

TOYOTA

REPAIR MANUAL SUPPLEMENT FOR CHASSIS & BODY

LAND CRUISER

(Station Wagon)

**FZJ80 series
HZJ80 series
HDJ80 series**

Jan., 1995

FOREWORD

This supplement has been prepared to provide information covering general service repairs for the chassis and body of the TOYOTA LAND CRUISER (Station Wagon) which underwent changes in January, 1995.

Applicable models: FZJ80 series
HZJ80 series
HDJ80 series

For the service specifications and repair procedures of the above model other than those listed in this supplement, refer to the following manuals.

Manual Name	Pub. No.
• Land Cruiser (Station Wagon) Chassis and Body Repair Manual	RM184E
• Land Cruiser (Hardtop/Canvas Top/ Station Wagon) Chassis and Body Repair Manual Supplement	RM290E
Jan., 1992	RM315E
Aug., 1992	
• 1FZ-F, 1FZ-FE Engine Repair Manual	RM321E
• 1FZ-FE Engine Repair Manual Supplement	RM436E
• 1PZ, 1HZ, 1HD-T Engine Repair Manual	RM172E
• 1HD-FT Engine Repair Manual	RM437E
• A442F Automatic Transmission Repair Manual	RM314E
• Land Cruiser (Station Wagon) Electrical Wiring Diagram	EWD169F
• Land Cruiser (Station Wagon) Electrical Wiring Diagram Supplement	EWD232F

All information in this manual is based on the latest product information at the time of publication. However, specifications and procedures are subject to change without notice.

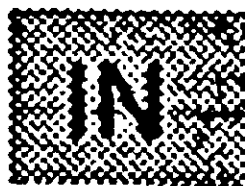
TOYOTA MOTOR CORPORATION

NOTE: The following screen toning letters sections refer to the Land Cruiser (Station Wagon) Repair Manual for Chassis and Body (Pub. No. RM184E, RM290E, RM315E).

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INTRODUCTION

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HOW TO USE THIS MANUAL INDEX

IN02E-01

An INDEX is provided on the first page of each section to guide you to the item to be repaired. To assist you in finding your way through the manual, the Section Title and major heading are given at the top of every page.

IN

GENERAL DESCRIPTION

IN02G-01

At the beginning of each section, a general Description is given that pertains to all repair operations contained in that section.

Read these precautions before starting any repair task.

IN02J-01

PREPARATION

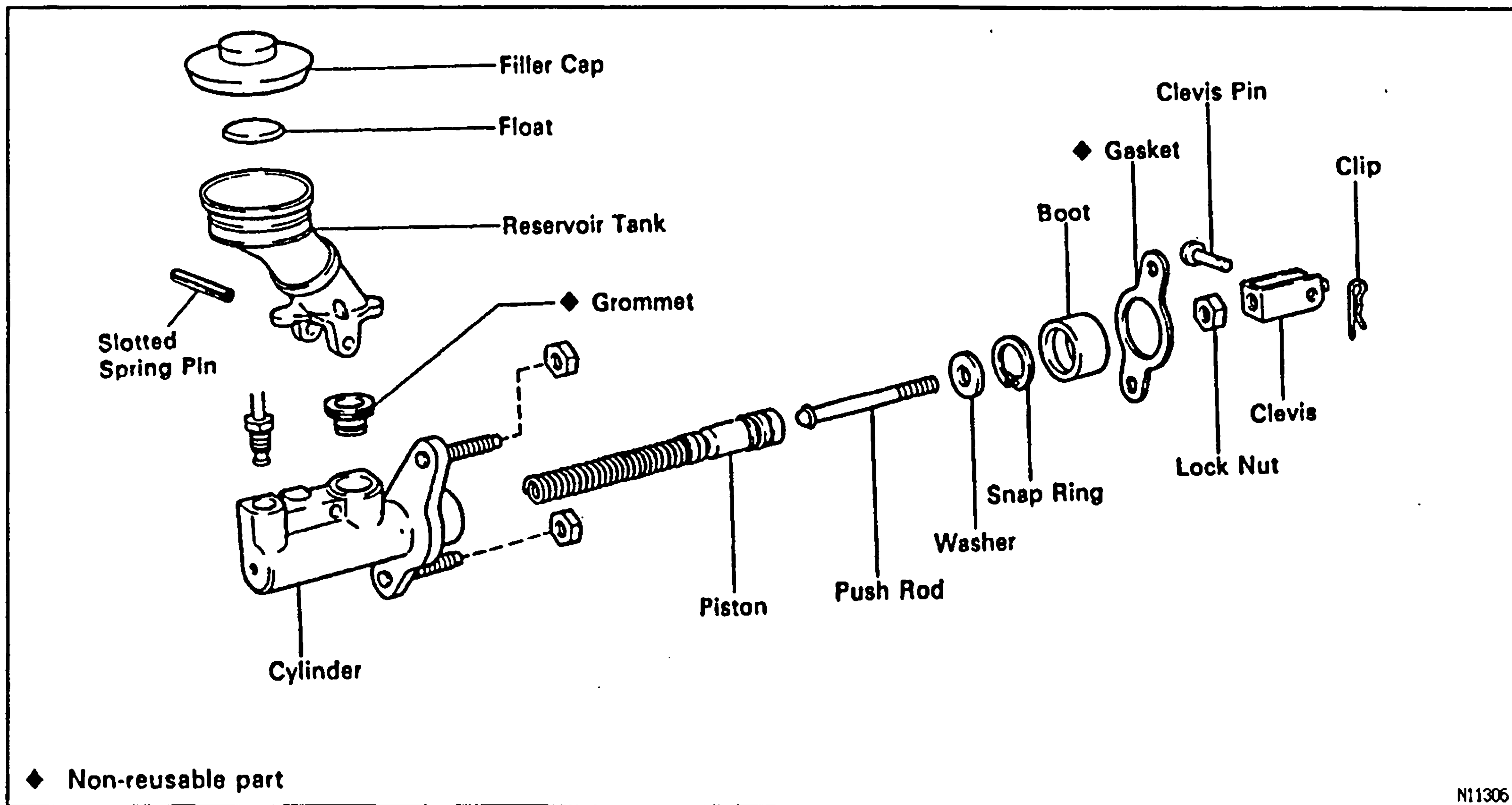
Preparation lists the SST (Special Service Tools), recommended tools, equipment, lubricant and SSM (Special Service Materials) which should be prepared before beginning the operation and explains the purpose of each one.

IN02K-01

REPAIR PROCEDURES

Most repair operations begin with an overview illustration. It identifies the components and shows how the parts fit together.

Example:



The procedures are presented in a step—by—step format:

- The illustration shows what to do and where to do it.
- The task heading tells what to do.
- The detailed text tells how to perform the task and gives other information such as specifications and warnings.

Example:

*Illustration:
what to do and where*

Task heading : what to do

21. CHECK PISTON STROKE OF OVERDRIVE BRAKE

(a) Place SST and a dial indicator onto the overdrive brake piston as shown in the illustration.

SST 09350-30020 (09350-06120)

Set part No.

Component part No.

Detailed text: how to do task

(b) Measure the stroke applying and releasing the compressed air (392 — 785 kPa, 4 — 8 kgf/cm² or 57 — 114 psi) as shown in the illustration.

Piston stroke: **1.40 — 1.70 mm (0.0551 — 0.0669 in.)**

Specification

This format provides the experienced technician with a FAST TRACK to the information needed. The upper case task heading can be read at a glance when necessary, and the text below it provides detailed information. Important specifications and warnings always stand out in bold type.

REFERENCES

References have been kept to a minimum. However, when they are required you are given the page to refer to.

SPECIFICATIONS

Specifications are presented in bold type throughout the text where needed. You never have to leave the procedure to look up your specifications. They are also found at the end of each section, for quick reference.

CAUTIONS, NOTICES, HINTS:

- **CAUTIONS** are presented in bold type, and indicate there is a possibility of injury to you or other people.
- **NOTICES** are also presented in bold type, and indicate the possibility of damage to the components being repaired.
- **HINTS** are separated from the text but do not appear in bold. They provide additional information to help you perform the repair efficiently.

IN

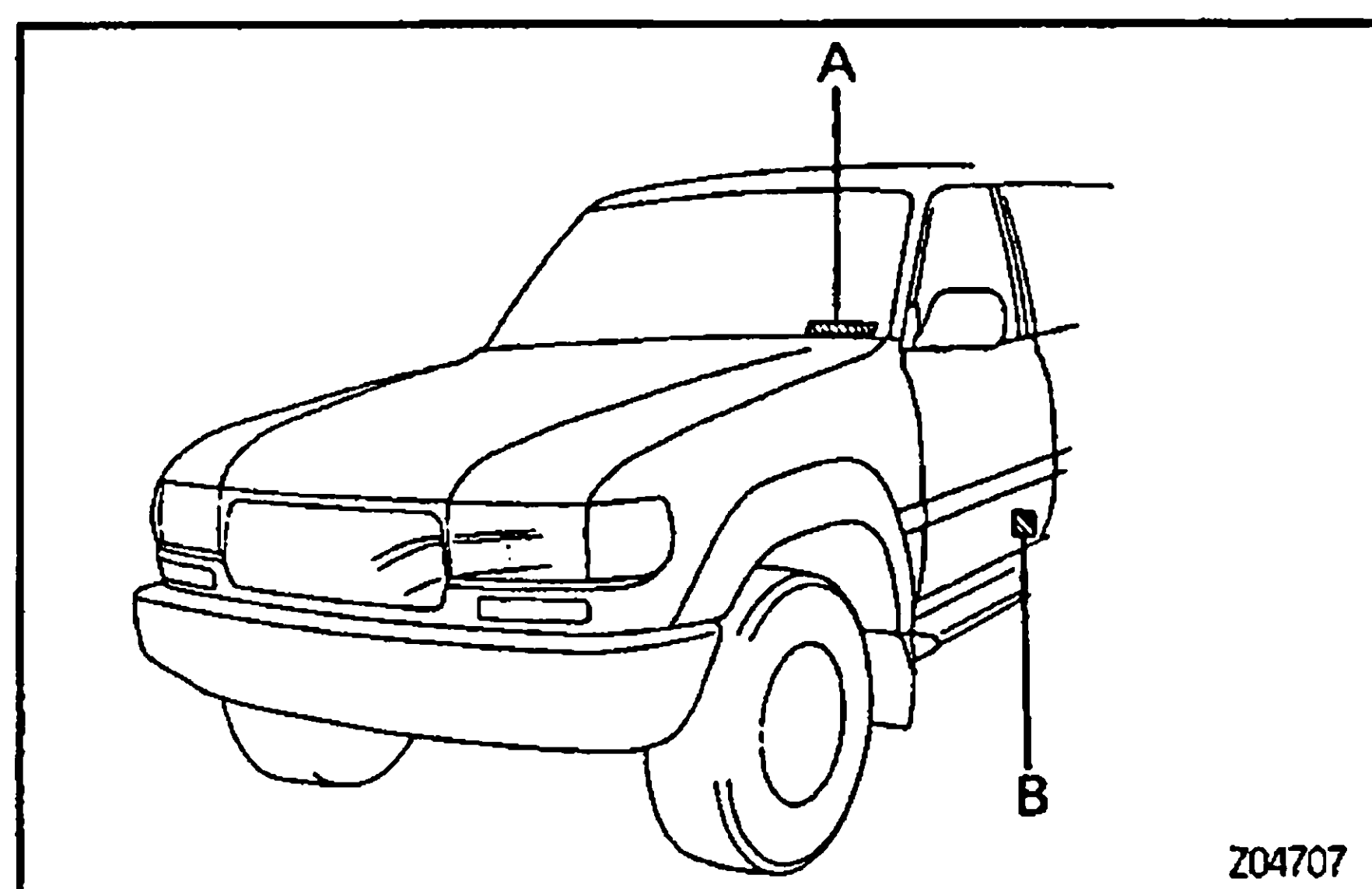
SI UNIT

IN02P-02

The **UNITS** given in this manual are primarily expressed according to the **SI UNIT** (International System of Unit), and alternately expressed in the metric system and in the English System.

Example:

Torque: **30 N·m (310 kgf·cm, 22 ft·lbf)**

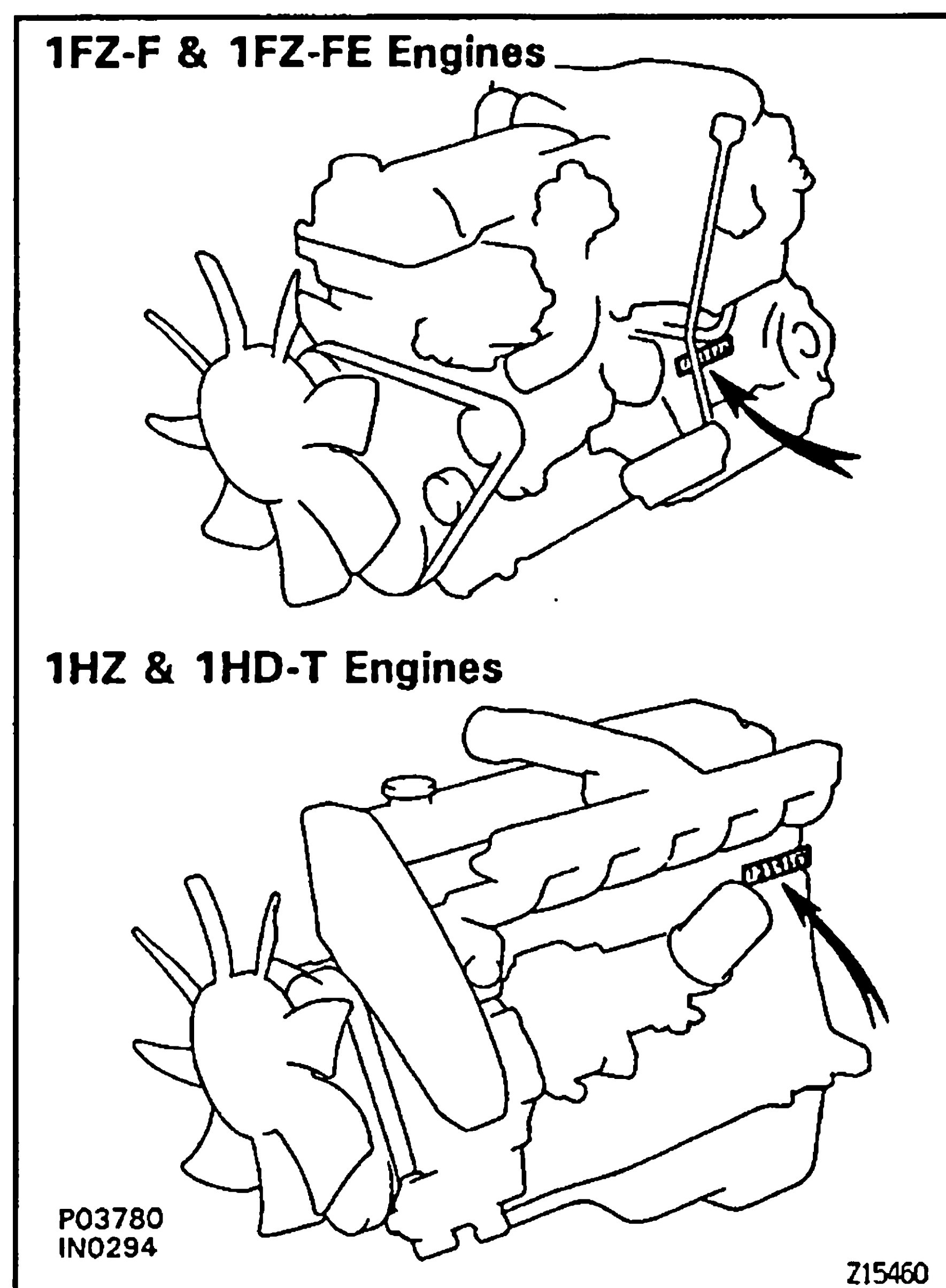


IDENTIFICATION INFORMATION VEHICLE IDENTIFICATION NUMBER

IN003-0R

The vehicle identification number is stamped on the vehicle identification number plate and manufacture's plate.

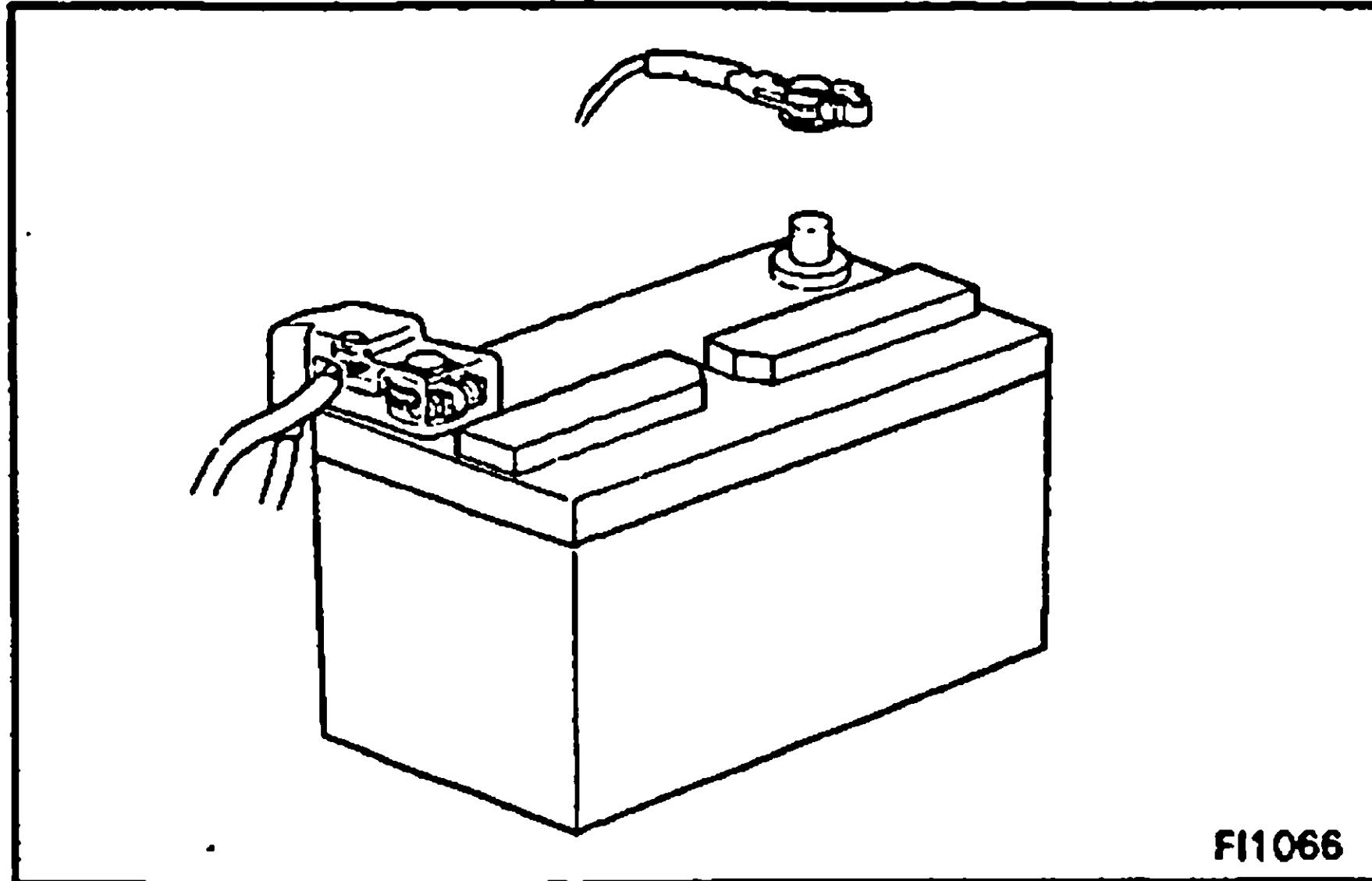
- A. Vehicle Identification Number Plate
- B. Manufacture's Plate



ENGINE SERIAL NUMBER

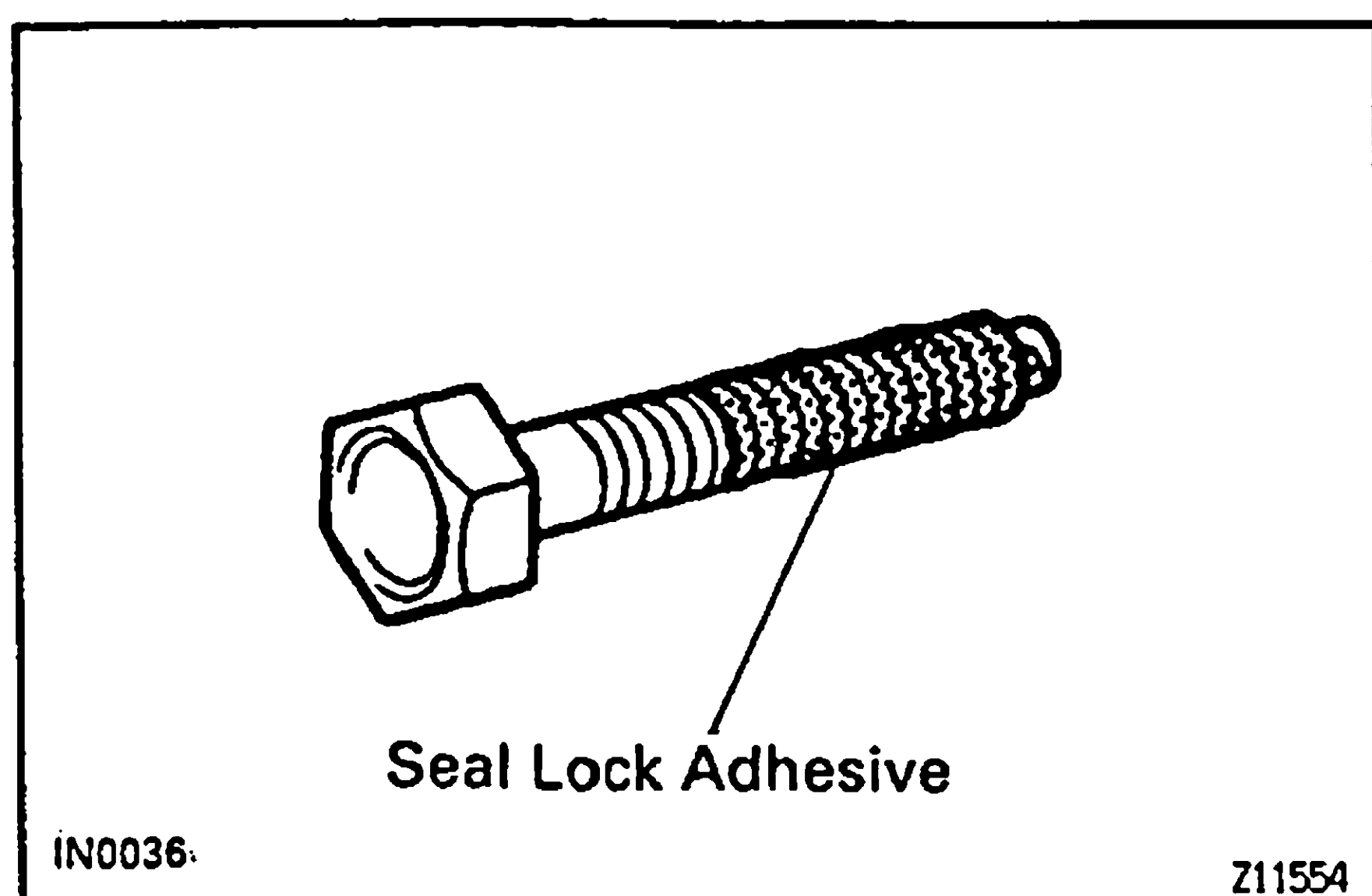
IN05C-01

The engine serial number is stamped on the engine block as shown.



GENERAL REPAIR INSTRUCTIONS

1. Use fender, seat and floor covers to keep the vehicle clean and prevent damage.
2. During disassembly, keep parts in the appropriate order to facilitate reassembly.
3. Observe the following:
 - (a) Before performing electrical work, disconnect the negative (—) terminal cable from the battery.
 - (b) If it is necessary to disconnect the battery for inspection or repair, always disconnect the negative (—) terminal cable which is grounded to the vehicle body.
 - (c) To prevent damage to the battery terminal, loosen the cable nut and raise the cable straight up without twisting or prying it.
 - (d) Clean the battery terminals and cable ends with a clean shop rag. Do not scrape them with a file or other abrasive objects.
 - (e) Install the cable ends to the battery terminals with the nut loose, and tighten the nut after installation. Do not use a hammer to tap the cable ends onto the terminals.
 - (f) Be sure the cover for the positive (+) terminal is properly in place.
4. Check hose and wiring connectors to make sure that they are secure and correct.
5. Non—reusable parts
 - (a) Always replace cotter pins, gaskets, O—rings and oil seals etc. with new ones.
 - (b) Non—reusable parts are indicated in the component illustrations by the "◆" symbol.



6. Precoated parts

Precoated parts are bolts and nuts, etc. that are coated with a seal lock adhesive at the factory.

 - (a) If a precoated part is retightened, loosened or caused to move in any way, it must be recoated with the specified adhesive.

IN

- (b) When reusing precoated parts, clean off the old adhesive and dry with compressed air. Then apply the specified seal lock adhesive to the bolt, nut or threads.
 - (c) Precoated parts are indicated in the component illustrations by the "★" symbol.
7. When necessary, use a sealer on gaskets to prevent leaks.
 8. Carefully observe all specifications for bolt tightening torques. Always use a torque wrench.
 9. Use of special service tools (SST) and special service materials (SSM) may be required, depending on the nature of the repair. Be sure to use SST and SSM where specified and follow the proper work procedure. A list of SST and SSM can be found in the preparation part at the front of each section in this manual.

Medium Current Fuse and High Current Fuse
Equal Amperage Rating

BE1367

10. When replacing fuses, be sure the new fuse has the correct amperage rating. DO NOT exceed the rating or use one with a lower rating.

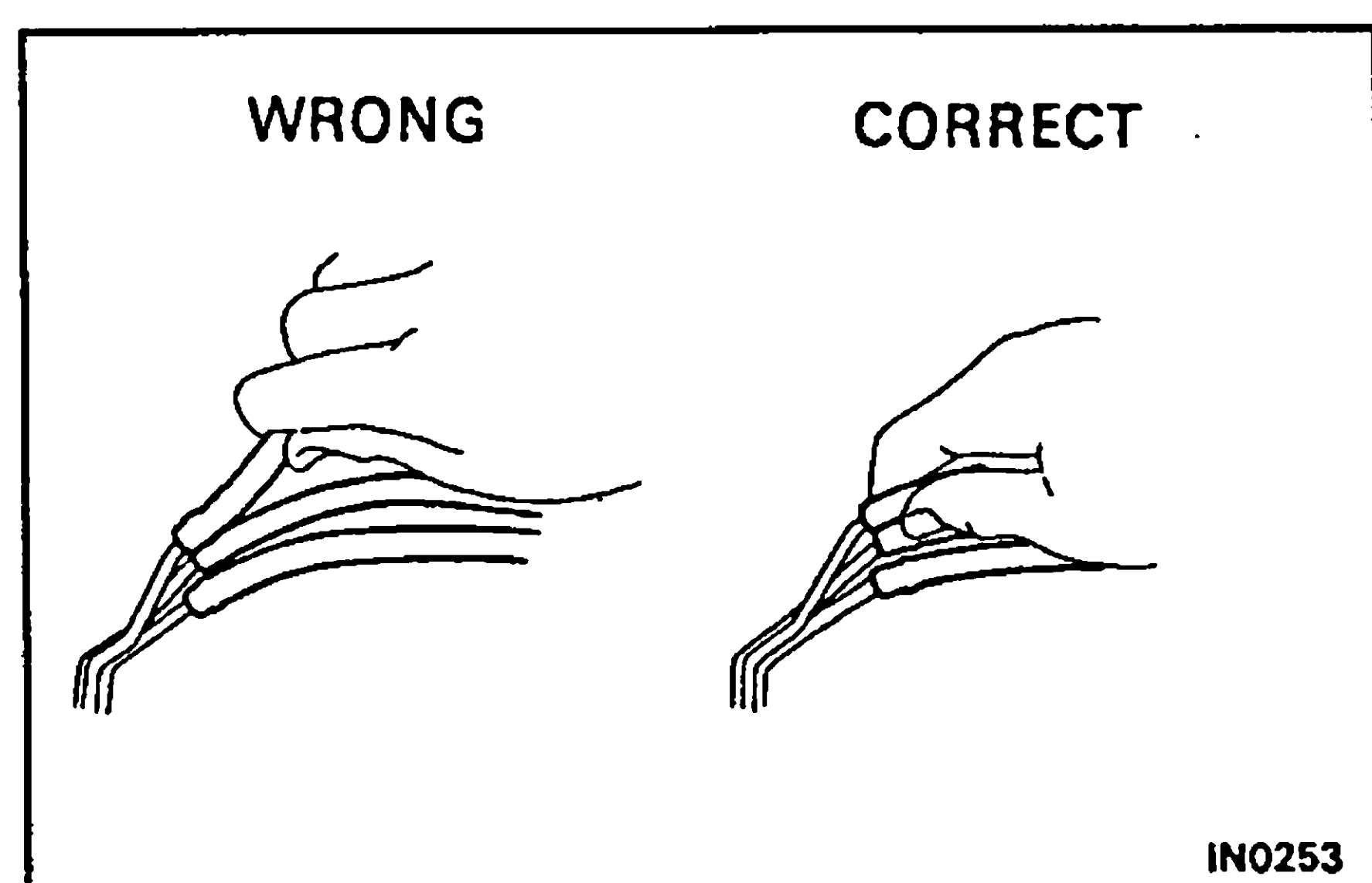
Illustration	Symbol	Part Name	Abbreviation
 BE5594	 IN0385	FUSE	FUSE
 BE5595	 IN0388	MEDIUM CURRENT FUSE	M-FUSE
 BE5596	 IN0367	HIGH CURRENT FUSE	H-FUSE
 BE5597	 IN0367	FUSIBLE LINK	FL
 BE5598	 IN0388	CIRCUIT BREAKER	CB

11. Care must be taken when jacking up and supporting the vehicle. Be sure to lift and support the vehicle at the proper locations (See page IN—18).

- (a) If the vehicle is to be jacked up only at the front or rear end, be sure to block the wheels at the opposite end in order to ensure safety.
- (b) After the vehicle is jacked up, be sure to support it on stands. It is extremely dangerous to do any work on a vehicle raised on a jack alone, even for a small job that can be finished quickly.

12. Observe the following precautions to avoid damage to the following parts:

- (a) Do not open the cover or case of the ECU, PCM or TCM unless absolutely necessary. (If the IC terminals are touched, the IC may be destroyed by static electricity.)



- (b) To disconnect vacuum hoses, pull on the end, not the middle of the hose.

- (c) To pull apart electrical connectors, pull on the connector itself, not the wires.

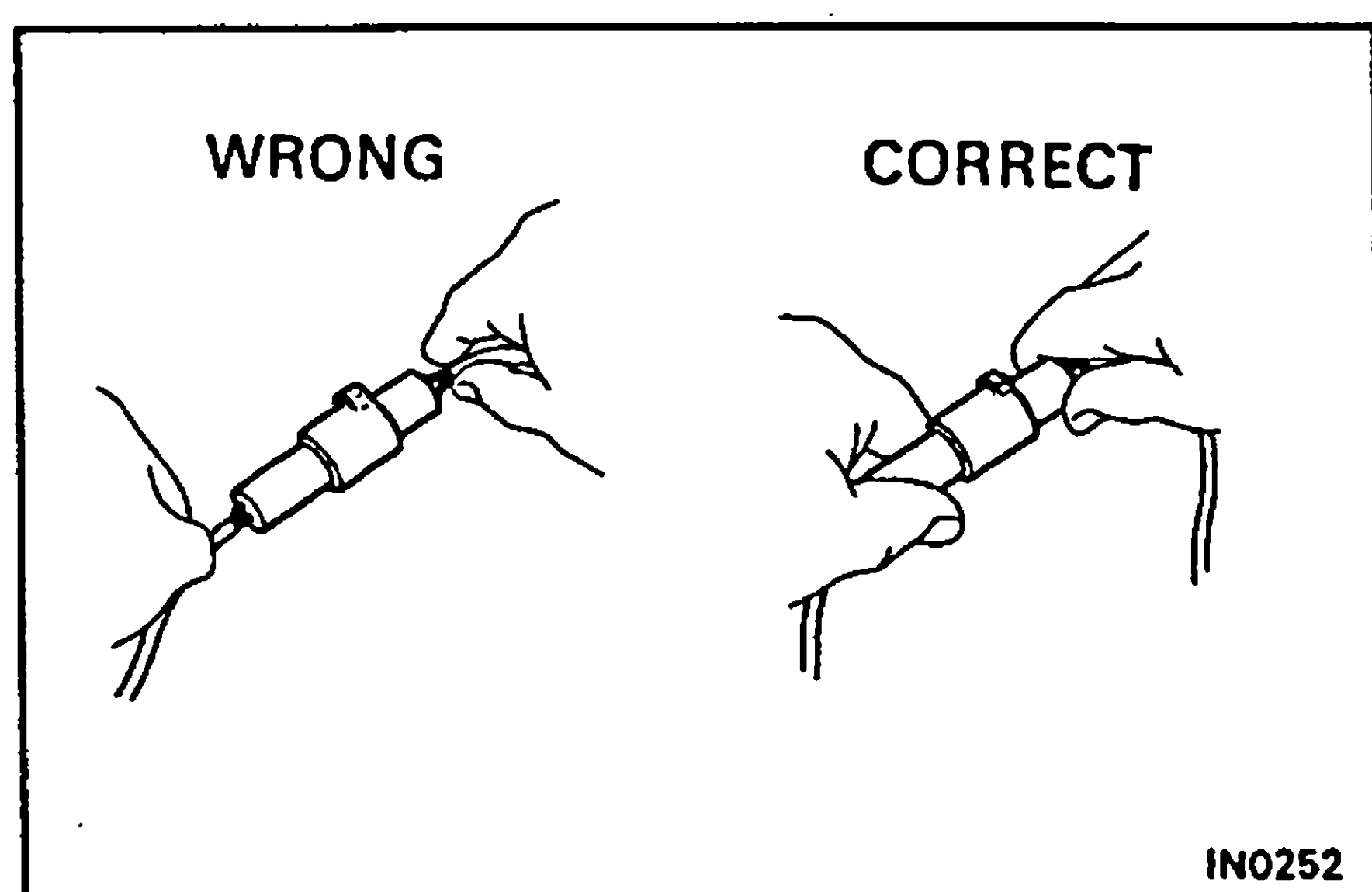
- (d) Be careful not to drop electrical components, such as sensors or relays. If they are dropped on a hard floor, they should be replaced and not reused.

- (e) When steam cleaning an engine, protect the distributor, air filter, and VCV from water.

- (f) Never use an impact wrench to remove or install temperature switches or temperature sensors.

- (g) When checking continuity at the wire connector, insert the tester probe carefully to prevent terminals from bending.

- (h) When using a vacuum gauge, never force the hose onto a connector that is too large. Use a step-down adapter instead. Once the hose has been stretched, it may leak.

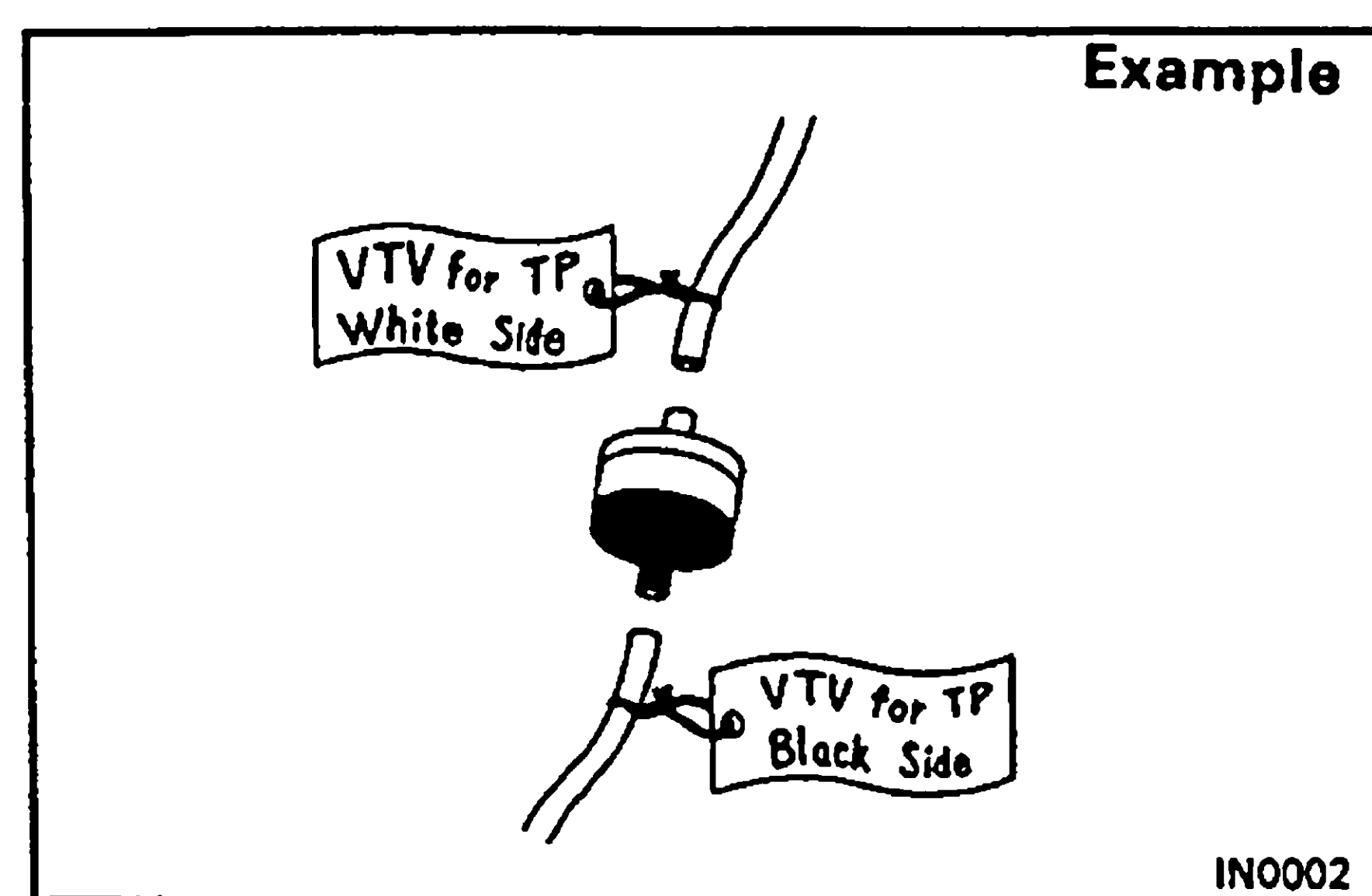


13. Tag hoses before disconnecting them:

- (a) When disconnecting vacuum hoses, use tags to identify how they should be reconnected.

- (b) After completing a job, double check that the vacuum hoses are properly connected. A label under the hood shows the proper layout.

14. Unless otherwise stated, all resistance is measured at an ambient temperature of 20°C (68°F). Because the resistance may be outside specifications if measured at high temperatures immediately after the vehicle has been running, measurements should be made when the engine has cooled down.



PRECAUTION FOR VEHICLES EQUIPPED WITH SRS AIRBAG

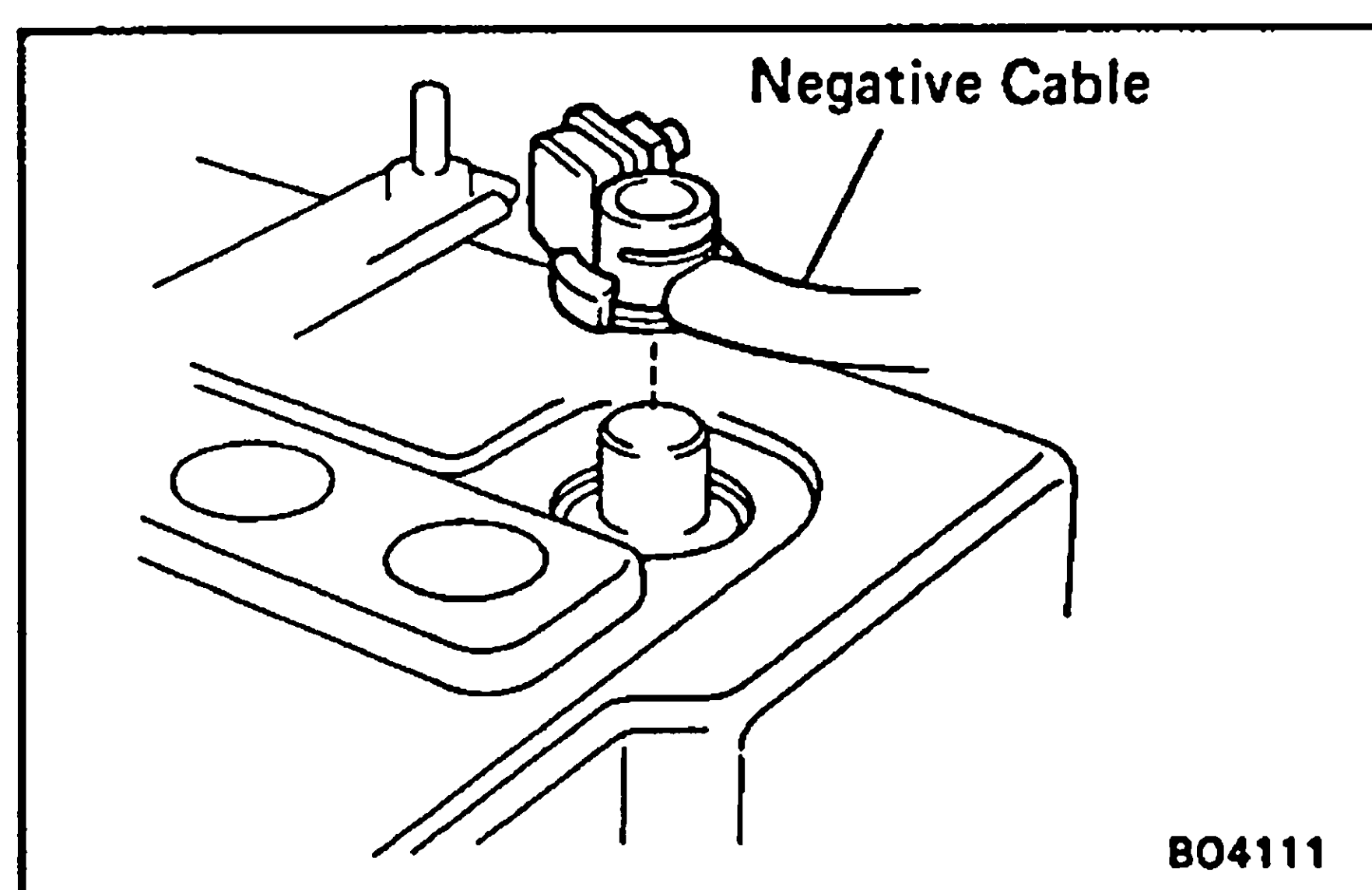
IN061-03

IN

The LAND CRUISER is equipped with an SRS (Supplemental Restraint System), such as the driver airbag, front passenger airbag.

Failure to carry out service operations in the correct sequence could cause the supplemental restraint system to unexpectedly deploy during servicing, possibly leading to a serious accident.

Further, if a mistake is made in servicing the supplemental restraint system, it is possible the SRS may fail to operate when required. Before 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 this manual.



1. Malfunction symptoms of the supplemental restraint system are difficult to confirm, so the diagnostic trouble codes become the most important source of information when troubleshooting. When troubleshooting the supplemental restraint system, always inspect the diagnostic trouble codes before disconnecting the battery (See page RS-2).
2. Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (—) terminal cable is disconnected from the battery.

(The supplemental restraint system is equipped with a back-up power source so that if work is started within 90 seconds of disconnecting the negative (—) terminal cable from the battery, the SRS may deploy.)

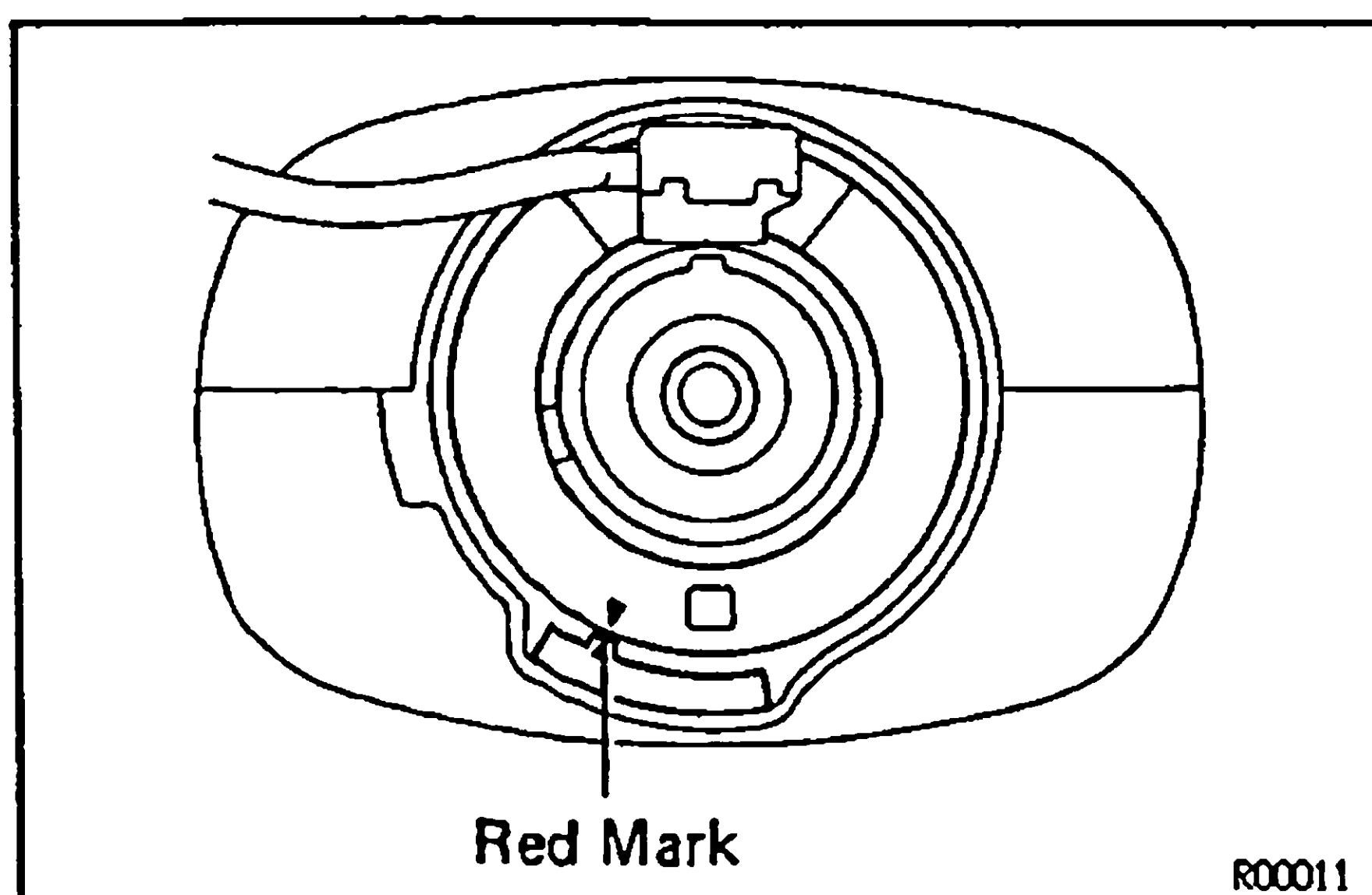
When the negative (—) terminal cable is disconnected from the battery, memory of the clock and audio systems will be cancelled. So before starting work, make a record of the contents memorized by the audio memory system. When work is finished, reset the audio systems as before and adjust the clock.

This vehicle has power seat, power outside rear view mirror and power shoulder belt anchorage, which are all equipped with memory function, it is not possible to make a record of the memory contents.

So when the work is finished, therefore it will be necessary to explain this fact to the customer, and ask the customer to adjust the features and reset the memory.

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 should be inspected (See page RS-9).
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 airbag sensor assembly, steering wheel pad or front passenger airbag assembly in order to reuse it.
7. If the airbag sensor assembly, steering wheel pad or front passenger airbag 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 airbag sensor assembly, steering wheel pad or front passenger airbag assembly directly to hot air or flames.
9. Use a volt/ohmmeter with high impedance (10 k Ω /V minimum) for troubleshooting of the electrical circuit.
10. Information labels are attached to the periphery of the SRS components. Follow the instructions on the notices.
11. After work on the supplemental restraint system is completed, check SRS warning light (See page RS-38).



Spiral Cable (in Combination Switch)

The steering wheel must be fitted correctly to the steering column with the spiral cable at the neutral position, otherwise cable disconnection and other troubles may result. Refer to SR-11 of this manual concerning correct steering wheel installation.

Steering Wheel Pad (with Airbag)

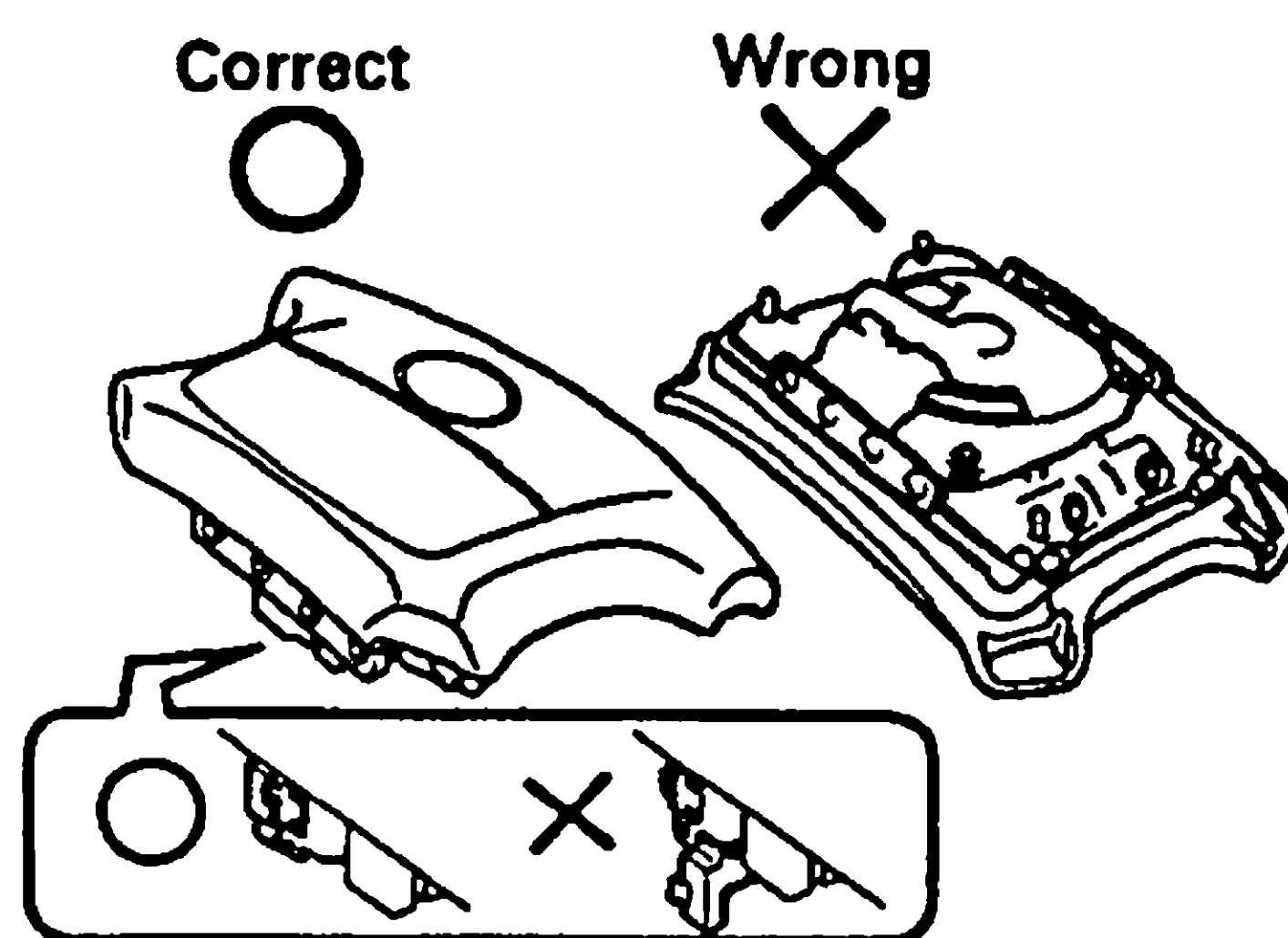
1. When removing the steering wheel pad or handling a new steering wheel pad, it should be placed with the pad top surface facing up.

In this case, the twin—lock type connector lock lever should be in the locked state and care should be taken to place it so the connector will not be damaged. In addition do not store a steering wheel pad on top of another one. Storing the pad with its metallic surface up may lead to a serious accident if the airbag inflates for some reason.

2. Never measure the resistance of the airbag squib. (This may cause the airbag to deploy, which is very dangerous.)
3. Grease should not be applied to the steering wheel pad and the pad should not be cleaned with detergents of any kind.
4. Store the steering wheel pad where the ambient temperature remains below 93°C (200°F), without high humidity and away from electrical noise.
5. When using electric welding, first disconnect the airbag connector (yellow color and 2 pins) under the steering column near the combination switch connector before starting work.
6. When disposing of a vehicle or the steering wheel pad alone, the airbag should be deployed using an SST before disposal (See page RS—12).

Carry out the operation in a safe place away from electrical noise.

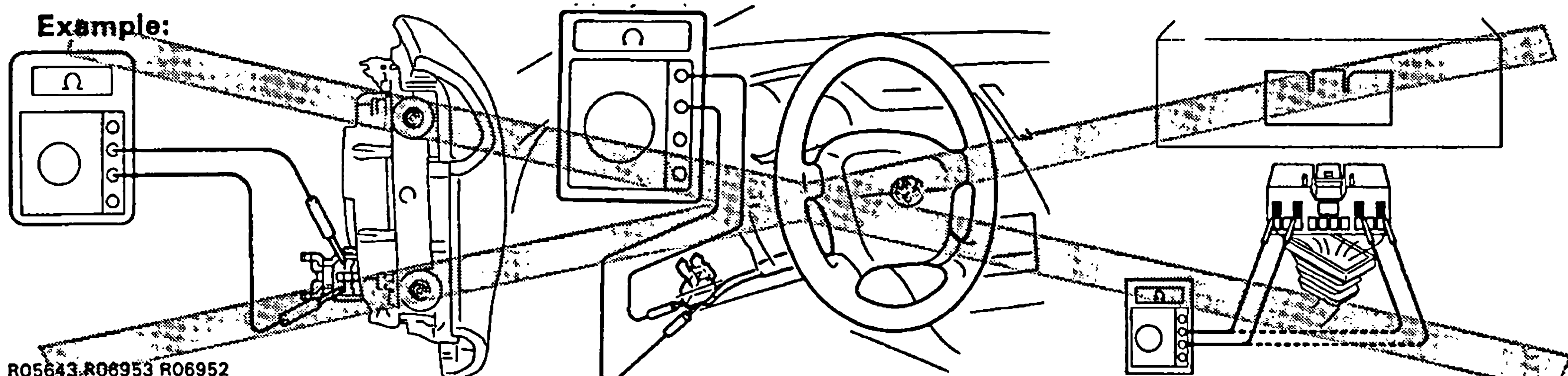
Example:



N01560

Z13953

Example:



R05643 R06953 R06952

Z13950

Airbag Sensor Assembly

1. Never reuse the airbag sensor assembly involved in a collision when the SRS has deployed.
2. The connectors to the airbag sensor assembly should be connected or disconnected with the sensor mounted on the floor. If the connectors are connected or disconnected while the airbag sensor assembly is not mounted to the floor, it could cause undesired ignition of the supplemental restraint system.
3. Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (—) terminal cable is disconnected from the battery, even if only loosening the set bolts of the airbag sensor assembly.

Wire Harness and Connector

The SRS wire harness is integrated with the cowl wire harness assembly and floor wire harness assembly. The wires for the SRS wire harness are encased in a yellow corrugated tube. All the connectors for the system are also a standard yellow color. If the SRS wire harness becomes disconnected or the connector becomes broken due to an accident, etc., repair or replace it as shown on page RS-32.

FOR VEHICLES EQUIPPED WITH A CATALYTIC CONVERTER

19008-00

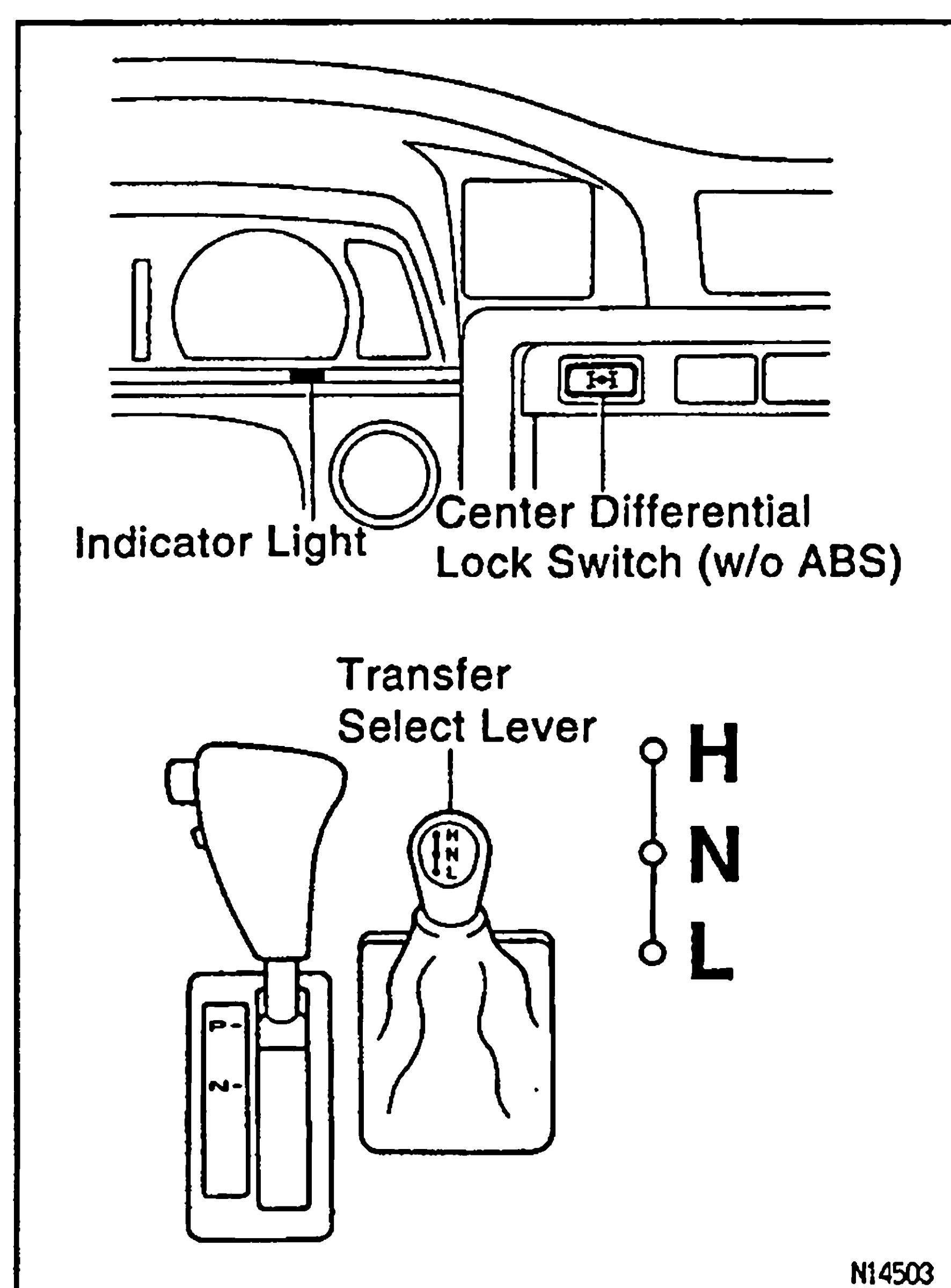
CAUTION: If large amounts of unburned gasoline flow into the converter, it may overheat and create a fire hazard. To prevent this, observe the following precautions and explain them to your customer.

1. Use only unleaded gasoline.
2. Avoid prolonged idling.
Avoid running the engine at idle speed for more than 20 minutes.
3. Avoid spark jump test.
 - (a) Perform spark jump test only when absolutely necessary. Perform this test as rapidly as possible.
 - (b) While testing, never race the engine.
4. Avoid prolonged engine compression measurement.
Engine compression tests must be done as rapidly as possible.
5. Do not run engine when fuel tank is nearly empty.
This may cause the engine to misfire and create an extra load on the converter.
6. Avoid coasting with ignition turned off and prolonged braking.
7. Do not dispose of used catalyst along with parts contaminated with gasoline or oil.

IF VEHICLE IS EQUIPPED WITH MOBILE COMMUNICATION SYSTEM

For vehicles with mobile communication systems such as two-way radios and cellular telephones, observe the following precautions.

- (1) Install the antenna as far as possible away from the Engine ECU, ECU and sensors of the vehicle's electronic system.
- (2) Install the antenna feeder at least 20 cm (7.87 in.) away from the Engine ECU, ECU and sensors of the vehicle's electronics systems. For details about Engine ECU, ECU and sensors locations, refer to the section on the applicable component.
- (3) Do not wind the antenna feeder together with the other wiring. As much as possible, also avoid running the antenna feeder parallel with other wire harnesses.
- (4) Confirm that the antenna and feeder are correctly adjusted.
- (5) Do not install powerful mobile communications system.



WHEN SERVICING FULL-TIME 4WD VEHICLES

IN05E-01

The full-time 4WD Land Cruiser Station Wagon is equipped with the mechanical lock type center differential system. When carrying out any kind of servicing or testing on a full-time 4WD in which the front or rear wheels are made to rotate (braking test, speedometer test, on-vehicle wheel balancing, etc.), or when towing the vehicle, be sure to observe the precautions given below. If incorrect preparations or test procedures are used, the test cannot be successfully carried out, and may be dangerous as well. Therefore, before beginning any such servicing or test, be sure to check the following items:

- (1) Center differential lock type
- (2) w/o ABS:
Center differential mode position (FREE or LOCK)
- (3) Whether wheels should be touching ground or jacked up
- (4) Transmission gear position
- (5) Transfer gear position (H or L)
- (6) Maximum testing vehicle speed
- (7) Maximum testing time

Also be sure to observe the following cautions:

- (1) Never accelerate or decelerate the vehicle suddenly.
- (2) Observe the other cautions given for each individual test.

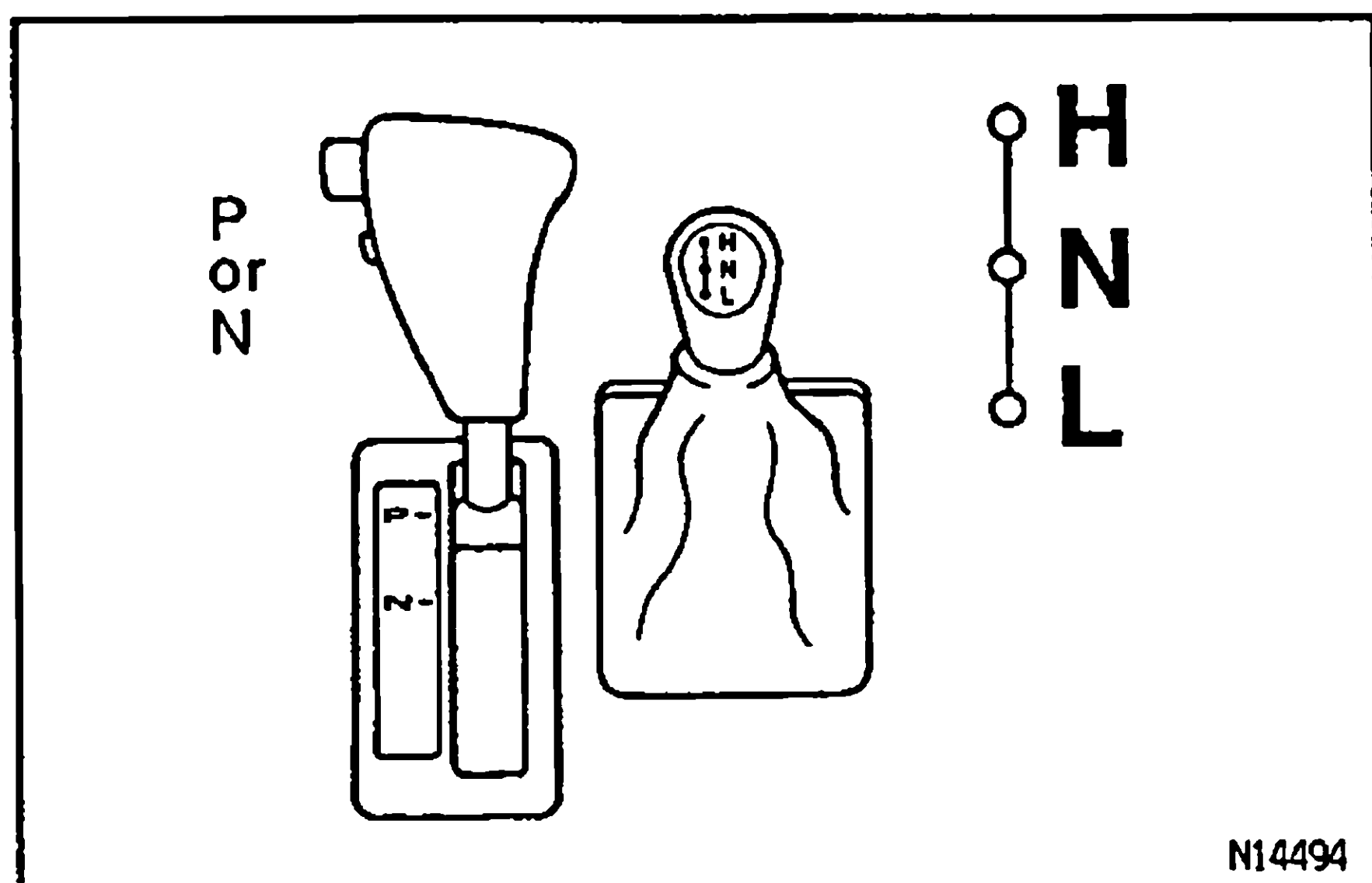
Before Beginning Test

During tests with a brake tester or chassis dynamometer, such as braking force tests or speedometer tests, if only the front or rear wheels are to be rotated, it is necessary to set the position of the center differential to the FREE position or to the LOCK position depending on the type of test being performed.

(1) w/o ABS:

Select the position of the center differential by pushing the center differential lock switch with the transfer select lever to "H" position.

(2) After selecting the position, confirm the operation of indicator light.



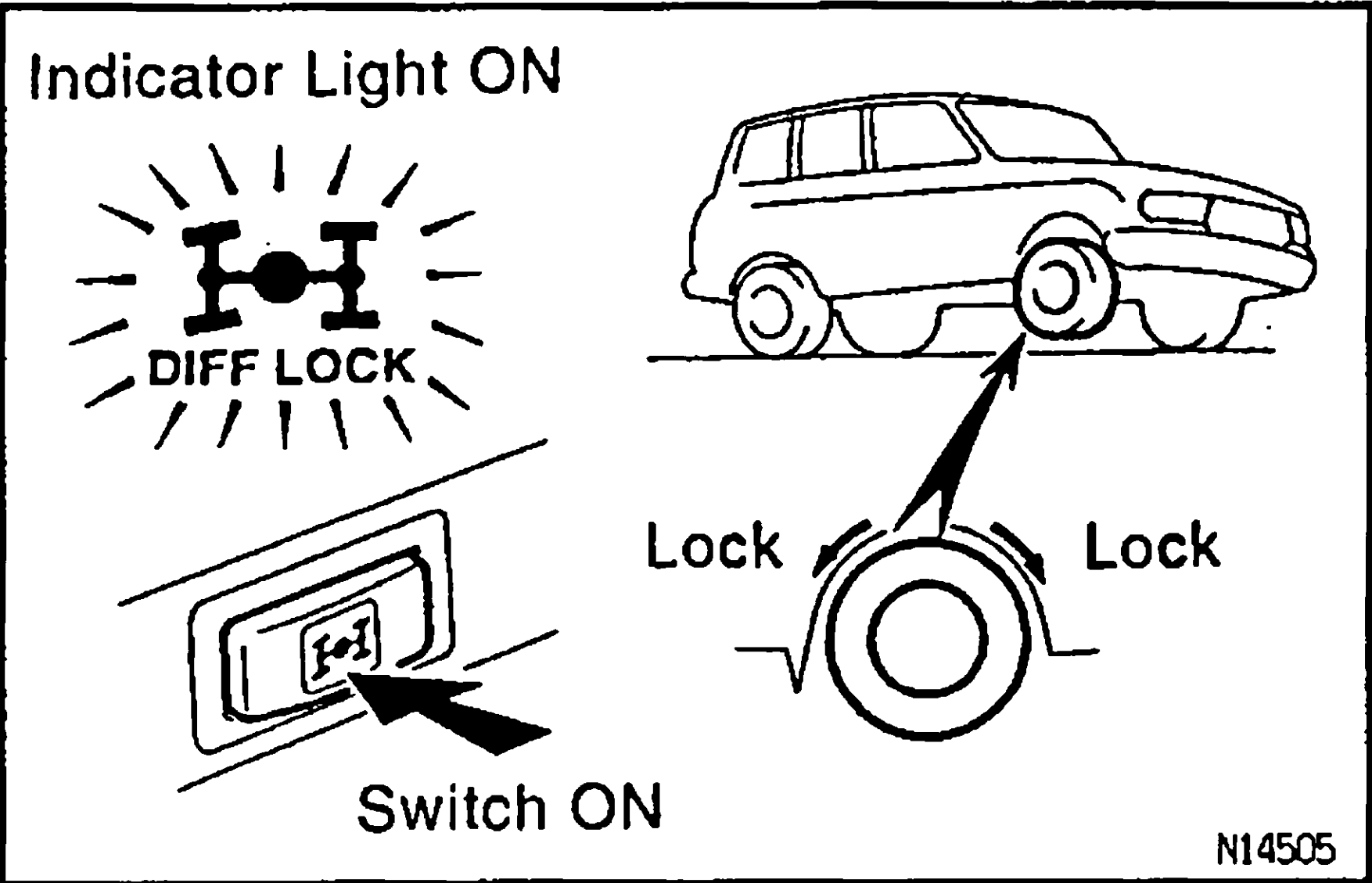
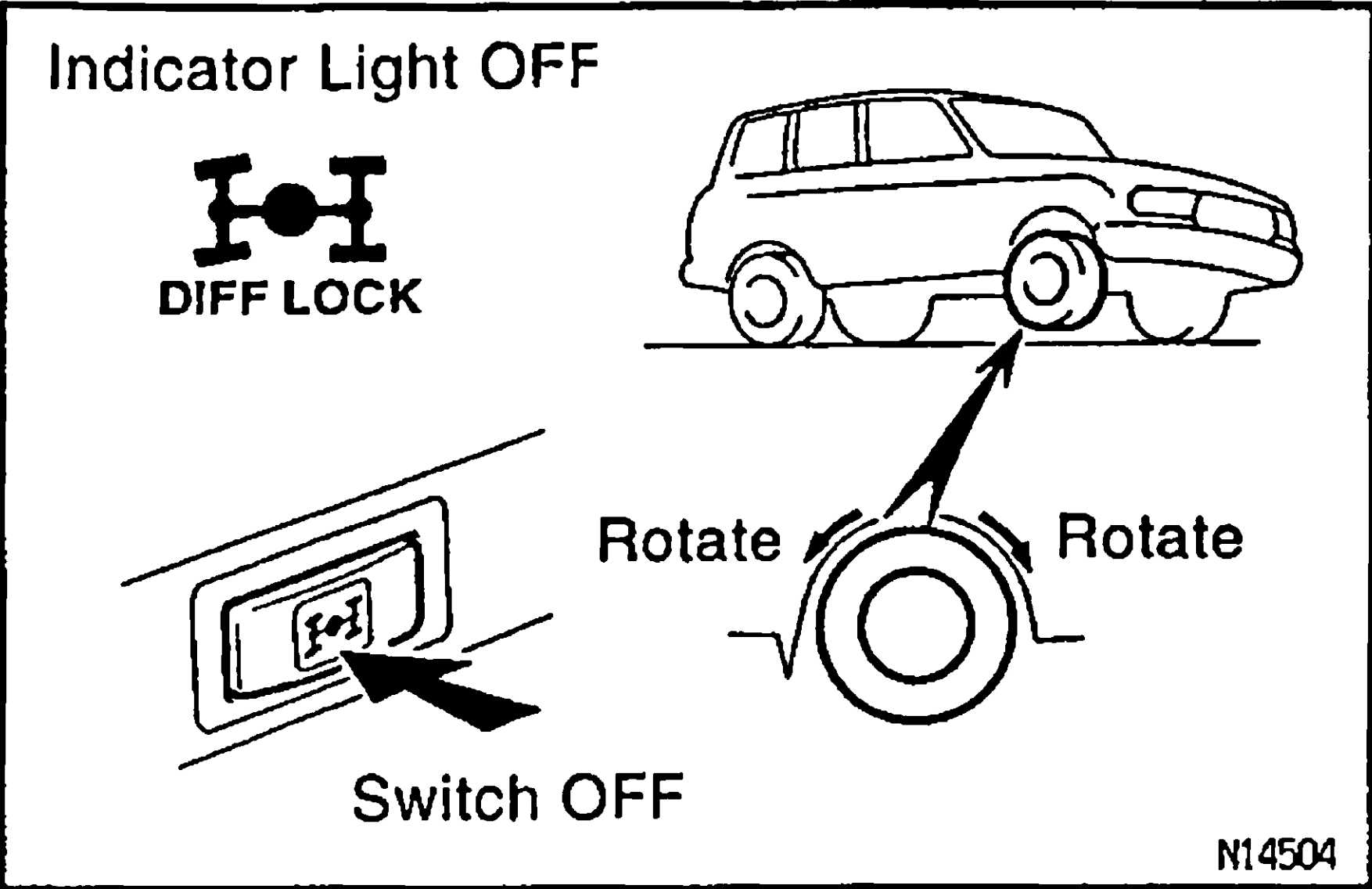
HINT:

- w/o ABS:
Move the vehicle backward or forward slightly if the indicator light does not operate correctly when the center differential lock switch is turned ON or OFF.
- When the transfer select lever is put in "L" position, the center differential is put in LOCK condition regardless of the position of the center differential lock switch.
- Transfer H ↔ L Gear Shifting Procedure:
When shifting, always put the shift lever of the automatic transmission in P or N range. In other ranges, the gears of the transfer clash, and switching cannot occur.

w/o ABS:

CAUTIONS WHEN CENTER DIFFERENTIAL CONTROL SWITCH IS TURNED ON

- Operate the switch only when all 4 wheels are stopped or when driving with the wheels in a straight line.
- Never operate the switch under the following conditions.
 - (1) When any tire is slipping.
 - (2) When any tire is spinning freely.
 - (3) When swerving or cornering.



FREE Position

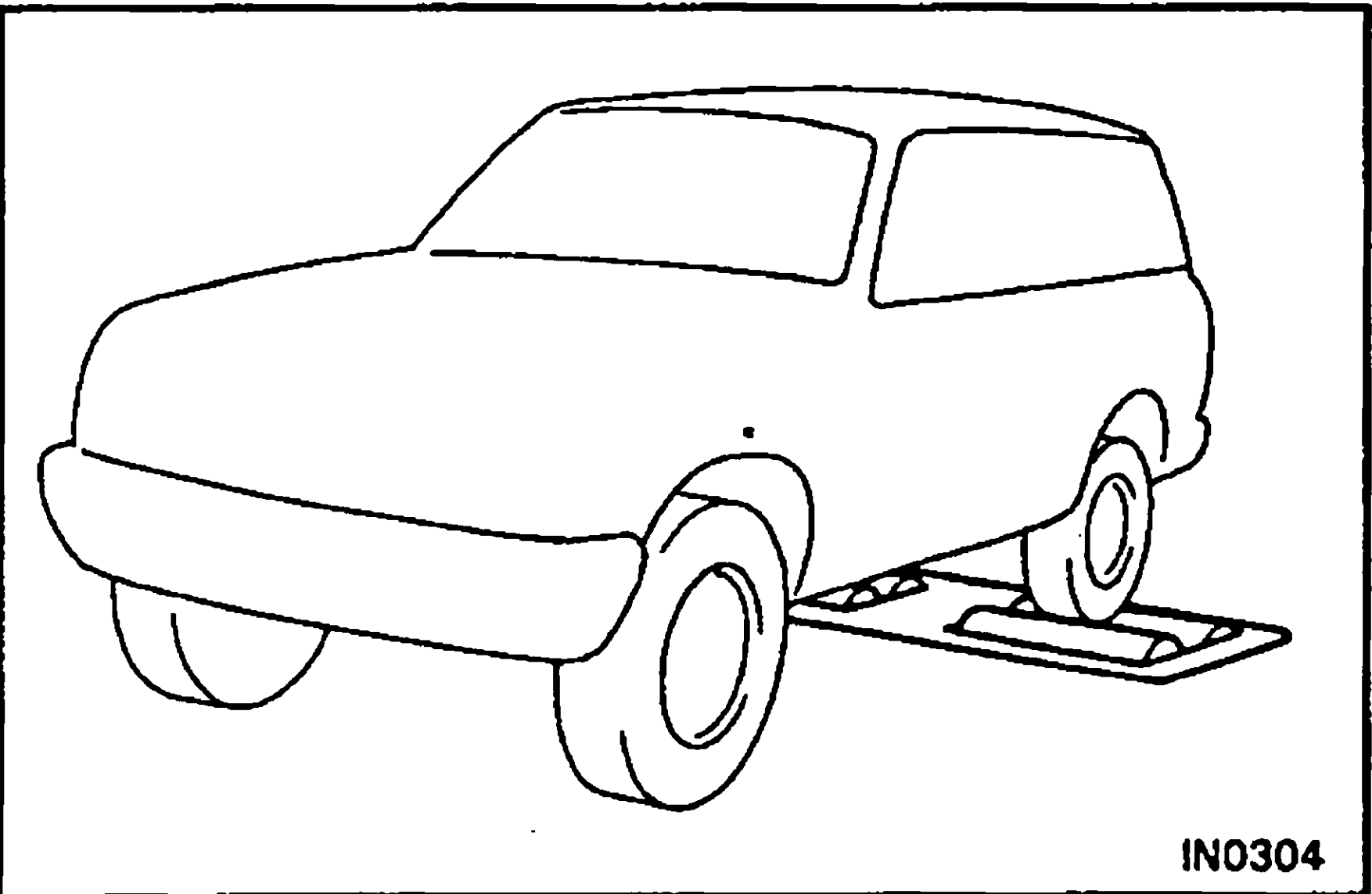
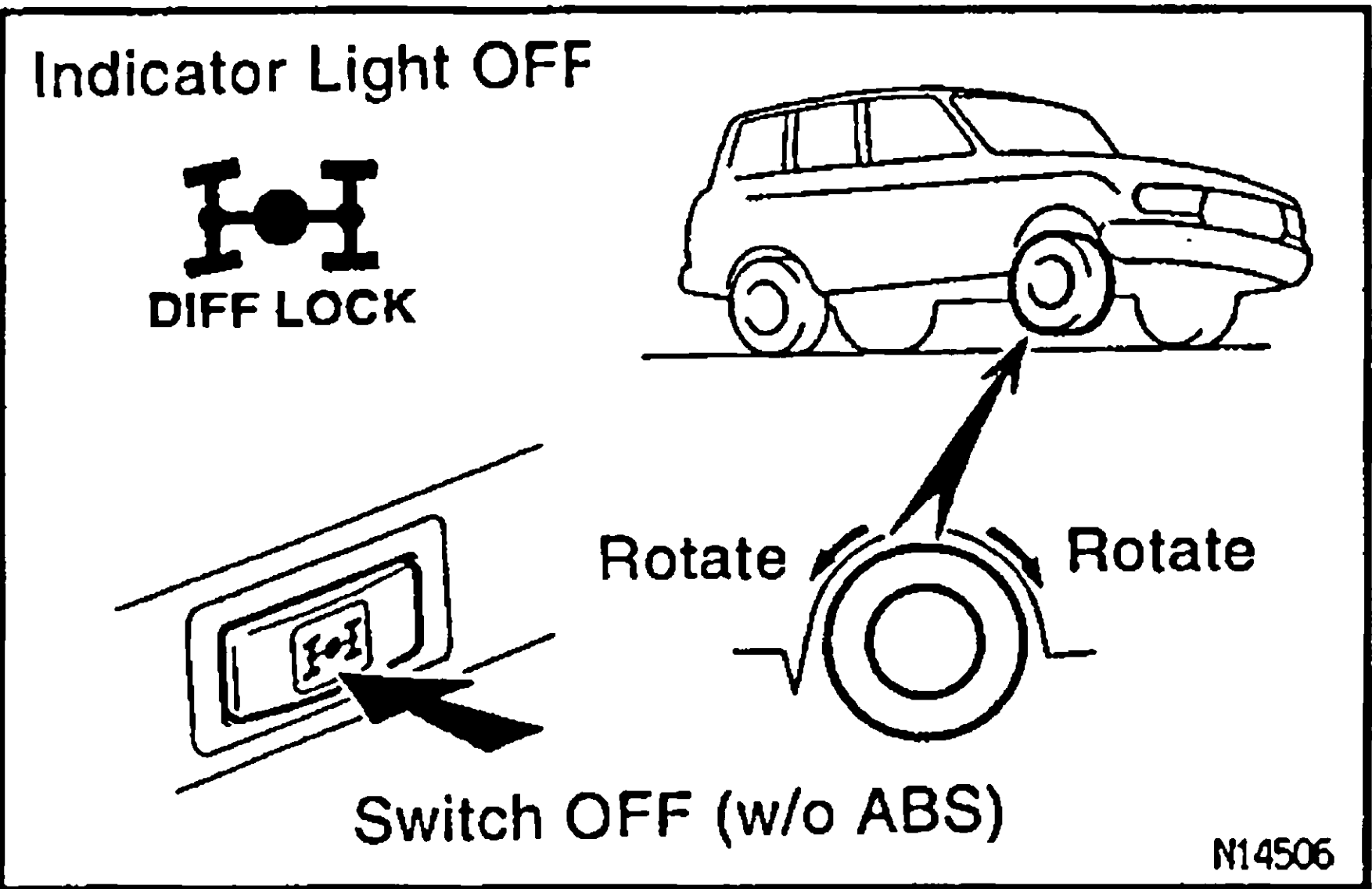
Center Differential Lock		Transfer Select Lever	Wheel
Control Switch	Indicator Light		
OFF	OFF	H	A lifted wheel can be rotated even if only one wheel is lifted up, as long as transmission is in N range.

