

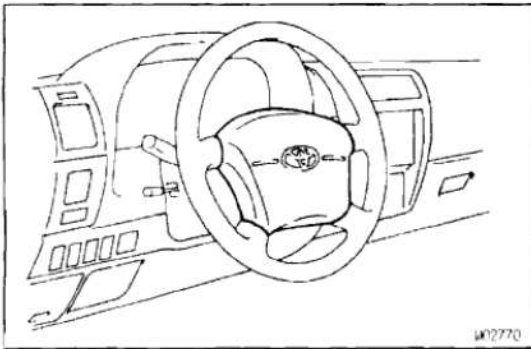
SUPPLEMENTAL RESTRAINT SYSTEM

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GENERAL DESCRIPTION

The LAND CRUISER/LAND CRUISER PRADO is equipped with an SRS (Supplemental Restraint System), which comprises a driver airbag and front passenger airbag. Failure to carry out service operations in the correct sequence could cause the SRS to unexpectedly deploy during servicing, possibly leading to a serious accident. Further, if a mistake is made in servicing the SRS, it is possible the SRS may fail to operate when required. Before performing servicing (including removal or installation of parts, inspection or replacement), be sure to read the following items carefully, then follow the correct procedure described in the repair manual.

1. Malfunction symptoms of the SRS are difficult to confirm, so the DTCs become the most important source of information when troubleshooting. When troubleshooting the SRS, always inspect the DTCs before disconnecting the battery.
(See page RS-32)
2. **Work must be started after 90 seconds from when the ignition switch is turned to the "LOCK" position and the negative (–) terminal cable is disconnected from the battery.**
(The SRS is equipped with a back-up power source so that if work is started within 90 seconds of disconnecting the negative (–) terminal cable of the battery, the SRS may deploy.) When the negative (–) terminal cable is disconnected from the battery, the memory of the clock and audio system will be canceled. So before starting work, make a record of the contents memorized by the audio memory system. When work is finished, reset the audio systems as before and adjust the clock. To avoid erasing the memory of each memory system, never use a back-up power supply from outside the vehicle.
3. Even in cases of a minor collision where the SRS does not deploy, the steering wheel pad, front passenger airbag assembly and airbag sensor assembly should be inspected.
(See pages RS-9 and 23)
4. Never use SRS parts from another vehicle. When replacing parts, replace them with new parts.
5. Before repairs, remove the airbag sensor if shocks are likely to be applied to the sensor during repairs.
6. Never disassemble and repair the steering wheel pad, front passenger airbag assembly or airbag sensor assembly in order to reuse it.
7. If the steering wheel pad, front passenger airbag assembly or airbag sensor assembly have been dropped or if there are cracks, dents or other defects in the case, bracket or connector, replace them with new ones.
8. Do not expose the steering wheel pad, front passenger airbag assembly or airbag sensor assembly directly to hot air or flames.
9. Use a volt/ohmmeter with high impedance (10 k Ω /V minimum) for troubleshooting the system's electrical circuits.
10. Information labels are attached to the periphery of the SRS components. Follow the instructions on the notices.
11. After work on the SRS is completed, check the SRS warning light.
(See page RS-32)
12. If the vehicle is equipped with a mobile communication system, refer to the precaution in the IN section.



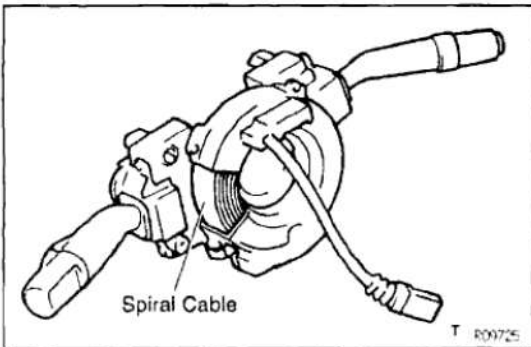
OPERATION

FUNCTION OF COMPONENTS

R9088-0A

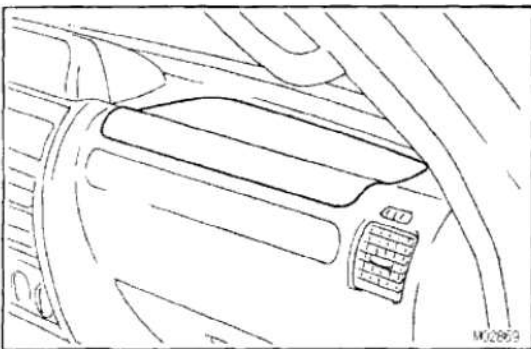
1. STEERING WHEEL PAD (with AIRBAG)

The inflator and bag of the SRS are stored in the steering wheel pad and cannot be disassembled. The inflator contains a squib, igniter charge, gas generant, etc., and inflates the bag when instructed by the airbag sensor assembly.



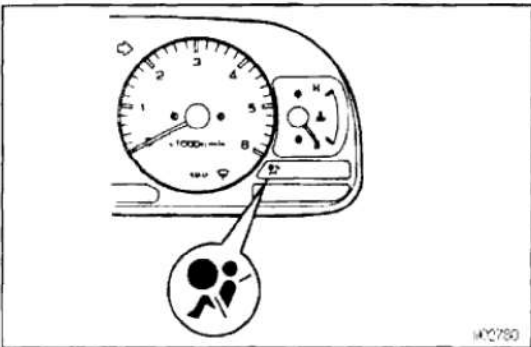
2. SPIRAL CABLE (in COMBINATION SWITCH)

A spiral cable is used as an electrical joint from the vehicle body side to the steering wheel.



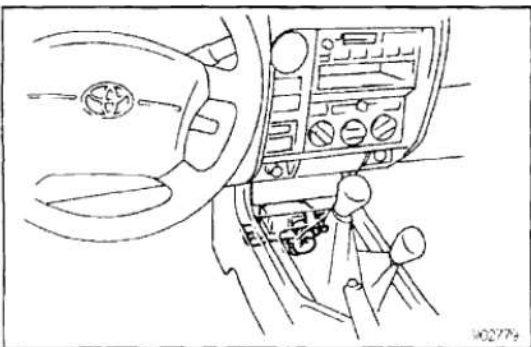
3. FRONT PASSENGER AIRBAG ASSEMBLY

The inflator and bag of the SRS are stored in the front passenger airbag assembly and cannot be disassembled. The inflator contains a squib, igniter charge, gas generant, etc., and inflates the bag when instructed by the center airbag sensor assembly.



4. SRS WARNING LIGHT

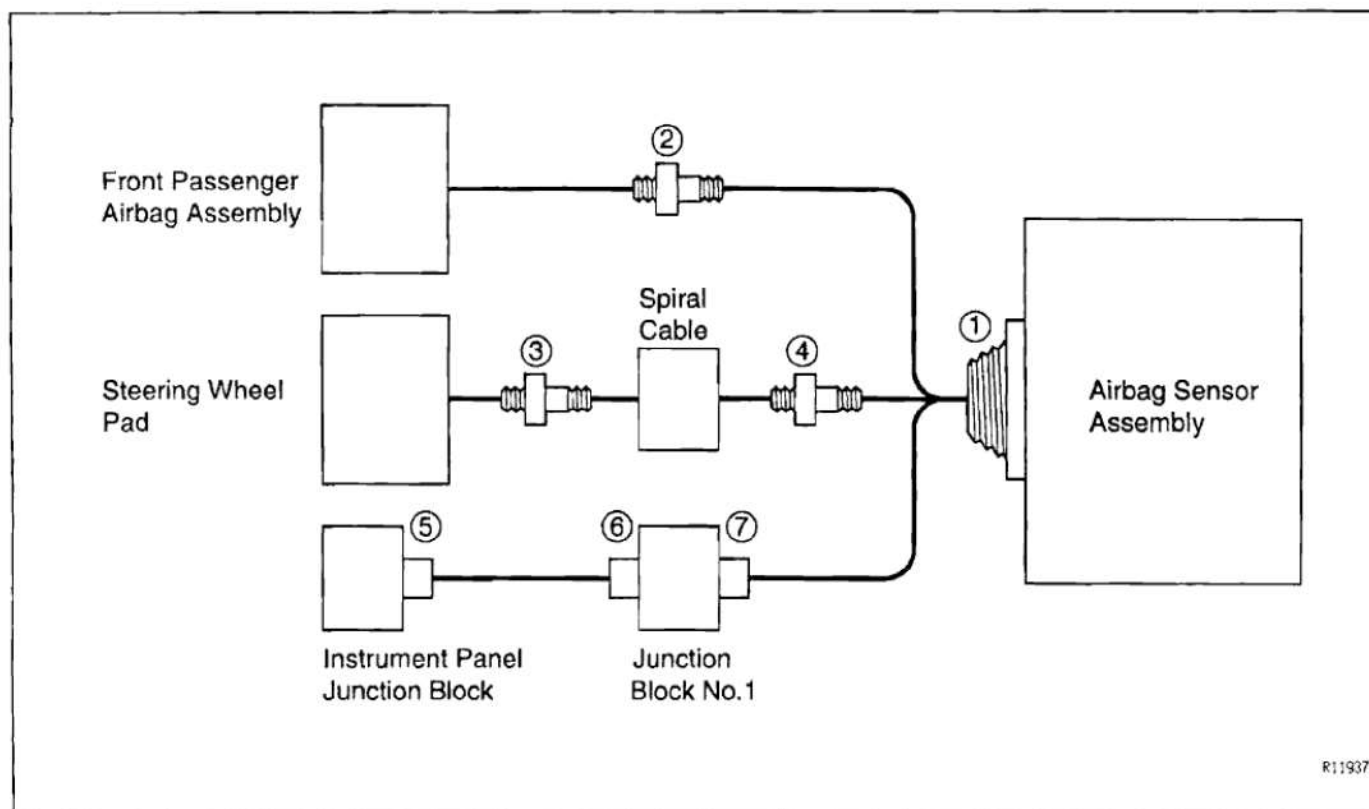
The SRS warning light is located on the combination meter. It goes on to alert the driver of trouble in the system when a malfunction is detected in the airbag sensor assembly. In normal operating condition when the ignition switch is turned to the ACC or ON position, the light goes on for about 6 seconds and then goes off.



5. AIRBAG SENSOR ASSEMBLY

The airbag sensor assembly is mounted on the floor inside the lower console box. The airbag sensor assembly consists of an airbag sensor, safing sensor, diagnosis circuit and ignition control, drive circuit, etc. It receives signals from the airbag sensor and judges whether the SRS must be activated or not.

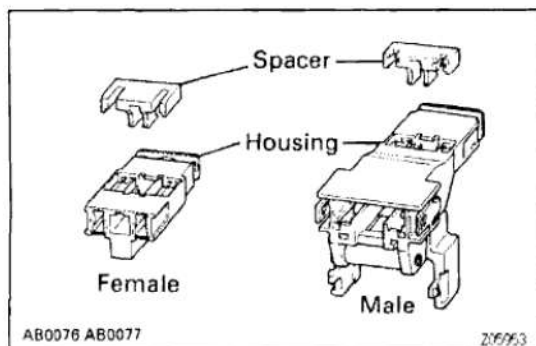
6. SRS CONNECTORS



RS

No.	Item	Application
(1)	Terminal Twin-Lock Mechanism	Connectors ①, ②, ③, ④, ⑤, ⑥, ⑦
(2)	Airbag Activation Prevention Mechanism	Connectors ②, ③, ④
(3)	Electrical Connection Check Mechanism	Connectors ①
(4)	Connector Twin-Lock Mechanism	Connectors ②, ③, ④

All connectors in the SRS are colored yellow to distinguish them from other connectors. Connectors having special functions and specifically designed for the SRS are used in the locations shown above to ensure high reliability. These connectors use durable gold-plated terminals.

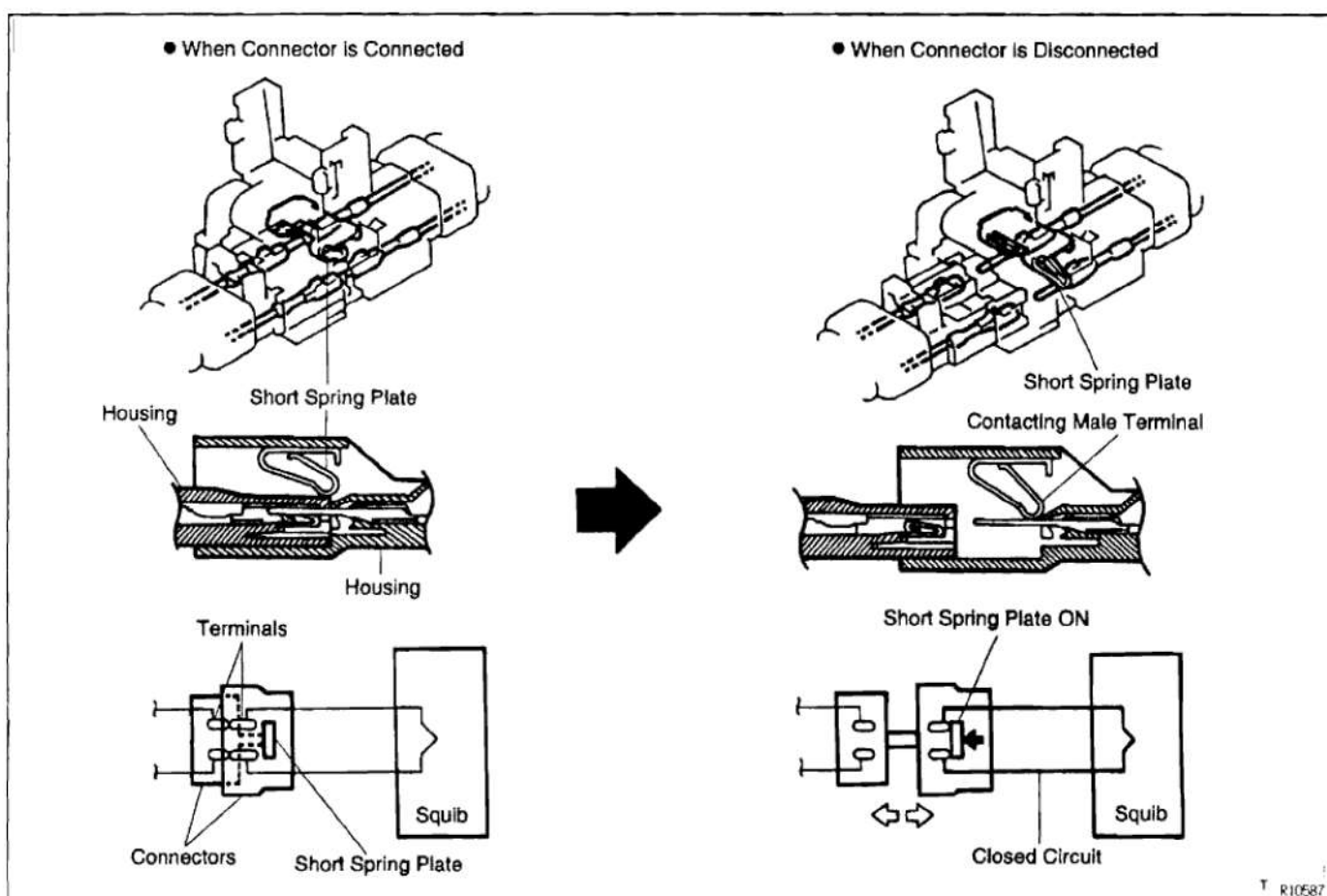


(1) Terminal Twin-Lock Mechanism

Each connector has a two-piece construction consisting of a housing and a spacer. This design secures the locking of the terminal by two locking devices (the retainer and the lance) to prevent terminals from coming out.

(2) Airbag Activation Prevention Mechanism

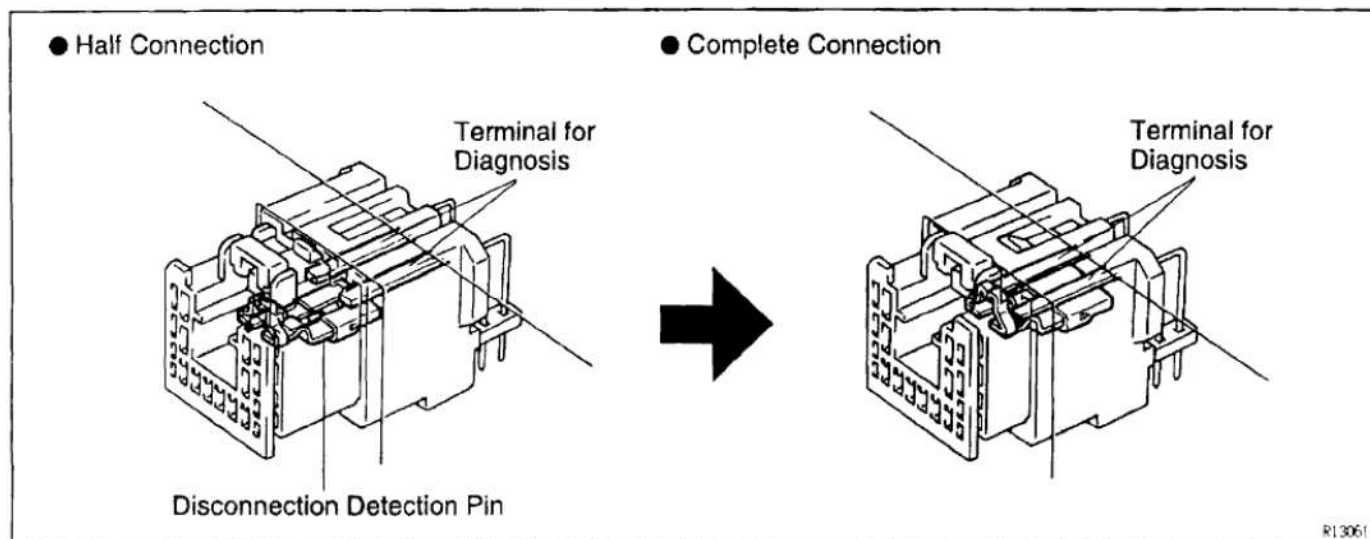
Each connector contains a short spring plate. When the connector is disconnected, the short spring plate automatically connects the power source and grounding terminals of the squib.



HINT: The type of connector shown above is used for connectors ②, ③, and ④, in the diagram on the previous page.

(3) Electrical Connection Check Mechanism

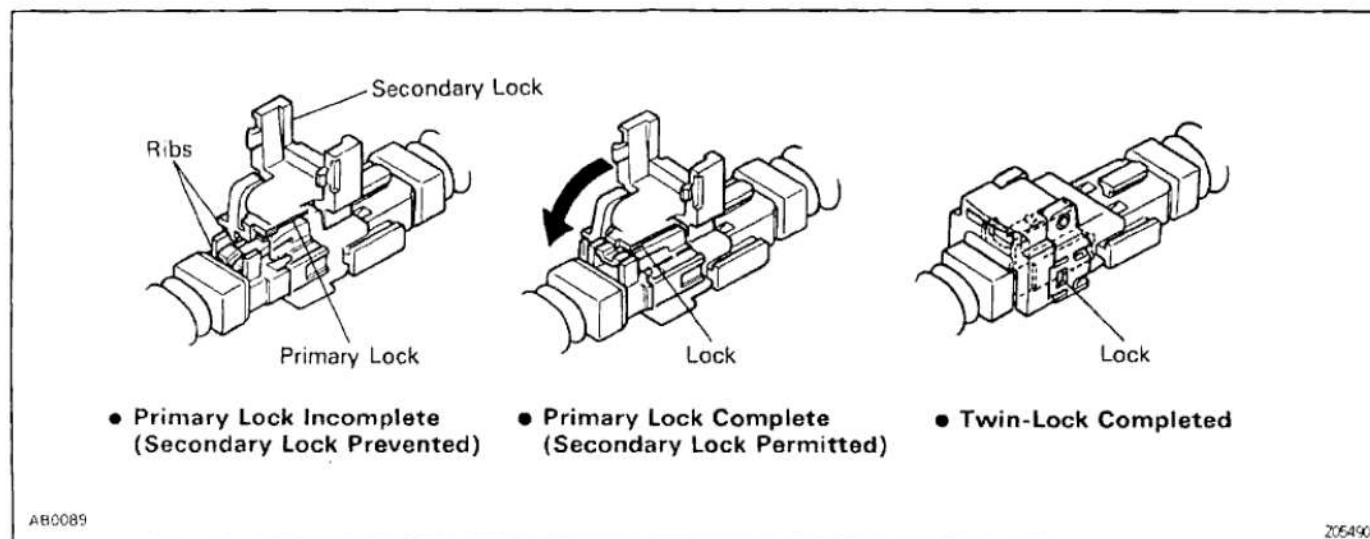
This mechanism electrically checks if connectors are connected correctly and completely. The electrical connection check mechanism is designed so that the disconnection detection pin connects with the diagnosis terminals when the connector housing lock is locked.

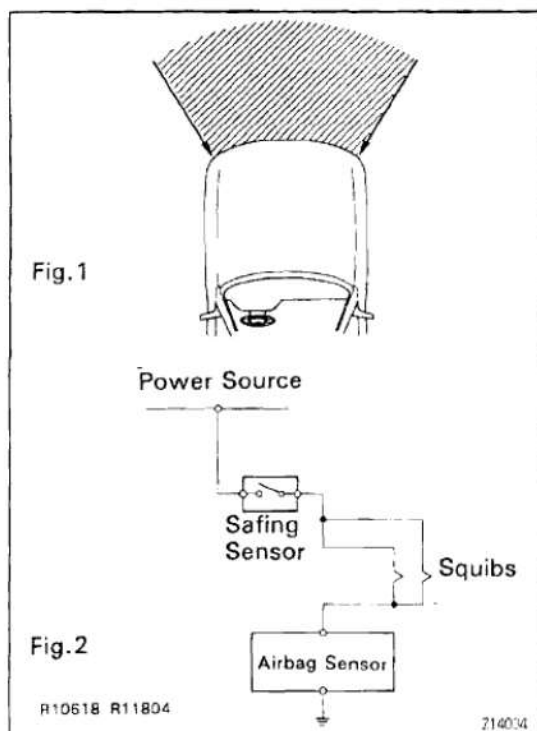


HINT: The illustration shows connector ①.

(4) Connector Twin—Lock Mechanism

With this mechanism connectors (male and female connectors) are locked by 2 locking devices to increase connection reliability. If the primary lock is incomplete, ribs interfere and prevent the secondary lock.





