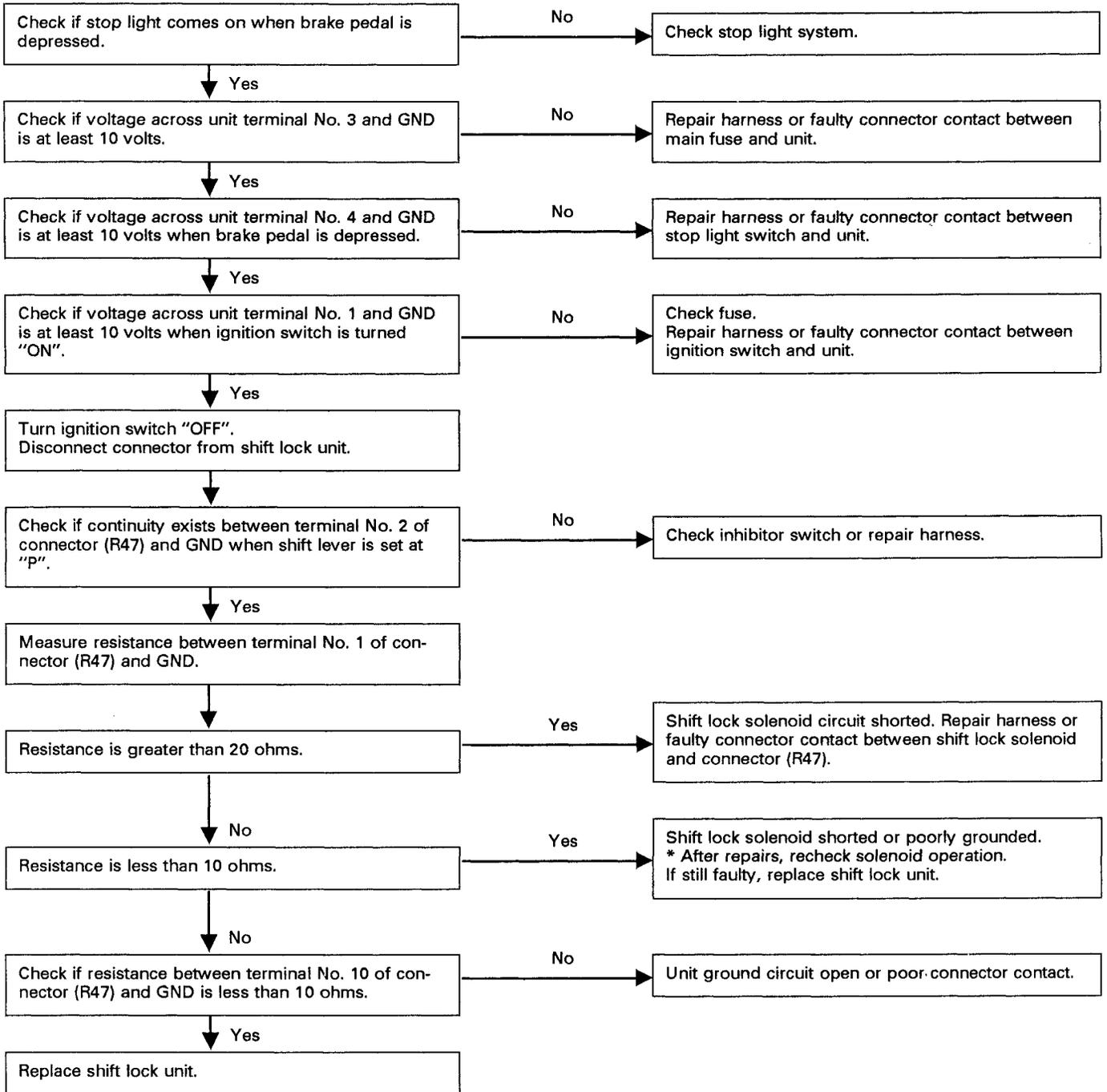
### 3. Troubleshooting Chart

#### A: BASIC TROUBLESHOOTING CHART

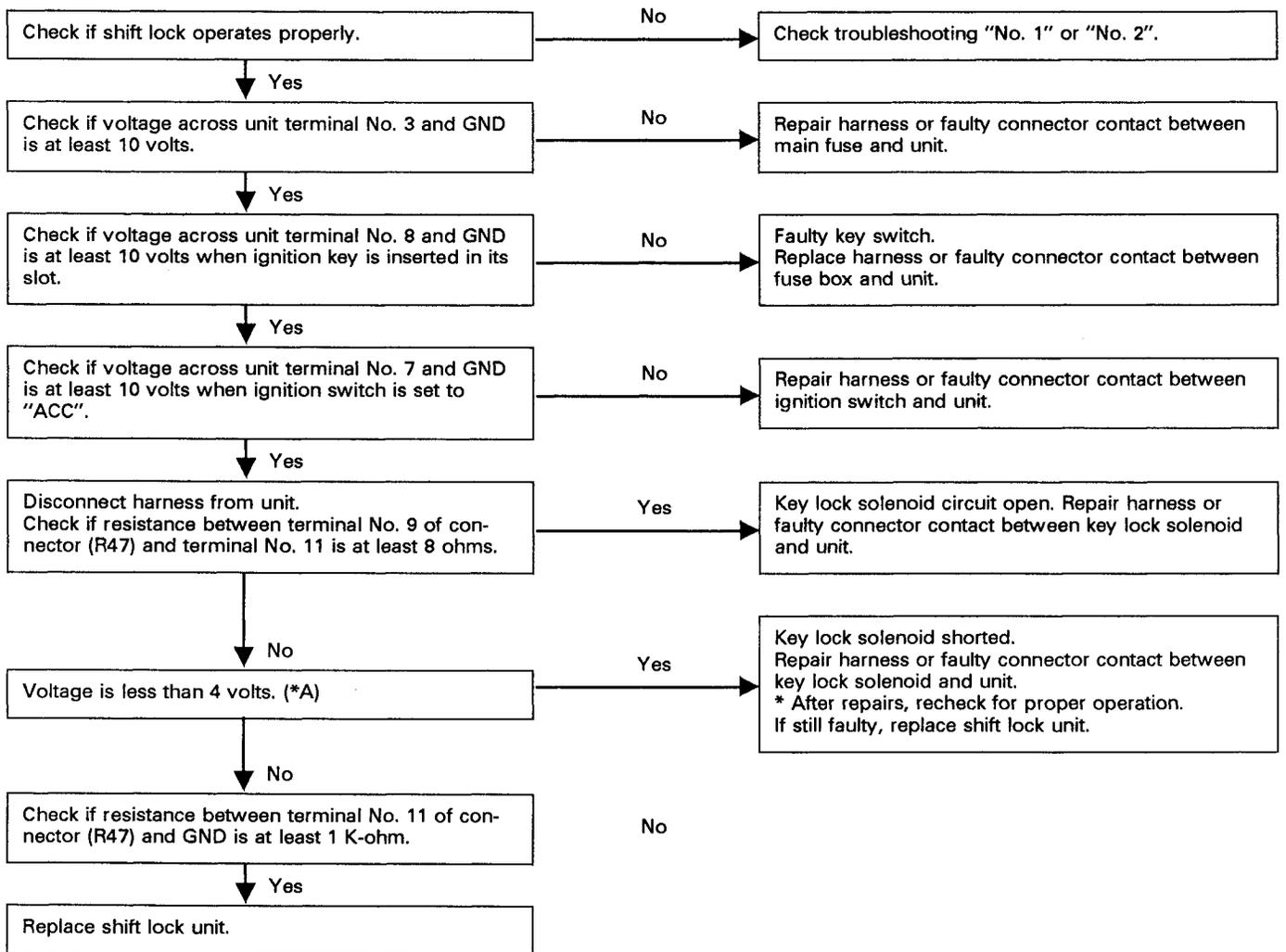