V06649

LOCK Position

Center Differential Lock		Transfer Select Lever	Wheel
Control Switch	Indicator Light		
ON	ON	H	A lifted wheel cannot be rotated if only one wheel is lifted up, even if transmission is in N range.
OFF	ON	L	

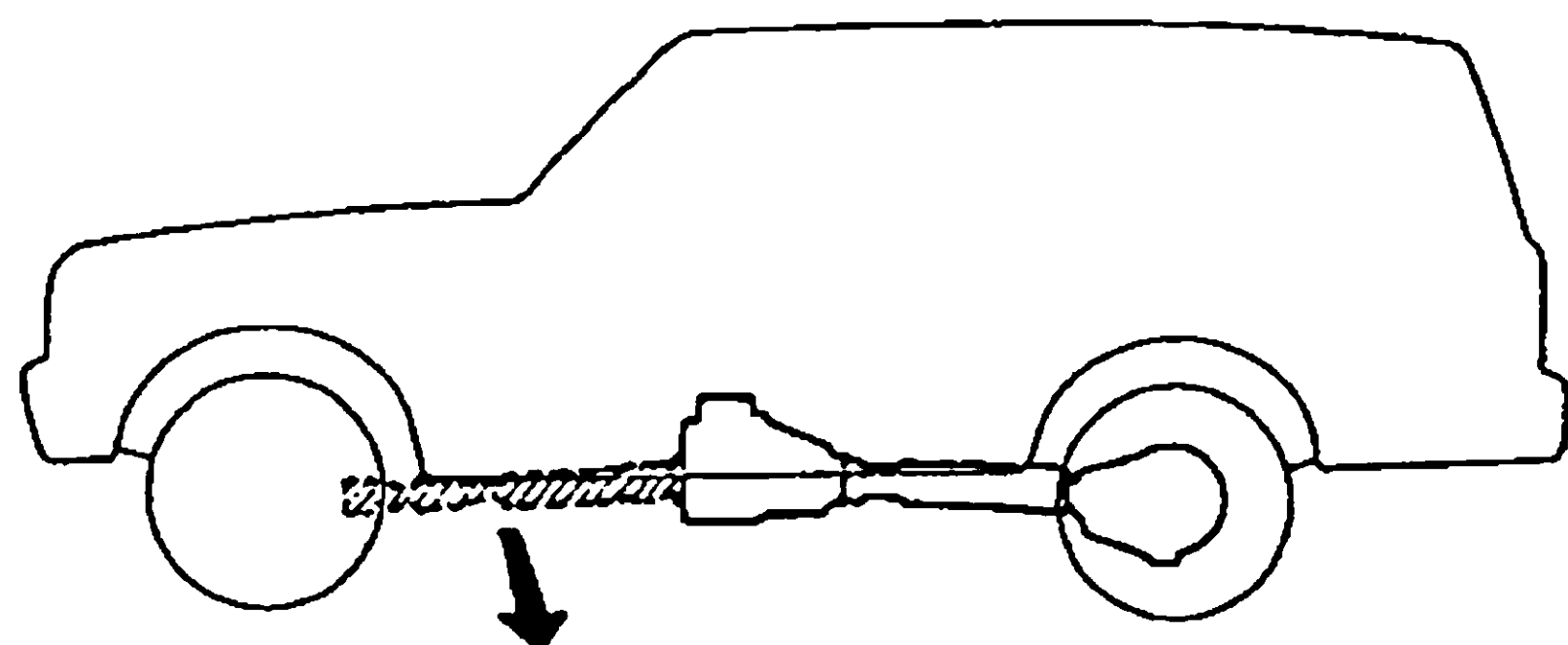
V06650



Braking Force Test (Vehicle Speed: Below 0.5 km/h or 0.3 mph)

- When performing low-speed type brake tester measurements, observe the following instructions.
- (1) Put the center differential in FREE position.
 - Shift the transfer select lever to H position.
 - (w/o ABS)
Turn the center differential lock switch to OFF and check that the center differential lock indicator light goes off.
 - (2) Shift the transmission shift lever to N range.
 - (3) Idle the engine, operate the brake booster and perform the test.

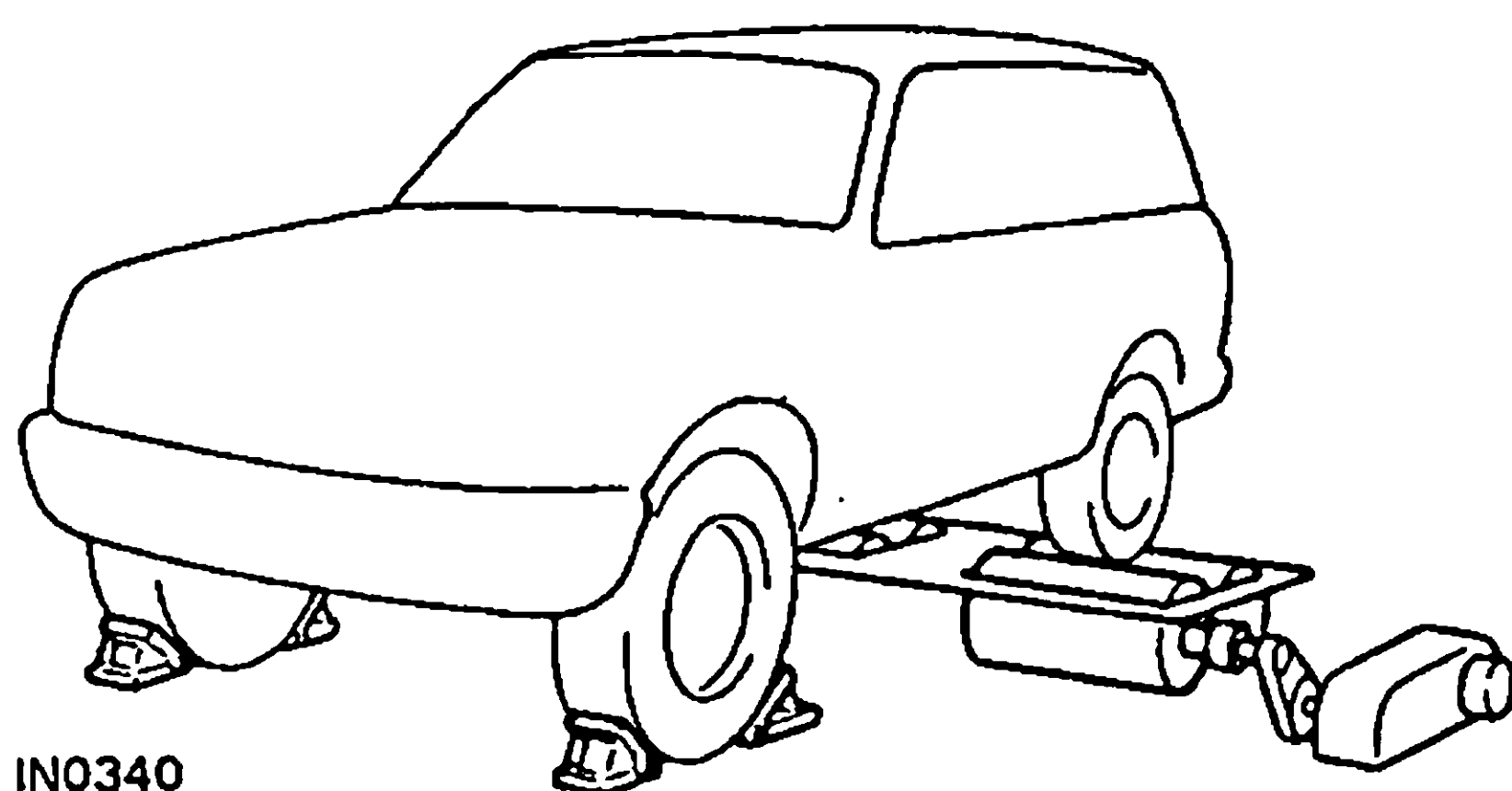
(w/o ABS)
w/ Center Diff. Lock Switch ON
and Transfer in H Position



IN0305

Z04710

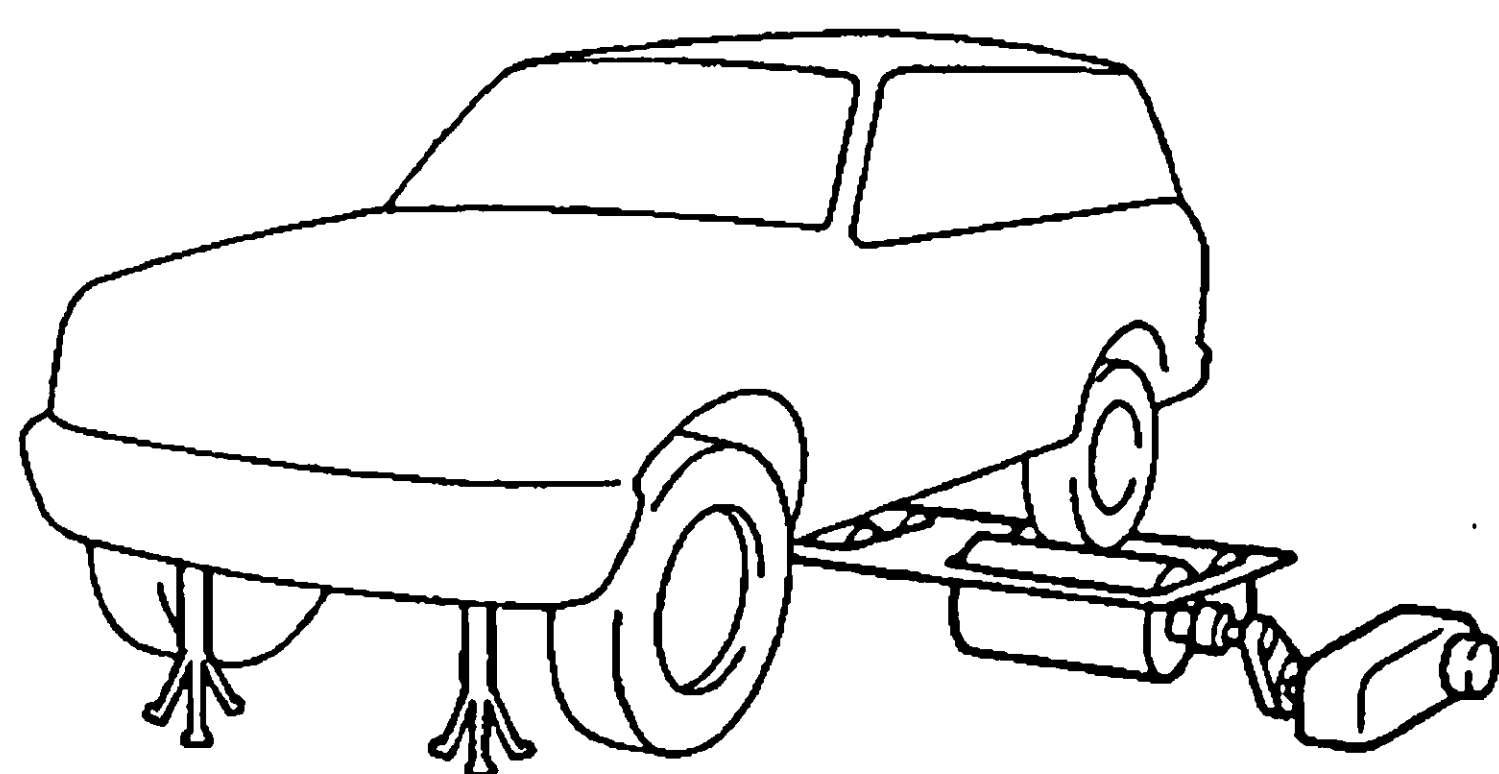
(w/o ABS)



IN0340

Z04711

(w/ ABS)



N06622

Speedometer Test or Other Tests (Using Speedometer Tester or Chassis Dynamometer)

(1) w/o ABS:

Remove the front propeller shaft, put the center differential in LOCK position, then put the rear wheels on the tester roller and perform the test.

IN

(2) w/ ABS:

Shift the transfer select lever to H position, jack up the front wheels, then put the rear wheels on the tester roller and perform the test.

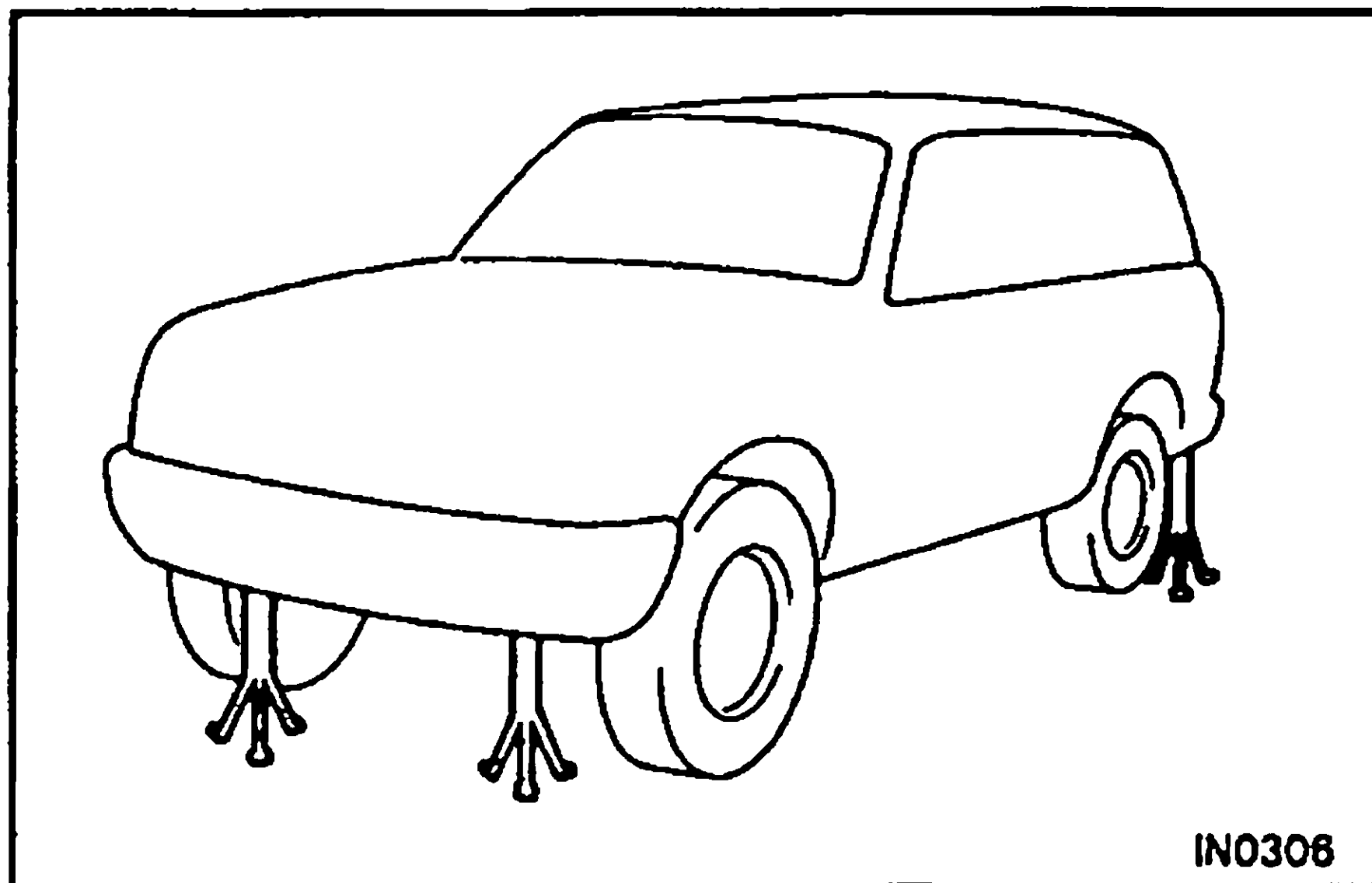
(3) When performing tests, observe the following precautions.

- w/o ABS:
Check that the center differential is securely in LOCK condition.
- Confirm that the vehicle is securely immobilised.
- Never operate the brakes suddenly, suddenly drive the wheels, or suddenly decelerate.

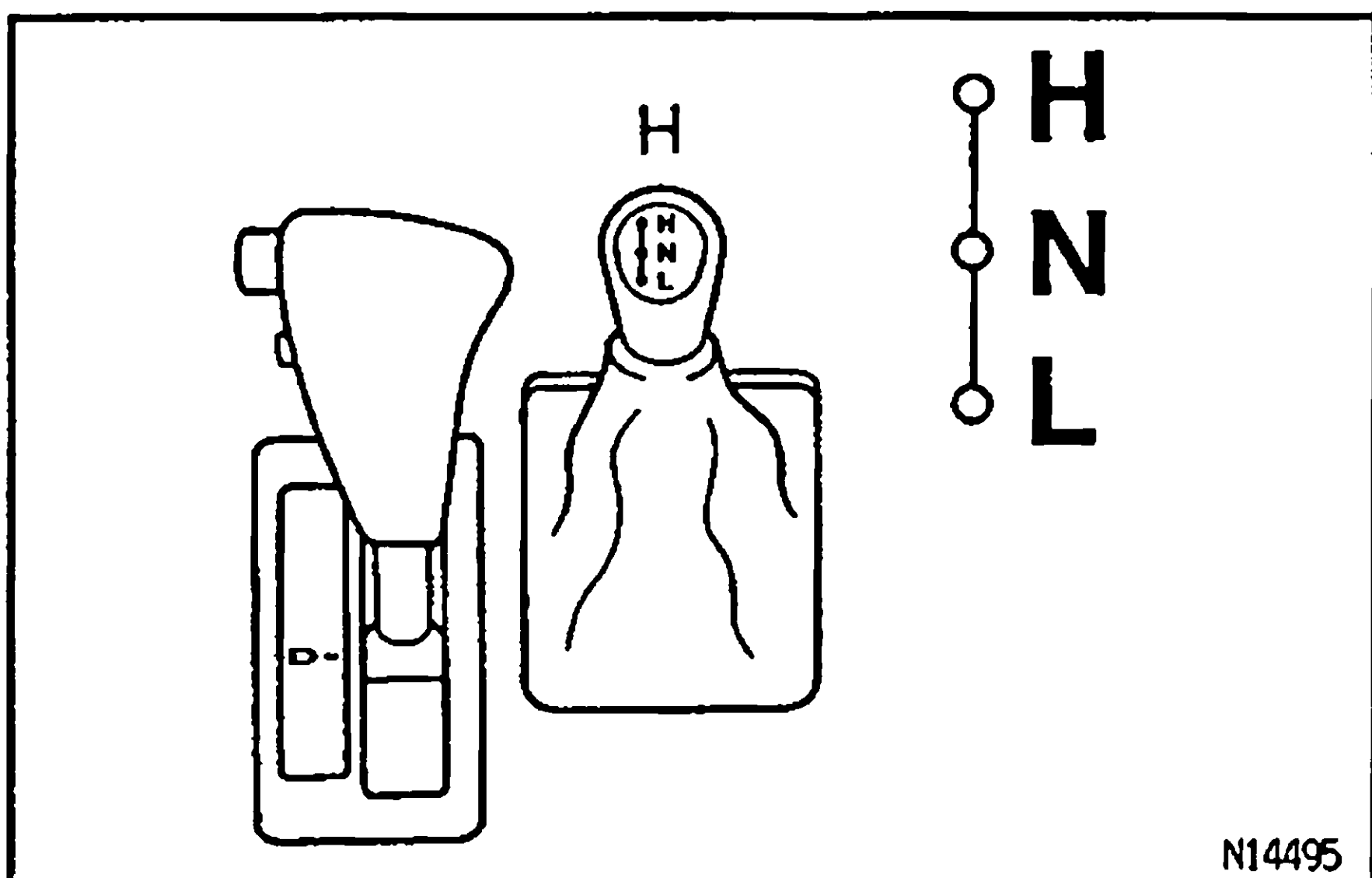
On – Vehicle Wheel Balancing

When doing on – vehicle wheel balancing on a full – time 4WD vehicle, to prevent the wheels from rotating at different speeds or in different directions from each other (which could lead to damage to the center differential or transfer gears), always be sure to observe the following precautions:

IN

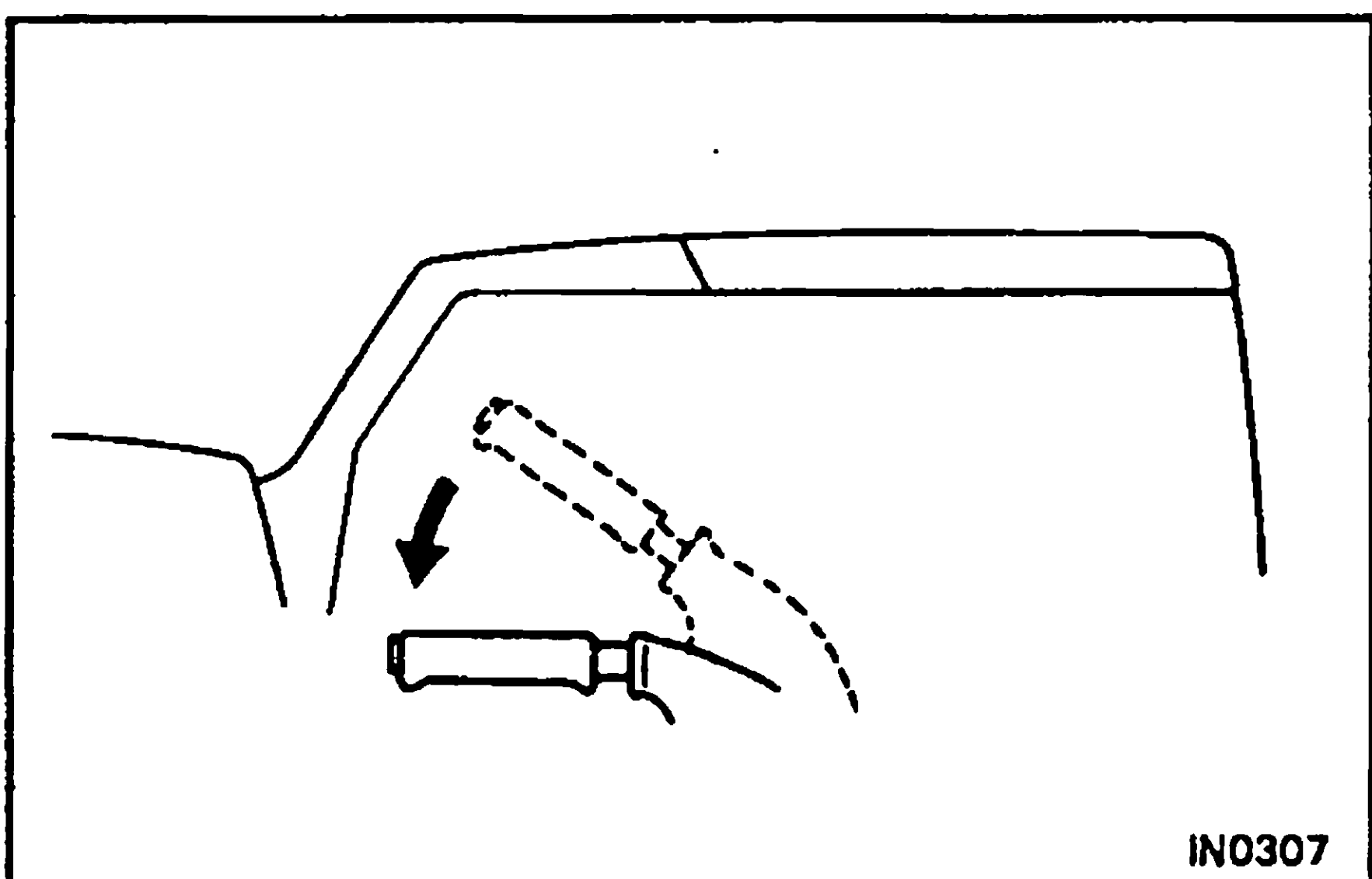


- (1) All 4 wheels should be jacked up, clearing the ground completely.

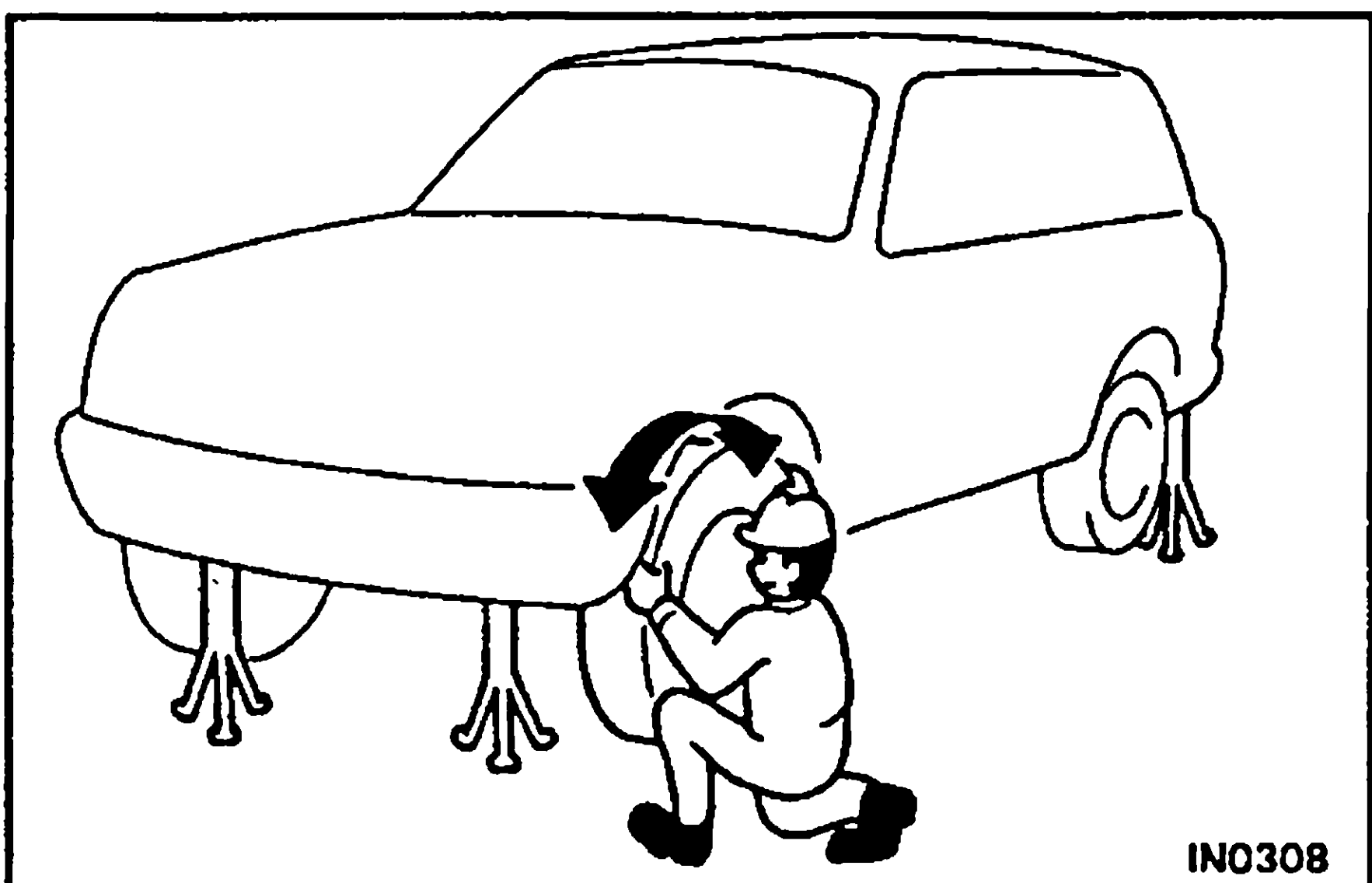


- (2) **w/o ABS:**
The center differential should be in the LOCK position with the transfer gear in H position.

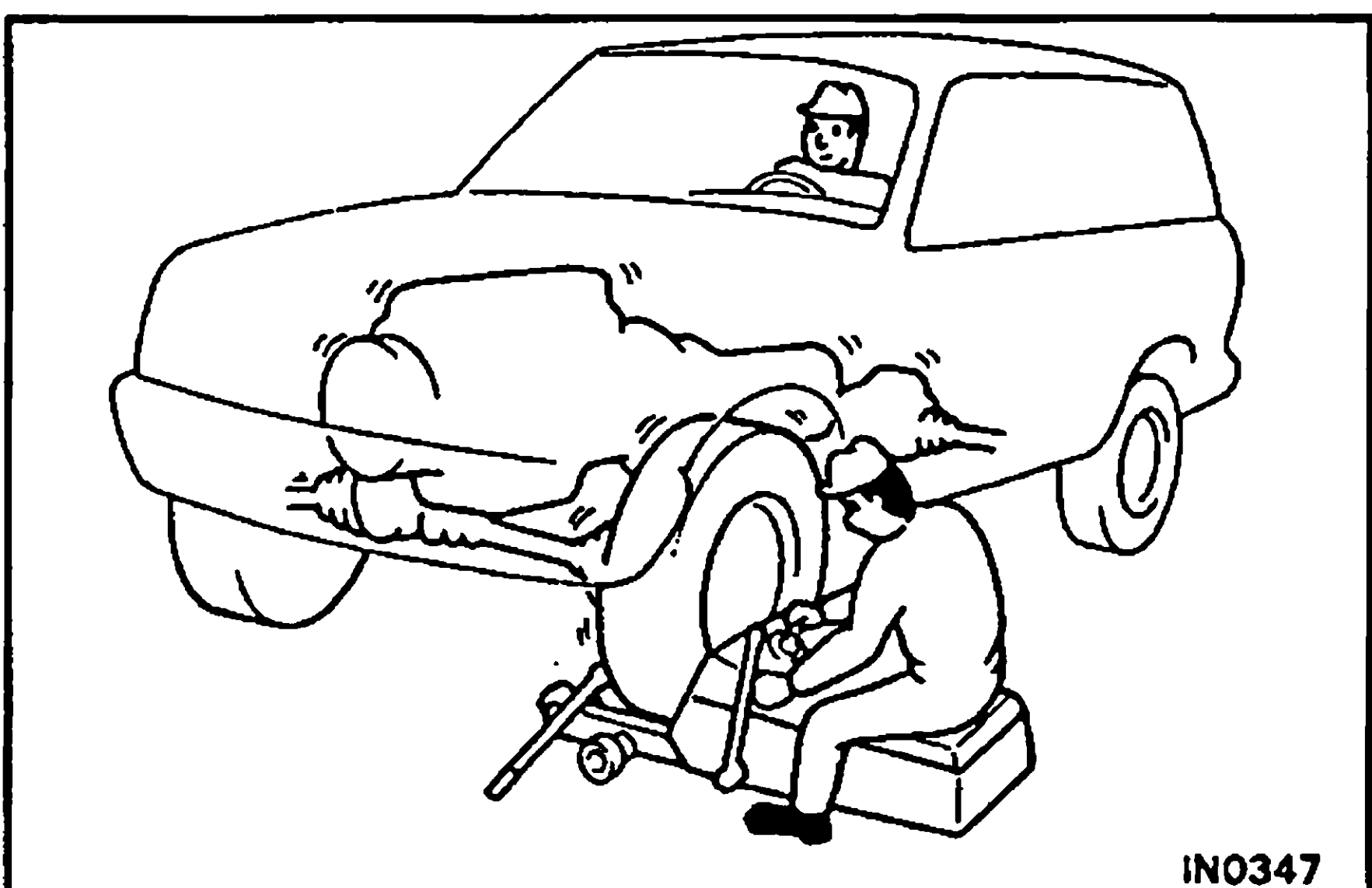
- (3) **w/ ABS:**
Shift the transfer select lever to H position.



- (4) The parking brake lever should be fully released.



- (5) None of the brakes should be allowed to drag.



- (6) The wheels should be driven with both the engine and the wheel balancer.

HINT: When doing this, be careful of the other wheels, which will rotate at the same time.

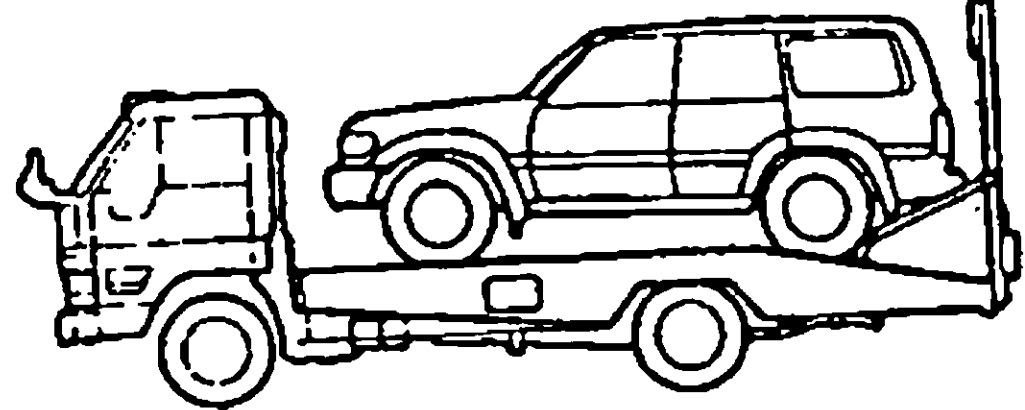
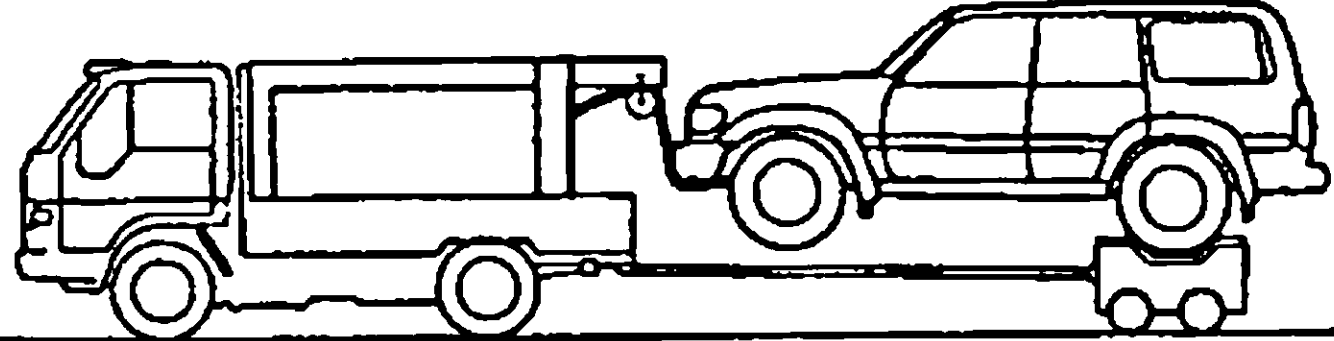
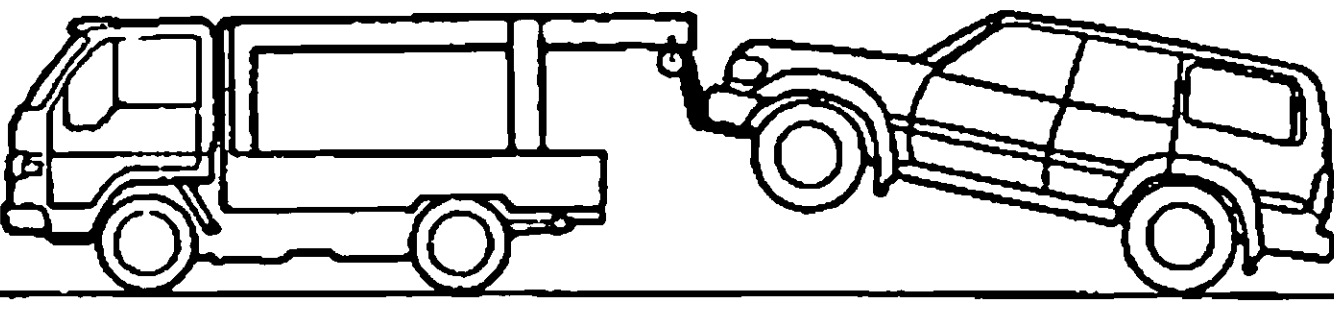
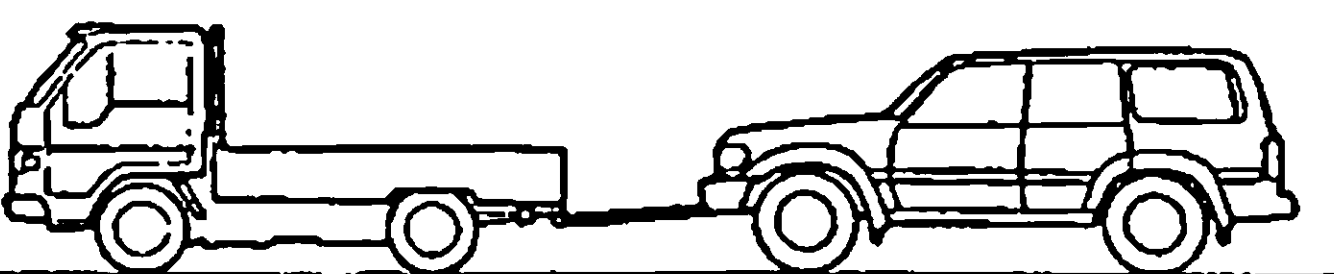
- (7) Avoid sudden acceleration, deceleration and braking.

- (8) Carry out the wheel balancing with the transmission in "D" or "3" range.

WHEN TOWING FULL-TIME 4WD VEHICLES

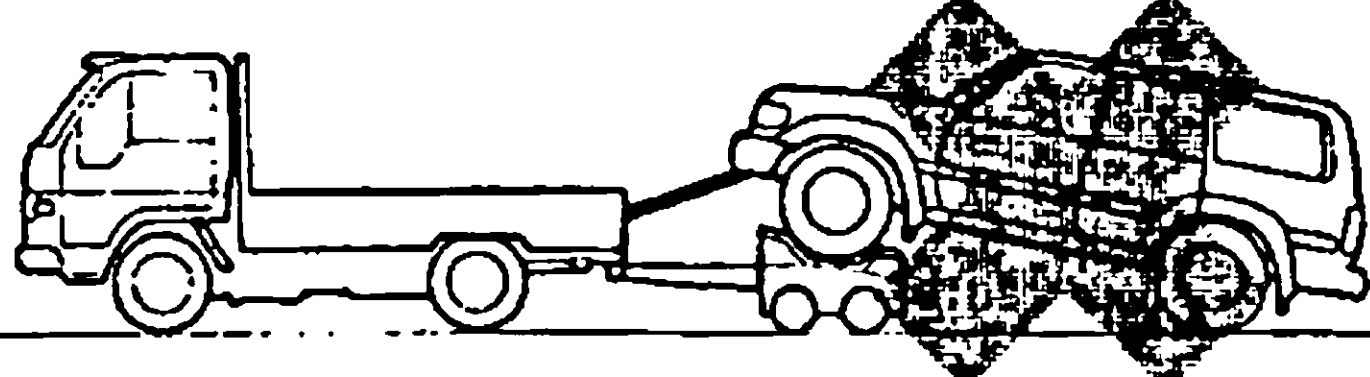
1. Use one of the recommended methods shown below to tow the vehicle.
2. When there is trouble with the chassis and drive train, use method ① (flat bed truck) or method ② (sling type tow truck with dollies)
3. Recommended Methods: No. ①, ② or ③
Emergency Method: No. ④

IN

Condition Towing Method	Parking Brake	Transmission Shift Lever Position	Transfer Shift Lever Position	(w/o ABS) Center Differential Lock Switch	Center Differential
① Flat Bed Truck  IN0309	Applied	"P" Range	"H" Position	OFF	FREE (Normal) Driving
② Sling-Type Tow Truck with Dollies  IN0310					
③ Sling-Type Tow Truck (Front wheels must be able to rotate freely)  IN0311	Released	"N" Range	"N" Position	OFF	↑
④ Towing with Rope  IN0312	Released	"N" Range	"N" Position	OFF	↑
HINT: Do not tow the vehicle at a speed faster than 45 km/h (30 mph) or a distance greater than 80 km (50 miles).					

HINT: Do not use any towing methods other than those shown above.

For example, the towing method shown below is dangerous, so do not use it.

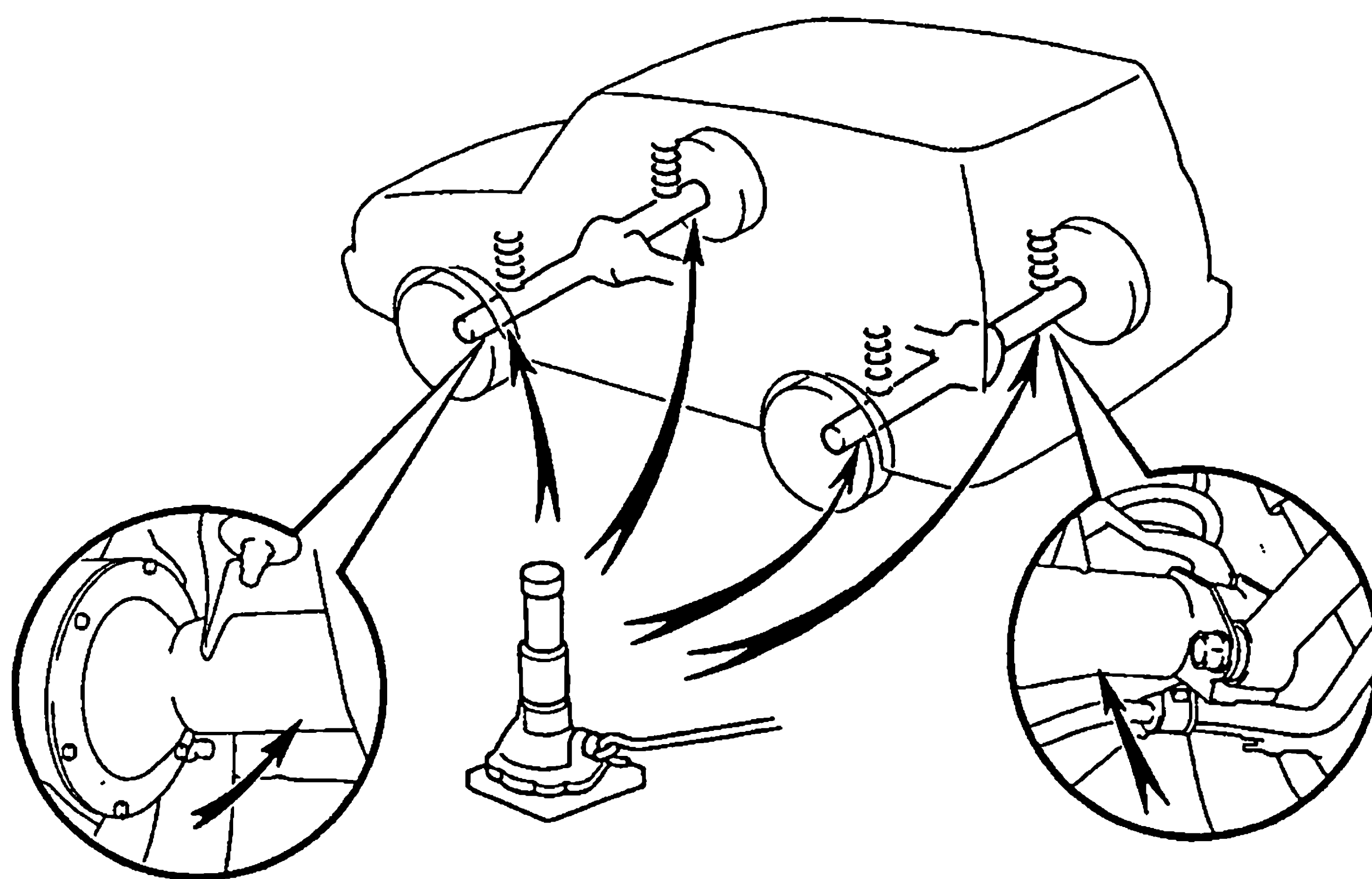
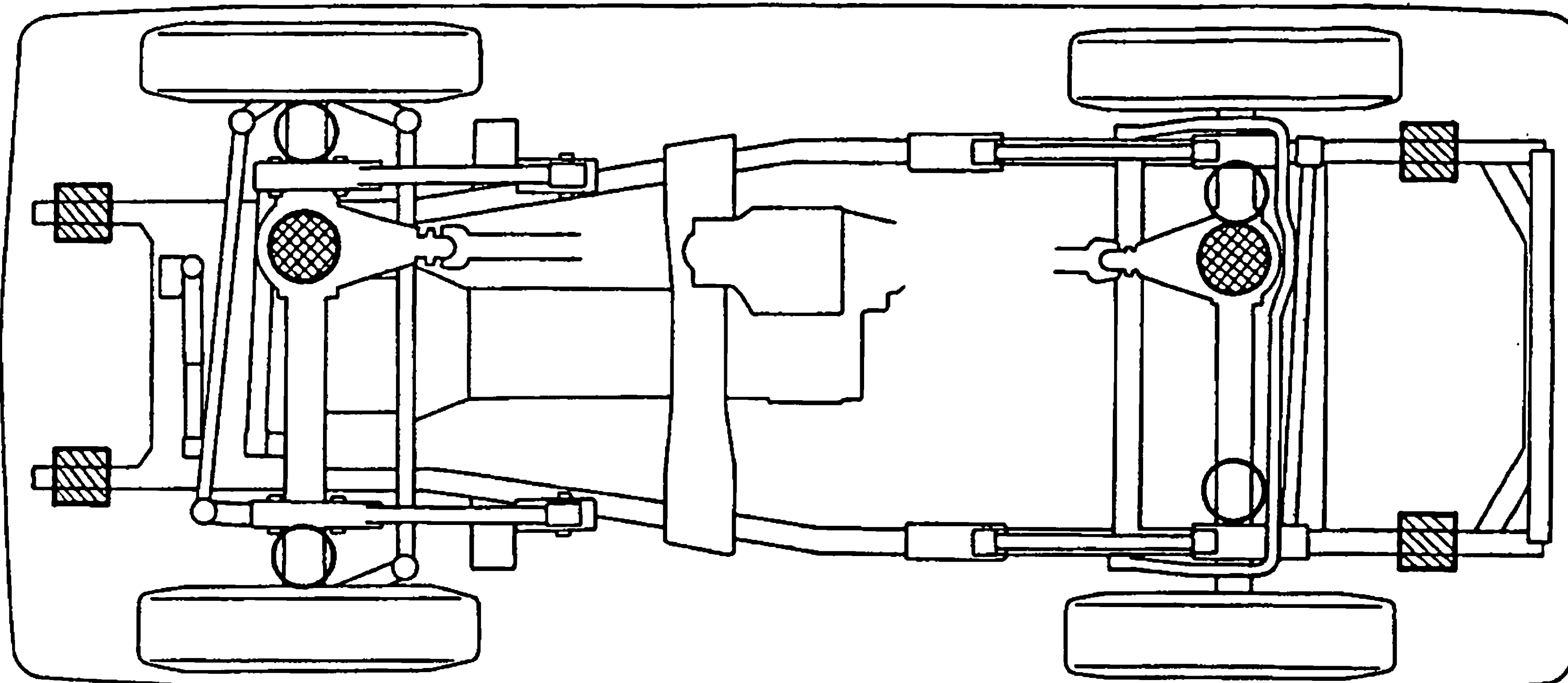
NO  IN0313	During towing with this towing method, there is a danger of the drive train heating up and causing breakdown, or of the front wheels flying off the dolly.
---	--

VEHICLE LIFT AND SUPPORT LOCATIONS

IN007-08

IN

←
Front



JACK POSITION _____ ●

Front Under the front differential

Rear Under the rear differential

SCREW TYPE JACK POSITION _____ ○

SUPPORT POSITION

Safety stand ▨

ABBREVIATIONS USED IN THIS MANUAL

IN01D-1P

ABS	Anti—Lock Brake System
ADD	Automatic Disconnecting Differential
ALR	Automatic Locking Retractor
A/T	Automatic Transmission
ATF	Automatic Transmission Fluid
CB	Circuit Breaker
CRS	Child Restraint System
ECU	Electronic Control Unit
ELR	Emergency Locking Retractor
ESA	Electronic Spark Advance
FIPG	Formed in Place Gasket
FL	Fusible Link
Fr	Front
IG	Ignition
J/B	Junction Block
LH	Left—Hand
LSPV	Load Sensing Proportioning Valve
Max.	Maximum
Min.	Minimum
MP	Multipurpose
M/T	Manual Transmission
O/D, OD	Overdrive
O/S	Oversize
PCV	Positive Crankcase Ventilation
PKB	Parking Brake
PS	Power Steering
RH	Right—Hand
Rr	Rear
SSM	Special Service Materials
SST	Special Service Tools
STD	Standard
SW	Switch
TEMP.	Temperature
T/F	Transfer
T/M	Transmission
U/S	Undersize
w/	With
w/o	Without
4WD	Four Wheel Drive Vehicles (4x4)

IN

STANDARD BOLT TORQUE SPECIFICATIONS

IN008-01

IN

HOW TO DETERMINE BOLT STRENGTH

	Mark	Class		Mark	Class
Hexagon head bolt	4— 5— 6— 7— 8— 9— 10— 11— 4 Bolt head No.	4T 5T 6T 7T 8T 9T 10T 11T	Stud bolt	No mark	4T
	No mark	4T			
Hexagon flange bolt w/ washer hexagon bolt	No mark	4T	Welded bolt	Grooved	6T
Hexagon head bolt	2 protruding lines	5T			
Hexagon flange bolt w/ washer hexagon bolt	2 protruding lines	6T			
Hexagon head bolt	3 protruding lines	7T			
Hexagon head bolt	4 protruding lines	8T			4T

SPECIFIED TORQUE FOR STANDARD BOLTS

Class	Diameter mm	Pitch mm	Specified torque					
			Hexagon head bolt			Hexagon flange bolt		
			N·m	kgf·cm	ft·lbf	N·m	kgf·cm	ft·lbf
4T	6	1	5	55	48 in.·lbf	6	60	52 in.·lbf
	8	1.25	12.5	130	9	14	145	10
	10	1.25	26	260	19	29	290	21
	12	1.25	47	480	35	53	540	39
	14	1.5	74	760	55	84	850	61
	16	1.5	115	1,150	83	—	—	—
5T	6	1	6.5	65	56 in.·lbf	7.5	75	65 in.·lbf
	8	1.25	15.5	160	12	17.5	175	13
	10	1.25	32	330	24	36	360	26
	12	1.25	59	600	43	65	670	48
	14	1.5	91	930	67	100	1,050	76
	16	1.5	140	1,400	101	—	—	—
6T	6	1	8	80	69 in.·lbf	9	90	78 in.·lbf
	8	1.25	19	195	14	21	210	15
	10	1.25	39	400	29	44	440	32
	12	1.25	71	730	53	80	810	59
	14	1.5	110	1,100	80	125	1,250	90
	16	1.5	170	1,750	127	—	—	—
7T	6	1	10.5	110	8	12	120	9
	8	1.25	25	260	19	28	290	21
	10	1.25	52	530	38	58	590	43
	12	1.25	95	970	70	105	1,050	76
	14	1.5	145	1,500	108	165	1,700	123
	16	1.5	230	2,300	166	—	—	—
8T	8	1.25	29	300	22	33	330	24
	10	1.25	61	620	45	68	690	50
	12	1.25	110	1,100	80	120	1,250	90
9T	8	1.25	34	340	25	37	380	27
	10	1.25	70	710	51	78	790	57
	12	1.25	125	1,300	94	140	1,450	105
10T	8	1.25	38	390	28	42	430	31
	10	1.25	78	800	58	88	890	64
	12	1.25	140	1,450	105	155	1,600	116
11T	8	1.25	42	430	31	47	480	35
	10	1.25	87	890	64	97	990	72
	12	1.25	155	1,600	116	175	1,800	130

IN

CLUTCH

PREPARATION	CL— 2
CLUTCH PEDAL.....	CL— 3
CLUTCH MASTER CYLINDER	CL— 5
SERVICE SPECIFICATIONS	CL— 7

CL

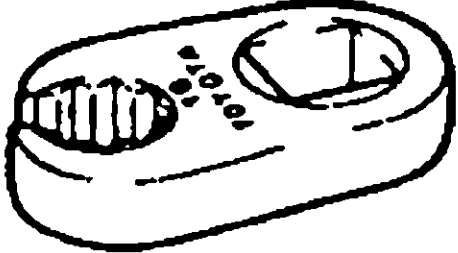
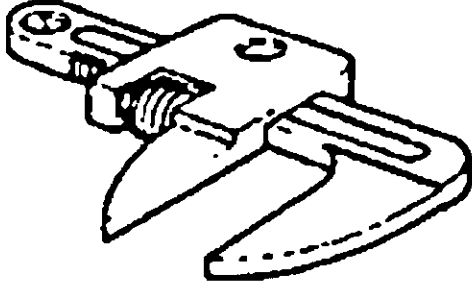
REFER TO FOLLOWING REPAIR MANUALS:

Manual Name	Pub. No.
• Land Cruiser (Station Wagon) Chassis and Body Repair Manual	RM184E
• Land Cruiser (Hardtop, Canvas Top and Station Wagon) Chassis and Body Repair Manual Supplement Jan., 1992	RM290E
Aug., 1992	RM315E

NOTE: The above pages contain only the points which differ from the above listed manuals.

PREPARATION
SST(SPECIAL SERVICE TOOLS)

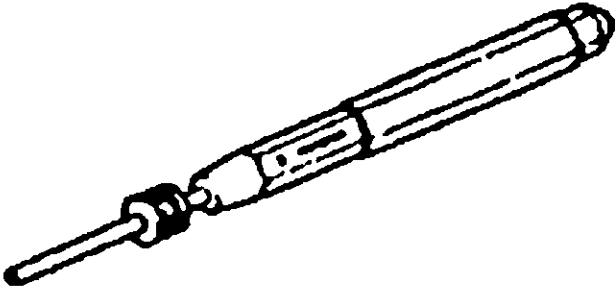
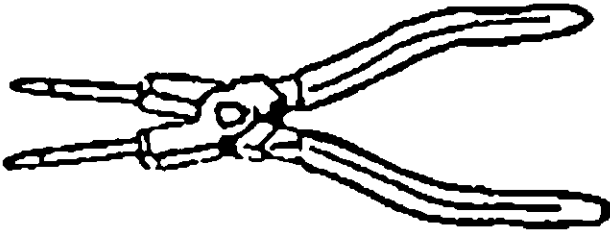
CL003-01

	09023-00100 Union Nut Wrench 10 mm	Clutch line
	09922-10010 Variable Open Wrench	Accumulator

CL

RECOMMENDED TOOLS

CL005-00

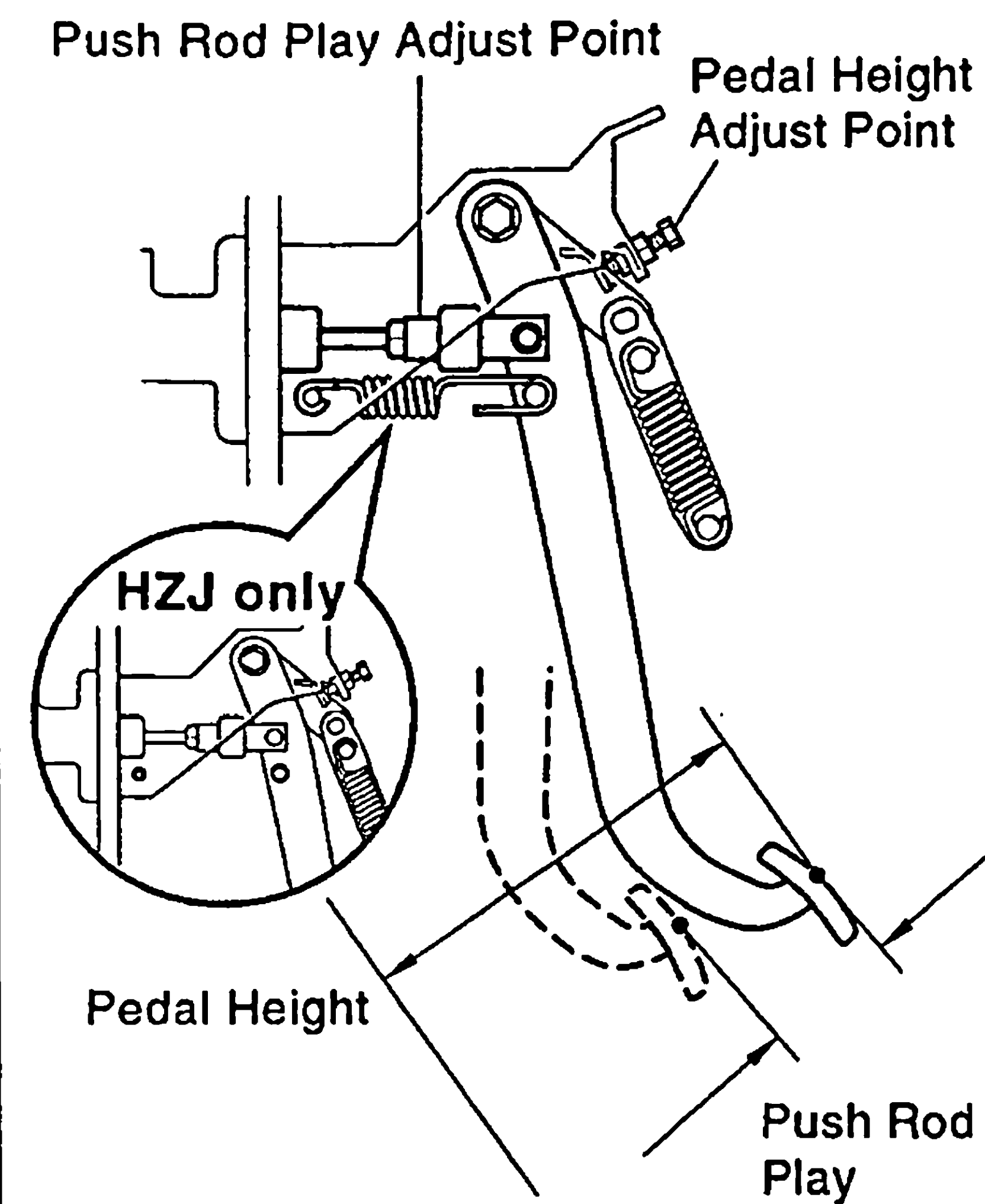
	09031-00030 Pin Punch .	
	09905-00013 Snap Ring Pliers .	

EQUIPMENT

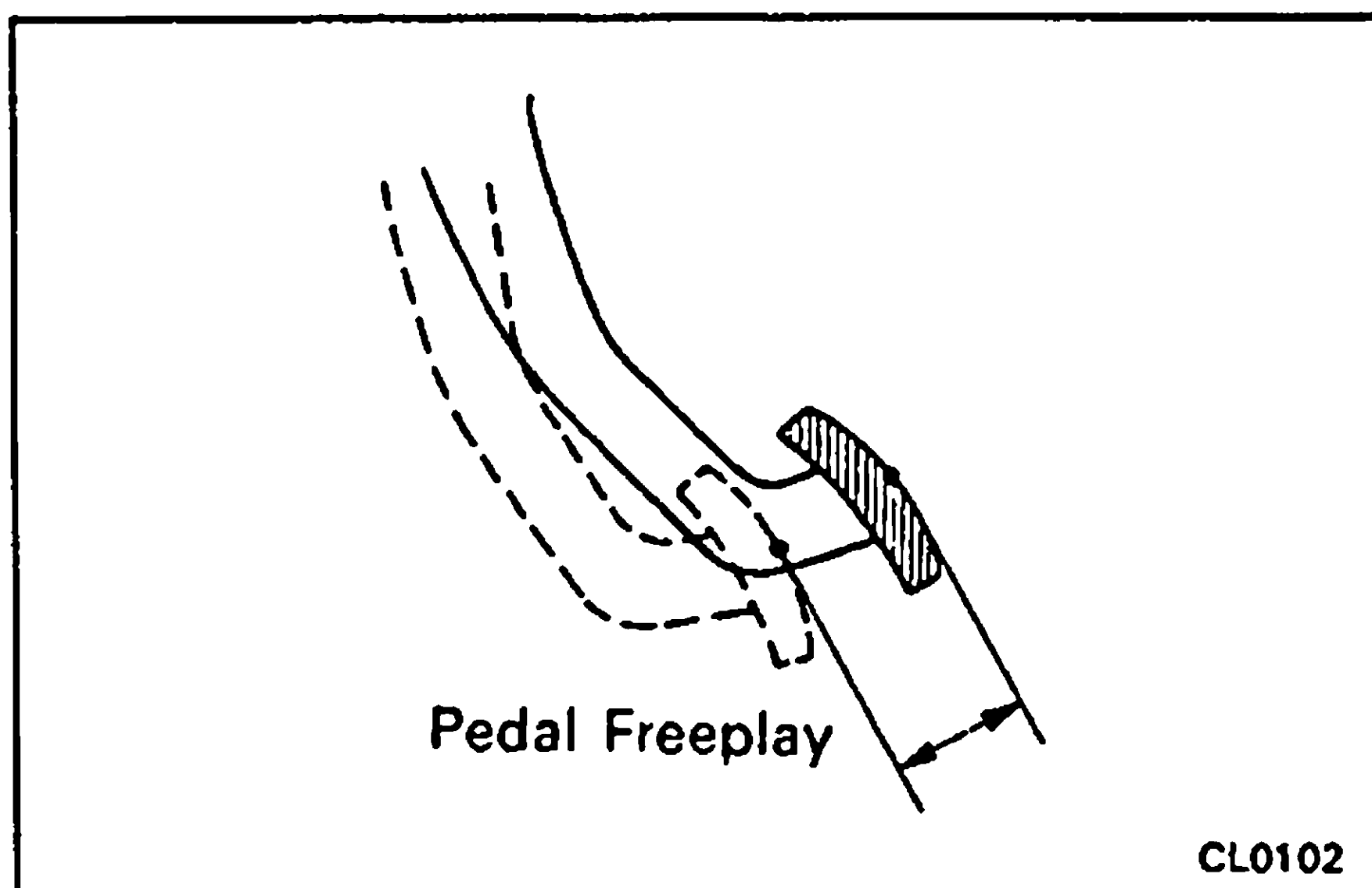
CL0AF-01

Torque wrench	
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FZJ, HDJ series



007251



CL0102

CLUTCH PEDAL

CLUTCH PEDAL CHECK AND ADJUSTMENT

CLOAG-01

1. CHECK THAT PEDAL HEIGHT IS CORRECT

Pedal height from asphalt sheet:

168.0–178.0 mm (6.61–7.00 in.)

Pedal height from floor panel:

172.0–182.0 mm (6.77–7.17 in.)

2. IF NECESSARY, ADJUST PEDAL HEIGHT

Loosen the lock nut and turn the stopper bolt until the height is correct. Tighten the lock nut.

3. CHECK THAT PEDAL FREEPLAY AND PUSH ROD PLAY ARE CORRECT

Pedal freeplay:

Push in on the pedal until the beginning of clutch resistance is felt.

Pedal freeplay:

5.0–15.0 mm (0.197–0.591 in.)

Push rod play:

Gently push on the pedal until the resistance begins to increase a little.

Push rod play at pedal top:

1.0–5.0 mm (0.039–0.197 in.)

4. IF NECESSARY, ADJUST PEDAL FREEPLAY AND PUSH ROD PLAY

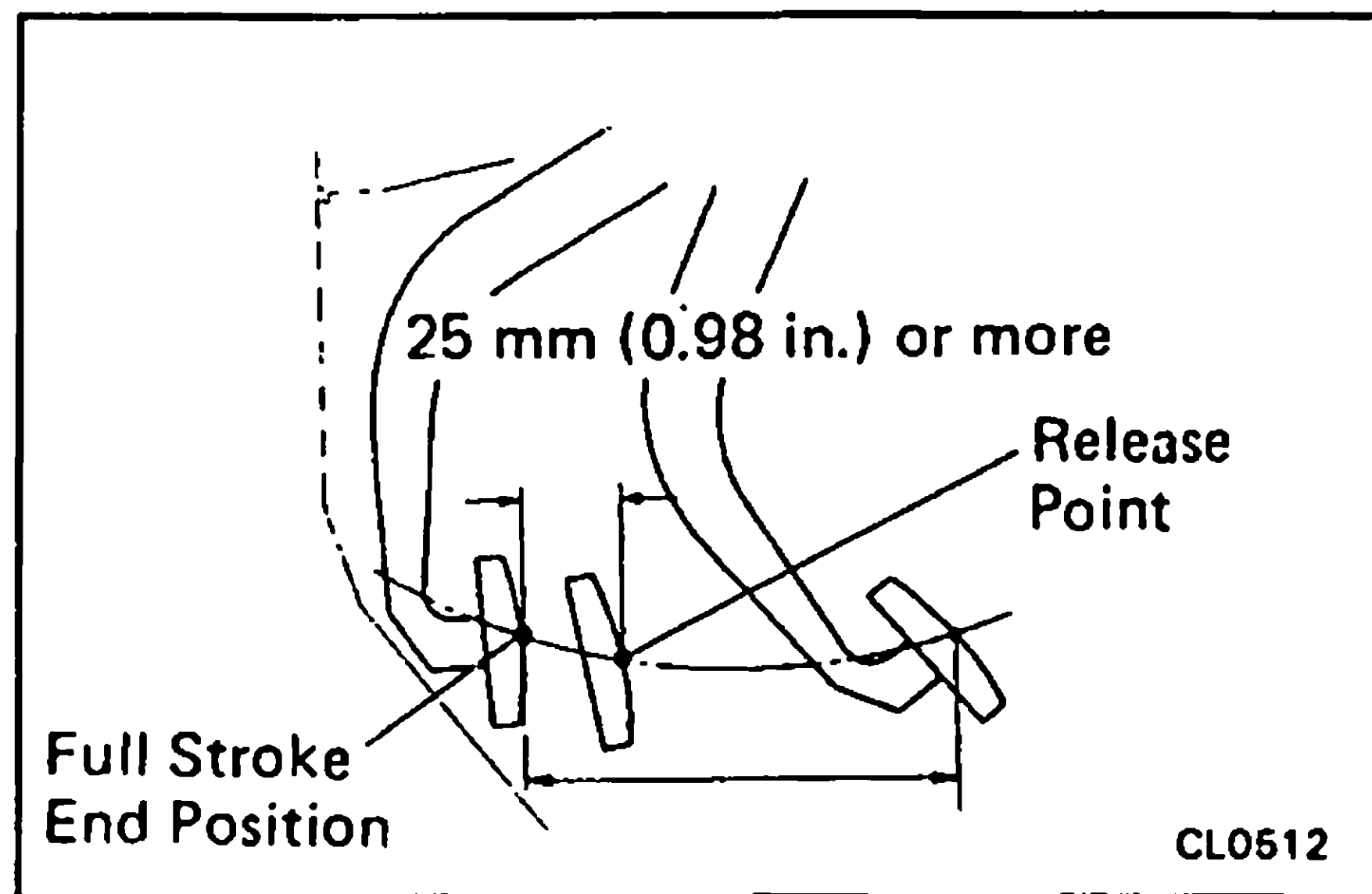
- Loosen the lock nut and turn the push rod until the freeplay and push rod play are correct.
- Tighten the lock nut.
- After adjusting the pedal freeplay, check the pedal height.

- Connect the air duct and install the lower finish panel.

5. CHECK CLUTCH RELEASE POINT

- Pull the parking brake lever and install wheel stopper.
- Start the engine and idle the engine.
- Without depressing the clutch pedal, slowly shift the shift lever into reverse position until the gears contact.

CL



- (d) Gradually depress the clutch pedal and measure the stroke distance from the point the gear noise stops (release point) up to the full stroke end position.

Standard distance:

25 mm (0.98 in.) or more

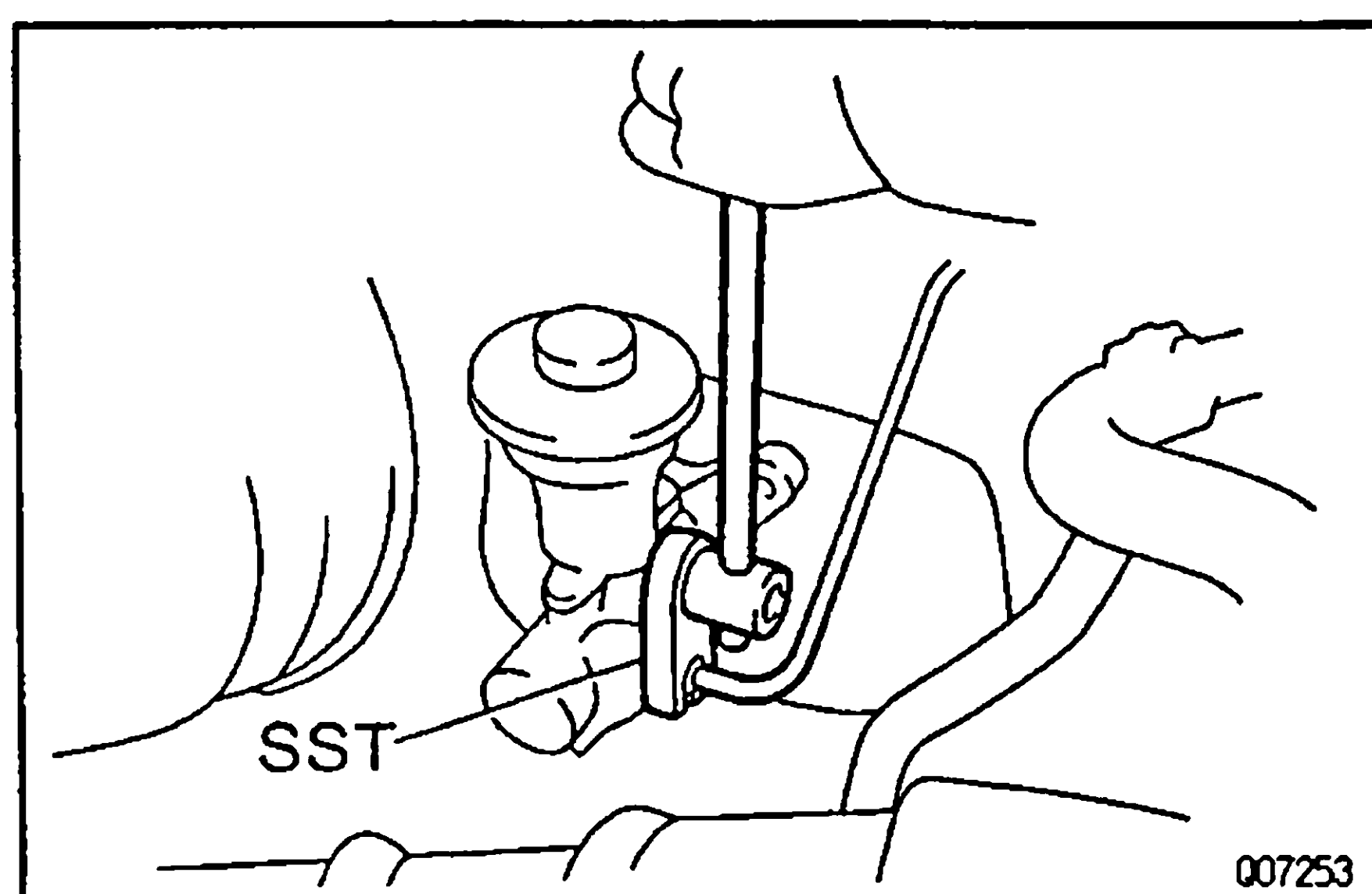
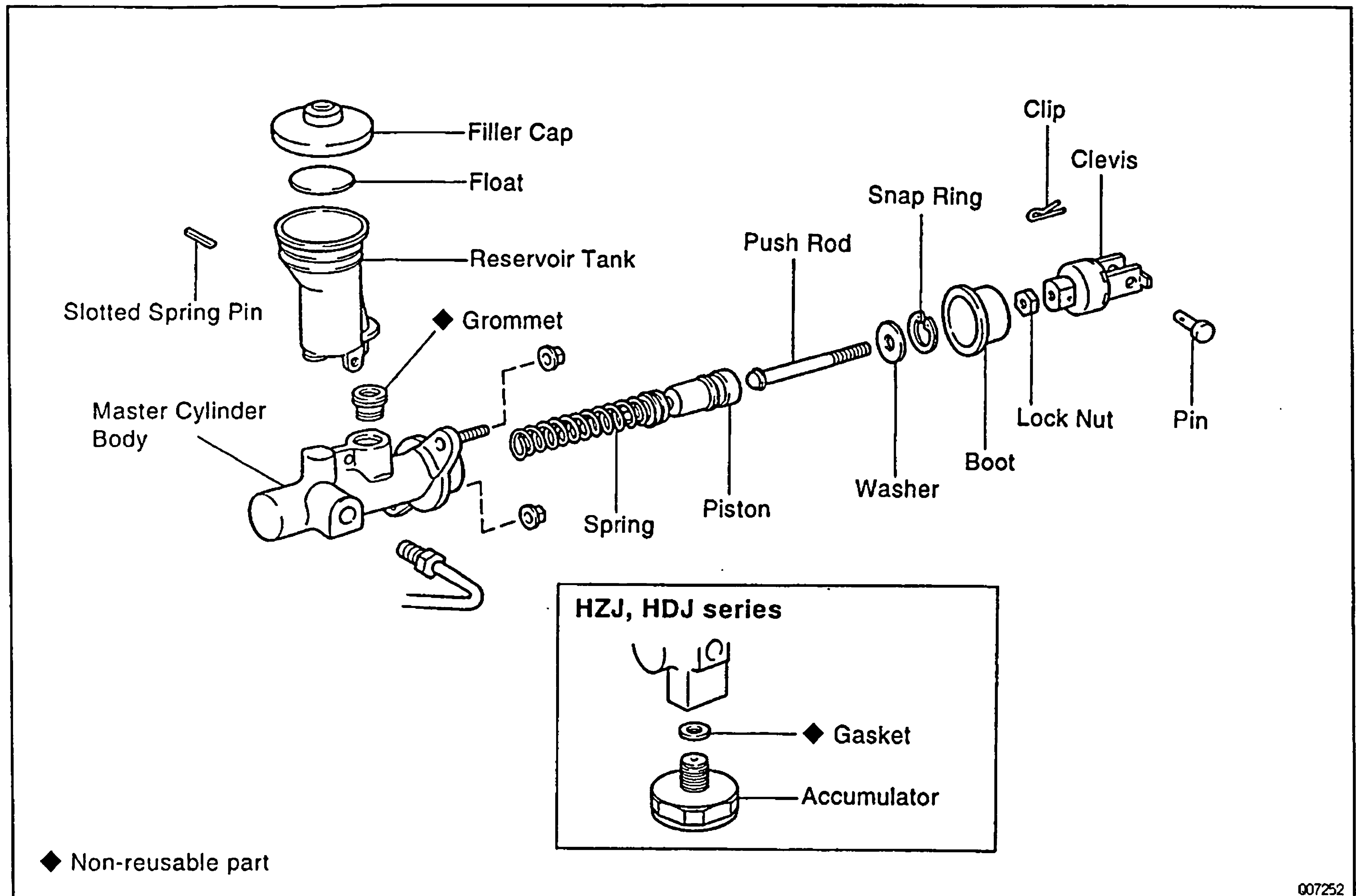
(From pedal stroke end position to release point)

If the distance not as specified, perform the following operation.

- Check pedal height.
- Check push rod play and pedal freeplay.
- Bleed the clutch line.
- Check the clutch cover and disc.

CLUTCH MASTER CYLINDER COMPONENTS

CL008-0J



MASTER CYLINDER REMOVAL

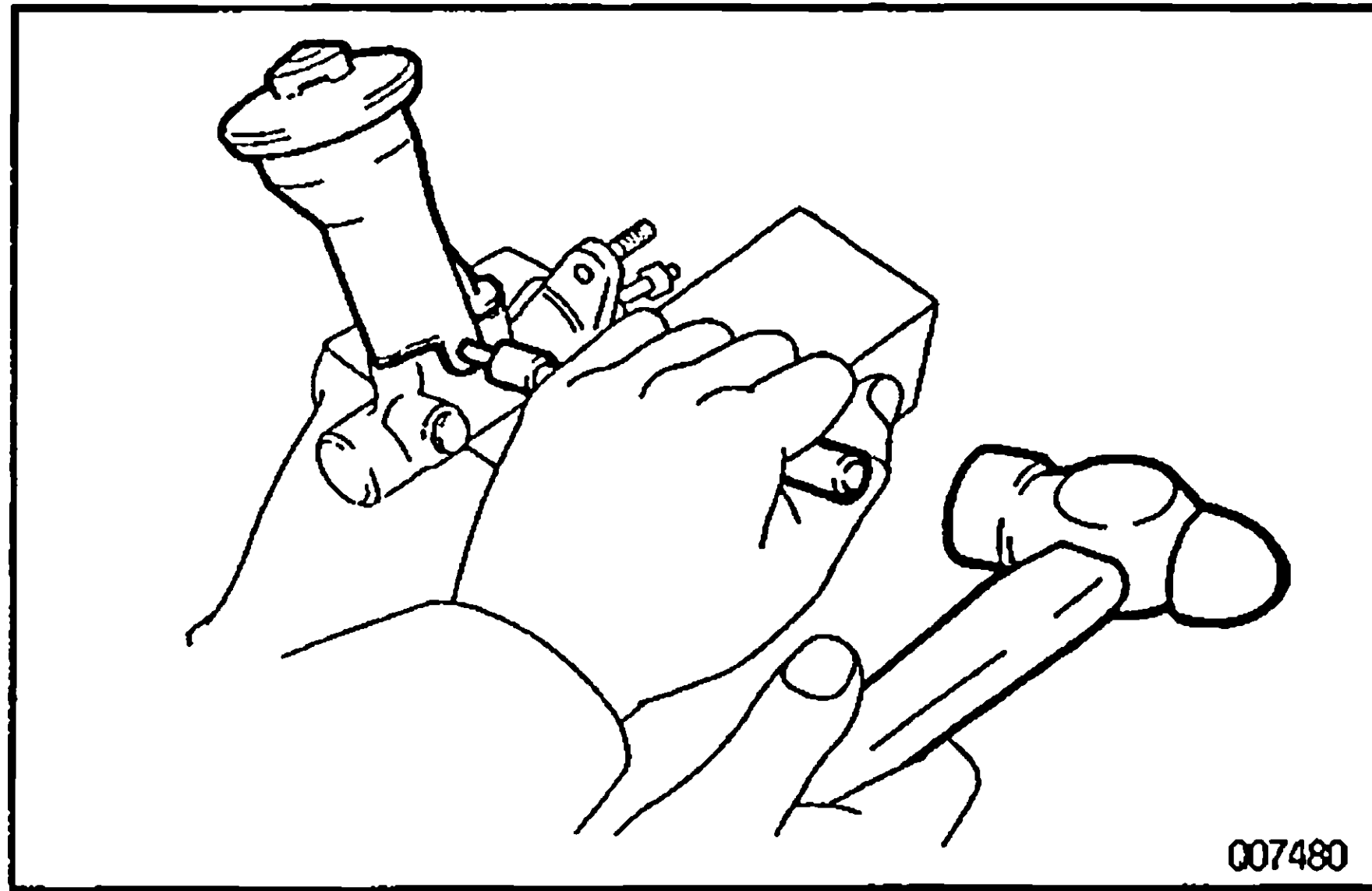
CL008-0K

Installation is in the reverse order of removal.