When the vehicle is involved in a frontal collision in the hatched area (Fig. 1) and the shock is larger than a predetermined level, the SRS is activated automatically. A safing sensor is designed to go on at a smaller deceleration rate than the airbag sensor. As illustrated in Fig. 2, ignition is caused when current flows to the squib, which happens when a safing sensor and the airbag sensor go on simultaneously. When a deceleration force acts on the sensors, 2 squibs in the driver airbag and front passenger airbag ignite and generate gas. The gas discharging into the driver airbag and front passenger airbag rapidly increases the pressure inside the bags, breaking open the steering wheel pad and instrument panel door.

Bag inflation then ends, and the bags deflate as the gas is discharged through discharge holes at the bag's rear or side.

PREPARATION**SST (SPECIAL SERVICE TOOLS)**

8800K-0N

	09082-00700 SRS Airbag Deployment Tool	
	09843-18020 Diagnosis Check Wire	

RECOMMENDED TOOLS

8800Y-14

	09042-00020 Torx Socket T40 .	Airbag sensor assembly
	09082-00040 TOYOTA Electrical Tester.	

EQUIPMENT

8800U-01

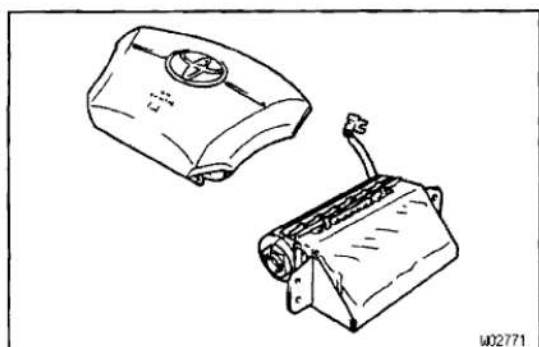
Torque wrench	
Bolt: Length: 35 mm (1.38 in.) Pitch: 1.0 mm (0.039 in.) Diam.: 6.0 mm (0.236 in.)	Airbag disposal
Tire Width: 185 mm (7.28 in.) Inner diam.: 360mm (14.17 in.)	Airbag disposal
Tire with disc wheel Width: 185 mm (7.28 in.) Inner diam.: 360 mm (14.17 in.)	Airbag disposal
Vinyl bag	Airbag disposal

STEERING WHEEL PAD/FRONT PASSENGER AIRBAG ASSEMBLY INSPECTION ITEMS

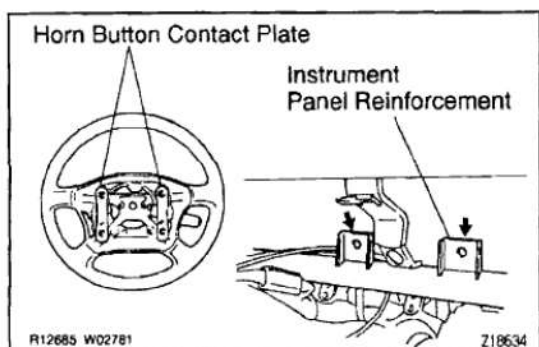
RM0AL-04

1. VEHICLES NOT INVOLVED IN COLLISION

- (a) Do a diagnostic system check. (See page RS-32)
- (b) With the steering wheel pad and/or front passenger airbag assembly installed in the vehicle, do a visual check which includes the following items.
 - Check for cuts, minute cracks or marked discoloration of the steering wheel pad top surface, grooved portion and front passenger airbag assembly.



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2. VEHICLES INVOLVED IN COLLISION

- (a) Do a diagnostic system check. (See page RS-32)
- (b) Do a visual check.

IF AIRBAG IS NOT DEPLOYED:

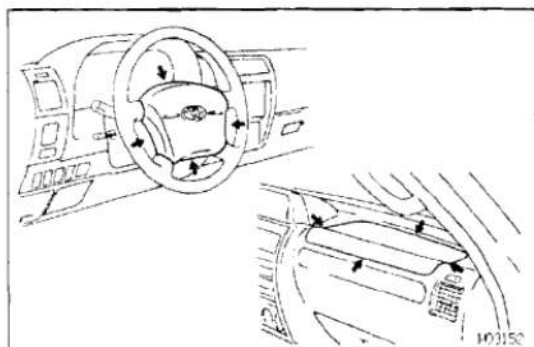
With the steering wheel pad and/or front passenger airbag assembly removed from the vehicle, do a visual check which includes the following items.

- Check for cuts and cracks in, or marked discoloration of, the steering wheel pad top surface, its grooved portion and front passenger airbag assembly.
- Check for cuts and cracks in wire harnesses, and for chipping in connectors.
- Check for deformation of the horn button contact plate of the steering wheel, instrument panel and instrument panel reinforcement.

IF AIRBAG IS DEPLOYED:

With the steering wheel pad and/or front passenger airbag assembly removed from the vehicle, do a visual check which includes the following items.

- Check for deformation of the horn button contact plate of the steering wheel, instrument panel, instrument panel reinforcement.
- Check for damage to the connector and wire harness.

**HINT:**

- If the horn button contact plate, instrument panel or instrument panel reinforcement is deformed, never repair. Always replace them with new ones.
- There should be no interference between the steering wheel pad and steering wheel or the instrument panel and airbag door.
- The clearance should be uniform all the way around when the new steering wheel pad is installed on the steering wheel and when the new airbag assembly is installed on the instrument panel.

CAUTION: For removal and installation of the steering wheel pad and/or front passenger airbag assembly, see the SR section and page RS-12 respectively.

Be sure to follow the correct procedure.

REPLACEMENT REQUIREMENTS

RS011-14

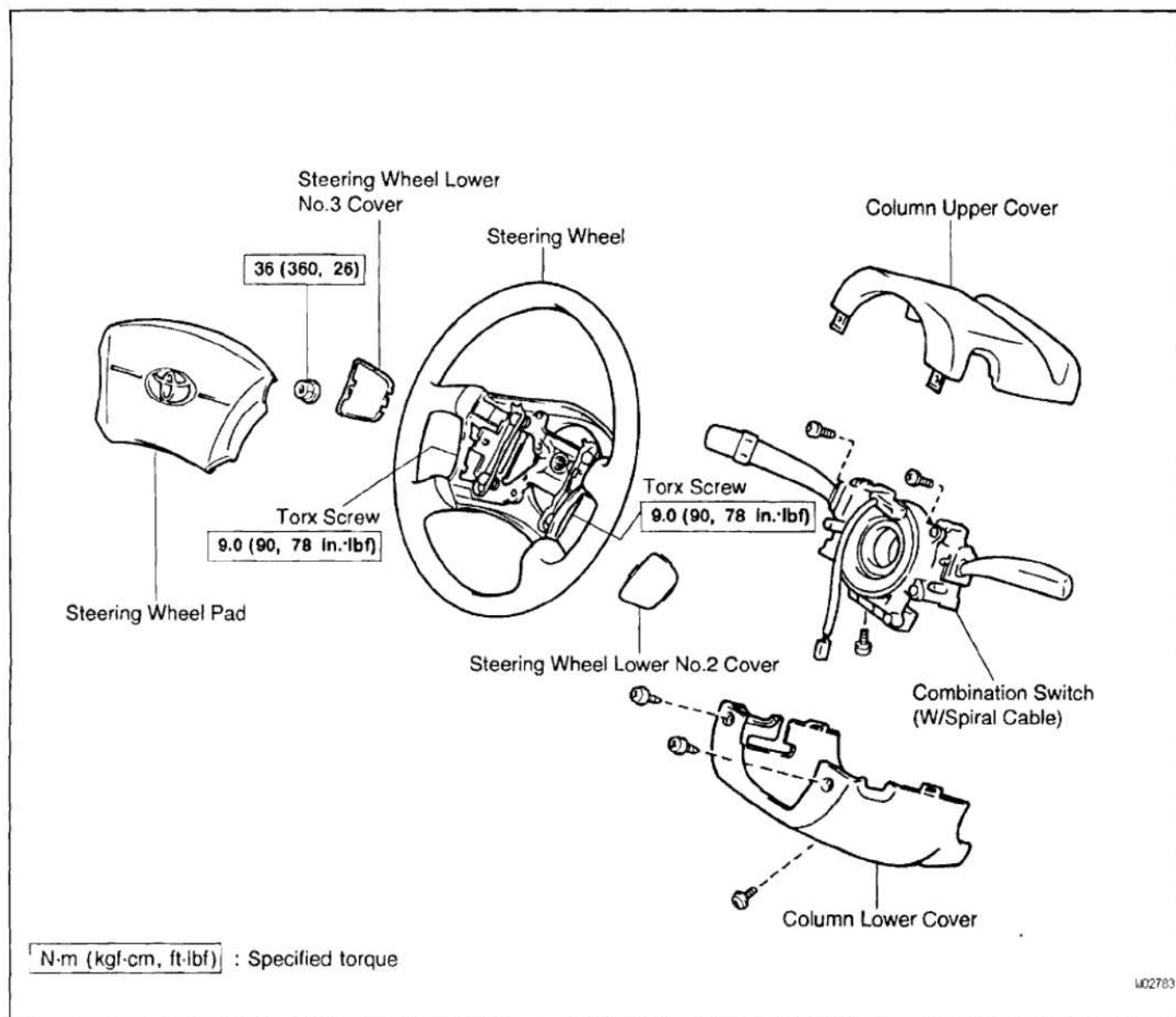
In the following cases, replace the steering wheel pad, steering wheel, spiral cable, instrument panel and instrument panel reinforcement.

- If the airbag has been deployed.
- If the steering wheel pad, spiral cable or front passenger airbag assembly has been found to be faulty in troubleshooting.
- If the steering wheel pad, steering wheel, spiral cable, instrument panel or instrument panel reinforcement has been found to be faulty during the check in items 1-(b) or 2-(b).
- If the steering wheel pad or front passenger airbag assembly has been dropped.

CAUTION: For removal and installation of the steering wheel pad and/or front passenger airbag assembly, see the SR section and page RS-12 respectively.

Be sure to follow the correct procedure.

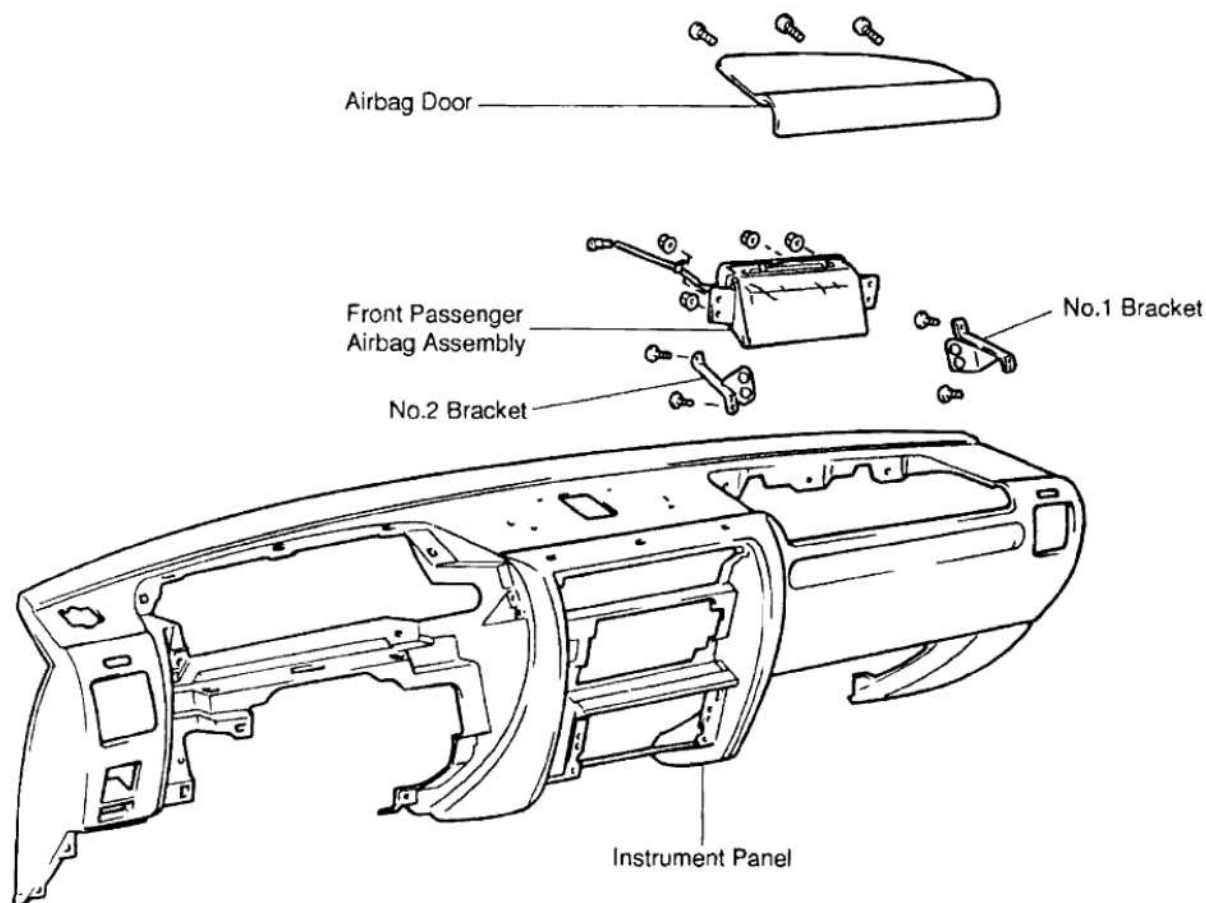
COMPONENTS



STEERING WHEEL PAD AND SPIRAL CABLE REMOVAL AND INSTALLATION

(See SR section)

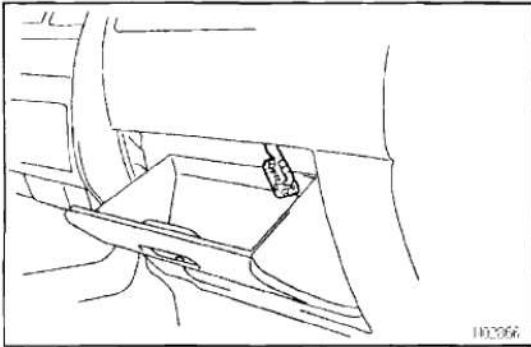
COMPONENTS

FRONT PASSENGER AIRBAG ASSEMBLY
REMOVAL AND INSTALLATION

RS008-01

NOTICE:

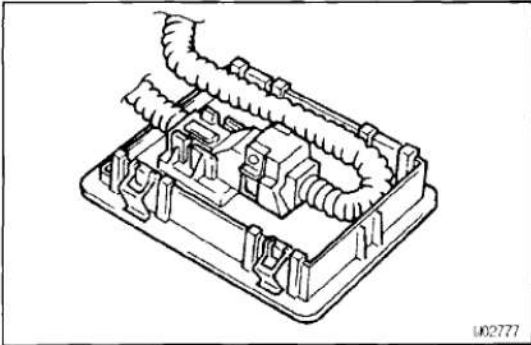
- If the wiring connector of the SRS is disconnected with the ignition switch at ON or ACC, DTCs will be recorded.
- Never use airbag parts from another vehicle. When replacing parts, replace with new parts.



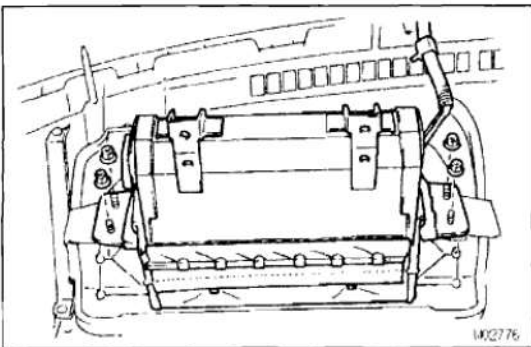
1. DISCONNECT AIRBAG CONNECTOR

- (a) Remove the No.1 under cover inside the glove compartment door.

NOTICE: When handling the airbag connector, take care not to damage the airbag wire harness.



- (b) Pull up the connector.
(c) Disconnect the airbag connector.



2. REMOVE INSTRUMENT PANEL

(See pages BO — 55)

3. REMOVE AND INSTALL FRONT PASSENGER AIRBAG ASSEMBLY

- (a) Remove the 4 nuts and front passenger airbag assembly.
(b) Remove the 4 screws, No.1 and No.2 brackets.
(c) Remove the 3 screws and airbag door.

CAUTION:

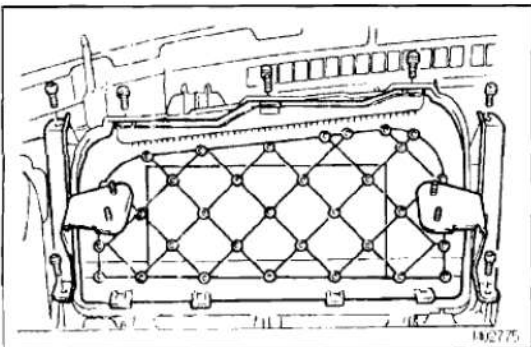
- Do not store the front passenger airbag assembly with the airbag deployment direction facing down.
- Never disassemble the front passenger airbag assembly.

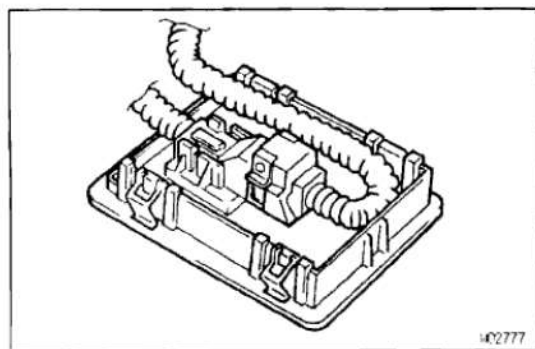
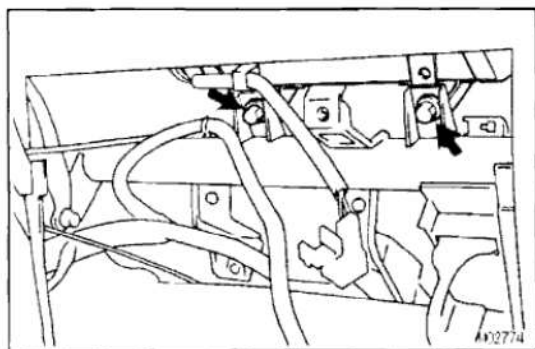
- (d) Install the airbag door, No.1 bracket, No.2 bracket and front passenger airbag assembly to the instrument panel.

CAUTION:

- Make sure that no foreign objects are trapped between the airbag door and bag, and within the module.
- Do not damage the strap when installing the module.
- If the airbag door is cracked or its surface is peeling, always replace it with a new one.

NOTICE: If the front passenger airbag assembly has been dropped, or there are cracks, dents or other defects in the case or connector, replace the front passenger airbag assembly with a new one.





4. INSTALL INSTRUMENT PANEL

(See page BO-55)

Install the 2 bolts to instrument panel reinforcement.

Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

NOTICE:

- Make sure that the front passenger airbag assembly is installed to the specified torque.
- When installing the instrument panel, take care that the airbag wire harness does not interfere with other parts and is not pinched between other parts.

5. CONNECT AIRBAG CONNECTOR

- Connect the airbag connector.
- Put the connector on the No.1 under cover.
- Install the No.1 under cover to the glove compartment door.

DISPOSAL PROCEDURE

RS0CT-01

When scrapping vehicles equipped with an SRS or disposing of a steering wheel pad or front passenger airbag assembly, always first deploy the airbag in accordance with the procedure described below.

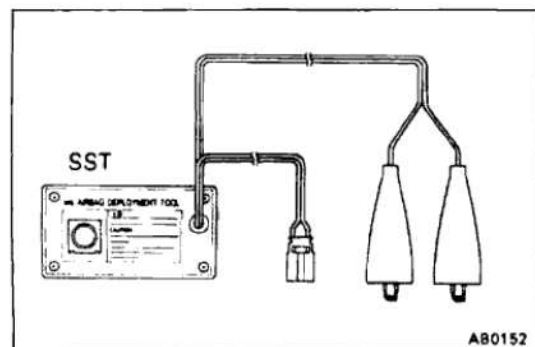
If any abnormality occurs with the airbag deployment, contact the SERVICE DEPT. of the DISTRIBUTOR.

Never dispose of a steering wheel pad or front passenger airbag assembly which has an undeployed airbag.

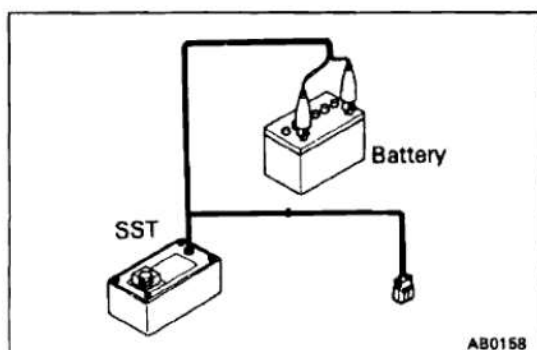
When disposing of a steering wheel pad or front passenger airbag assembly with an airbag deployed in a collision, follow the same procedure given under "When scrapping vehicle, step 5. DISPOSAL OF STEERING WHEEL PAD/FRONT PASSENGER AIRBAG ASSEMBLY" (See page RS-16)

PRECAUTIONS FOR AIRBAG DEPLOYMENT

- The airbag produces a sizeable exploding sound when it deploys, so do the operation out-of-doors and where it will not create a nuisance to nearby residents.
- When deploying the airbag, always use the specified SST; SRS AIRBAG DEPLOYMENT TOOL (SST 09082-00700). Do the operation in a place away from electrical noise.



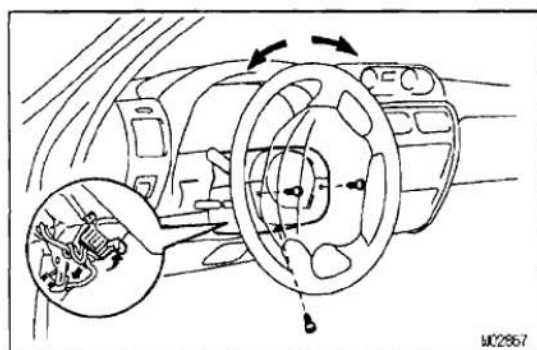
- When deploying an airbag, do the operation from at least 10 m (33 ft) away from the airbag assembly.
- The airbag assembly is very hot when the airbag is deployed, so leave it alone for at least 30 minutes after deployment.
- Use gloves and safety glasses when handling a steering wheel pad/front passenger airbag assembly with deployed airbag.
- Do not apply water etc. to a airbag assembly with deployed airbag.
- Always wash your hands with water after completing the operation.