**B: TROUBLESHOOTING NO. 1**

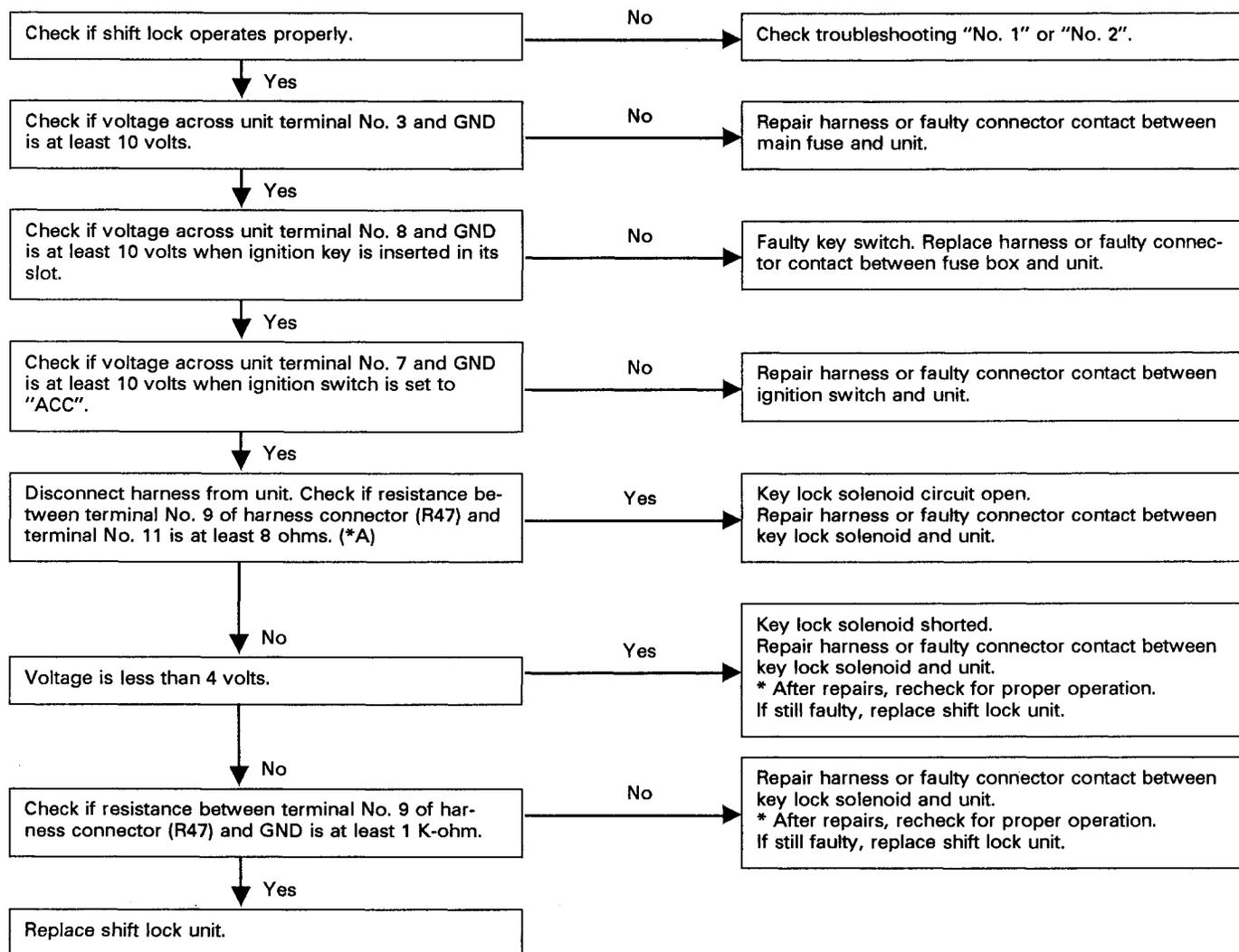
**C: TROUBLESHOOTING NO. 2 (SHIFT LOCK DOES NOT RELEASE.)**



**D: TROUBLESHOOTING NO. 3 (KEY INTERLOCK DOES NOT OPERATE.)**



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

**E: TROUBLESHOOTING NO. 4 (KEY INTERLOCK DOES NOT RELEASE.)**

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