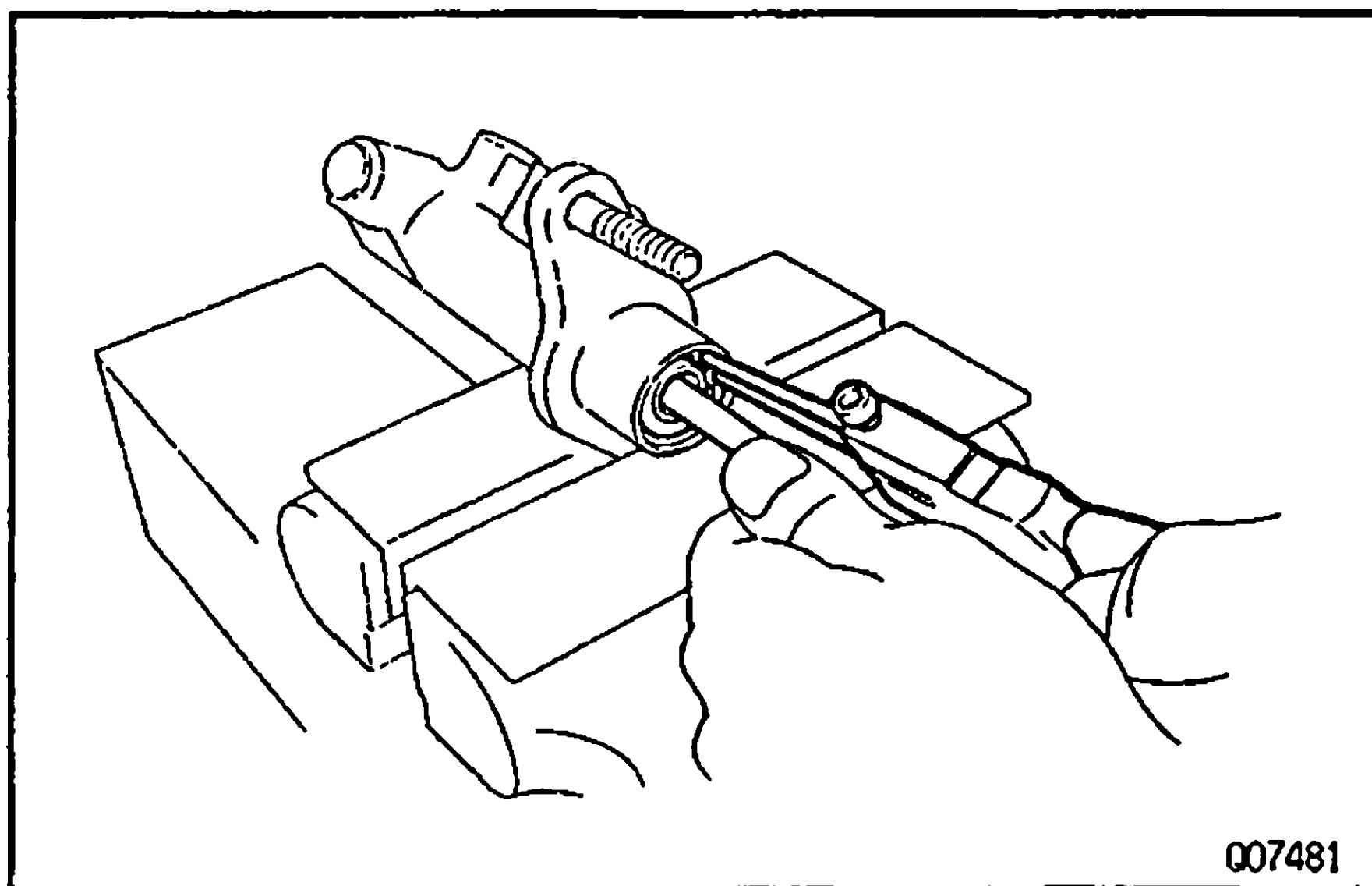
1. **DRAW OUT FLUID WITH SYRINGE**
INSTALLATION HINT: After installation, bleed system and adjust clutch pedal.
2. **DISCONNECT CLUTCH LINE**
Using SST, disconnect the line. Use a container to catch the brake fluid.
SST 09023-00100
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)
3. **REMOVE CLIP AND CLEVIS PIN**
4. **REMOVE MOUNTING NUTS AND PULL OUT MASTER CYLINDER**
Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

MASTER CYLINDER DISASSEMBLY**1. REMOVE RESERVOIR TANK**

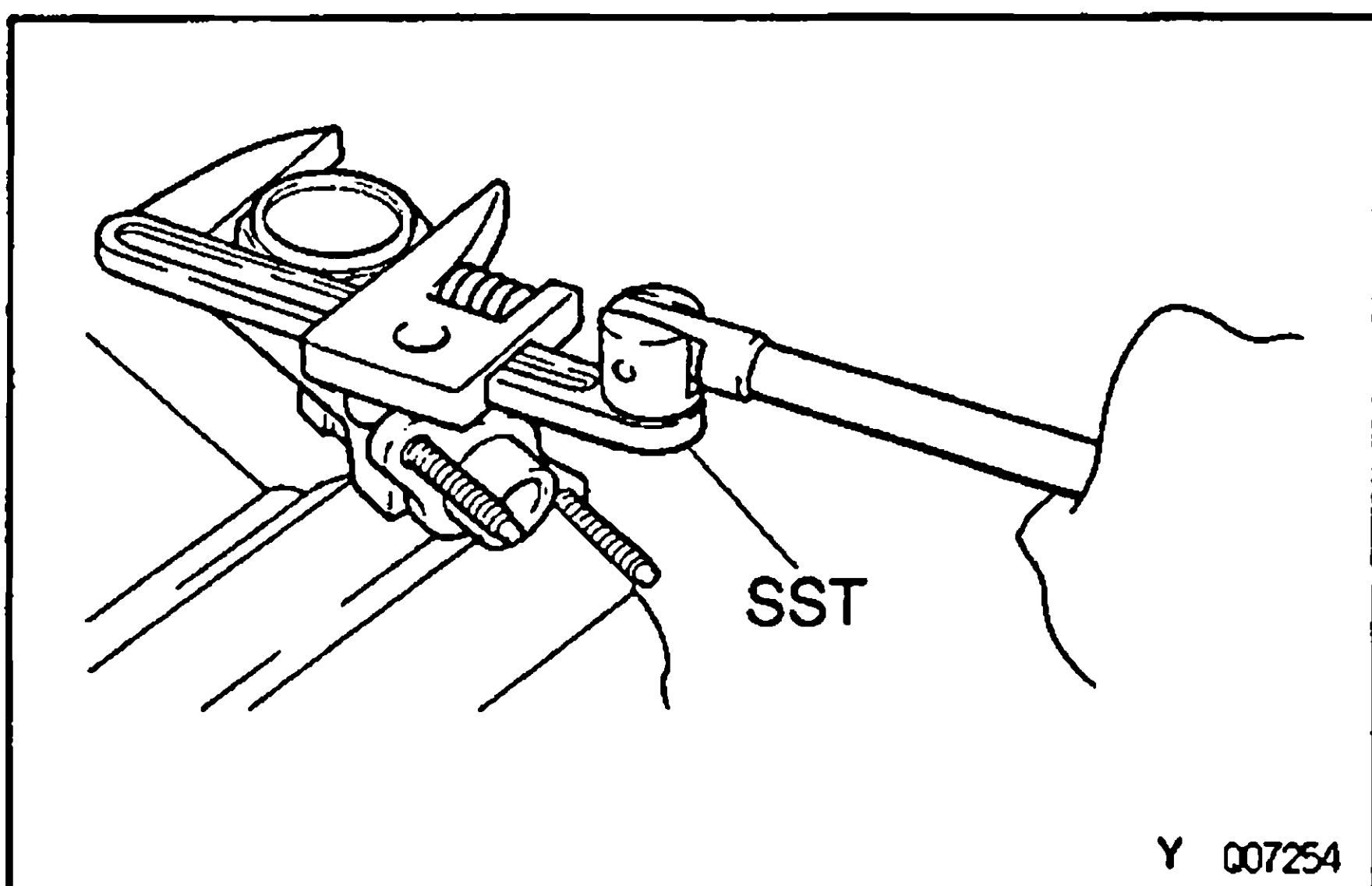
- (a) Using a pin punch and hammer, drive out the slotted spring pin.
- (b) Remove the reservoir tank and grommet.

**2. REMOVE PUSH ROD**

Pull back the boot and using snap ring pliers, remove the snap ring.

3. REMOVE PISTON**4. HZJ, HDJ series:****REMOVE ACCUMULATOR**

- (a) Using SST, remove the accumulator.
SST 09922-10010
- (b) Remove the gasket.

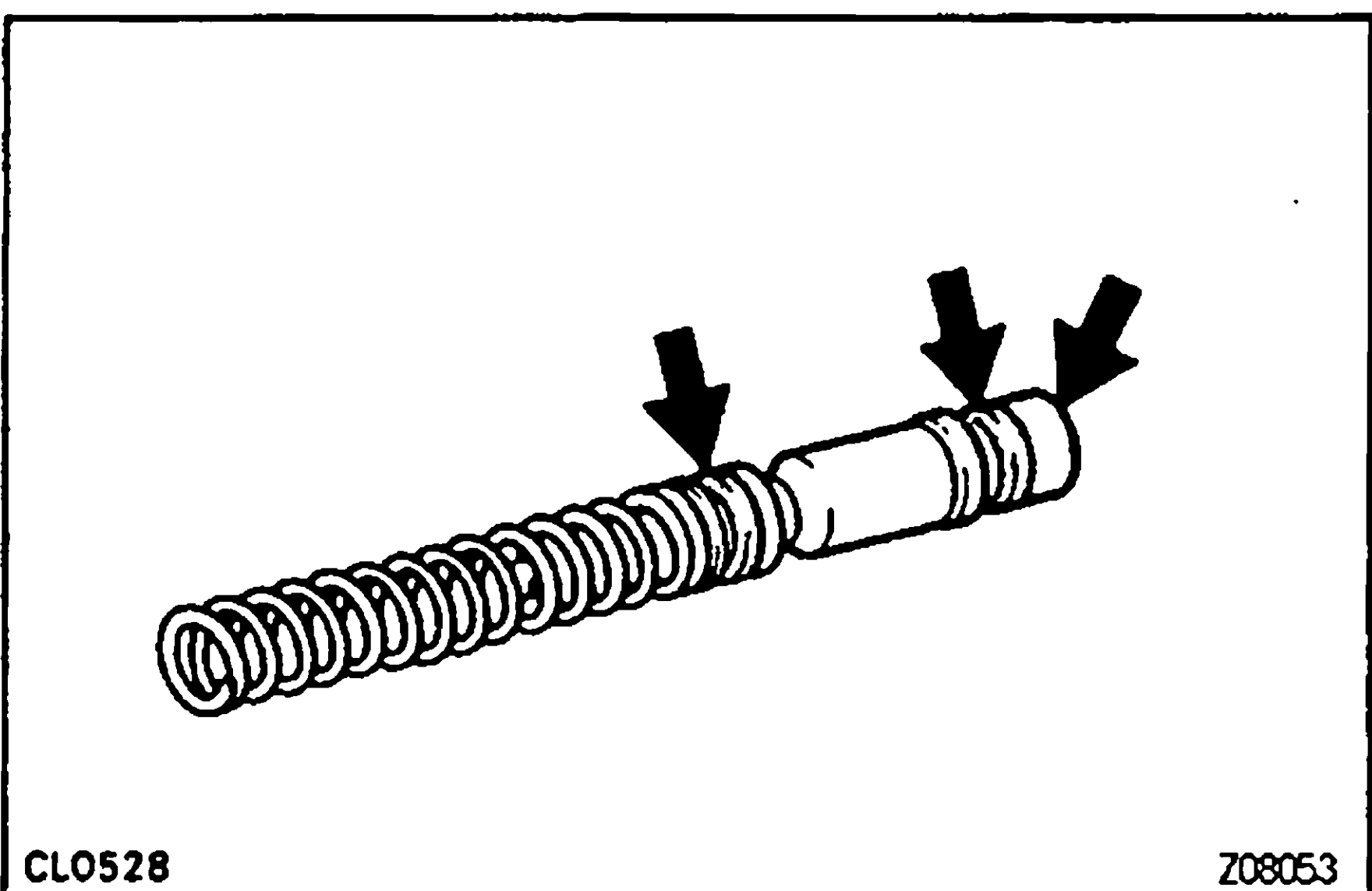
**MASTER CYLINDER ASSEMBLY****1. HZJ, HDJ series:****INSTALL ACCUMULATOR**

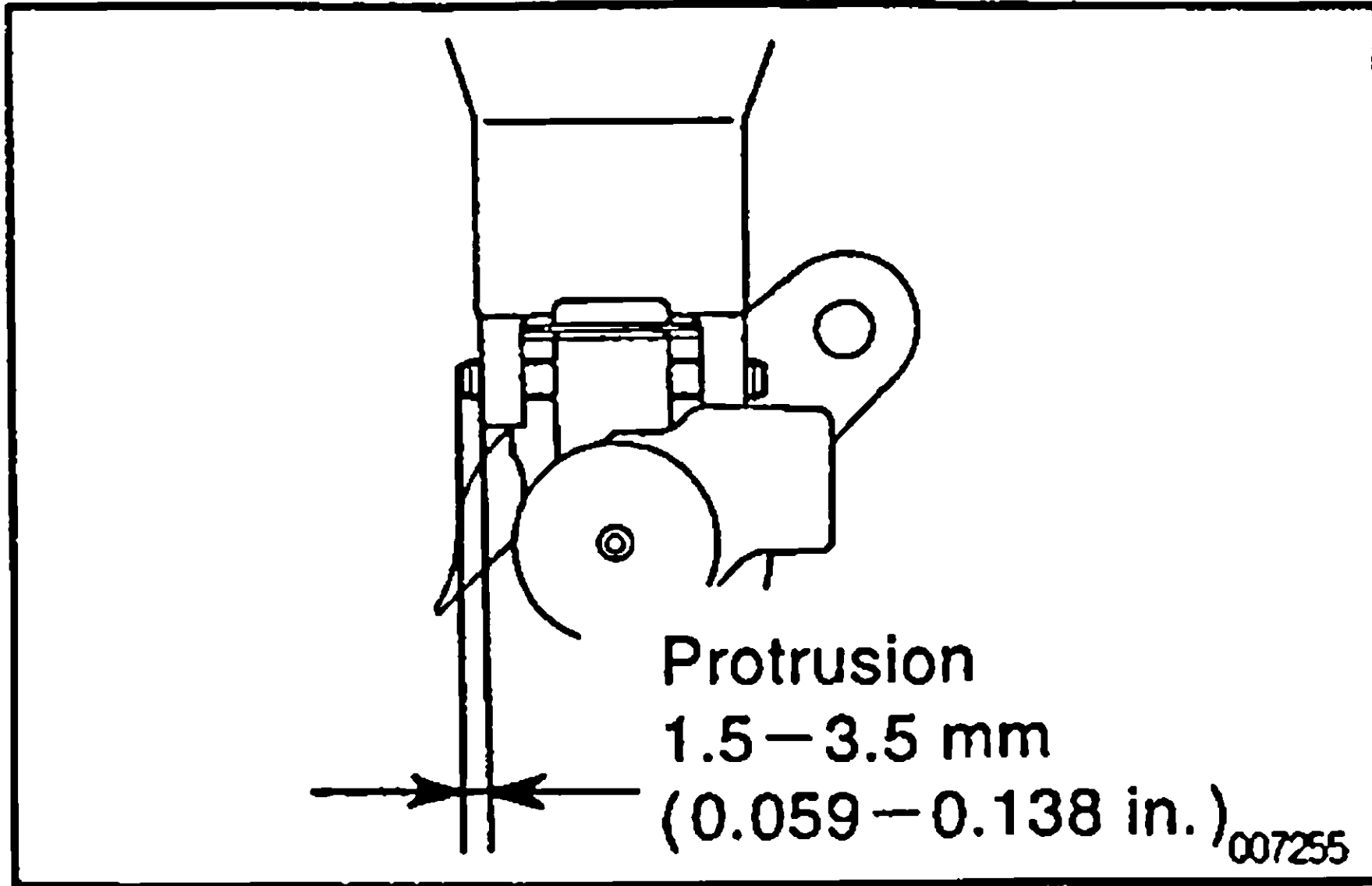
- (a) Install a new gasket.
- (b) Using SST, install the accumulator.
SST 09922-10010

Torque: 32 N·m (330 kgf·cm, 24 ft·lbf)

HINT: Use a torque wrench with a fulcrum length of 345 mm (13.6 in.).

- 2. COAT PARTS WITH LITHIUM SOAP BASE GLYCOL GREASE, AS SHOWN**
- 3. INSERT PISTON INTO CYLINDER**
- 4. INSTALL PUSH ROD ASSEMBLY WITH SNAP RING**



**5. INSTALL RESERVOIR TANK**

- (a) Install the reservoir tank and a new grommet.
- (b) Using a pin punch and hammer, drive in the slotted spring pin.

CL

SERVICE SPECIFICATIONS
SERVICE DATA

CLOOF-OM

Pedal height from asphalt sheet	168.0–178.0 mm (6.61–7.00 in.)
Pedal height from floor panel	172.0–182.0 mm (6.77–7.17 in.)
Push rod play at pedal top	1.0–5.0 mm (0.039–0.197 in.)
Pedal freeplay	5.0–15.0 mm (0.197–0.591 in.)
Clutch release point from pedal full stroke end position	25 mm (0.98 in.) or more

CLOOG-OR

TORQUE SPECIFICATIONS

Part tightened	N·m	kgf·cm	ft·lbf
Clutch line union	15	155	11
Master cylinder installation nut	12	120	9
Master cylinder body x Accumulator	32 (44)	330 (450)	24 (33)

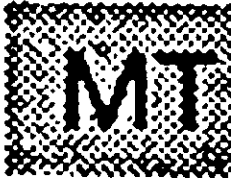
(): For use without SST

MANUAL TRANSMISSION

PREPARATION MT- 2

ASSEMBLY REMOVAL AND
INSTALLATION MT- 3

SERVICE SPECIFICATIONS MT- 4



REFER TO FOLLOWING REPAIR MANUALS:

Manual Name	Pub. No.
• Land Cruiser (Station Wagon) Chassis and Body Repair Manual	RM184E
• Land Cruiser (Hardtop, Canvas Top and Station Wagon) Chassis and Body Repair Manual	
Supplement Jan., 1992	RM290E
Aug., 1992	RM315E

NOTE: The above pages contain only the points which differ from the above listed manuals.

PREPARATION

EQUIPMENT

MT08X-01

Torque wrench	
---------------	--

LUBRICANT

MT08Y-01

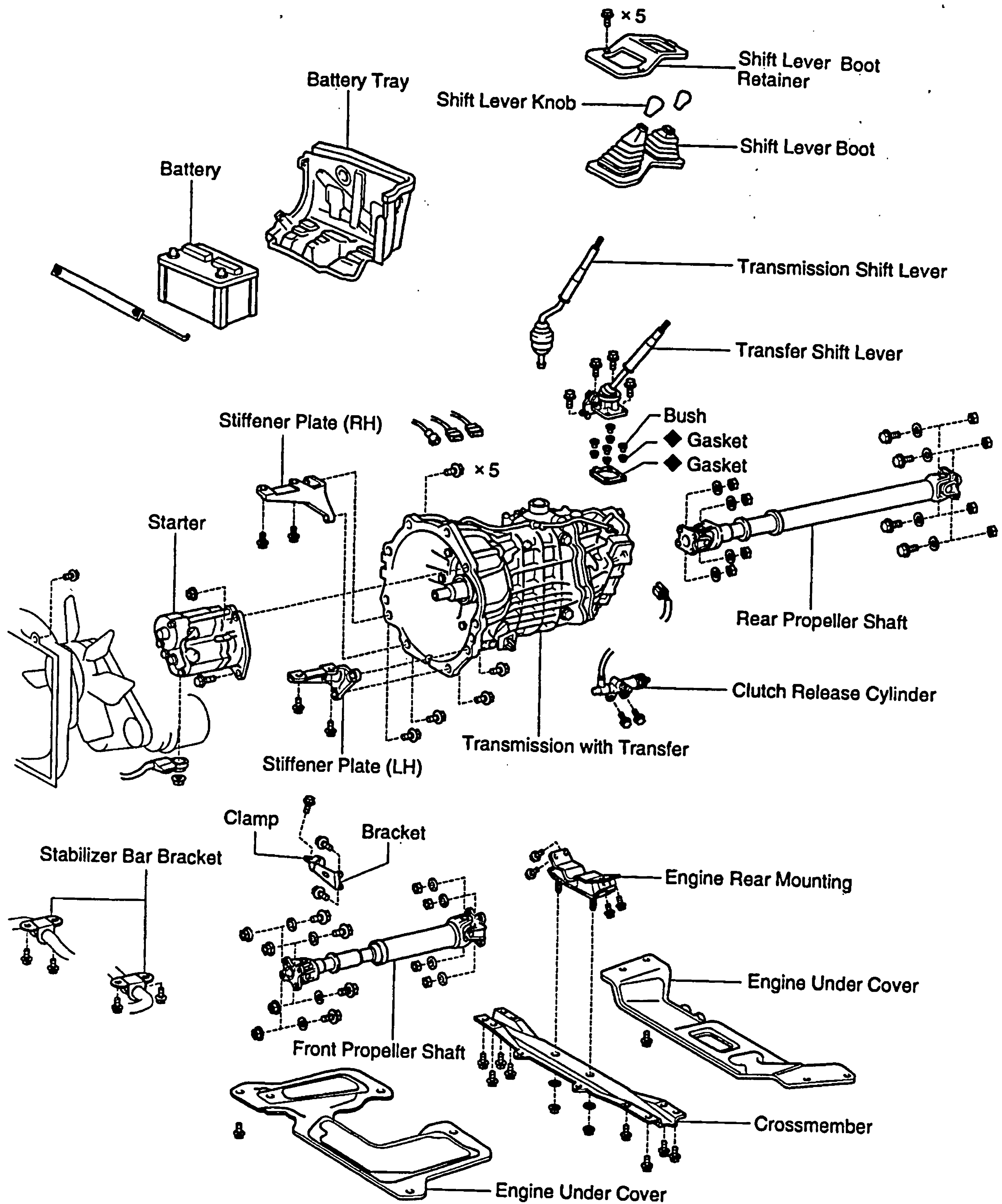
Item	Capacity	Classification
Manual transmission oil	2.7 liters (2.9 US qts, 2.4 Imp. qts)	API GL-4 or GL-5 SAE 75W-90



ASSEMBLY REMOVAL AND INSTALLATION

MT08Z-01

1HD-FT Engine



◆ Non-reusable part

SERVICE SPECIFICATIONS
TORQUE SPECIFICATIONS
1HD — FT ENGINE:

MT0C0-01

Engine x Transmission	72	730	52
Starter x Transmission	39	400	29
Stiffener plate x Transmission	69	700	51
Stiffener plate x Engine	69	700	51
Engine rear mounting x Transmission	59	600	43
Crossmember x Engine rear mounting	74	750	54
Crossmember x Frame	61	620	45
Clutch release cylinder x Transmission	12	120	9
Transfer shift lever x Transmission	19	190	14
Front exhaust pipe bracket x Transmission	24	240	17
Front exhaust pipe clamp set bolt	19	195	14
Engine under cover	28	290	21
Stabilizer bar bracket set bolt	18	185	13



SUSPENSION AND AXLE

FRONT SUSPENSION	SA— 2
PREPARATION	SA— 2
LEADING ARM	SA— 3
REAR DIFFERENTIAL	SA— 5
PREPARATION	SA— 5
DIFFERENTIAL CASE	SA— 6
(Limited Slip Differential)	SA— 6
REAR SUSPENSION	SA— 10
PREPARATION	SA— 10
LATERAL CONTROL ROD	SA— 12
UPPER AND LOWER CONTROL ARM	SA— 14
SERVICE SPECIFICATIONS	SA— 16

SA

REFER TO FOLLOWING REPAIR MANUALS:

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• Land Cruiser (Station Wagon) Chassis and Body Repair Manual	RM184E
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Supplement Jan., 1992	RM290E
Aug., 1992	RM315E

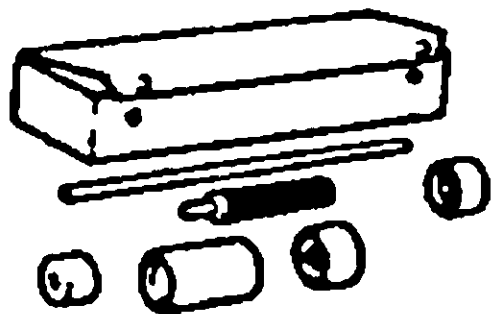
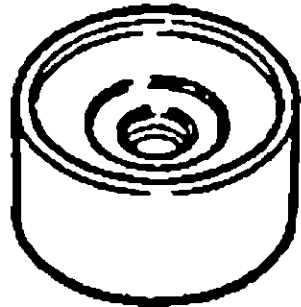
NOTE: The above pages contain only the points which differ from the above listed manuals.

FRONT SUSPENSION

PREPARATION

SST (SPECIAL SERVICE TOOLS)

SA1VB-01

	09710-22041 Rear Suspension Bushing Tool Set	Leading arm bushing (Rear side)
	(09710-02060) Replacer	
	09710-30050 Suspension Arm Bushing Replacer	Leading arm bushing (Front side)

SA

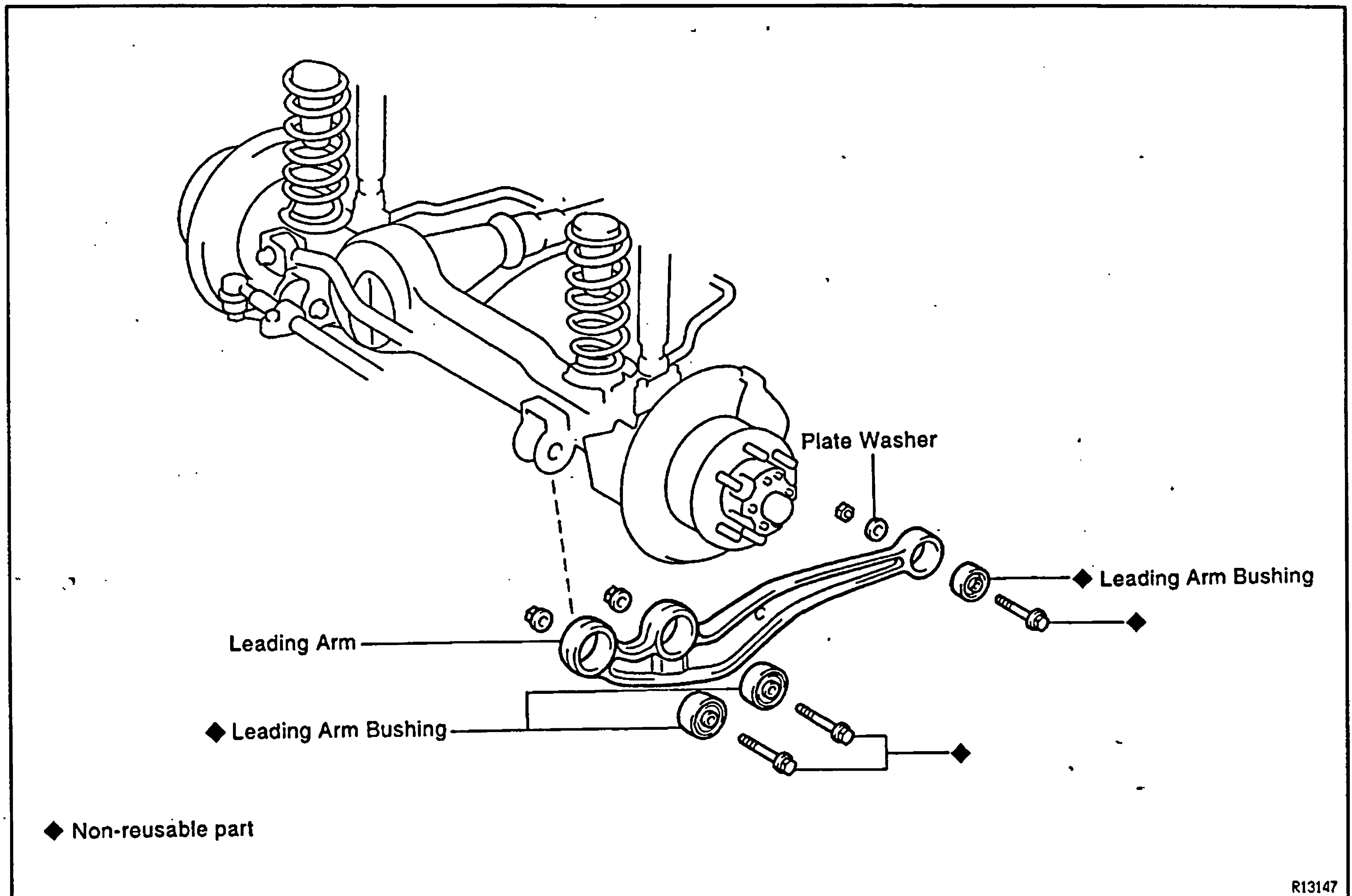
EQUIPMENT

SA1VC-01

Torque wrench	
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LEADING ARM COMPONENTS

SA1VD-01



LEADING ARM REMOVAL

SA1VE-01

Installation is in the reverse order of removal.

1. JACK UP VEHICLE

- Jack up and support the frame with stands.
- Hold the front axle housing with a jack.

2. REMOVE FRONT WHEEL

Torque:

Steel wheel:

147 N·m (1,500 kgf·cm, 109 ft·lbf)

Aluminum wheel:

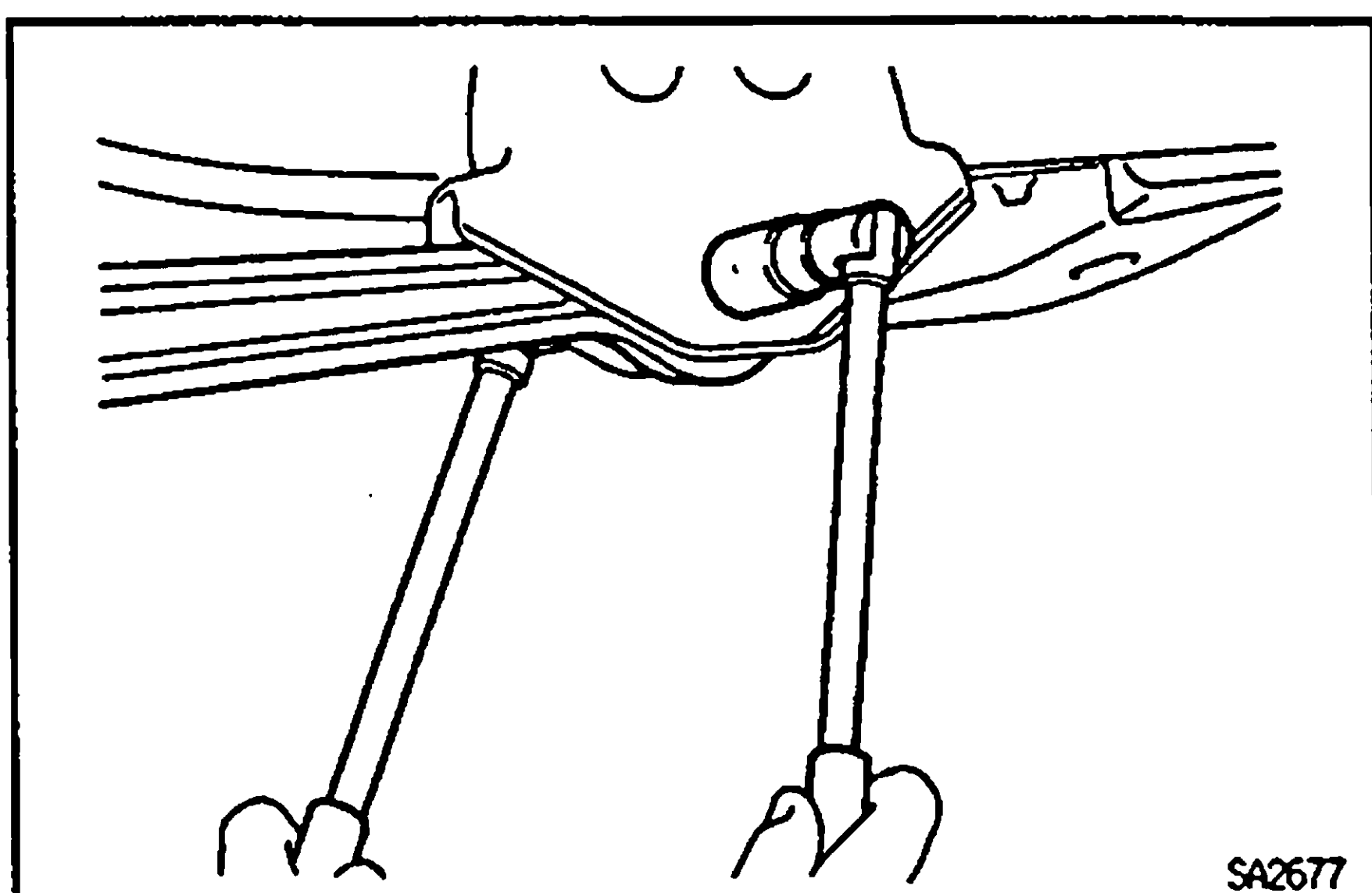
103 N·m (1,050 kgf·cm, 76 ft·lbf)

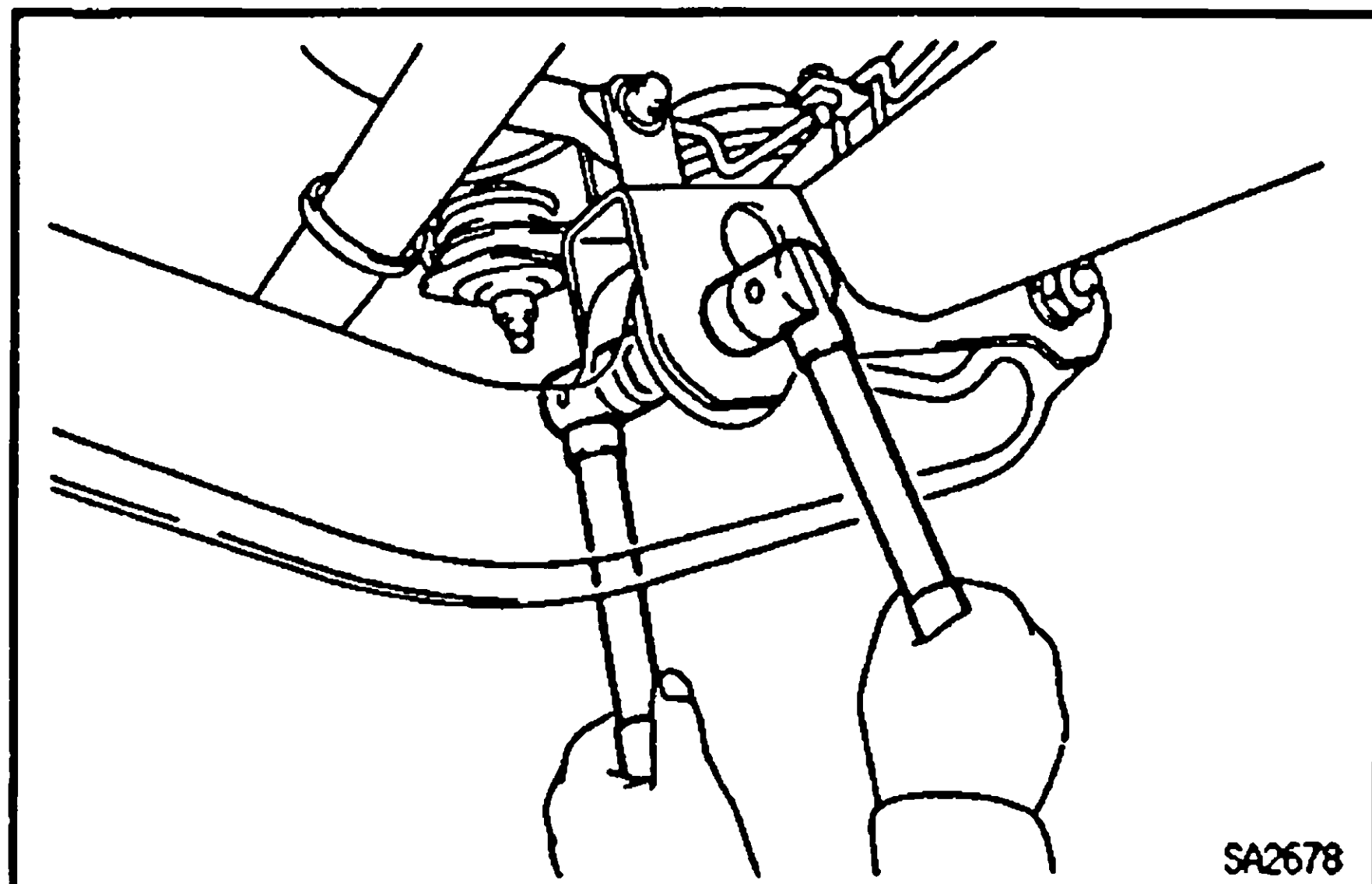
3. REMOVE LEADING ARM

- Remove the bolt, plate washer and nut from the leading arm to the frame side.

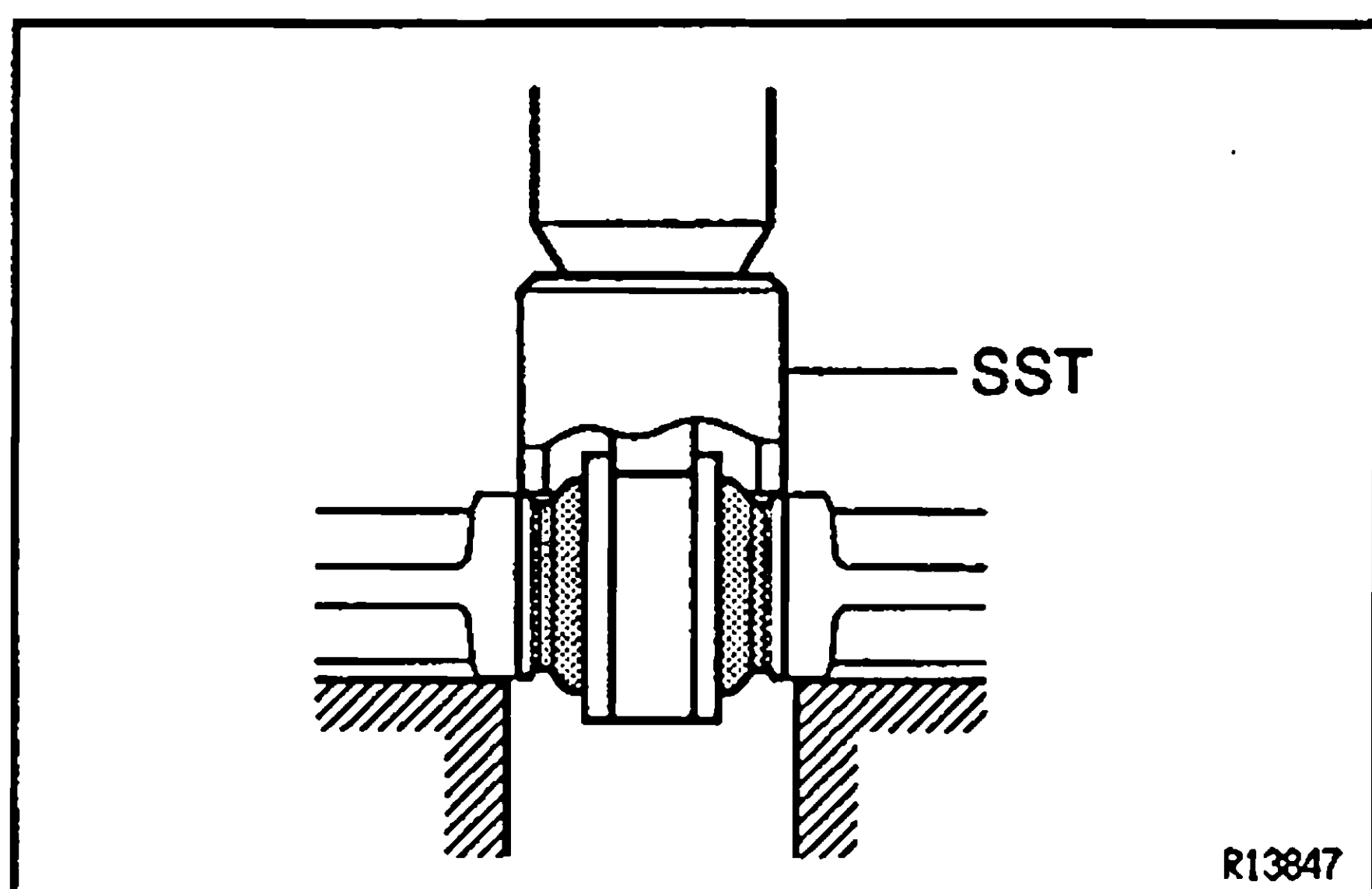
Torque: 177 N·m (1,800 kgf·cm, 130 ft·lbf)

INSTALLATION HINT: After stabilizing the suspension, torque the bolt.





- (b) Remove the 2 bolts and nuts from the leading arm to the axle housing side.
Torque: 171 N·m (1,750 kgf·cm, 127 ft·lbf)
INSTALLATION HINT: After stabilizing the suspension, torque the bolts.
- (c) Remove the leading arm.



LEADING ARM BUSHING REPLACEMENT ^{SA1VF-01}

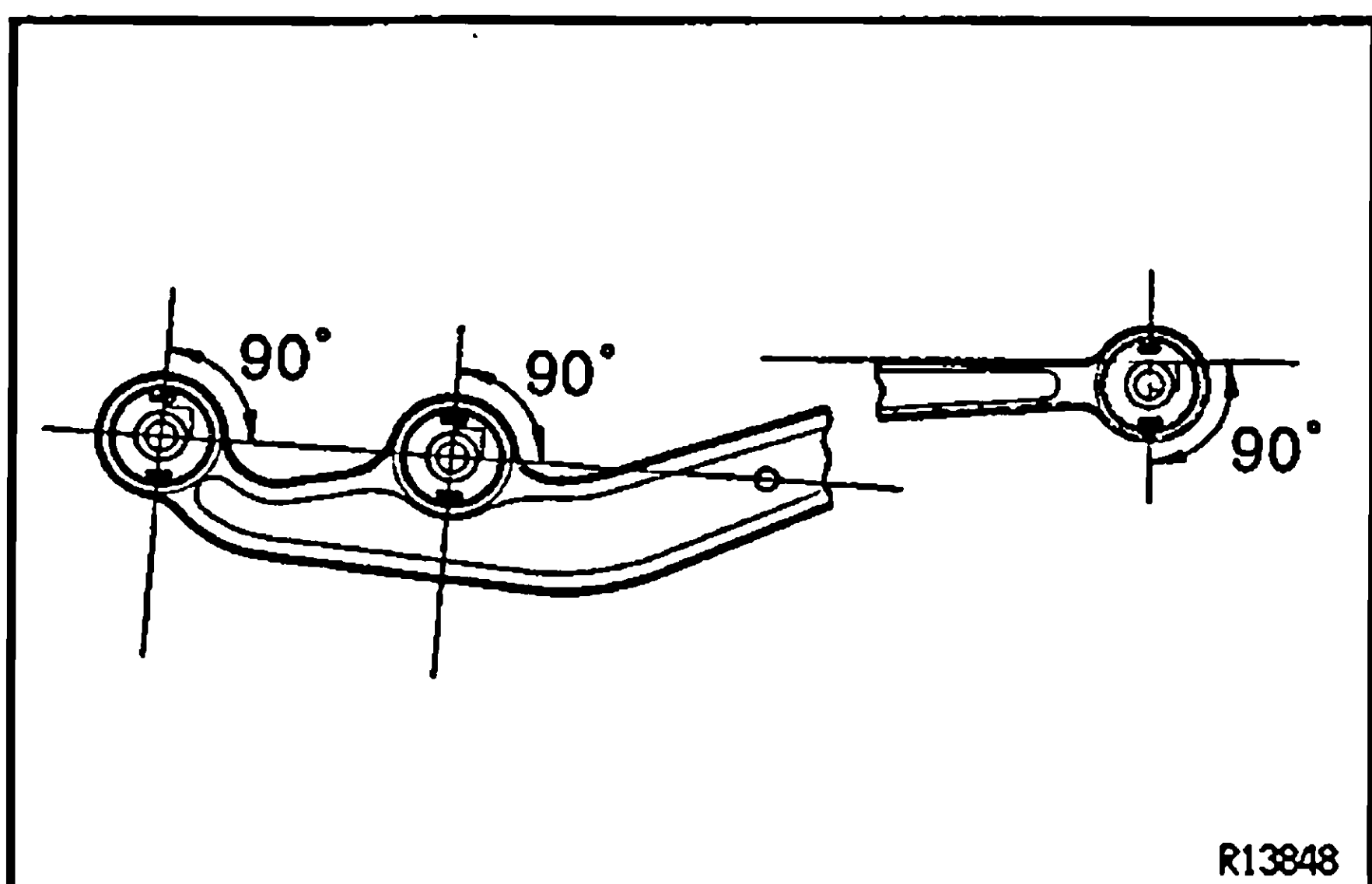
REPLACE BUSHINGS

Using SST and a press, replace the bushing from the leading arm.

SST

Front side: 09710-30050

Rear side: 09710-22041 (09710-02060)



HINT: When assembling the bushing, as shown in the illustration.

REAR DIFFERENTIAL

PREPARATION

EQUIPMENT

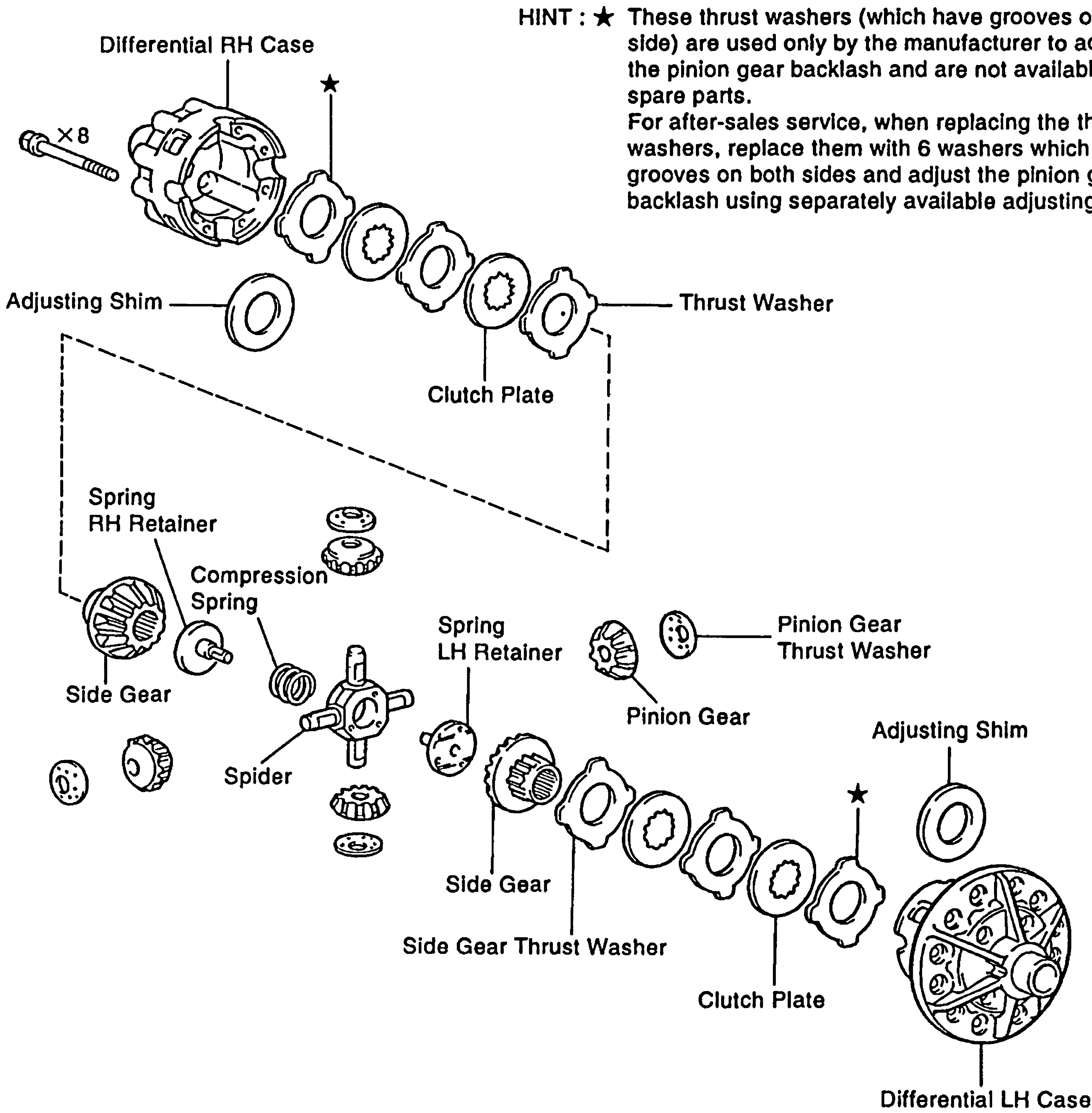
BA1VG-01

Dial indicator or dial indicator with magnetic base	
Micrometer	
Torque wrench	
Vernier calipers	
Shop rag	

SA

DIFFERENTIAL CASE
(Limited Slip Differential)
COMPONENTS

8A1VH-01

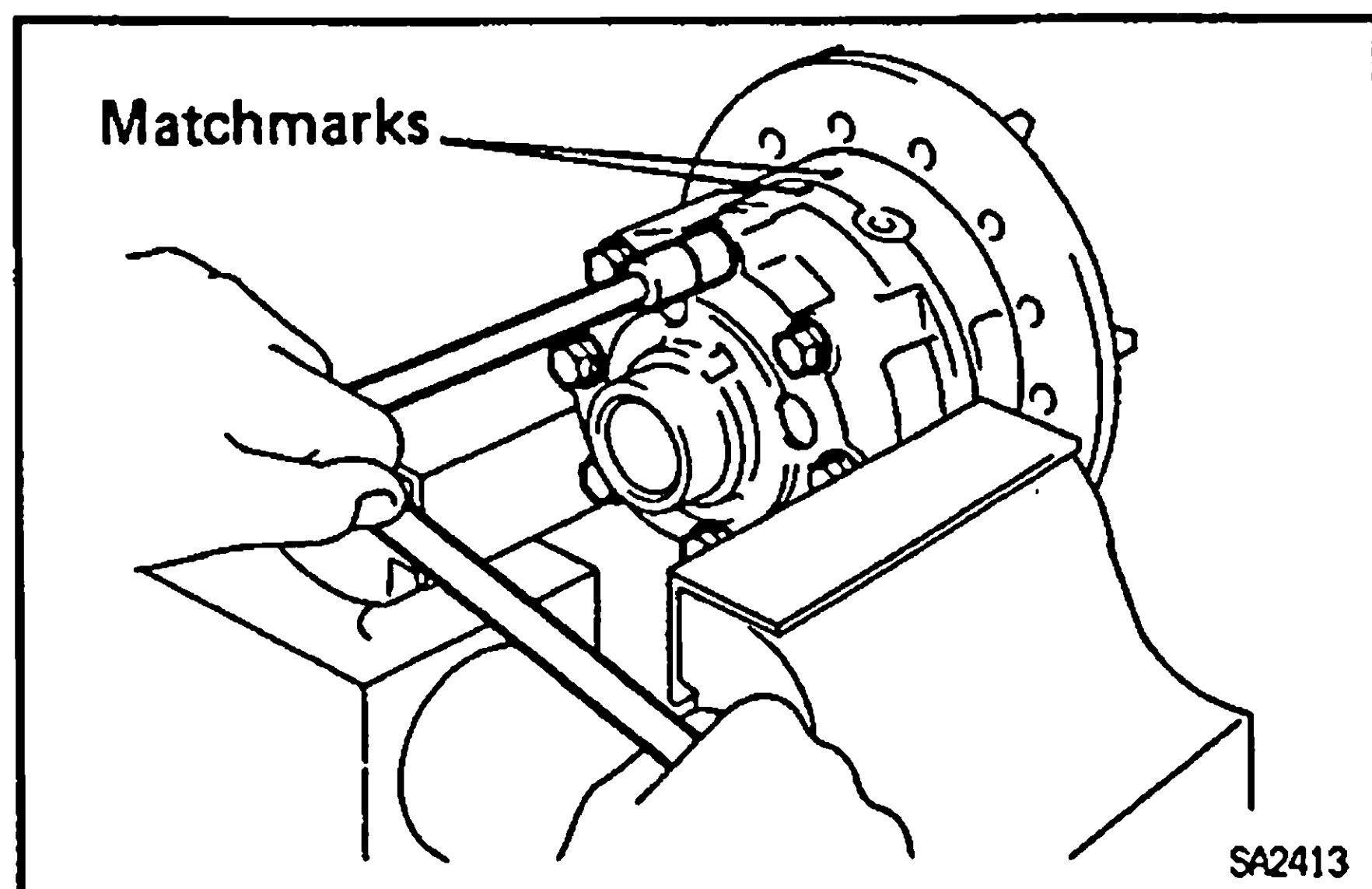


SA

DIFFERENTIAL CASE REMOVAL

Installation is in the reverse order of removal.

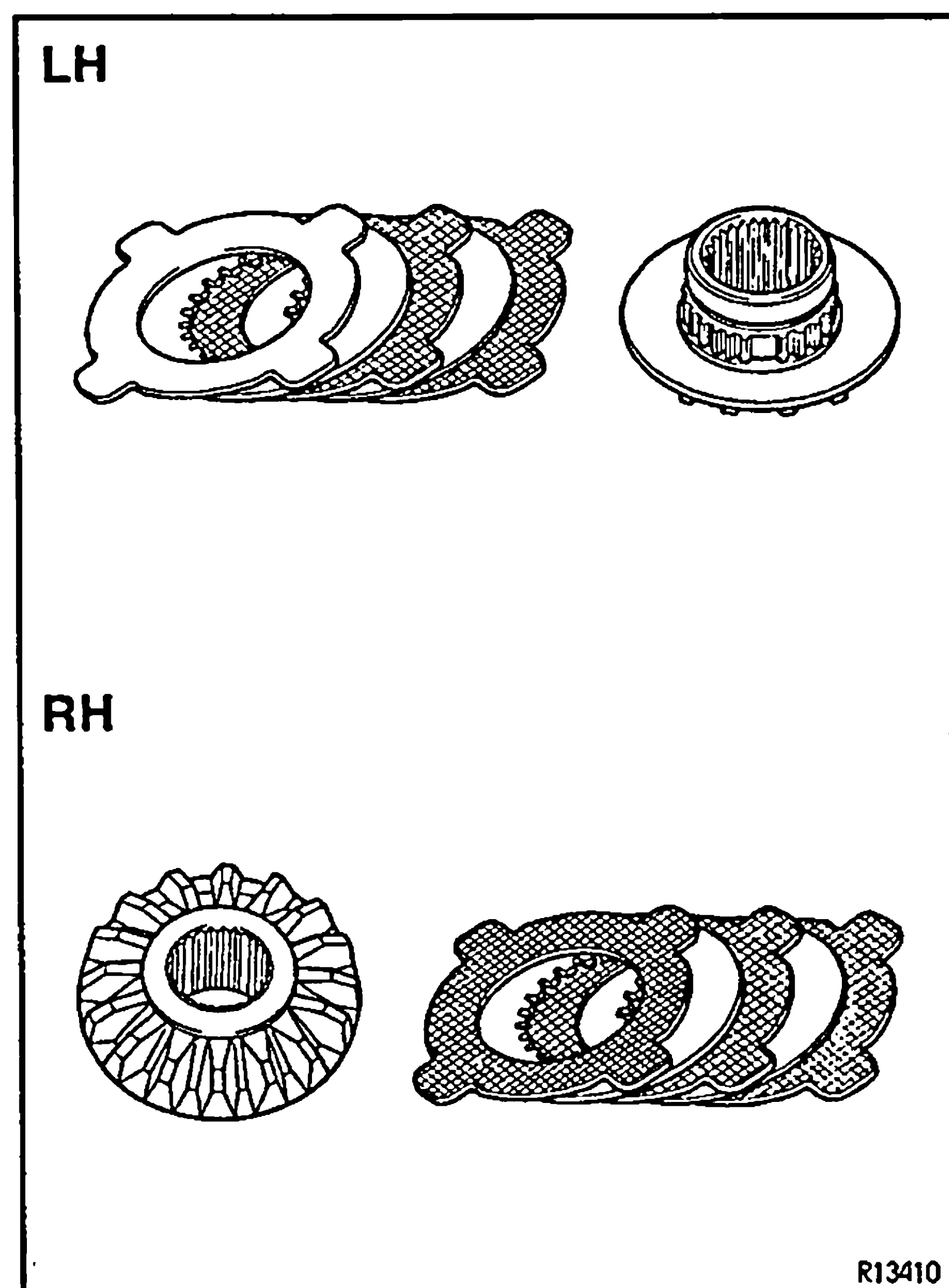
1. **REMOVE DIFFERENTIAL**
(See Pub. No. RM184E on page SA-97)
2. **REMOVE DIFFERENTIAL CASE FROM CARRIER**
(See Pub. No. RM184E on page SA-101)



DIFFERENTIAL CASE DISASSEMBLY

1. **DISASSEMBLE DIFFERENTIAL CASE**
 - (a) Place matchmarks on the LH and RH cases.
 - (b) Remove the 8 bolts uniformly, a little at a time.
 - (c) Using a plastic hammer, separate the LH and RH cases.

SA



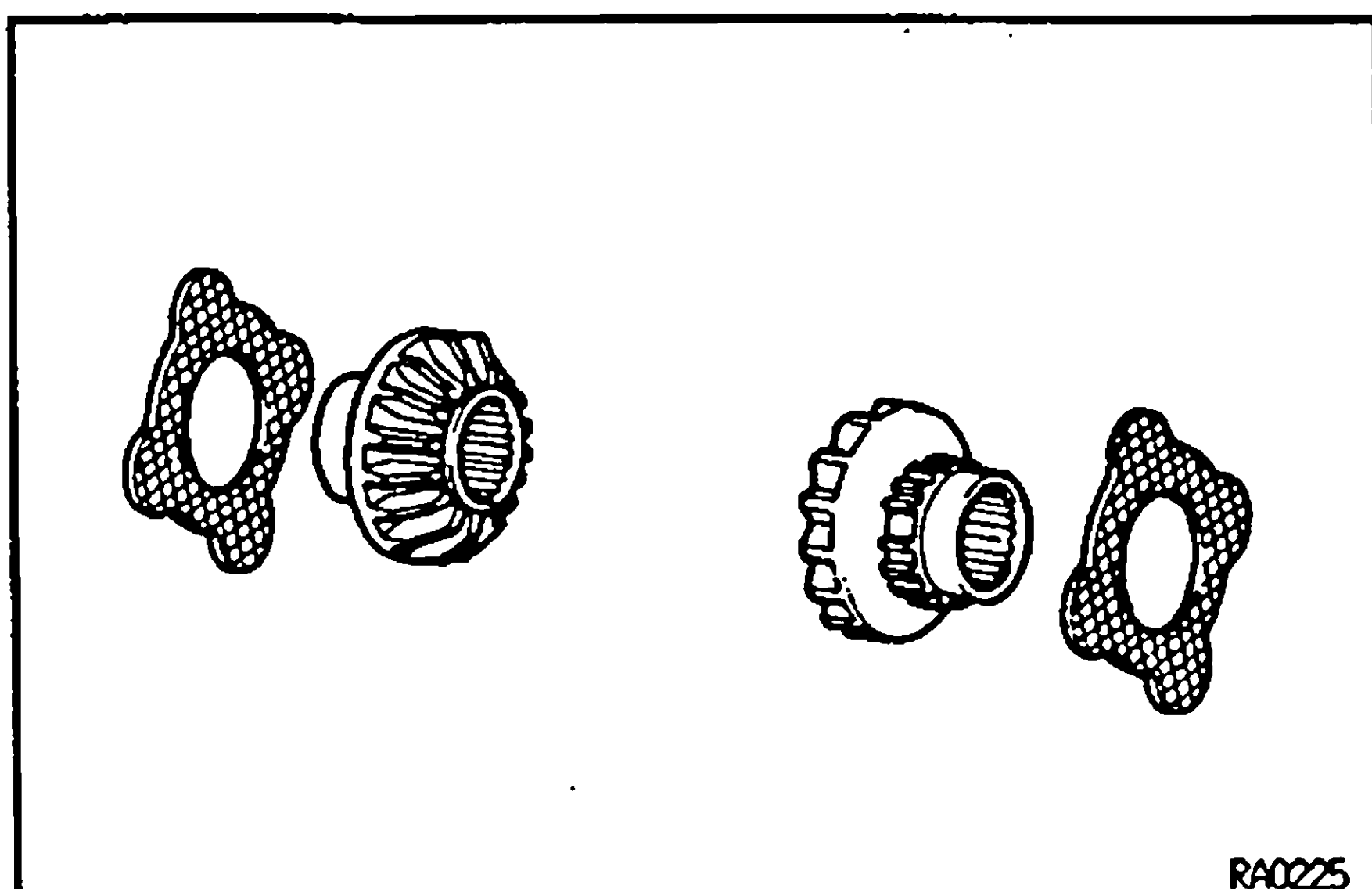
2. **REMOVE THESE PARTS FROM DIFFERENTIAL LH AND RH CASES:**

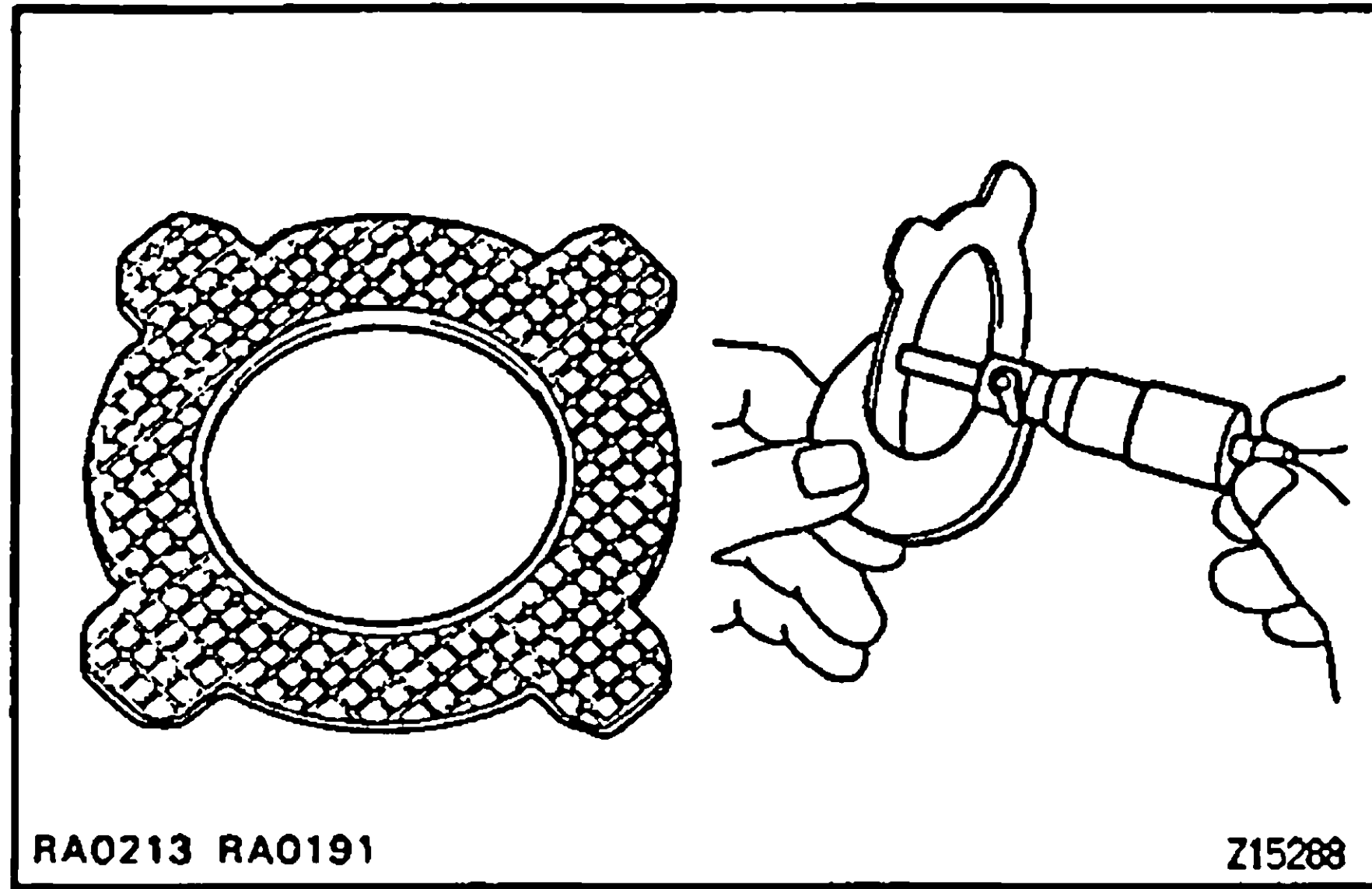
HINT: Keep the disassembled parts in order.

- (a) Remove the these parts from the LH case:
 - Side gear
 - Side gear thrust washer (3 pieces)
 - Clutch plate (2 pieces)
- (b) Remove the these parts from the RH case:
 - Spring LH retainer
 - Compression spring
 - Spider with pinion gear (4 pieces)
 - Pinion gear thrust washer (4 pieces)
 - Spring RH retainer
 - Side gear
 - Side gear thrust washer (3 pieces)
 - Clutch plate (2 pieces)

COMPONENTS INSPECTION

1. **REPLACE PARTS THAT ARE DAMAGED OR WORN**
HINT: If replacing the side gear, also replace the thrust washer that contacts with it.





2. INSPECT SIDE GEAR THRUST WASHERS FOR WEAR OR DAMAGE

Using a micrometer, measure the contact surface of the thrust washer is even and check that no bare metal is showing.

Thickness (For reference):

1.97 – 2.06 mm (0.0776 – 0.0811 in.)

If necessary, replace the thrust washers.

HINT: If replacing the thrust washer, also replace the clutch plate that contacts with it.

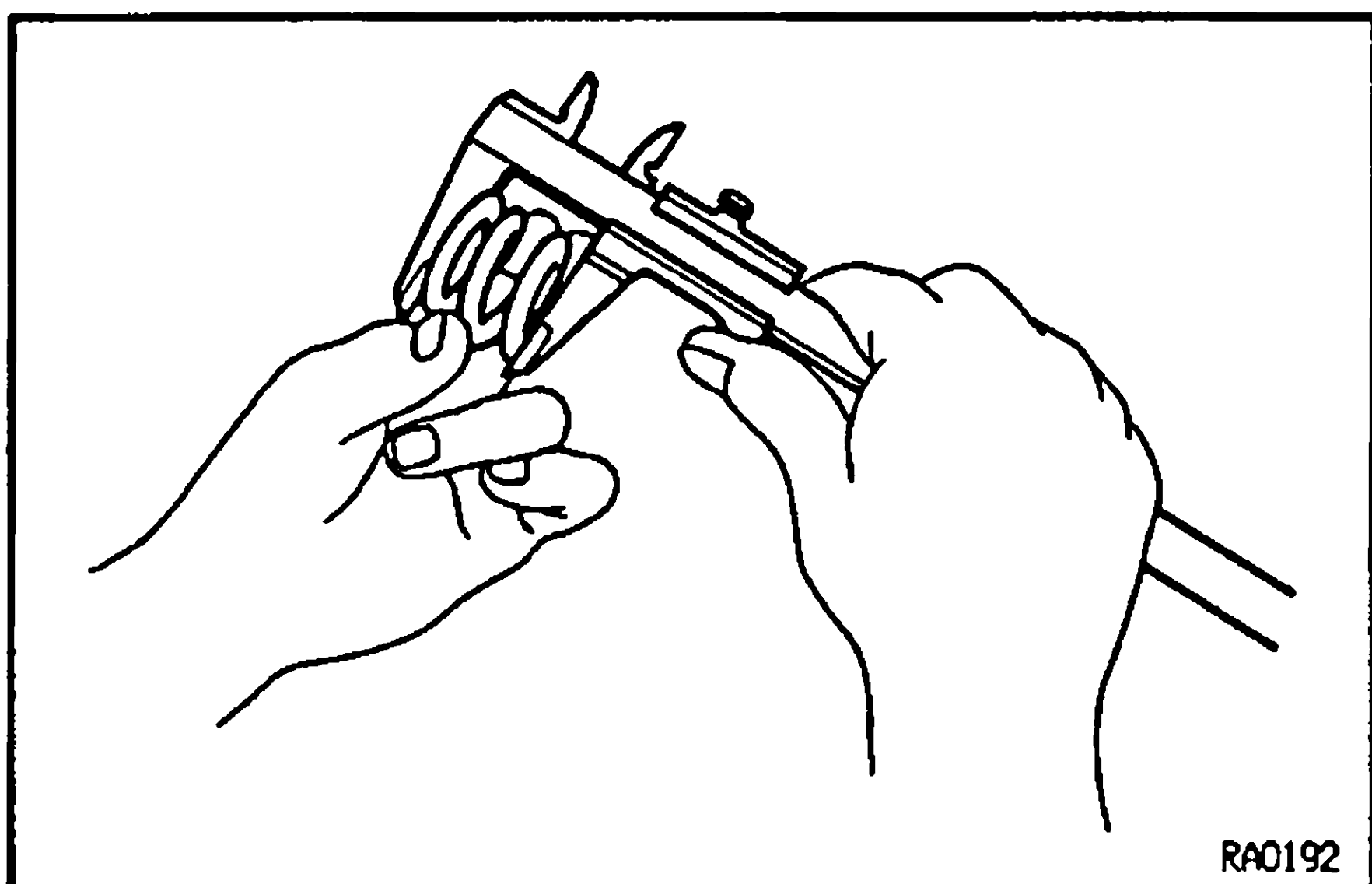
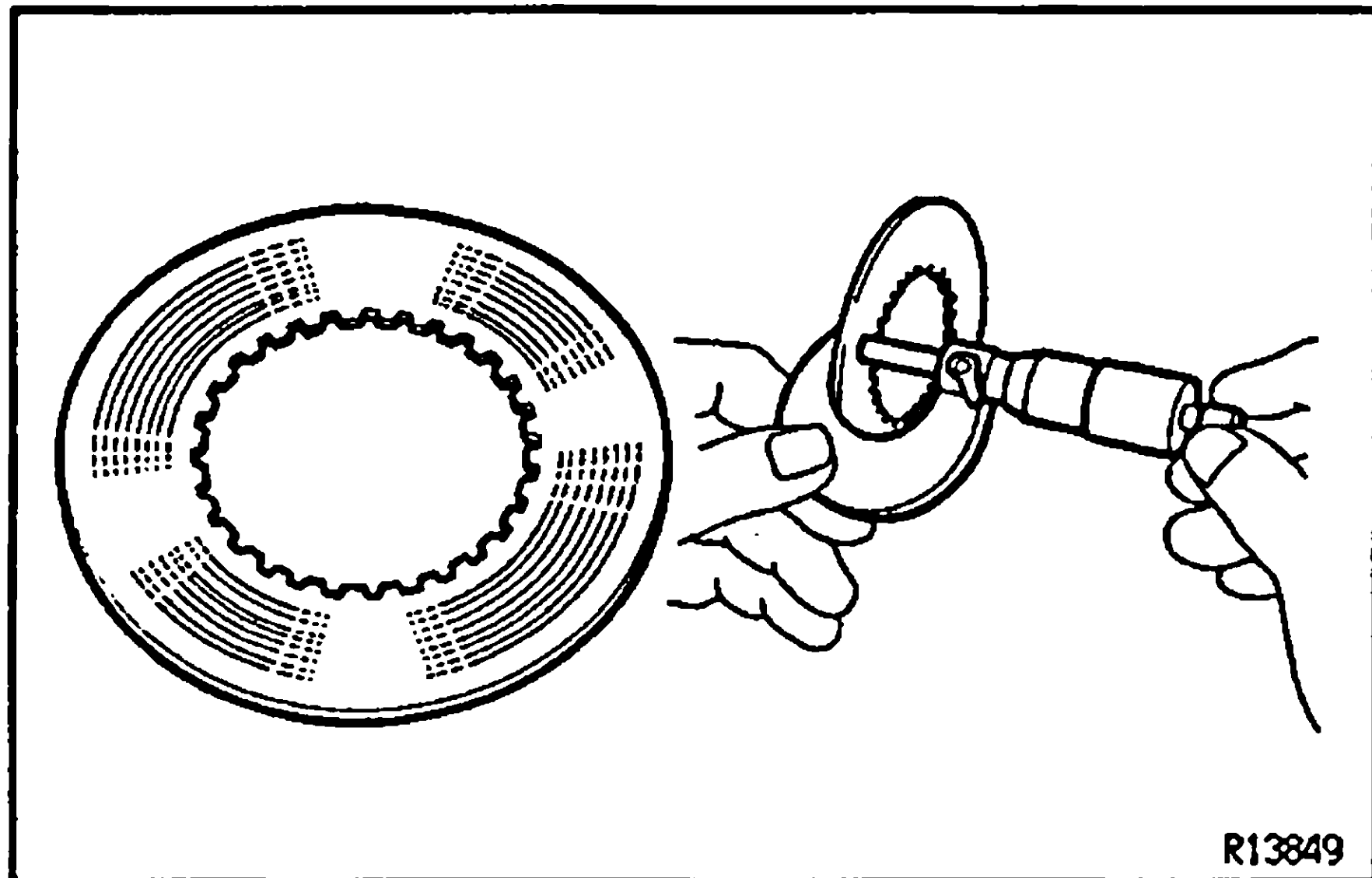
3. INSPECT CLUTCH PLATE FOR WEAR OR DAMAGE

Using a micrometer, measure the contact surface of the clutch plate and check that there is no abnormal wear.

Thickness (For reference):

1.97 – 2.03 mm (0.0776 – 0.0799 in.)

If necessary, replace the clutch plate.

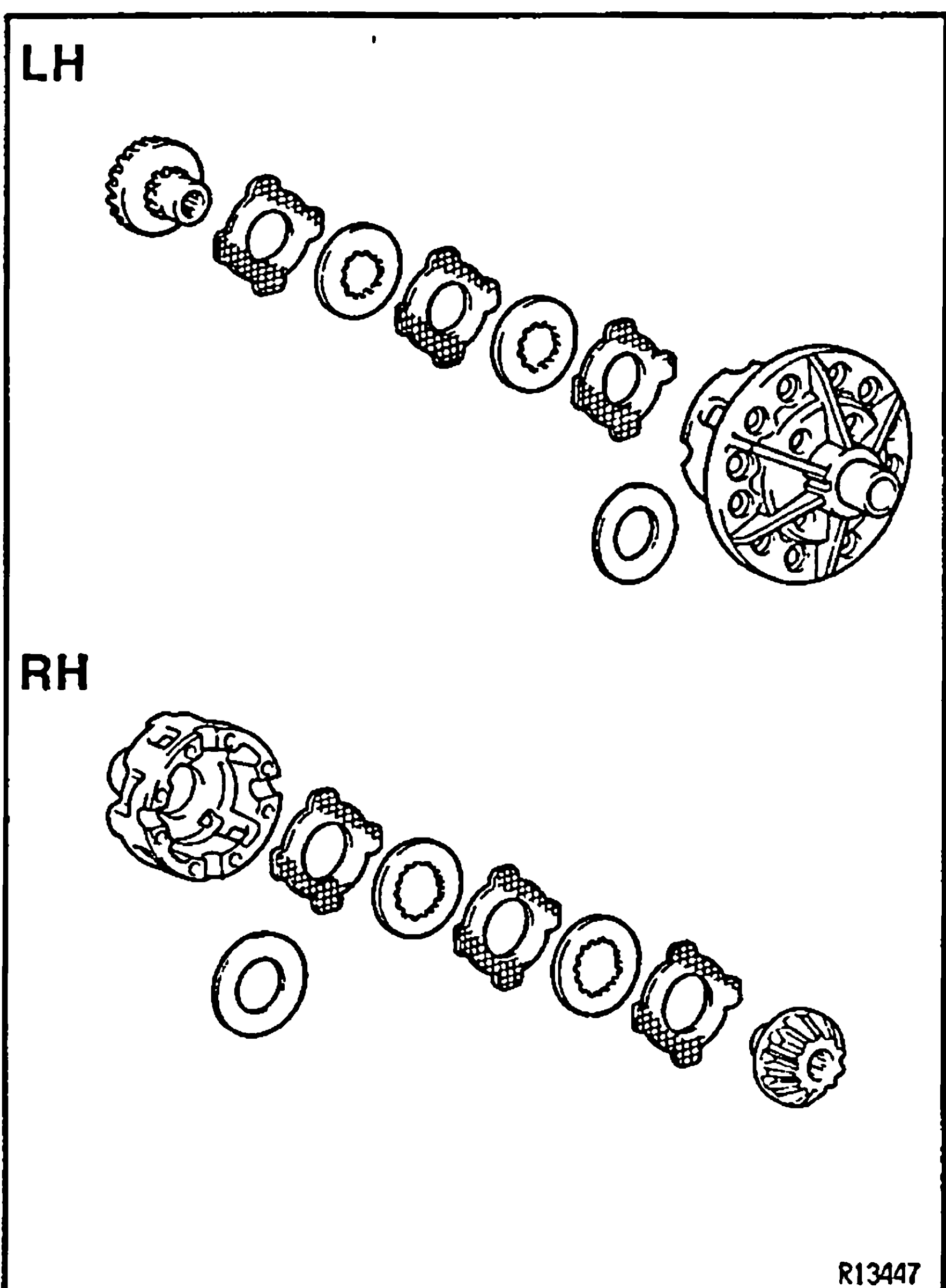


4. INSPECT COMPRESSION SPRING FREE LENGTH

Using a vernier caliper, measure the free length of the spring.

Length (For reference):

38.1 – 38.9 mm (1.50 – 1.53 in.)



DIFFERENTIAL CASE ASSEMBLY

SA1VM-01

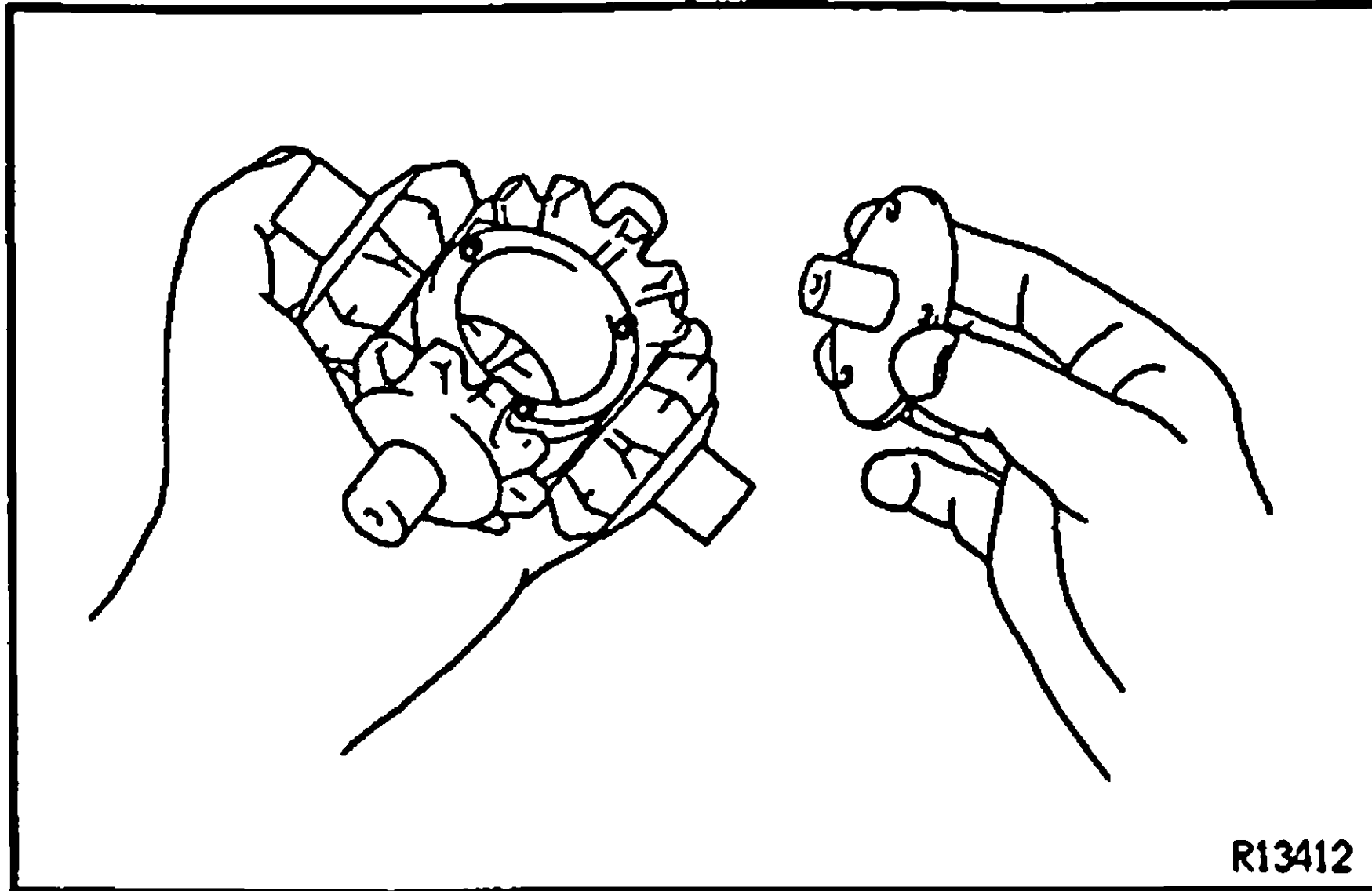
HINT:

- Using a shop rag, clean off any foreign matter from the parts.
- Apply all of the sliding and rotating surfaces with LSD oil.
- When installing, the side gear thrust washers (Marking 1 – 8) are not used. To adjust the backlash, use new thrust washer and the adjusting shim.