When scrapping vehicle

HINT: Have a battery ready as the power source to deploy the airbag.

1. **CONFIRM FUNCTIONING OF SST**
(See page RS-22)
SST 09082-00700



2. DISCONNECT AIRBAG CONNECTOR

Driver side:

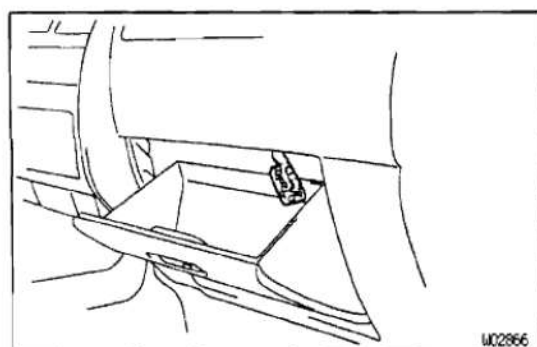
CAUTION: Check that there is no looseness in the steering wheel and steering wheel pad.

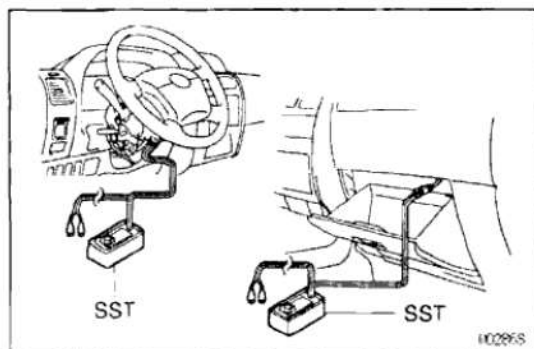
- (a) Remove the lower column cover.
HINT: Remove the 3 screws of steering column lower cover as shown.
- (b) Disconnect the airbag connector of the spiral cable.

Passenger side:

CAUTION: Check that there is no looseness in the front passenger airbag assembly.

- (a) Remove the glove compartment door finish plate inside the glove compartment door.
NOTICE: When handling the airbag connector, take care not to damage the airbag wire harness.
- (b) Pull up the connector.
- (c) Disconnect the airbag connector.

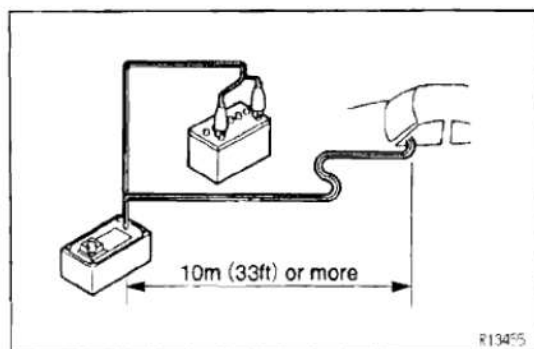




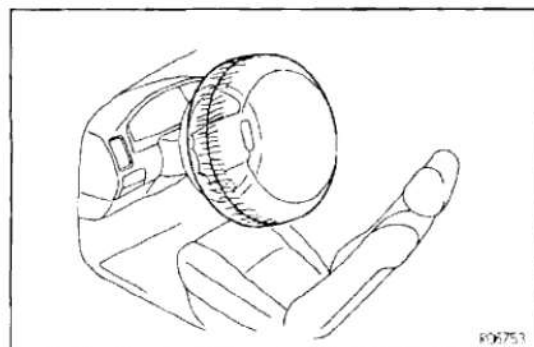
3. INSTALL SST

- (a) Connect the SST connector to the airbag connector.
SST 09082-00700

NOTICE: To avoid damaging the SST connector and wire harness, do not lock the secondary lock of the twin lock.



- (b) Move the SST to at least 10 m (33 ft) from the front of the vehicle.
(c) Close all the doors and windows of the vehicle.
NOTICE: Take care not to damage the SST wire harness.
(d) Connect the SST red clip to the battery positive (+) terminal and the black clip to the battery negative (-) terminal.



4. DEPLOY AIRBAG

- (a) Confirm that no one is inside the vehicle or within 10 m (33 ft) of the vehicle.
(b) Press the SST activation switch and deploy the airbag.
HINT: The airbag deploys simultaneously as the LED of the SST activation switch lights up.

5. DISPOSAL OF STEERING WHEEL PAD / FRONT PASSENGER AIRBAG ASSEMBLY

CAUTION:

- The steering wheel pad/front passenger airbag assembly is very hot when the airbag is deployed, so leave it alone for at least 30 minutes after deployment.
- Use gloves and safety glasses when handling a steering wheel pad/front passenger airbag assembly with deployed airbag.
- Do not apply water etc. to a steering wheel pad/front passenger airbag assembly with deployed airbag.
- Always wash your hands with water after completing the operation.

When scrapping a vehicle, deploy the airbag and scrap the vehicle with the steering wheel pad/front passenger airbag assembly still installed.

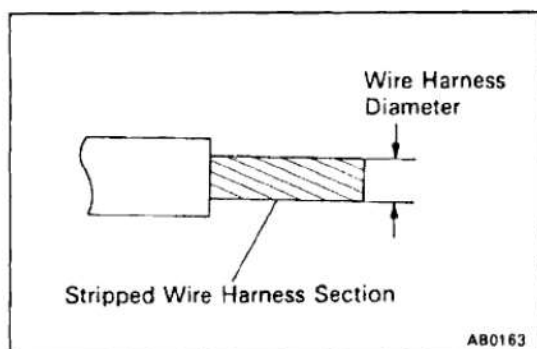
When disposing of steering wheel pad/ front passenger airbag assembly only

When disposing of the steering wheel pad/front passenger airbag assembly only, never use the customer's vehicle to deploy the airbag.

Remove the steering wheel pad / front passenger airbag assembly from the vehicle and be sure to follow the procedure given below when deploying the airbag. HINT: Have a battery ready as the power source to deploy the airbag.

1. REMOVE STEERING WHEEL PAD/FRONT PASSENGER AIRBAG ASSEMBLY

When storing the steering wheel pad/front passenger airbag assembly, keep the deployment direction facing up.



2. FIX STEERING WHEEL PAD/FRONT PASSENGER AIRBAG ASSEMBLY

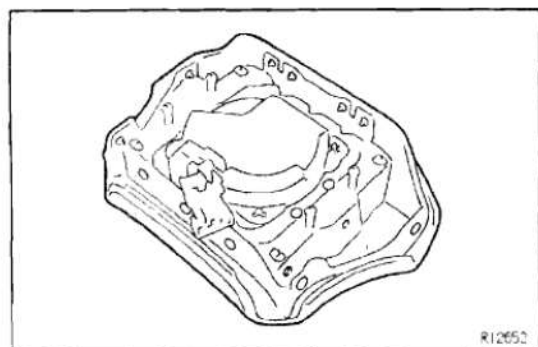
Using a service – purpose wire harness for the vehicle tie down the steering wheel pad / front passenger airbag assembly.

Wire harness: Stripped wire harness section
1.25 mm² or more (0.0019 in² or more)

HINT: To calculate the square of the stripped wire harness section –

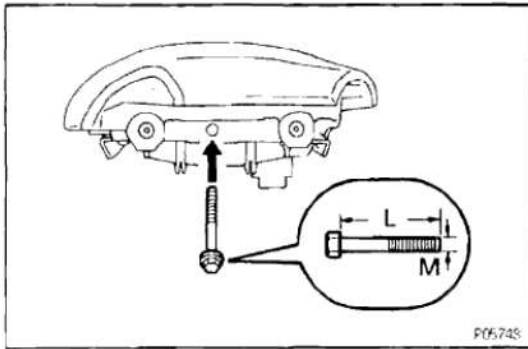
Square = 3.14 x (Diameter)² divided by 4

CAUTION: If a wire harness which is too thin or some other thing is used to tie down the steering wheel pad / front passenger airbag assembly, it may be snapped by the shock when the airbag is deployed. This is highly dangerous. Always use a wire harness for vehicle which is at least 1.25 mm² (0.0019 in²).



Steering wheel pad:

- (a) Remove the connector on the steering wheel pad rear surface from the inflator cover.



- (b) Install the 2 bolts with washer in the 2 bolts holes of the steering wheel pad.

Bolt:

L 35.0 mm (1.378 in.)

M 6.0 mm (0.236 in.)

Pitch 1.0 mm (0.039 in.)

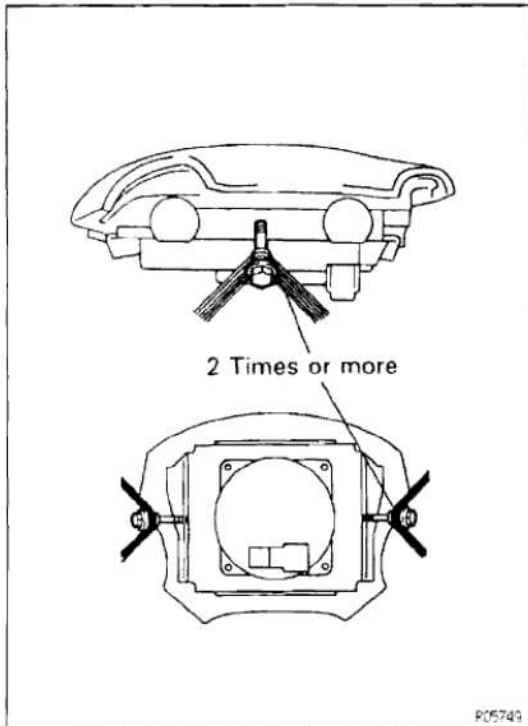
NOTICE:

- Tighten the bolts by hand until the bolts become difficult to turn.
- Do not tighten the bolt too much.

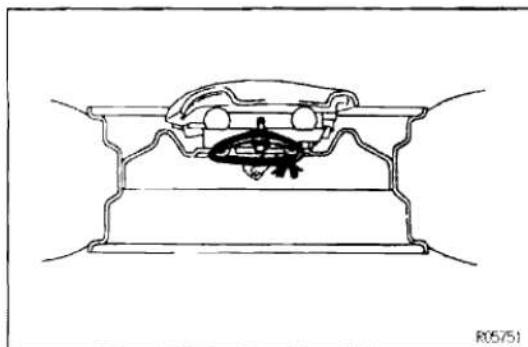
- (c) Using 3 wire harnesses, wrap the wire harnesses at least 2 times each around the bolts installed on the left and right sides of the steering wheel pad.

CAUTION:

- Tightly wind the wire harness around the bolts so that there is no slack.
- If there is slackness in the wire harness, the steering wheel pad may come loose due to the shock when the airbag is deployed. This is highly dangerous.



RS



- (d) Face the upper surface of the steering wheel pad upward.

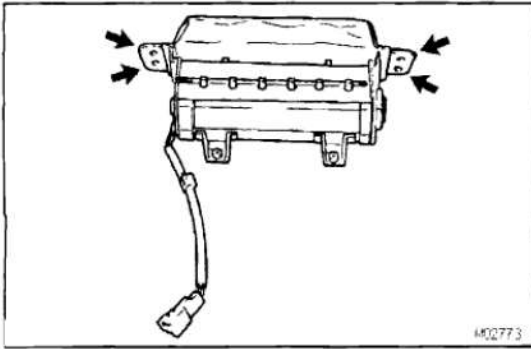
Separately tie the left and right sides of the steering wheel pad to the disc wheel through the hub nut holes.

Position the steering wheel pad connector so that it hangs downward through a hub hole in the disc wheel.

CAUTION:

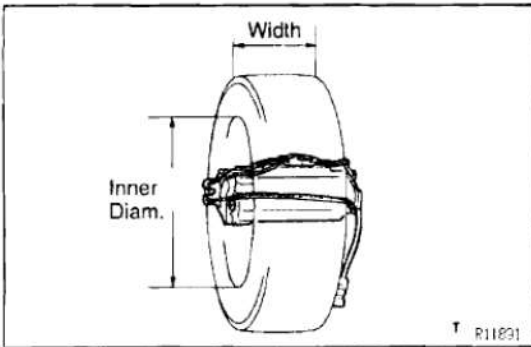
- Make sure that the wire harness is tight. It is very dangerous if looseness in the wire harness results in the steering wheel pad coming free through the shock of the airbag deploying.
- Always tie down the steering wheel pad with the pad side facing upward. It is very dangerous if the steering wheel pad is tied down with the metal surface facing upward as the wire harness will be cut by the shock of the airbag deploying and the steering wheel pad will be thrown into the air.

HINT: The disc wheel will be marked by airbag deployment, so use a redundant disc wheel.



Front passenger airbag assembly:

- (a) Wrap the wire harness around the tire, passing the wire harness through the installation holes indicated by arrows in the illustration.



- (b) Position the front passenger airbag assembly inside the tire with the airbag deployment direction facing inside.

Tire size: Must exceed the following dimensions :—

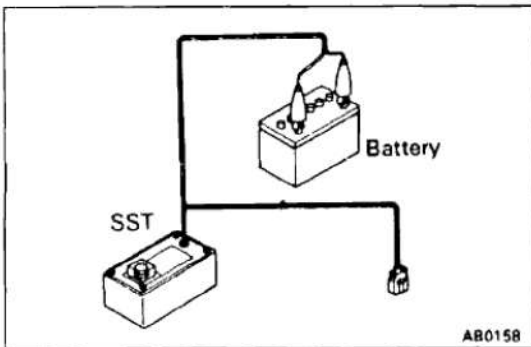
Width 185 mm (7.28 in.)

Inner diameter 360 mm (14.17 in.)

CAUTION:

- Make sure that the wire harness is tight. It is very dangerous if a loose wire harness results in the front passenger airbag assembly coming free due to the shock of the airbag deploying.
- Always tie down the front passenger airbag assembly with the airbag door facing inside.

NOTICE: The tire will be marked by the airbag deployment, so use a redundant tire.



3. CONFIRM FUNCTIONING OF SST

(See page RS-22)

SST 09082-00700

4. INSTALL SST AND COVER STEERING WHEEL PAD/ FRONT PASSENGER AIRBAG ASSEMBLY

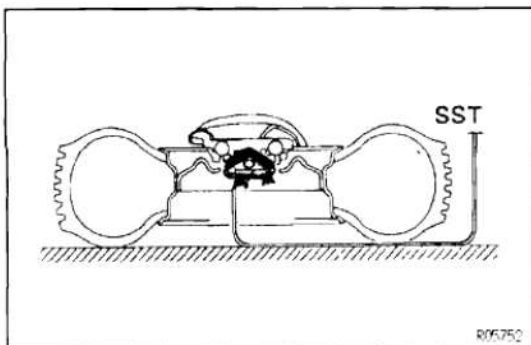
Steering wheel pad:

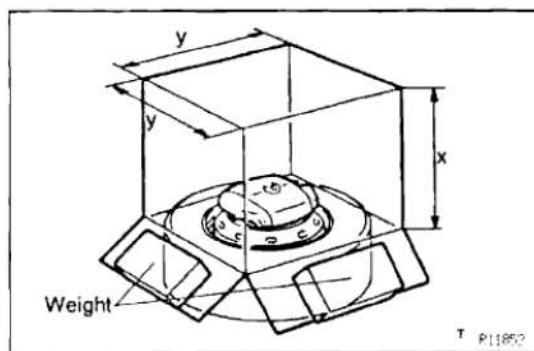
CAUTION: Place the disc wheel on level ground.

- (a) Connect the SST connector to the steering wheel pad connector.

SST 09082-00700

NOTICE: To avoid damaging the SST connector and wire harness, do not lock the secondary lock of the twin lock. Also, provide some slack for the SST wire harness inside the disc wheel.





- (b) Cover steering wheel pad with cardboard box or tires.
Covering Method Using Cardboard Box:
 Cover the steering wheel pad with the cardboard box and weigh the cardboard box down in 4 places with at least 196 N (20 kg, 44 lb).

Size of cardboard box:

Must exceed the following dimensions—

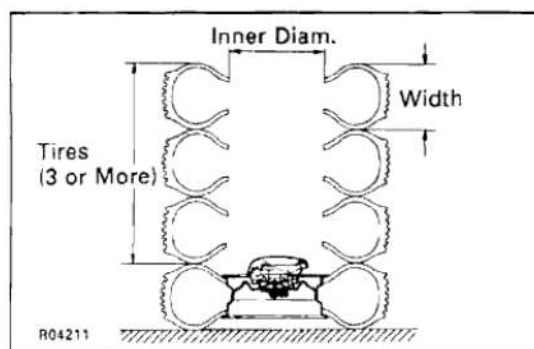
$x = 460 \text{ mm (18.11 in.)}$

When dimension y of the cardboard box exceeds the diameter of the disc wheel with tire the steering wheel pad is tied to —

$x = 460 \text{ mm (18.11 in.)} + \text{width of tire}$

$y = 650 \text{ mm (25.59 in.)}$

NOTICE: If a cardboard box which is smaller than the size specified is used, the cardboard box will be broken by the shock of the airbag deployment.



Covering Method Using Tires:

Place at least 3 tires without disc wheel on top of the disc wheel with tire to which the steering wheel pad is tied.

Tire size: Must exceed the following dimensions—

Width 185 mm (7.28 in.)

Inner diam 360 mm (14.17 in.)

CAUTION: Do not use tires with disc wheels.

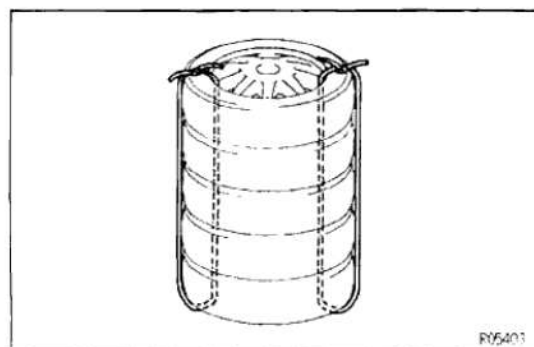
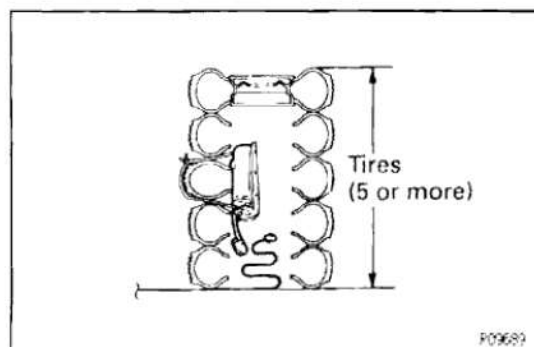
NOTICE: The tires may be marked by the airbag deployment, so use redundant tires.

Front passenger airbag assembly:

- Place at least 2 tires under the tire to which the front passenger airbag assembly is tied.
- Place at least 2 tires over the tire to which the front passenger airbag assembly is tied. The top tire should have the wheel installed.
- Tie the tires together by 2 wire harnesses.

CAUTION: Make sure that the wire harnesses are tight. It is very dangerous if loose wire harnesses result in the tires coming free due to the shock of the airbag deploying.

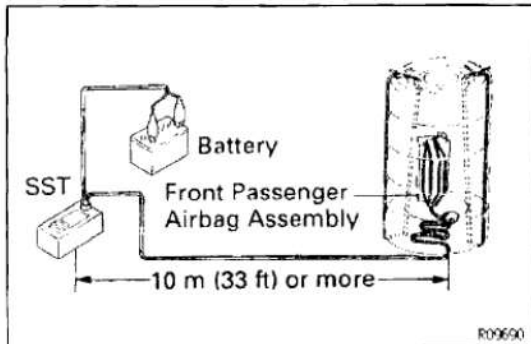
HINT: Place the SST connector and wire harness inside tires. Provide at least 1 m (3 ft) of slack for the wire harness.



- (d) Connect the SST connector to the front passenger airbag assembly connector.

SST 09082–00700

NOTICE: To avoid damaging the SST connector and wire harness, do not lock the secondary lock of the twin lock.



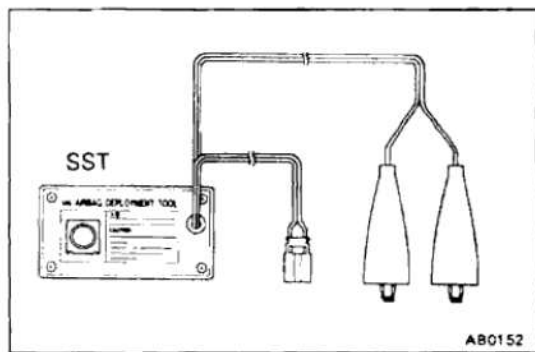
5. AIRBAG DEPLOYMENT

- Connect the SST red clip to the battery positive (+) terminal and the black clip to the battery negative (-) terminal.
- Confirm that no one is within 10 m (33 ft) of the tire the steering wheel pad/front passenger airbag assembly is tied to.
- Press the SST activation switch and deploy the airbag. **HINT:** The airbag deploys simultaneously as the LED of the SST activation switch lights up.

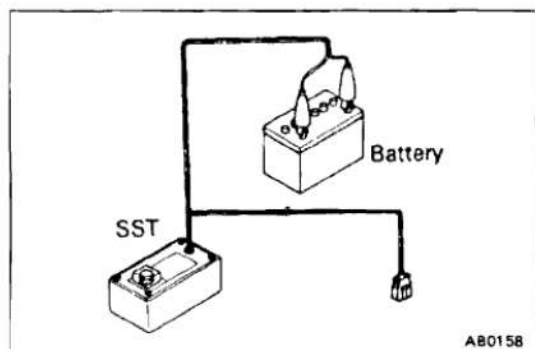
6. DISPOSAL OF STEERING WHEEL PAD / FRONT PASSENGER AIRBAG ASSEMBLY

CAUTION:

- The steering wheel pad/front passenger airbag assembly is very hot when the airbag is deployed, so leave it alone for at least 30 minutes after deployment.
 - Use gloves and safety glasses when handling a steering wheel pad/front passenger airbag assembly with deployed airbag.
 - Do not apply water etc. to a steering wheel pad/front passenger airbag assembly with deployed airbag.
 - Always wash your hands with water after completing the operation.
- Remove the steering wheel pad / front passenger airbag assembly from the tire.
 - Place the steering wheel pad/front passenger airbag assembly in a vinyl bag, tie the end tightly and dispose of it the same way as other general parts.

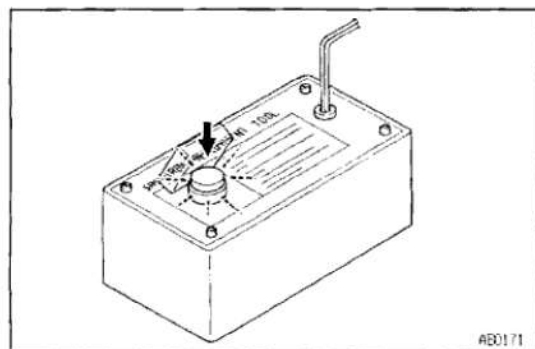
**CONFIRM FUNCTIONING OF SST**

When deploying the airbag, always use the specified
SST: SRS AIRBAG DEPLOYMENT TOOL.
SST 09082-00700

**1. CONNECT SST TO BATTERY**

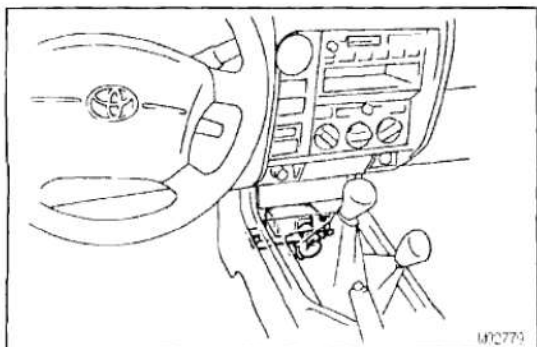
Connect the red clip of the SST to the battery positive
(+) terminal and the black clip to the battery negative
(-) terminal.

HINT: Do not connect the yellow connector which
connects with the supplemental restraint system.

**2. CONFIRM FUNCTIONING OF SST**

Press the SST activation switch, and confirm the LED
of the SST activation switch lights up.

CAUTION: If the LED lights up when the activation
switch is not being pressed, SST malfunction is probable,
so definitely do not use the SST.



AIRBAG SENSOR ASSEMBLY INSPECTION ITEMS

RS07T-0A

1. VEHICLES NOT INVOLVED IN COLLISION

Do a diagnostic system check.

(See page RS-32)

2. VEHICLES INVOLVED IN COLLISION

IF SRS IS NOT DEPLOYED

Do a diagnostic system check.

(See page RS-32)

IF SRS IS DEPLOYED

Replace the airbag sensor assembly.

REPLACEMENT REQUIREMENTS

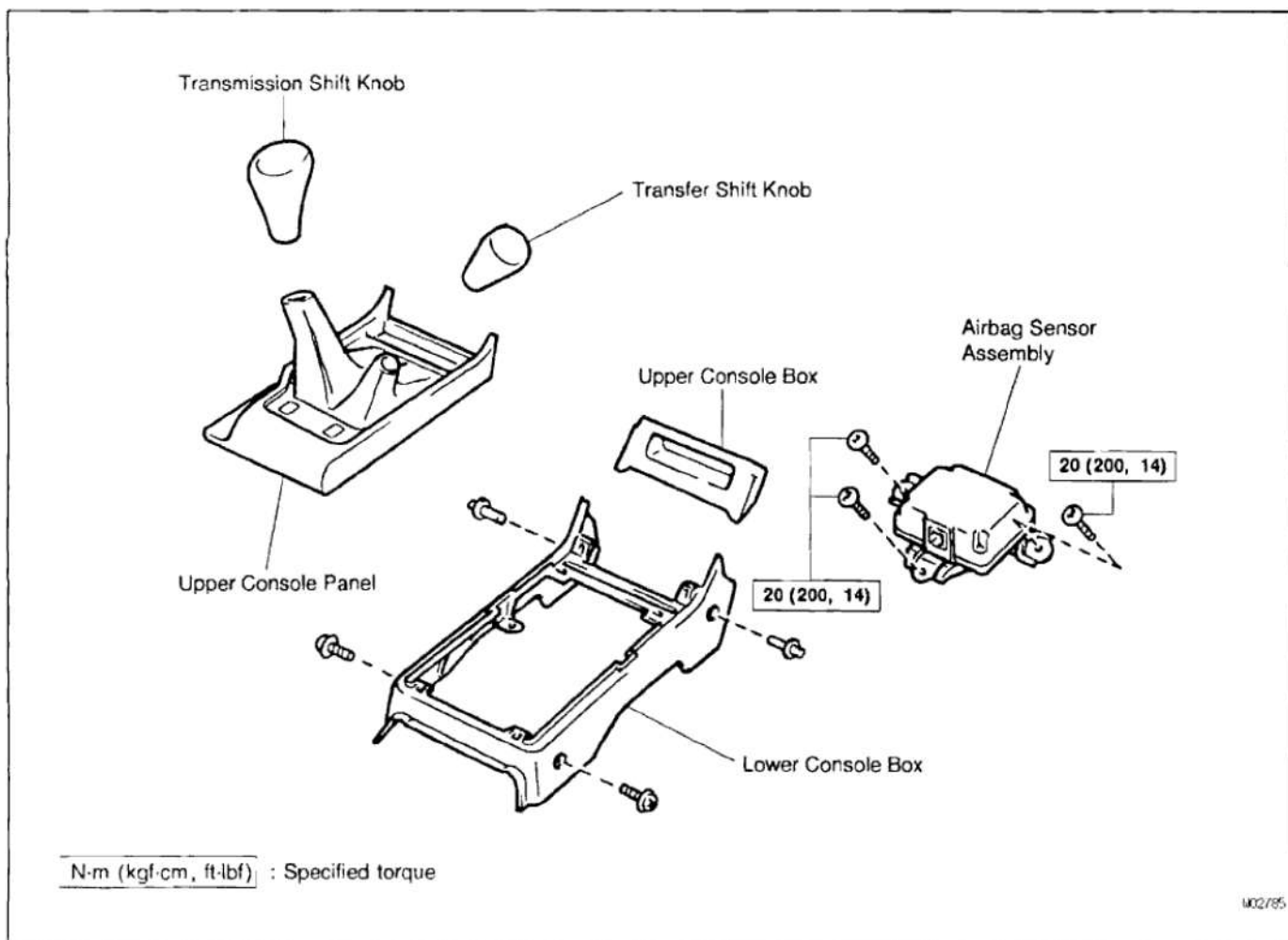
RS07U-0B

In the following cases, replace the airbag sensor assembly.

- If the SRS has been deployed in a collision.
- If the airbag sensor assembly has been found to be faulty in troubleshooting.
- If the airbag sensor assembly has been dropped.

NOTICE: For replacement of the airbag sensor assembly, see page RS-24, "AIRBAG SENSOR ASSEMBLY REMOVAL AND INSTALLATION" and be sure to follow the correct procedure.

COMPONENTS



AIRBAG SENSOR ASSEMBLY REMOVAL AND INSTALLATION

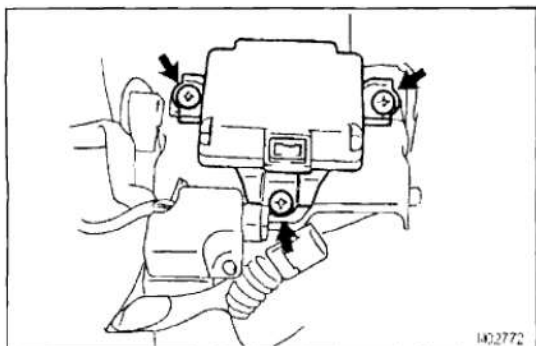
R8047-06

NOTICE:

- Do not open the cover or the case of the ECU and various computers unless absolutely necessary. (If the IC terminals are touched, the IC may be destroyed by static electricity.)
- Never use SRS parts from another vehicle. When replacing parts, replace with new parts.
- Never reuse the airbag sensor assembly involved in a collision when the airbag has deployed.
- Never repair a sensor in order to reuse it.

1. REMOVE THESE PARTS:

- (a) Transfer shift knob and transmission shift knob
- (b) Upper console cover
- (c) Upper console panel
- (d) Lower console box



2. REMOVE AIRBAG SENSOR ASSEMBLY

- (a) Disconnect the connector.

NOTICE: Remove the connector with the sensor assembly installed.

- (b) Using a torx wrench, remove the 3 screws and airbag sensor assembly.

Torx wrench: T40 (Part No. 09042-00020 or locally manufactured tool)

3. INSTALL AIRBAG SENSOR ASSEMBLY

- (a) Using a torx wrench, install the airbag sensor assembly with the 3 screws.

Torx wrench: T40 (Part No. 09042-00020 or locally manufactured tool)

Torque: 20 N.m (200 kgf.cm, 14 ft.lbf)

- (b) Connect the connector.

NOTICE:

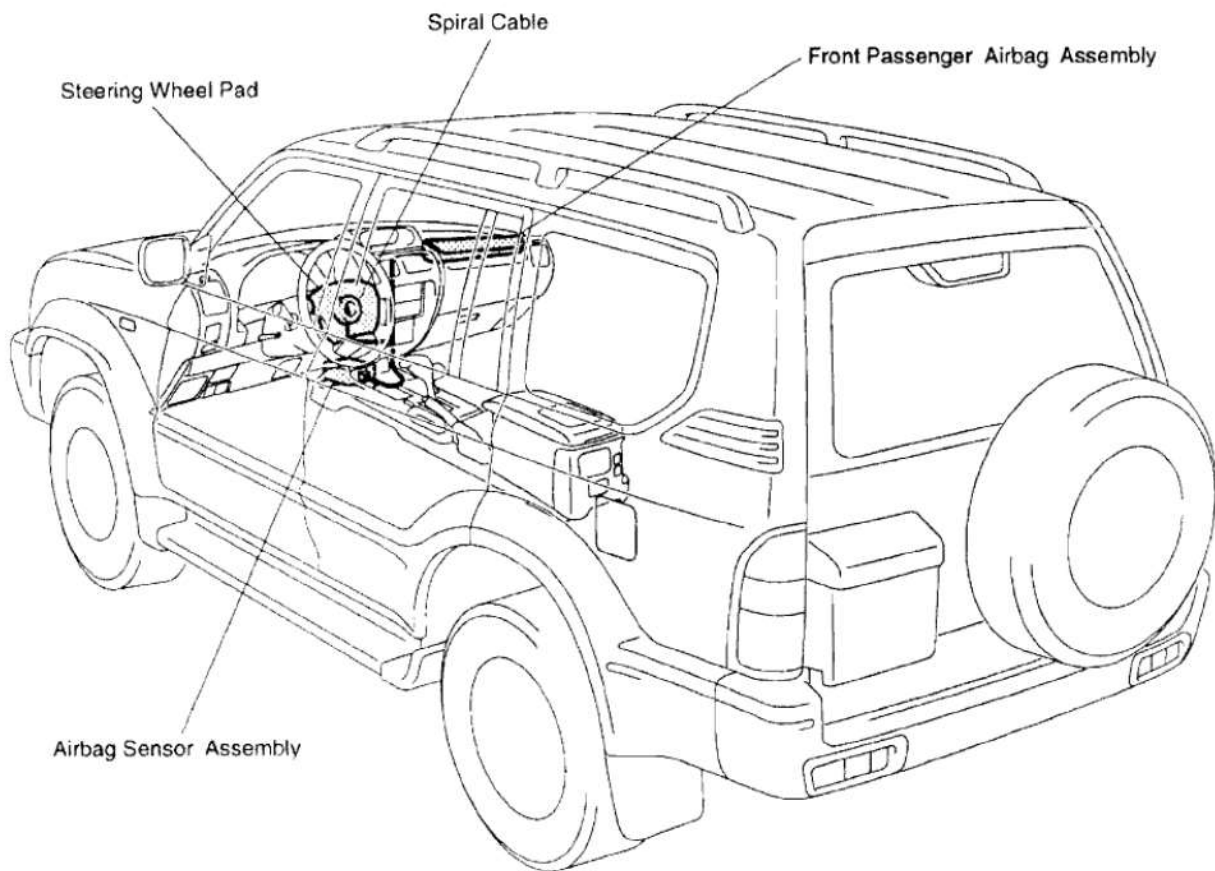
- Installation of the connector is done with the sensor assembly installed.
- Make sure that the sensor assembly is installed to the specified torque.
- If the sensor assembly has been dropped, or there are cracks, dents or other defects in the case, bracket or connector, replace the sensor assembly with a new one.
- When installing the sensor assembly, take care that the SRS wiring does not interfere with other parts and is not pinched between other parts.
- After installation, shake the sensor assembly to check that there is no looseness.

4. INSTALL REMOVED PARTS

WIRE HARNESS AND CONNECTOR

HINT: The SRS wire harness is integrated with the ^{RS018-15} cowl wire harness assembly and floor wire harness assembly.

The wires for the SRS wire harness are encased in a black corrugated tube and all the connectors in the system are a standard yellow color.



INSPECTION ITEMS

1. **VEHICLES NOT INVOLVED IN COLLISION**
Do a diagnostic system check.
(See page RS-32)
2. **VEHICLES INVOLVED IN COLLISION**
 - (a) Do a diagnostic system check.
(See page RS-32)

- (b) Check for breaks in all wires of the SRS wire harness, and for exposed conductors.
- (c) Check to see if the SRS wire harness connectors are cracked or chipped.

REPLACEMENT REQUIREMENTS

#8010-0W

In the following cases, replace the wire harness or connector.

- If any part of the SRS wire harness or any connector has been found to be faulty in troubleshooting.
- If any part of the SRS wire harness or any connector has been found to be faulty during the check in items 2 – (b) or (c).

NOTICE:

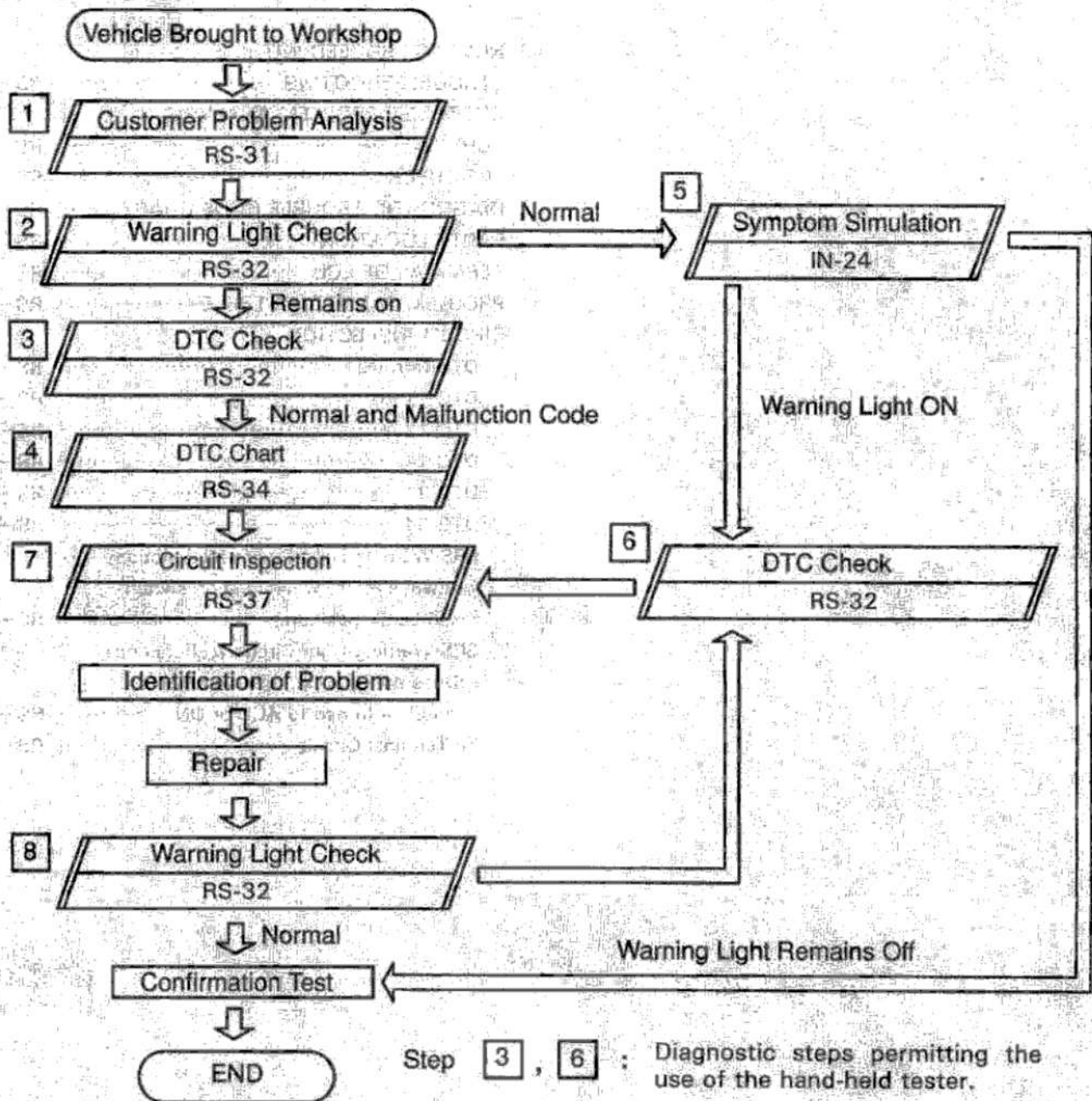
- If the wire harness used in the SRS is damaged, replace the whole wire harness assembly.
- When the connector to the front airbag sensors can be repaired alone (when there is no damage to the wire harness), use the repair wire specially designed for the purpose.

TROUBLESHOOTING

HOW TO PROCEED WITH TROUBLESHOOTING	RS-30
CUSTOMER PROBLEM ANALYSIS	
CHECK	RS-31
PRE-CHECK	RS-32
DIAGNOSTIC TROUBLE CODE CHART	RS-34
PARTS LOCATION	RS-35
TERMINAL OF ECU	RS-36
PROBLEM SYMPTOMS TABLE	RS-36
CIRCUIT INSPECTION	
DTC(Normal)	RS-37
DTC 11	RS-40
DTC 12	RS-46
DTC 14	RS-52
DTC 31	RS-56
DTC 54	RS-58
SRS Warning Light Circuit Malfunction (Always lit up, when ignition switch is in LOCK position.)	RS-61
SRS Warning Light Circuit Malfunction (Does not light up, when ignition switch is turned to ACC or ON.)	RS-63
Tc Terminal Circuit	RS-66

HOW TO PROCEED WITH TROUBLESHOOTING

Perform troubleshooting in accordance with the procedure on the following pages.



CUSTOMER PROBLEM ANALYSIS CHECK

Supplemental Restraint System Check Sheet

Inspector's
Name _____

Customer's Name		Registration No.	
		Registration Year	/ /
		Frame No.	
Date Vehicle Brought In	/ /	Odometer Reading	km Miles

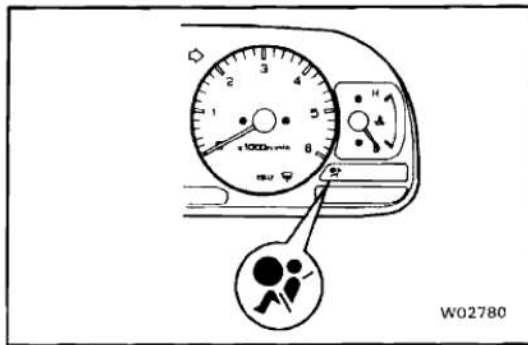
Date Problem Dist Occurred	/ /
Weather	☐ Fine ☐ Cloudy ☐ Rainy ☐ Snowy ☐ Other
Temperature	Approx.

Vehicle Operation	☐ Starting ☐ Idling ☐ Driving [☐ Constant speed ☐ Acceleration ☐ Deceleration ☐ Other]
Road Conditions	
Details Of Problem	

Vehicle Inspection, Repair History Prior to Occurrence of Malfunction(Including Supplemental Restraint System)	
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Diagnosis System Inspection

SRS Warning Light Inspection	1st Time	☐ Remains ON ☐ Sometimes Light Up ☐ Does Not Light Up
	2nd Time	☐ Remains ON ☐ Sometimes Light Up ☐ Does Not Light Up
DTC Inspection	1st Time	☐ Normal Code ☐ Malfunction Code [Code.]
	2nd Time	☐ Normal Code ☐ Malfunction Code [Code.]



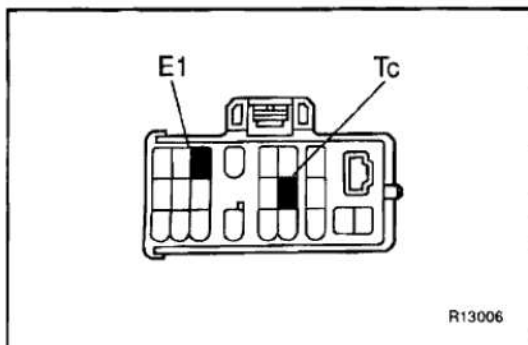
PRE-CHECK

1. SRS warning light check

- Turn the ignition switch to ACC or ON and check that the SRS warning light lights up.
- Check that the SRS warning light goes out after approx. 6 seconds.

HINT:

- When the ignition switch is at ACC or ON and the SRS warning light remains on or flashes, the airbag sensor assembly has detected a malfunction code.
- If, after approx. 6 seconds have elapsed, the SRS warning light sometimes lights up or the SRS warning light lights up even when the ignition switch is OFF, a short in the SRS warning light circuit can be considered likely. Proceed to "SRS warning light circuit malfunction" on page RS - 61, 63.