1. MEASURE SIDE GEAR BACKLASH

(a) Install the these parts to the differential LH and RH cases:

- Adjusting shim (1 or 2 pieces)
- Clutch plate (2 pieces)
- Side gear thrust washer (3 pieces)
- Side gear



- (b) Install the 4 pinion gears and thrust washers to the spider.
- (c) Align the spring LH retainer holes with the spider knock pins and install the LH retainer.
- (d) Install the pinion gear and spider to the differential LH case.

HINT: Install the spider to the LH case tightly and don't move the spring retainer.

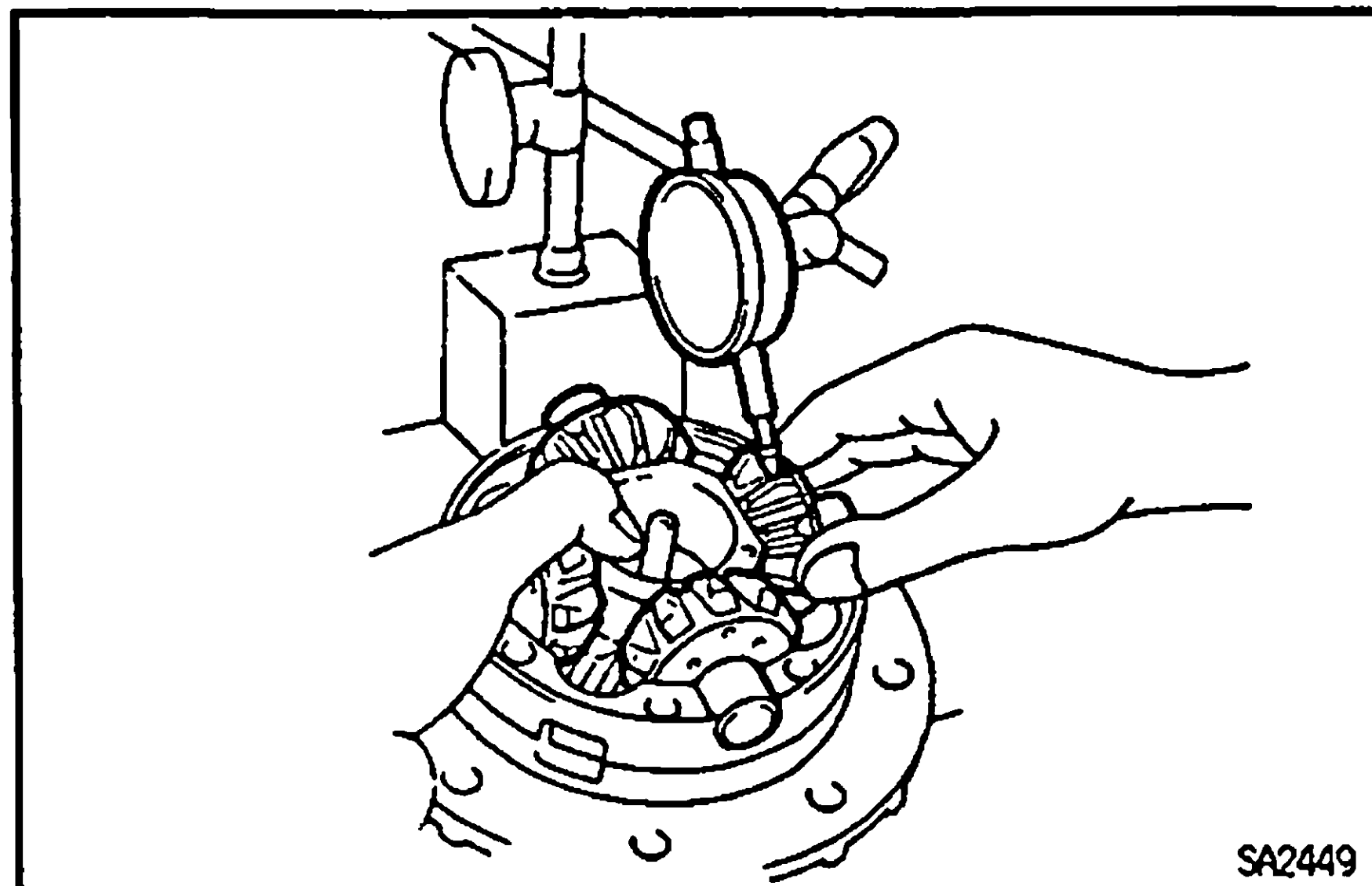
- (e) Using a dial indicator, measure the side gear backlash while hold the side gear and spider.

Backlash: 0.05 – 0.24 mm (0.0020 – 0.0094 in.)

HINT:

- Measure at all 4 locations.
- Measure the backlash at the LH case and at the RH case.

If the backlash is not within specification, install a adjusting shim of a different thickness.



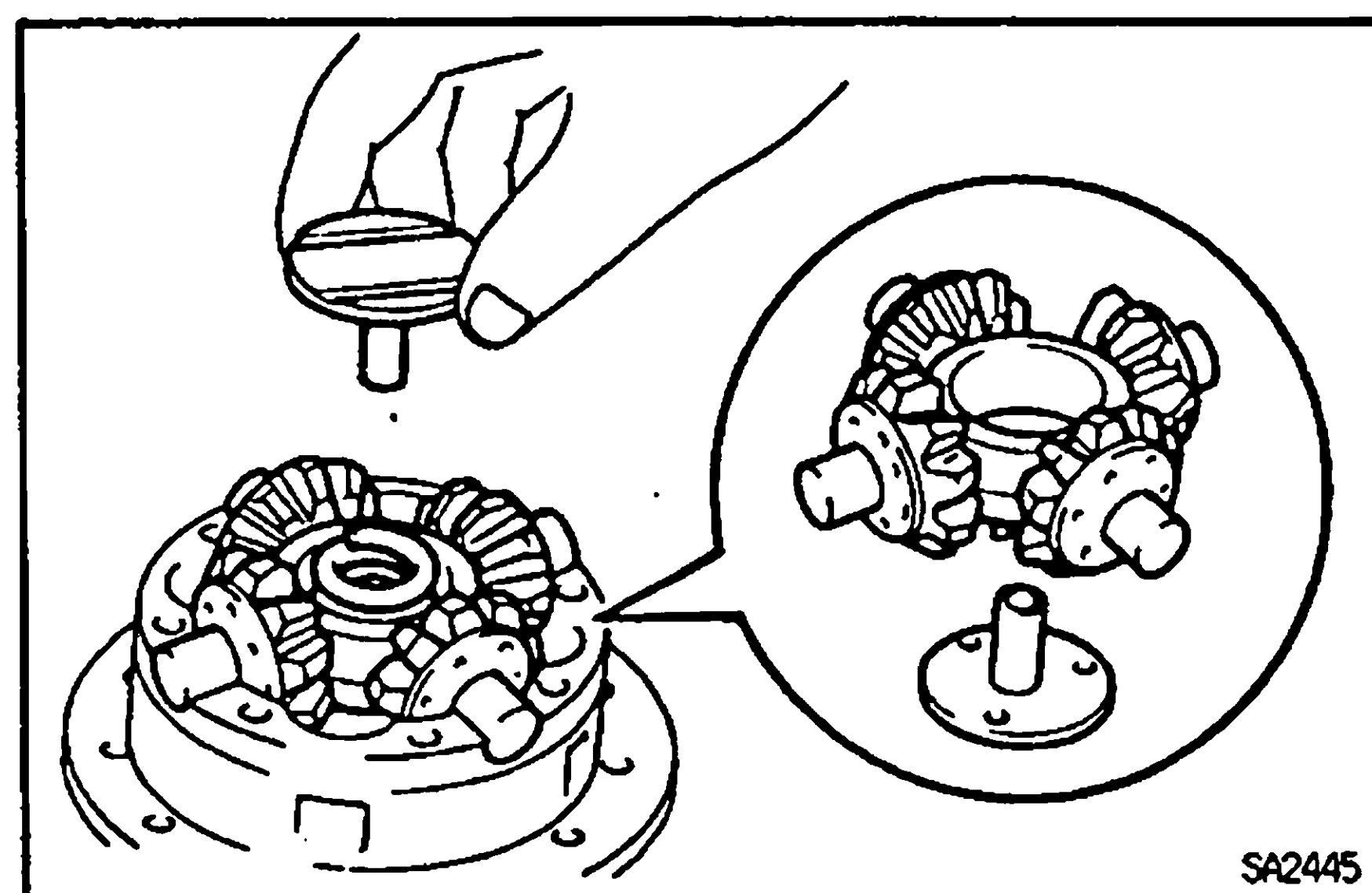
Thickness mm (in.)	Thickness mm (in.)
0.20 (0.0079)	0.30 (0.0018)
0.25 (0.0098)	0.35 (0.0138)

2. ASSEMBLE DIFFERENTIAL CASE

- (a) Reinstall the spider and spring LH retainer to the differential LH case.

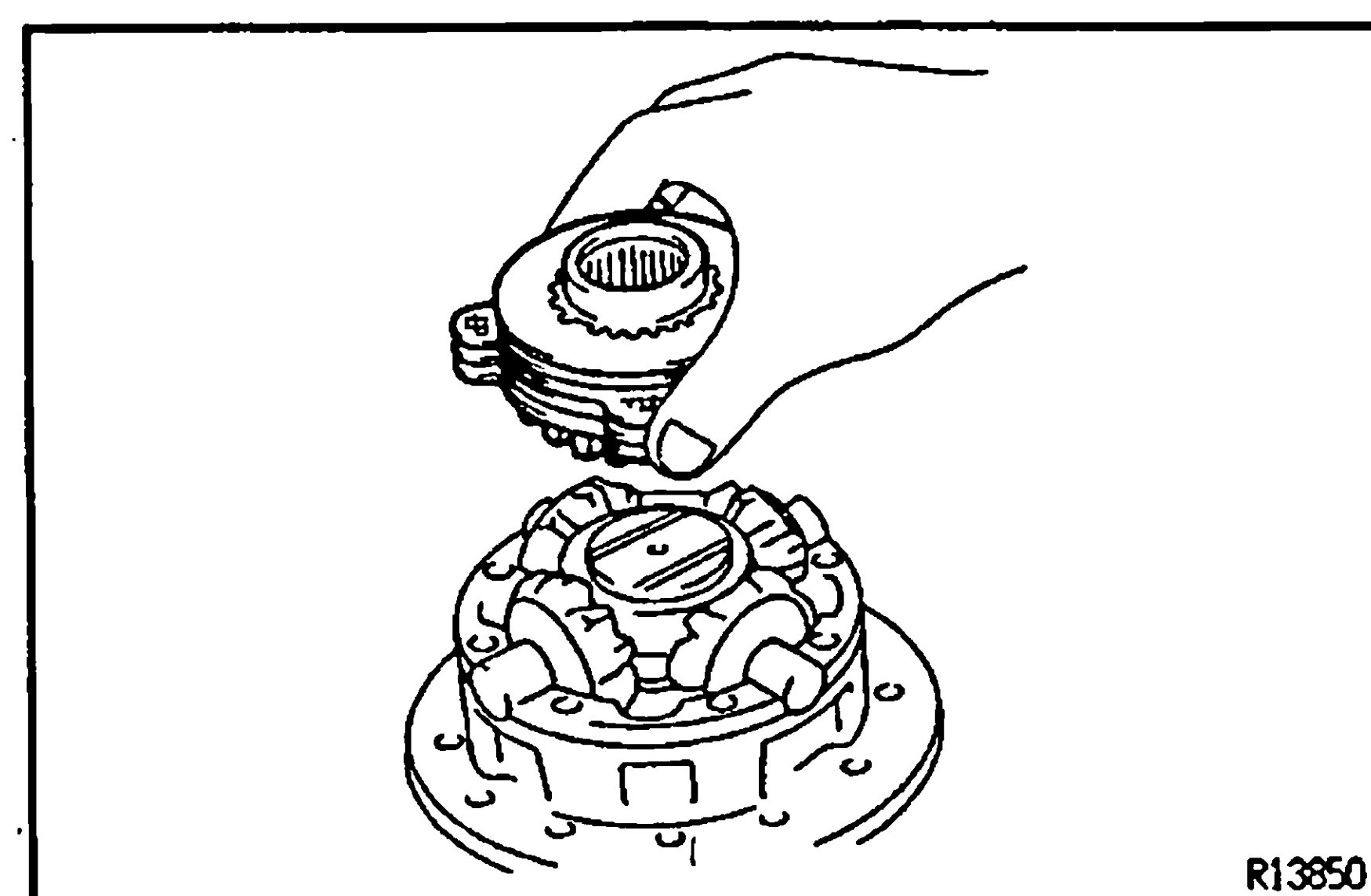
HINT: Install the spider to the LH case tightly and don't move the spring retainer.

- (b) Install the compression spring and spring RH retainer.

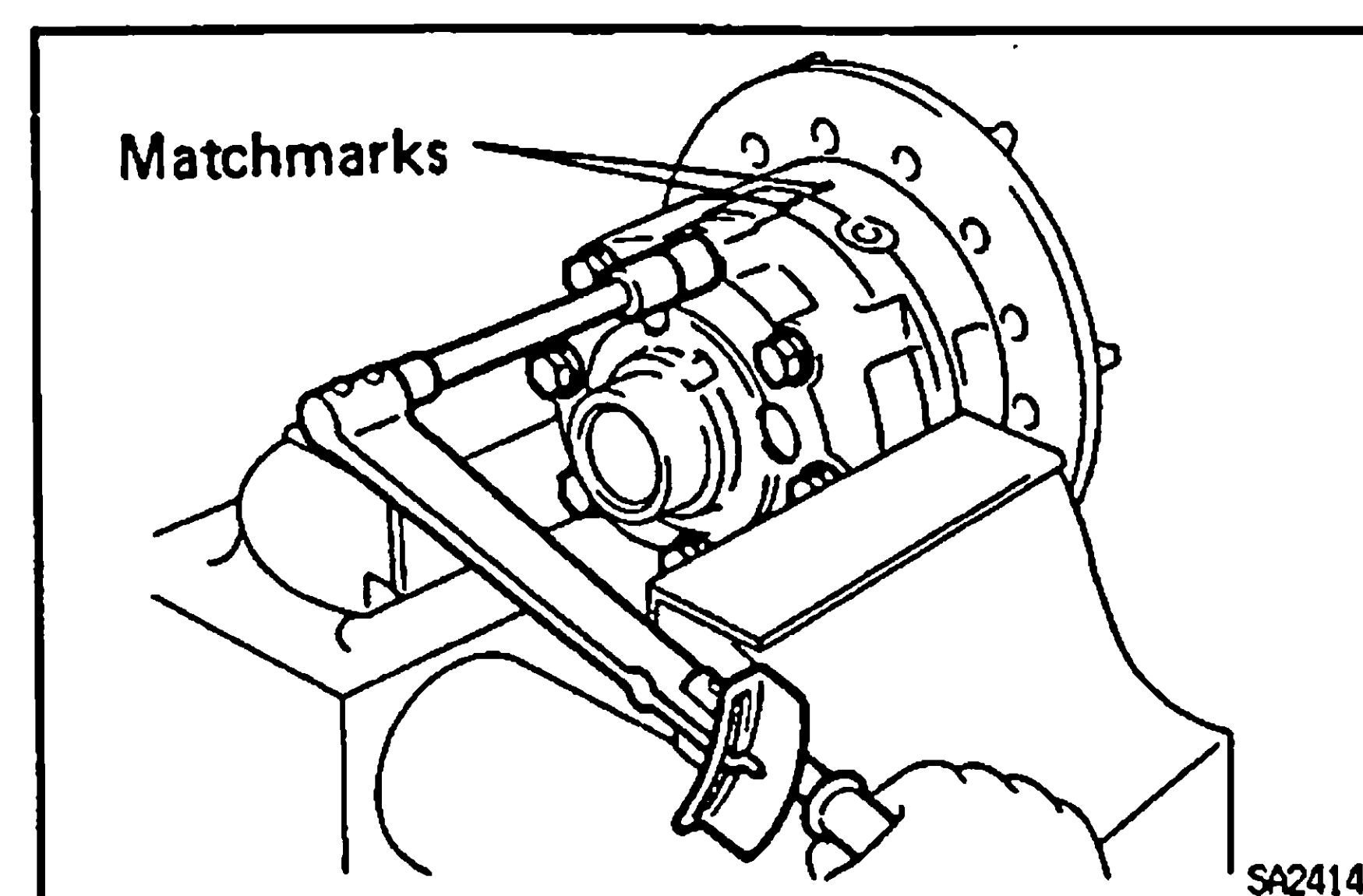


- (c) Install the side gear, thrust washers and clutch plates.
- (d) Align the matchmarks and assemble the RH and LH cases.

HINT: Be careful not to drop the side gear and check the pinion and side gear alignment.



- (e) Tighten the 8 bolts uniformly, a little at a time.
Torque: 47 N·m (480 kgf·cm, 35 ft·lbf)

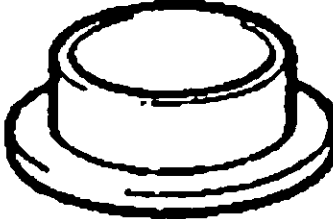
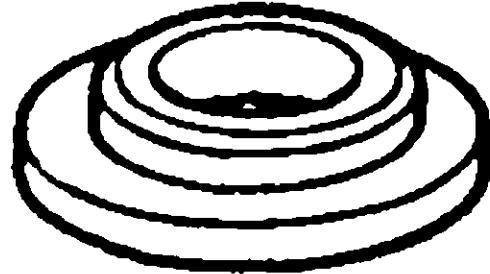
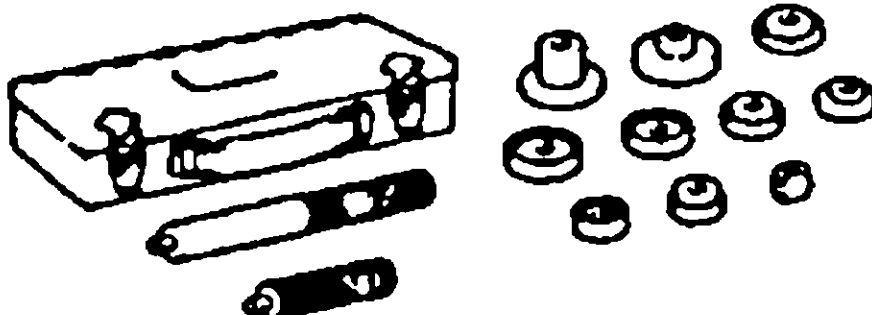
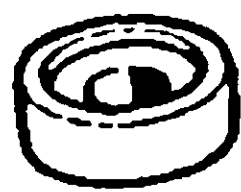
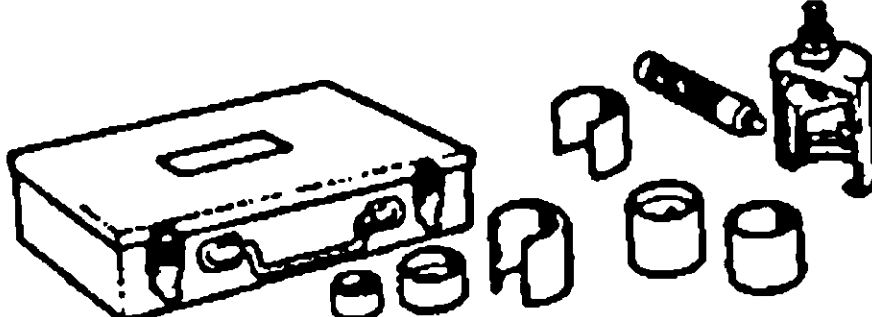
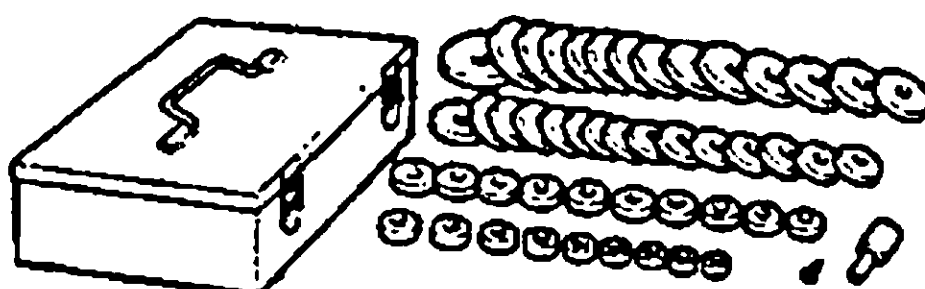
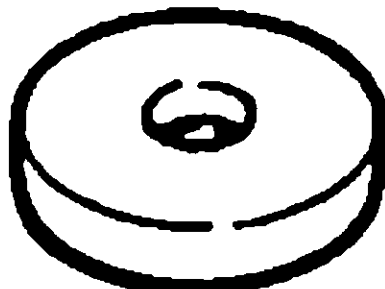
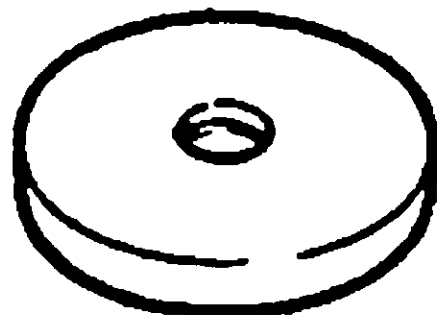
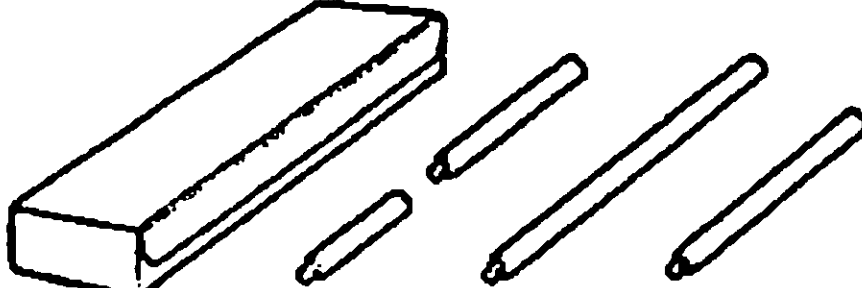
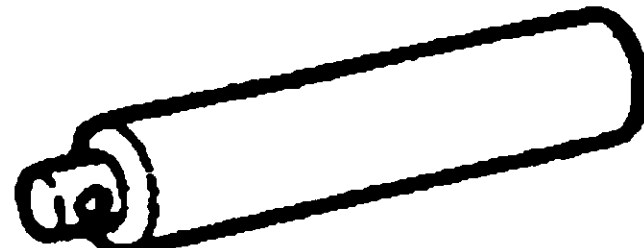


REAR SUSPENSION

PREPARATION

SST (SPECIAL SERVICE TOOLS)

SA1VM-01

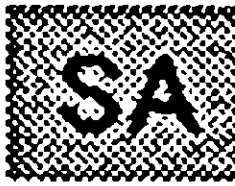
	09226-10010	Crankshaft Front & Rear Bearing Replacer	Upper control arm bushing
	09316-20011	Transfer Bearing Replacer	Lower control arm bushing installation
	09506-35010	Differential Drive Pinion Rear Bearing Replacer	Lower control arm bushing
	09550-10012	Replacer Set "B"	Lateral control rod arm bushing
	(09553-10010)	Differential Side Bearing Replacer	
	09710-22020	Front Suspension Bushing Tool Set	Upper and lower control arm bushing installation
	(09710-01070)	Lower Arm Bushing Removing Sleeve	
	09950-60010	Replacer Set	
	(09951-00490)	Replacer 49	Upper control arm bushing removal
	(09951-00540)	Replacer 54	Lower control arm bushing removal
	09950-70010	Handle Set	Upper and lower control arm bushing removal
	(09951-07100)	Handle 100	

SA

EQUIPMENT

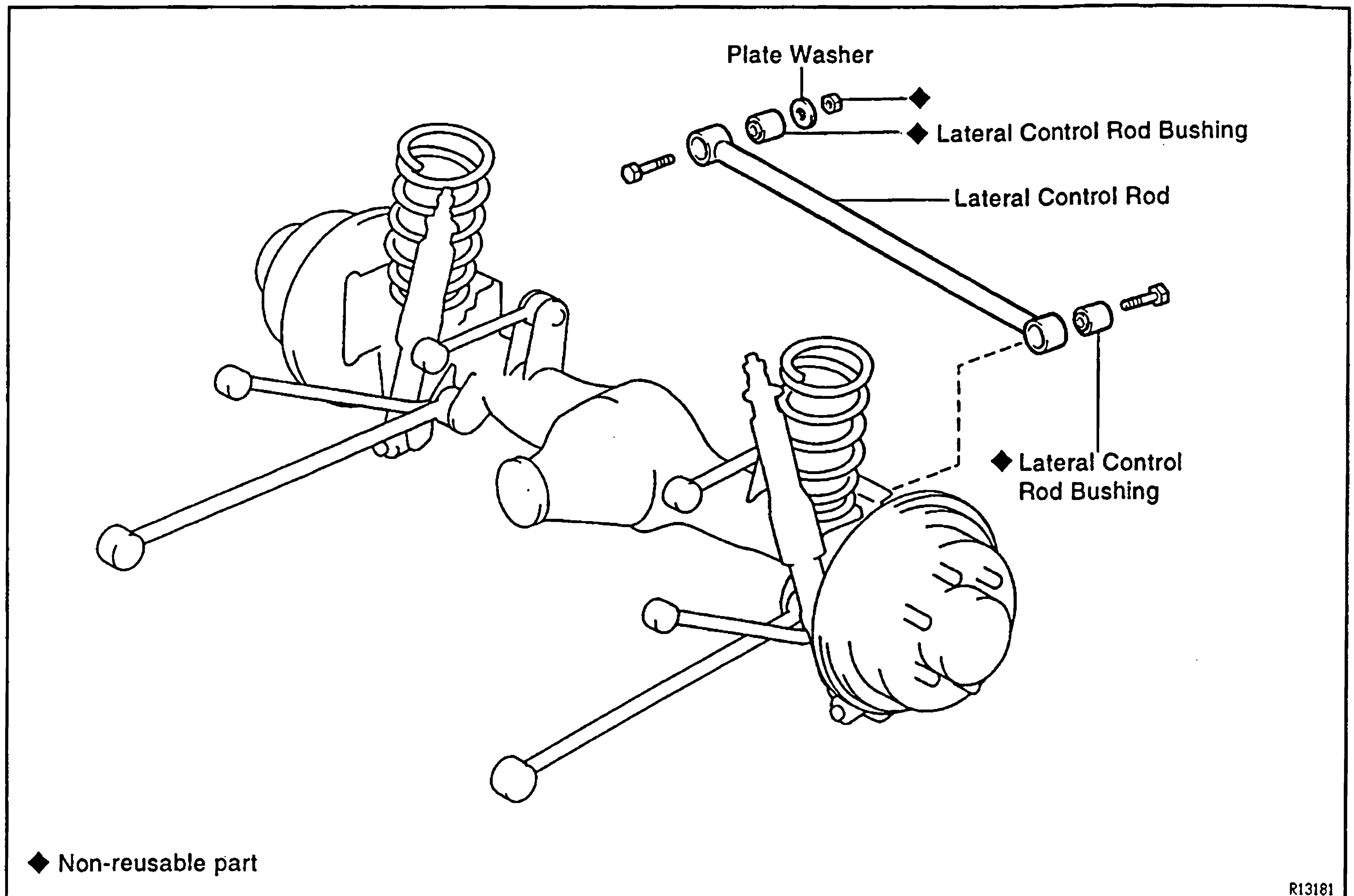
SA1V7-01

Torque wrench	
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LATERAL CONTROL ROD COMPONENTS

SA1VQ-01



LATERAL CONTROL ROD REMOVAL

SA1VR-01

Installation is in the reverse order of removal.

1. JACK UP AND SUPPORT VEHICLE

Jack up the rear axle housing and support the frame with stands. Hold the rear axle housing with a jack.

2. REMOVE REAR WHEEL

Torque:

Steel wheel:

147 N·m (1,500 kgf·cm, 109 ft·lbf)

Aluminum wheel:

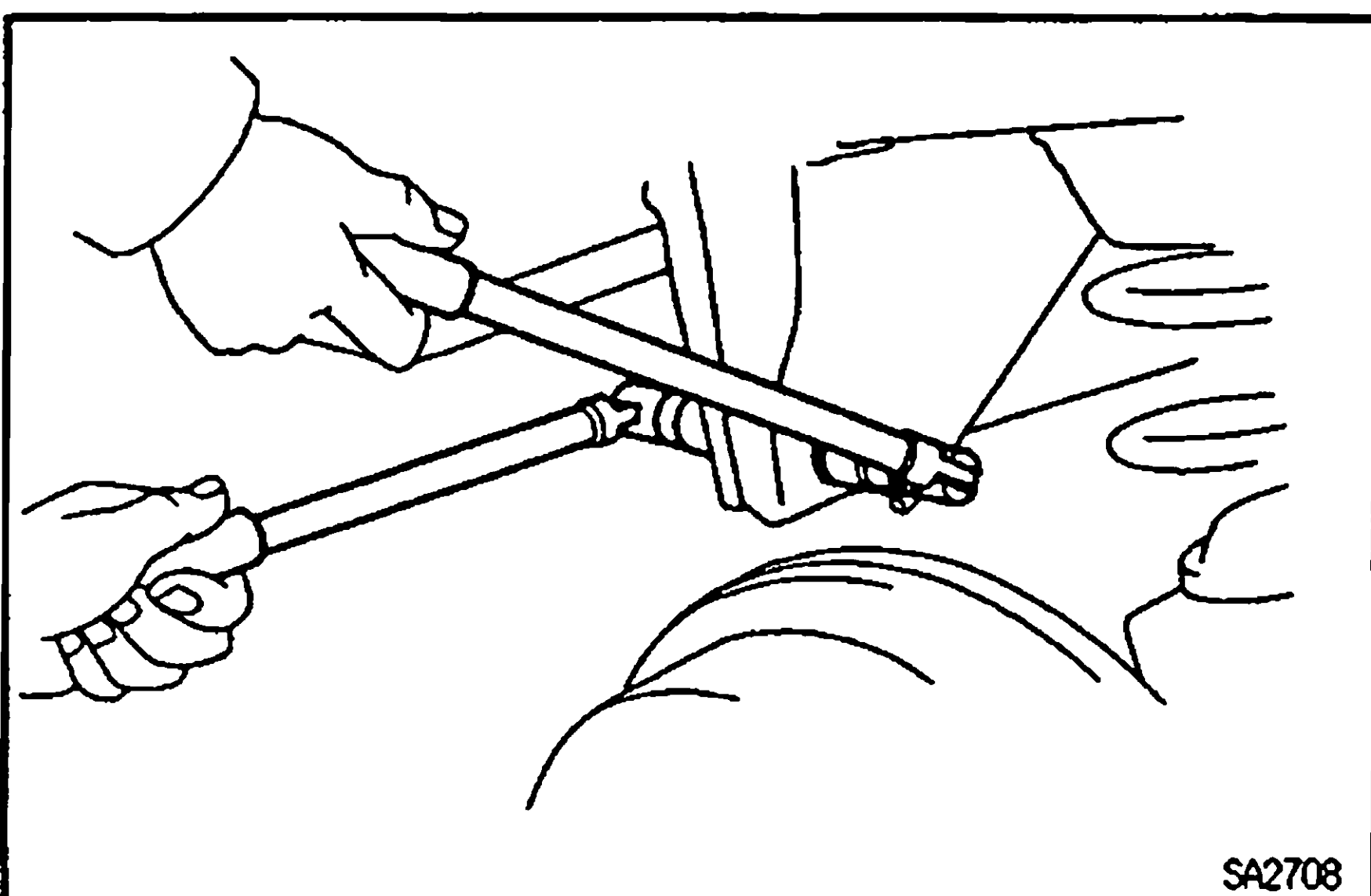
103 N·m (1,050 kgf·cm, 76 ft·lbf)

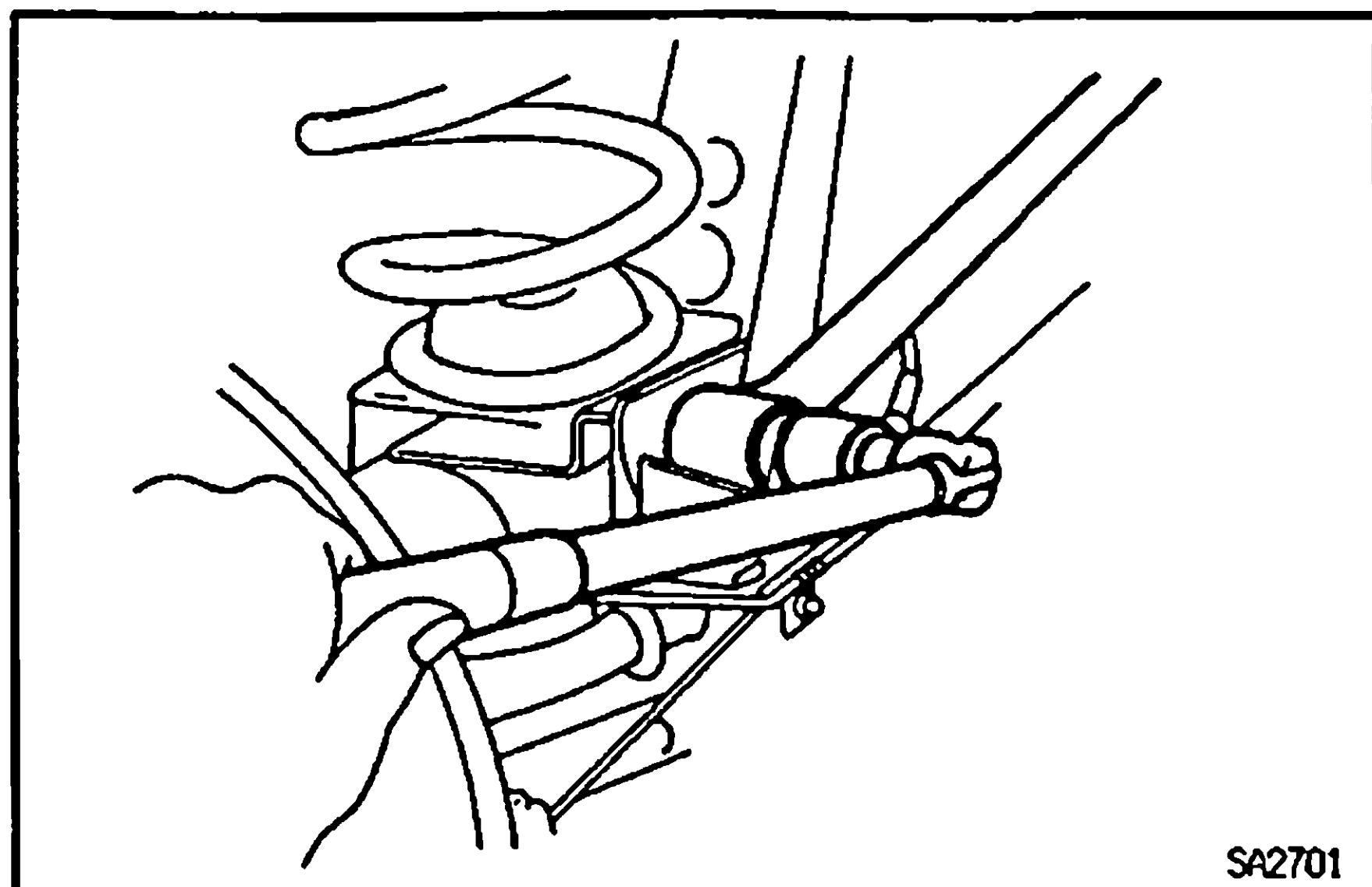
3. REMOVE LATERAL CONTROL ROD

- (a) Remove the bolt, nut and plate washer, and disconnect the lateral control rod.

Torque: 177 N·m (1,800 kgf·cm, 130 ft·lbf)

INSTALLATION HINT: After stabilizing the suspension, torque the bolt.

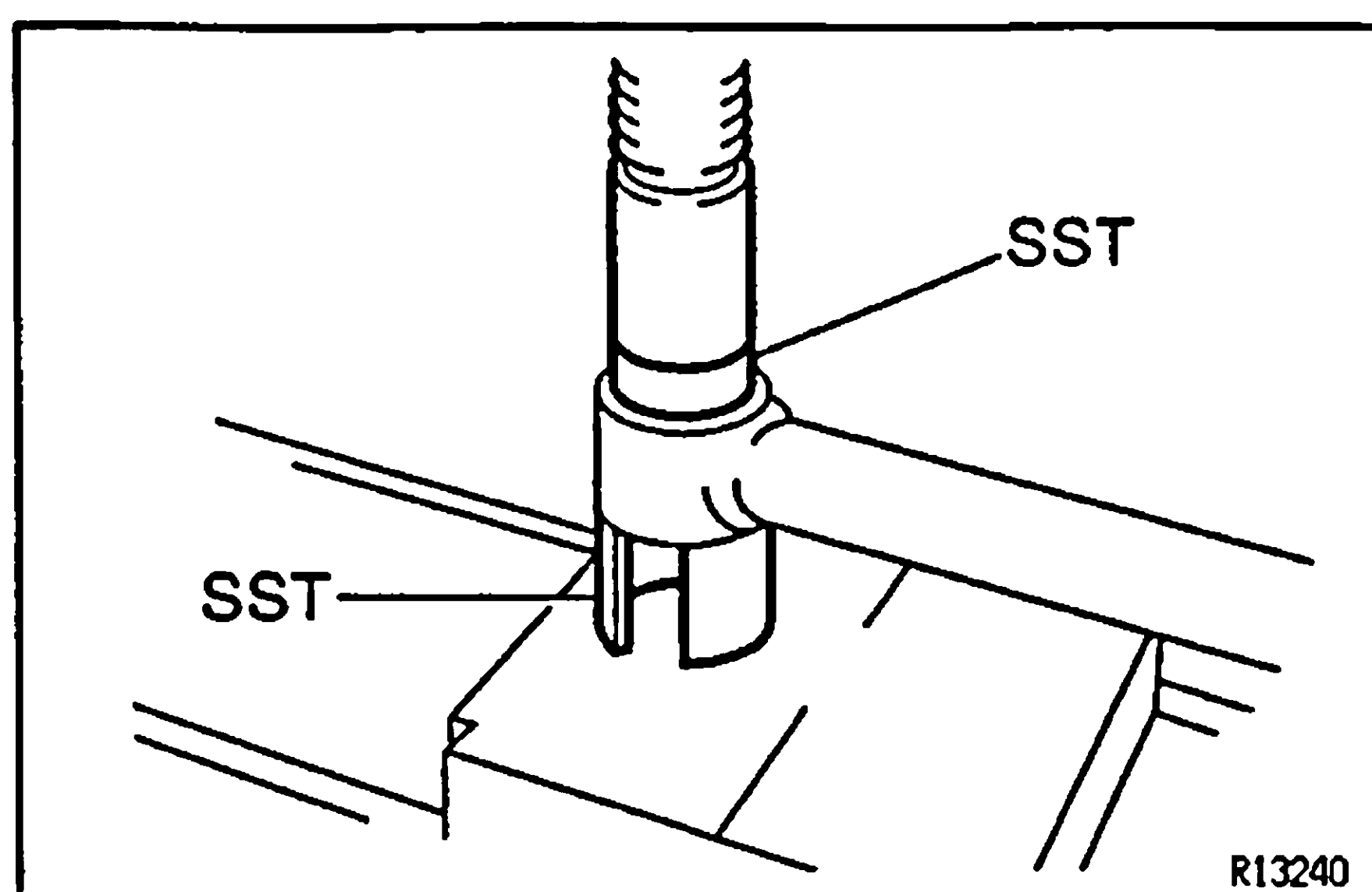




- (b) Remove the bolt and lateral control rod from the axle housing.

Torque: 245 N·m (2,500 kgf·cm, 181 ft·lbf)

INSTALLATION HINT: After stabilizing the suspension, torque the bolt.



BUSHING REPLACEMENT

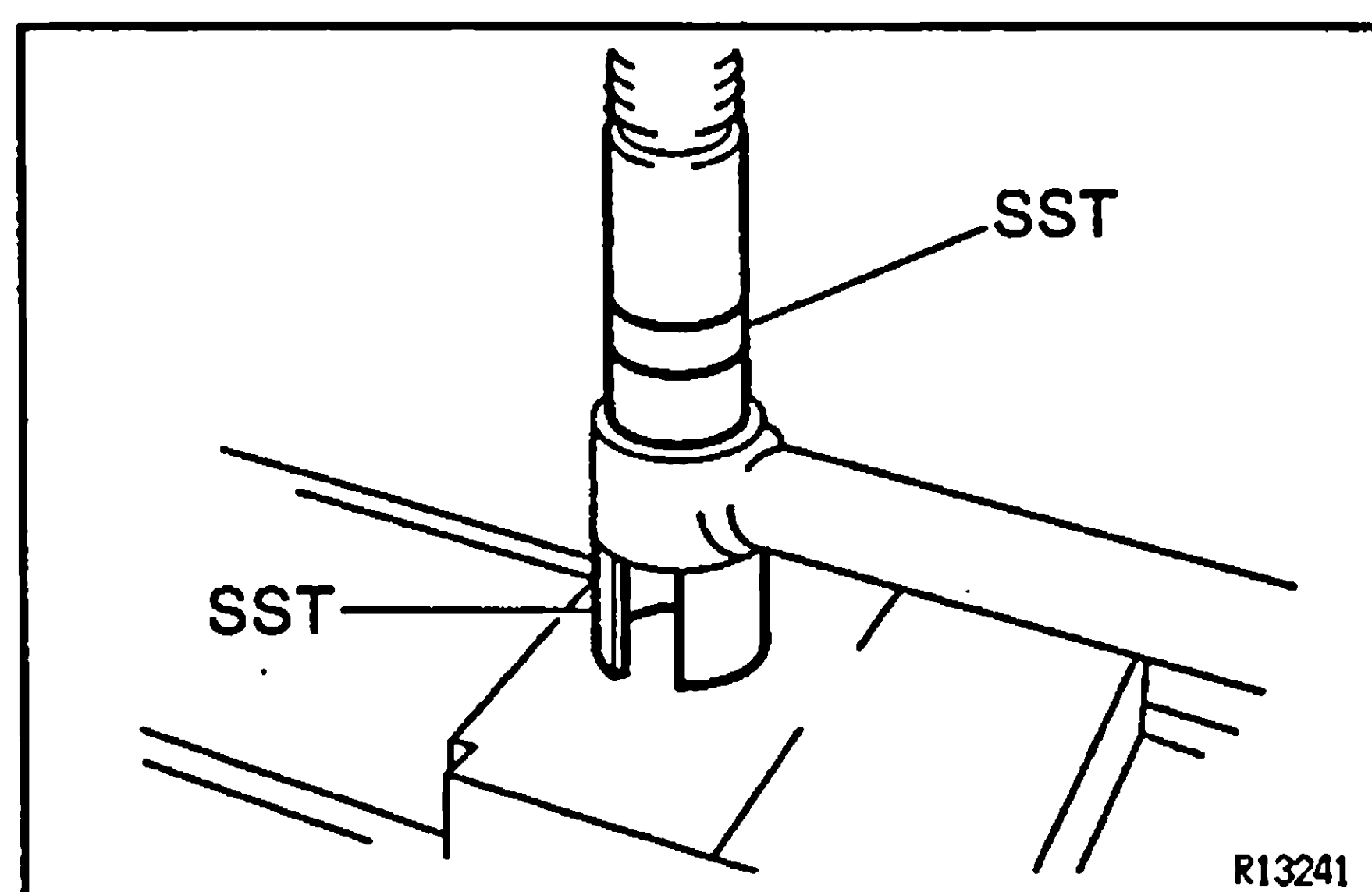
SA1V8-01

1. REPLACE LATERAL CONTROL ROD BUSHING

- (a) Using SST and a press, remove the bushing.

SST 09550-10012 (09553-10010),
09710-22020 (09710-01070)

SA

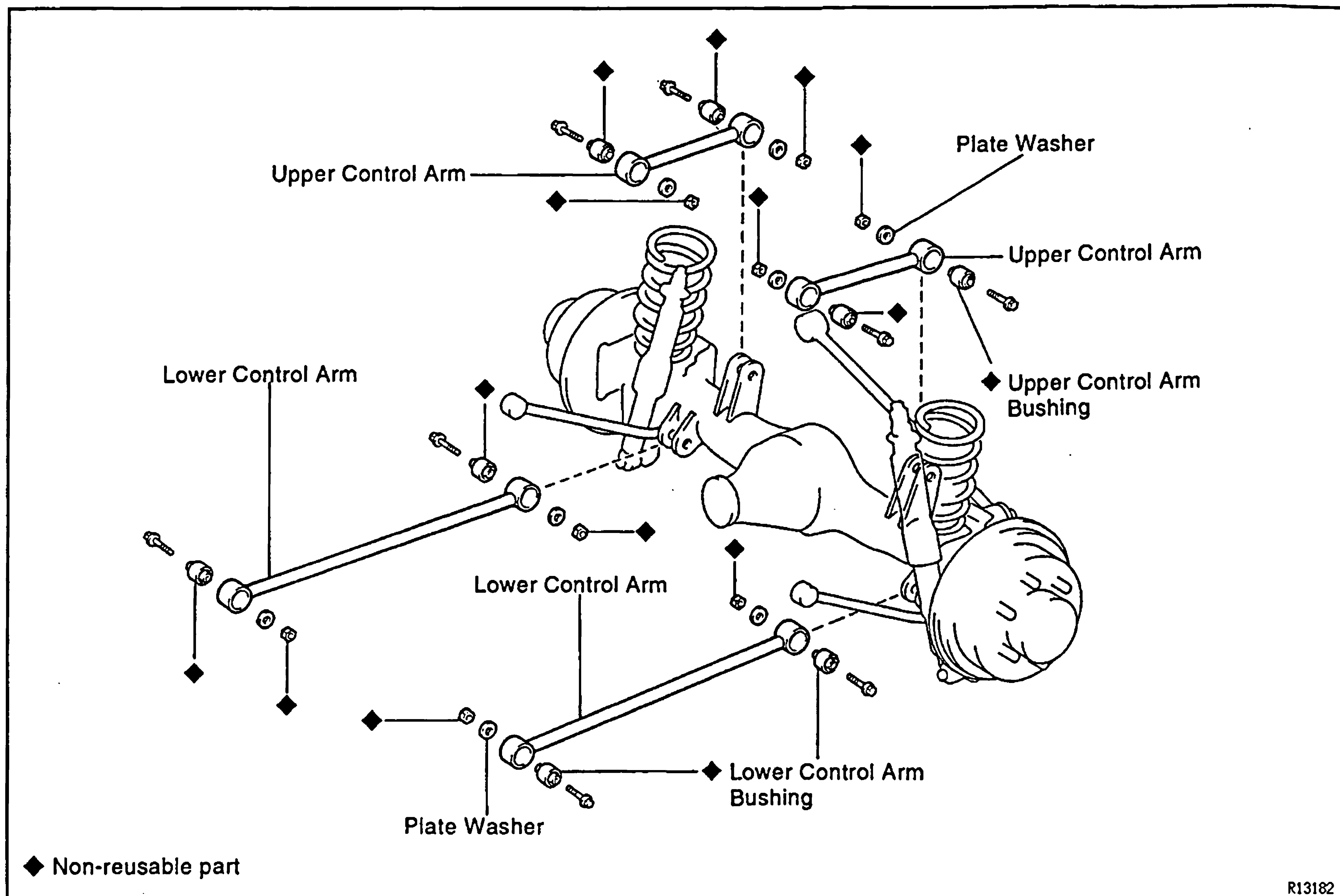


- (b) Using SST and a press, install a new bushing.

SST 09550-10012 (09553-10010),
09710-22020 (09710-01070)

UPPER AND LOWER CONTROL ARM COMPONENTS

SA1VT-01



R13182

UPPER AND LOWER CONTROL ARMS REMOVAL

SA1VU-01

Installation is in the reverse order of removal.

1. JACK UP AND SUPPORT VEHICLE

Jack up the rear axle housing and support the frame with stands. Hold the rear axle housing with a jack.

2. REMOVE REAR WHEEL

Torque:

Steel wheel:

147 N·m (1,500 kgf·cm, 109 ft·lbf)

Aluminum wheel:

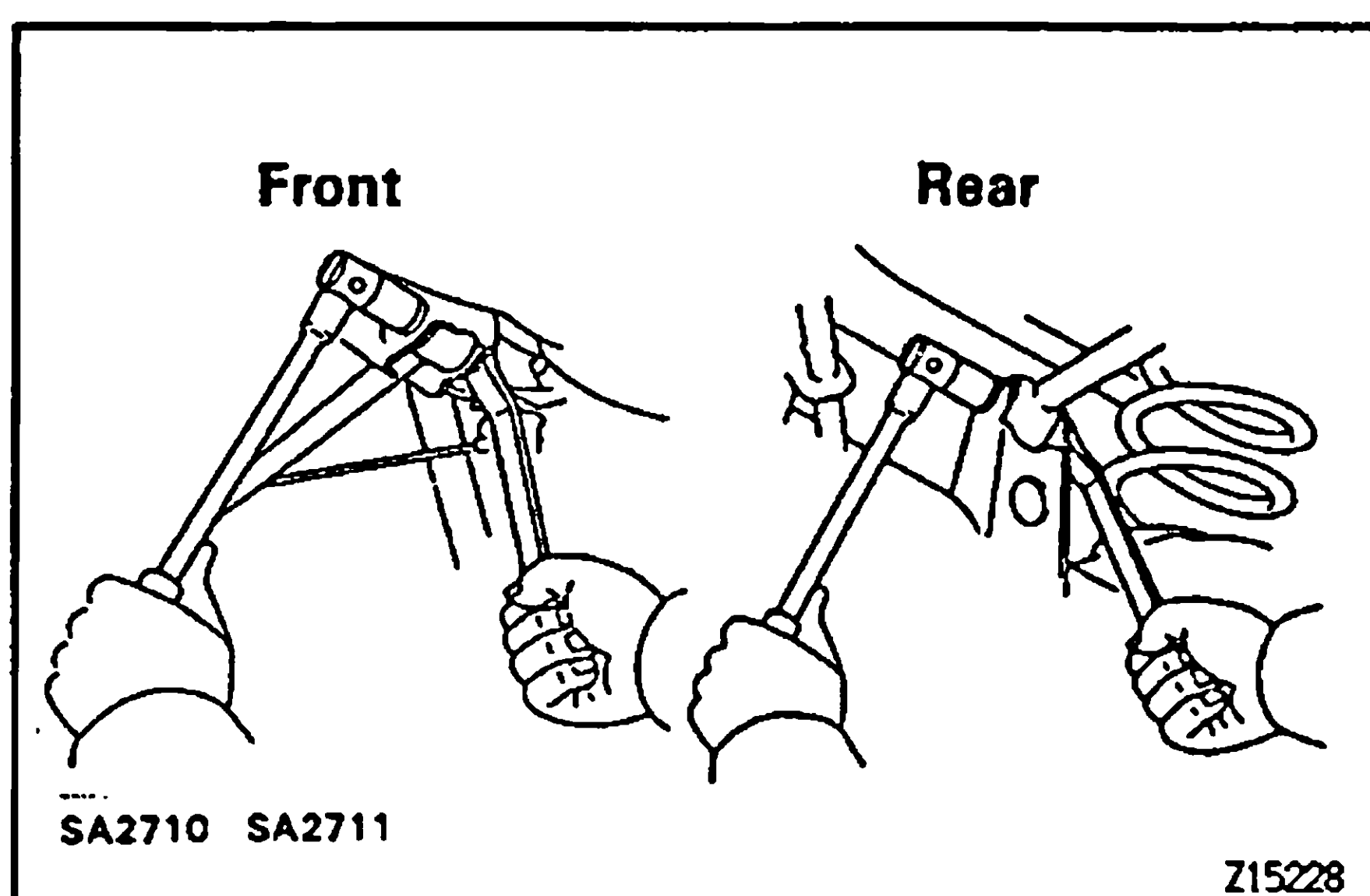
103 N·m (1,050 kgf·cm, 76 ft·lbf)

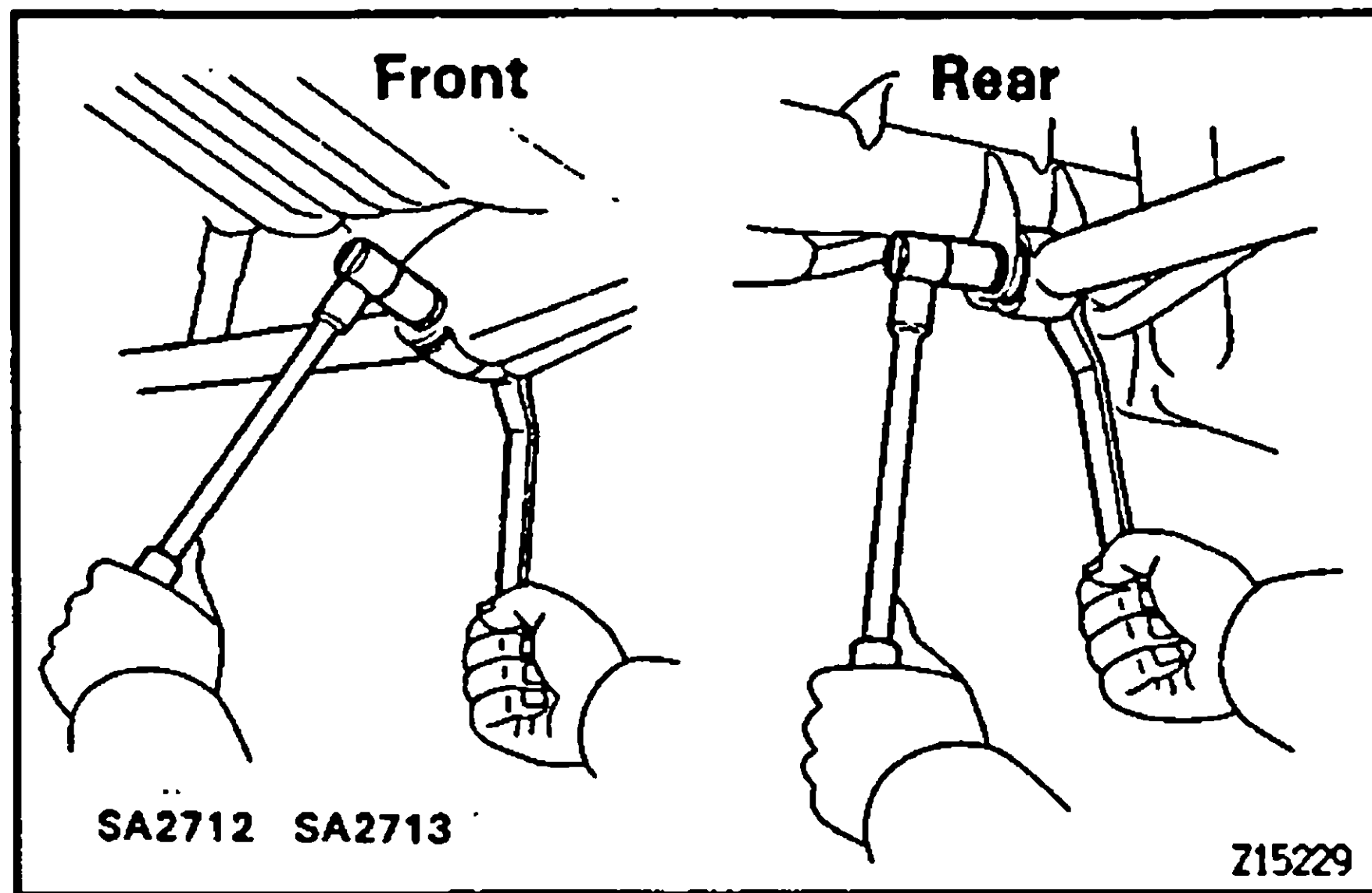
3. REMOVE UPPER CONTROL ARM

Remove the nuts, plate washers bolts and upper control arm from the frame.

Torque: 177 N·m (1,800 kgf·cm, 130 ft·lbf)

INSTALLATION HINT: After stabilizing the suspension, torque the bolt.

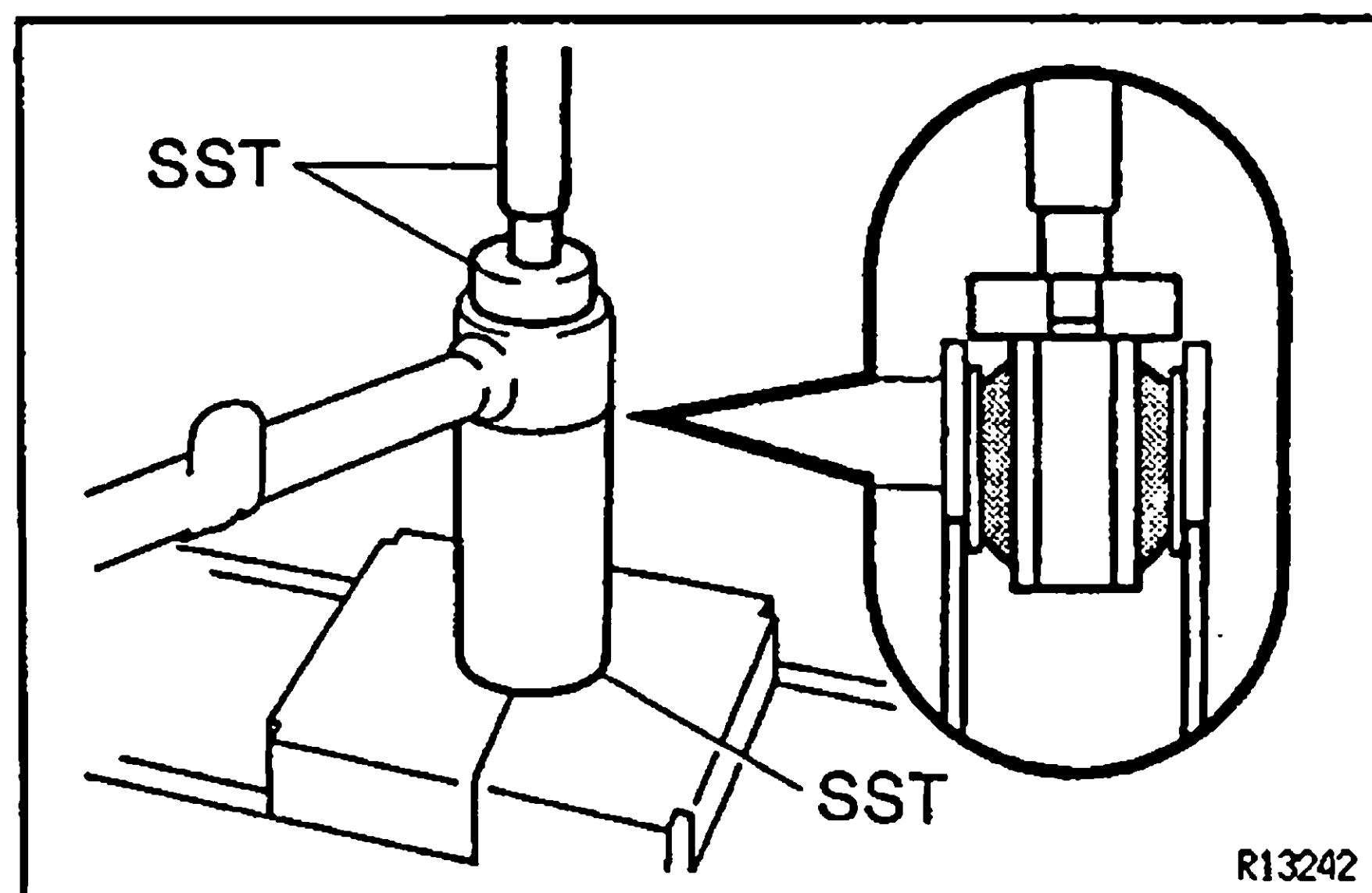


**4. REMOVE LOWER CONTROL ARM**

Remove the bolts, plate washers, nuts and lower control arm from the frame.

Torque: 177 N·m (1,800 kgf·cm, 130 ft·lbf)

INSTALLATION HINT: After stabilizing the suspension, torque the bolt.

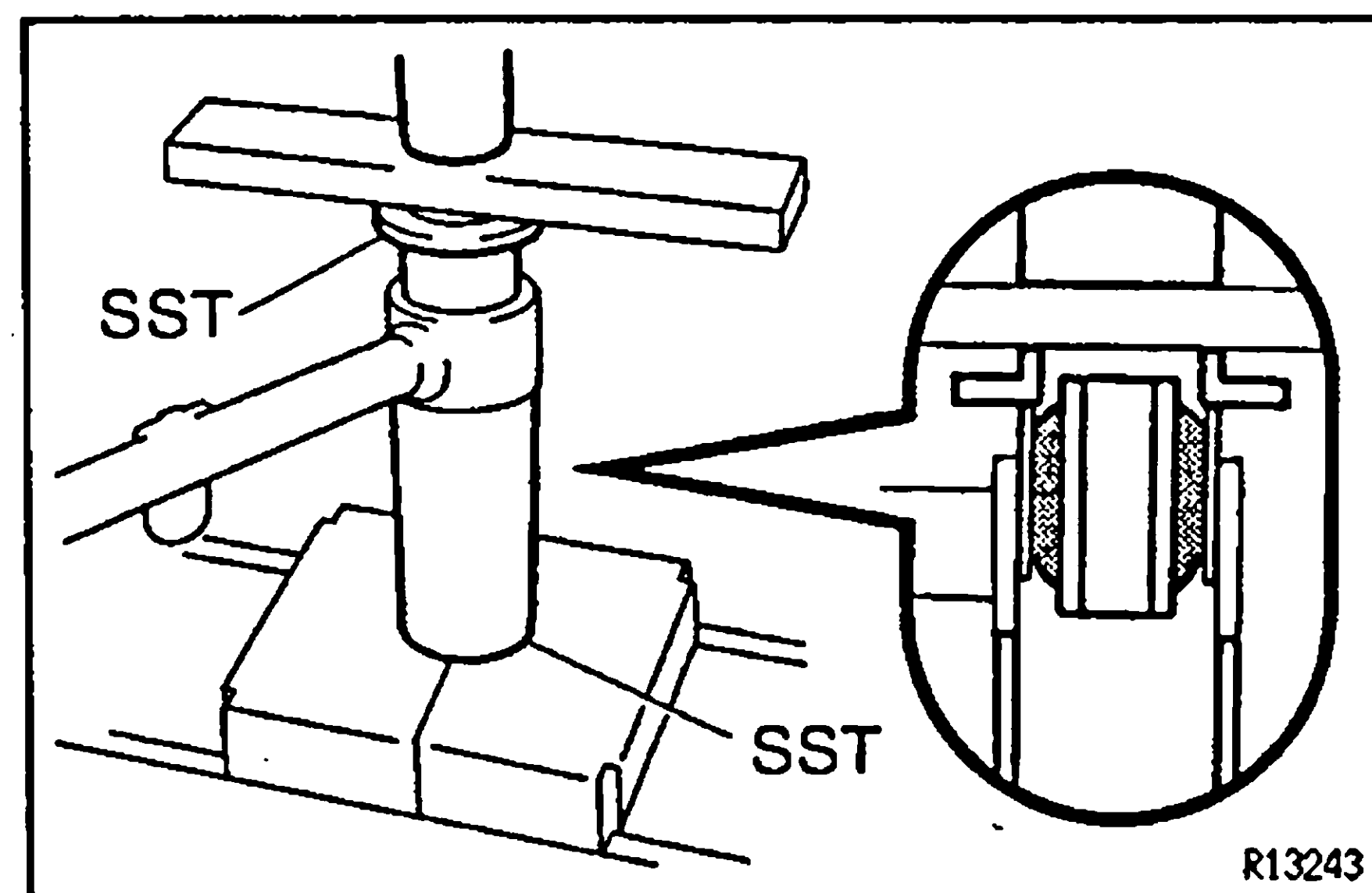
**BUSHING REPLACEMENT**

SA1VW-01

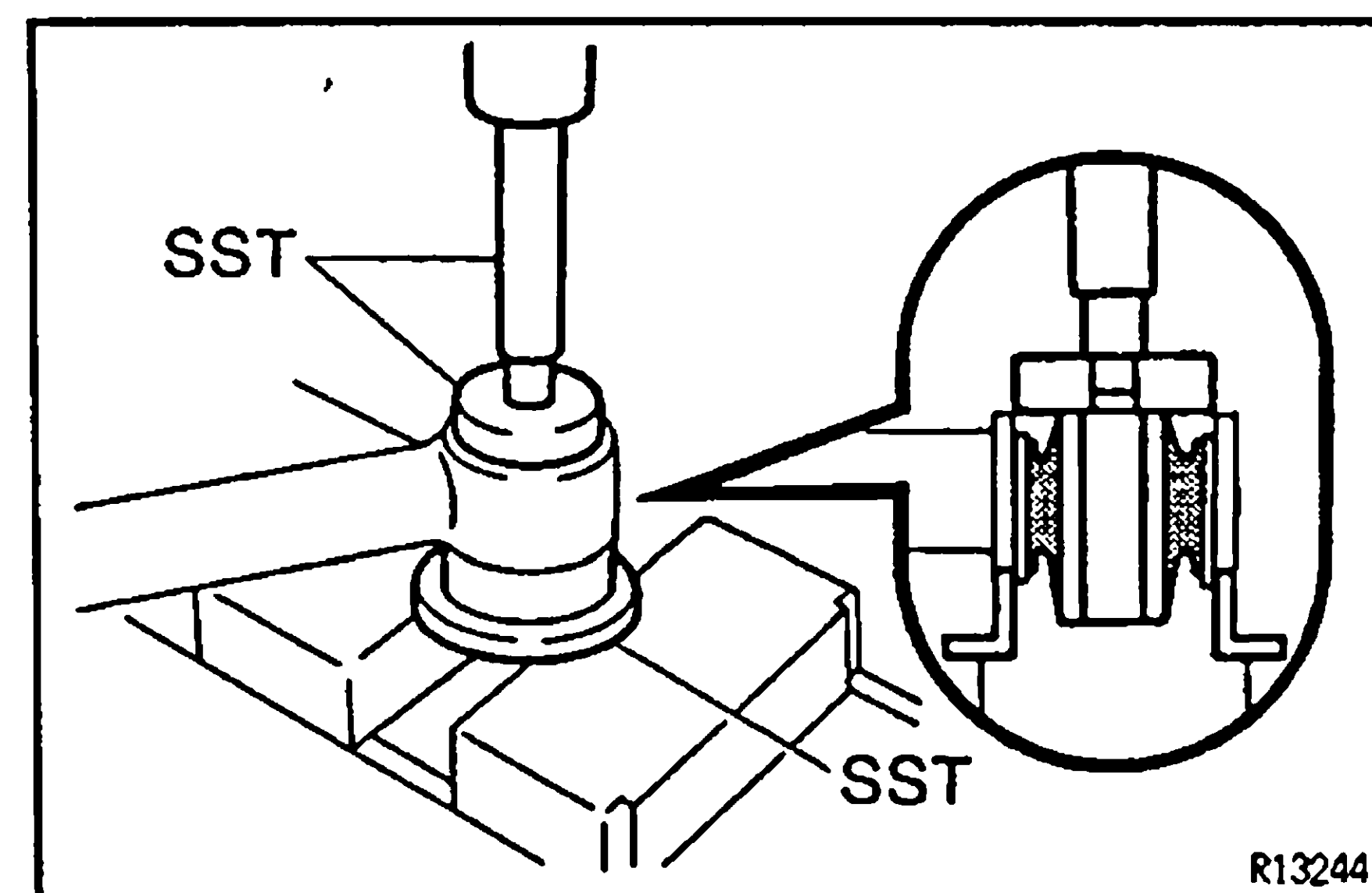
1. REPLACE UPPER CONTROL ARM BUSHING

- (a) Using SST and a press, remove the bushing.
SST 09226-10010, 09950-60010 (09951-00490),
09950-70010 (09951-07100)

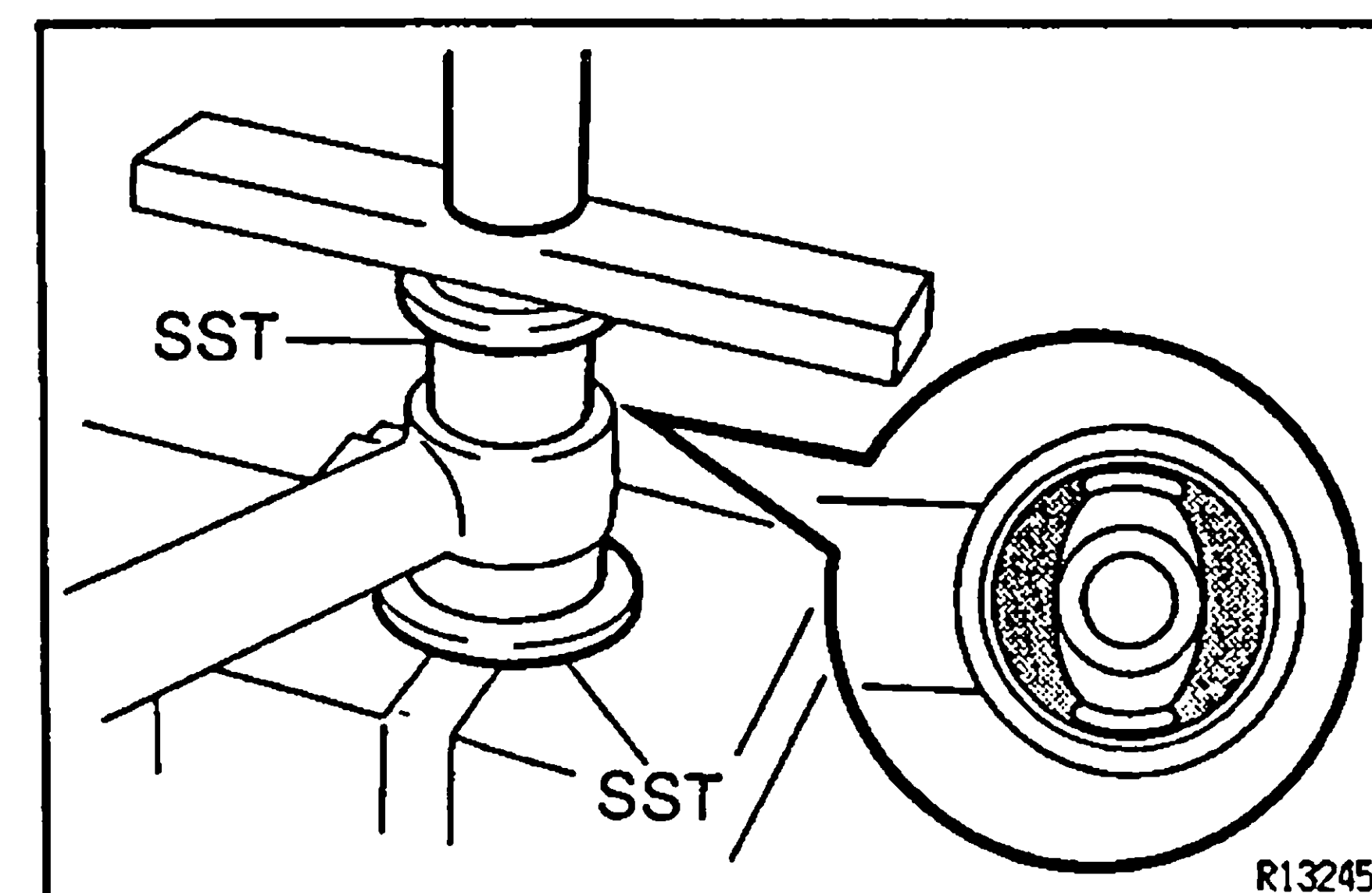
SA



- (b) Using SST and a press, install a new bushing.
SST 09226-10010, 09506-35010

**2. REPLACE LOWER CONTROL ARM BUSHING**

- (a) Using SST and a press, remove the bushing.
SST 09506-35010, 09950-60010 (09951-00540),
09950-70010 (09951-07100)



- (b) Using SST and a press, install a new bushing, as shown.
SST 09316-20011, 09506-35010

SERVICE SPECIFICATIONS
SERVICE DATA

SA1VW-01

Side gear thrust washer thickness	For reference	1.97–2.06 mm (0.0776–0.0811 in.)
Clutch plate thickness	For reference	1.97–2.03 mm (0.0776–0.0799 in.)
Compression spring free length	For reference	38.1–38.9 mm (1.50–1.53 in.)
Side gear backlash		0.05–0.24 mm (0.0020–0.0094 in.)
Side gear thrust washer thickness		(See page SA–9)

TORQUE SPECIFICATIONS
FRONT

SA1VX-01

Part tightened		N·m	kgf·cm	ft·lbf
Hub nut	Steel wheel	147	1,500	108
	Aluminum wheel	103	1,050	76
Leading arm x Frame		177	1,800	130
Leading arm x Axle housing		171	1,750	127

REAR

Part tightened		N·m	kgf·cm	ft·lbf
Hub nut	Steel wheel	147	1,500	108
	Aluminum wheel	103	1,050	76
Differential case LH x Differential case RH		47	480	35
Lateral control rod x Frame		177	1,800	130
Lateral control rod x Axle housing		245	2,500	181
Upper control rod x Frame		177	1,800	130
Upper control rod x Axle housing		177	1,800	130
Lower control arm x Frame		177	1,800	130
Lower control arm x Axle housing		177	1,800	130

SA

BRAKE SYSTEM

PREPARATION BR— 2

MASTER CYLINDER

 (Except LHD 1FZ—F Engine Vehicles) BR— 3

ANTI—LOCK BRAKE SYSTEM (ABS)

 FRONT SPEED SENSOR BR— 8

 REAR SPEED SENSOR..... BR— 10

SERVICE SPECIFICATIONS BR— 12

REFER TO FOLLOWING REPAIR MANUALS:

Manual Name	Pub. No.
• Land Cruiser (Station Wagon) Chassis and Body Repair Manual	RM184E
• Land Cruiser (Hardtop, Canvas Top and Station Wagon) Chassis and Body Repair Manual Supplement (Aug., 1992)	RM315E

NOTE: The above pages contain only the points which differ from the above listed manuals.