2. DTC check (Using diagnosis check wire)

(a) OUTPUT DTC

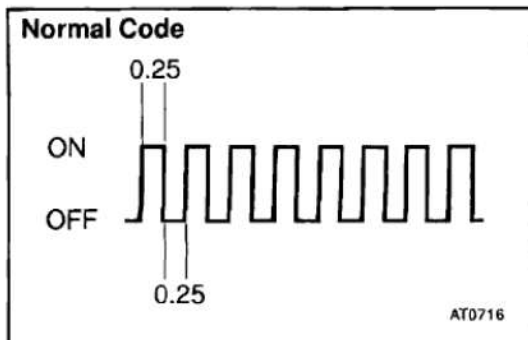
- Turn the ignition switch to the ACC or ON position and wait approx. 20 seconds.
- Using SST, connect terminals Tc and E1 of the check connector.
SST 09843 - 18020

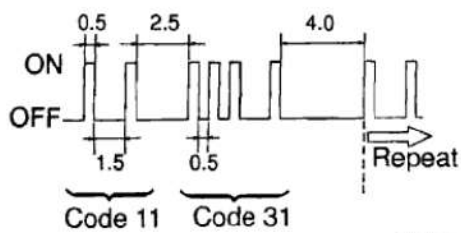
NOTICE: Never make a mistake with the terminal connecting position as this will cause a malfunction.

(b) READ DTC

Read the 2-digit DTC as indicated by the number of times the SRS warning light blinks. As an example, the blinking patterns, normal, 11 and 31 are as shown on the illustration.

- Normal code indication**
The light will blink 2 times per second.
- Malfunction code indication**
The first blinking output indicates the first digit of a 2-digit DTC. After a 1.5 second pause, the second blinking output will indicate the second digit.



Code 11 and 31

AB0056

If there are 2 or more codes, there will be a 2.5 second pause between each code. After all the codes have been output, there will be a 4.0 second pause and they will all be repeated.

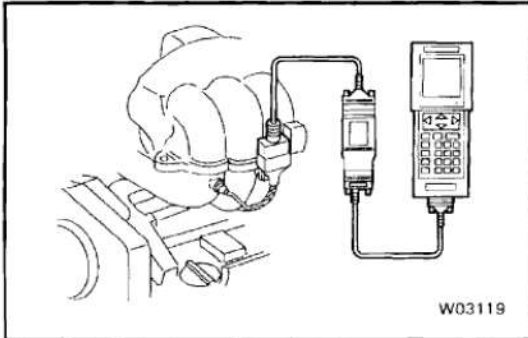
HINT:

- In the event of a number of trouble codes, indication will start from the smallest numbered code.
- If it does not output a DTC or outputs a DTC without terminal connection, proceed to the Tc terminal circuit inspection on page RS – 66.

3. DTC check (Using hand – held tester)

- Hook up the hand – held tester to the check connector.
- Read the DTCs by following the prompts on the tester screen.

HINT: Please refer to the hand – held tester operator's manual, for further details.



W03119

4. DTC clearance

When the ignition switch is turned off, the DTC is cleared.

DIAGNOSTIC TROUBLE CODE CHART

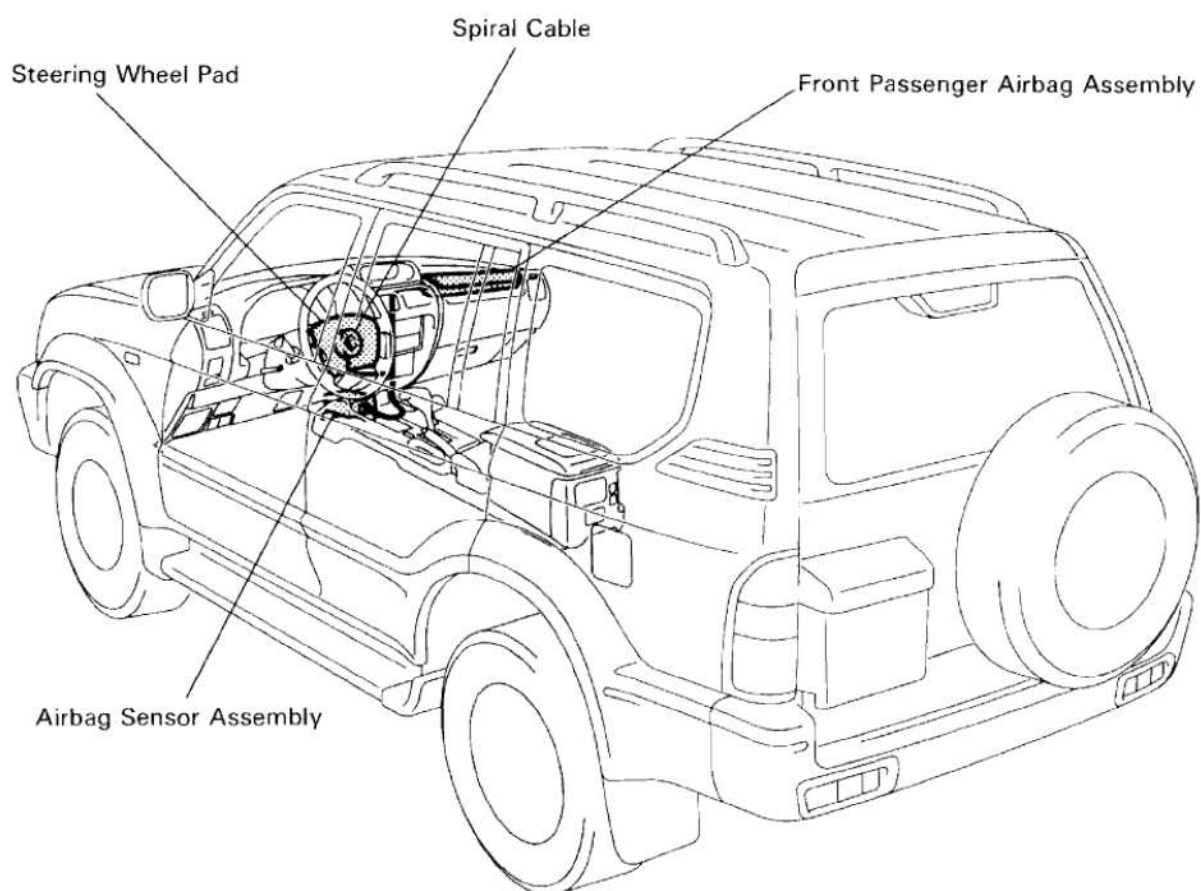
If a malfunction code is displayed during the DTC check, check the circuit listed for that code in the table below (Proceed to the page given for that circuit.).

DTC No. (See Page)	Detection Item	Trouble Area	SRS Warning Light
Normal (RS-37)	• System normal	—	OFF
	• Source voltage drop	• Battery • Airbag sensor assembly	ON
11 (RS-40)	• Short in squib circuit (to ground)	• Steering wheel pad (D squib) • Front passenger airbag assembly (P squib) • Spiral cable • Airbag sensor assembly • Wire harness	ON
12 (RS-46)	• Short in squib circuit (to B+)	• Steering wheel pad (D squib) • Front passenger airbag assembly (P squib) • Spiral cable • Airbag sensor assembly • Wire harness	ON
14 (RS-52)	• Open in D squib circuit	• Steering wheel pad (D squib) • Spiral cable • Airbag sensor assembly • Wire harness	ON
31 (RS-56)	• Airbag sensor assembly malfunction	• Airbag sensor assembly	ON
54 (RS-58)	• Open in P squib circuit	• Front passenger airbag assembly (P squib) • Airbag sensor assembly • Wire harness	ON

HINT:

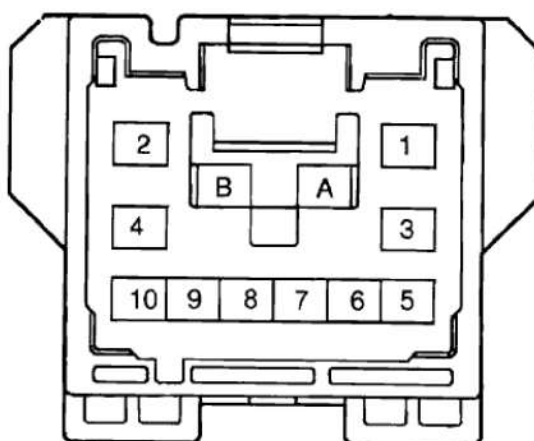
- When the SRS warning light remains lit up and the DTC is the normal code, this means a source voltage drops.
This malfunction is not stored in memory by the airbag sensor assembly and if the power source voltage returns to normal, the SRS warning light will automatically go out.
- When 2 or more codes are indicated, the codes will be displayed in numeral order starting from the lowest numbered code.
- If a code not listed on the chart is displayed, the airbag sensor assembly is faulty.

PARTS LOCATION



W02786

TERMINALS OF ECU



W02056

No.	Symbol	Terminal Name
A	—	Electrical Connection Check Mechanism
B	—	Electrical Connection Check Mechanism
1	P—	Squib ⊖ (Passenger)
2	P+	Squib ⊕ (Passenger)
3	D—	Squib ⊖ (Driver)
4	D+	Squib ⊕ (Driver)
5	E1	Ground
6	E2	Ground
7	Tc	Diagnosis
8	LA	SRS Warning Light
9	IG2	Power Source (IGN Fuse)
10	ACC	Power Source (CIG Fuse)

PROBLEM SYMPTOMS TABLE

Proceed with troubleshooting of each circuit in the table below.

Symptom	Suspect Area	See page
• With the ignition switch at ACC or ON, the SRS warning light sometimes lights up after approx. 6 seconds have elapsed. • SRS warning light is always lit up even when ignition switch is in the LOCK position.	• SRS warning light circuit (Always lights up when ignition switch is in LOCK position.)	RS-61
• With the ignition switch at ACC or ON, the SRS warning lights does not light up.	• SRS warning light circuit (Does not light up when ignition switch is turned to ACC or ON.)	RS-63
• DTC not displayed. • SRS warning light is always lit up a DTC check procedure. • DTC displayed without Tc and E1 terminal connection.	• Tc terminal circuit	RS-66

CIRCUIT INSPECTION

DTC	Normal	Source Voltage Drop
-----	--------	---------------------

CIRCUIT DESCRIPTION

The SRS is equipped with a voltage-increase circuit (DC-DC converter) in the airbag sensor assembly in case the source voltage drops.

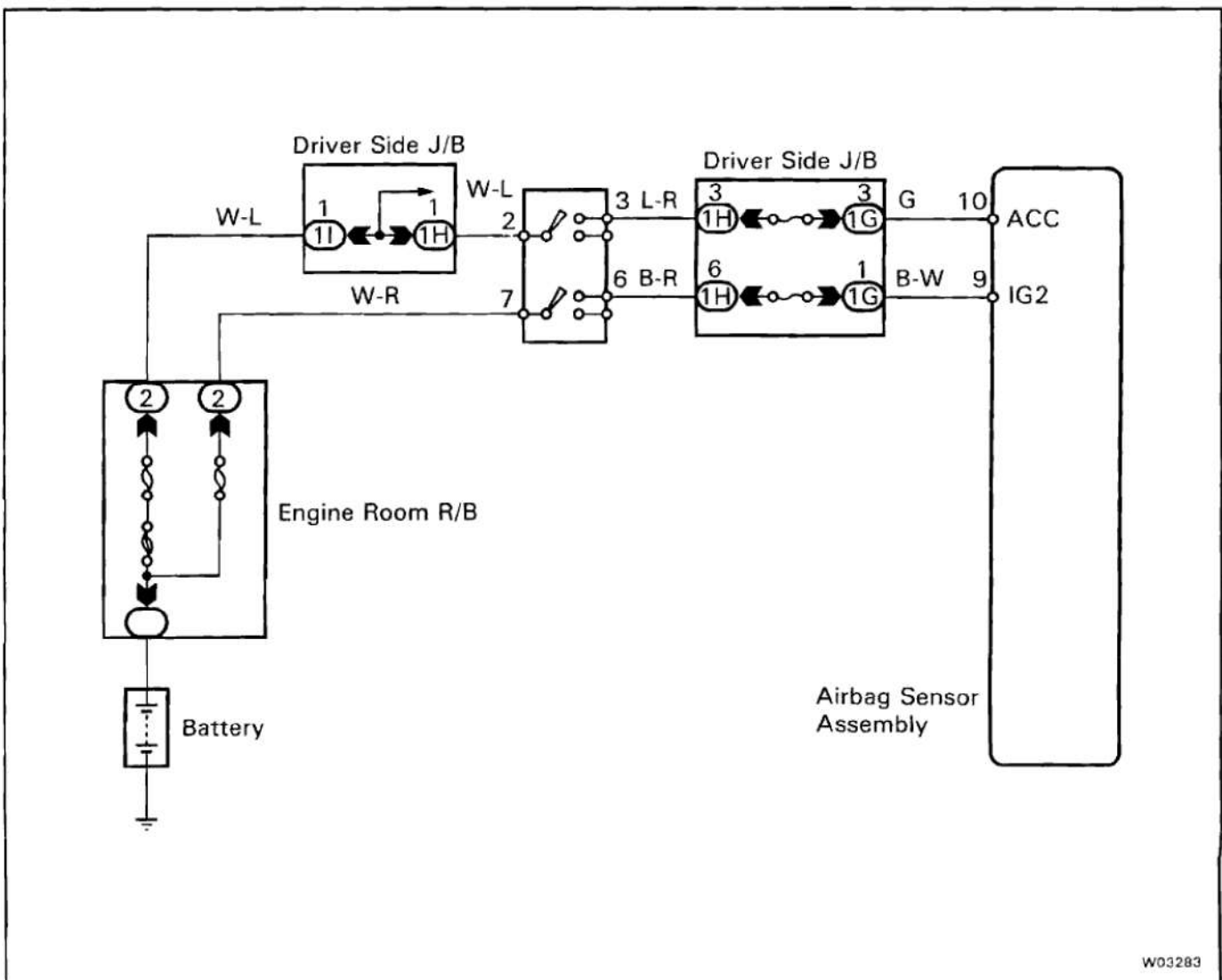
When the battery voltage drops, the voltage-increase circuit (DC-DC converter) functions to increase the voltage of the SRS to normal voltage.

The diagnosis system malfunction display for this circuit is different to other circuits—when the SRS warning light remains lit up and the DTC is a normal code, source voltage drop is indicated.

Malfunction in this circuit is not recorded in the airbag sensor assembly, and the source voltage returns to normal, the SRS warning light automatically goes off.

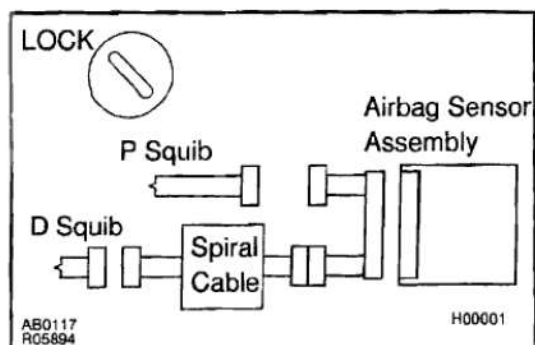
DTC No.	Diagnosis
(Normal)	Source voltage drop.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 Preparation.

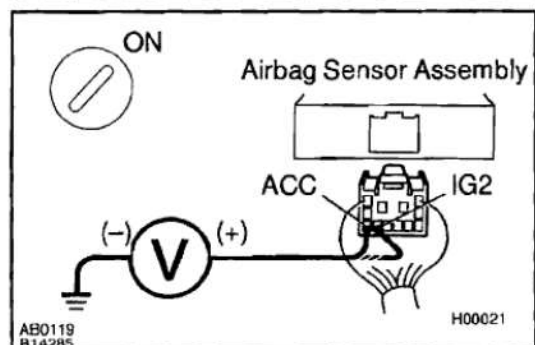
**PREPARATION:**

- Disconnect the negative (–) terminal cable from the battery, and wait at least 90 seconds.
- Remove the steering wheel pad. (See SR section)
- Disconnect the connector of front passenger airbag assembly. (See page RS – 13)
- Disconnect the connector of airbag sensor assembly. (See page RS – 25)

CAUTION:

Store the steering wheel pad with the front surface facing upward.

2 Check source voltage.

**PREPARATION:**

- Connect the negative (–) terminal cable to battery.
- Turn the ignition switch ON.

CHECK:

Measure voltage at IG2 or ACC on sensor and operate electric system. (defogger, wiper, headlight, heater blower, etc.)

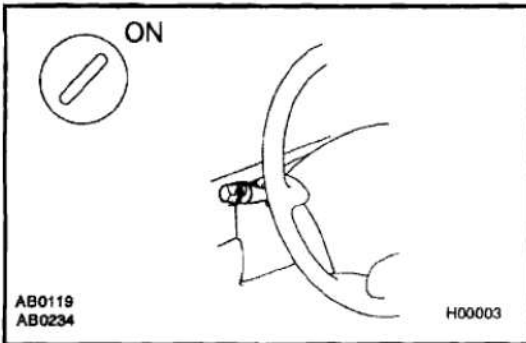
OK:

Voltage: 10 – 14V

NG

Check the harness between battery and airbag sensor assembly, and check the battery and charging system.

OK

3 Does SRS warning light turn off?**PREPARATION:**

- (a) Turn the ignition switch to LOCK.
- (b) Connect the steering wheel pad connector.
- (c) Connect the front passenger airbag assembly connector.
- (d) Connect the airbag sensor assembly connector.
- (e) Turn the ignition switch ON.

CHECK:

Operate electric system (defogger, wiper, headlight, heater blower, etc.) and check that SRS warning light goes off.

NO

Check for DTCs. If a DTC is output, perform troubleshooting for the DTC. If a normal code is output, replace airbag sensor assembly.

YES

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

DTC	11	Short in Squib Circuit (to Ground)
------------	-----------	---

CIRCUIT DESCRIPTION

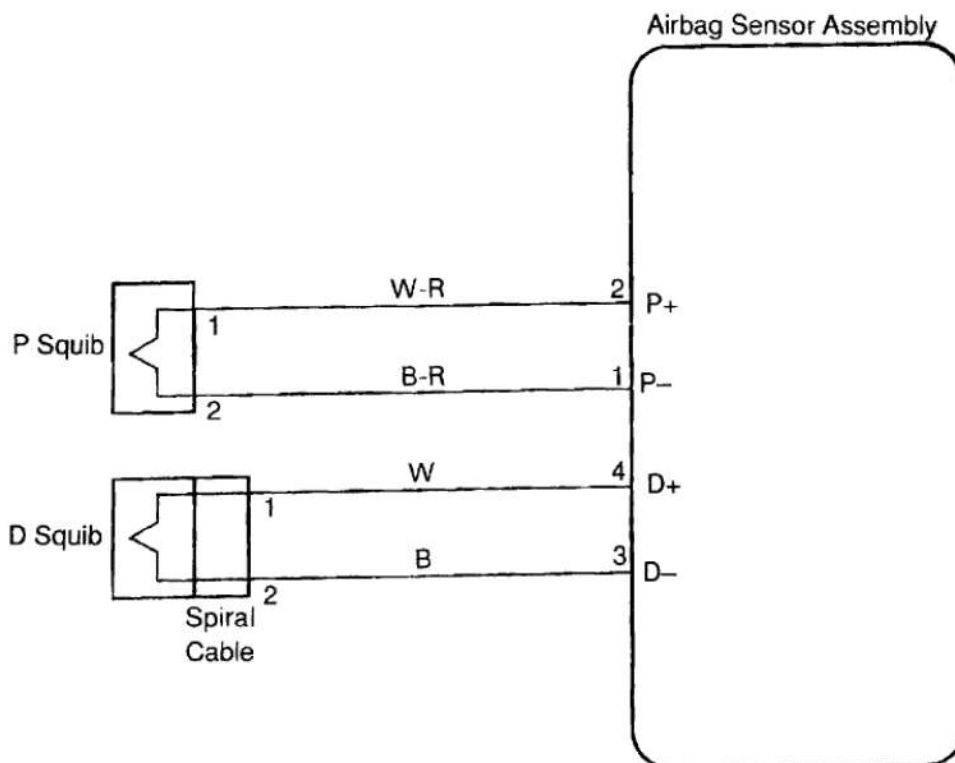
The squib circuit consists of the airbag sensor assembly, spiral cable, steering wheel pad and front passenger airbag assembly. If causes the SRS to deploy when the SRS deployment conditions are satisfied.

For details of the function of each component, see FUNCTION OF COMPONENTS on page RS-4.

DTC 11 is recorded when ground short is detected in the squib circuit.

DTC No.	DTC Detecting Condition	Trouble Area
11	• Short circuit in squib wire harness (to ground) • Squib malfunction • Spiral cable malfunction • Airbag sensor assembly malfunction	• Steering wheel pad (D squib) • Front passenger airbag assembly (P squib) • Spiral cable • Airbag sensor assembly • Wire harness

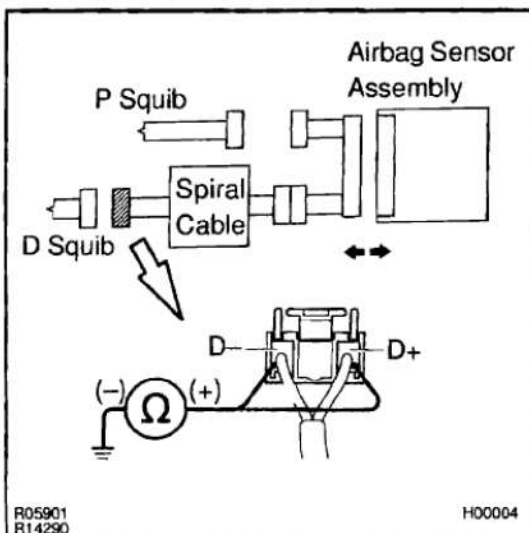
WIRING DIAGRAM



INSPECTION PROCEDURE

1 Preparation. (See step "1" on page RS-38)

2 Check D squib circuit.

**CHECK:**

For the connector (on the spiral cable side) between the spiral cable and steering wheel pad, measure the resistance between D+, D- and body ground.

OK:

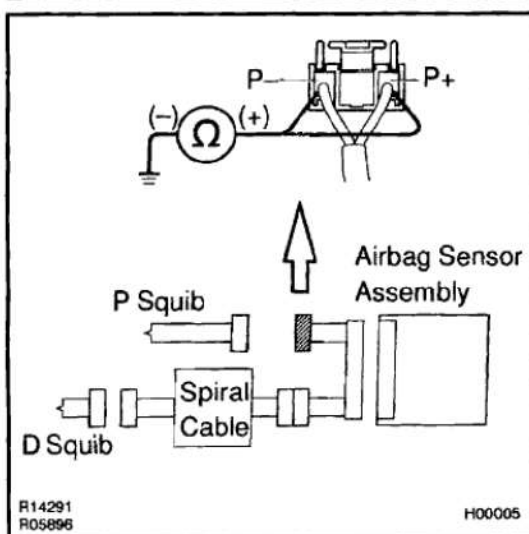
Resistance: $1M\Omega$ or Higher

OK

NG

Go to step "7".