BR

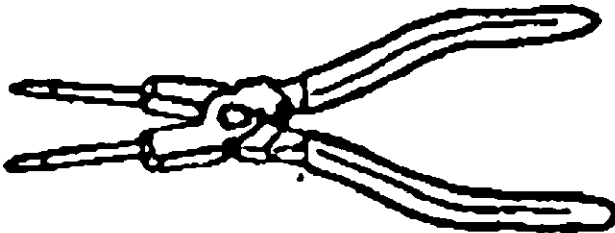
PREPARATION
SST (SPECIAL SERVICE TOOLS)

BR12H-01

	09023-00100 Union Nut Wrench 10 mm	
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RECOMMENDED TOOLS

BR12J-01

	09905-00013 Snap Ring Pliers .	
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EQUIPMENT

BR12K-01

BR

Torque wrench	
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LUBRICANT

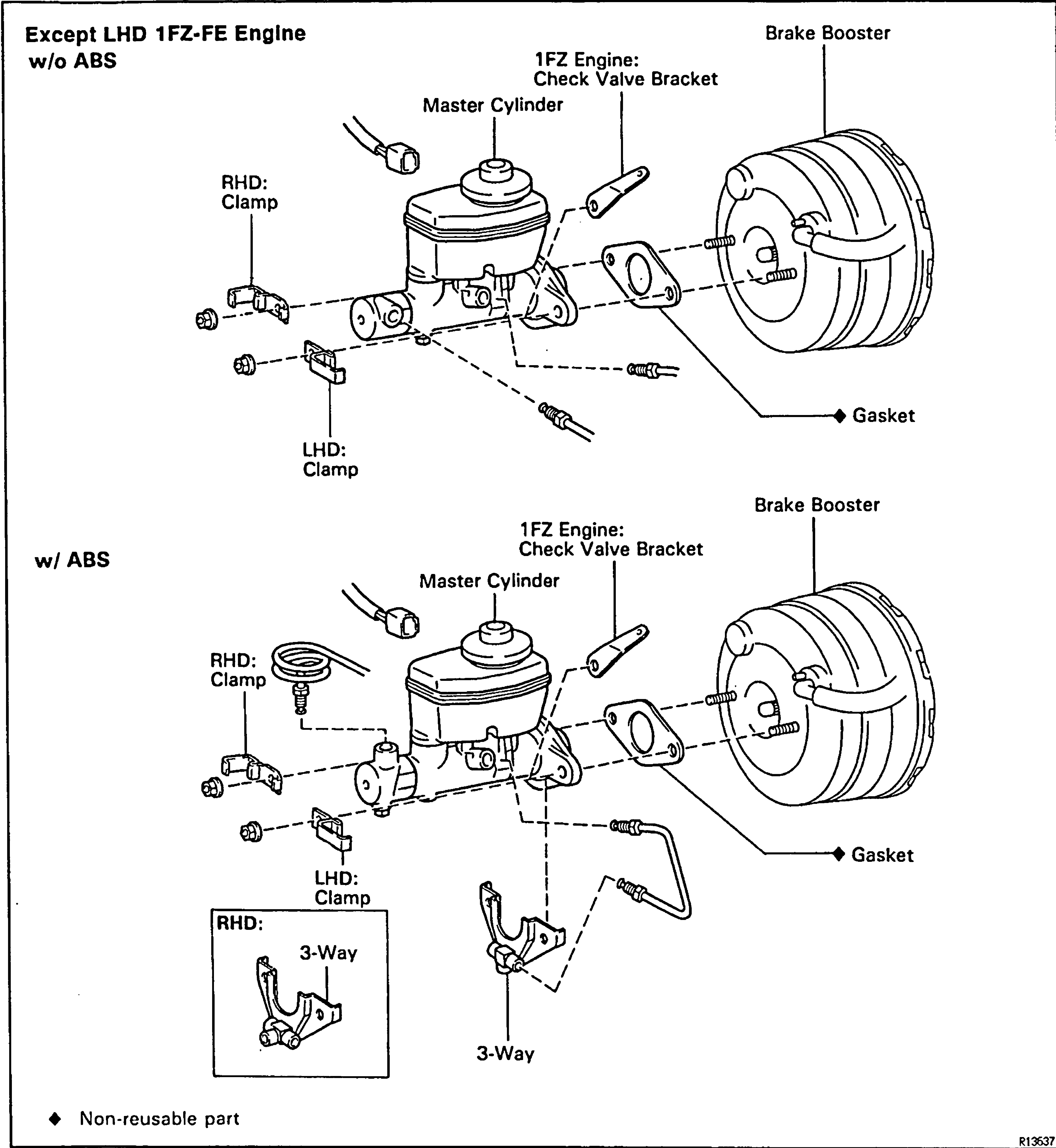
BR12L-01

Item	Capacity	Classification
Brake fluid	—	SAE J1703 or FMVSS No.116 DOT 3

MASTER CYLINDER
(Except LHD 1FZ—F Engine Vehicles)

MASTER CYLINDER REMOVAL

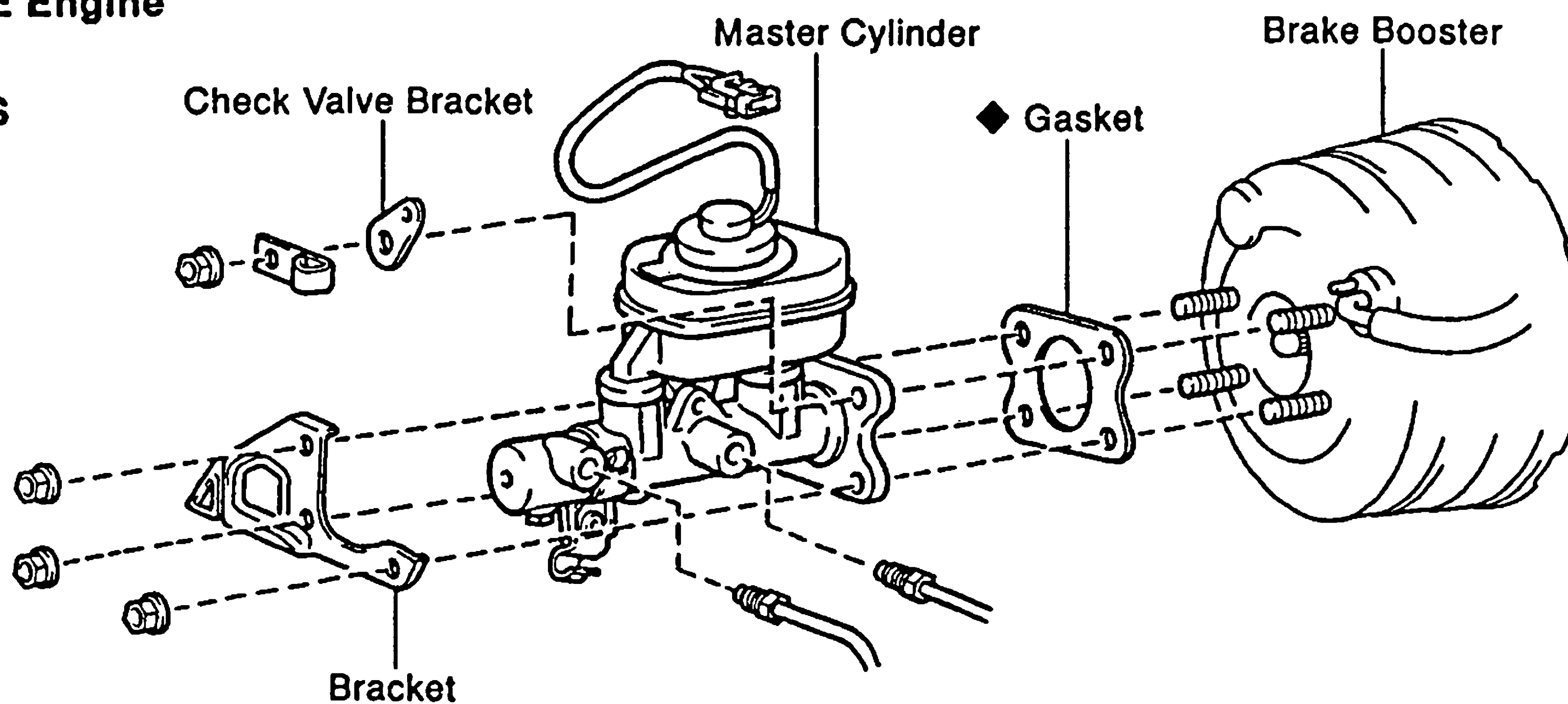
BR139-01



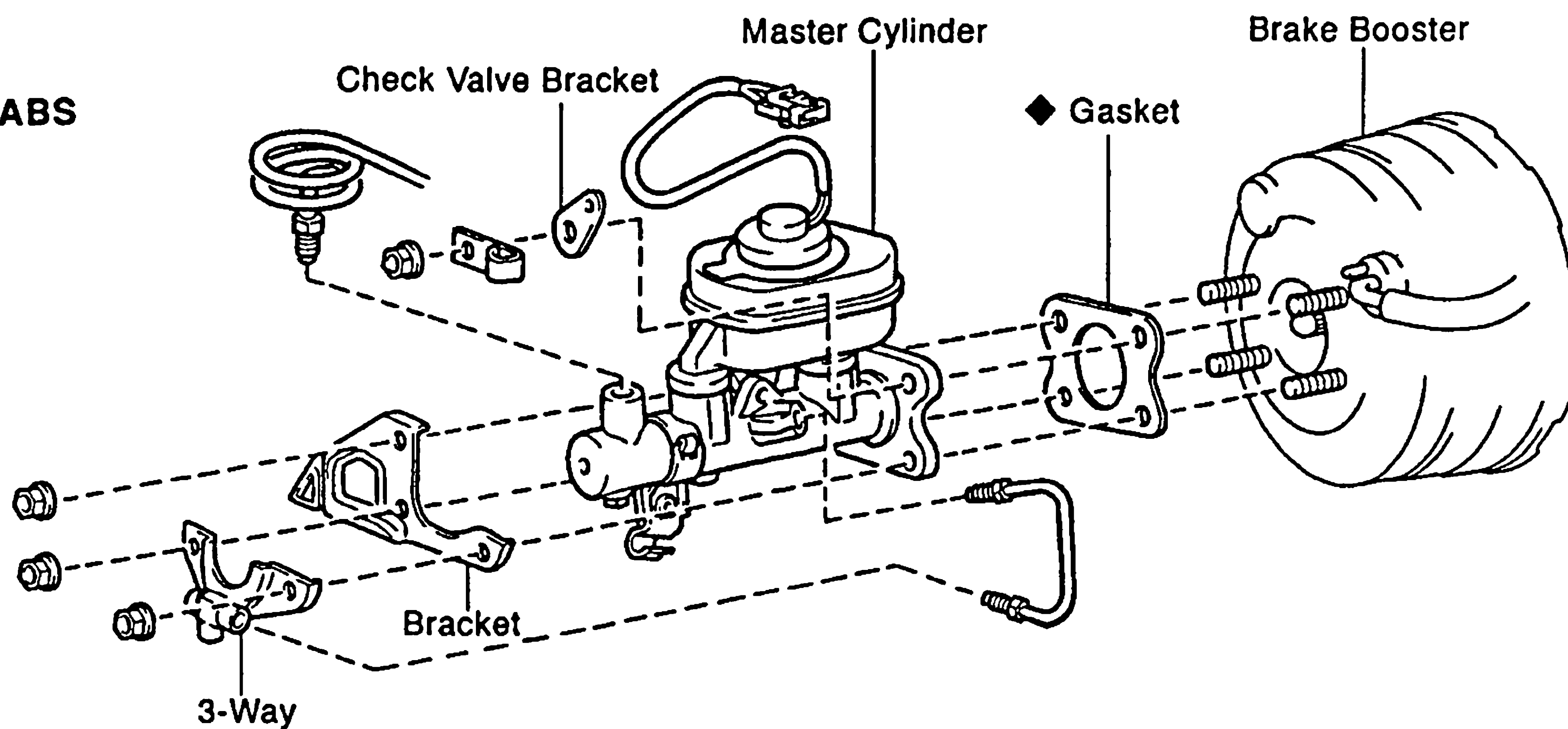
BR

LHD 1FZ-FE Engine

w/o ABS

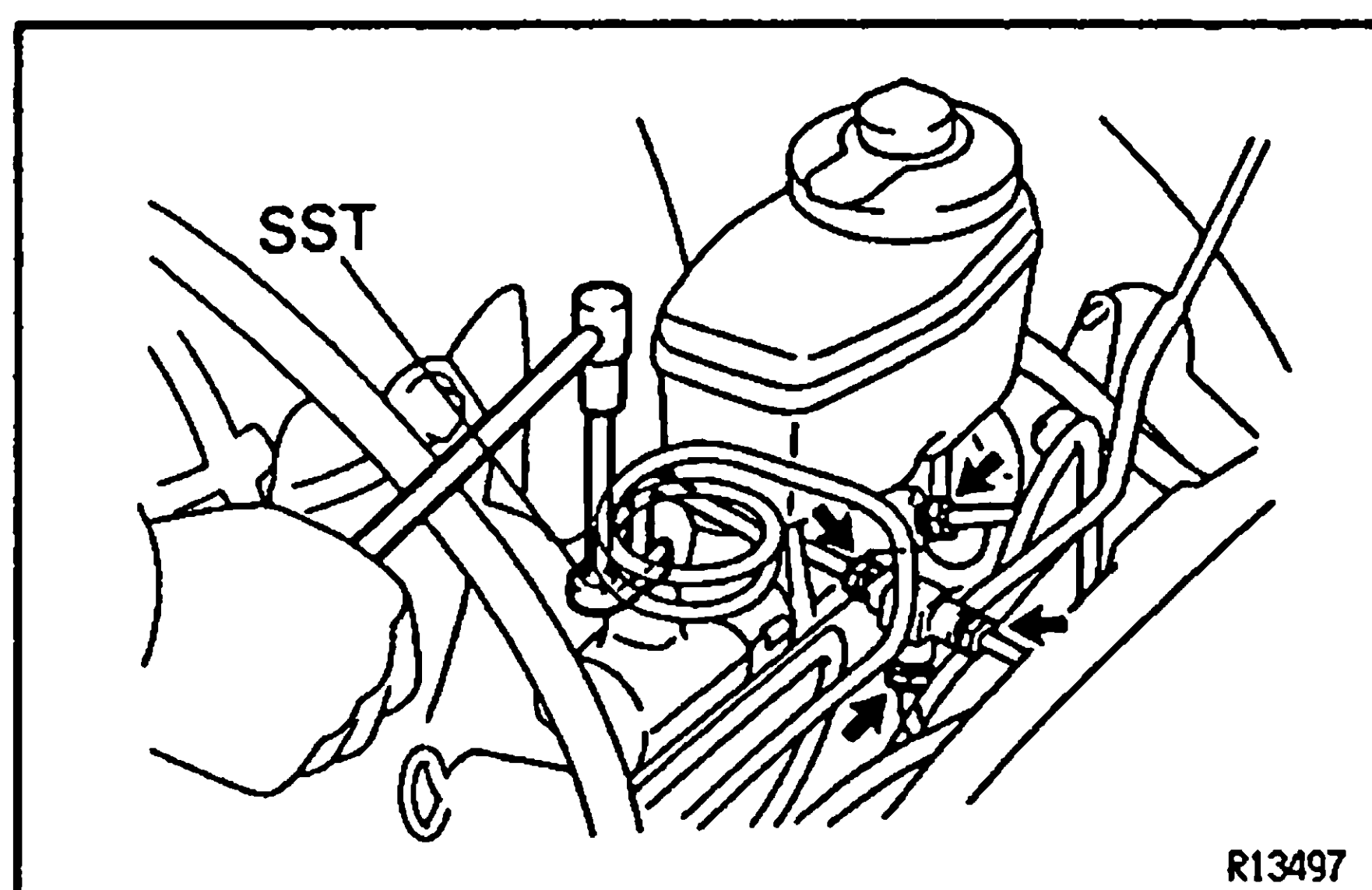


w/ ABS



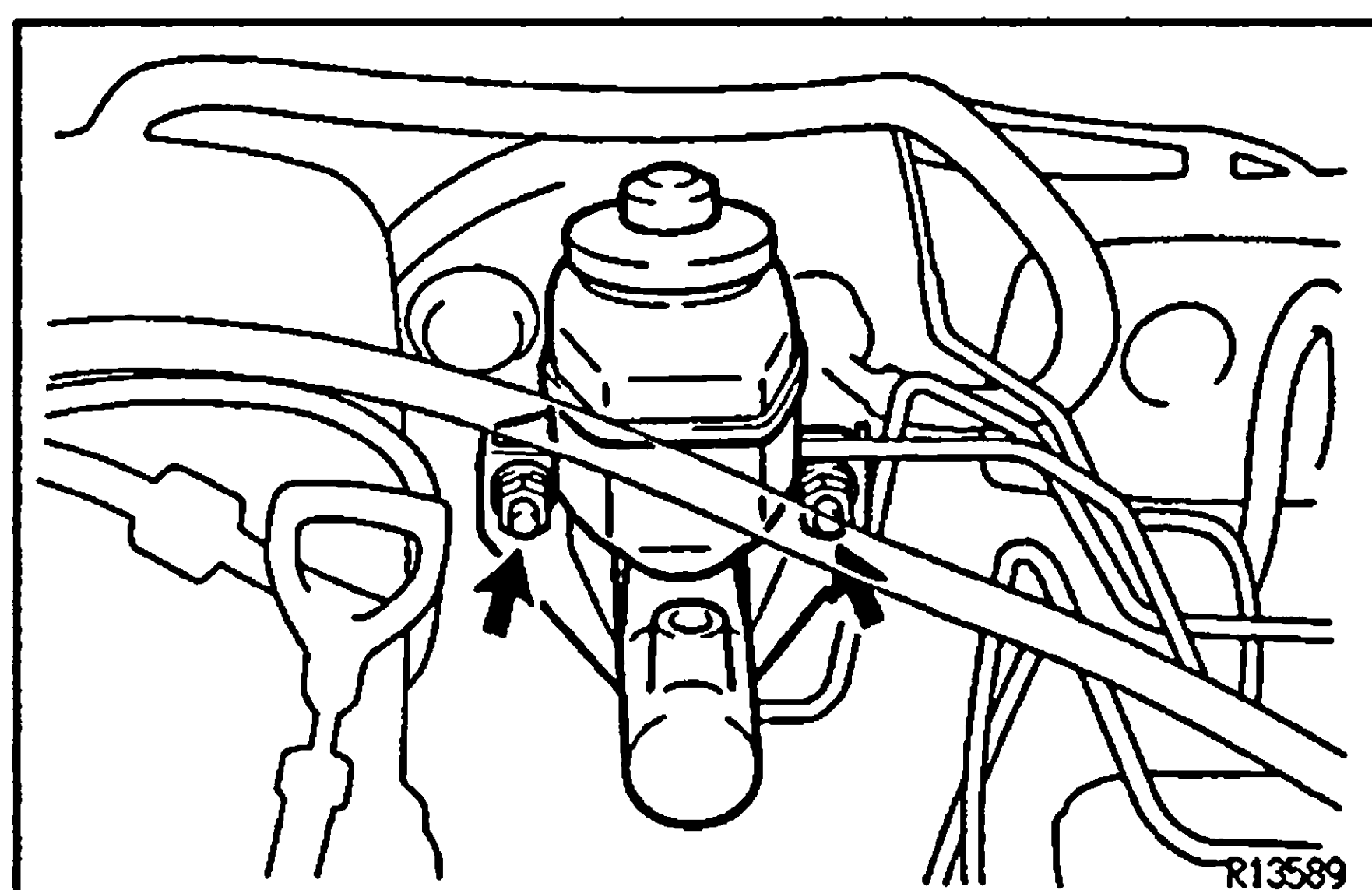
◆ Non-reusable part

R13924



R13497

1. **DISCONNECT LEVEL WARNING SWITCH CONNECTOR**
2. **TAKE OUT FLUID WITH SYRINGE**
NOTICE: Do not let brake fluid remain on a painted surface. Wash it off immediately.
3. **DISCONNECT BRAKE LINES**
Using SST, disconnect brake lines from the master cylinder and 3-way.
SST 09023-00100:

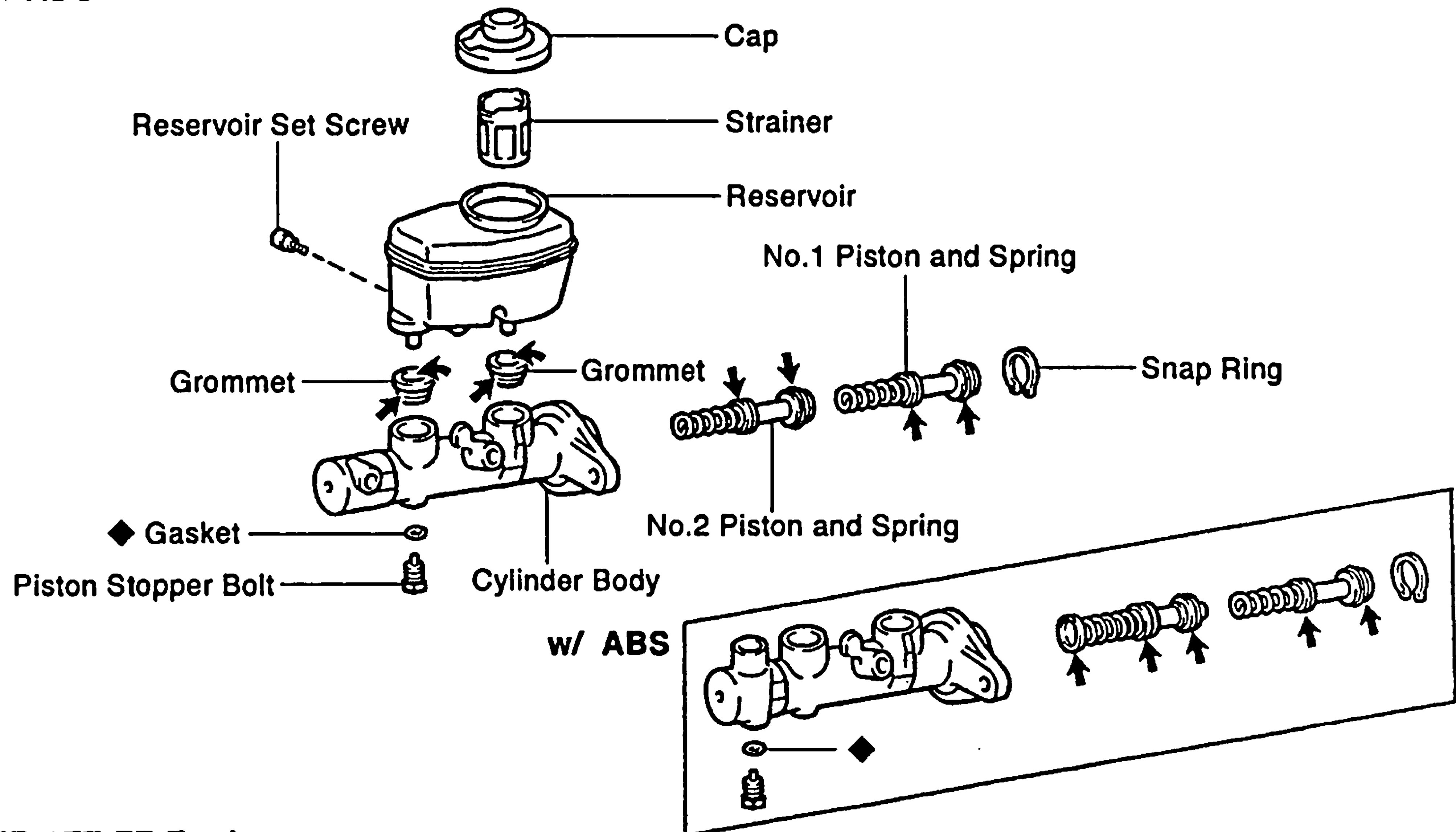


R13589

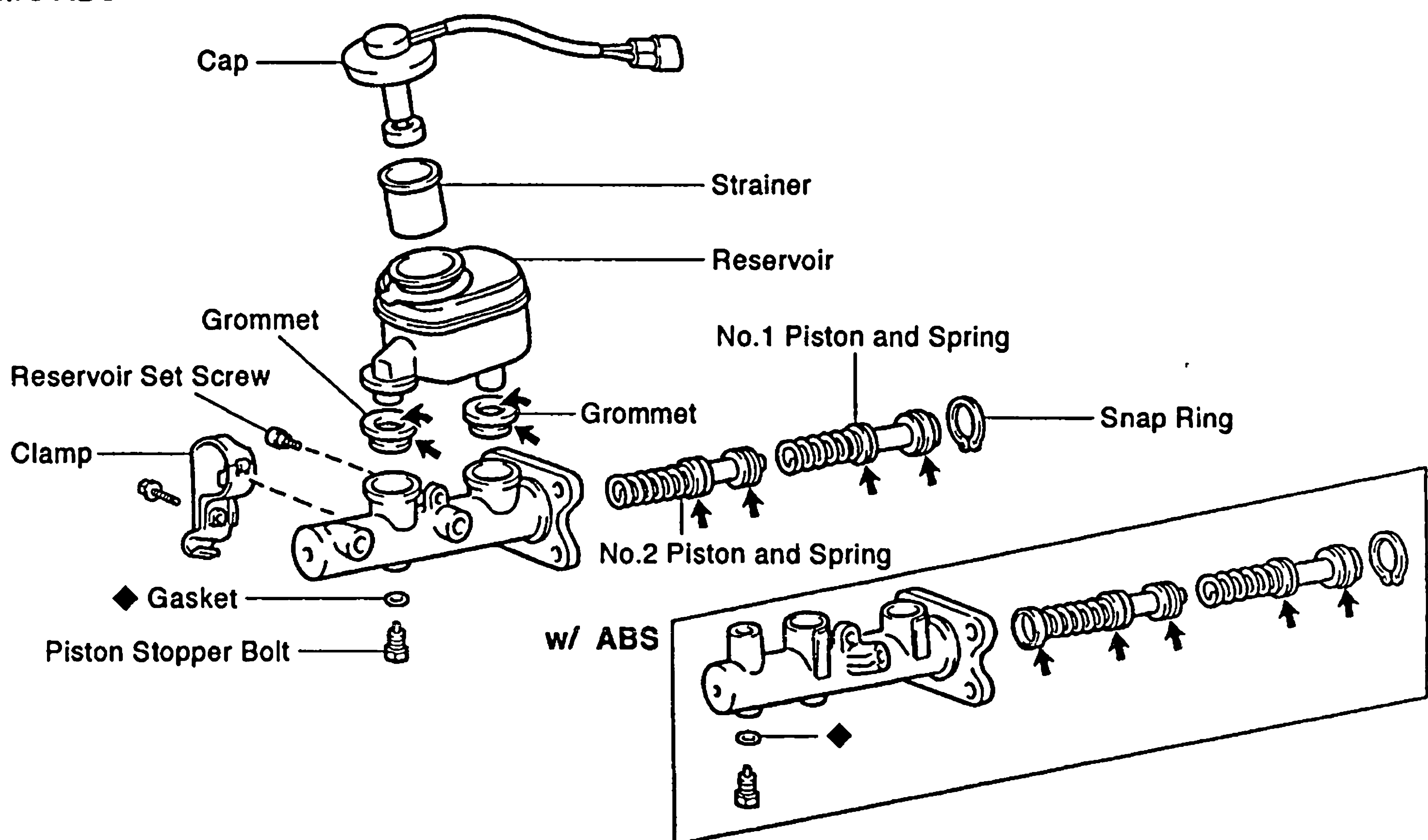
4. **REMOVE MASTER CYLINDER**
 - (a) Remove the mounting nuts.
 - (b) Remove the 3-way, clamp and check valve bracket.
 - (c) Pull out the master cylinder and gasket.

COMPONENTS

Except LHD 1FZ-FE Engine w/o ABS



LHD 1FZ-FE Engine w/o ABS



◆ Non-reusable part

← Lithium soap base glycol grease

MASTER CYLINDER DISASSEMBLY

Assembly is in the reverse order of disassembly.

ASSEMBLY NOTICE: Apply lithium soap base glycol grease to the rubber parts indicated by arrows (See page BR-5).

1. REMOVE RESERVOIR CAP AND STRAINER
2. REMOVE RESERVOIR

Remove the set screw and pull out the reservoir.

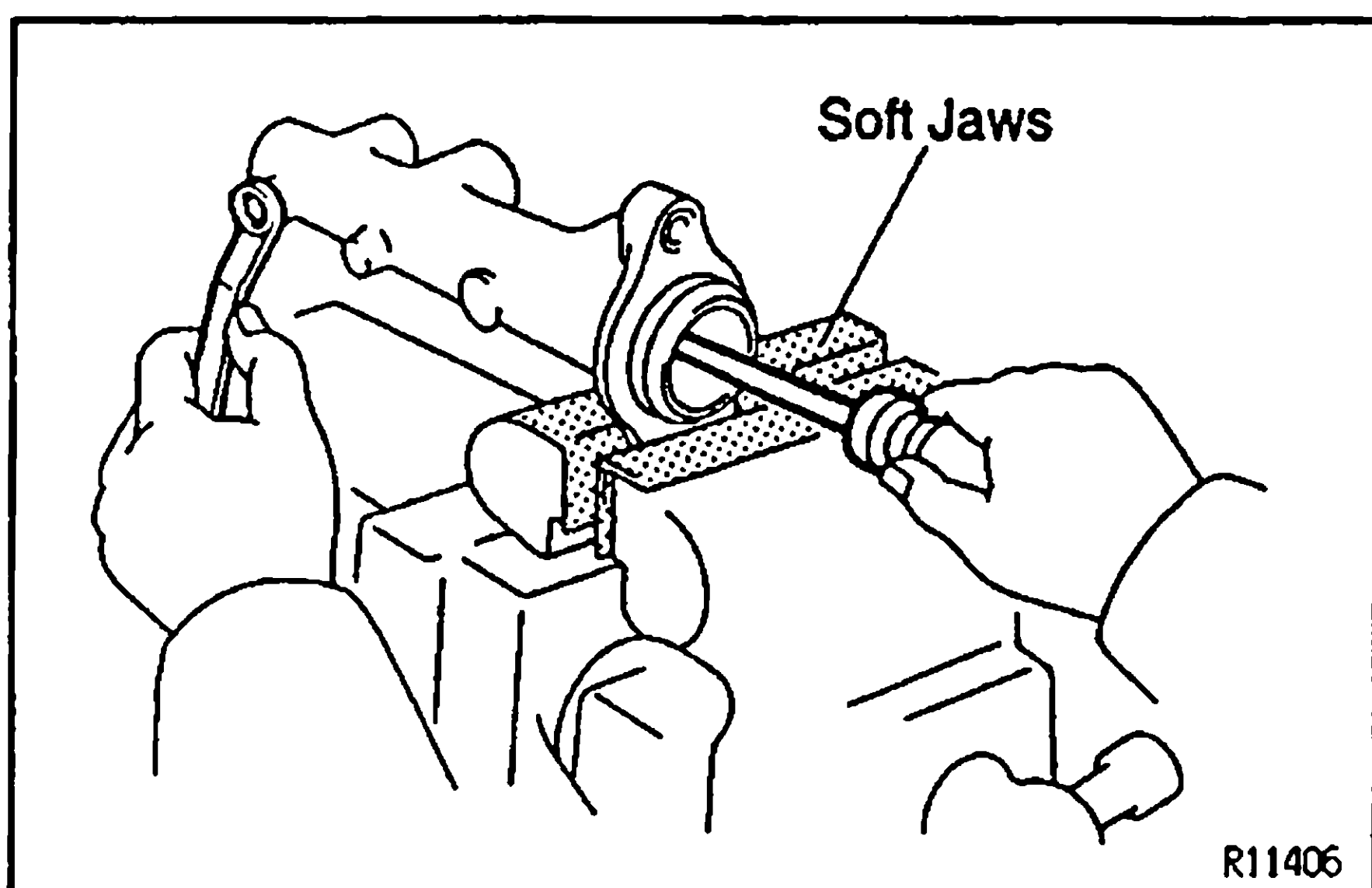
Torque: 1.7 N·m (17.5 kgf·cm, 15.2 in·lbf)

3. REMOVE 2 GROMMETS
4. PLACE CYLINDER IN VISE
5. REMOVE PISTON STOPPER BOLT

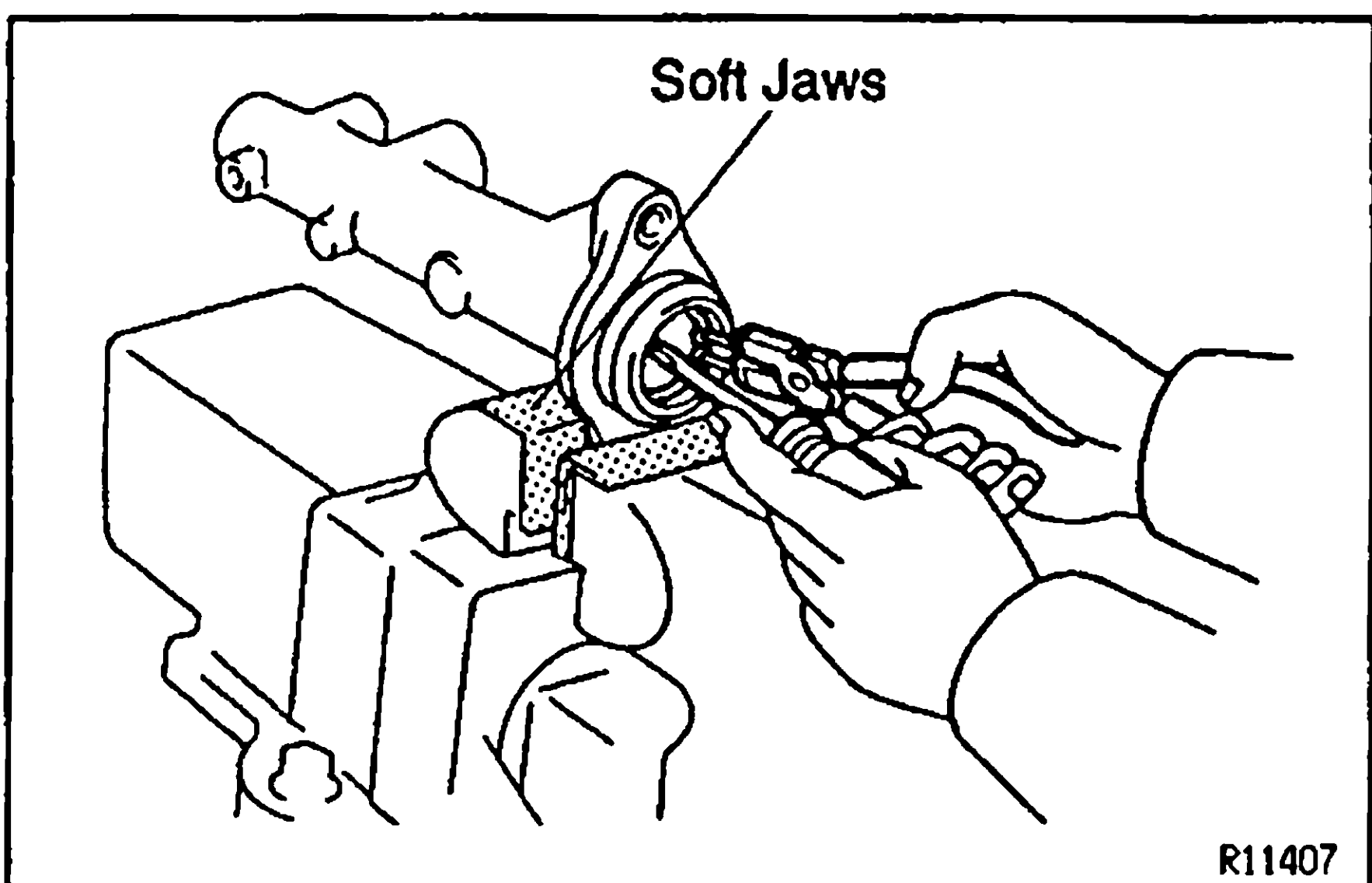
Using a screwdriver, push the pistons in all the way and remove the piston stopper bolt and gasket.

HINT: Tape the screwdriver tip before use.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)



R11406



R11407

6. REMOVE PISTONS

(a) Push in the piston with a screwdriver and remove the snap ring with snap ring pliers.

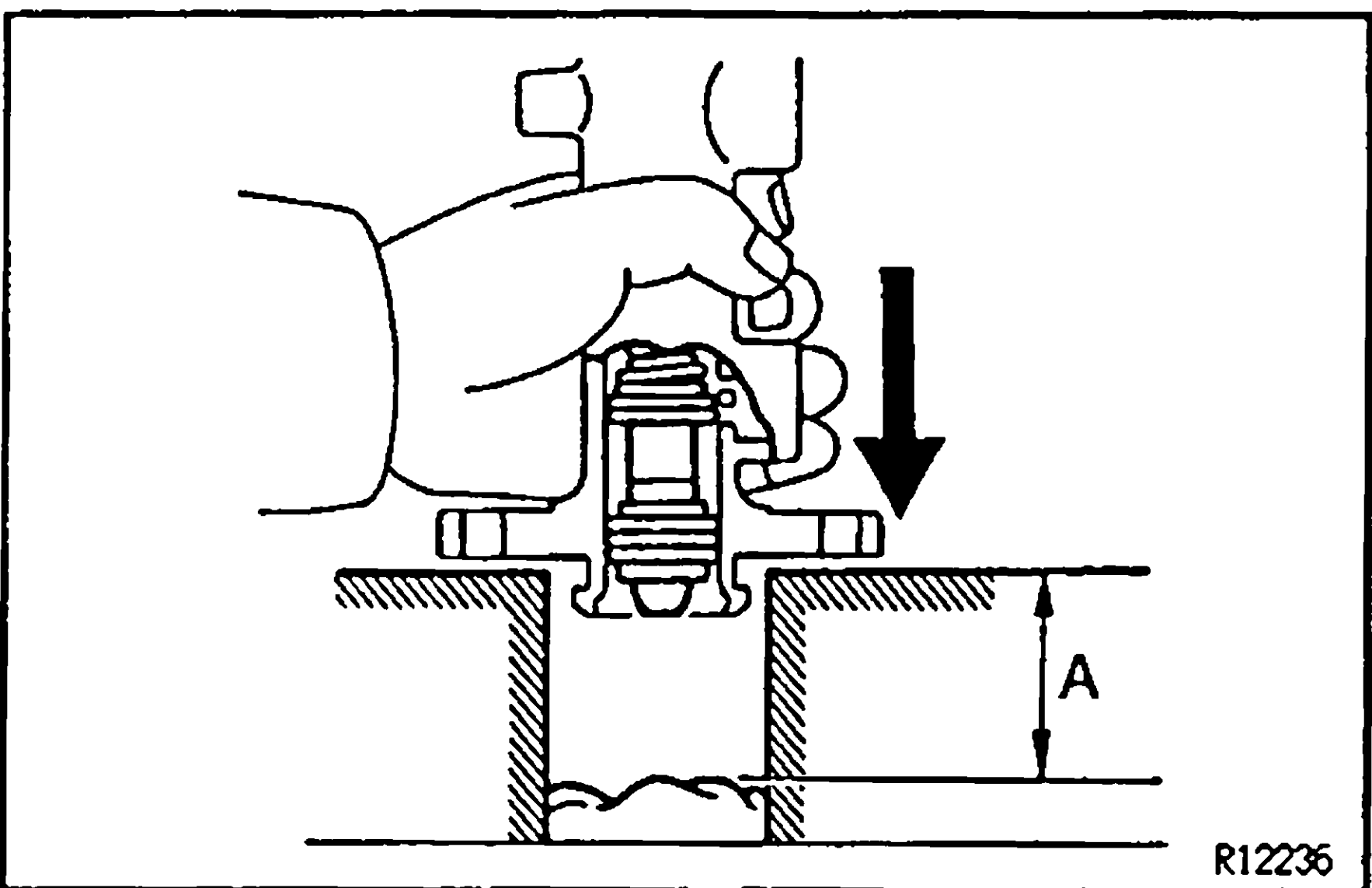
(b) Remove the No. 1 piston and spring by hand, pulling straight out, not at an angle.

NOTICE: If pulled out and installed at an angle, there is a possibility that the cylinder bore could be damaged.

HINT: Tape the screwdriver tip before use.

(c) Place a rag and 2 wooden blocks on the work table and lightly tap the cylinder flange against the blocks until the No. 2 piston drops out of the cylinder.

HINT: Make sure the distance (A) from the rag to the top of the blocks is at least 100 mm (3.94 in.).



R12236

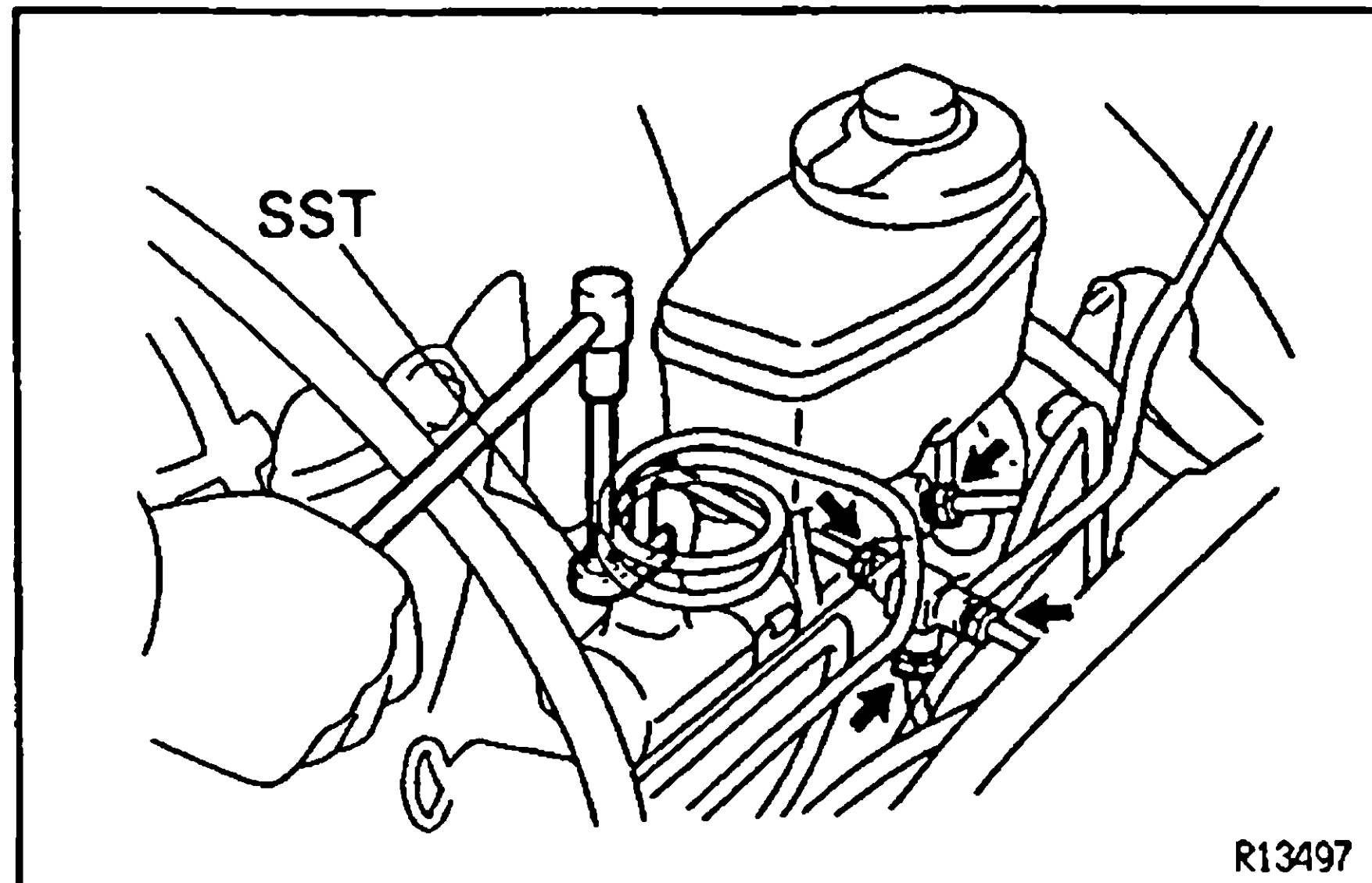
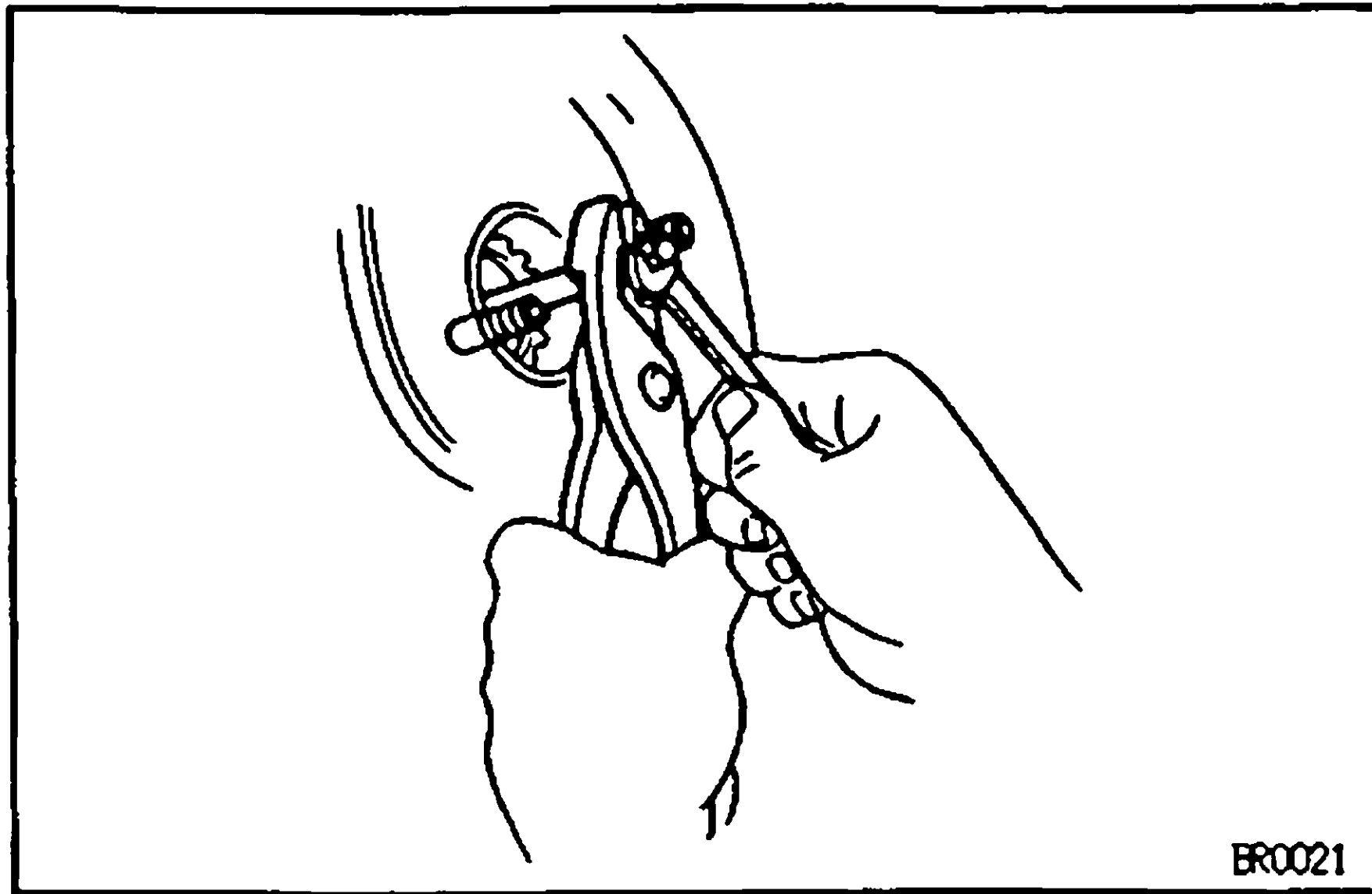
MASTER CYLINDER INSPECTION

BR12Q-01

HINT: Clean the disassembled parts with compressed air.

1. INSPECT CYLINDER BORE FOR RUST OR SCORING
2. INSPECT CYLINDER FOR WEAR OR DAMAGE

If necessary, clean or replace the cylinder.



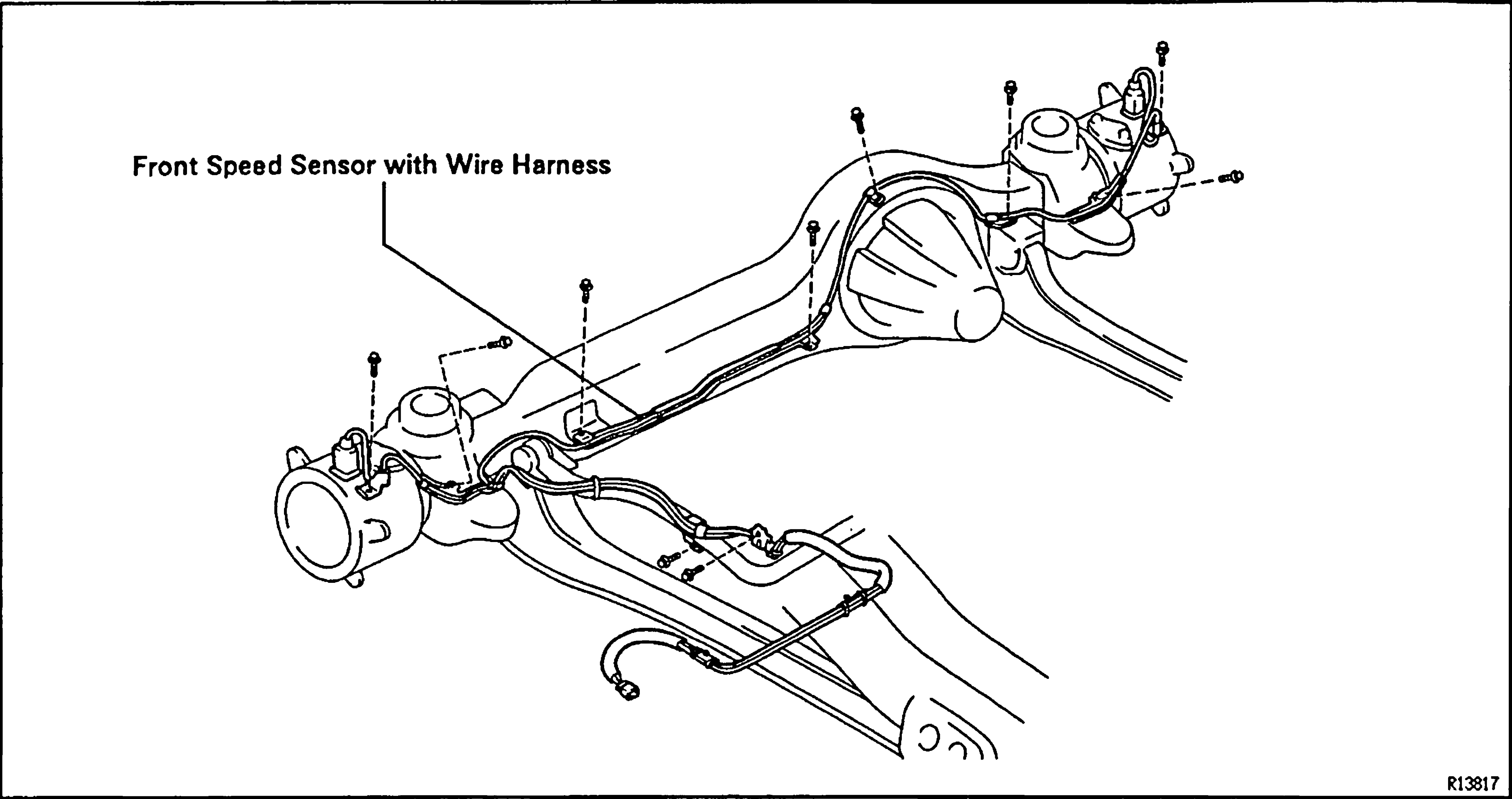
MASTER CYLINDER INSTALLATION

- 1. ADJUST LENGTH OF BRAKE BOOSTER PUSH ROD BEFORE INSTALLING MASTER CYLINDER**
(See Pub. No. RM184E on page BR-26)
- 2. INSTALL MASTER CYLINDER**
 - (a) Install the master cylinder, gasket, 3-way, clamp and bracket on the brake booster with the mounting nuts.
 - (b) Tighten the mounting nuts.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)
- 3. CONNECT BRAKE LINES**
Using SST, connect the brake lines to the master cylinder and 3-way. Torque the union nuts.
SST 09023-00100
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)
- 4. CONNECT LEVEL WARNING SWITCH CONNECTOR**
- 5. FILL BRAKE RESERVOIR WITH BRAKE FLUID AND BLEED BRAKE SYSTEM**
(See Pub. No. RM184E on page BR-7)
- 6. CHECK FOR LEAKS**
- 7. CHECK AND ADJUST BRAKE PEDAL**
(See Pub. No. RM315E on page BR-4)

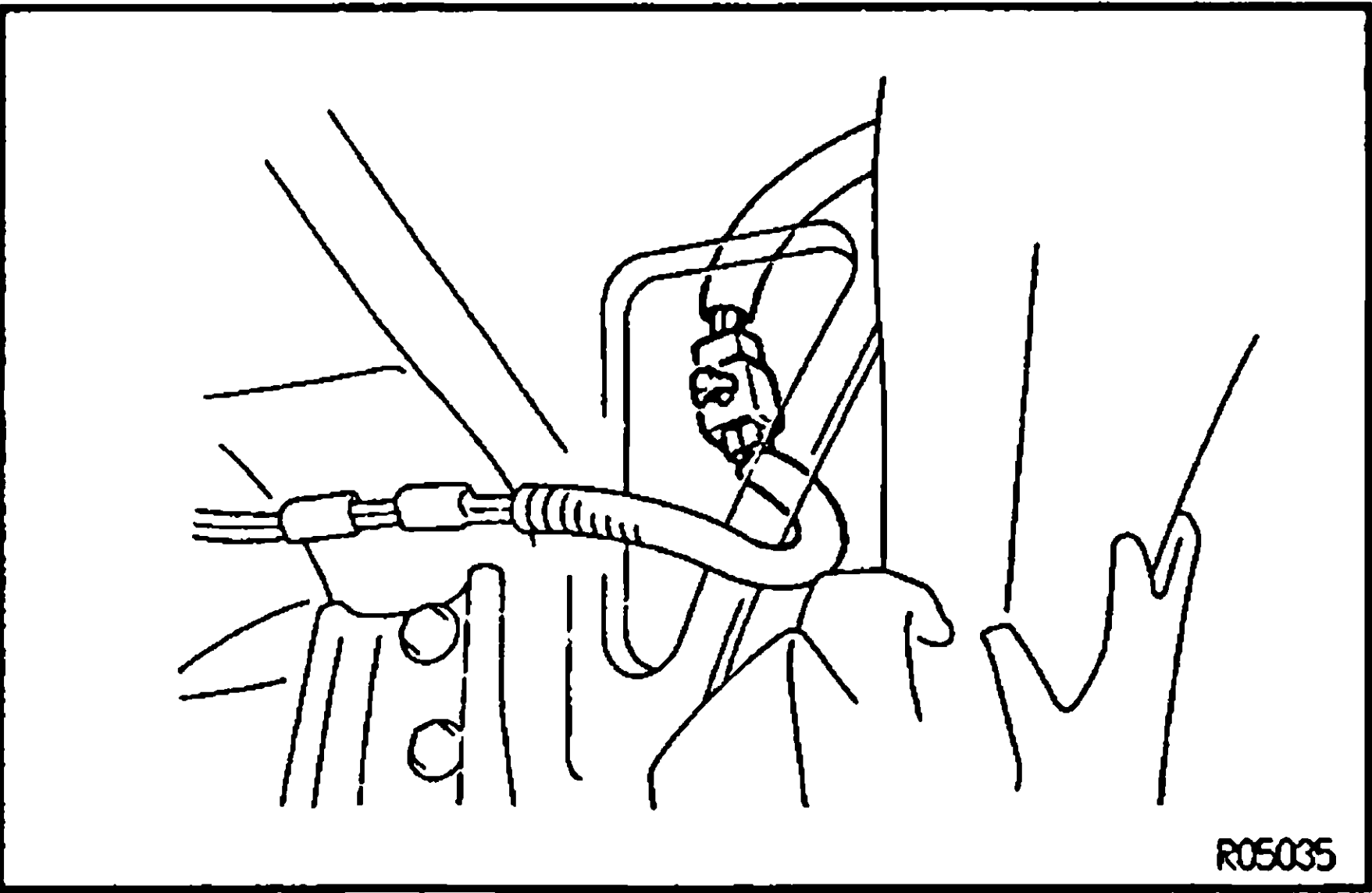
ANTI—LOCK BRAKE SYSTEM (ABS)

FRONT SPEED SENSOR COMPONENTS

BR128-01



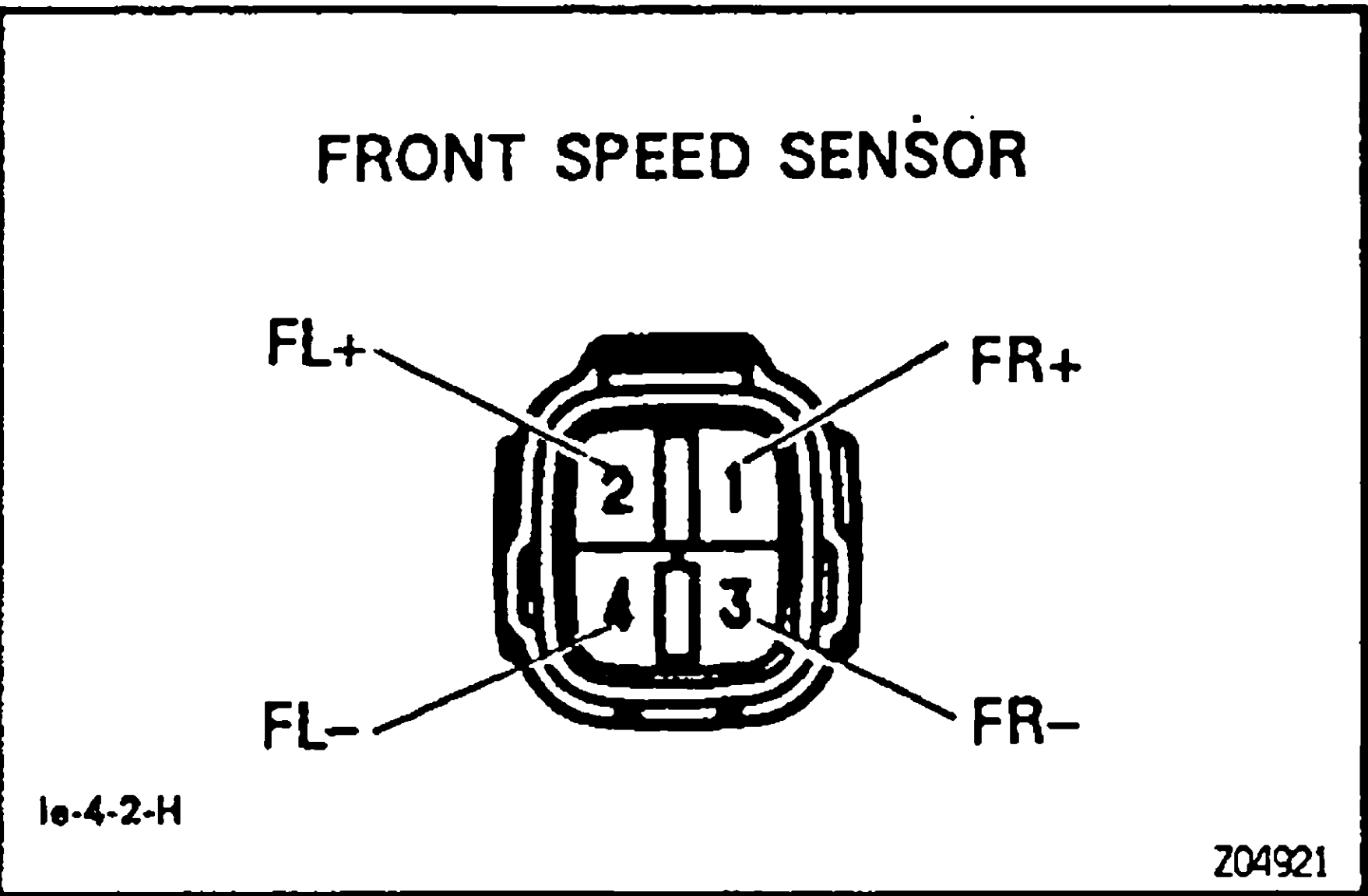
BR



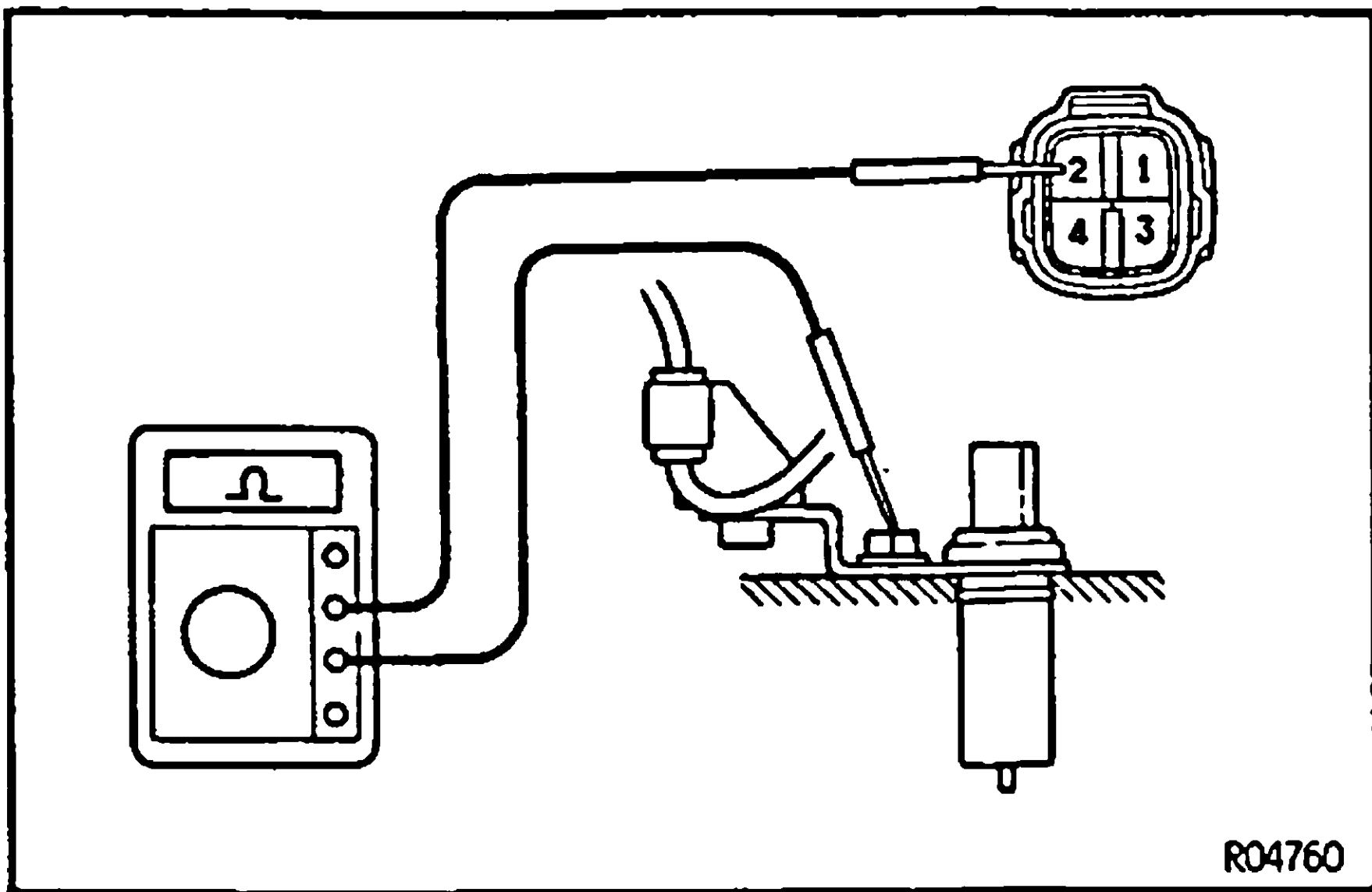
FRONT SPEED SENSOR INSPECTION

BR127-01

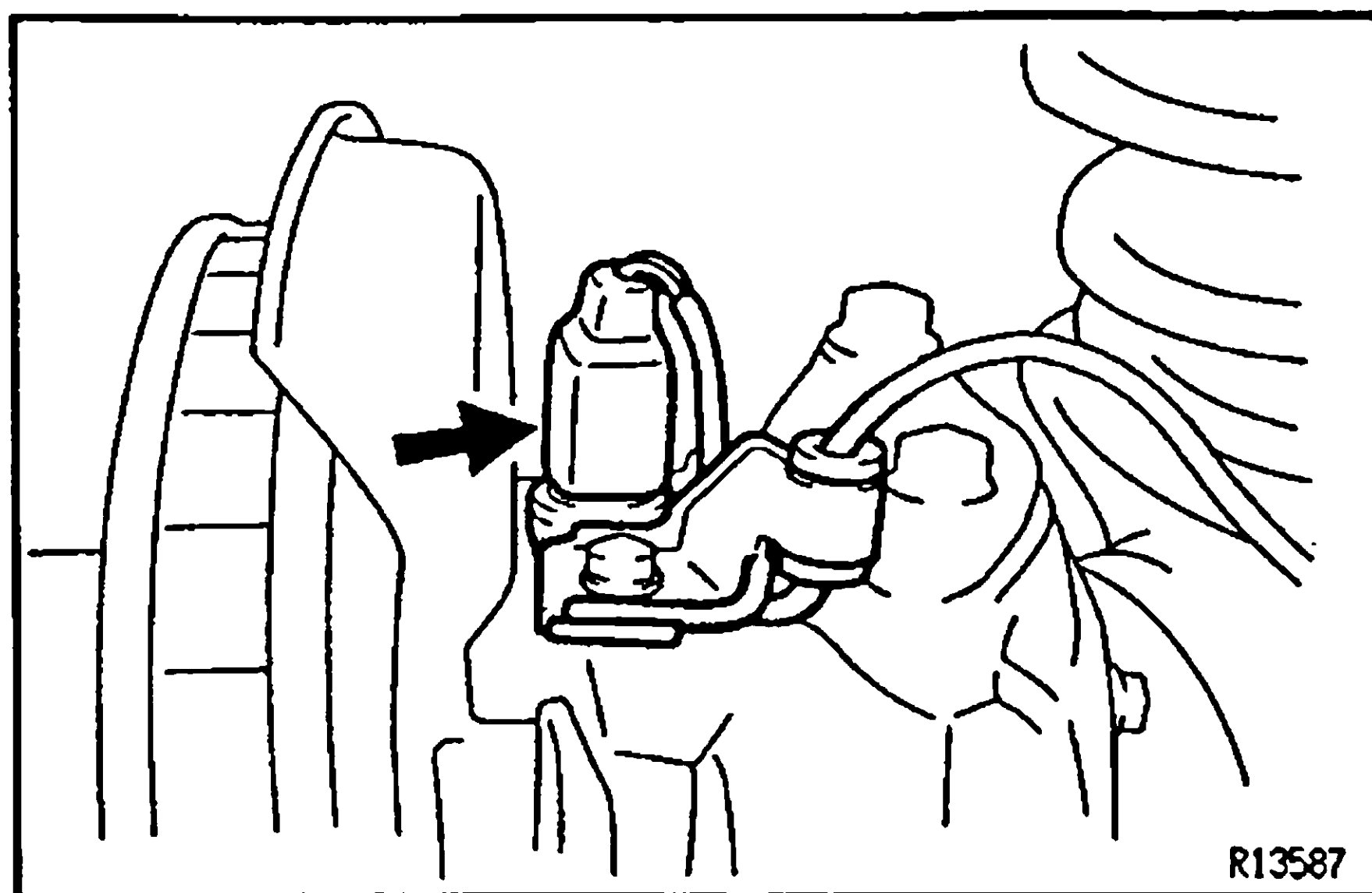
1. **INSPECT SPEED SENSOR**
 - (a) Disconnect the speed sensor connector.



- (b) Measure the resistance between terminals FR+ and FR—, and FL+ and FL—. **Resistance:**
0.97—1.77 kΩ
If resistance value is not as specified, replace the sensor.



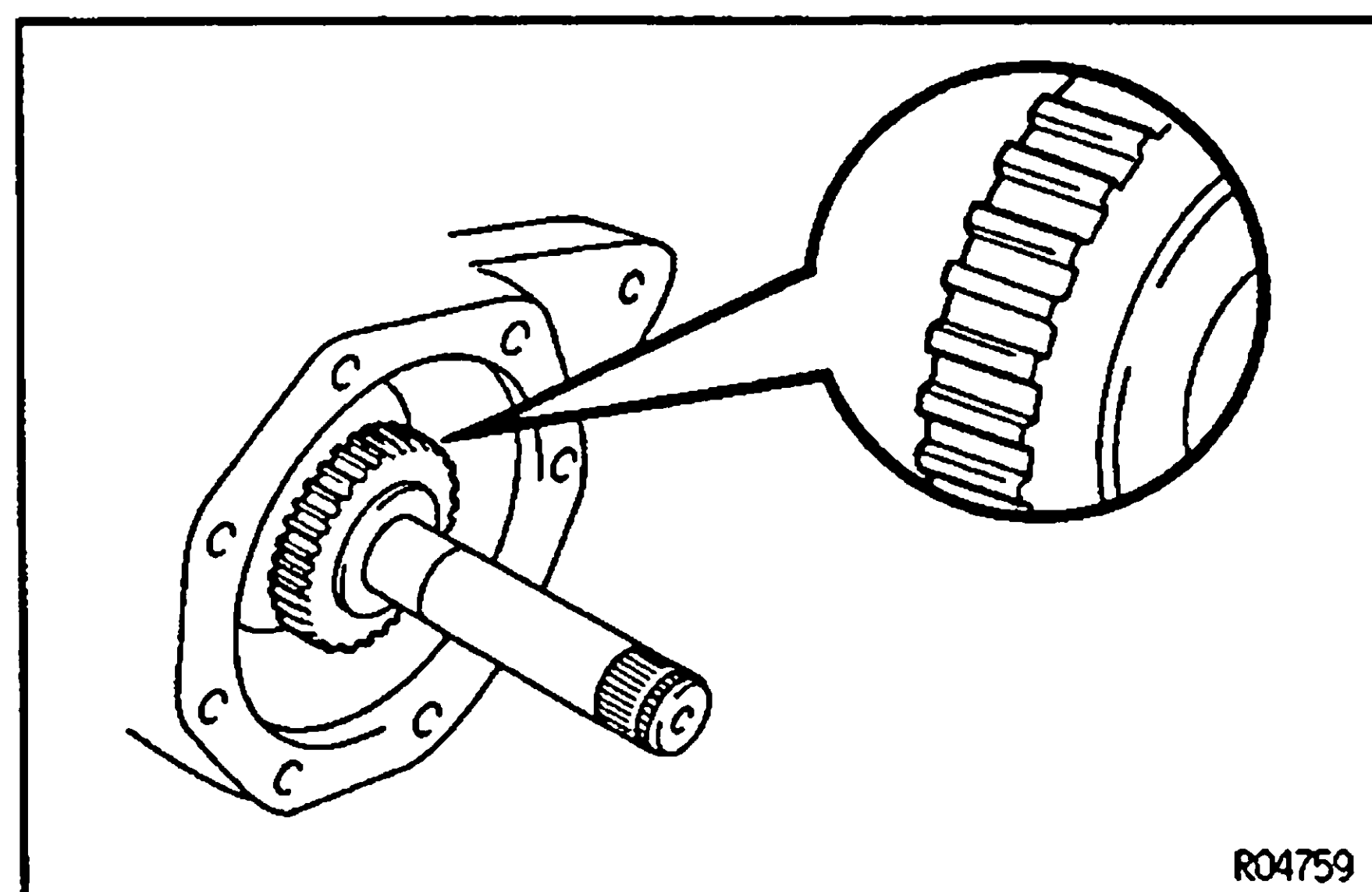
- (c) Check there is no continuity between each terminal and sensor body.
If there is continuity, replace the sensor.
- (d) Connect the speed sensor connector.



2. INSPECT SENSOR INSTALLATION

Check the sensor installation bolt is tightened properly. If not, tighten the bolt.

Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

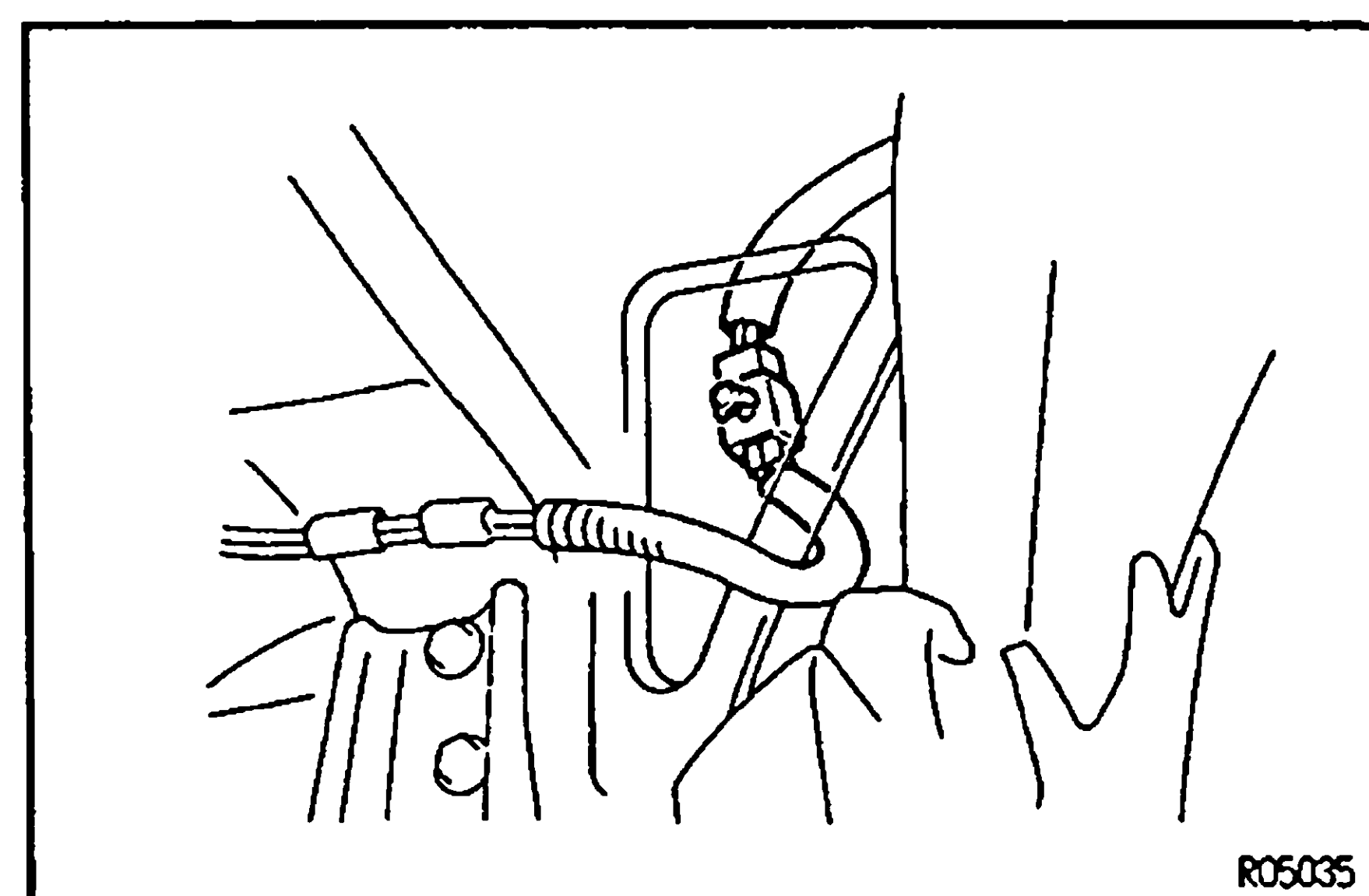


3. VISUALLY INSPECT SENSOR ROTOR SERRATIONS

- (a) Remove the axle hub with disc.
(See Pub. No. RM184E on page SA—16)
- (b) Inspect the sensor rotor serrations for scratches, cracks, warping or missing teeth.
- (c) Install the axle hub with disc.
(See Pub. No. RM184E on page SA—19)

4. CHECK SPEED SENSOR SIGNAL

(See Pub. No. RM315E on page BR—34)



FRONT SPEED SENSOR REMOVAL

BR12U-01

HINT: When replacing the sensor or sensor harness, replace the sensor and sensor harness together as a set.

Installation is in the reverse order of removal.

AFTER INSTALLATION, CHECK SPEED SENSOR SIGNAL (See Pub. No. RM315E on page BR—34)

1. DISCONNECT SPEED SENSOR CONNECTOR

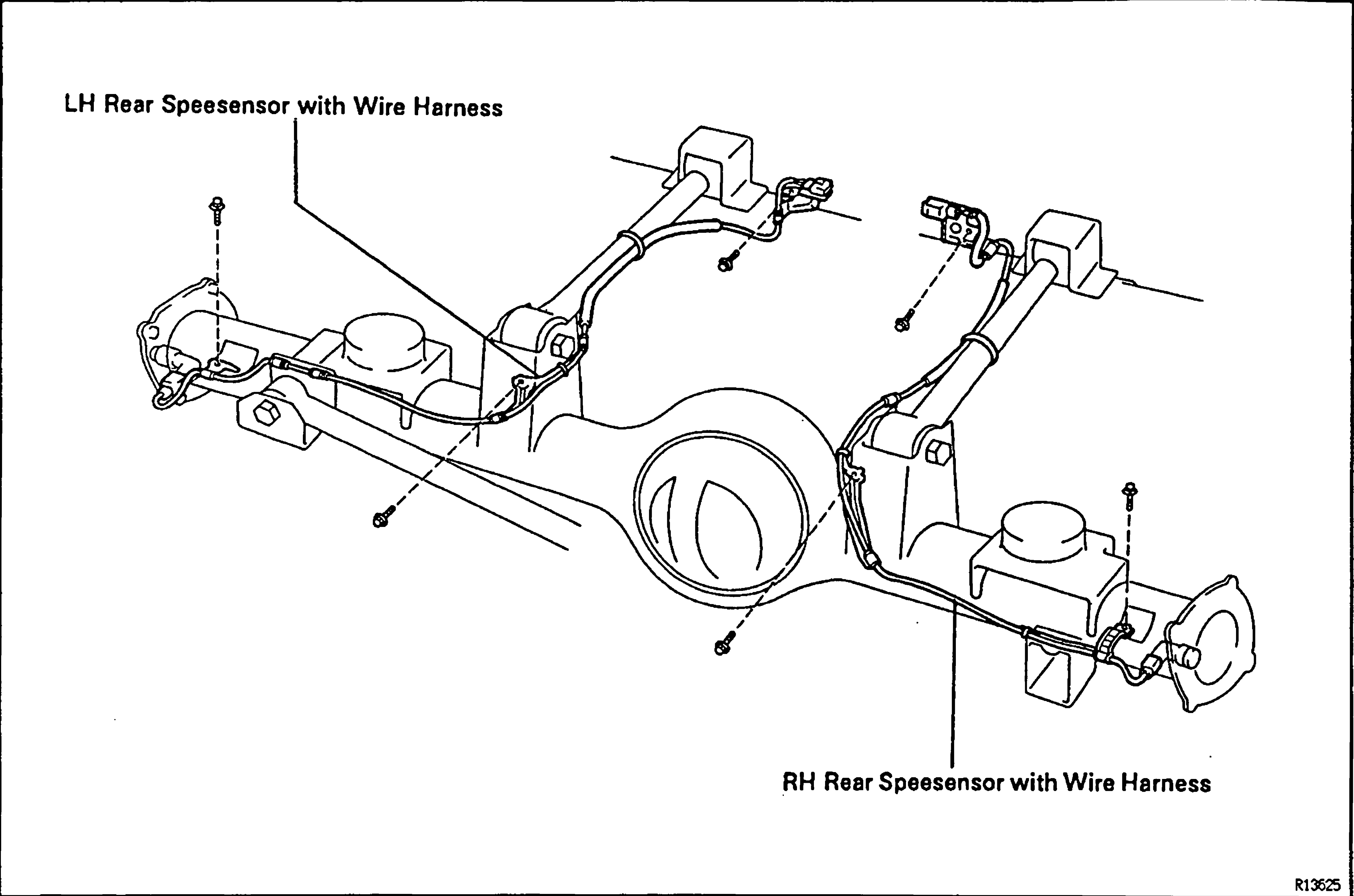
2. REMOVE SPEED SENSOR

- (a) Remove the 8 clamp bolts and 2 clips holding the sensor harness from the axle housing.
- (c) Remove the 2 installation bolts and speed sensor from the steering knuckle.