3 Check P squib circuit.

**CHECK:**

For the connector (on the airbag sensor assembly side) between the airbag sensor assembly and front passenger airbag assembly, measure the resistance between P+, P- and body ground.

OK:

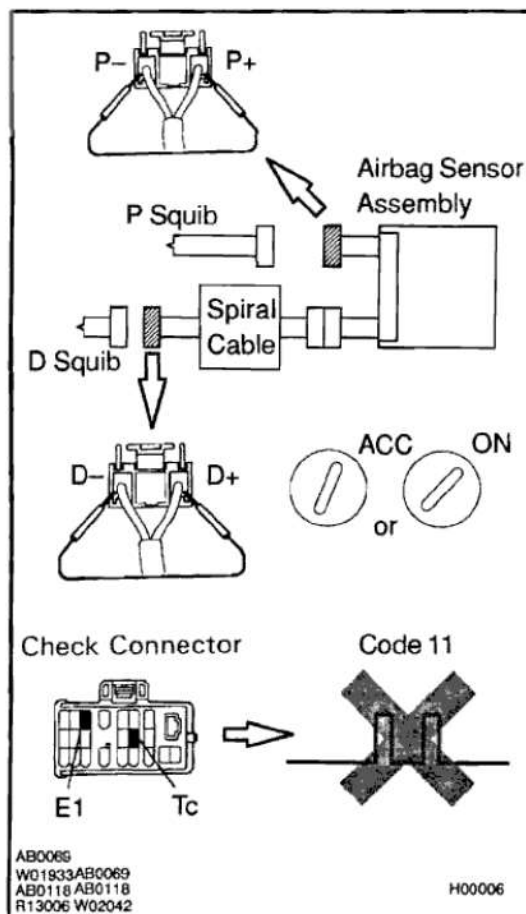
Resistance: $1M\Omega$ or Higher

OK

NG

Repair or replace harness or connector between the airbag sensor assembly and front passenger airbag assembly.

4 Check airbag sensor assembly.



PREPARATION:

- Connect the connector to airbag sensor assembly.
- Using a service wire connect D₊ and D₋ on spiral cable side of the connector between the spiral cable and steering wheel pad.
- Using a service wire, connect P₊ and P₋ on airbag sensor assembly side of the connector between the airbag sensor assembly and front passenger airbag assembly.
- Connect negative (-) terminal cable to battery, and wait at least 2 seconds.

CHECK:

- Turn the ignition switch to ACC or ON and wait at least 20 seconds.
- Clear malfunction code stored in memory. (See page RS-33)
- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Using SST, connect terminals Tc and E1 of check connector.
SST 09843 - 18020
- Check DTC

OK:

DTC 11 is not output.

HINT:

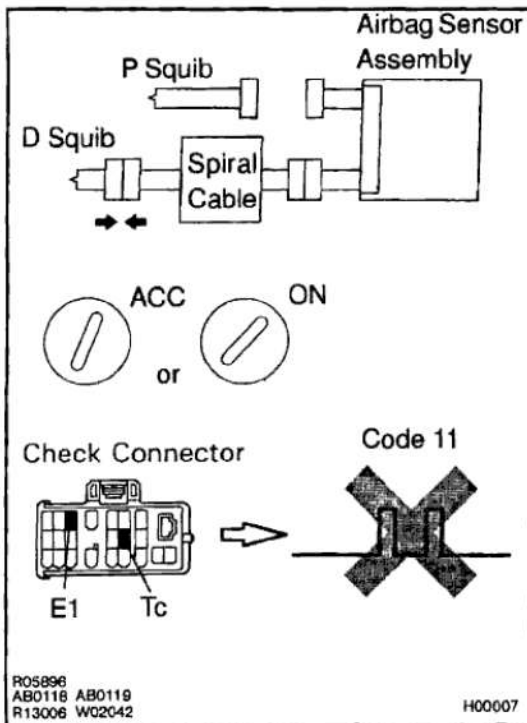
Codes other than code 11 may be output at this time, but they are not relevant to this check.

NG

Replace airbag sensor assembly.

OK

5

Check D squib.**PREPARATION:**

- Turn the ignition switch to LOCK.
- Disconnect the negative (–) terminal cable from the battery, and wait at least 90 seconds.
- Connect the steering wheel pad connector.
- Connect the negative (–) terminal cable to the battery, and wait at least 2 seconds.

CHECK:

- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Clear malfunction code stored in memory. (See page RS-33)
- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Using SST, connect terminals Tc and E1 of check connector.
SST 09843 – 18020
- Check DTC.

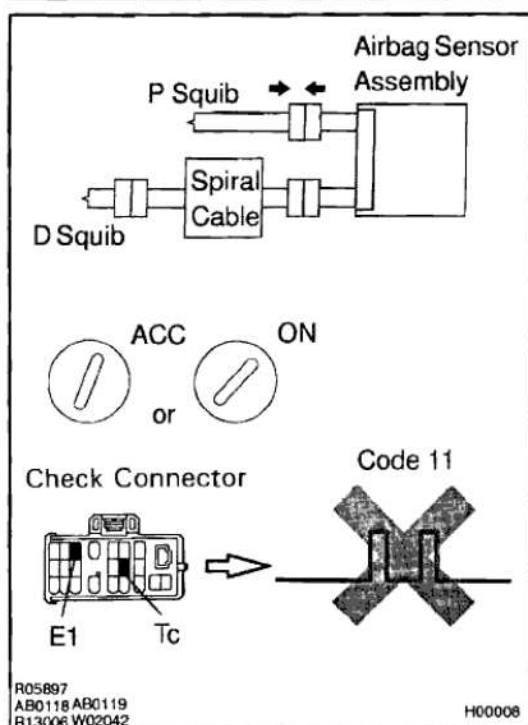
OK:**DTC 11 is not output.****HINT:**

Codes other than code 11 may be output at this time, but they are not relevant to this check.

NG**Replace steering wheel pad.****OK**

RS

6 Check P squib.



PREPARATION:

- Turn the ignition switch to LOCK.
- Disconnect the negative (–) terminal cable from the battery, and wait at least 90 seconds.
- Connect the front passenger airbag assembly connector.
- Connect the negative (–) terminal cable to the battery, and wait at least 2 seconds.

CHECK:

- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Clear malfunction code stored in memory. (See page RS-33)
- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Using SST, connect terminals Tc and E1 of check connector.
SST 09843 – 18020
- Check DTC.

OK:

DTC 11 is not output.

HINT:

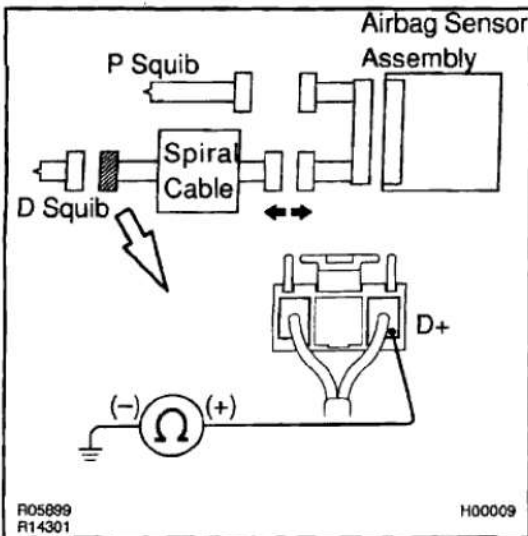
Codes other than code 11 may be output at this time, but they are not relevant to this check.

NG

Replace front passenger airbag assembly.

OK

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check. If the malfunctioning part can not be detected by the simulation method, replace all SRS components including the wire harness.

7 Check spiral cable.**PREPARATION:**

Disconnect the connector between the airbag sensor assembly and spiral cable.

CHECK:

Measure resistance between D+ on spiral cable side of connector between spiral cable and steering wheel pad and body ground.

OK:

Resistance: 1MΩ or Higher

NG**Repair or replace spiral cable.****OK**

Repair or replace harness or connector between airbag sensor assembly and spiral cable.

DTC	12	Short in Squib Circuit (to B+)
------------	-----------	---------------------------------------

CIRCUIT DESCRIPTION

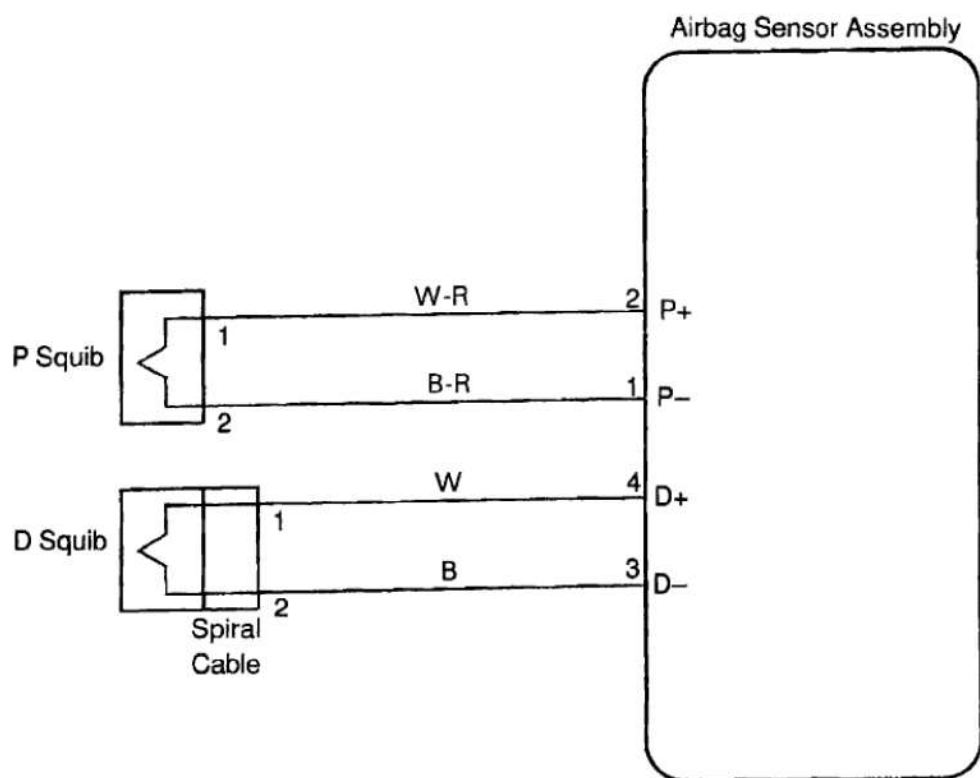
The squib circuit consists of the airbag sensor assembly, spiral cable, steering wheel pad and front passenger airbag assembly. It causes the SRS to deploy when the SRS deployment conditions are satisfied.

For details of the function of each components, see page FUNCTION OF COMPONENTS on page RS - 4.

DTC 12 is recorded when a B+ short is detected in the squib circuit.

DTC No.	DTC Detecting Condition	Trouble Area
12	• Short circuit in squib wire harness (to B+) • Squib malfunction • Spiral cable malfunction • Airbag sensor assembly malfunction	• Steering wheel pad (D squib) • Front passenger airbag assembly (P squib) • Spiral cable • Airbag sensor assembly • Wire harness

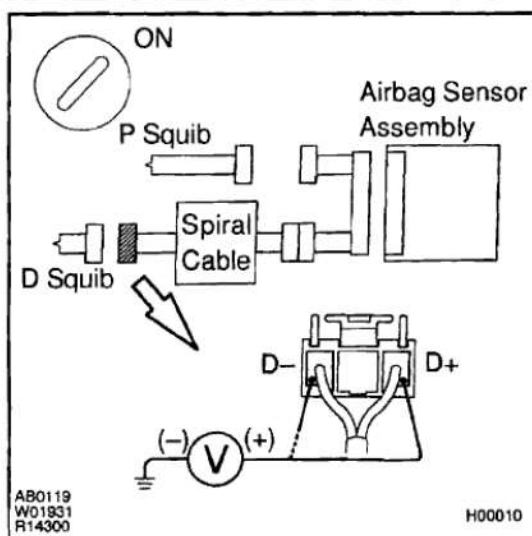
WIRING DIAGRAM



INSPECTION PROCEDURE

1 Preparation. (See step "1" on page RS-38)

2 Check D squib circuit.

**CHECK:**

For the connector (on the spiral cable side) between the spiral cable and steering wheel pad, measure the voltage between D+, D- and body ground.

OK:

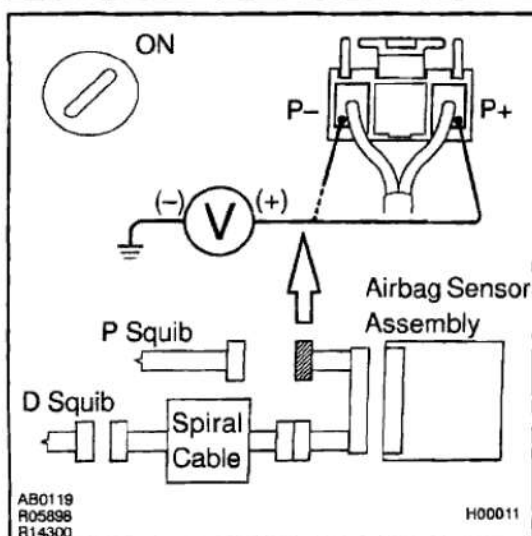
Voltage: 0 V

OK

NG

Go to step "7".

3 Check P squib circuit.

**CHECK:**

For the connector (on the airbag sensor assembly side) between airbag sensor assembly and front passenger airbag assembly, measure the voltage between P+, P- and body ground.

OK:

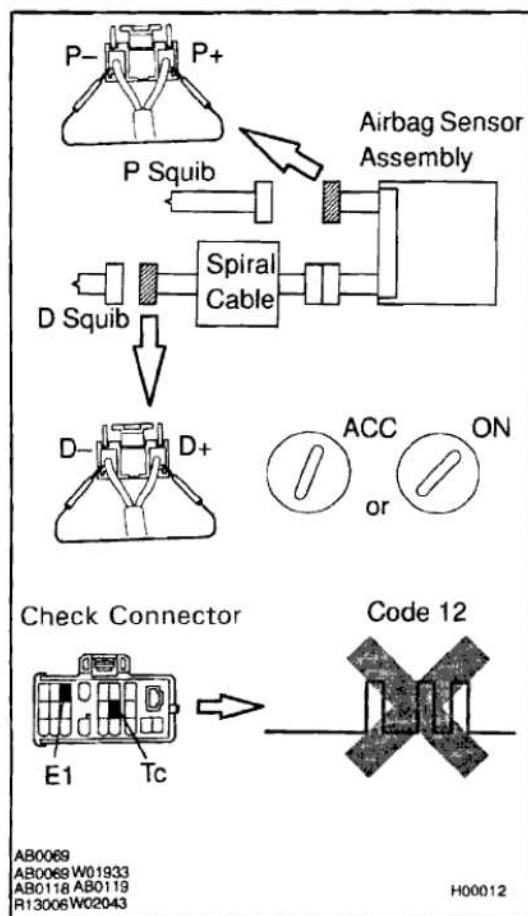
Voltage: 0V

OK

NG

Repair or replace harness or connector between the airbag sensor assembly and front passenger airbag assembly.

4 Check airbag sensor assembly.



PREPARATION:

- Connect the connector to the airbag sensor assembly.
- Using a service wire, connect D₊ and D₋ on spiral cable side of the connector between the spiral cable and steering wheel pad.
- Using a service wire, connect P₊ and P₋ on airbag sensor assembly side of the connector between the airbag sensor assembly and front passenger airbag assembly.
- Connect negative (-) terminal cable to battery, and wait at least 2 seconds.

CHECK:

- Turn the ignition switch to ACC or ON and wait at least 20 seconds.
- Clear malfunction code stored in memory.
(See page RS-33)
- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Using SST, connect terminals Tc and E1 of check connector.
SST 09843 - 18020
- Check DTC.

OK:

DTC 12 is not output.

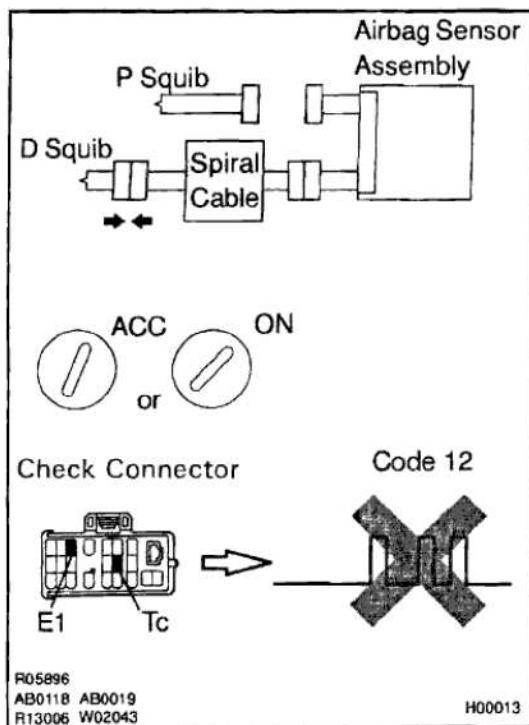
HINT: Codes other than code 12 may be output at this time, but they are not relevant to this check.

NG

Replace airbag sensor assembly.

OK

5 Check D squib.



PREPARATION:

- Turn the ignition switch to LOCK.
- Disconnect the negative (–) terminal cable from the battery, and wait at least 90 seconds.
- Connect the steering wheel pad connector.
- Connect the negative (–) terminal cable to the battery, and wait at least 2 seconds.

CHECK:

- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Clear malfunction code stored in memory. (See page RS-33)
- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Using SST, connect terminals Tc and E1 of check connector. SST 09843 – 18020
- Check DTC.

OK:

DTC 12 is not output.

HINT: Codes other than code 12 may be output at this time, but they are not relevant to this check.

NG

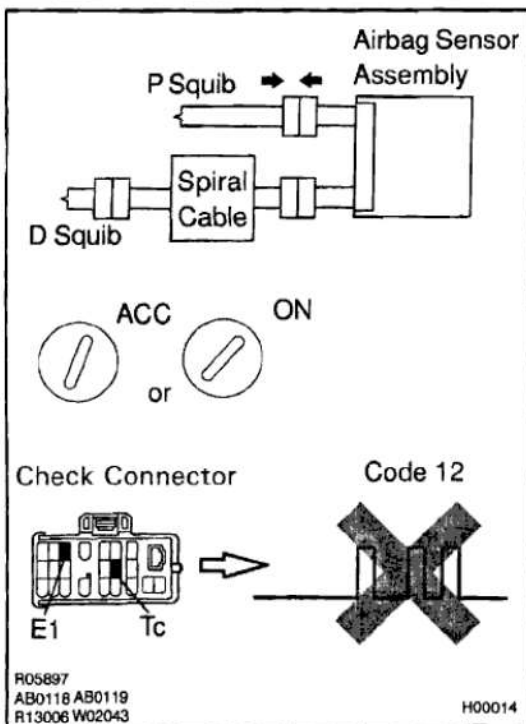
Replace steering wheel pad.

OK

RS

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6 Check P squib.



PREPARATION:

- Turn the ignition switch to LOCK.
- Disconnect the negative (–) terminal cable from the battery, and wait at least 90 seconds.
- Connect the front passenger airbag assembly connector.
- Connect the negative (–) terminal cable to the battery, and wait at least 2 seconds.

CHECK:

- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Clear malfunction code stored in memory. (See page RS-33)
- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Using SST, connect terminals Tc and E1 of check connector.
SST 09843 – 18020
- Check DTC.

OK:

DTC 12 is not output.

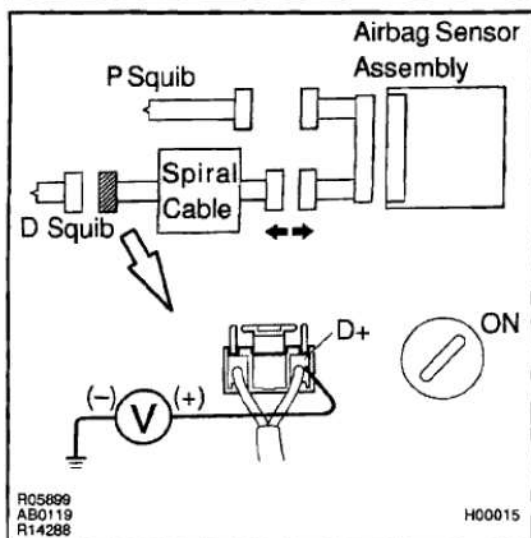
HINT: Codes other than code 12 may be output at this time, but they are not relevant to this check.

NG

Replace front passenger airbag assembly.

OK

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

7 Check spiral cable.**PREPARATION:**

- (a) Turn the ignition switch to LOCK.
- (b) Disconnect the connector between the airbag sensor assembly and spiral cable.
- (c) Turn the ignition switch ON.

CHECK:

Measure voltage at D+ on spiral cable side of connector between spiral cable and steering wheel pad and body ground.