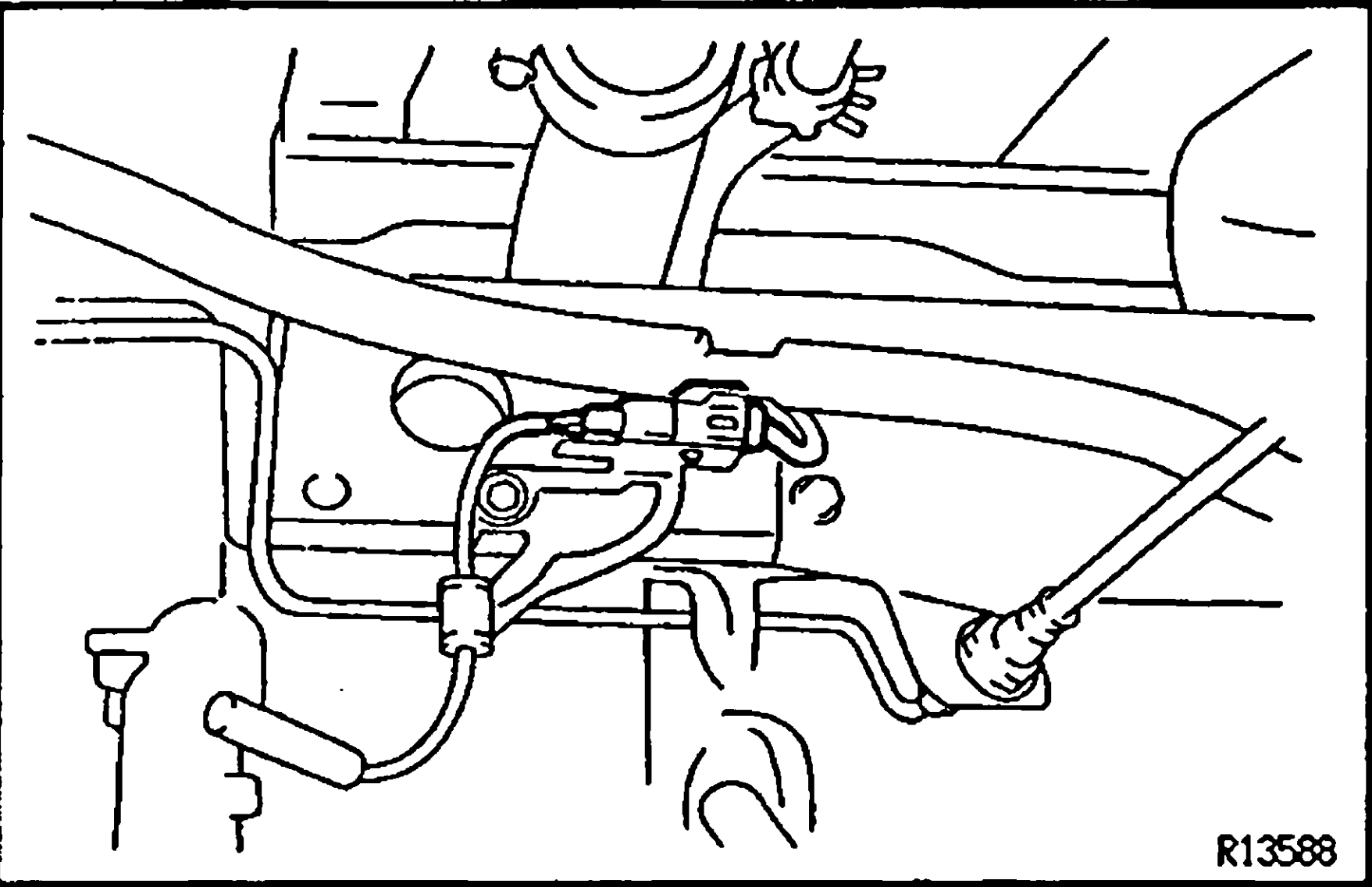
Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

REAR SPEED SENSOR
COMPONENTS

BR12V-01



R13625

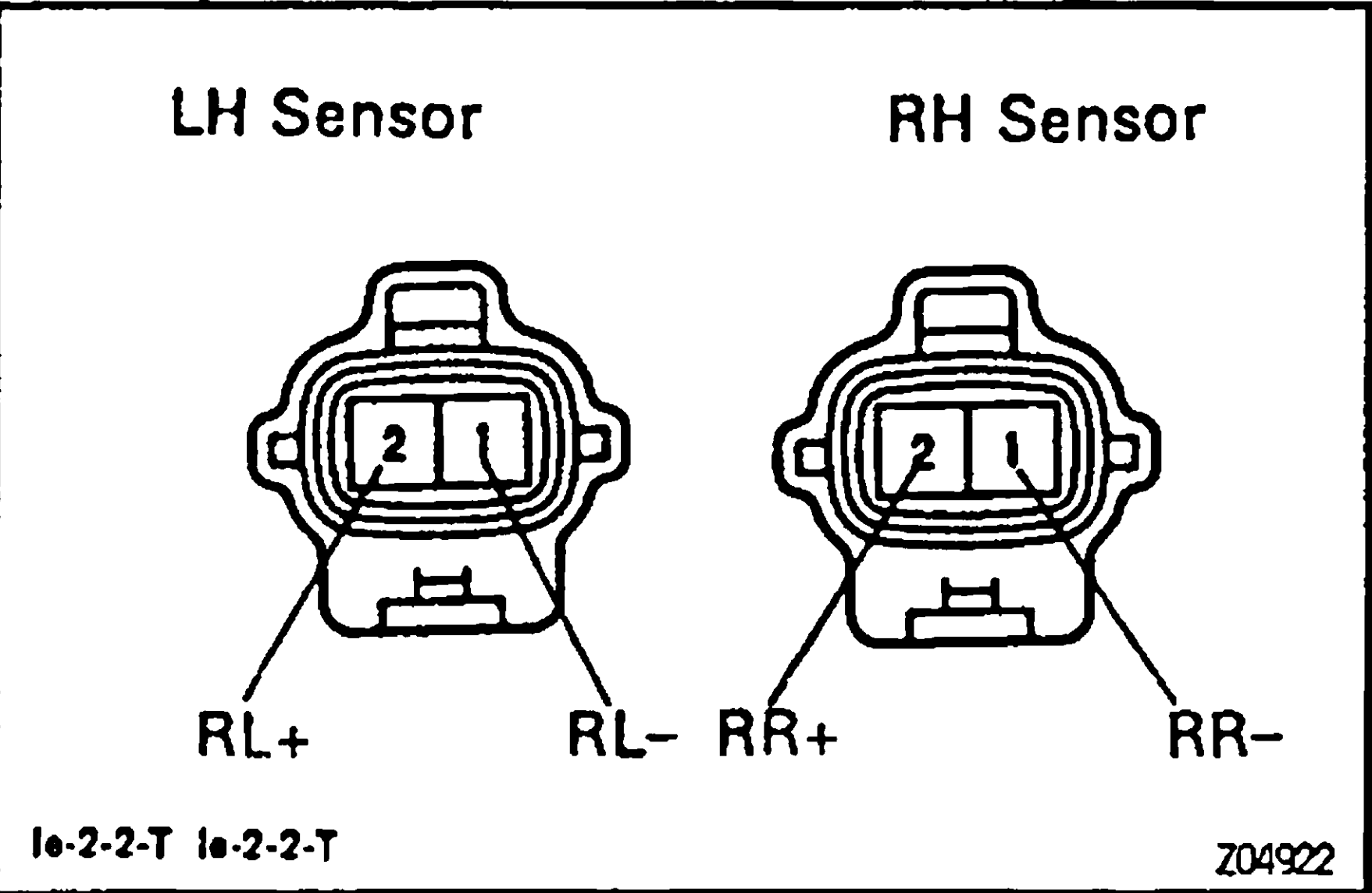


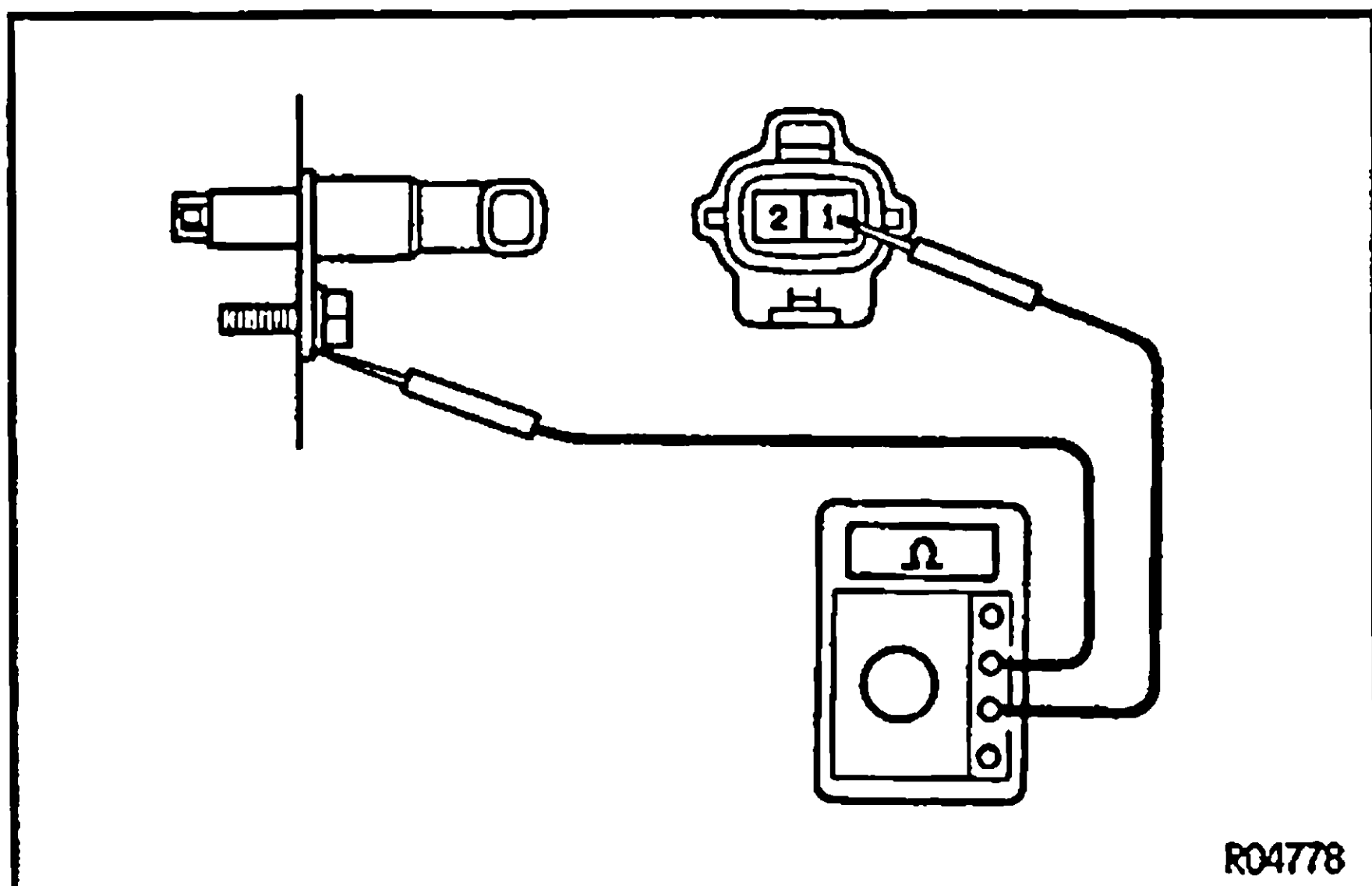
REAR SPEED SENSOR INSPECTION

BR12W-01

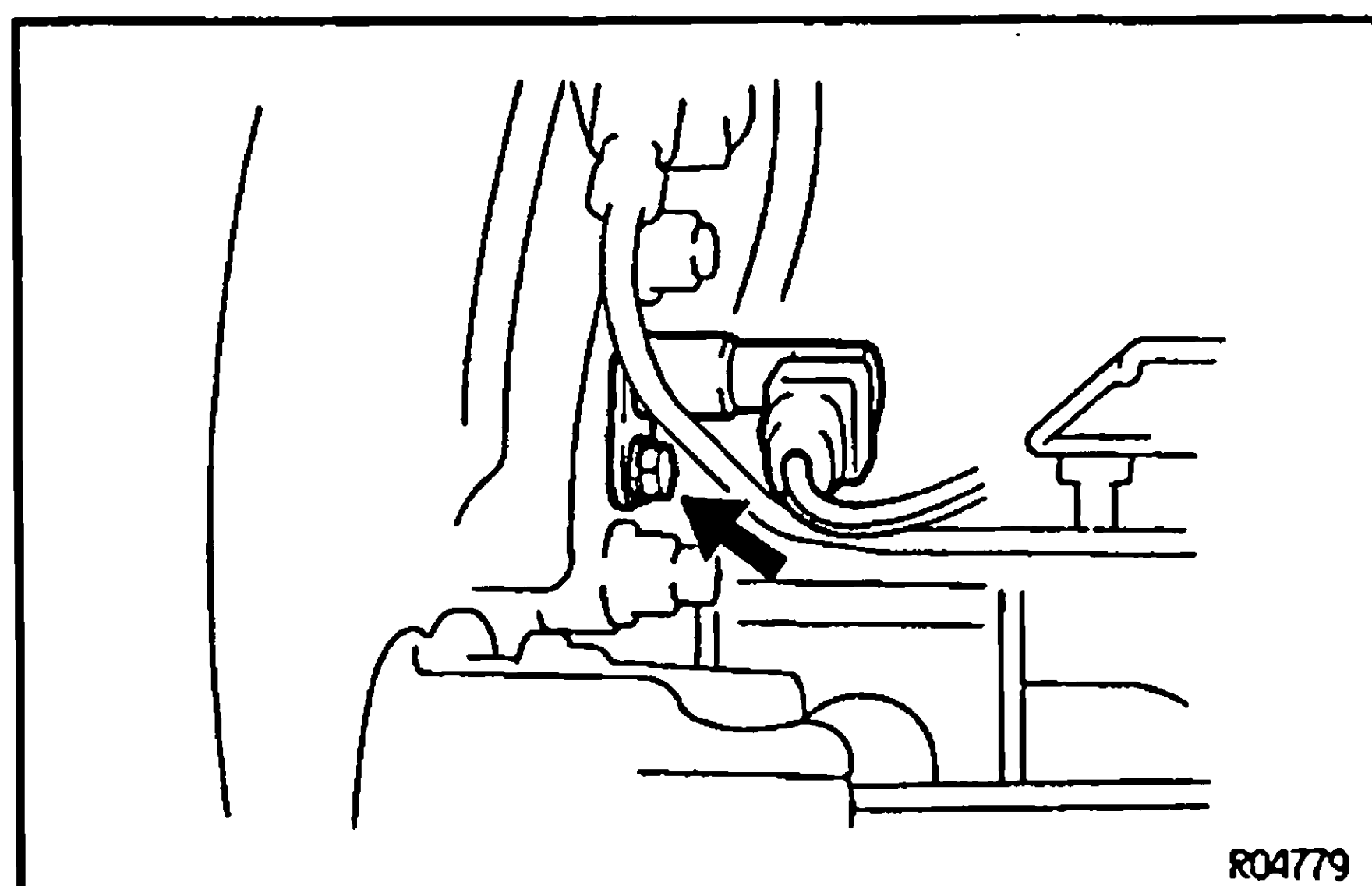
1. **INSPECT SPEED SENSOR**
 - (a) Disconnect the speed sensor connector.

- (b) Measure the resistance between terminals.
Resistance:
0.5—1.6 k Ω
If resistance value is not as specified, replace the sensor.





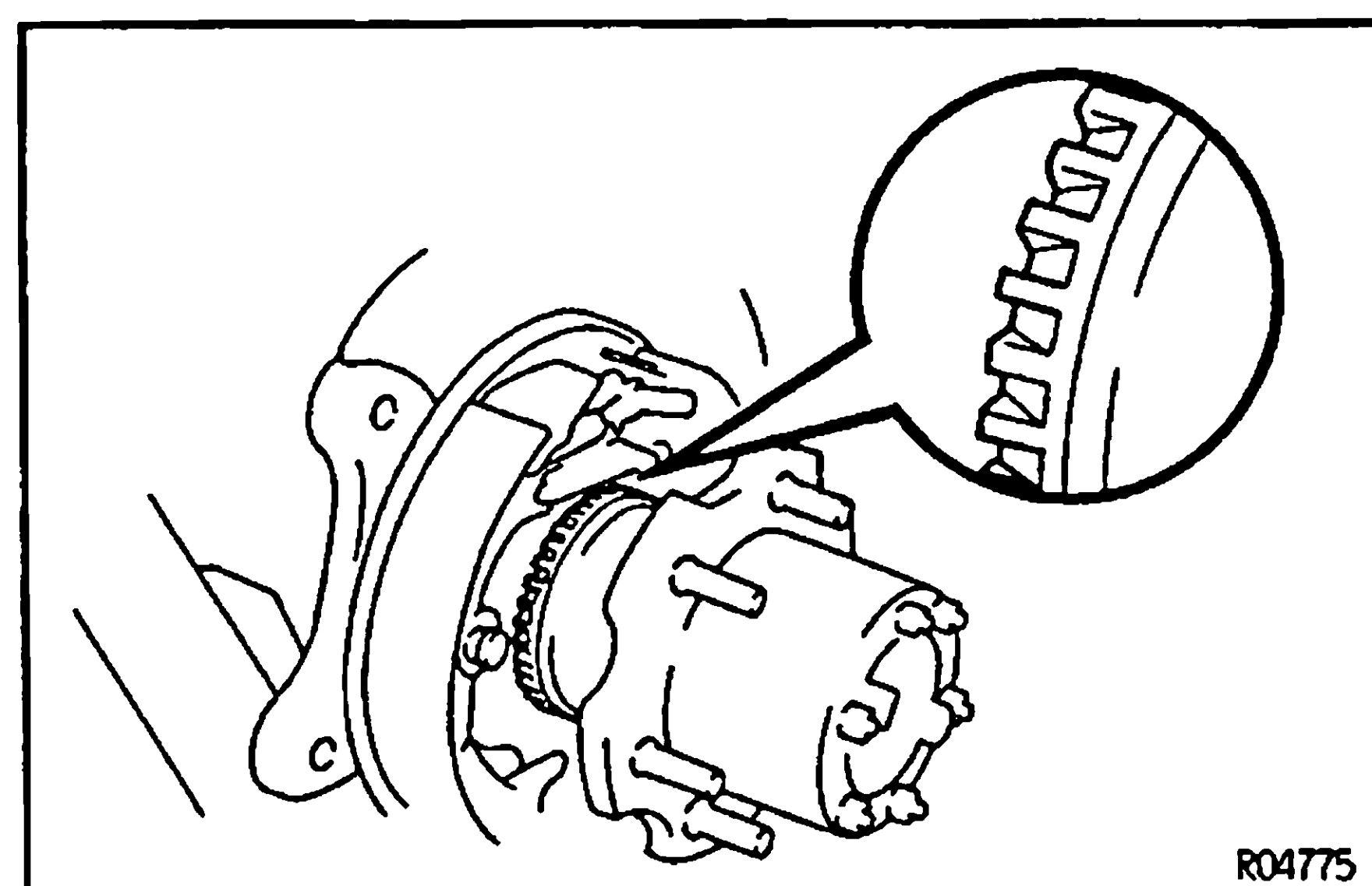
- (c) Check there is no continuity between each terminal and sensor body.
If there is continuity, replace the sensor.
- (d) Connect the speed sensor connector.



2. INSPECT SENSOR INSTALLATION

Check the sensor installation bolt is tightened properly. If not, tighten the bolt.

Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)



3. VISUALLY INSPECT SENSOR ROTOR SERRATIONS

- (a) Remove the brake disc.
(See Pub. No. RM184E on page BR-57)
 - (b) Inspect the sensor rotor serrations for scratches, cracks, warping or missing teeth.
 - (c) Install the brake disc.
(See Pub. No. RM184E on page BR-64)
- NOTICE:** To prevent damage to the serrations, do not strike the axle hub.

4. CHECK SPEED SENSOR SIGNAL

(See Pub. No. RM315E on page BR-34)

REAR SPEED SENSOR REMOVAL

BR12X-01

Installation is in the reverse order of removal.

AFTER INSTALLATION, CHECK SPEED SENSOR SIGNAL (See Pub. No. RM315E on page BR-34)

HINT: When replacing the sensor or sensor harness, replace the sensor and sensor harness together as a set.

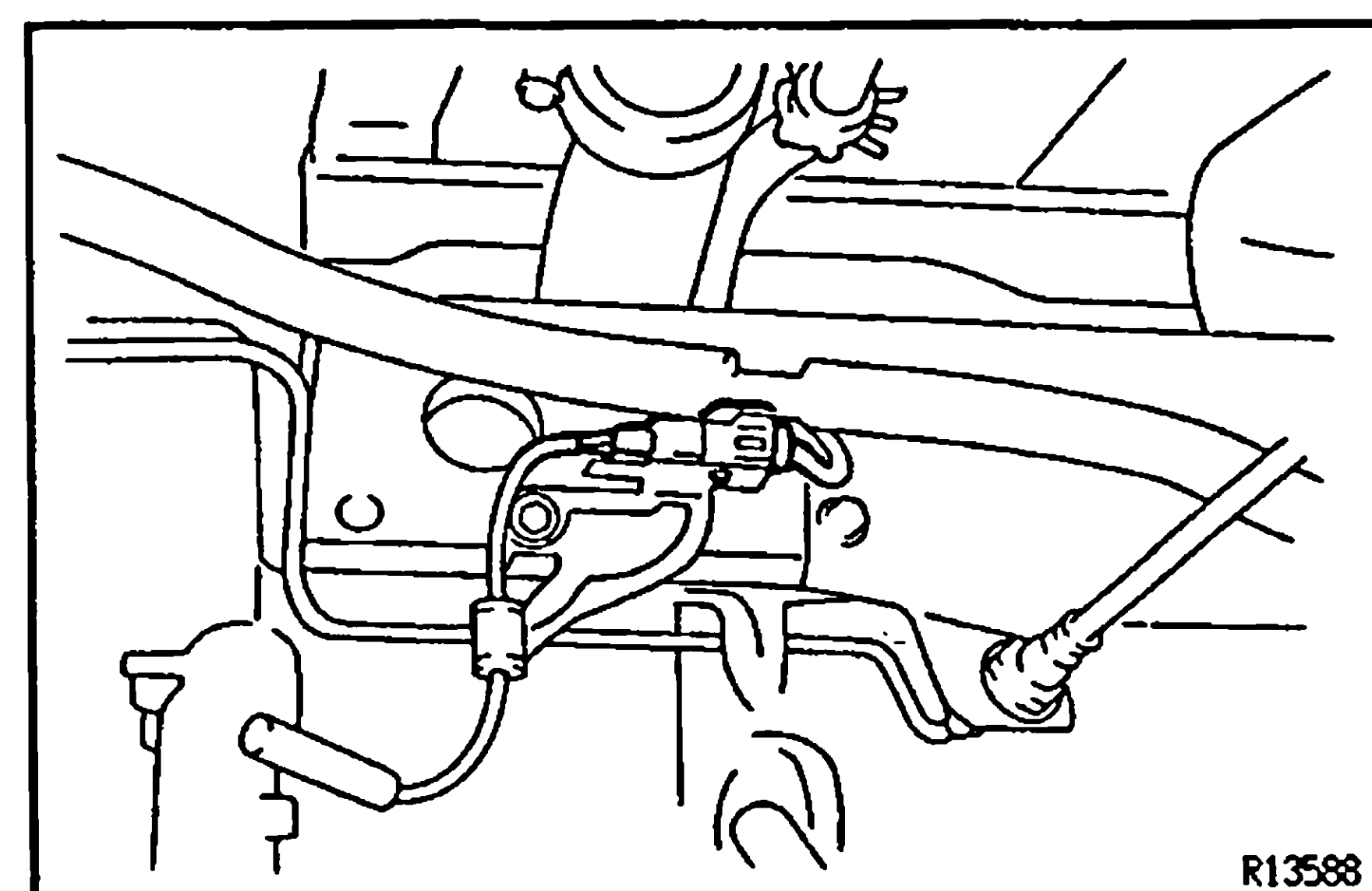
1. DISCONNECT SPEED SENSOR CONNECTOR

- (a) Disconnect the speed sensor connector.
- (b) Remove the 3 clamp bolts and 2 clips holding the sensor wire harness from the suspension arm and frame.

2. REMOVE SPEED SENSOR

Remove the installation bolt and speed sensor from the axle end.

Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)



SERVICE SPECIFICATIONS
TORQUE SPECIFICATIONS

BR12Y-01

Part tightened	N·m	kgf·cm	ft·lbf
Master cylinder x Piston stopper bolt	10	100	7
Master cylinder x Reservoir	1.7	17.5	15.2 in·lbf
Master cylinder x Brake booster	13	130	9
Brake line union nut	15	155	11
Front speed sensor installation bolt	18	185	13
Rear speed sensor installation bolt	18	185	13



STEERING

PRECAUTION	SR— 2
PREPARATION	SR— 2
ON—VEHICLE INSPECTION	SR— 3
TILT STEERING COLUMN	SR— 8
SERVICE SPECIFICATIONS	SR— 12

REFER TO LAND CRUISER (Station Wagon)
REPAIR MANUAL FOR CHASSIS AND BODY (Pub.
No. RM184E)

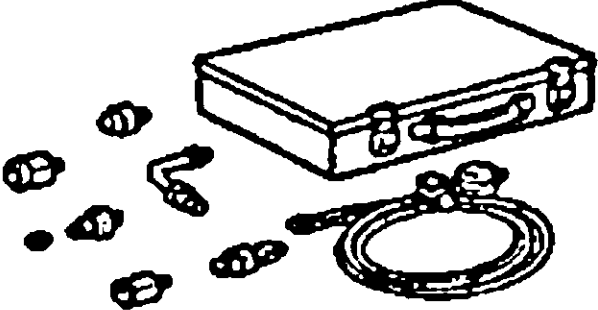
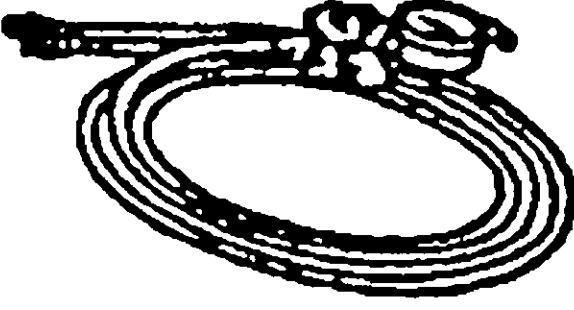
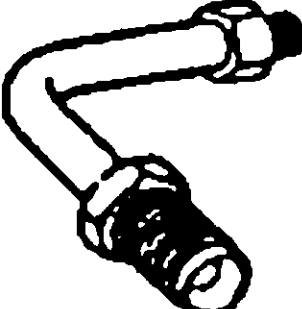
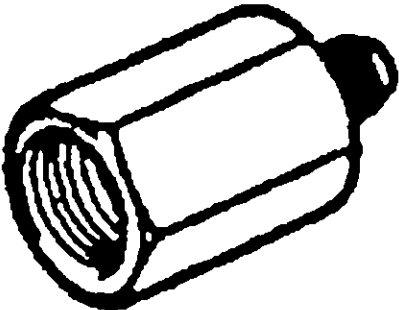
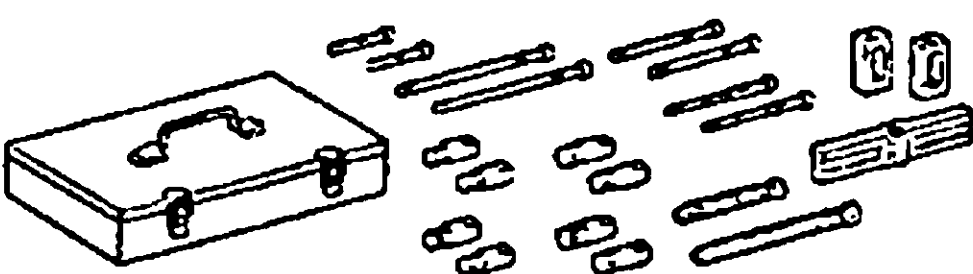
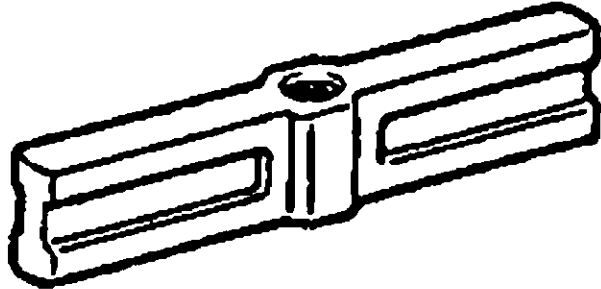
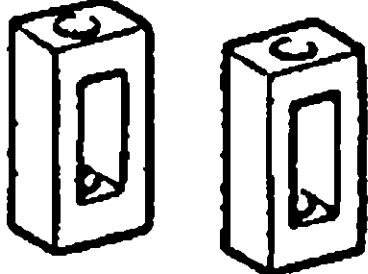
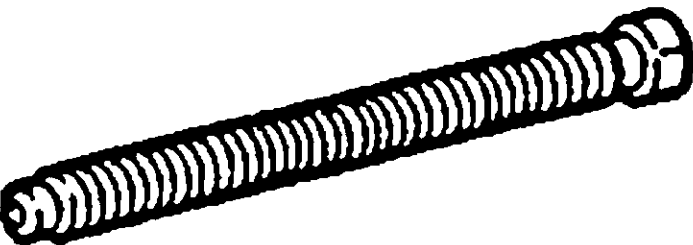
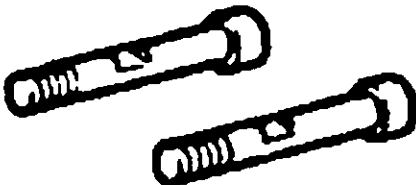
NOTE: The above pages contain only the points
which differ from the above listed manual.

SR

PRECAUTION

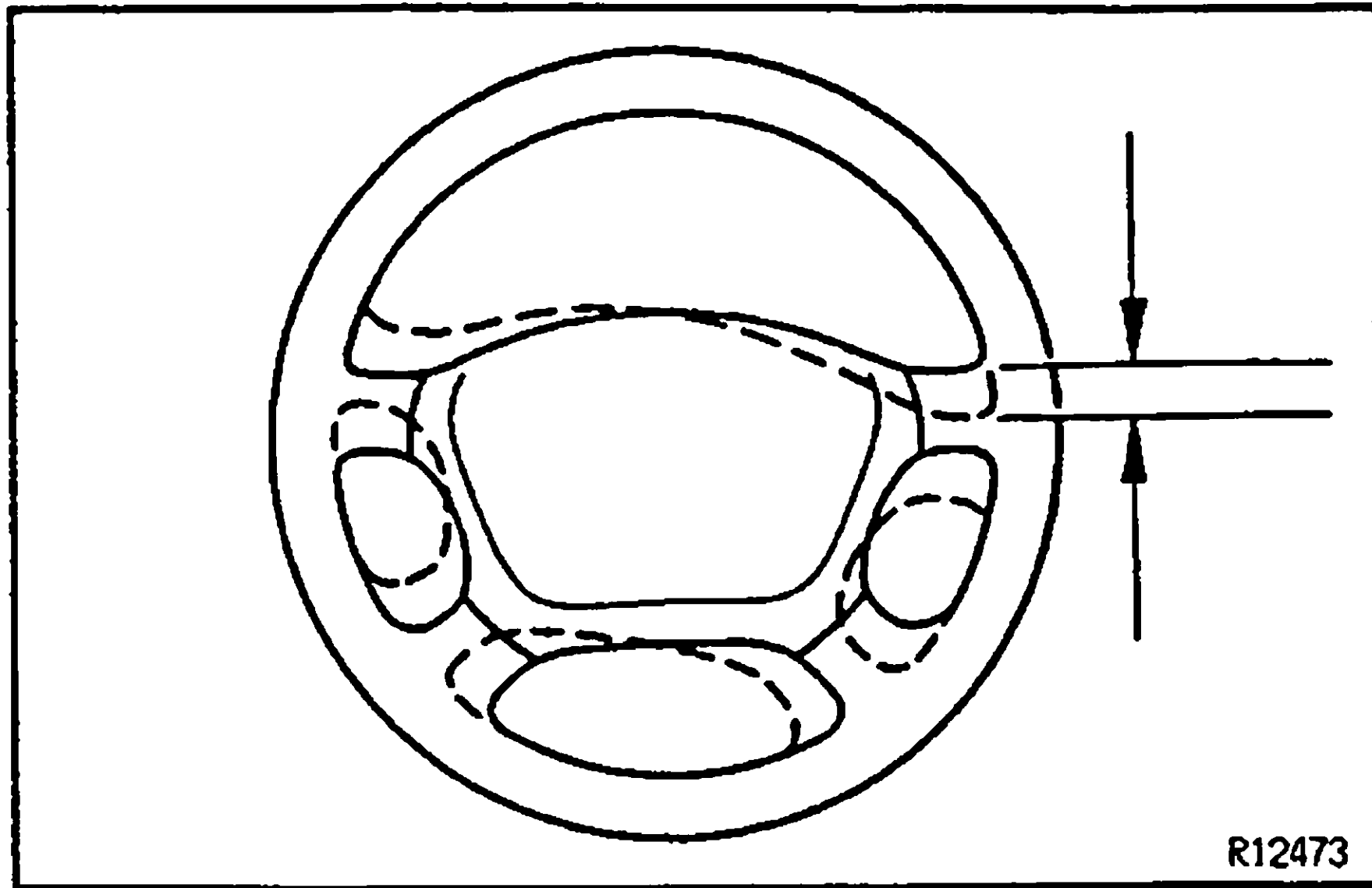
- Care must be taken to replace parts properly because they could affect the performance of the steering system and result in a driving hazard.
- The steering wheel pad has an SRS (Supplemental Restraint System) airbag built in, so take all due precautions when handling it. For more details, see the RS section.

SST (SPECIAL SERVICE TOOLS)

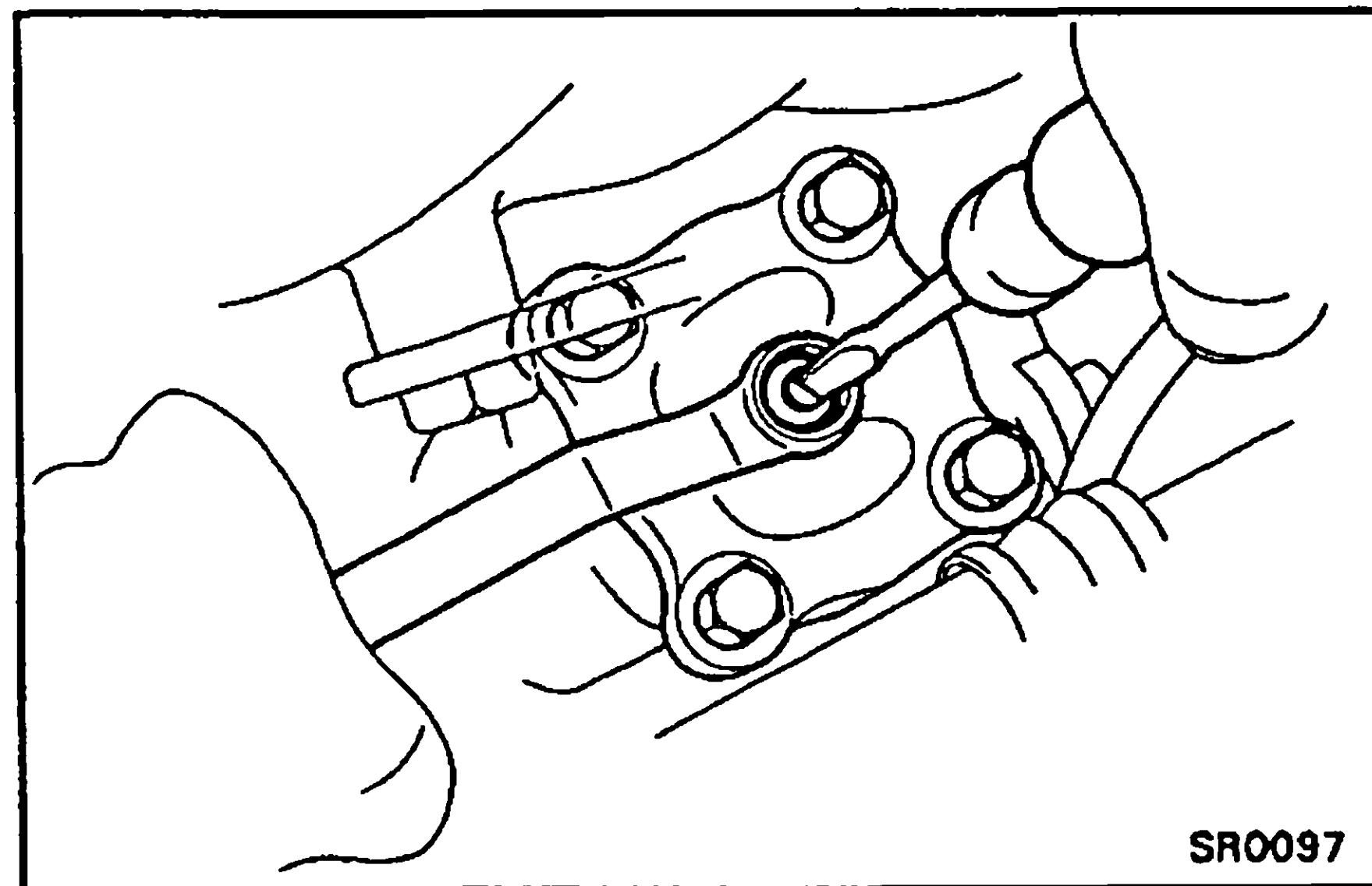
	09640-10010 Power Steering Pressure Gauge Set	
	(09641-01010) Gauge Assy	Fluid pressure check
	(09641-01030) Attachment B	Fluid pressure check
	(09641-01060) Attachment E	Fluid pressure check
	09950-50010 Puller C Set	
	(09951-05010) Hanger 150	Steering wheel
	(09952-05010) Slide Arm	Steering wheel
	(09953-05020) Center Bolt 150	Steering wheel
	(09954-05020) Claw No.2	Steering wheel

EQUIPMENT

Torque wrench	
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R12473



SR0097

ON—VEHICLE INSPECTION

STEERING WHEEL FREEPLAY CHECK

SR1CB-01

1. CHECK THAT STEERING WHEEL FREEPLAY IS CORRECT

With the vehicle stopped and tires pointed straight ahead, rock the steering wheel gently back and forth with light finger pressure.

Freeplay should not exceed the maximum.

	Freeplay	mm (in.)
Maximum	40	(1.57)

2. POINT WHEELS STRAIGHT AHEAD

3. ADJUST STEERING GEAR

- Loosen the cross shaft adjusting screw lock nut.
- Turn the cross shaft adjusting screw clockwise to decrease wheel freeplay and counterclockwise to increase it.

HINT: Turn the adjusting screw in small increments and check the wheel freeplay between each adjustment.

4. CHECK THAT STEERING DOES NOT BIND

Turn the steering wheel half way around in both directions.

Check that the freeplay is correct and steering is smooth and without rough spots.

5. HOLD CROSS SHAFT ADJUSTING SCREW AND TIGHTEN CROSS SHAFT ADJUSTING SCREW LOCK NUT

Torque: 46 N·m (470 kgf·cm, 34 ft·lbf)

SR1CC-01

FLUID LEVEL CHECK

1. KEEP VEHICLE LEVEL

2. CHECK FLUID LEVEL

With the engine stopped, check the fluid level in the oil reservoir. If necessary, add fluid.

Fluid: **ATF DEXRON® II**

HINT: Check that the fluid level is within the **HOT LEVEL** range on the reservoir. If the fluid is cold, check that it is within the **COLD LEVEL** range.

3. BOOST FLUID TEMPERATURE

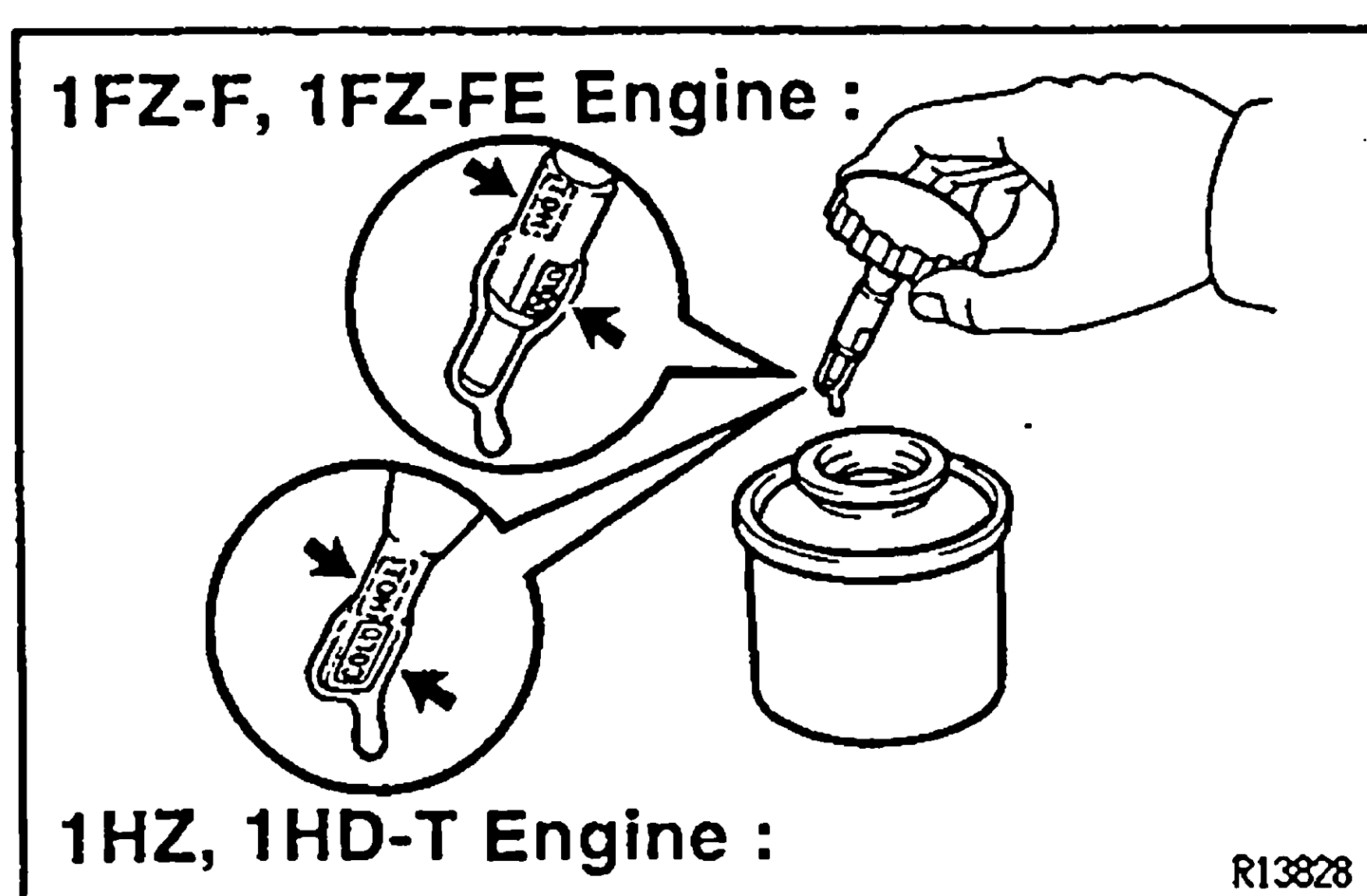
- Start the engine and run it at idle.
- Turn the steering wheel from lock to lock several times to boost fluid temperature.

Fluid temperature: **80°C (176°F)**

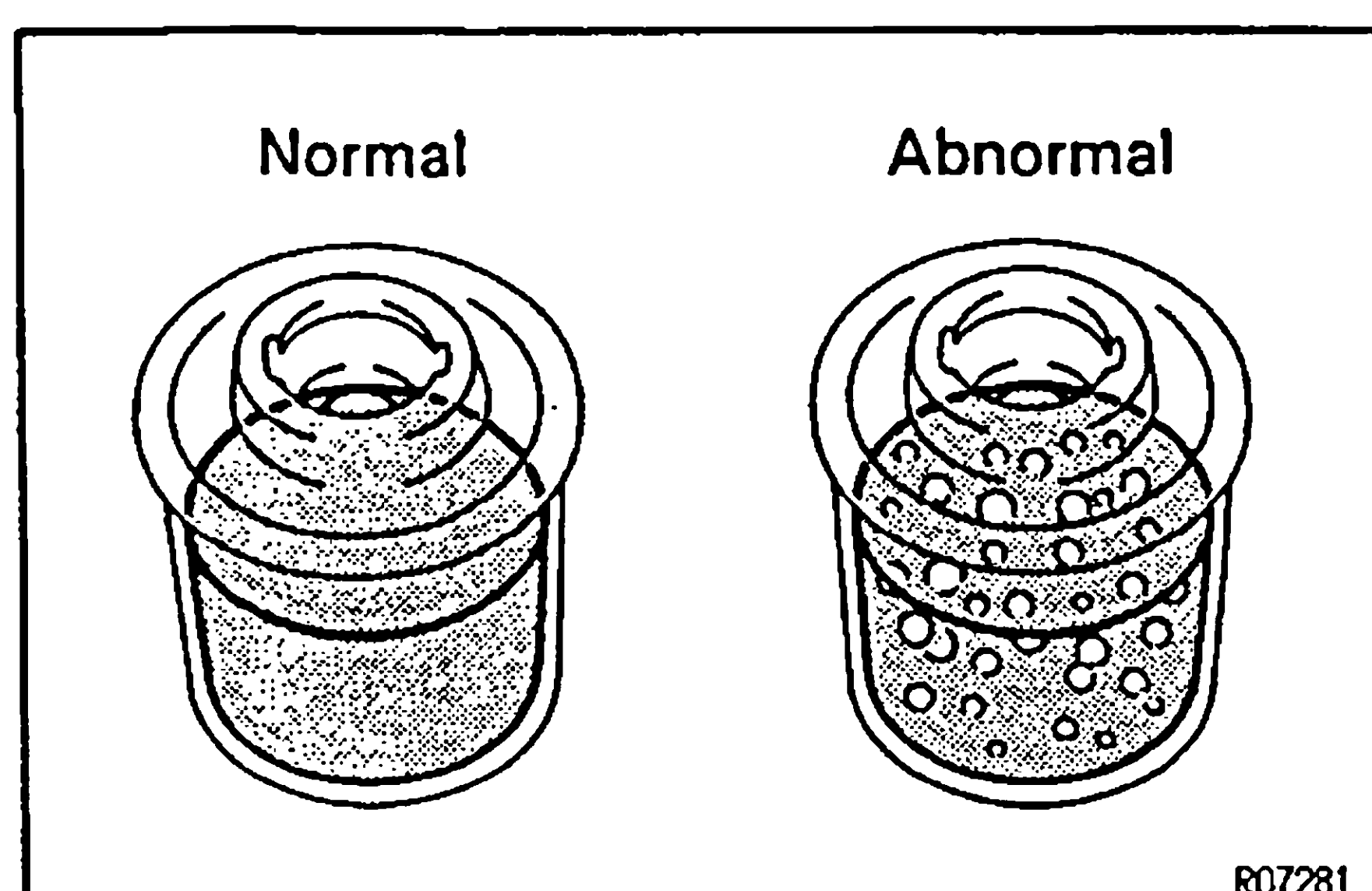
4. CHECK FOR FOAMING OR EMULSIFICATION

If there is foaming or emulsification, bleed power steering system.

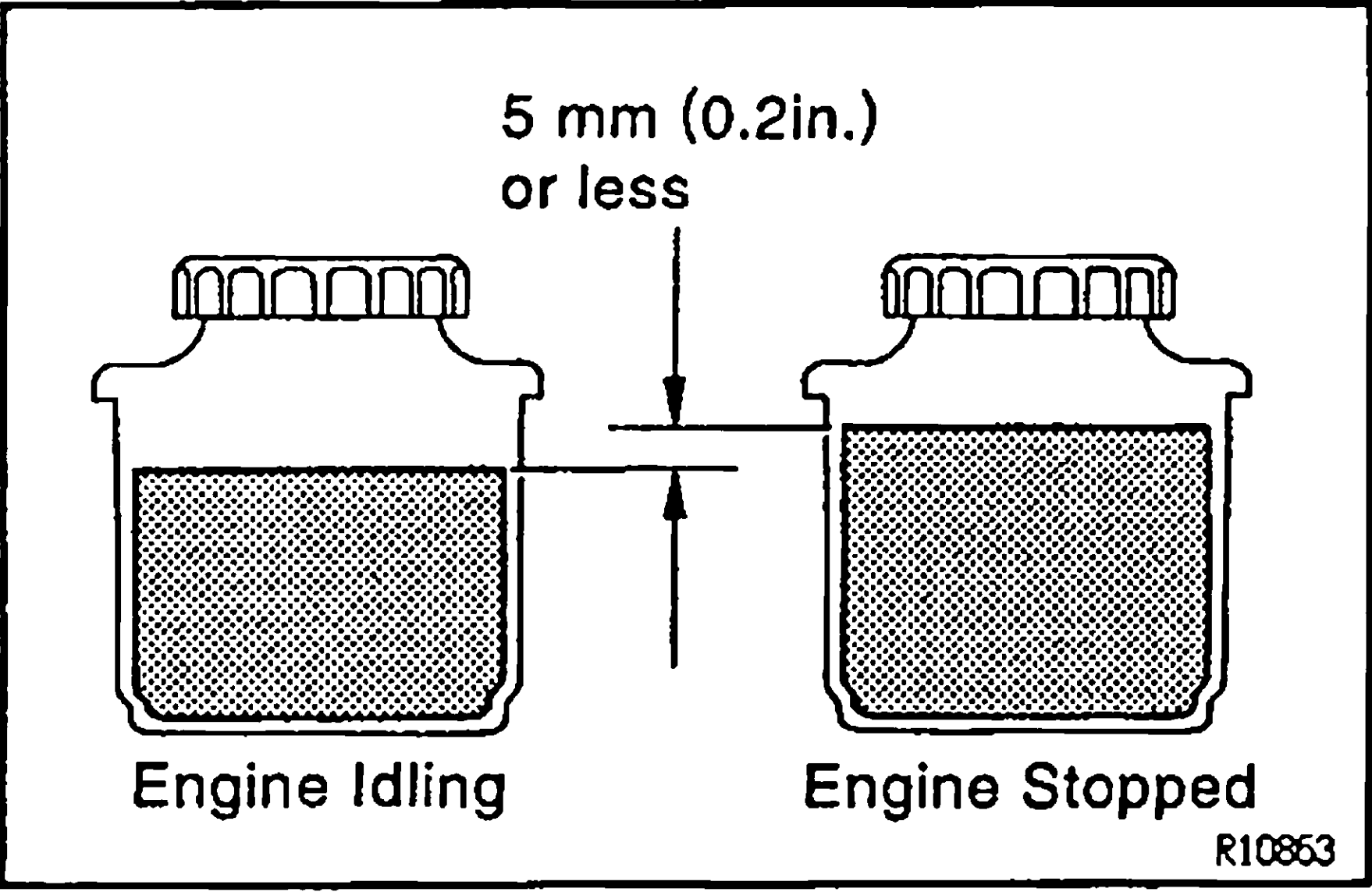
(See page SR—4)



R13828



R07281



- 5. CHECK FLUID LEVEL RISE**
- (a) With the engine idling, measure the fluid level in the oil reservoir.
 - (b) Stop the engine.
 - (c) Wait a few minutes and remeasure the fluid level in the reservoir.

	Fluid level rise	mm (in.)
Maximum	5	(0.2)

If a problem is found, bleed power steering system.

- 6. CHECK FLUID LEVEL**
(See page SR—3)

SR

POWER STEERING FLUID REPLACEMENT^{SR1CD-01}

- 1. JACK UP FRONT OF VEHICLE AND SUPPORT IT WITH STANDS**
- 2. DRAIN FLUID**
 - (a) Disconnect the return hose from the PS vane pump.
 - (b) Turn the steering wheel from lock to lock.
- 3. FILL OIL RESERVOIR**
 - (a) Fill oil reservoir with fresh fluid.
Fluid: **ATF DEXRON® II**
 - (b) Start engine.
 - (c) After 1 or 2 seconds, fluid will begin to discharge from the return hose.
 - (d) Stop the engine immediately.
NOTICE: Take care that some fluid remains in the oil reservoir.
 - (e) Repeat steps (a), (b), (c) and (d) until there is no more air in fluid.
 - (f) Connect the return hose to the PS vane pump.

4. BLEED POWER STEERING SYSTEM
POWER STEERING SYSTEM BLEEDING^{SR1CE-01}

- 1. CHECK FLUID LEVEL**
(See page SR—3)
- 2. JACK UP FRONT OF VEHICLE AND SUPPORT IT WITH STANDS**
- 3. TURN STEERING WHEEL**
With the engine stopped, turn the wheel slowly from lock to lock several times.
- 4. LOWER VEHICLE**
- 5. START ENGINE**
Run the engine at idle for a few minutes.

6. TURN STEERING WHEEL

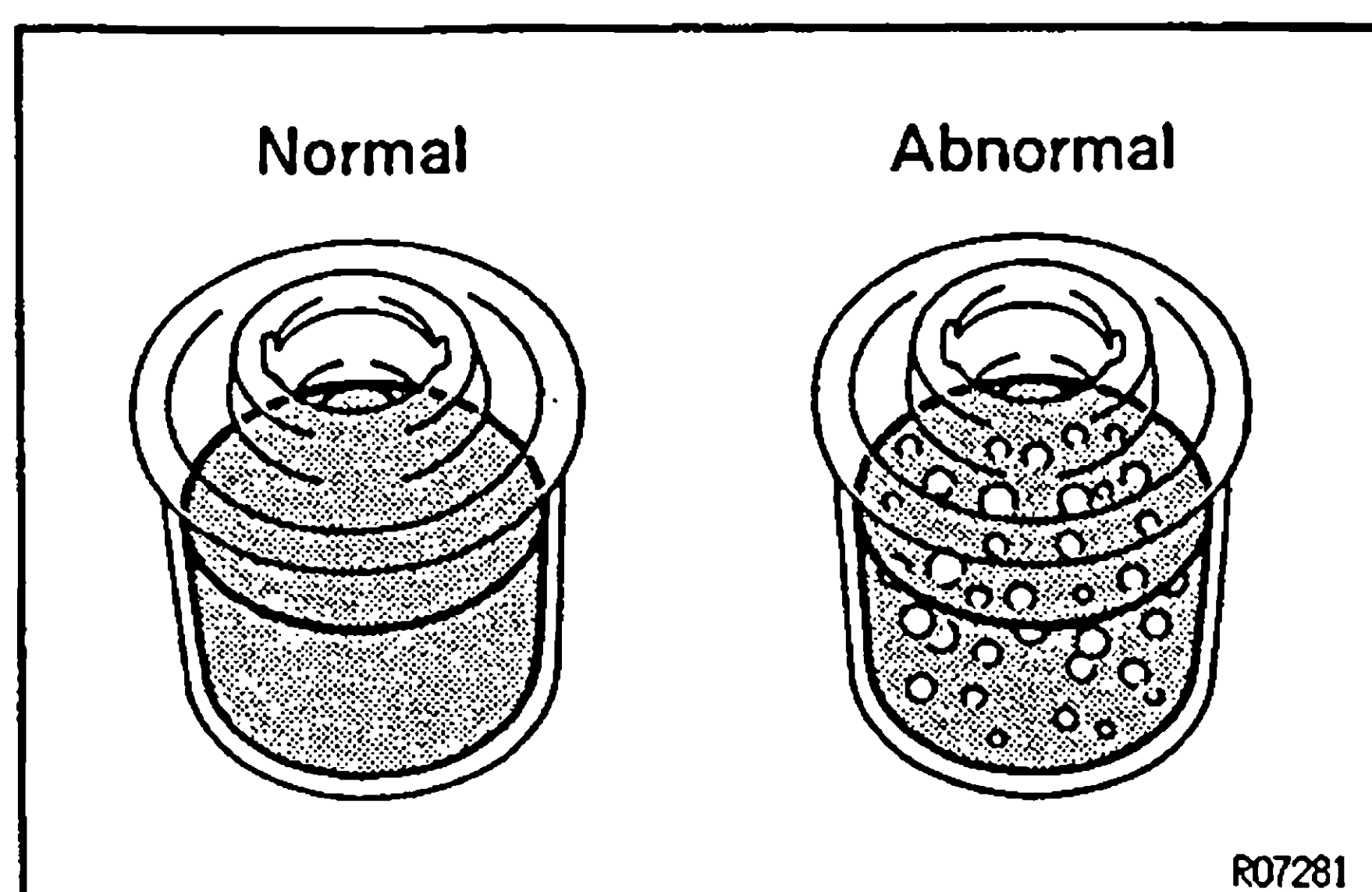
- (a) With the engine idling, turn the wheel to left or right full lock and keep it there for 2—3 seconds, then turn the wheel to the opposite full lock and keep it there for 2—3 seconds.
- (b) Repeat (a) several times.

7. STOP ENGINE**8. CHECK FOR FOAMING OR EMULSIFICATION**

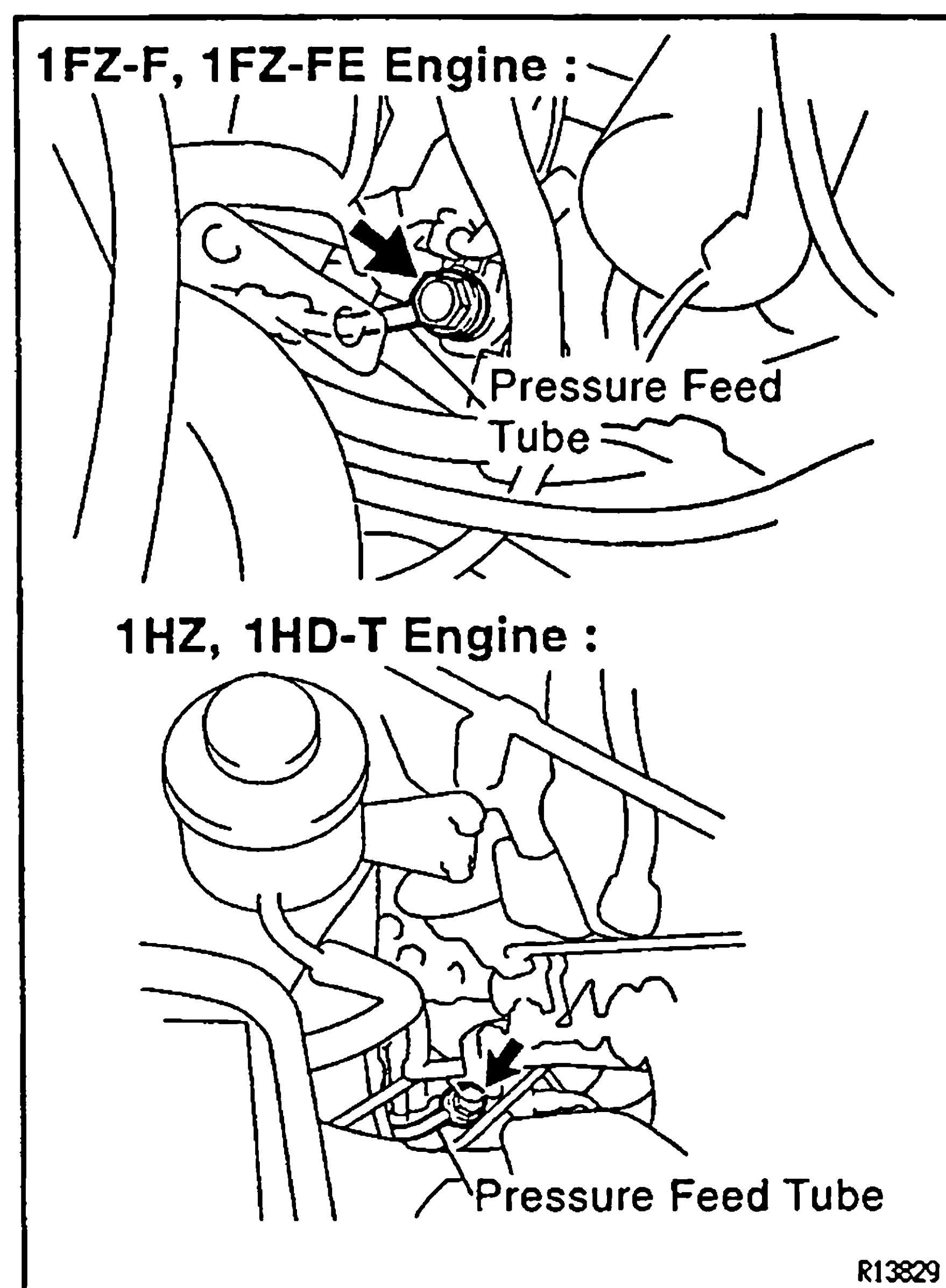
If the system has to be bled twice specifically because of foaming or emulsification, check for fluid leaks in the system.

9. CHECK FLUID LEVEL

(See page SR—3)



R07281



R13829

FLUID PRESSURE CHECK**1. CONNECT SST**

1FZ—F, 1FZ—FE Engine:

- (a) Using a spanner (24 mm) to hold the pressure port union, remove the union bolt and 2 gaskets.
- (b) Connect SST, as shown on the following page.
SST 09640—10010 (09641—01010, 09641—01030, 09641—01060)

NOTICE: Check that the valve of the SST is in the open position.

1HZ, 1HD—T Engine:

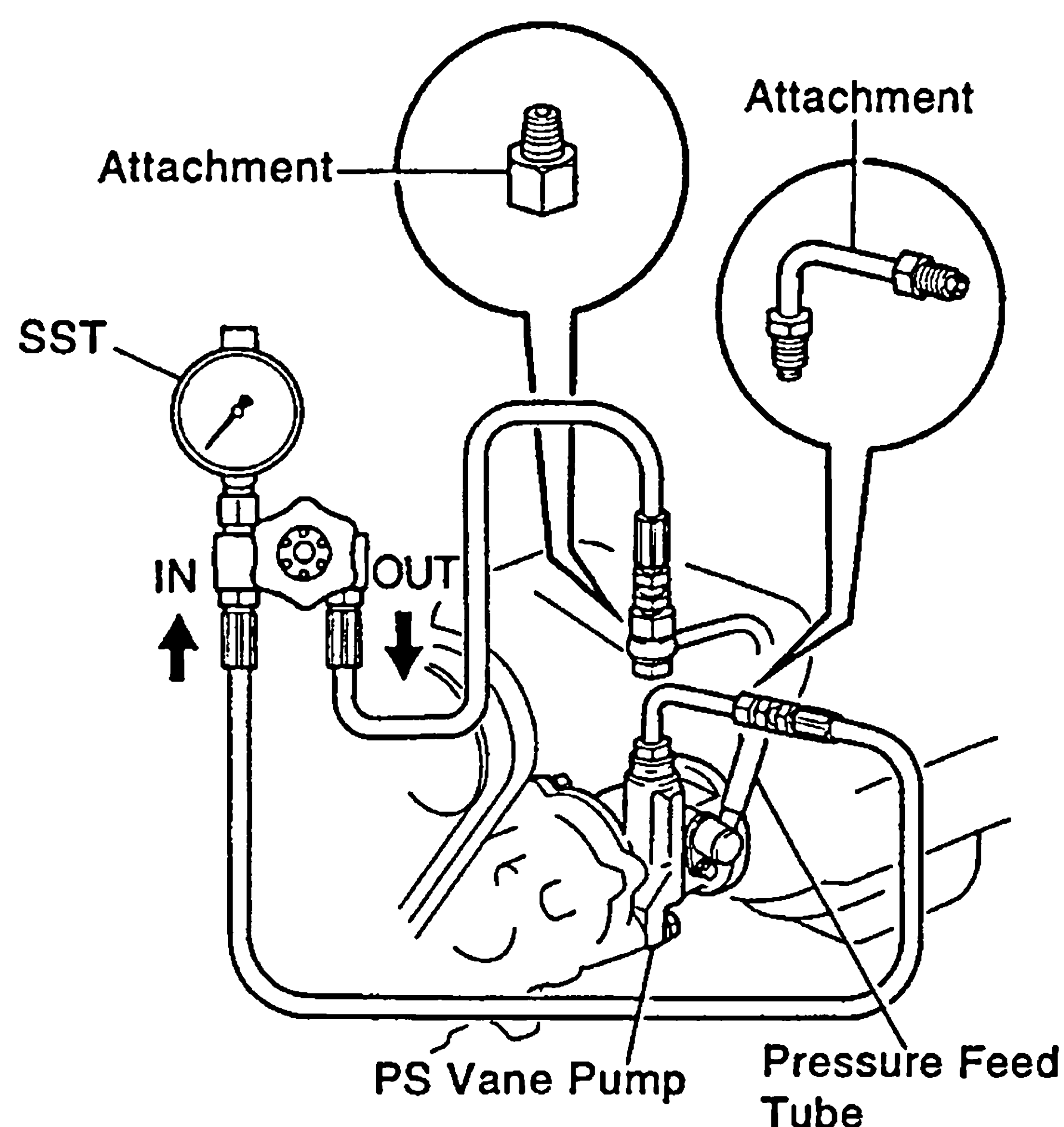
- (a) Remove the union bolt and 2 gaskets.
- (b) Connect SST, as shown on the following page.
SST 09640—10010 (09641—01010, 09641—01030, 09641—01060)

NOTICE: Check that the valve of the SST is in the open position.

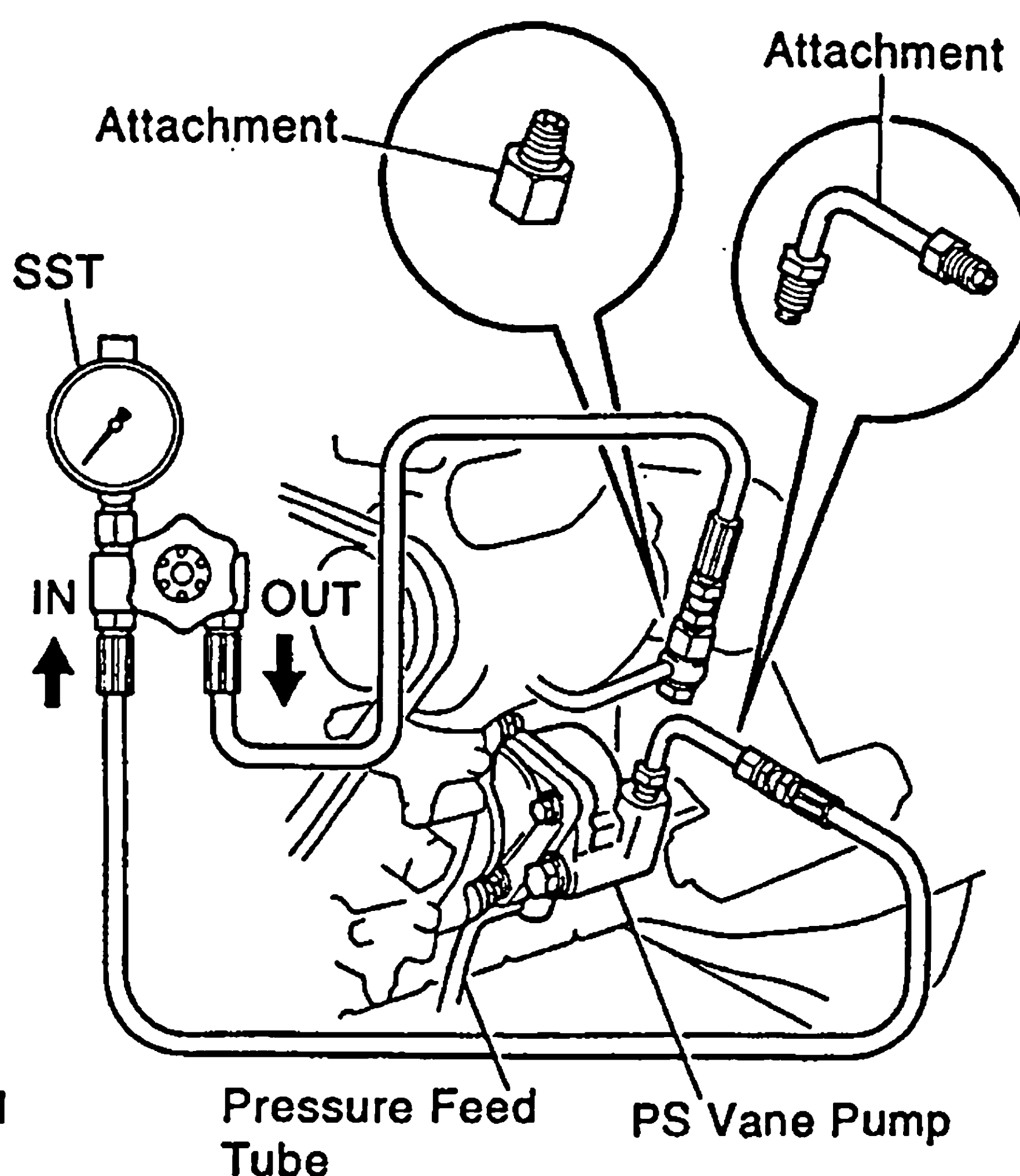
SR

SR1CF-01

1FZ-F, 1FZ-FE Engine :



1HZ, 1HD-T Engine :



R13408

SR

3. BLEED POWER STEERING SYSTEM

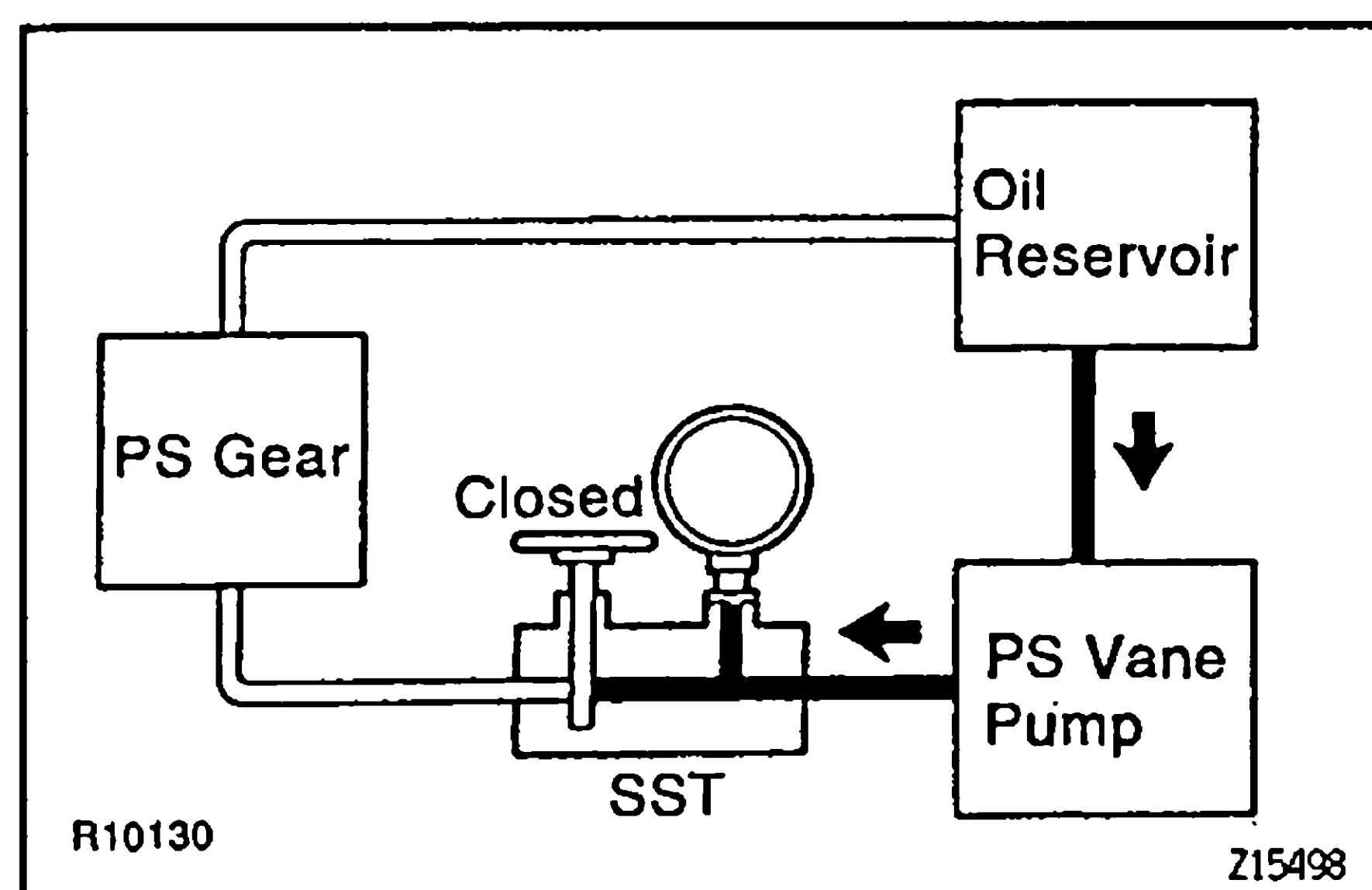
(See page SR-4)

4. BOOST FLUID TEMPERATURE

- Start the engine and run it at idle.
- Turn the steering wheel from lock to lock several times to boost fluid temperature.
Fluid temperature: 80 °C (176 °F)

5. CHECK FLUID PRESSURE READING WITH VALVE CLOSED

With the engine idling, close the valve of the SST and observe the reading on the SST.



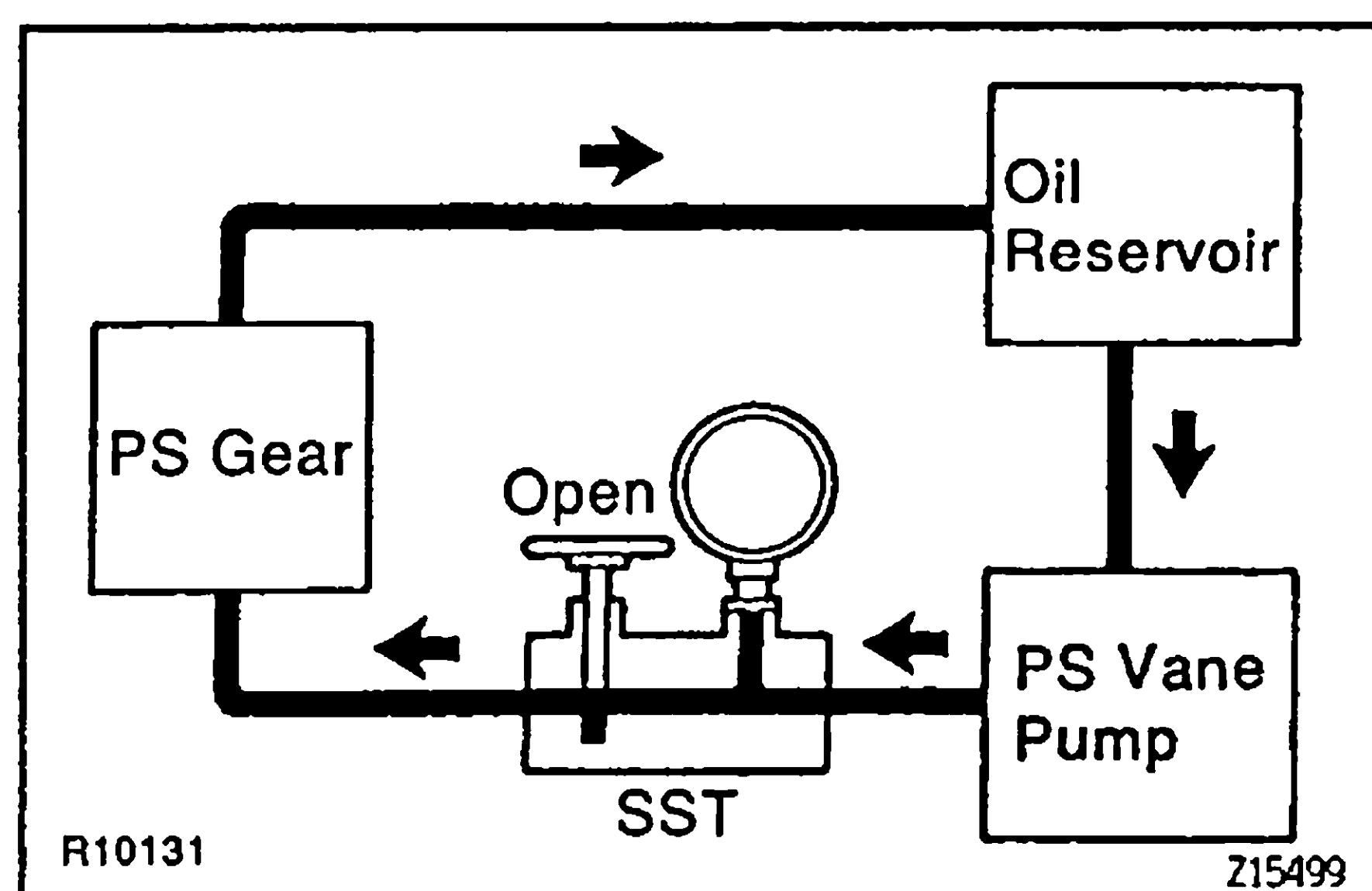
	1FZ-F, 1FZ-FE Engine	1HZ, 1HD-T Engine
Minimum kPa (kgf/cm ² , psi)	9,316 (95, 1,351)	9,807 (100, 1,422)

NOTICE:

- Do not keep the valve closed for more than 10 seconds.
- Do not let the fluid temperature become too high.

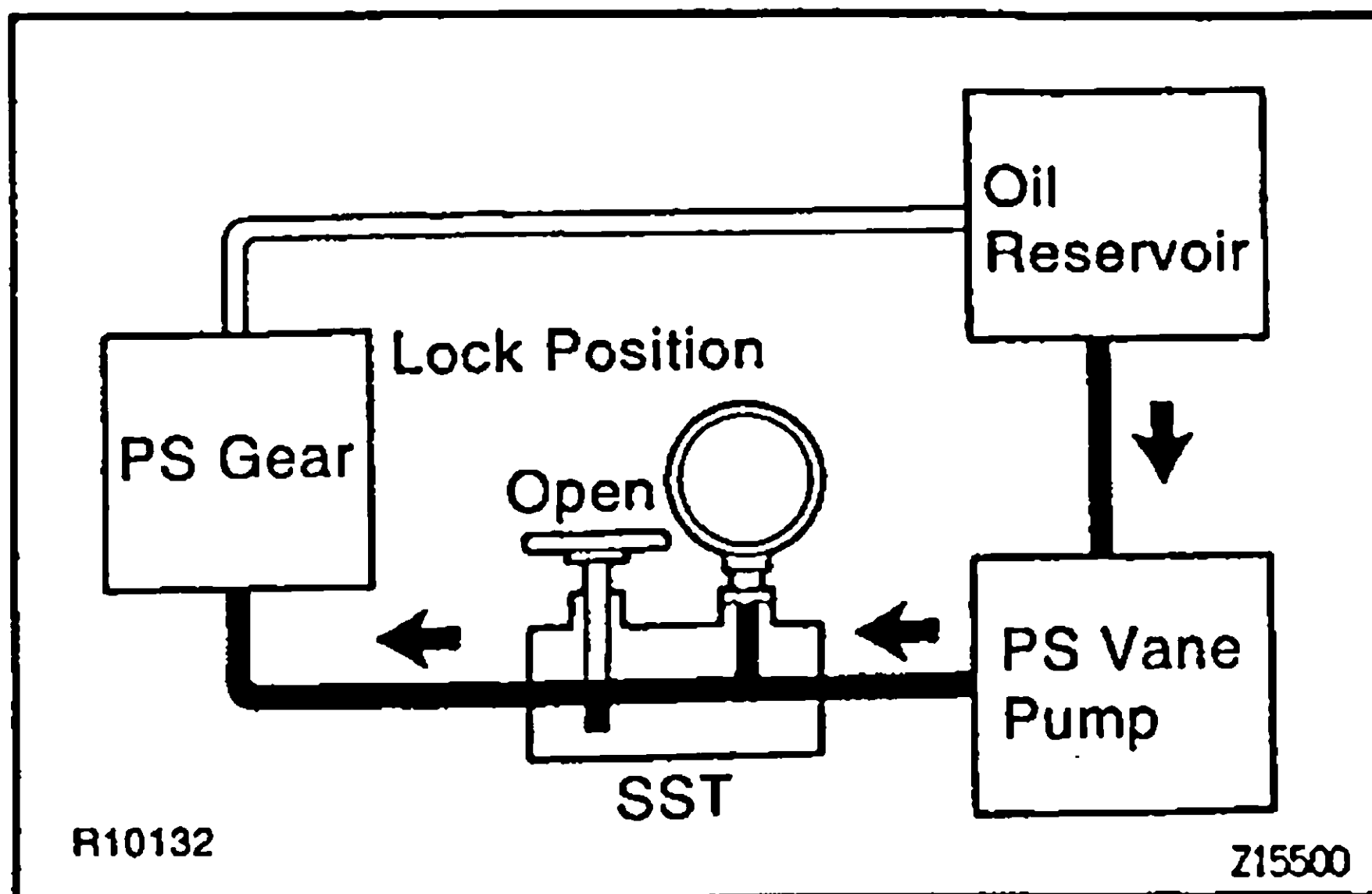
6. CHECK FLUID PRESSURE READING WITH VALVE OPENED

- With the engine idling, open the valve fully.
- Measure the fluid pressure at engine speeds of 1,000 rpm and 3,000 rpm.



	Fluid pressure kPa (kgf/cm ² , psi)
Difference	490 (5, 71) or less

NOTICE: Do not turn the steering wheel.



7. CHECK PRESSURE READING WITH STEERING WHEEL TURNED TO FULL LOCK

With the engine idling and valve fully opened, turn the wheel to full lock.

	1FZ-F, 1FZ-FE Engine	1HZ, 1HD-T Engine
Minimum kPa (kgf/cm ² , psi)	9,316 (95, 1,351)	9,807 (100, 1,422)

NOTICE:

- Do not maintain lock position for more than 10 seconds.
- Do not let the fluid temperature become too high.

8. DISCONNECT SST

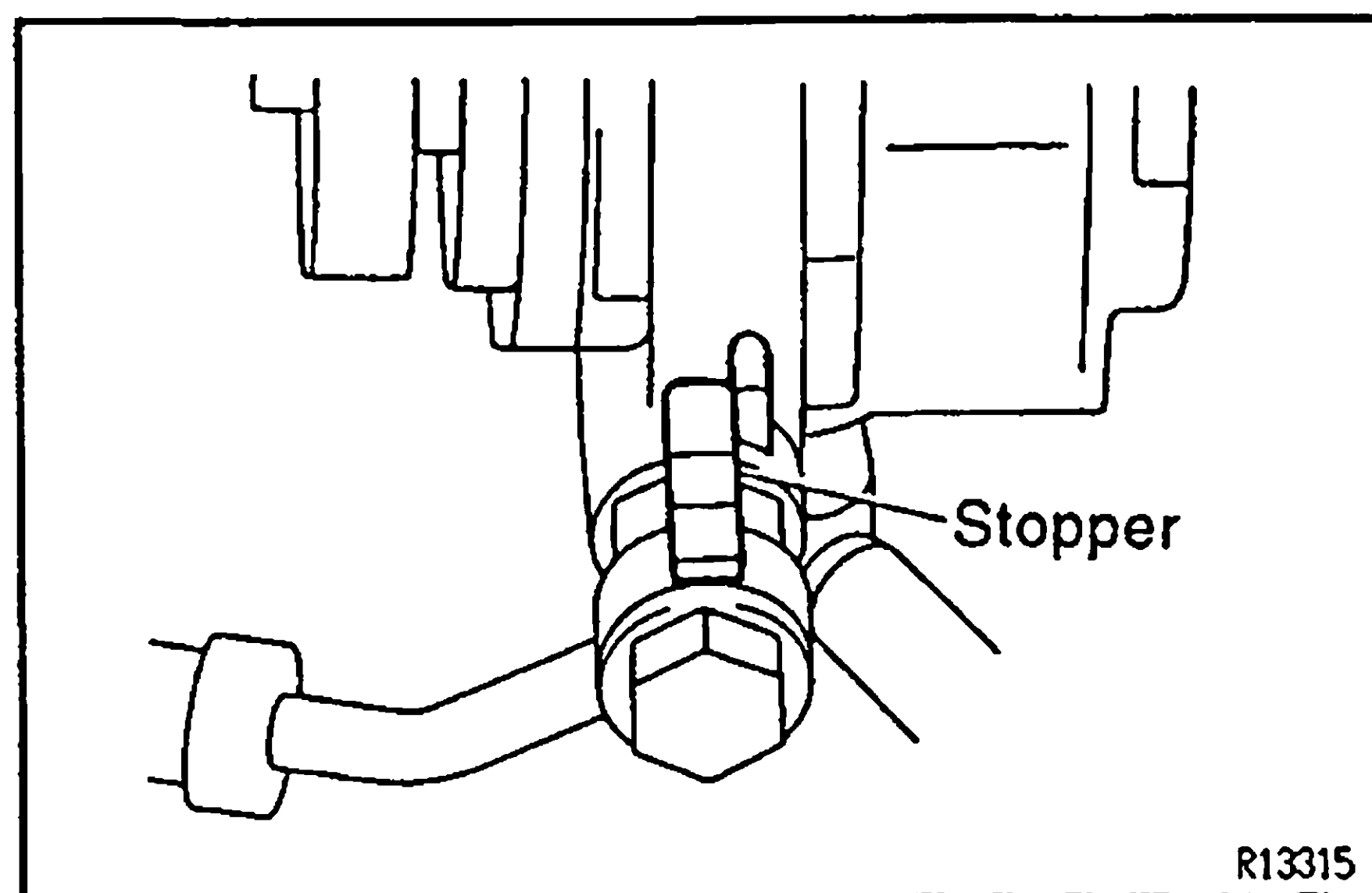
- Disconnect SST.
- Connect the pressure feed tube.
- Torque the union bolt with 2 new gaskets.

Torque: 56 N·m (575 kgf·cm, 42 ft·lbf)

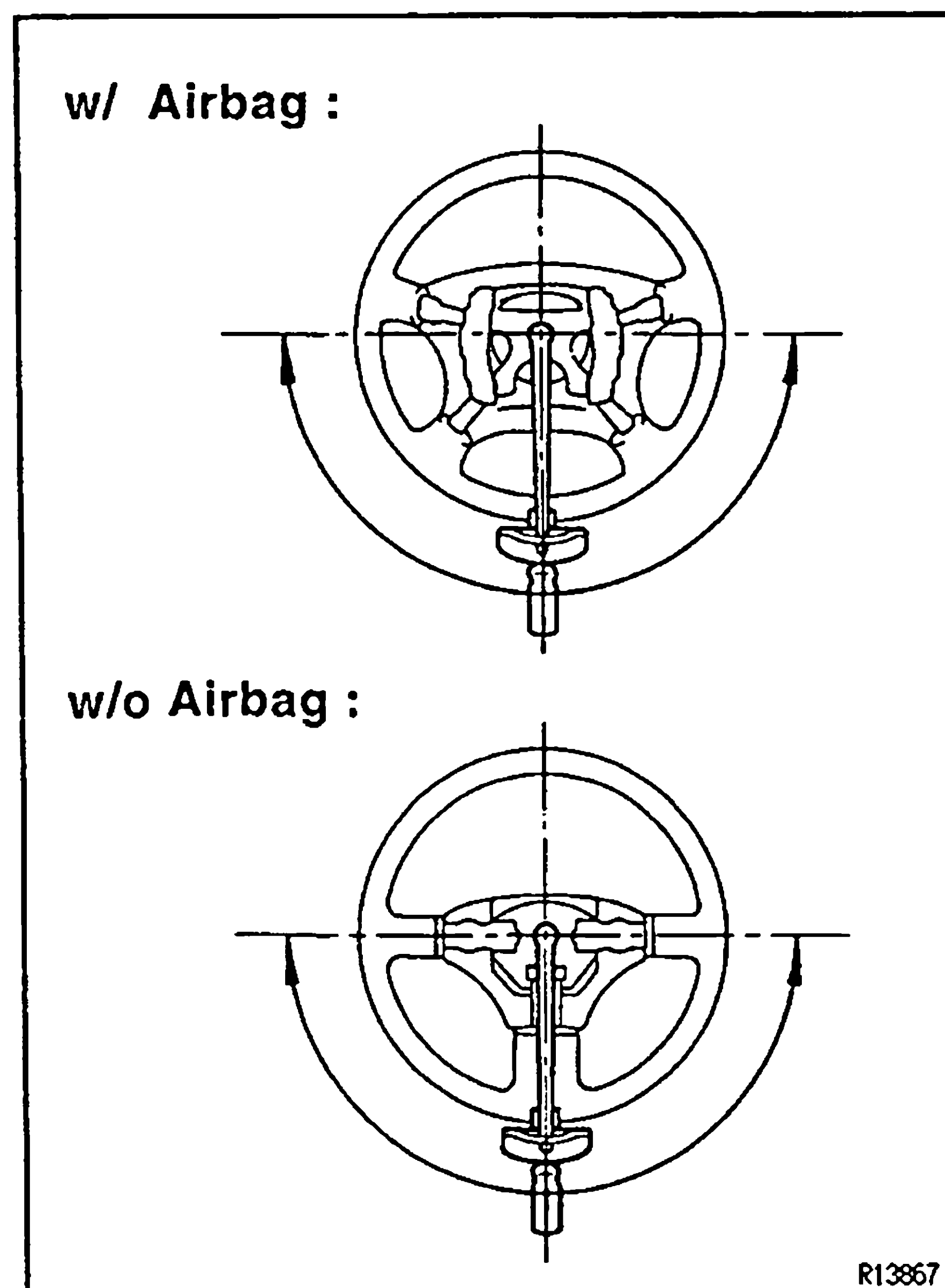
HINT: Make sure the stopper of the tube is touching the PS pump body, as shown then torque the union bolt.

9. BLEED POWER STEERING SYSTEM

(See page SR-4)



SR



STEERING EFFORT MEASUREMENT

SR1C9-01

- CENTER STEERING WHEEL
- MEASURE STEERING EFFORT

- Remove the steering wheel pad.
(w/ Airbag: See page SR-9)
- Start the engine and run it at idle.
- Measure the steering effort in both directions.

Reference (Maximum):

Normal PS 8.4 N·m (86 kgf·cm, 74 in·lbf)

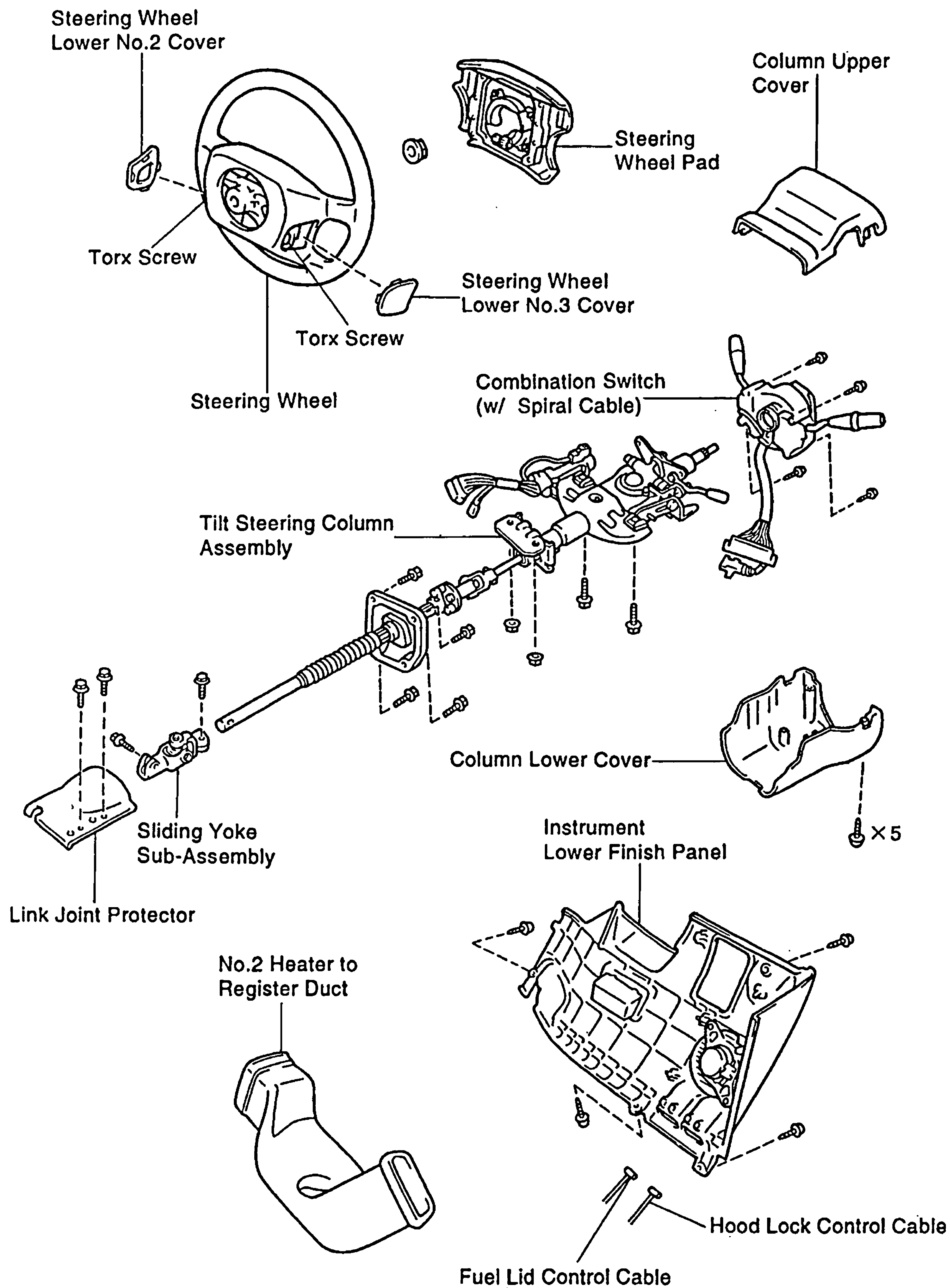
PPS 5.7 N·m (59 kgf·cm, 51 in·lbf)

HINT: Be sure to consider the tire type, pressure and contact surface before making your diagnosis.

- Torque the steering wheel set nut.
Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)
- Install the steering wheel pad.
(w/ Airbag: See page SR-11)

TILT STEERING COLUMN COMPONENTS

SR1CH-01



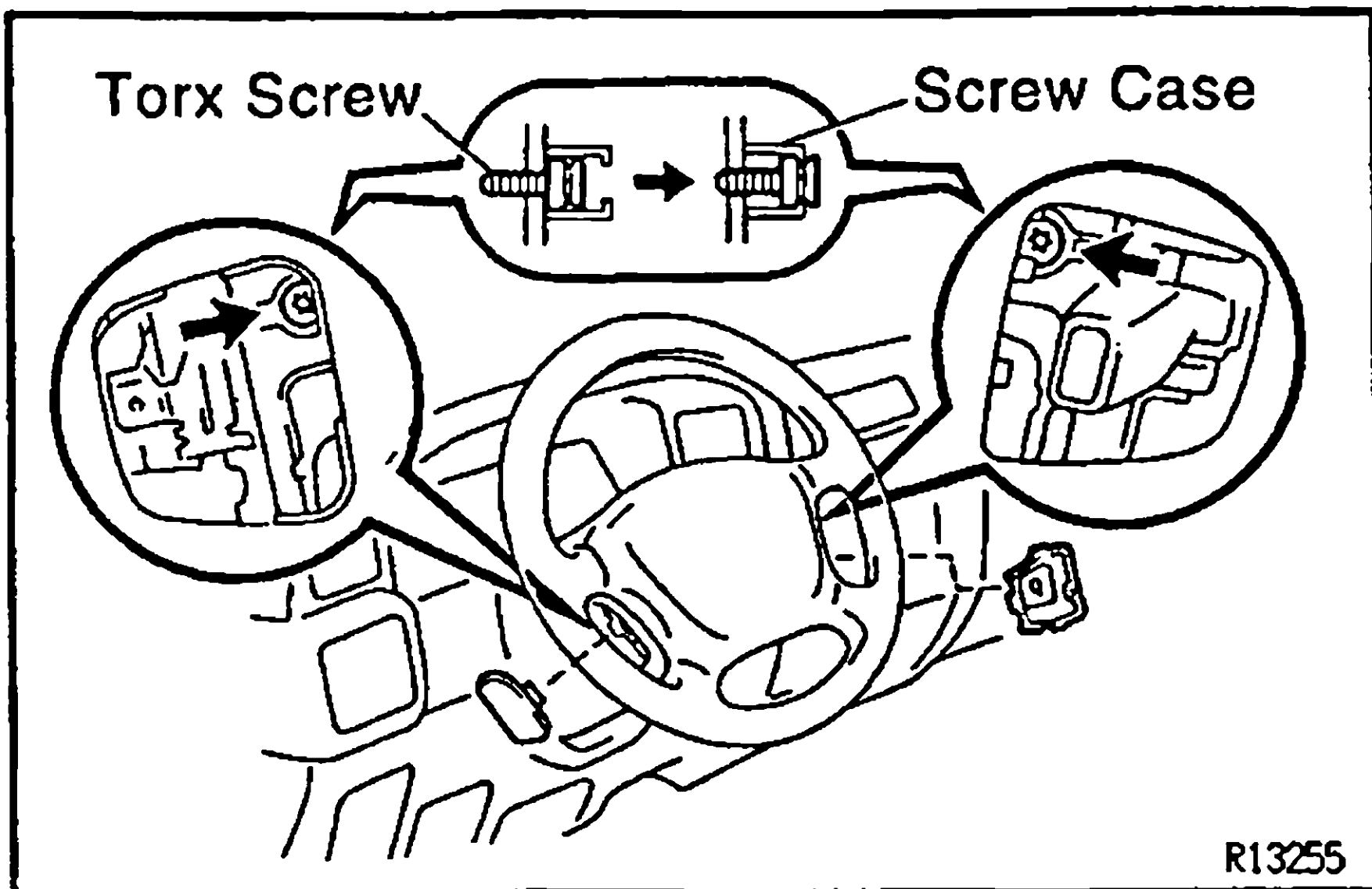
TILT STEERING COLUMN REMOVAL

1. REMOVE STEERING WHEEL PAD

NOTICE:

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

- Place the front wheels facing straight ahead.
- Remove the steering wheel lower No. 2 and No. 3 cover.
- Using a torx socket wrench, loosen the 2 torx screws. HINT: Loosen the 2 screws until the groove along the screw circumference catches on the screw case.



R13255

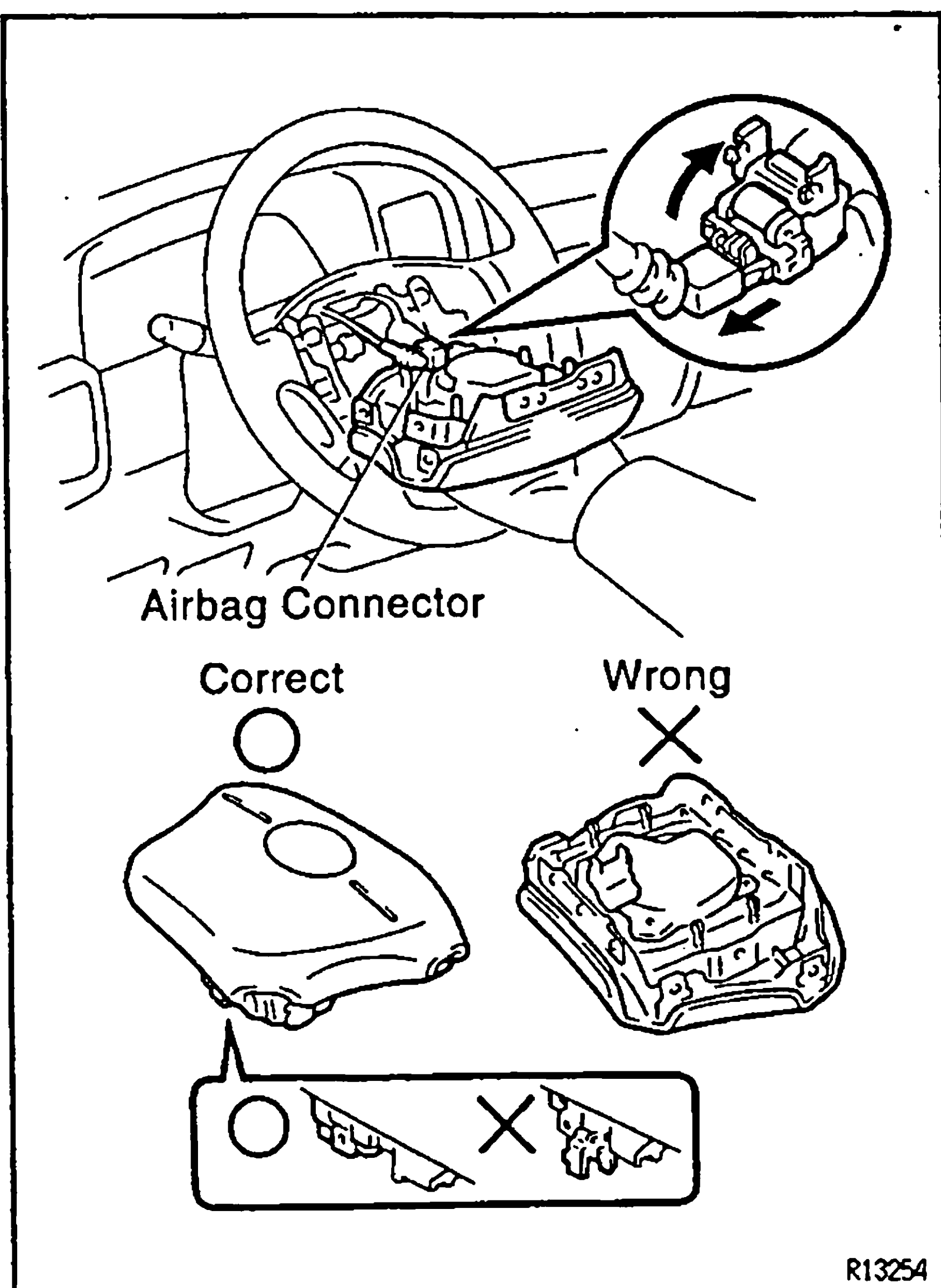
SR

- Pull out the wheel pad from the steering wheel and disconnect the airbag connector.

CAUTION:

- When storing the wheel pad, keep the upper surface of the pad facing upward.
- Never disassemble the wheel pad.

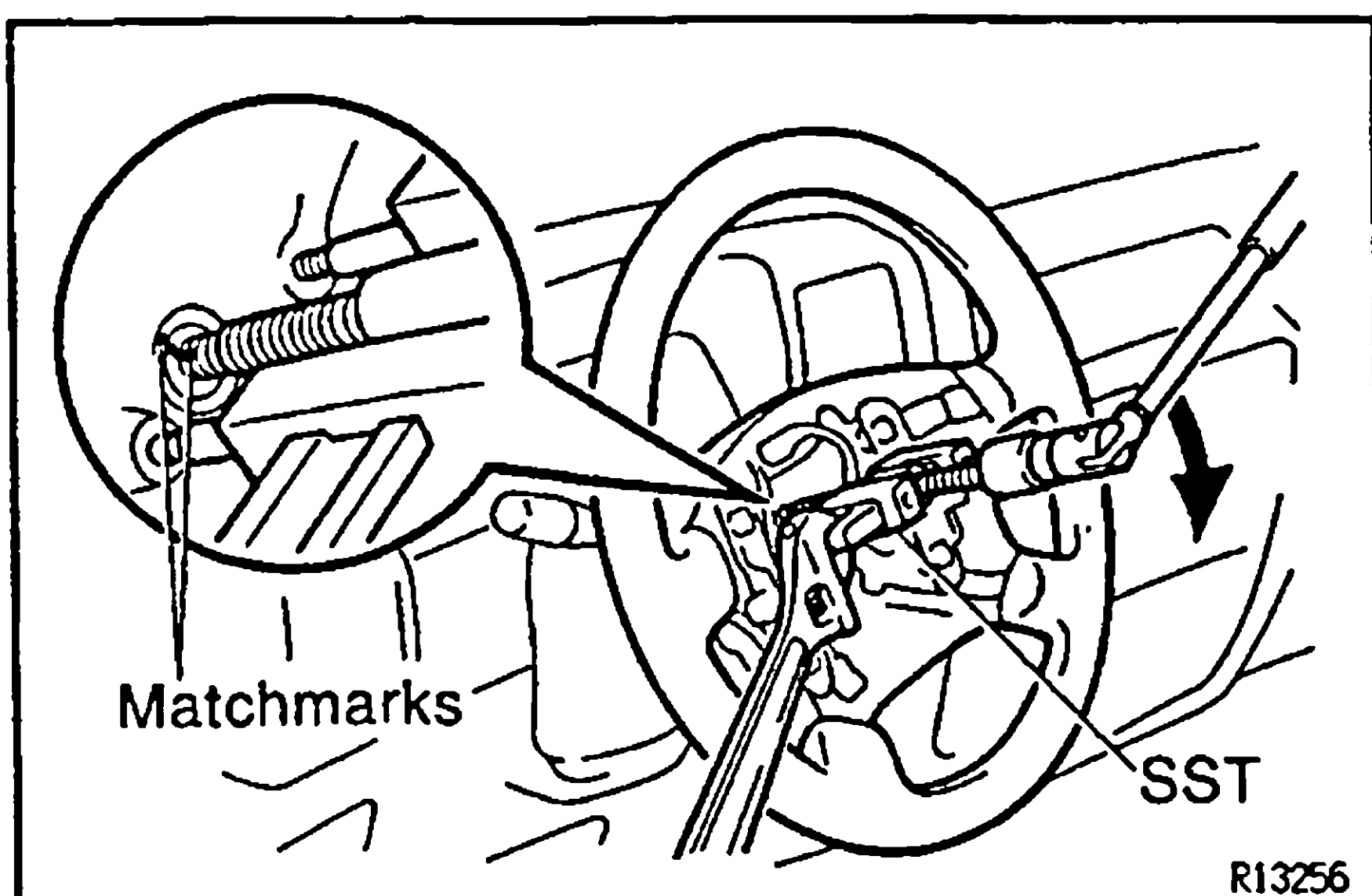
NOTICE: When removing the wheel pad, take care not to pull the airbag wire harness.



R13254

2. REMOVE STEERING WHEEL

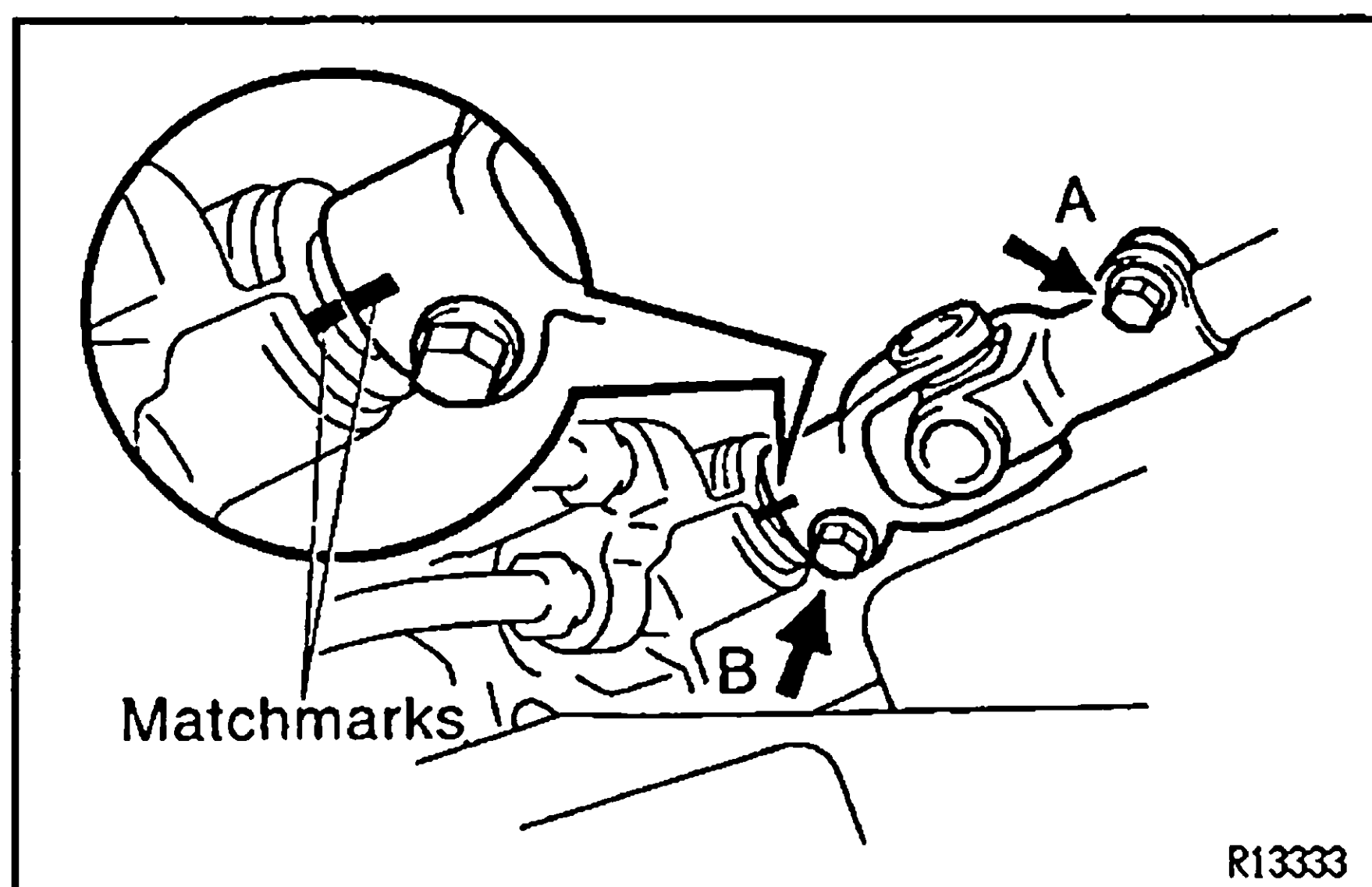
- Disconnect the connector.
- Remove the steering wheel set nut.
- Place matchmarks on the steering wheel and main shaft assembly.
- Using SST, remove the wheel.
SST 09950-50010 (09951-05010, 09952-05010, 09953-05020, 09954-05020)



R13256

SR

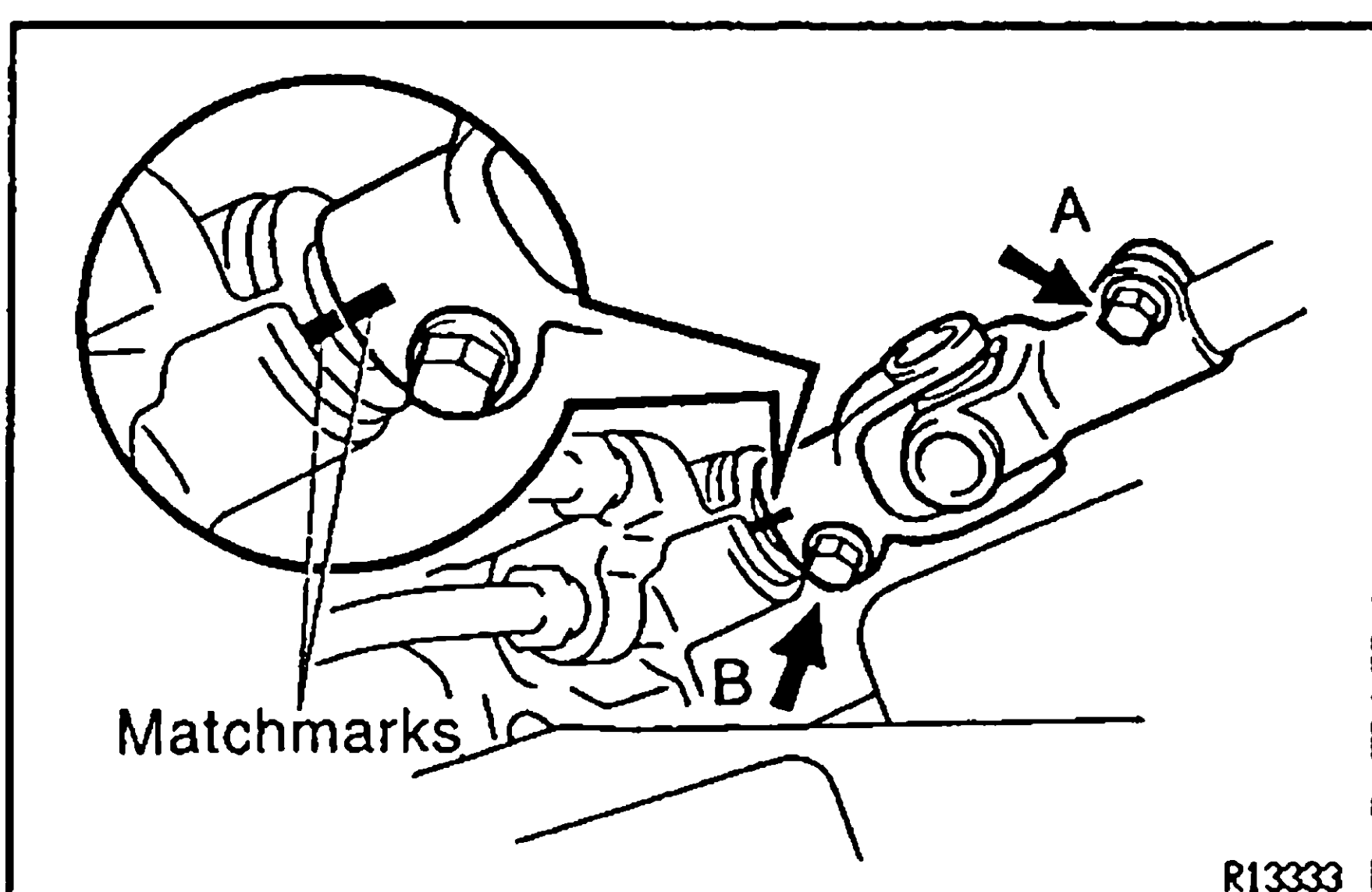
3. **REMOVE INSTRUMENT LOWER FINISH PANEL**
 - (a) Disconnect the hood lock control cable and fuel lid control cable.
 - (b) Remove the 4 panel set screws.
4. **REMOVE NO.2 HEATER TO REGISTER DUCT**
5. **REMOVE UPPER AND LOWER COLUMN COVERS**
Remove the 5 screws.
6. **REMOVE COMBINATION SWITCH WITH SPIRAL CABLE**
 - (a) Disconnect the 2 connectors.
 - (b) Disconnect the airbag connector.
 - (c) Remove the 4 screws.
7. **REMOVE SPIRAL CABLE**
(See page BE—8)
NOTICE: Do not disassemble the cable or apply oil to it.
8. **REMOVE 4 COLUMN HOLE COVER SET BOLTS**
9. **REMOVE LINK JOINT PROTECTOR**
Remove the 2 bolts.



10. **DISCONNECT SLIDING YOKE SUB—ASSEMBLY**
 - (a) Place matchmarks on the yoke sub—assembly and worm gear valve body shaft.
 - (b) Loosen bolt A and remove bolt B.
11. **REMOVE SLIDING YOKE SUB—ASSEMBLY**
Remove the bolt A.
12. **REMOVE TILT STEERING COLUMN ASSEMBLY**
 - (a) Disconnect the 3 connectors.
 - (b) Remove the 2 column assembly set nuts and 2 set bolts.

TILT STEERING COLUMN INSTALLATION ^{SR1C1-02}

1. **INSTALL STEERING COLUMN ASSEMBLY**
 - (a) Torque the 2 column assembly set nuts and 2 set bolts.
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)
 - (b) Connect the 3 connectors.
2. **INSTALL SLIDING YOKE SUB—ASSEMBLY**
Temporarily tighten the bolt A.
3. **CONNECT SLIDING YOKE SUB—ASSEMBLY**
 - (a) Align the matchmarks on the yoke sub—assembly and worm gear valve body shaft.
 - (b) Torque the bolt B.
Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)
 - (c) Torque the bolt A.
Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)
4. **INSTALL LINK JOINT PROTECTOR**
Torque the 2 bolts.
Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)



5. **TORQUE 4 COLUMN HOLE COVER SET BOLTS**
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)
6. **INSTALL SPIRAL CABLE (See page BE—8)**
7. **INSTALL COMBINATION SWITCH WITH SPIRAL CABLE**

- (a) Tighten the 4 screws.
- (b) Connect the airbag connector.
- (c) Connect the 2 connectors.

8. **INSTALL UPPER AND LOWER COLUMN COVERS**
Tighten the 5 screws.

9. **INSTALL NO.2 HEATER TO REGISTER DUCT**

10. **INSTALL INSTRUMENT LOWER FINISH PANEL**

- (a) Tighten the 4 panel set screws.
- (b) Connect the hood lock control cable and fuel lid control cable.

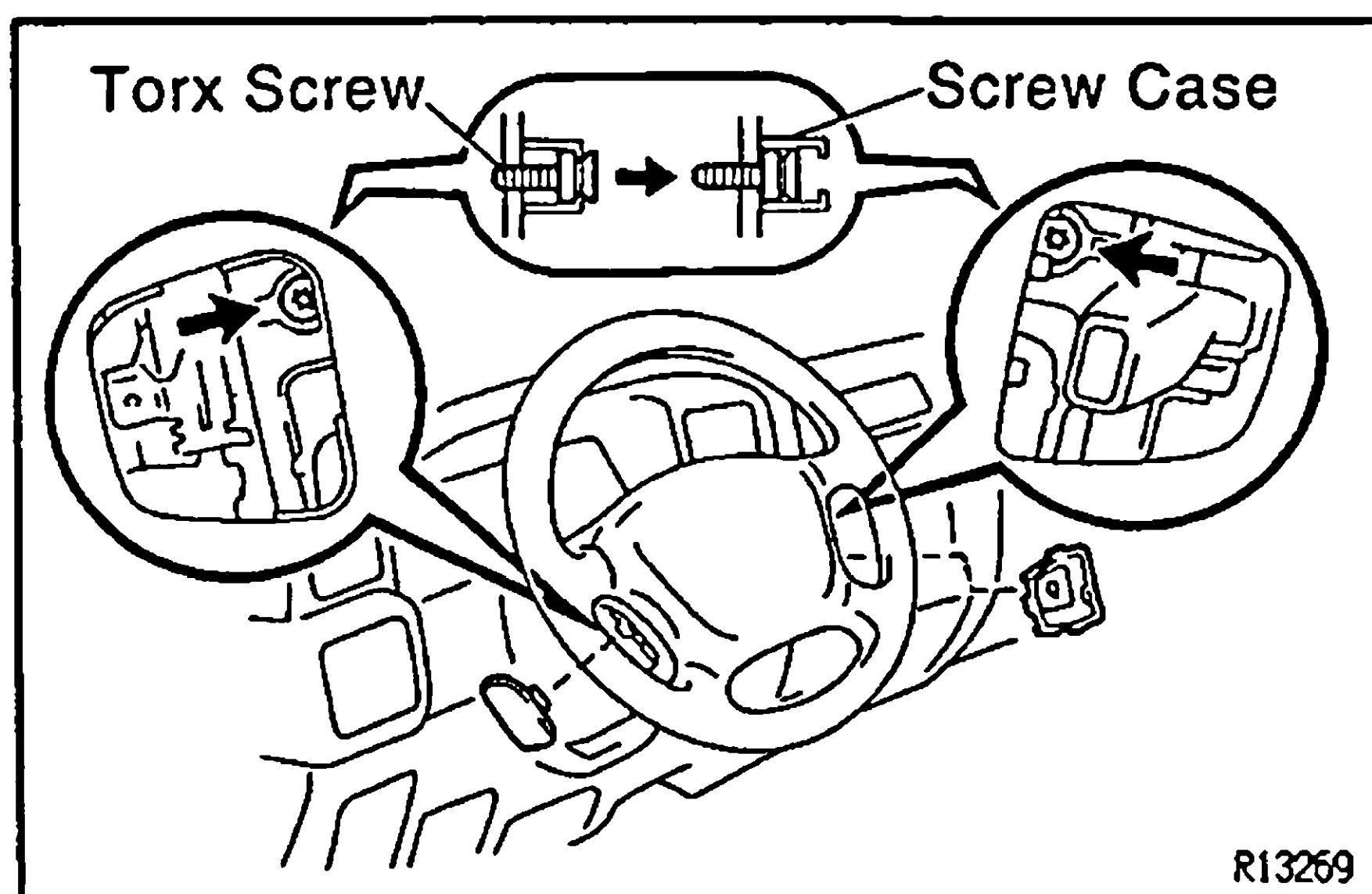
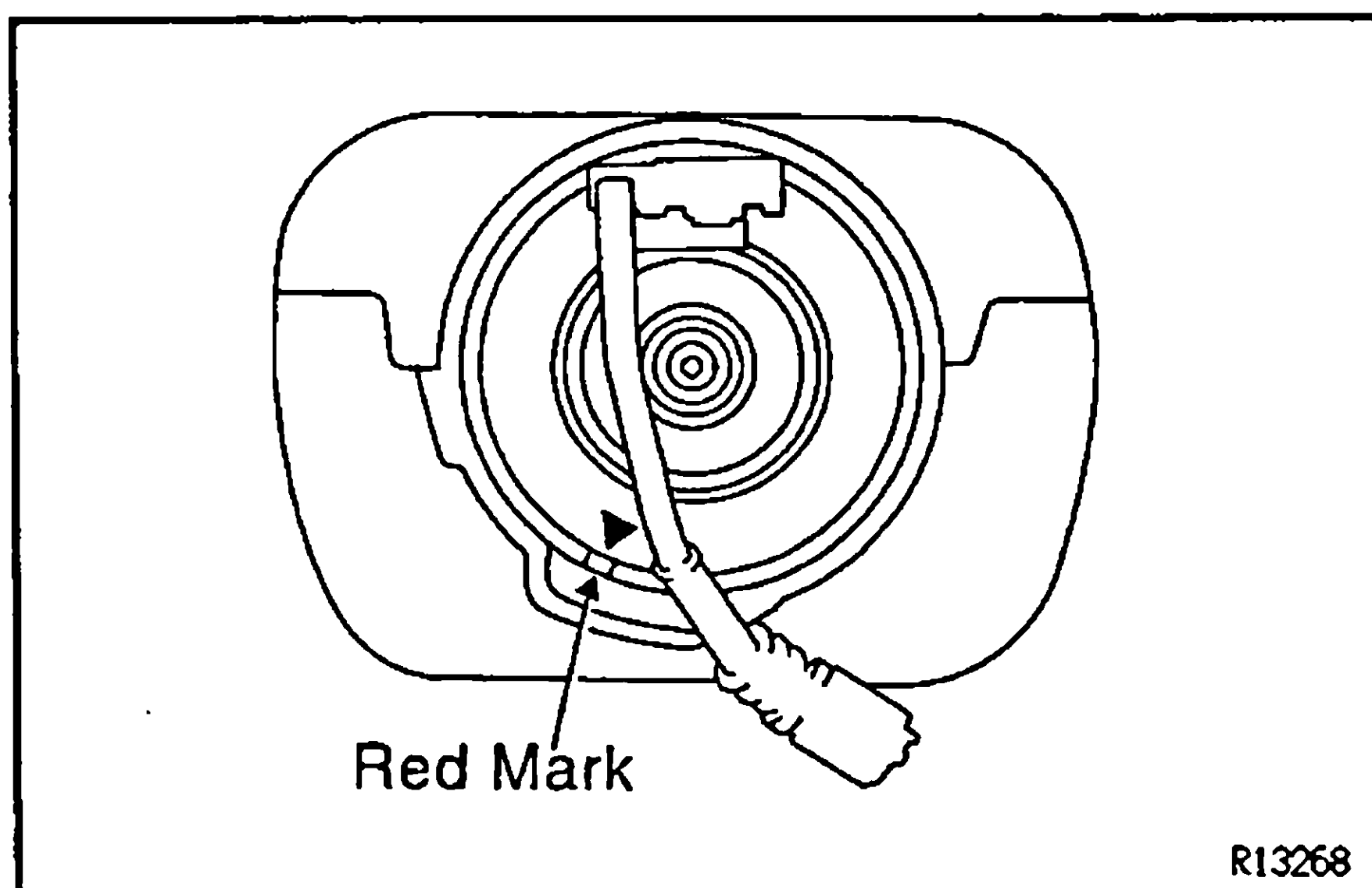
11. **CENTER SPIRAL CABLE**

- (a) Check that the front wheels are facing straight ahead.
- (b) Turn the cable counterclockwise by hand until it becomes harder to turn the cable.
- (c) Then rotate the cable clockwise about 3 turns to align the red mark.

HINT: The cable will rotate about 3 turns to either left or right of the center.

12. **INSTALL STEERING WHEEL**

- (a) Align the matchmarks on the wheel and main shaft assembly.
- (b) Torque the wheel set nut.
Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)
- (c) Connect the connector.



13. **INSTALL STEERING WHEEL PAD**

- (a) Connect the airbag connector.
- (b) Install the wheel pad after confirming that the circumference groove of the torx screws is caught on the screw case.
- (c) Using a torx socket wrench, torque the 2 screws.
Torque: 9.0 N·m (90 kgf·cm, 78 in·lbf)

NOTICE:

- Make sure the wheel pad is installed to the specified torque.
- If the wheel pad has been dropped, or there are cracks, dents or other defects in the case or connector, replace the wheel pad with a new one.
- When installing the wheel pad, take care that the wirings do not interfere with other parts and are not pinched between other parts.

- (d) Install the steering wheel lower No.2 and No.3 cover.

14. **CHECK STEERING WHEEL CENTER POINT**

SERVICE SPECIFICATIONS
SERVICE DATA

SR0VC-04

ON—VEHICLE INSPECTION		
Steering wheel freeplay	Maximum	40 mm (1.57 in.)
Fluid level rise	Maximum	Below 5 mm (0.20 in.)
Fluid pressure at idle speed with valve closed		
1FZ—F, 1FZ—FE Engine	Maximum	9,316 kPa (95 kgf/cm ² , 1,351 psi)
1HZ, 1HD—T Engine	Maximum	9,807 kPa (100 kgf/cm ² , 1,422 psi)
Steering effort at idle speed		
Normal PS	Maximum	8.4 N·m (86 kgf·cm, 74 in·lbf)
PPS	Maximum	5.7 N·m (59 kgf·cm, 51 in·lbf)

TORQUE SPECIFICATIONS

SR0VD-04

Part tightened	N·m	kgf·cm	ft·lbf
ON—VEHICLE INSPECTION			
Cross shaft adjustig screw lock nut	46	470	34
TILT STEERING COLUMN			
Steering wheel set nut	34	350	25
Steering wheel pad set screw (Torx screw)	9.0	90	78 in·lbf
Sliding yoke sub—assembly x Worm gear valve body shaft	34	350	25
Sliding york sub—assembly x Intermediate No.2 shaft	34	350	25
Steering column assembly set nut and bolt	25	250	18
Column hole cover x Body	13	130	9
Link joint protector set bolt	12	120	9

SR

SUPPLEMENTAL RESTRAINT SYSTEM

GENERAL DESCRIPTION..... RS— 2

OPERATION RS— 3

PREPARATION RS— 8

STEERING WHEEL PAD AND
SPIRAL CABLE RS— 9

FRONT PASSENGER
AIRBAG ASSEMBLY RS— 19

AIRBAG SENSOR ASSEMBLY..... RS— 29

WIRE HARNESS AND CONNECTOR RS— 32

TROUBLESHOOTING RS— 35

SERVICE SPECIFICATIONS RS— 78

GENERAL DESCRIPTION

The LAND CRUISER 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 diagnostic trouble codes become the most important source of information when troubleshooting. When troubleshooting the SRS, always inspect the diagnostic trouble codes before disconnecting the battery.

(See page RS–38)

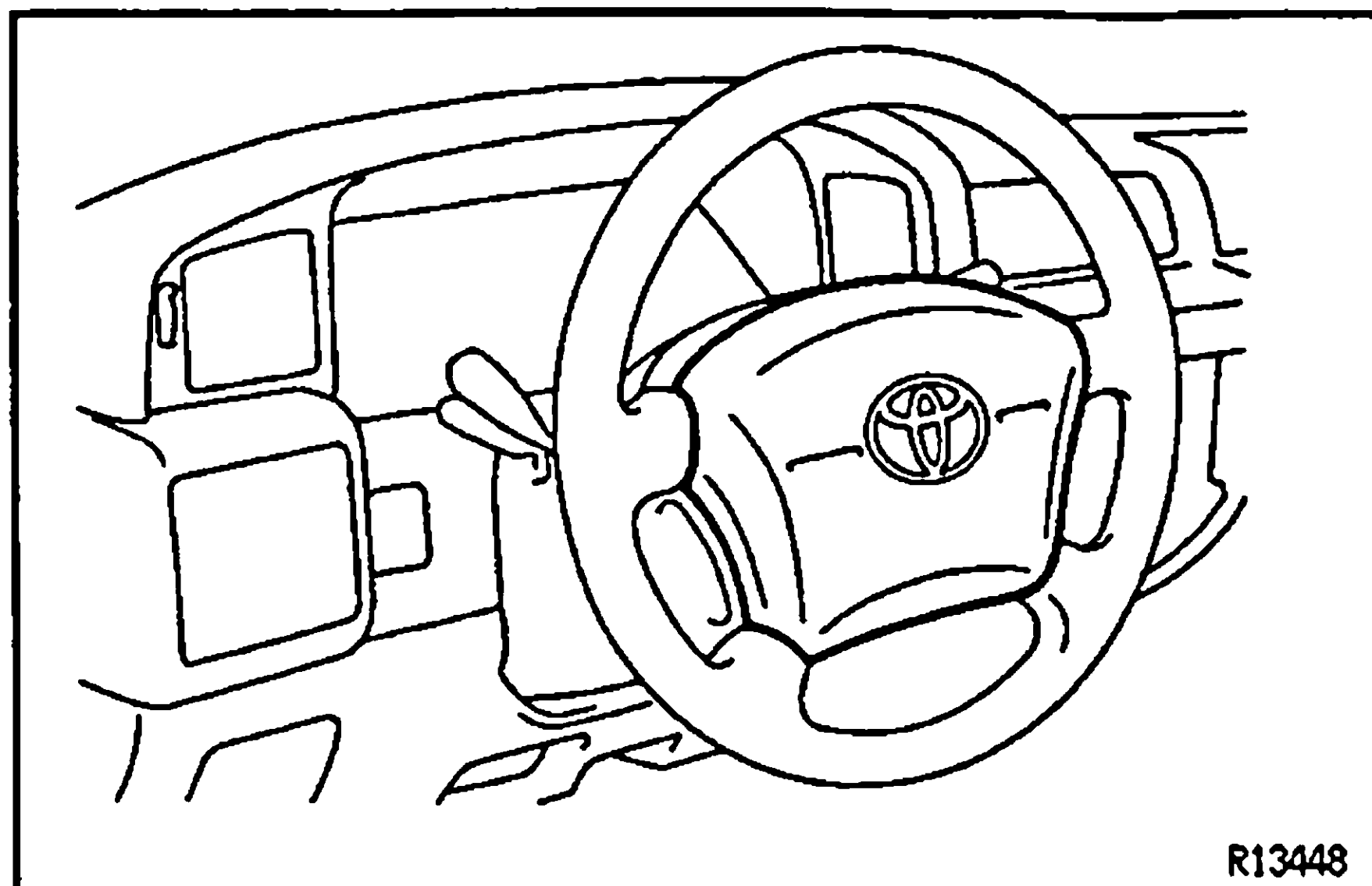
2. Work must be started after 90 seconds from the time the ignition switch is turned to the “LOCK” position and the negative (–) terminal cable is disconnected from the battery. (The SRS is equipped with a back–up power source so that if work is started within 90 seconds of disconnecting the negative (–) terminal cable of the battery, the SRS may be deployed.)

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, 19, and 29)

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–38)
12. If the vehicle is equipped with a mobile communication system, refer to the precaution in the IN section.



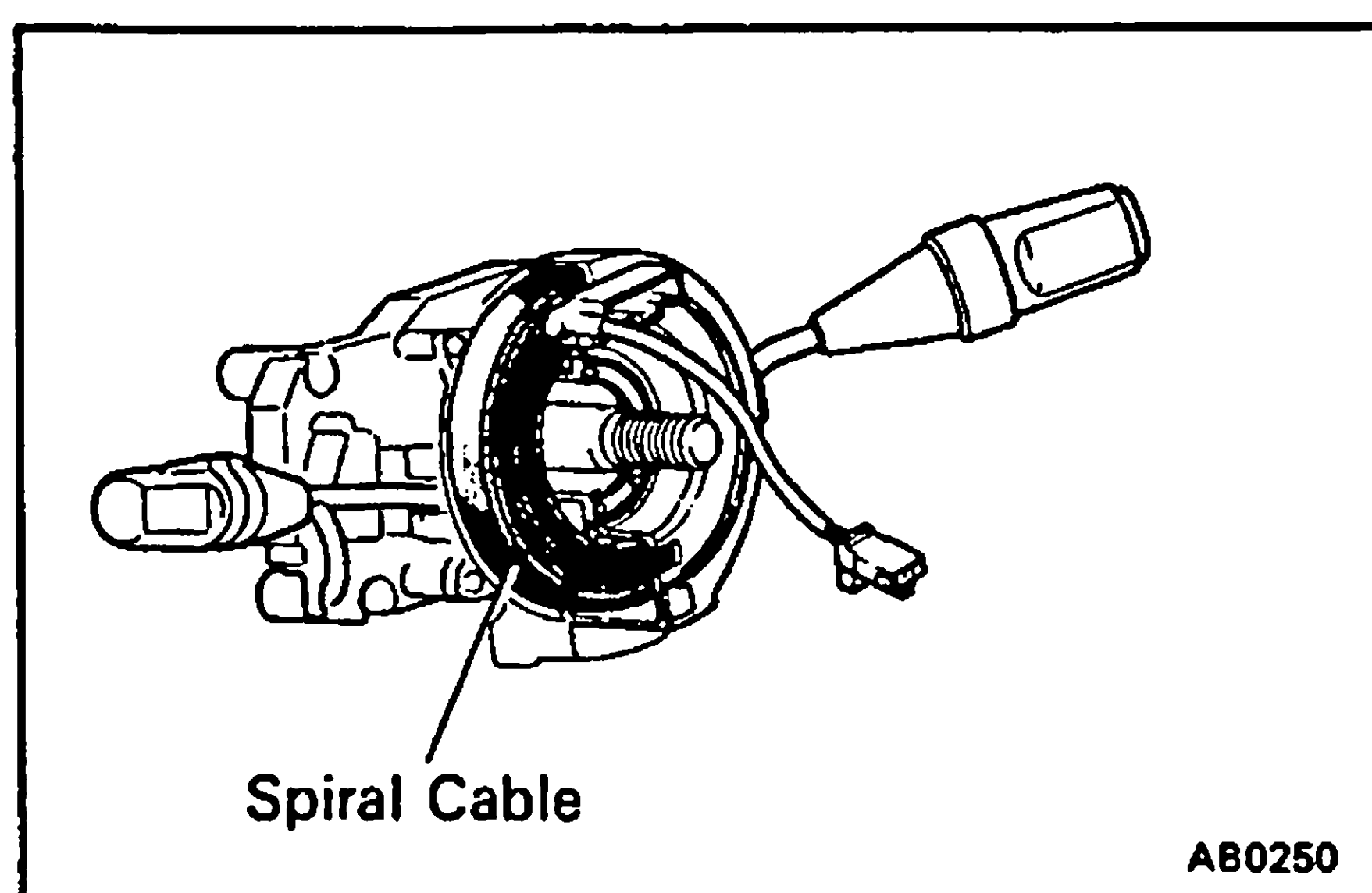
OPERATION

FUNCTION OF COMPONENTS

R3048-05

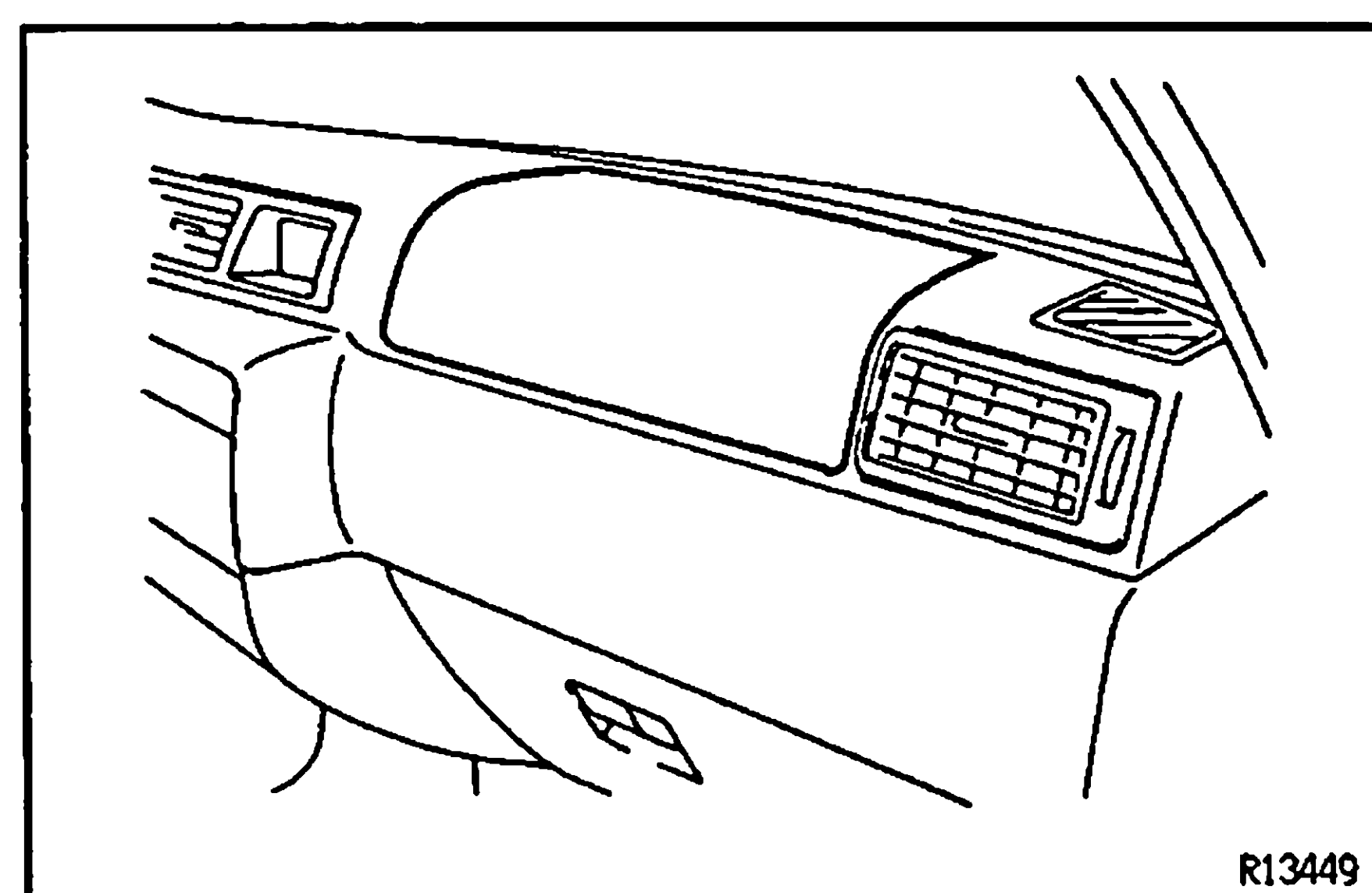
1. STEERING WHEEL PAD (with AIRBAG)

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 center airbag sensor assembly.



2. SPIRAL CABLE (in COMBINATION SWITCH)

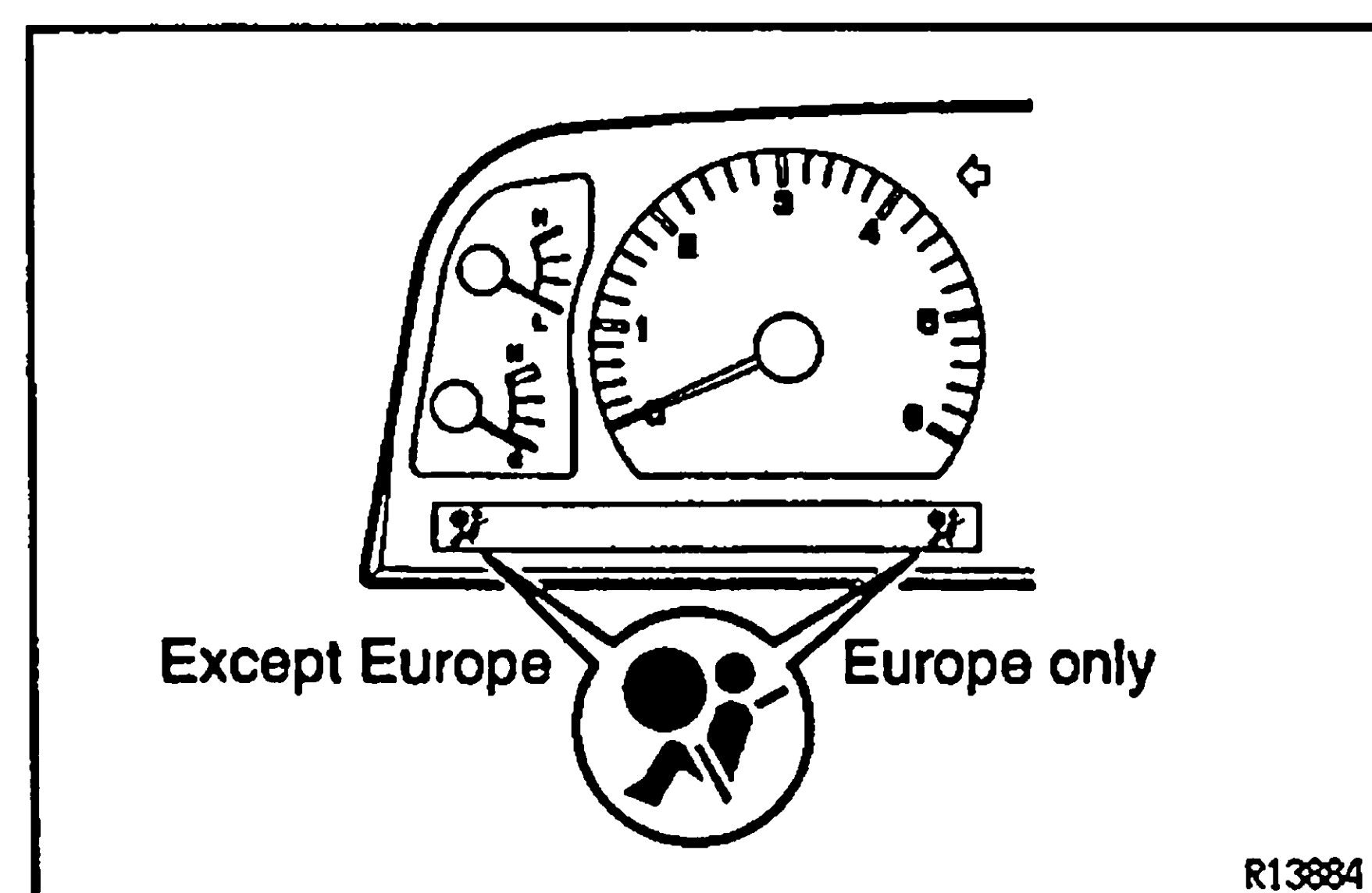
A spiral cable is used as an electrical joint from the vehicle body side to the steering wheel.



3. FRONT PASSENGER AIRBAG ASSEMBLY

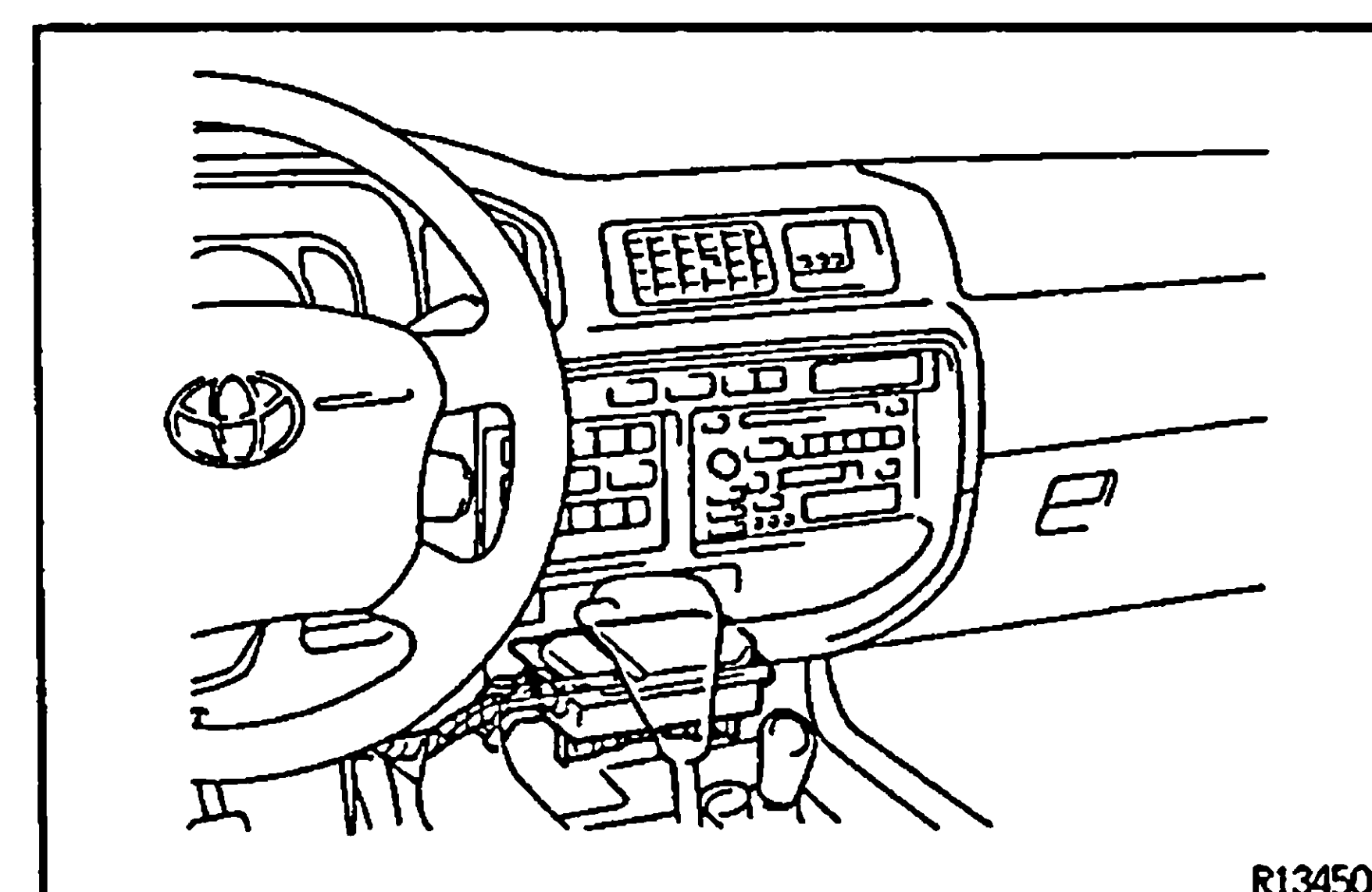
The inflator and bag of the SRS are stored in the front passenger airbag assembly and cannot be disassembled. The inflator contains a squib, igniter charge, gas generant, etc., and inflates the bag when instructed by the center airbag sensor assembly.

RS



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.

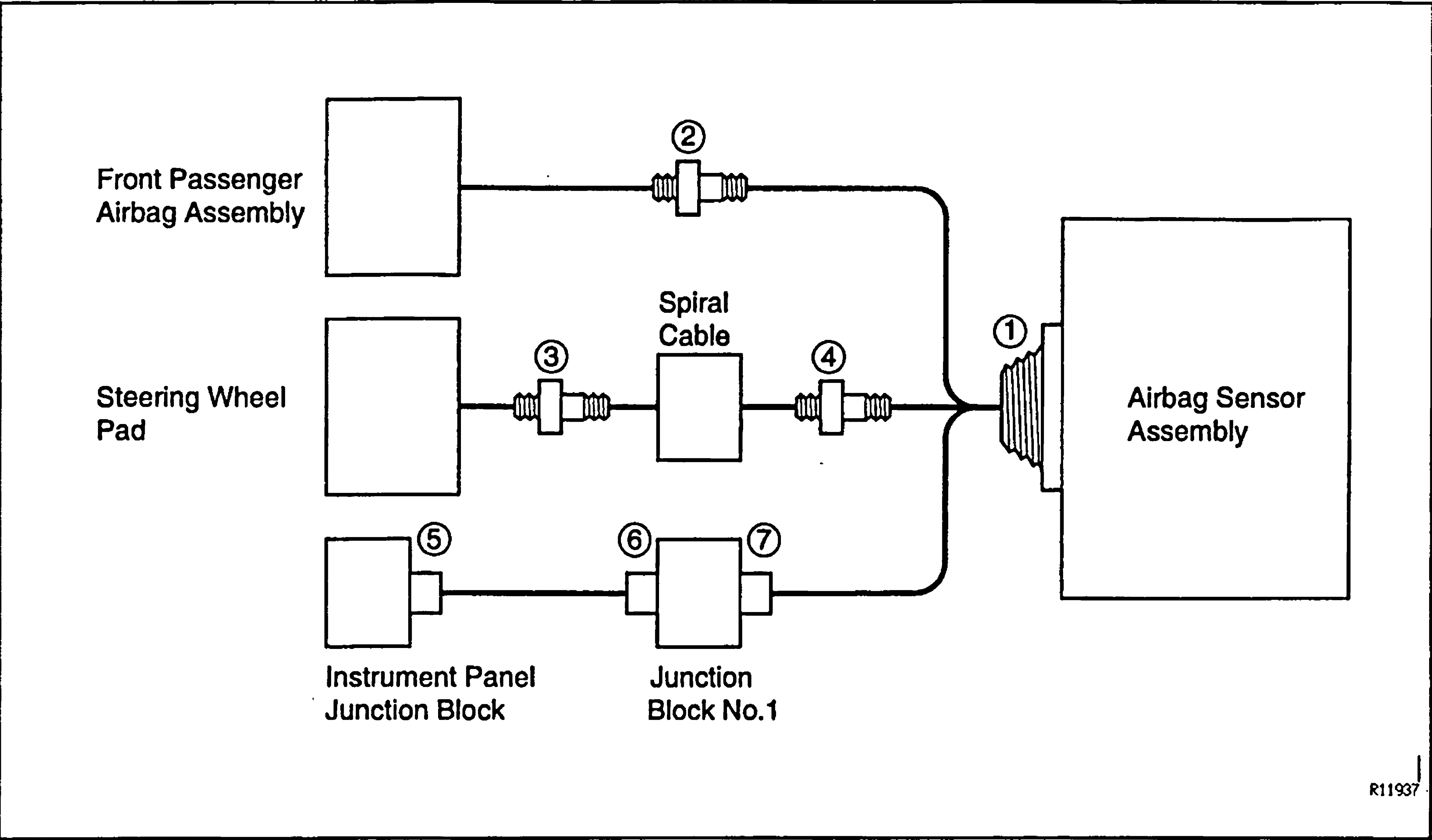


5. AIRBAG SENSOR ASSEMBLY

The airbag sensor assembly is mounted on the floor inside the console box. The airbag sensor assembly consists of an airbag sensor, safing sensor, diagnosis circuit and ignition control, drive circuit, etc.

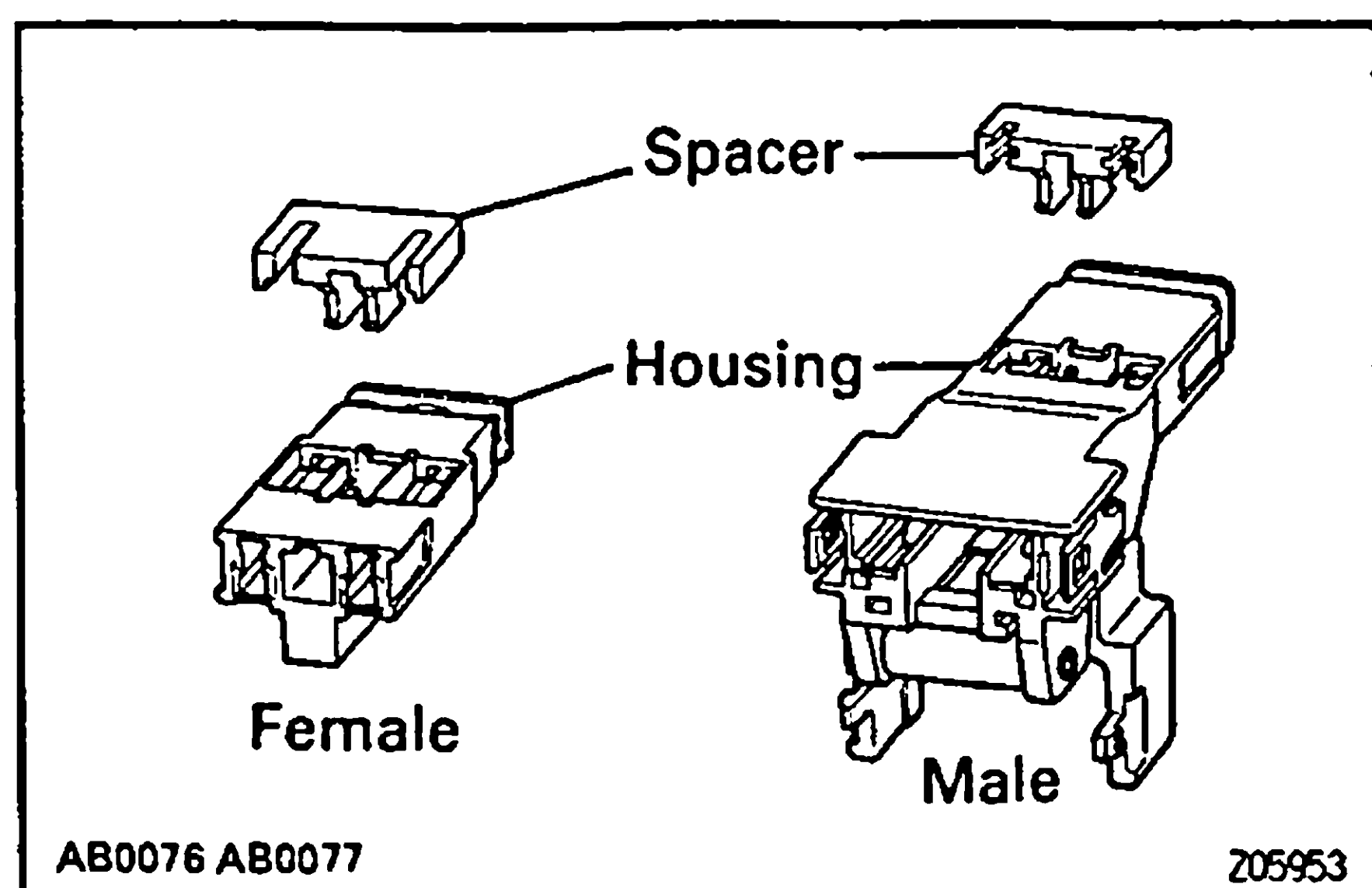
It receives signals from the airbag sensors and judges whether the SRS must be activated or not.

6. SRS CONNECTORS



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.

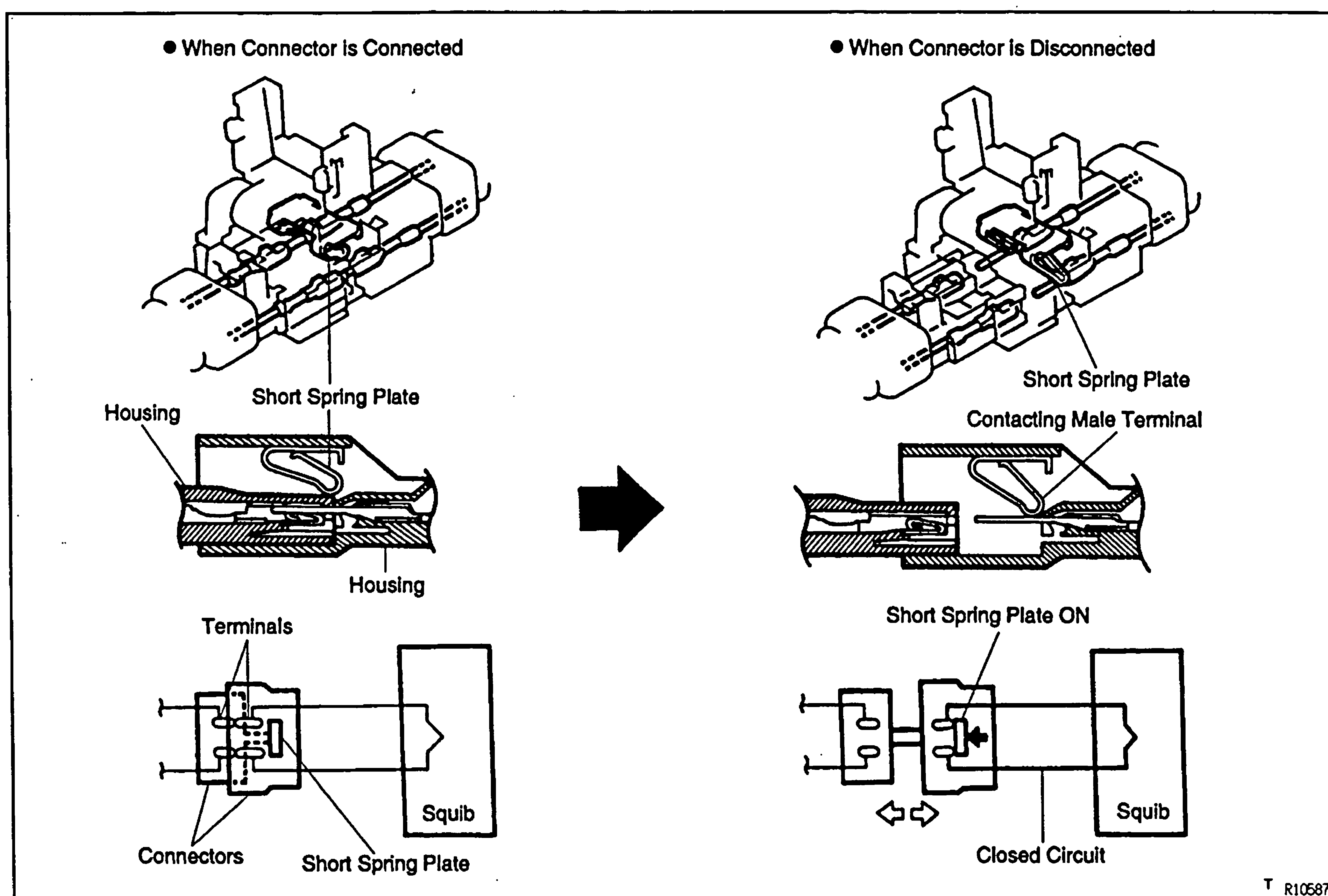


(1) Terminal Twin—Lock Mechanism

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.

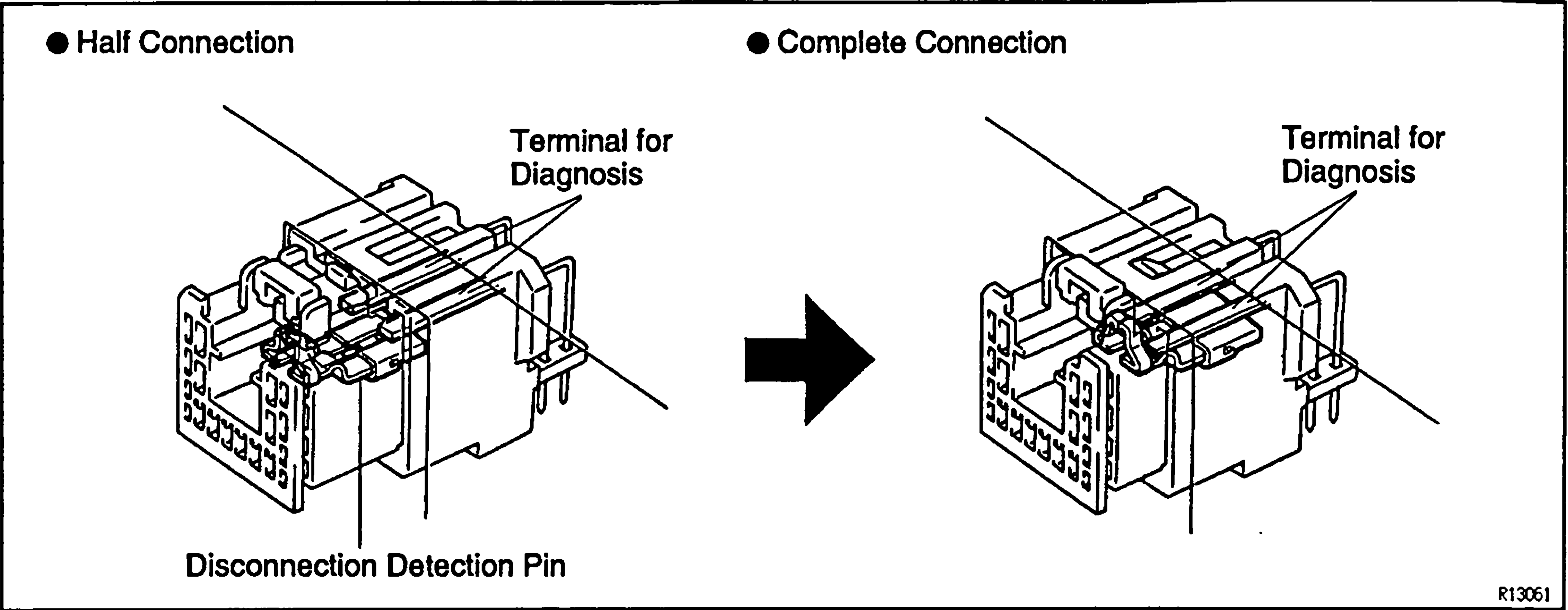
(2) Airbag Activation Prevention Mechanism

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.



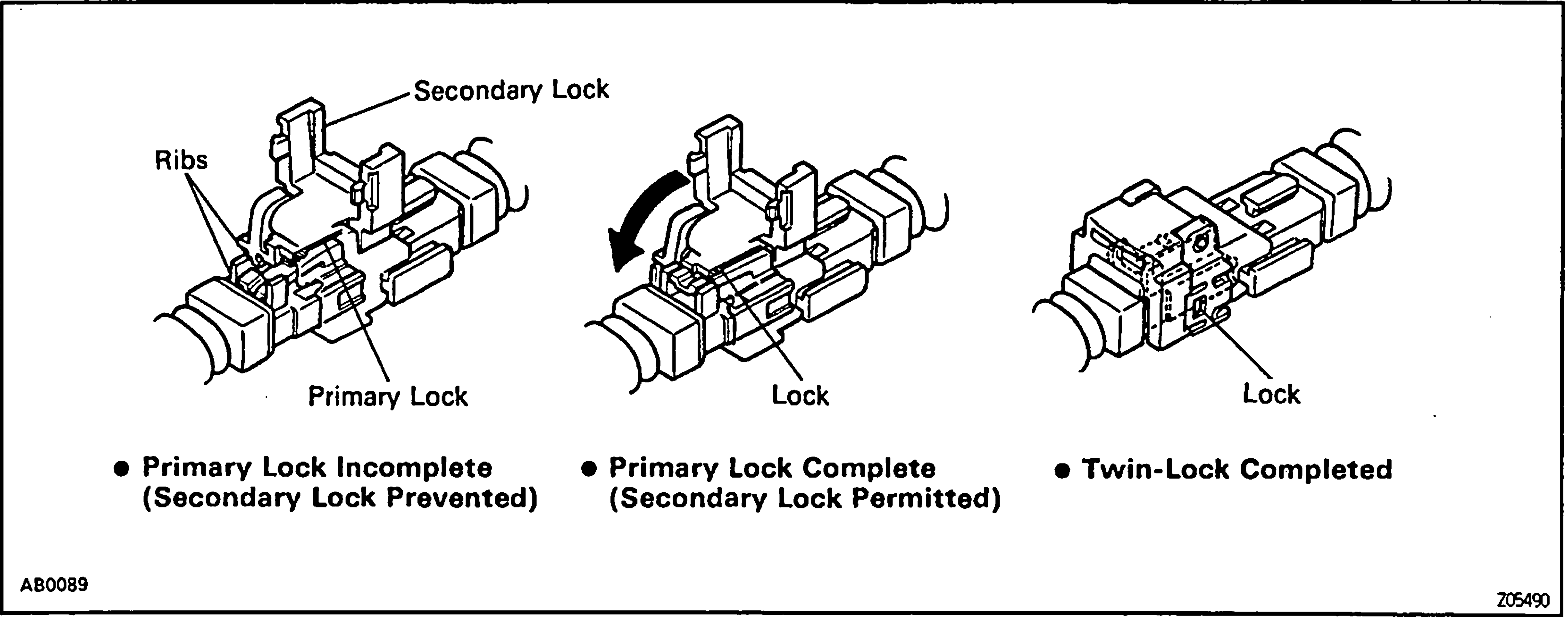
HINT: The type of connector shown above is used for connectors ②, ③, and ④, in the diagram on the preceding page.

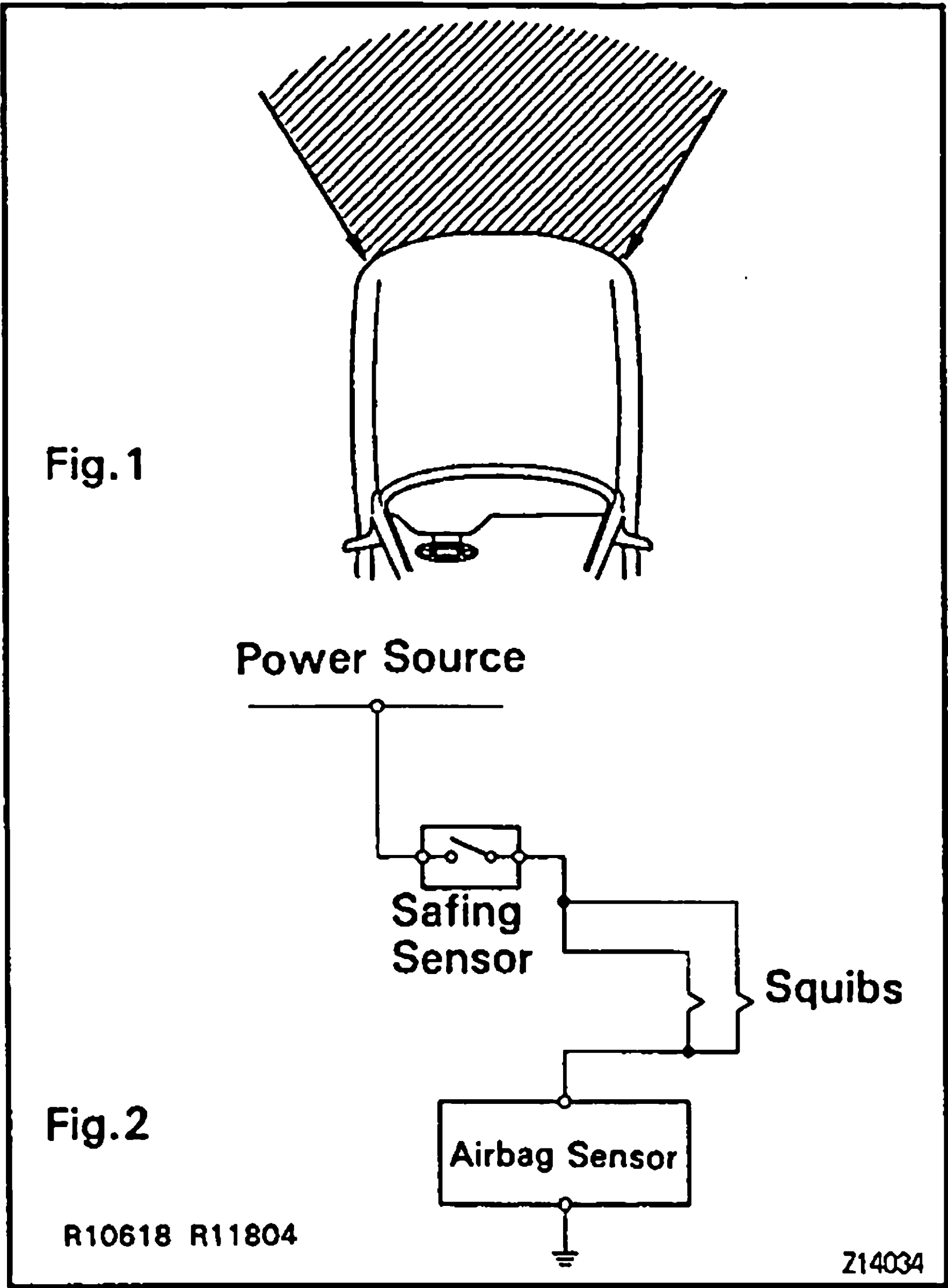
- (3) **Electrical Connection Check Mechanism**
This mechanism electrically checks if connectors are connected correctly and completely. The electrical connection check mechanism is designed so that the disconnection detection pin connects with the diagnosis terminals when the connector housing lock 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.