OK:

Voltage: 0 V

NG**Repair or replace spiral cable.****OK****Repair or replace harness or connector between airbag sensor assembly and spiral cable.**

RS

DTC	14	Open in D Squib Circuit
------------	-----------	--------------------------------

CIRCUIT DESCRIPTION

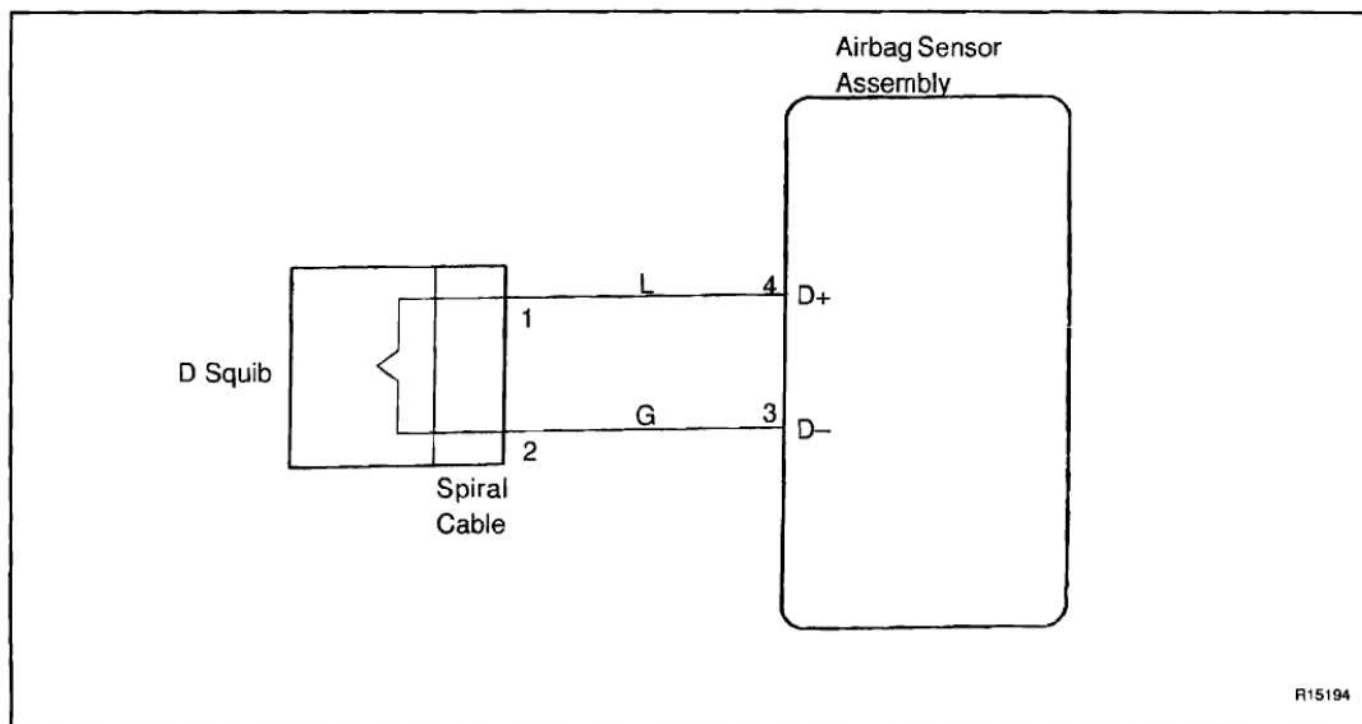
The D squib circuit consists of the airbag sensor assembly, spiral cable and steering wheel pad. It causes the airbag to deploy when the airbag deployment conditions are satisfied.

For details of the function of each components, see FUNCTION OF COMPONENTS on page RS-4.

DTC 14 is recorded when an open is detected in the D squib circuit.

DTC No.	DTC Detecting Condition	Trouble Area
14	• Open circuit in D+ wire harness or D- wire harness of squib • D squib malfunction • Spiral cable malfunction • Airbag sensor assembly malfunction	• Steering wheel pad (D squib) • Spiral cable • Airbag sensor assembly • Wire harness

WIRING DIAGRAM

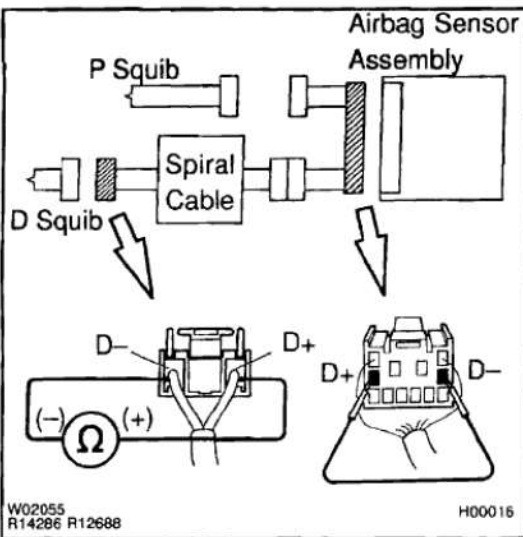


INSPECTION PROCEDURE

1	Preparation. (See step "1" on page RS-38)
----------	--



2 Check D squib circuit.



PREPARATION:

Using a service wire, connect D+ and D- on airbag sensor assembly connector.

CHECK:

For the connector (on the spiral cable side) between the spiral cable and steering wheel pad, measure the resistance between D+ and D-.

OK:

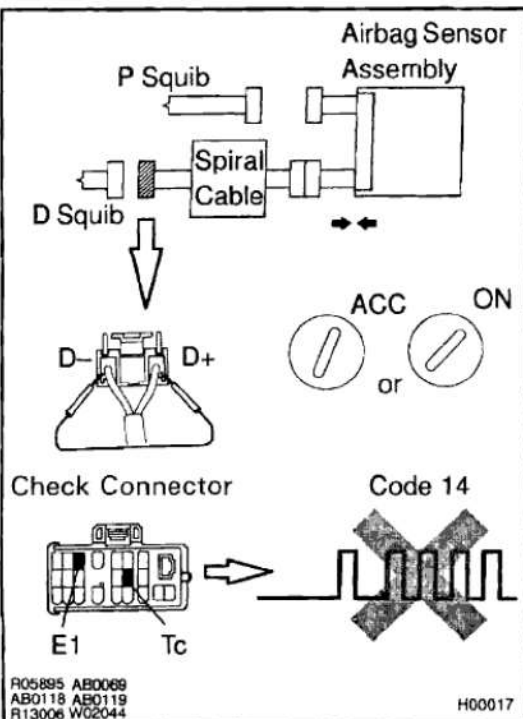
Resistance: Below 1 Ω

NG

Go to step "5".

OK

3 Check airbag sensor assembly.



PREPARATION:

- Connect the connector to the airbag sensor assembly.
- Using a service wire, connect D+ and D- on spiral cable side of the connector between the spiral cable and steering wheel pad.
- Connect the negative (-) terminal cable to the battery, and wait at least 2 seconds.

CHECK:

- Turn the ignition switch to ACC or ON and wait at least 20 seconds.
- Clear malfunction code stored in memory.
(See page RS-33)
- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Using SST, connect terminals Tc and E1 of check connector.
SST 09843 – 18020
- Check DTC.

OK:

DTC 14 is not output.

HINT:

Codes other than code 14 may be output at this time, but they are not relevant to this check.

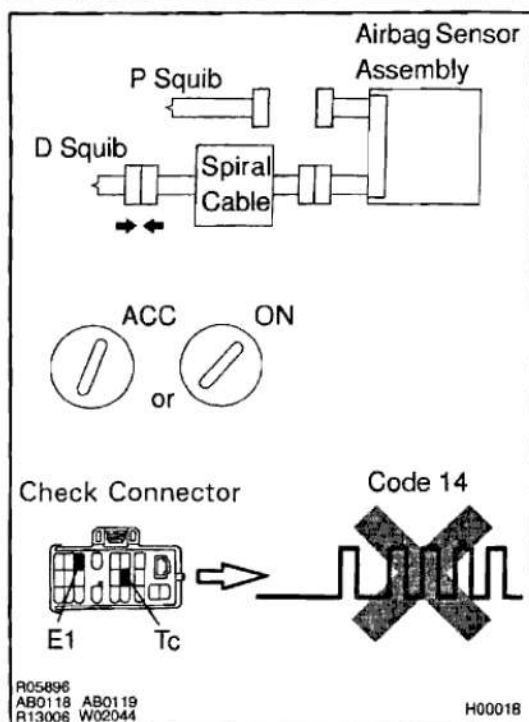
NG

Replace airbag sensor assembly.

OK

4

Check D squib.

**PREPARATION:**

- Turn the ignition switch to LOCK.
- Disconnect the negative (–) terminal cable from the battery, and wait at least 90 seconds.
- Connect the steering wheel pad connector.
- Connect the negative (–) terminal cable to the battery, and wait at least 2 seconds.

CHECK:

- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Clear malfunction code stored in memory. (See page RS-33)
- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Using SST, connect terminals Tc and E1 of check connector. SST 09843 – 18020
- Check DTC.

OK:

DTC 14 is not output.

HINT:

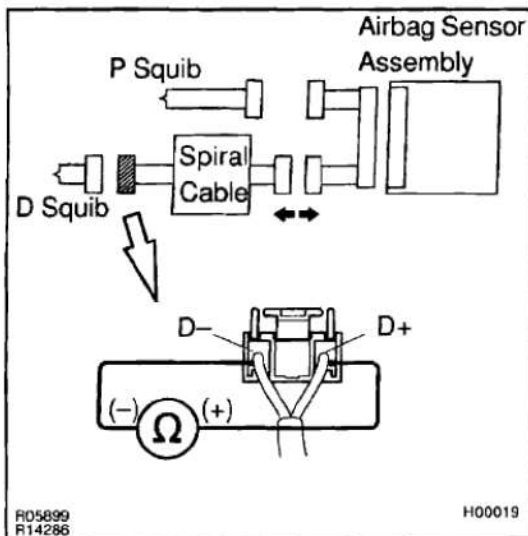
Codes other than code 14 may be output at this time, but they are not relevant to this check.

NG

Replace steering wheel pad.

OK

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

5 Check spiral cable.**PREPARATION:**

Disconnect connector between airbag sensor assembly and spiral cable.

CHECK:

For the connector (on the spiral cable side) between the spiral cable and steering wheel pad, measure the resistance between D₊ and D₋.

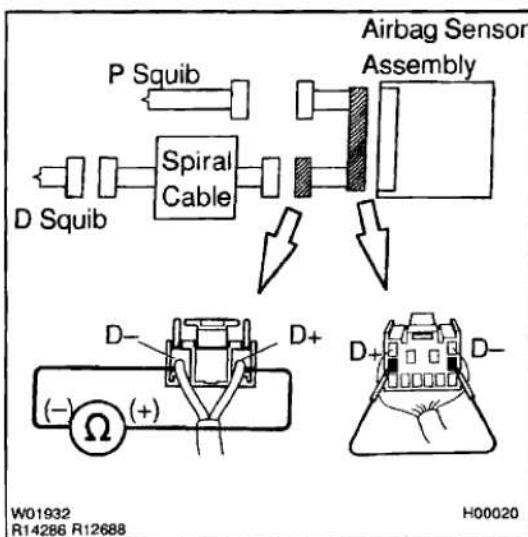
OK:

Resistance: Below 1 Ω

NG

Repair or replace spiral cable.

OK

6 Check harness between airbag sensor assembly and spiral cable.**PREPARATION:**

Using a service wire, connect D₊ and D₋ on the airbag sensor assembly connector.

CHECK:

For the connector (on the airbag sensor assembly side) between the airbag sensor assembly and spiral cable, measure the resistance D₊ and D₋.

OK:

Resistance: Below 1 Ω

NG

Repair or replace harness or connector between airbag sensor assembly and spiral cable.

OK

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

DTC**31****Airbag Sensor Assembly Malfunction****CIRCUIT DESCRIPTION**

The airbag sensor assembly consists of a airbag sensor, safing sensor, drive circuit, diagnosis circuit and ignition control, etc.

It receives signals from the airbag sensors, judges whether or not the SRS must be activated, and diagnosis system malfunction.

DTC 31 is recorded when occurrence of a malfunction in the airbag sensor assembly is detected.

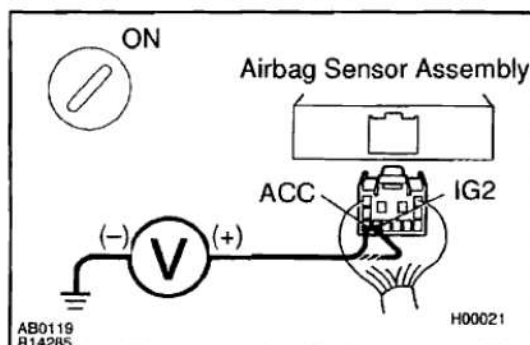
DTC No.	DTC Detecting Condition	Trouble Area
31	• Airbag sensor assembly malfunction	• Airbag sensor assembly

INSPECTION PROCEDURE

HINT: When a malfunction code other than code 31 is displayed at the same time, first repair the malfunction indicated by the malfunction code other than code 31.

1 Preparation. (See step "1" on page RS-38)

2 Check voltage at IG2 and ACC of airbag sensor assembly

**PREPARATION:**

Turn the ignition switch ON.

CHECK:

Measure voltage between the terminals IG2 and ACC of airbag sensor assembly and body ground.

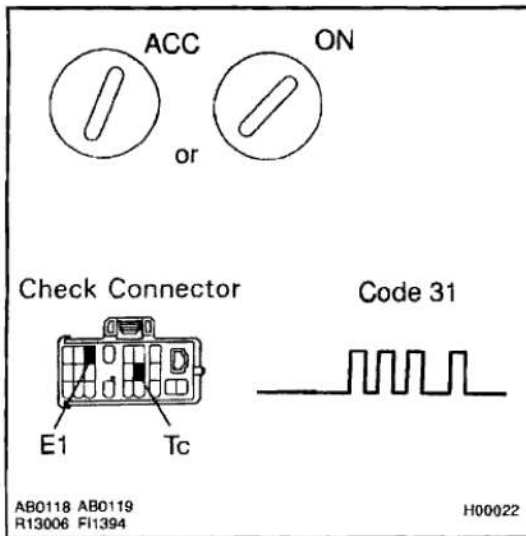
OK:

Voltage: Below 16 V

NG

Check battery and charging system.
(See charging system section)

OK

3 Is DTC 31 output again?**PREPARATION:**

Clear malfunction code.

CHECK:

- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Repeat operation in step (a) and (b) at least 5 times.
- Using SST, connect terminals Tc and E1 of check connector.
SST 09843 - 18020
- Check DTC.

NO

Using simulation method, reproduce malfunction symptoms (See page IN-24)

YES

Replace airbag sensor assembly.

DTC	54	Open in P Squib Circuit
------------	-----------	--------------------------------

CIRCUIT DESCRIPTION

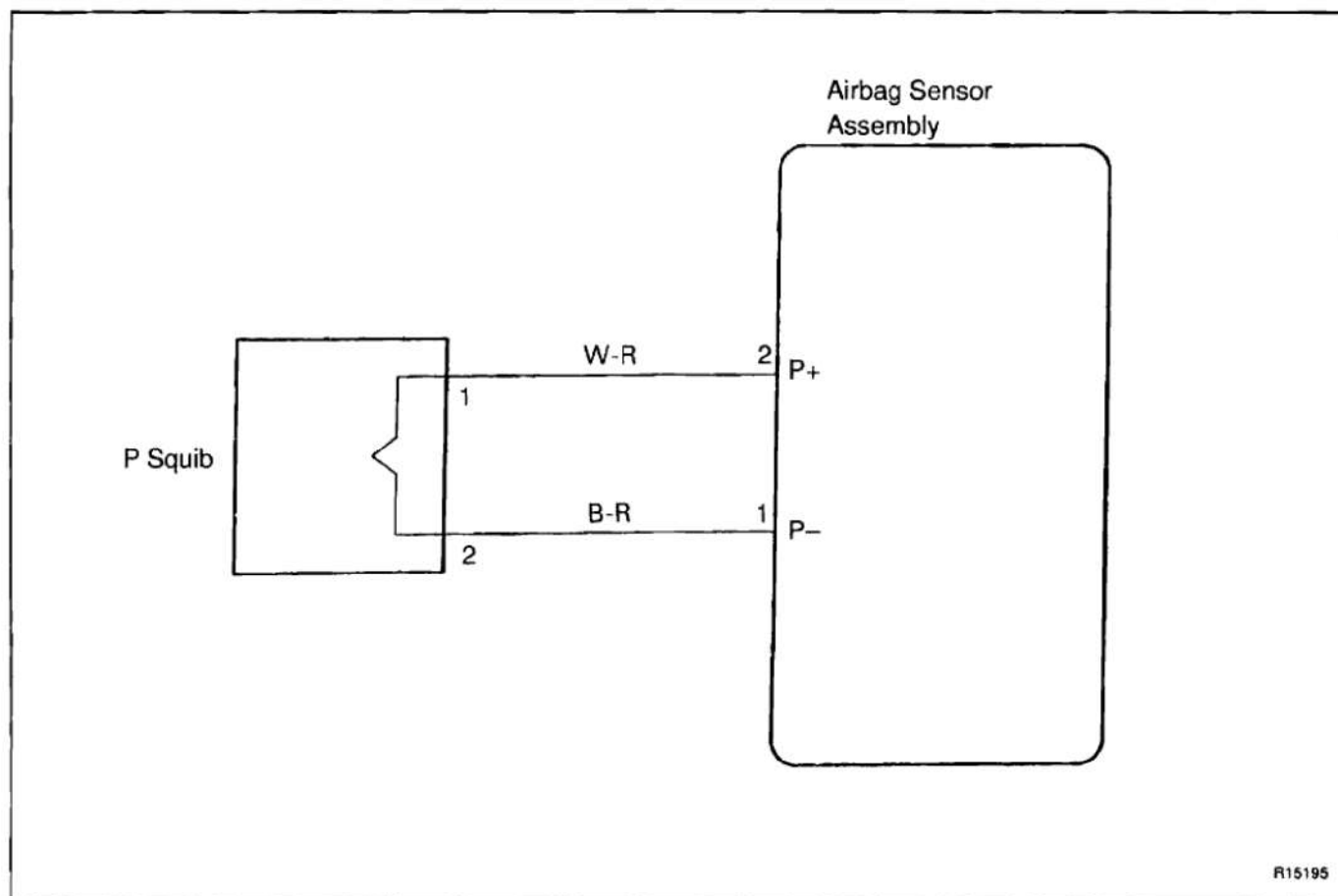
The P squib circuit consists of the airbag sensor assembly and front passenger airbag assembly. It causes the airbag to deploy when the airbag deployment conditions are satisfied.

For details of the function of each components, see FUNCTION OF COMPONENTS on page RS-4.

DTC 54 is recorded when an open is detected in the P squib circuit.

DTC No.	DTC Detecting Condition	Trouble Area
54	• Open circuit in P+ wire harness or P- wire harness of squib • P squib malfunction • Airbag sensor assembly malfunction	• Front passenger airbag assembly (P squib) • Airbag sensor assembly • Wire harness

WIRING DIAGRAM

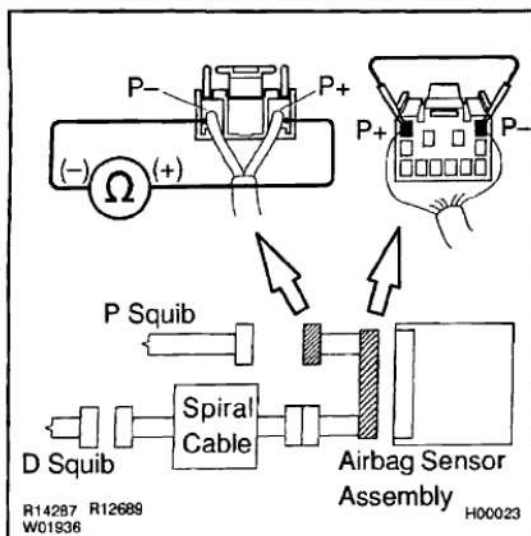


INSPECTION PROCEDURE

1	Preparation. (See step "1" on page RS-38)
----------	--



2 Check P squib circuit.



PREPARATION:

Using a service wire, connect P+ and P- on airbag sensor assembly connector.

CHECK:

For the connector (on the airbag sensor assembly side) between the airbag sensor assembly and front passenger airbag assembly measure the resistance between P+ and P-.

OK:

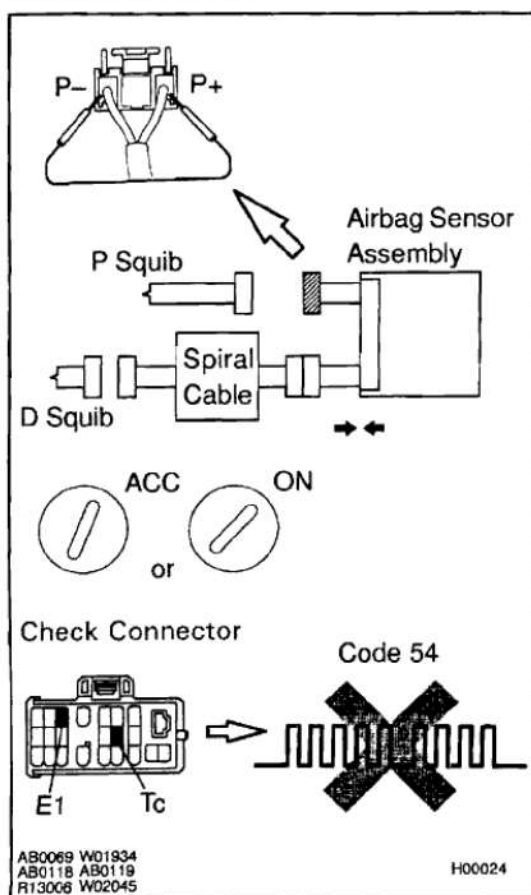
Resistance: Below 1 Ω

NG

Repair or replace harness or connector between airbag sensor assembly and front passenger airbag assembly.

OK

3 Check airbag sensor assembly.



PREPARATION:

- Connect the connector to the airbag sensor assembly.
- Using a service wire, connect P+ and P- on airbag sensor assembly side of the connector between the airbag sensor assembly and front passenger airbag assembly.
- Connect negative (-) terminal cable to battery, and wait at least 2 seconds.

CHECK:

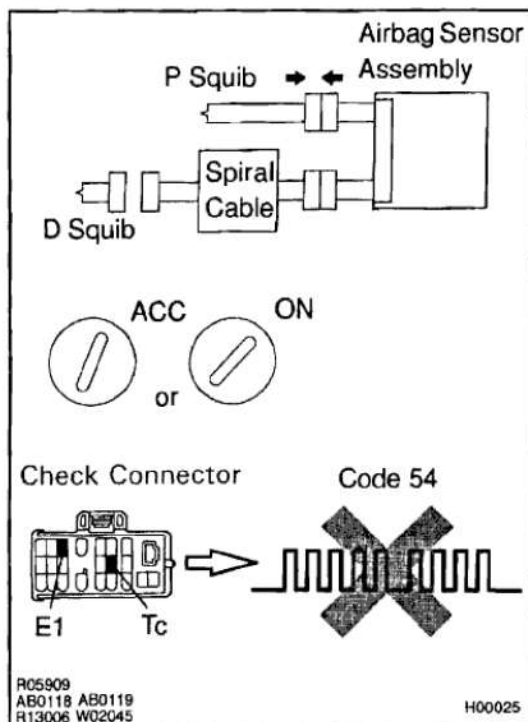
- Turn the ignition switch to ACC or ON and wait at least 20 seconds.
- Clear malfunction code stored in memory. (See page RS-33)
- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Using SST, connect terminals Tc and E1 of check connector. SST 09843-18020
- Check DTC.

OK:

DTC 54 is not output.

HINT:

Codes other than code 54 may be output at this time, but they are not relevant to this check.

NG**Replace airbag sensor assembly.****OK****4****Check P squib.****PREPARATION:**

- Turn the ignition switch to LOCK.
- Disconnect the negative (–) terminal cable from the battery, and wait at least 90 seconds.
- Connect the front passenger airbag assembly connector.
- Connect the negative (–) terminal cable to the battery, and wait at least 2 seconds.

CHECK:

- Turn the ignition switch to ACC or ON and wait at least 20 seconds.
- Clear malfunction code stored in memory. (See page RS-33)
- Turn the ignition switch to LOCK, and wait at least 20 seconds.
- Turn the ignition switch to ACC or ON, and wait at least 20 seconds.
- Using SST, connect terminals Tc and E1 of check connector.
SST 09843 – 18020
- Check DTC.

OK:**DTC 54 is not output.****HINT:**

Codes other than code 54 may be output at this time, but they are not relevant to this check.

NG**Replace front passenger airbag assembly.****OK**

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use the simulation method to check.

SRS Warning Light Circuit Malfunction (Always lit up, when ignition switch is in LOCK position.)

CIRCUIT DESCRIPTION

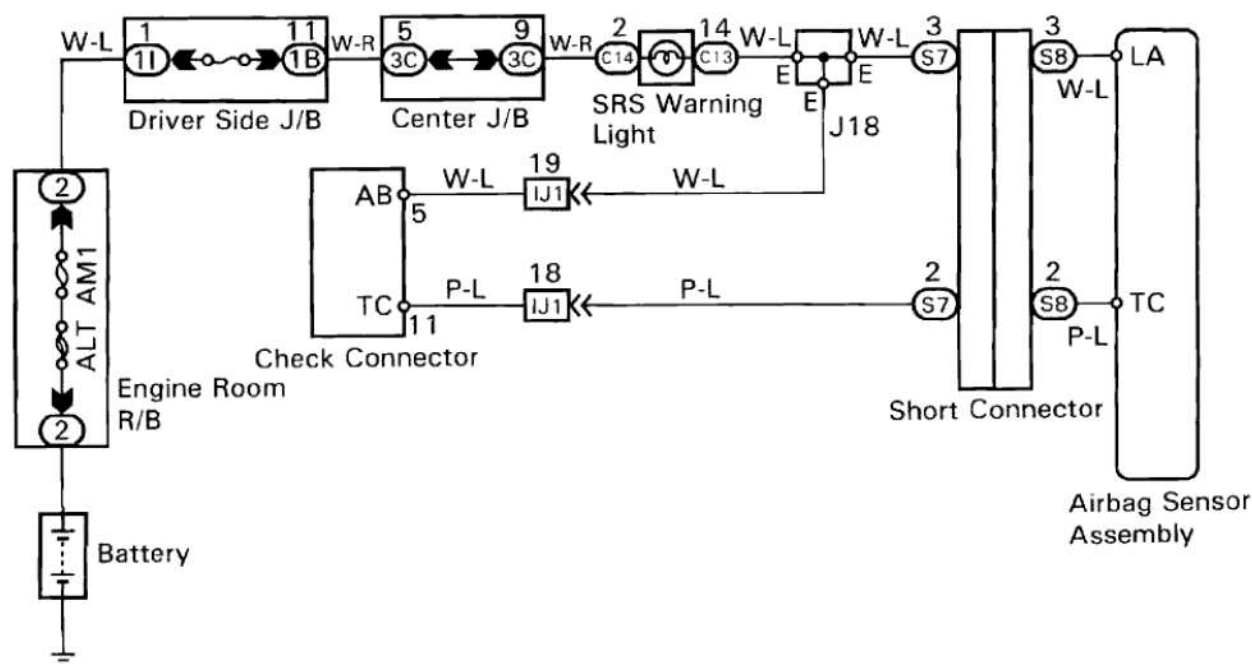
The SRS warning light is located on the combination meter.

When the SRS is normal, the SRS warning light lights up for approx. 6 seconds after the ignition switch is turned from the LOCK position to ACC or ON position, and then turns off automatically.

If there is a malfunction in the SRS, the SRS warning light lights up to inform the driver of the abnormality.

When terminals Tc and E1 of the check connector are connected, the DTC is displayed by the blinking of the SRS warning light.

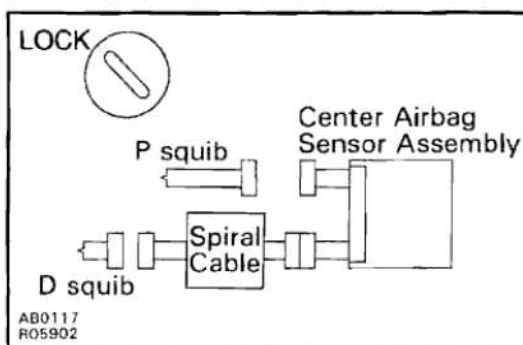
WIRING DIAGRAM



W03284

INSPECTION PROCEDURE

1 Preparation.

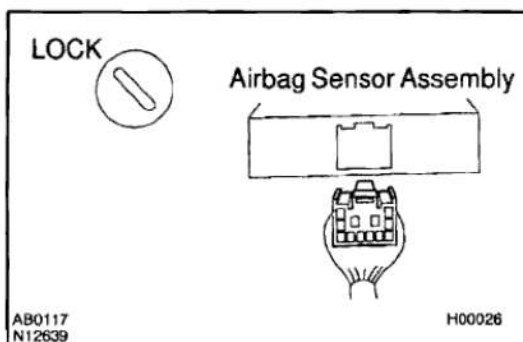
**PREPARATION:**

- Disconnect the negative (–) terminal cable from the battery, and wait at least 90 seconds.
- Remove steering wheel pad. (See SR section)
- Disconnect the connector of front passenger airbag assembly. (See page RS-13)

CAUTION:

Store the steering wheel pad with the front surface facing upward.

2 Does SRS warning light turn off?

**PREPARATION:**

- Turn the ignition switch to LOCK.
- Disconnect the negative (–) terminal cable from the battery, and wait at least 90 seconds.
- Disconnect the airbag sensor assembly connector.
- Connect the negative (–) terminal cable to battery.

CHECK:

Check operation of SRS warning light.

NO

Check SRS warning light circuit or terminal AB circuit of check connector.

YES

Replace airbag sensor assembly.

SRS Warning Light Circuit Malfunction (Does not light up, when ignition switch is turned to ACC or ON.)

CIRCUIT DESCRIPTION

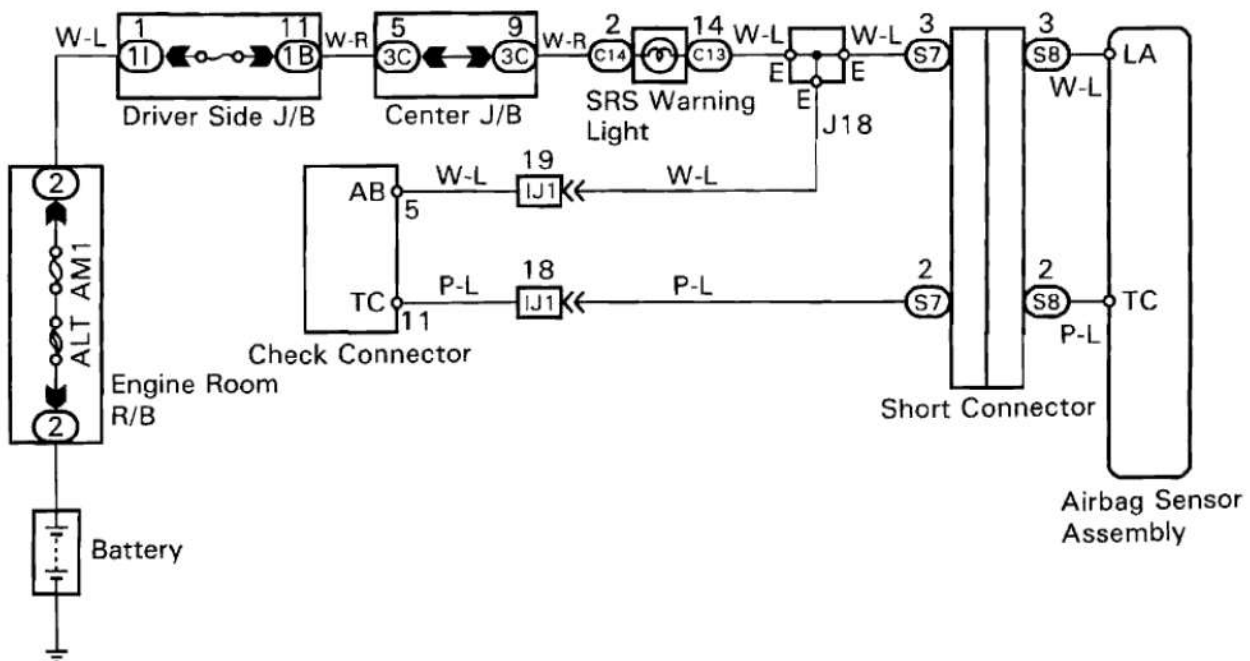
The SRS warning light is located on the combination meter.

When the SRS is normal, the SRS warning light lights up for approx. 6 seconds after the ignition switch is turned from LOCK position to ACC or ON position, and then turns off automatically.

If there is a malfunction in the SRS, the SRS warning light lights up to inform the driver of the abnormality.

When terminals Tc and E1 of the check connector are connected, the DTC is displayed by the blinking of the SRS warning light.

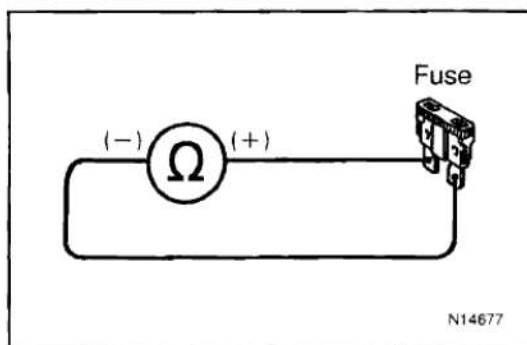
WIRING DIAGRAM



W03284

INSPECTION PROCEDURE

1 Check ECU-B Fuse.

**PREPARATION:**

Remove ECU-B fuse.

CHECK:

Check continuity of ECU-B fuse.

OK:

Continuity

HINT:

- Fuse may be burnt out even if it appears to be OK during visual inspection.
- If fuse is OK, install it.

NG

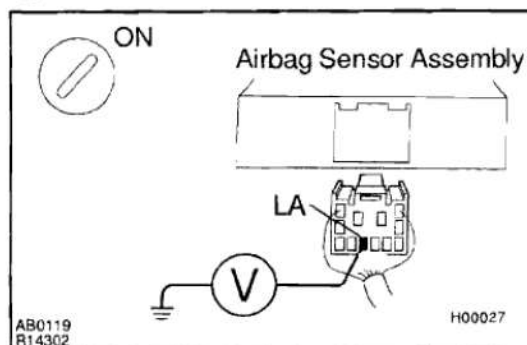
Go to step "5".

OK

2 Preparation. (See step "1" on page RS-38)

RS

3 Check SRS warning light circuit.

**PREPARATION:**

- Connect the negative (-) terminal cable to the battery.
- Turn the ignition switch to ACC or ON.

CHECK:

Measure voltage LA terminal of harness side connector of air-bag sensor assembly.

OK:

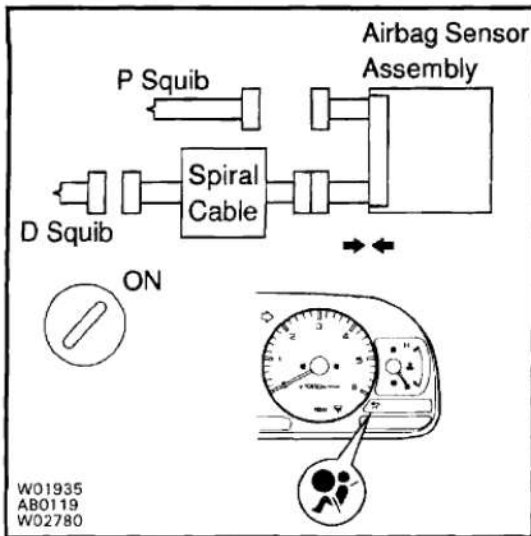
Voltage: 10 – 14 V

NG

Check SRS warning light bulb / repair SRS warning light circuit.

OK

4 Does SRS warning light come on?



PREPARATION:

- Disconnect the negative (—) terminal cable from the battery.
- Connect the airbag sensor assembly connector.
- Connect the negative (—) terminal cable to the battery, and wait at least 2 seconds.
- Turn the ignition switch to ACC or ON.

CHECK:

Check operation of SRS warning light.

NO

Check terminal LA of airbag sensor assembly. If normal, replace airbag sensor assembly.

YES

From the results of the above inspection, the malfunctioning part can now be considered normal. To make sure of this, use simulation method to check.

5 Is new ECU-B fuse burnt out again?

NO

Using simulation method, reproduce malfunction symptoms. (See page IN-24)

YES

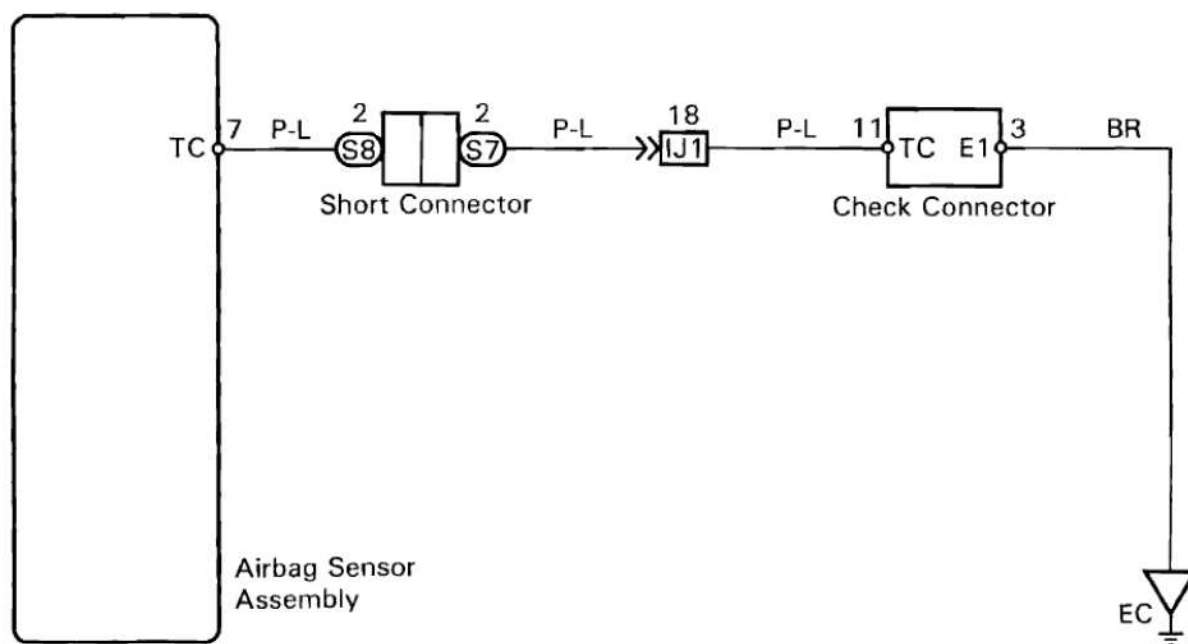
Check harness between ECU-B fuse and SRS warning light.

Tc Terminal Circuit

CIRCUIT DESCRIPTION

By connecting terminals Tc and E1 of the check connector the airbag sensor assembly is set in the DTC output mode. The DTCs are displayed by the blinking of the SRS warning light.

WIRING DIAGRAM

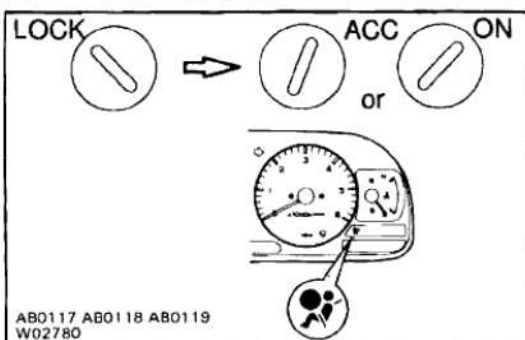


W03282

INSPECTION PROCEDURE

If the DTC is not displayed, do the following troubleshooting.

- | | |
|----------|---|
| 1 | Does SRS warning light up for approx. 6 seconds? |
|----------|---|



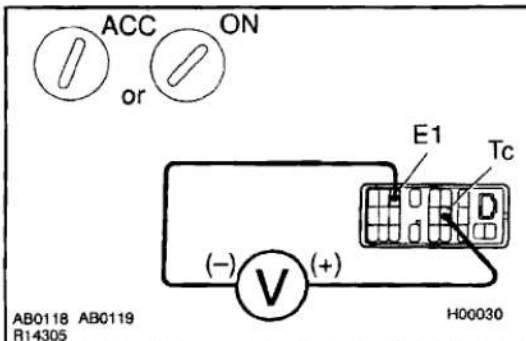
PREPARATION:

Check operation of SRS warning light after the ignition switch is turned from the LOCK position to ACC or ON position.

NO

Check SRS warning light system.
(See page RS-32)

YES

2 Check voltage between terminals Tc and E1 of check connector.**PREPARATION:**

Turn the ignition switch to ACC or ON.

CHECK:

Measure voltage between terminals Tc and E1 of check connector.

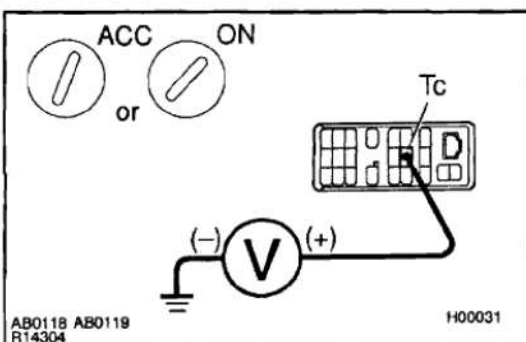
OK:

Voltage; 10 – 14 V

OK

Go to step "4".

NG

3 Check voltage between terminals Tc of check connector and body ground.**CHECK:**

Measure voltage between terminal Tc of check connector and body ground.

OK:

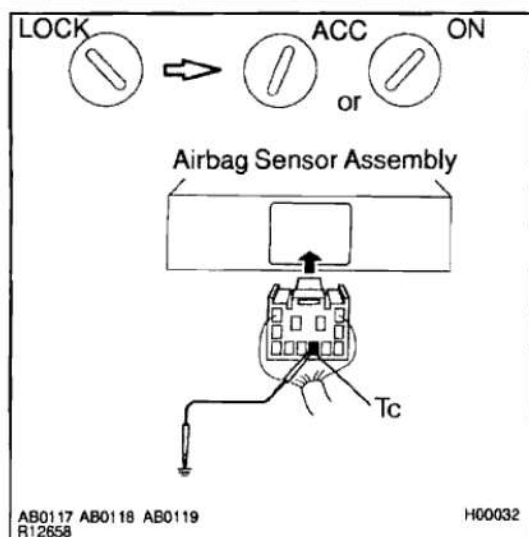
Voltage: 10 – 14 V

OK

Check harness between terminal E1 of check connector and body ground.

NG

4 Check airbag sensor assembly.



PREPARATION:

- Turn the ignition switch to LOCK.
- Disconnect negative (–) terminal cable from the battery, and wait at least 90 seconds.
- Remove steering wheel pad. (See SR section)
- Disconnect the connector of front passenger airbag assembly. (See page RS-13)
- Disconnect the airbag sensor assembly connector. (See page RS-25)
- Insert service wire into terminal Tc from back side as shown.
- Connect airbag sensor assembly connector with service wire.
- Connect the negative (–) terminal cable to battery.
- Turn the ignition switch to ACC or ON and wait at least 20 seconds.
- Connect service wire of terminal Tc to body ground.

CHECK:

Check operation of SRS warning light.

OK:

SRS warning light comes on.

NOTICE:

Never make a mistake with the terminal connection position as this will cause a malfunction.

OK

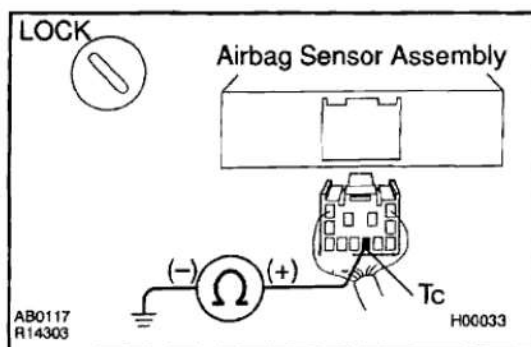
Check harness between airbag sensor assembly and check connector.

NG

Replace airbag sensor assembly.

If the DTC is displayed without a DTC check procedure, do the following troubleshooting.

- | | |
|----------|--|
| 1 | Check resistance between terminal Tc of airbag sensor assembly and body ground. |
|----------|--|

**PREPARATION:**

- (a) Turn the ignition switch to LOCK.
- (b) Disconnect negative (–) terminal cable from the battery, and wait at least 90 seconds.
- (c) Disconnect airbag sensor assembly connector.

CHECK:

Check resistance between terminal Tc of airbag sensor assembly connector and body ground.

OK:

Resistance: 1MΩ or Higher

NG

Repair or replace harness or connector.

OK

Replace airbag sensor assembly.

**SERVICE SPECIFICATIONS
TORQUE SPECIFICATIONS**

RS02T-1C

Part tightened	N·m	kgf·cm	ft·lbf
Steering wheel	36	360	26
Steering wheel pad	9.0	90	80 in·lbf
Front passenger airbag assembly x Instrument panel reinforcement	18	184	13
Airbag sensor assembly	20	200	14