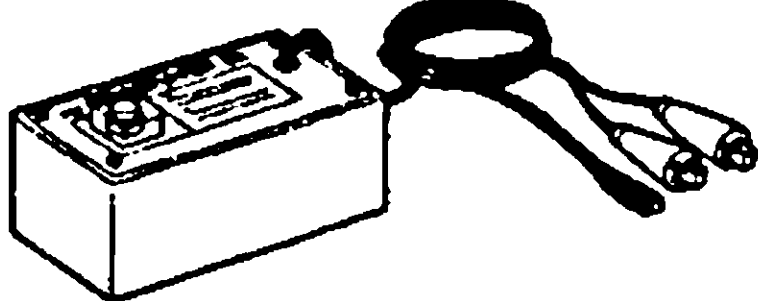
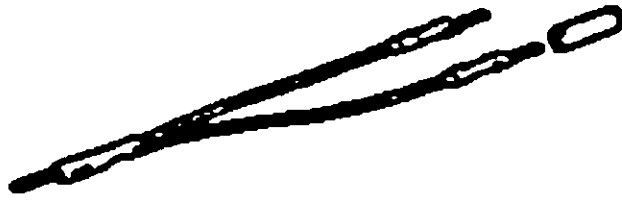




When the vehicle is involved in a frontal collision in the hatched area (Fig. 1) and the shock is larger than a predetermined level, the SRS is activated automatically. A safing sensor is designed to go on at a smaller deceleration rate than the airbag sensor. As illustrated in Fig. 2, ignition is caused 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, two 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.

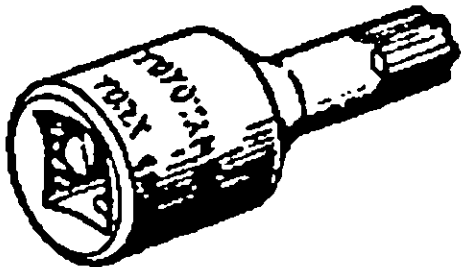
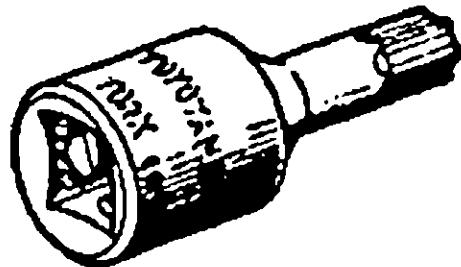
PREPARATION
SST (SPECIAL SERVICE TOOLS)

R800X-0C

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

RECOMMENDED TOOLS

R800Y-0C

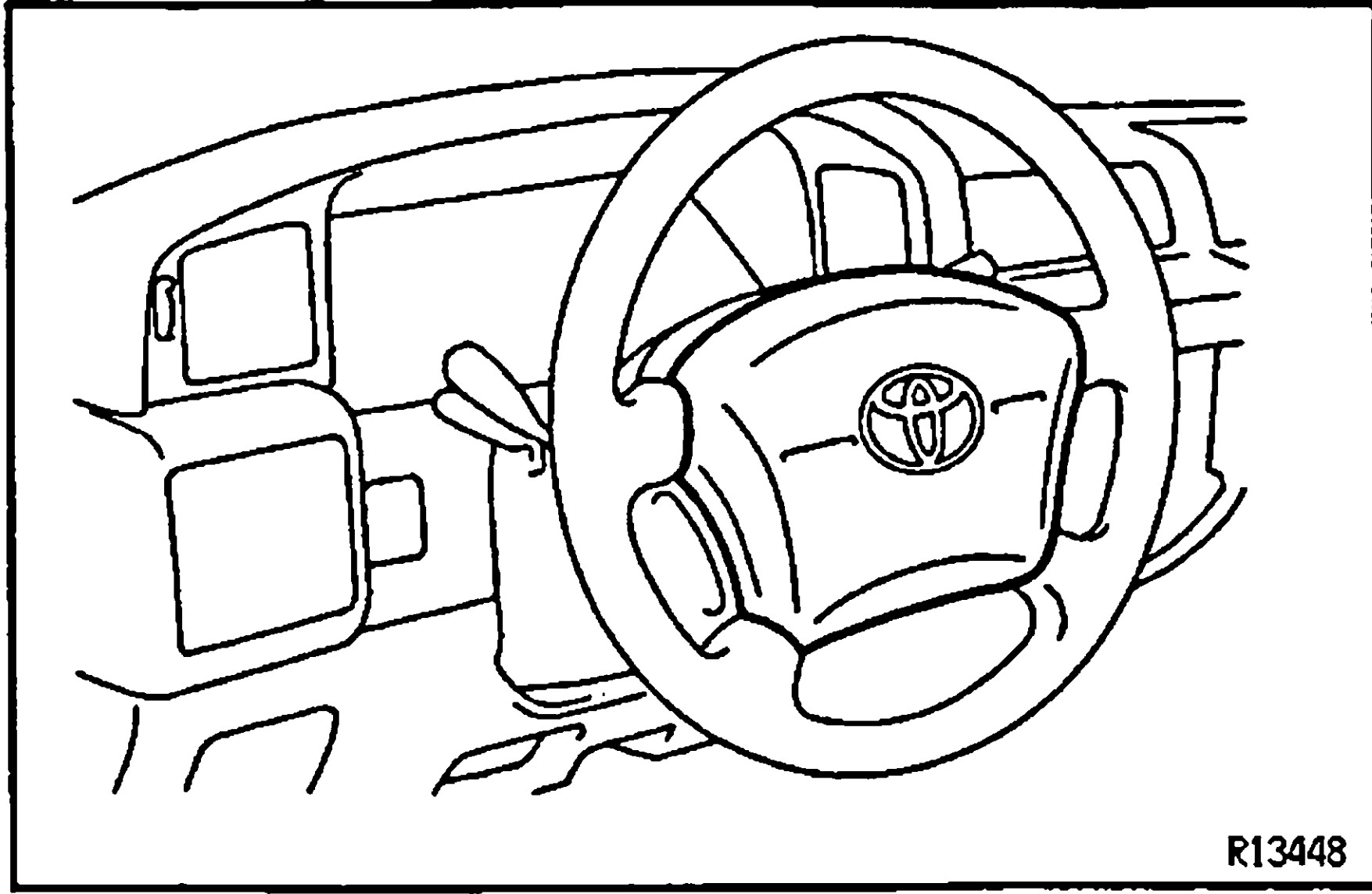
	09042-00010 Torx Socket T30 .	Steering wheel pad
	09042-00020 Torx Socket T40 .	Airbag sensor assembly
	09082-00050 TOYOTA Electrical Tester Set.	

EQUIPMENT

R800Z-04

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

RS



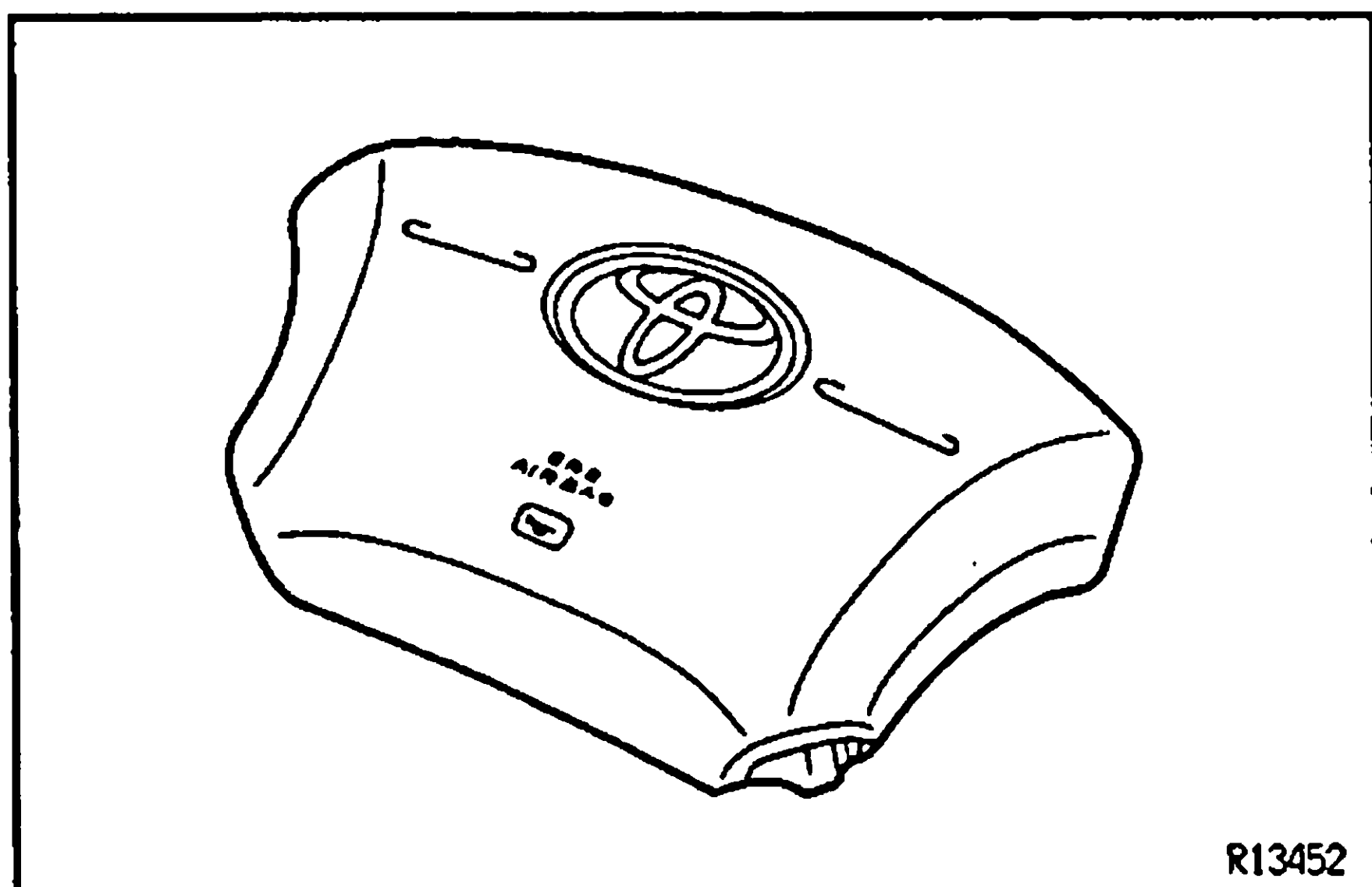
STEERING WHEEL PAD AND SPIRAL CABLE

RS01Z-00

INSPECTION ITEMS

1. VEHICLES NOT INVOLVED IN A COLLISION

- (a) Do a diagnostic system check.
(See page RS—38).
- (b) Do a visual check which includes the following items with the steering wheel pad (with airbag) installed in the vehicle.
 - Check for cuts, minute cracks or marked discoloration of the steering wheel pad top surface and grooved portion.



2. VEHICLES INVOLVED IN A COLLISION IF THE AIRBAG IS NOT DEPLOYED

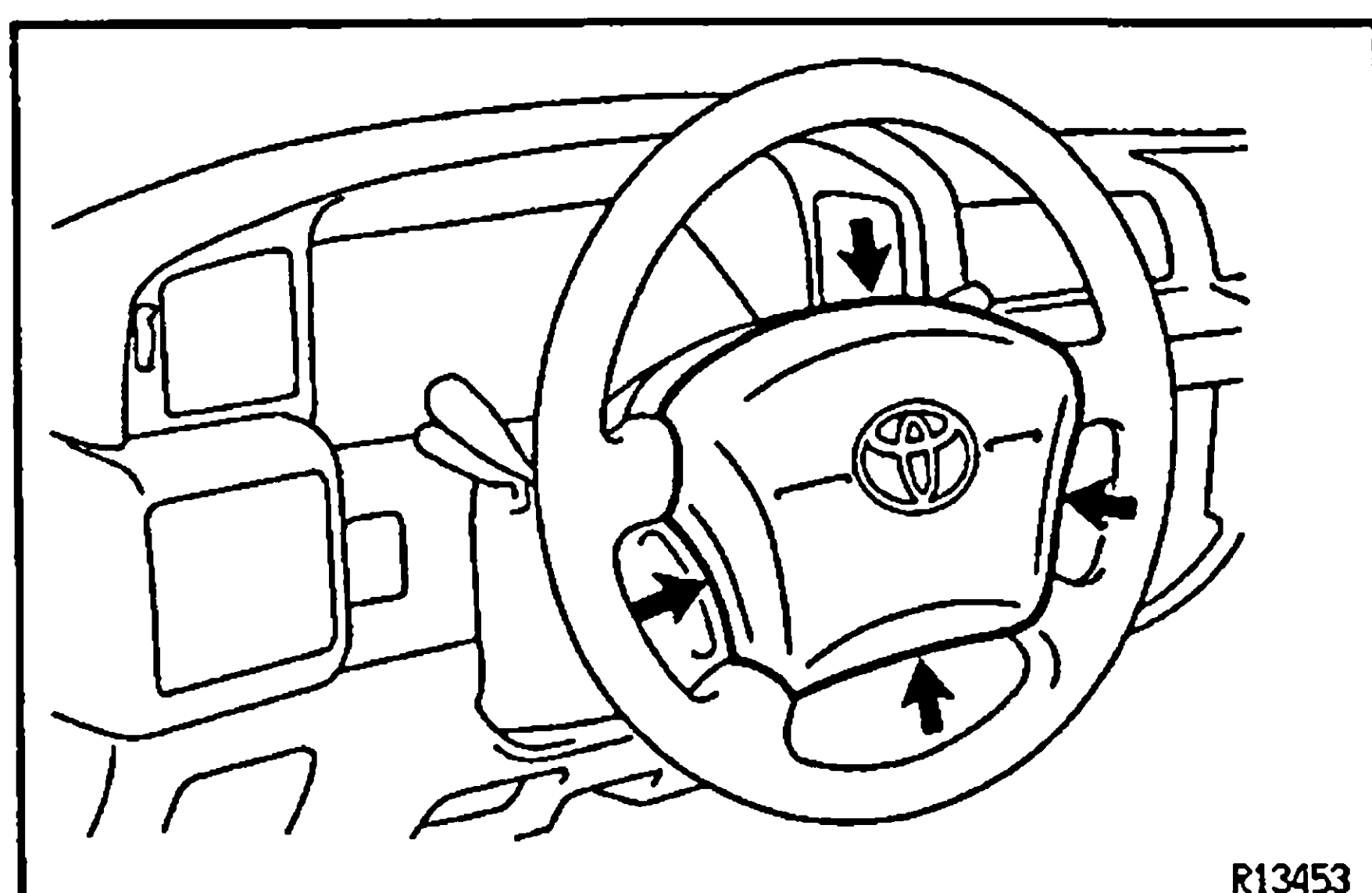
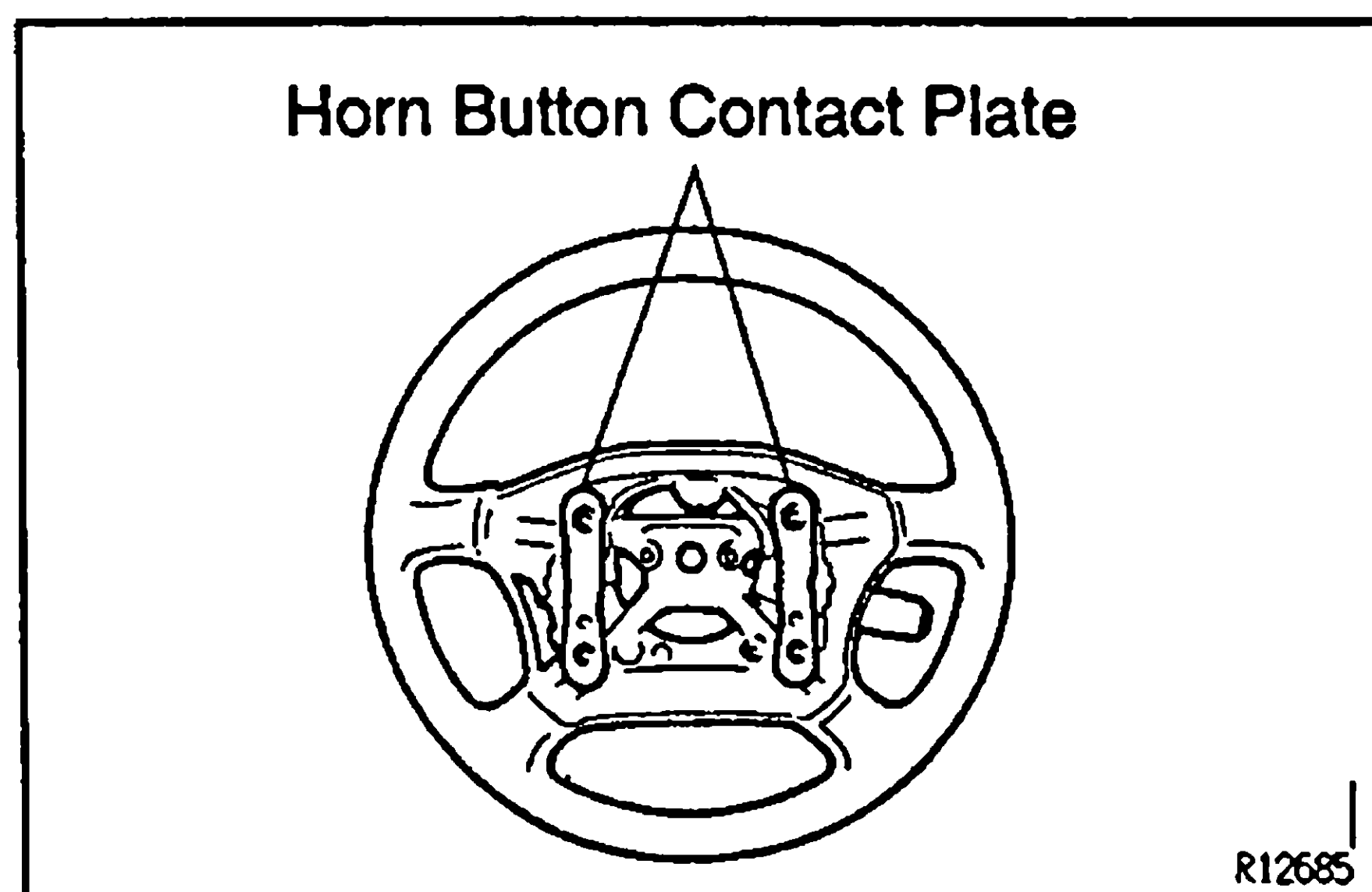
RS

- (a) Do a diagnostic system check.
(See page RS—38)
- (b) Do a visual check which includes the following items with the steering wheel pad (with airbag) removed from the vehicle.
 - Check for cuts and cracks in, or marked discoloration of, the steering wheel pad top surface and its grooved portion.
 - 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.

HINT:

- If the horn button contact plate of the steering wheel is deformed, never repair it. Always replace the steering wheel assembly with a new one.
- There should be no interference between the steering wheel pad and the steering wheel, and the clearance should be uniform all the way around when the new steering wheel pad is installed on the steering wheel.

CAUTION: For removal and installation of the steering wheel pad, see the SR section and be sure to follow the correct procedure.



IF THE AIRBAG IS DEPLOYED

- (a) Do a diagnostic system check.
(See page RS—38)
- (b) Do a visual check which includes the following items with the steering wheel pad (with airbag) removed from the vehicle.
 - Check for deformation of the horn button contact plate of the steering wheel.
 - Check for damage to the spiral cable connector and wire harness.

HINT:

- If the horn button contact plate of the steering wheel is deformed, never repair it. Always replace the steering wheel assembly with a new one.
- There should be no interference between the steering wheel pad and the steering wheel, and the clearance should be uniform all the way around when the new steering wheel pad is installed on the steering wheel.

RB011—OF

RS

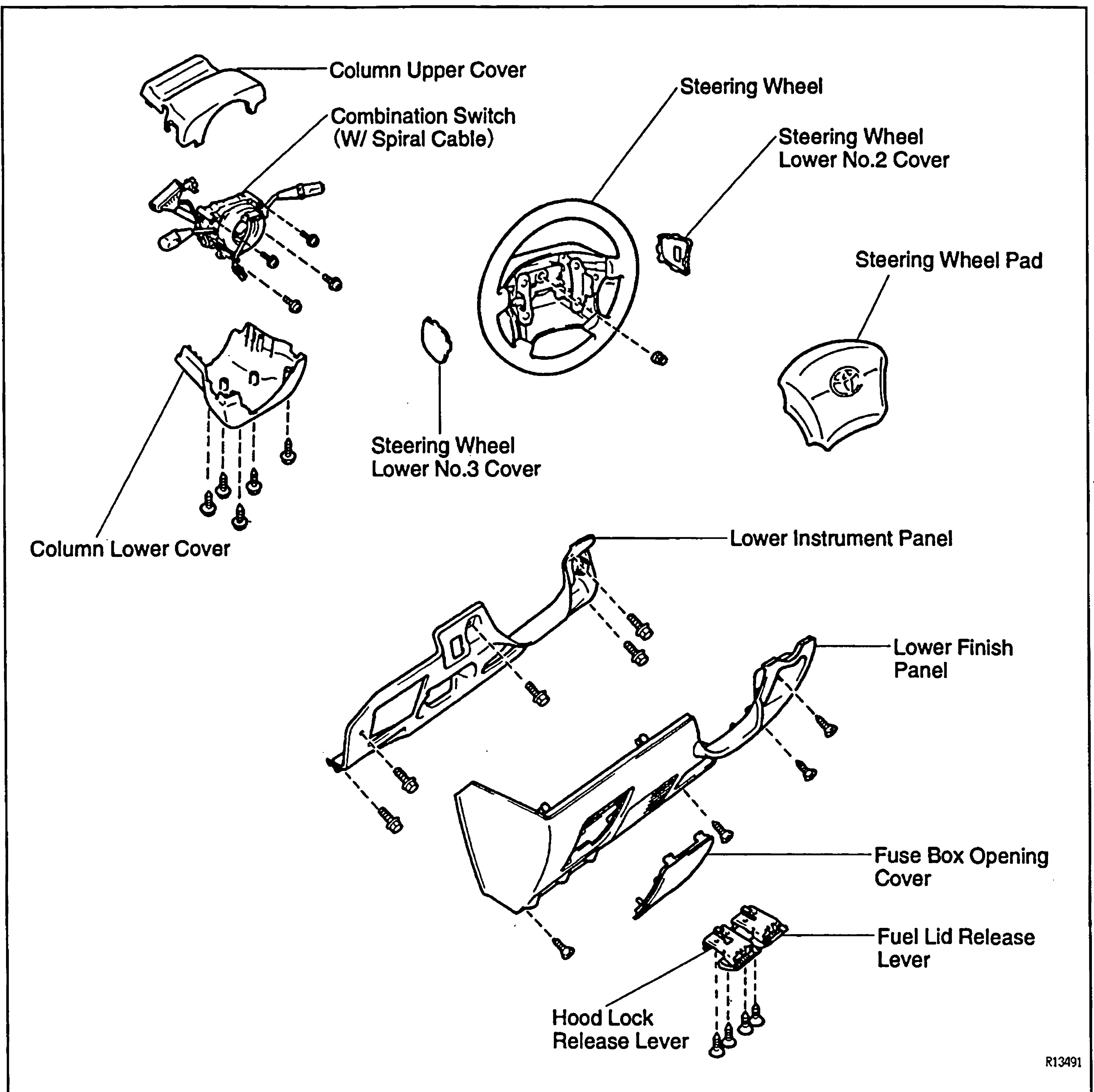
REPLACEMENT REQUIREMENTS

In the following cases, replace the steering wheel pad, steering wheel or spiral cable.

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

CAUTION: For replacement of the steering wheel pad, see the SR section and be sure to follow the correct procedure.

COMPONENTS

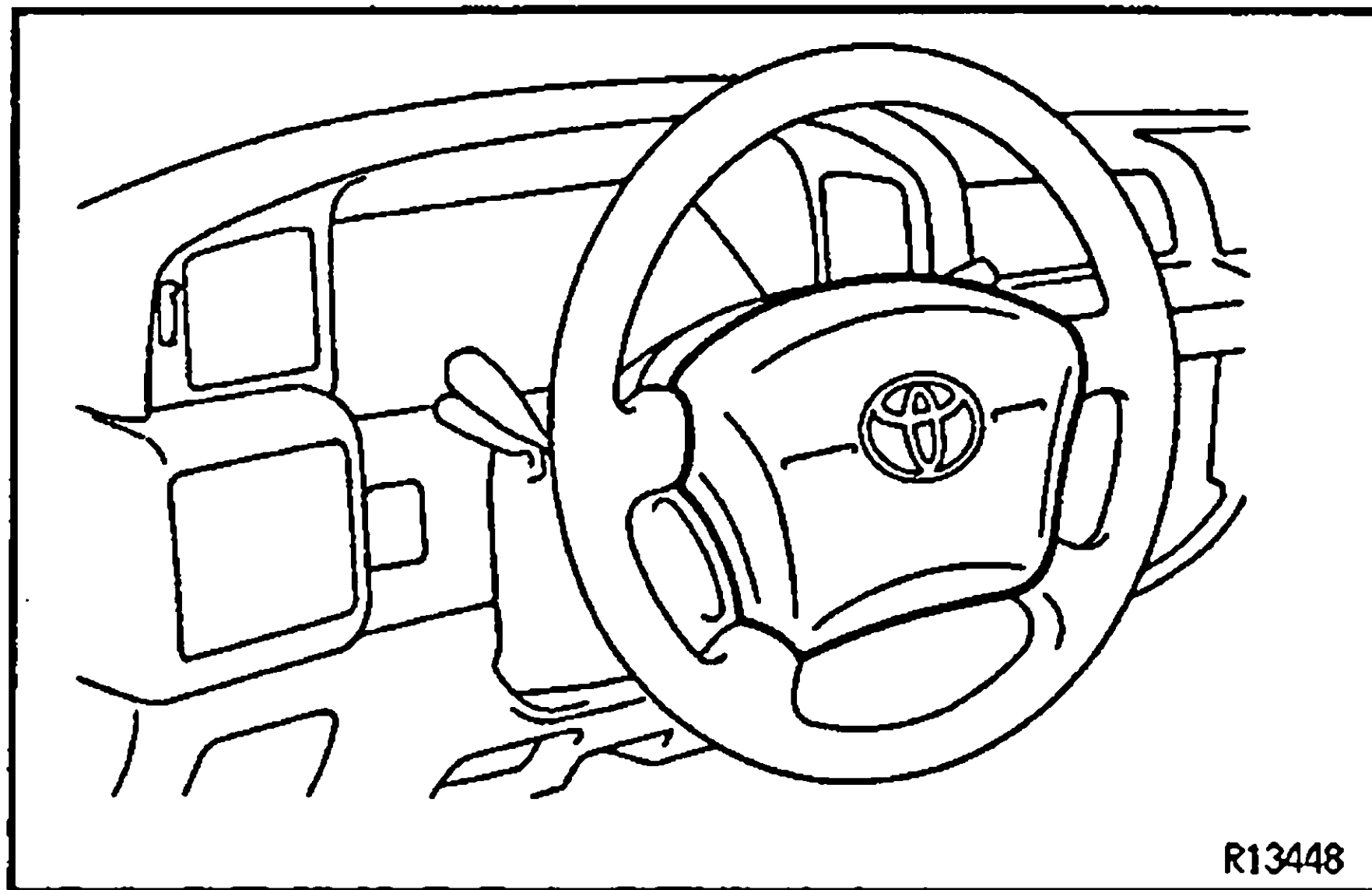


RS

R13491

STEERING WHEEL PAD AND SPIRAL CABLE REMOVAL AND INSTALLATION

(See SR section)



STEERING WHEEL PAD (WITH AIRBAG)^{RS08P-02} DISPOSAL

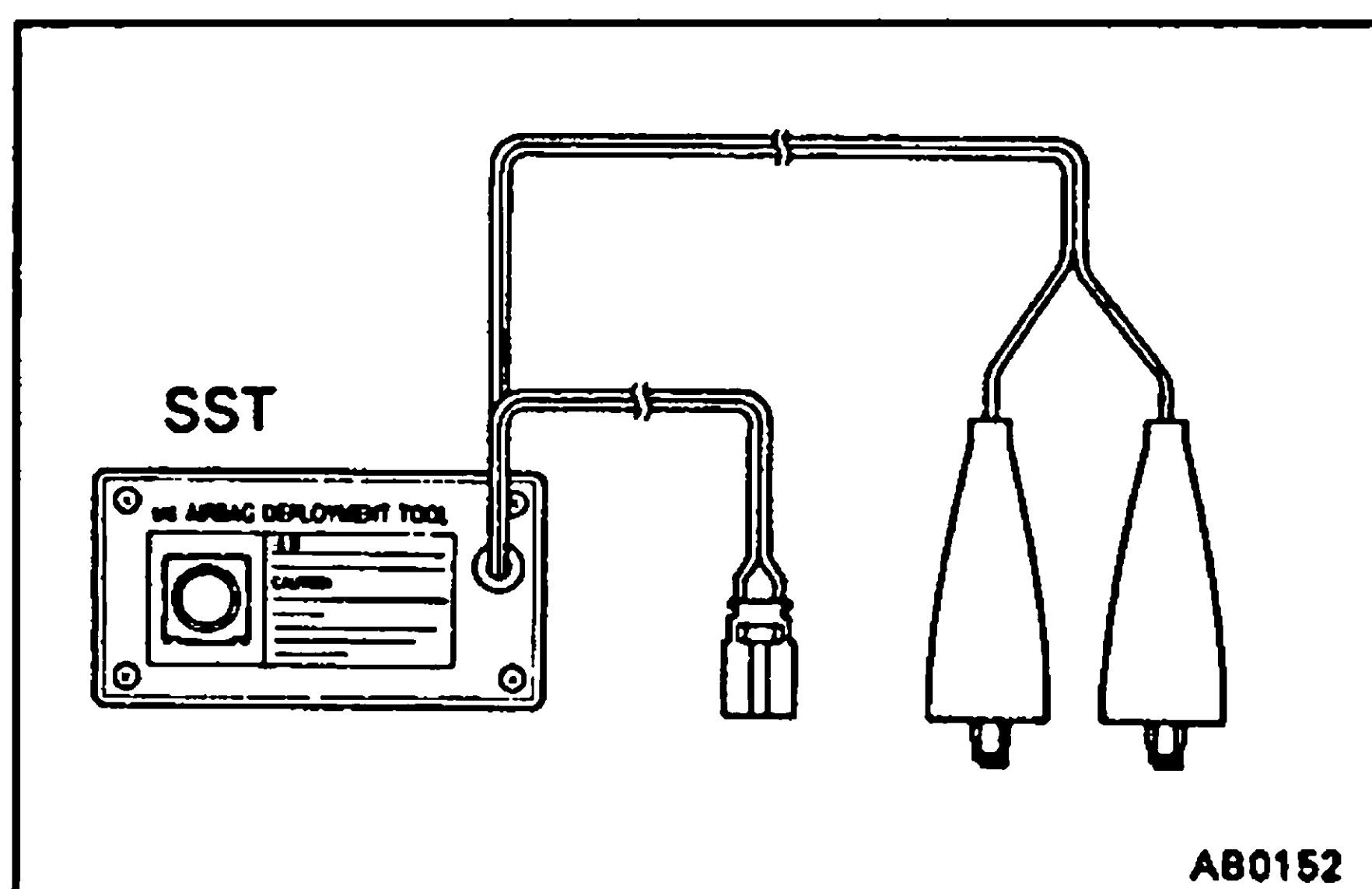
When scrapping vehicles equipped with an SRS or disposing of a steering wheel pad (with airbag), always first deploy the airbag in accordance with the procedure described below.

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

Never dispose of a steering wheel pad which has an undeployed airbag.

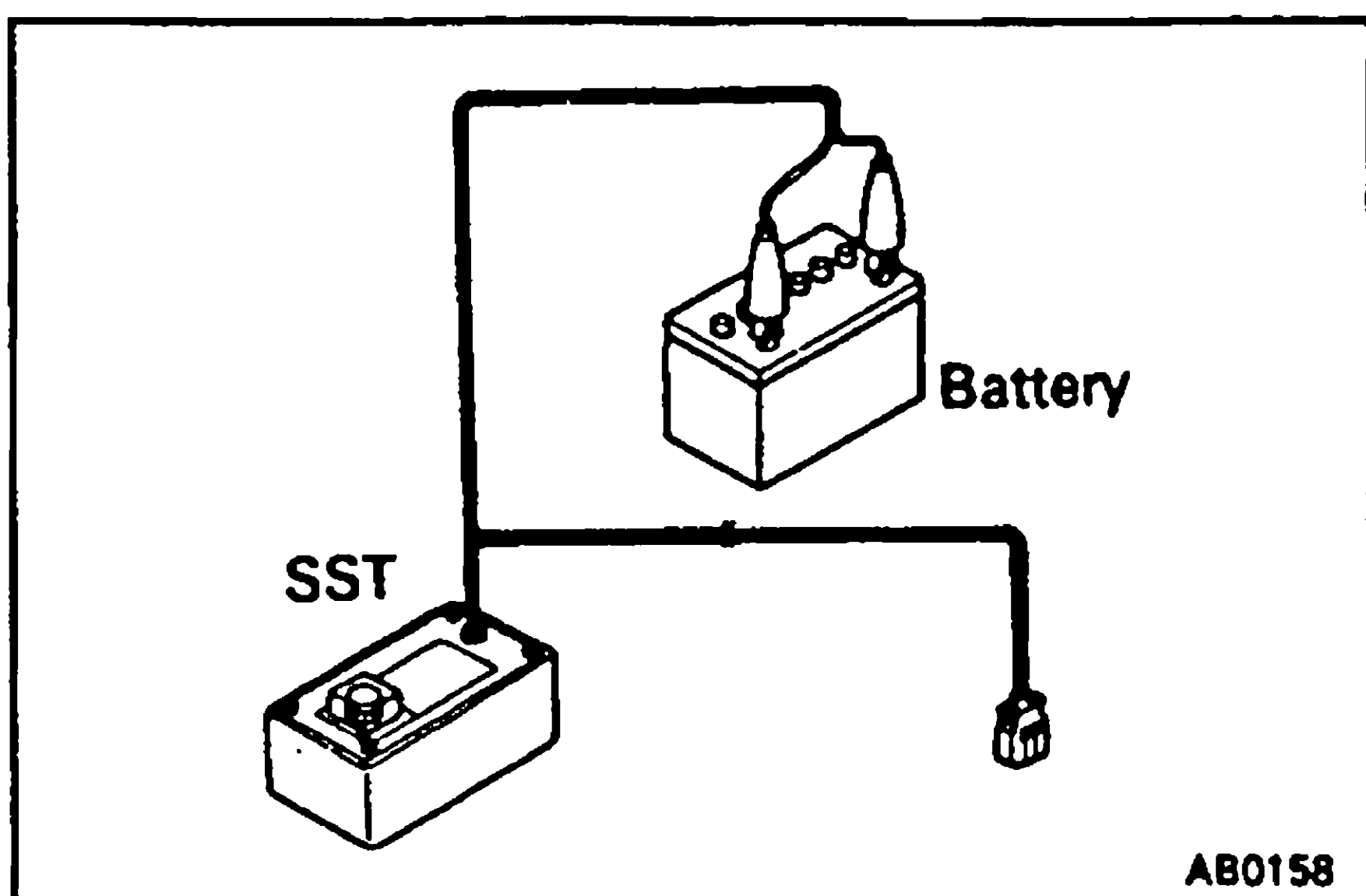
When disposing of a steering wheel pad with an airbag deployed in a collision, follow the same procedure given under "When scrapping vehicle, step 4. DISPOSAL OF STEERING WHEEL PAD (WITH AIRBAG)" (See page RS-14).

RS



PRECAUTIONS FOR AIRBAG DEPLOYMENT

- The airbag produces a sizeable exploding sound when it deploys, so perform 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). Perform the operation in a place away from electrical noise.
- When deploying an airbag, perform the operation from at least 10 m (33 ft) away from the steering wheel pad.
- The steering wheel pad 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 with deployed airbag.
- Always wash your hands with water after completing the operation.
- Do not apply water, etc. to a steering wheel pad with deployed airbag.



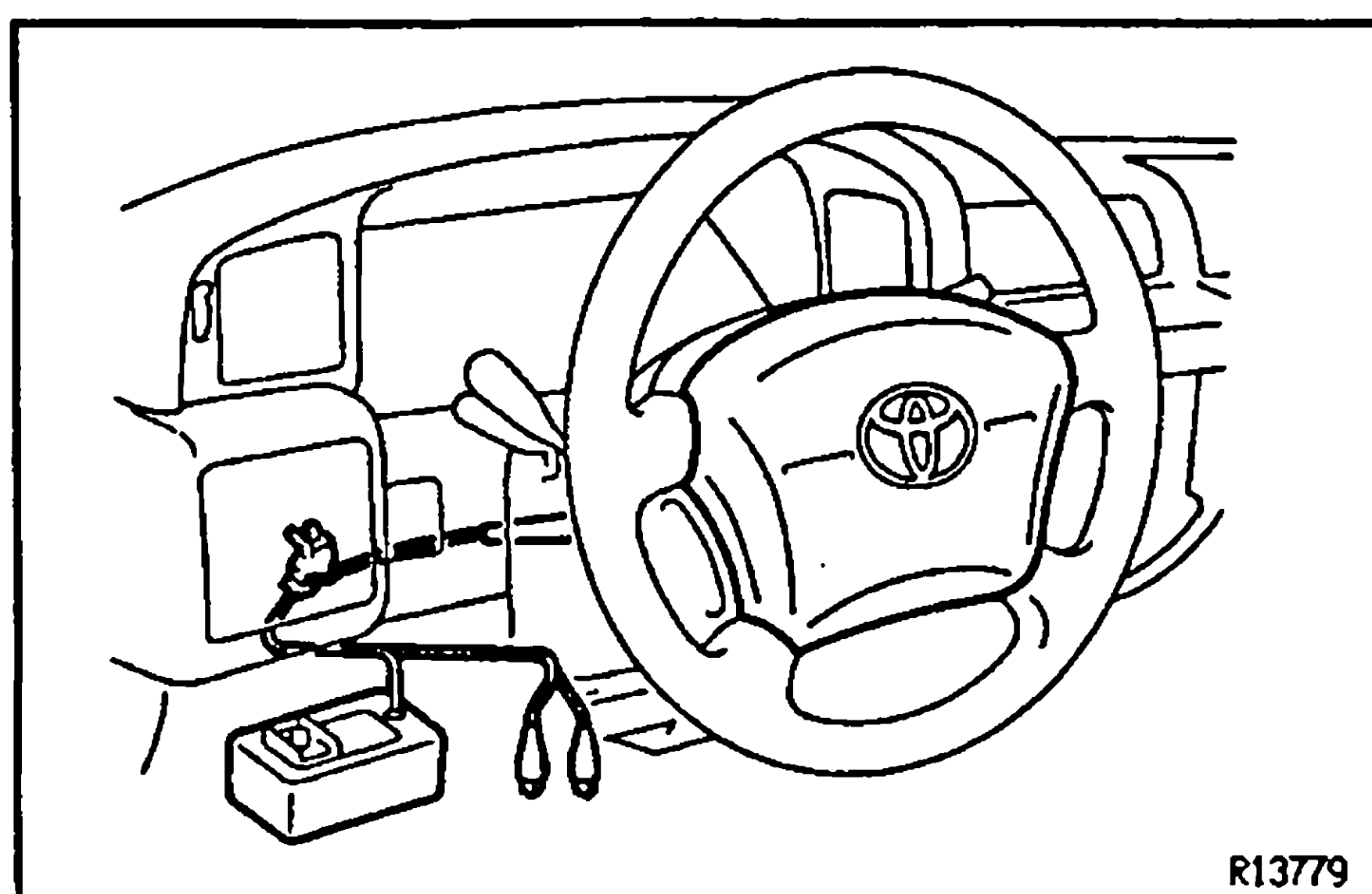
When scrapping vehicle

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

1. CONFIRM FUNCTIONING OF SST

(See page RS—18)

SST 09082—00700

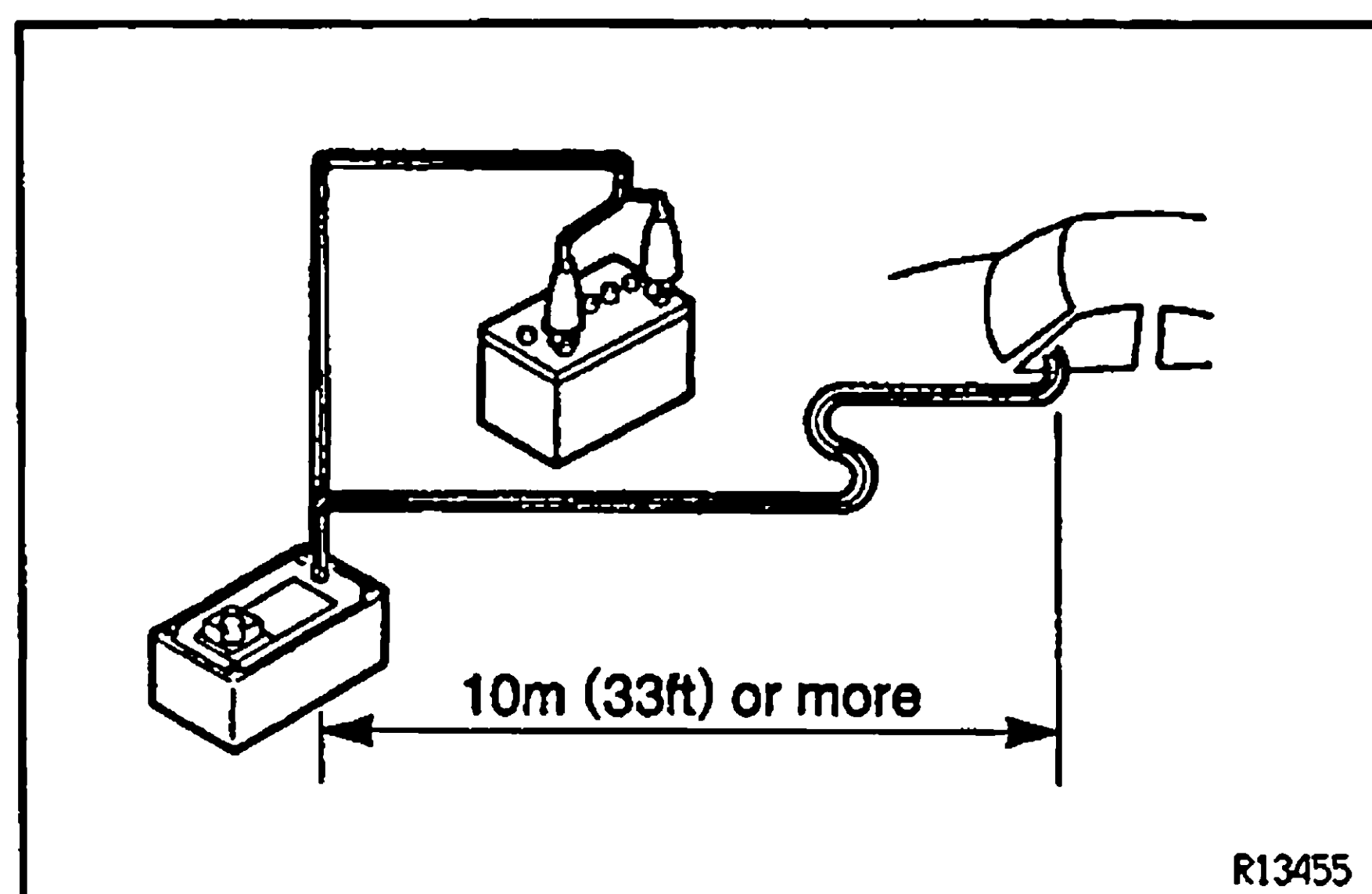


2. INSTALL SST

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

- Remove the under cover No.1.
- Disconnect the airbag connector of the spiral cable.
- Connect the SST connector to the airbag connector of the spiral cable.

SST 09082—00700

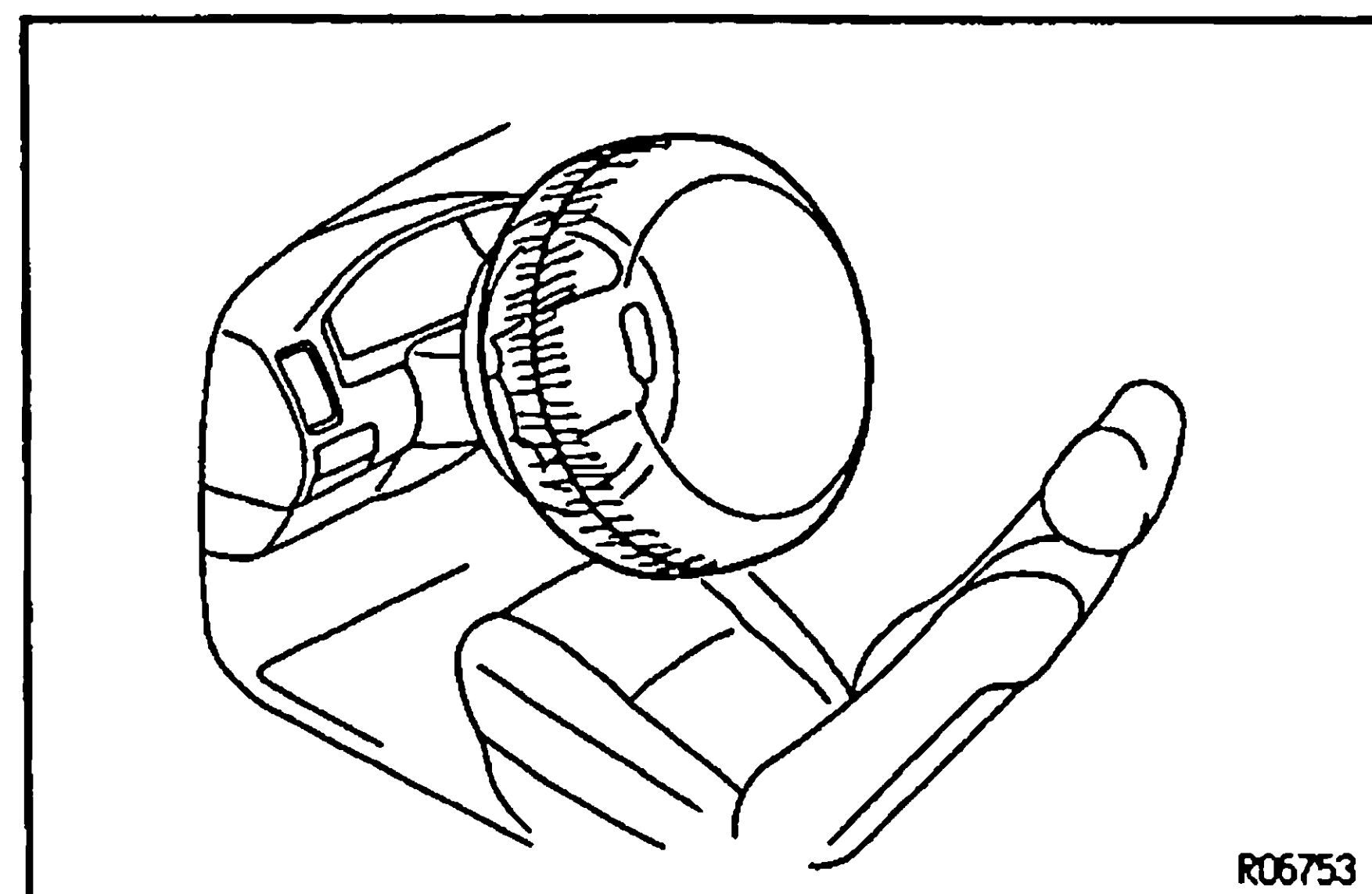


- Move the SST to at least 10 m (33 ft) from the front of the vehicle.
 - Close all the doors and windows of the vehicle.
- NOTICE:** Take care not to damage the SST wire harness.
- Connect the SST red clip to the battery positive (+) terminal and the black clip to the battery negative (—) terminal.

RS

3. DEPLOY AIRBAG

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



4. DISPOSAL OF STEERING WHEEL PAD (WITH AIRBAG)

CAUTION:

- The steering wheel pad 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 with deployed airbag.
 - Do not apply water, etc. to a steering wheel pad with deployed airbag.
 - Always wash your hands with water after completing the operation.
- (a) When scrapping a vehicle, deploy the airbag and scrap the vehicle with the steering wheel pad still installed.
- (b) When moving a vehicle for scrapping which has a steering wheel pad with deployed airbag, use gloves and safety glasses.

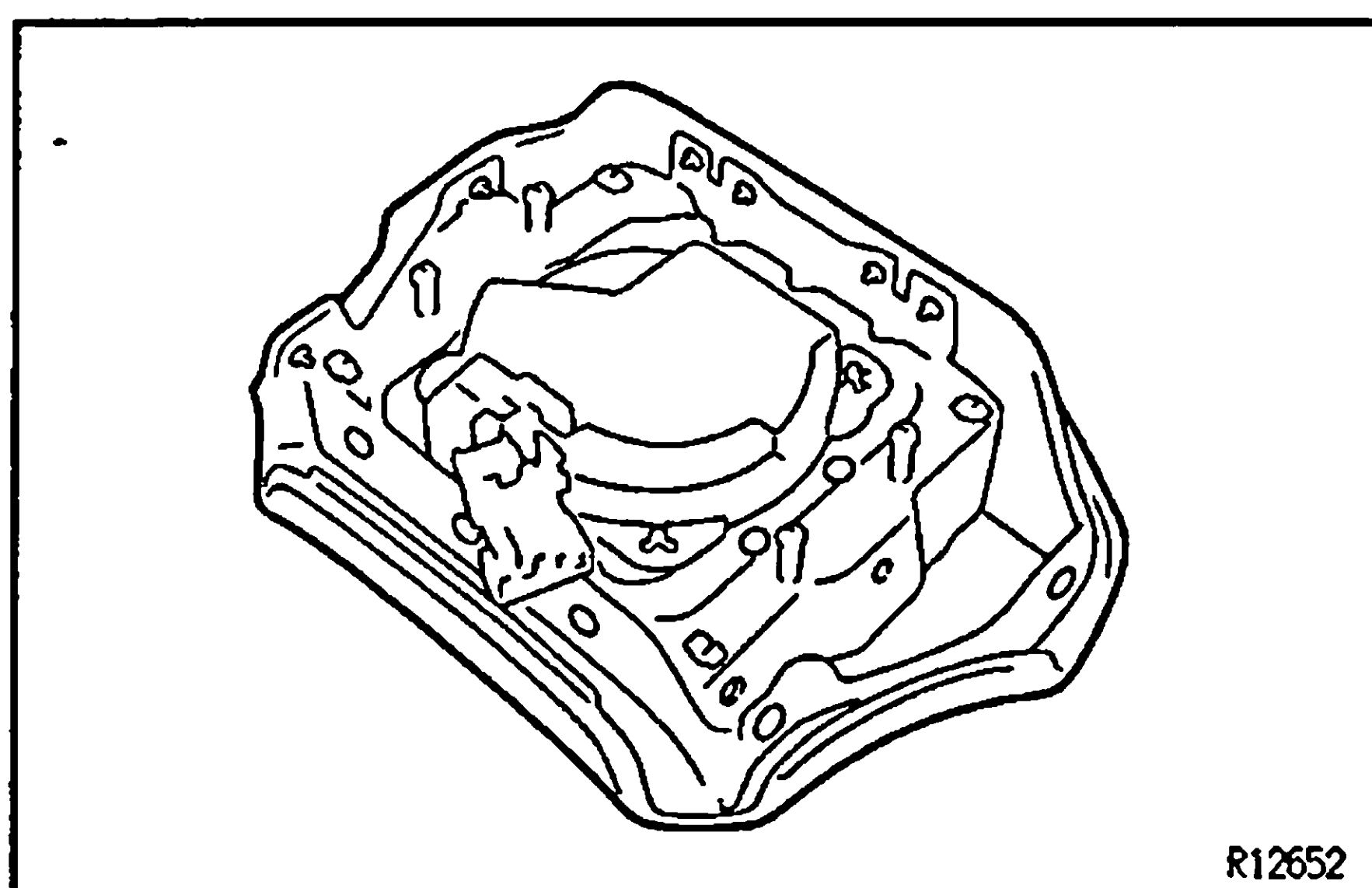
When disposing of steering wheel pad only

When disposing of the steering wheel pad (with airbag) only, never use the customer's vehicle to deploy the airbag.

Remove the steering wheel pad 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.

RS



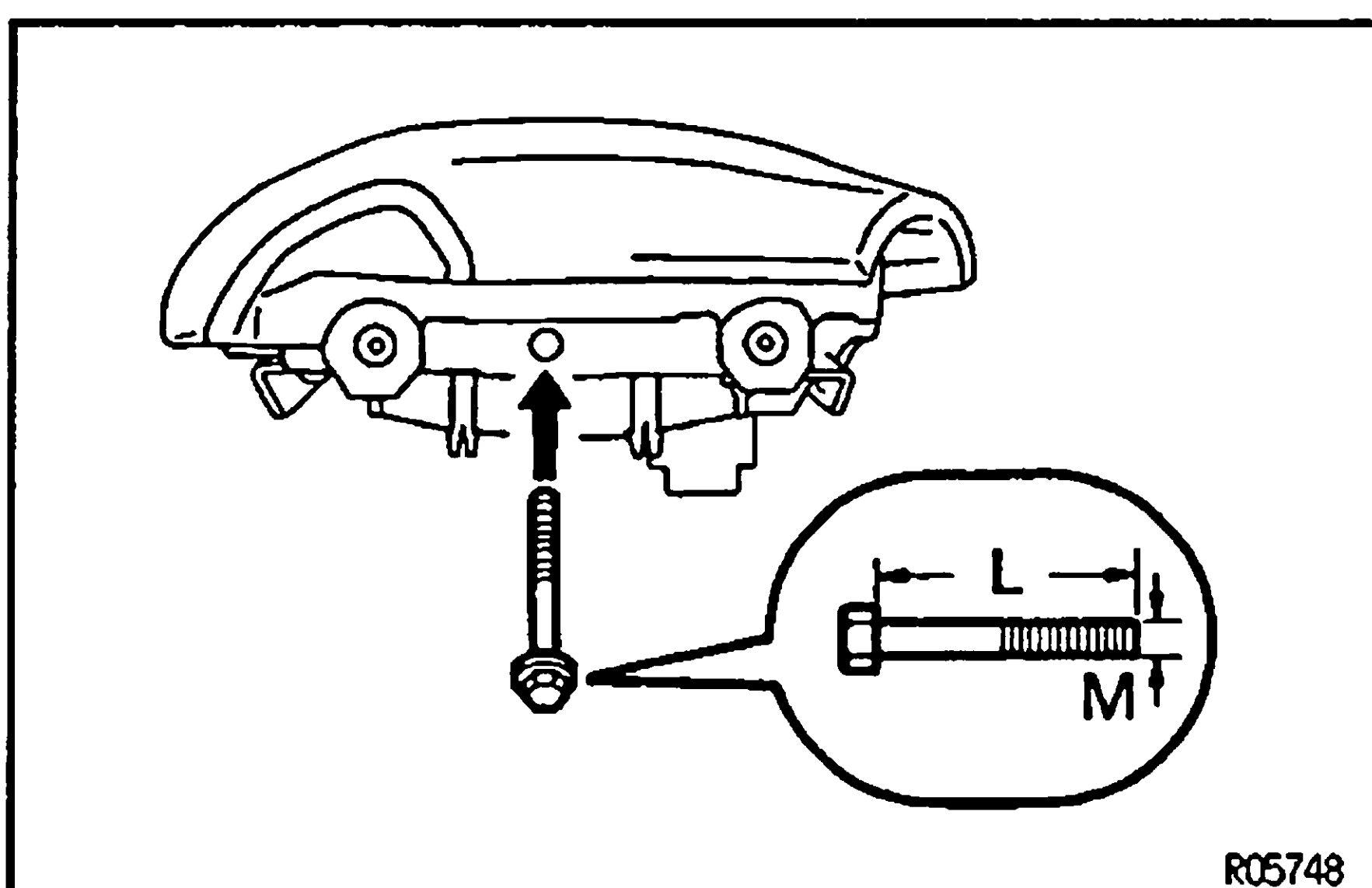
1. REMOVE STEERING WHEEL PAD (See SR section)

CAUTION:

- When storing the steering wheel pad, keep the upper surface of the pad facing upward.

2. REMOVE STEERING WHEEL PAD CONNECTOR

Remove the connector on the steering wheel pad rear surface from the inflator cover.

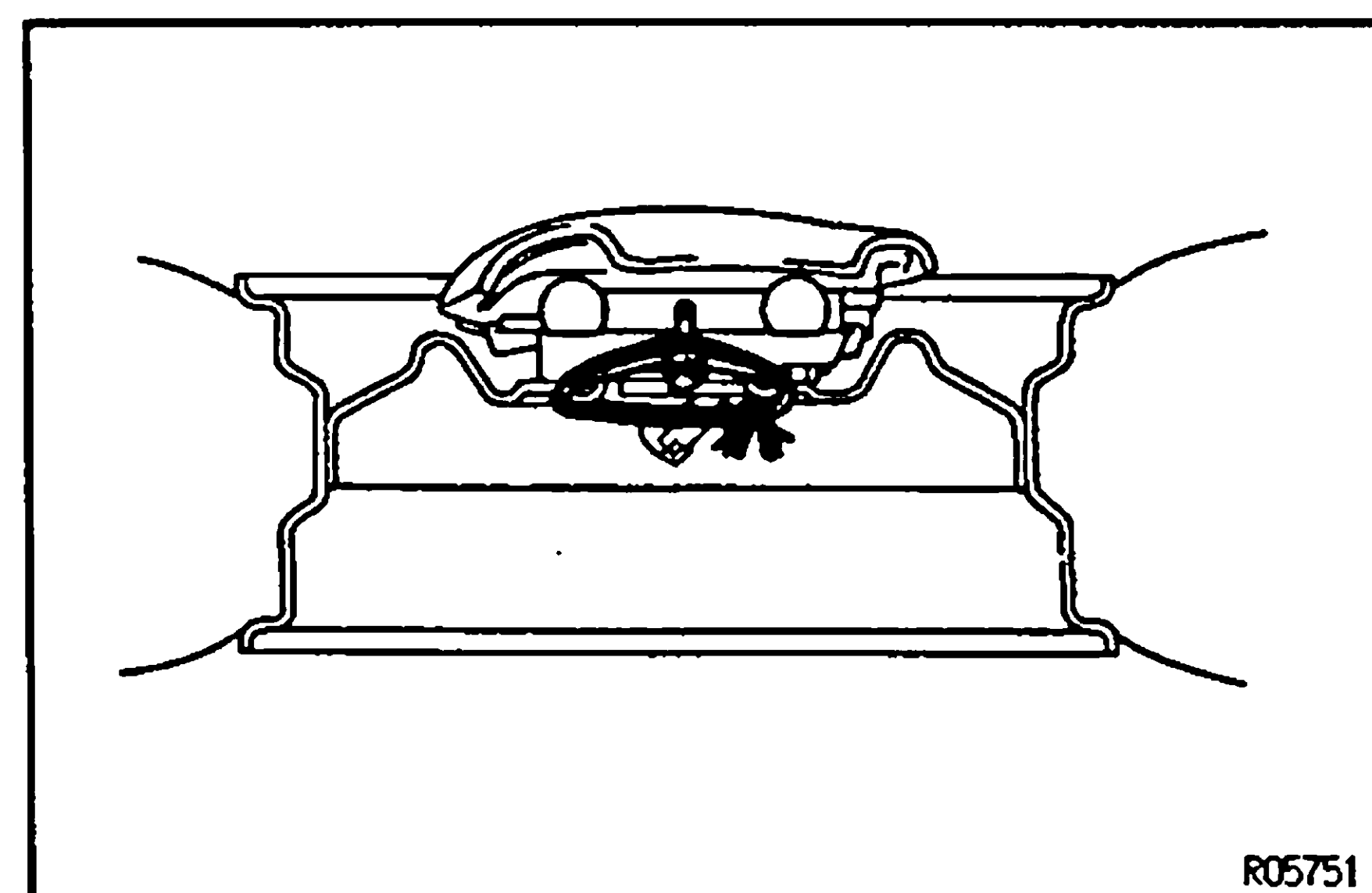
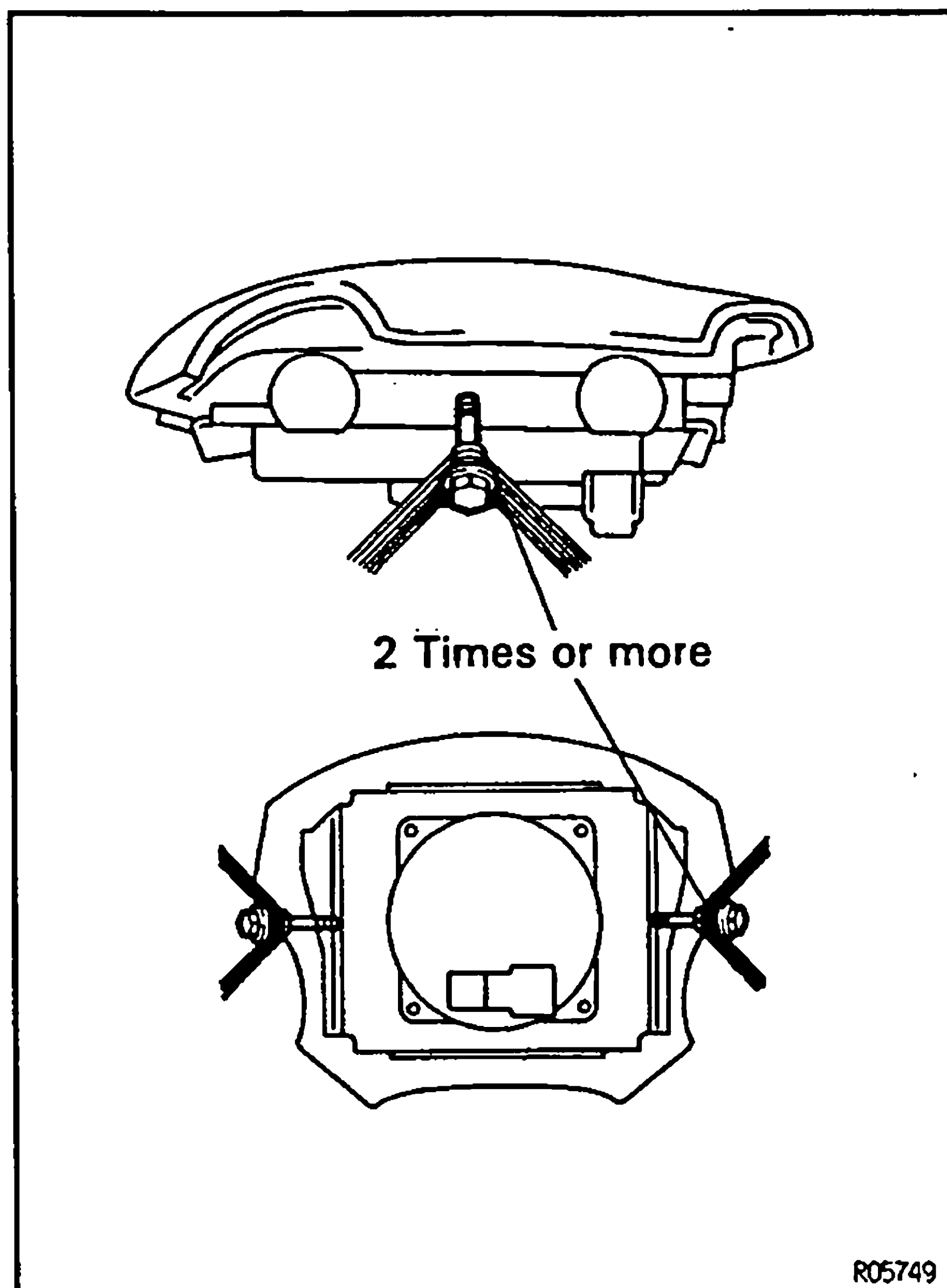
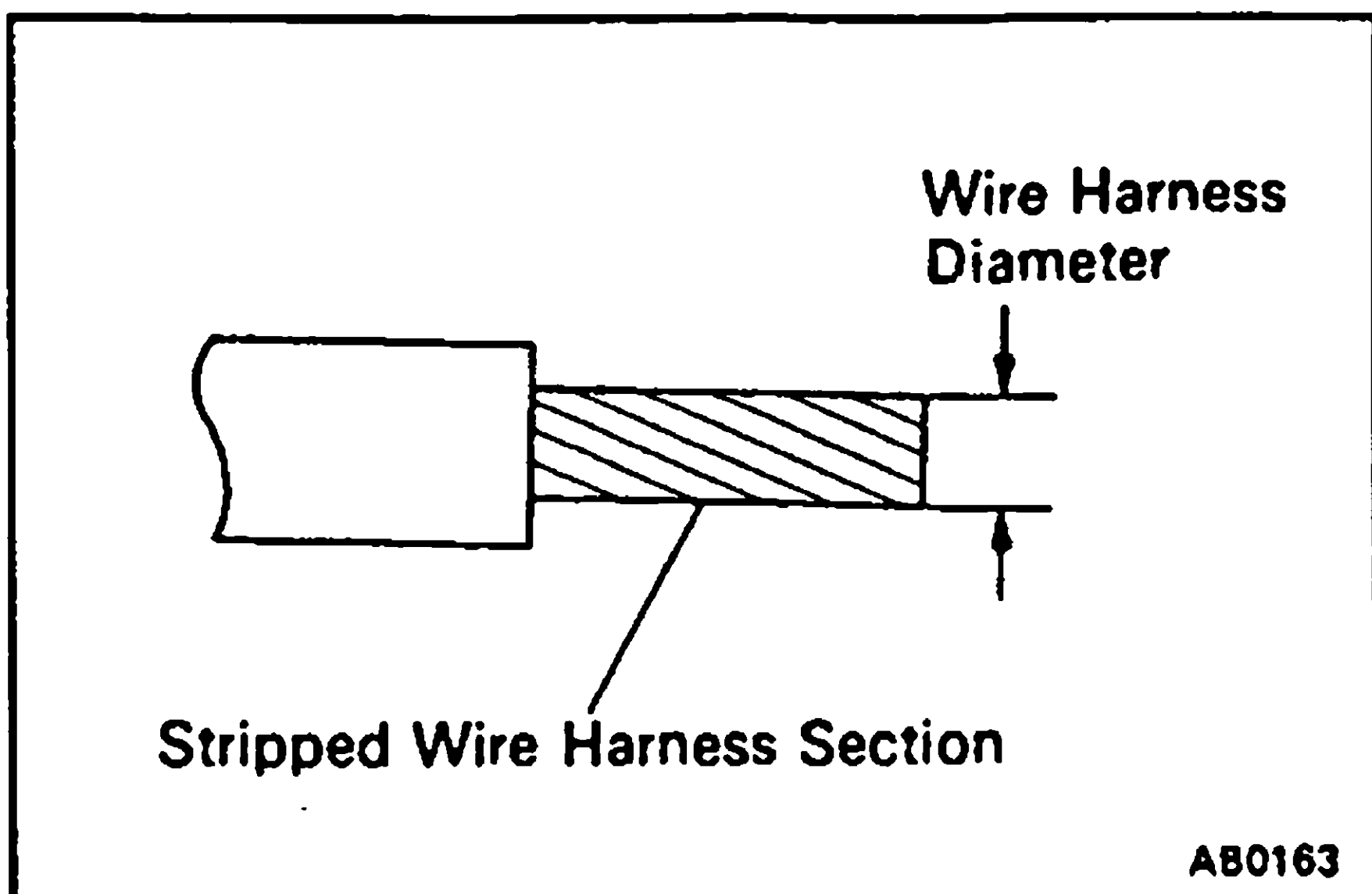


3. FIX STEERING WHEEL PAD TO DISC WHEEL WITH TIRE

- (a) Install the 2 bolts with washer in the 2 bolt holes in 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 bolts too much.
- (b) Using a service—purpose wire harness for the vehicle tie down the steering wheel pad to the disc wheel.

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, it may be snapped by the shock when the airbag is deployed. This is highly dangerous. Always use a wire harness for vehicle use which is at least 1.25 mm² (0.0019 in²).

- (1) 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

- (2) 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.

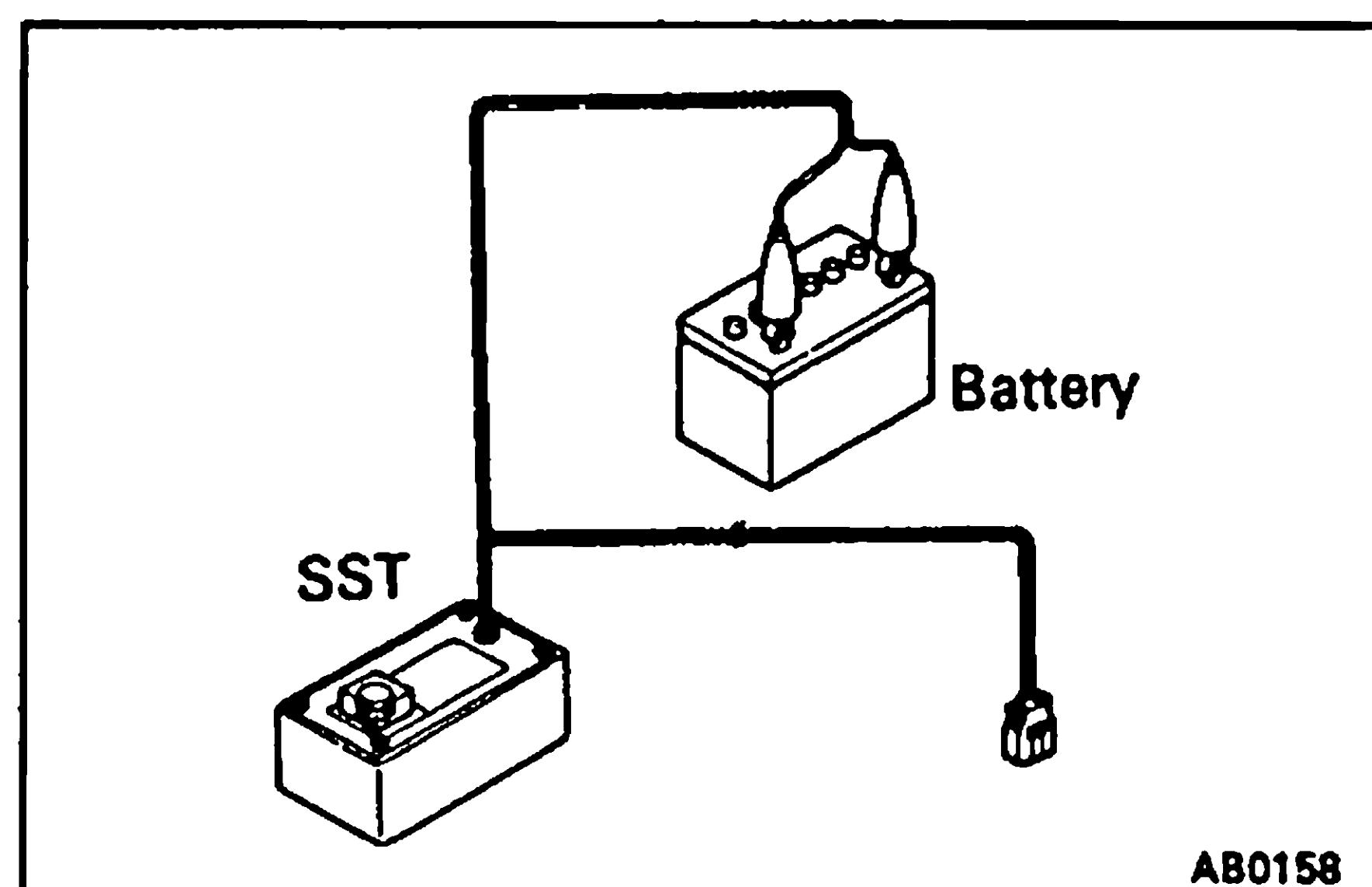
Position the steering wheel pad connector so that it hangs downward through a hub hole in the disc wheel.

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.

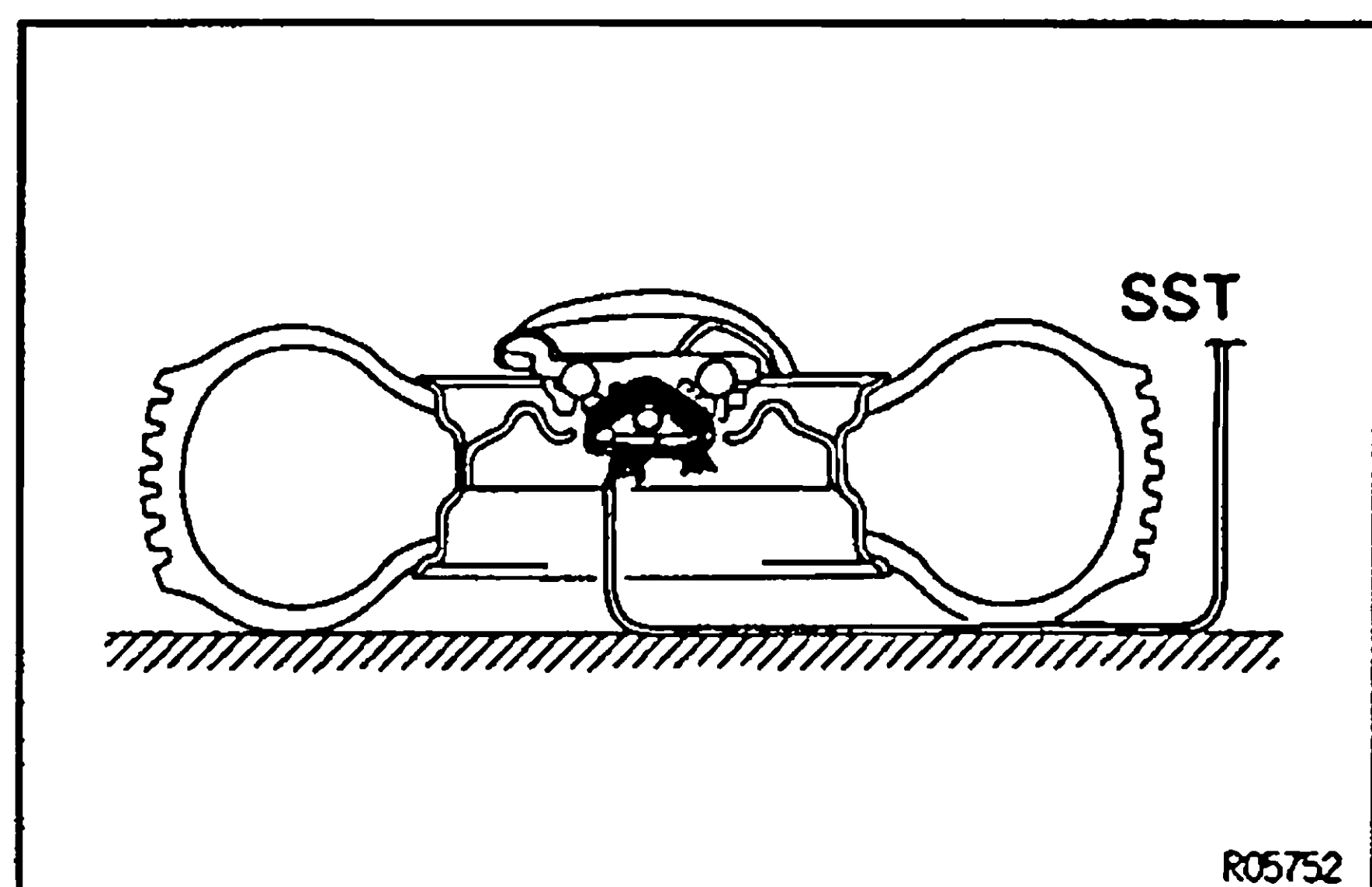
HINT: The disc wheel will be marked by airbag deployment, so use a redundant disc wheel.

RS

**4. CONFIRM FUNCTIONING OF SST**

(See page RS-18)

SST 09082-00070

**5. INSTALL SST**

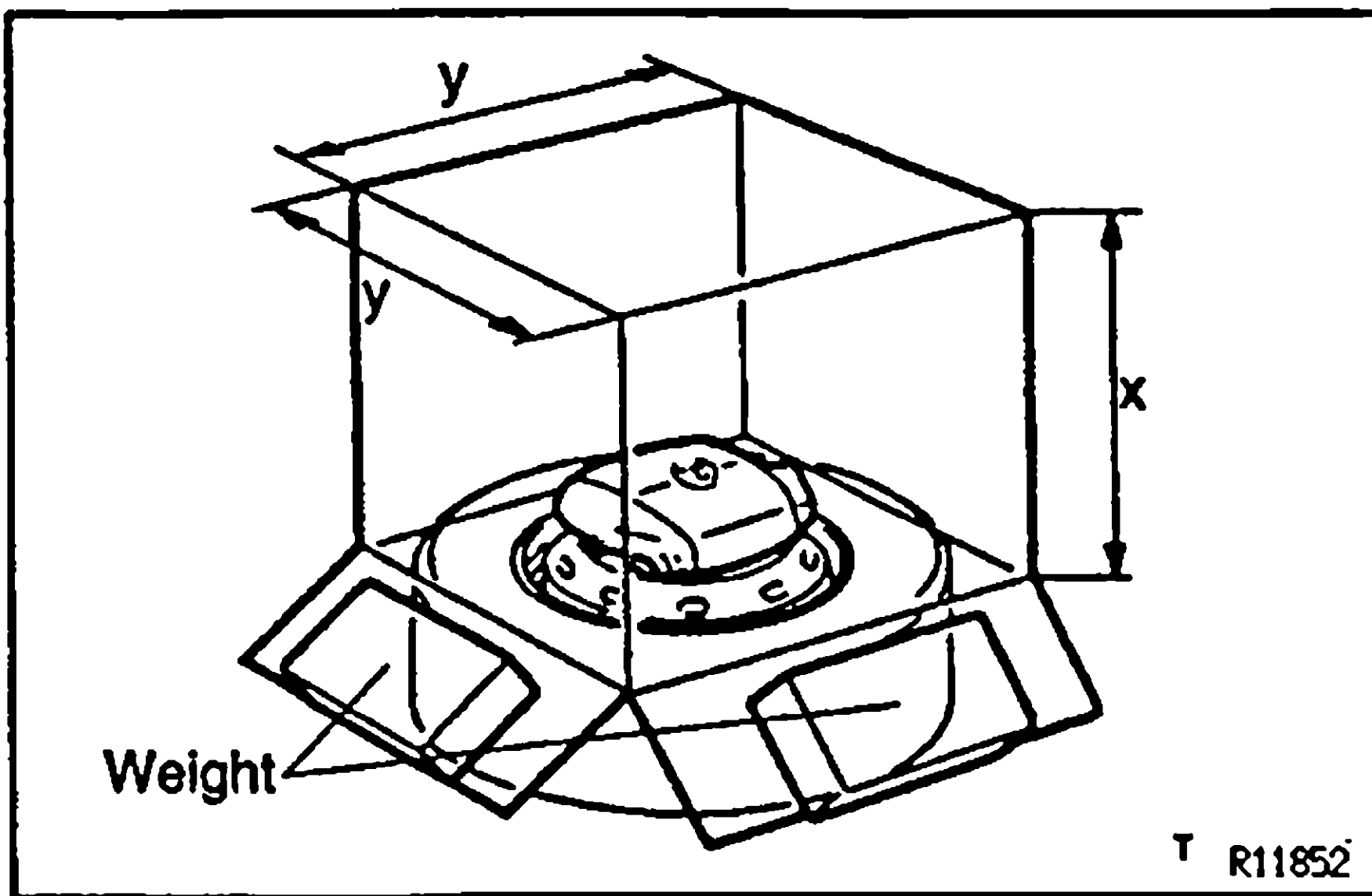
CAUTION: Place the disc wheel on level ground.

- (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) Move the SST to at least 10 m (33 ft) away from the steering wheel pad tied down on the disc wheel.



6. 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—

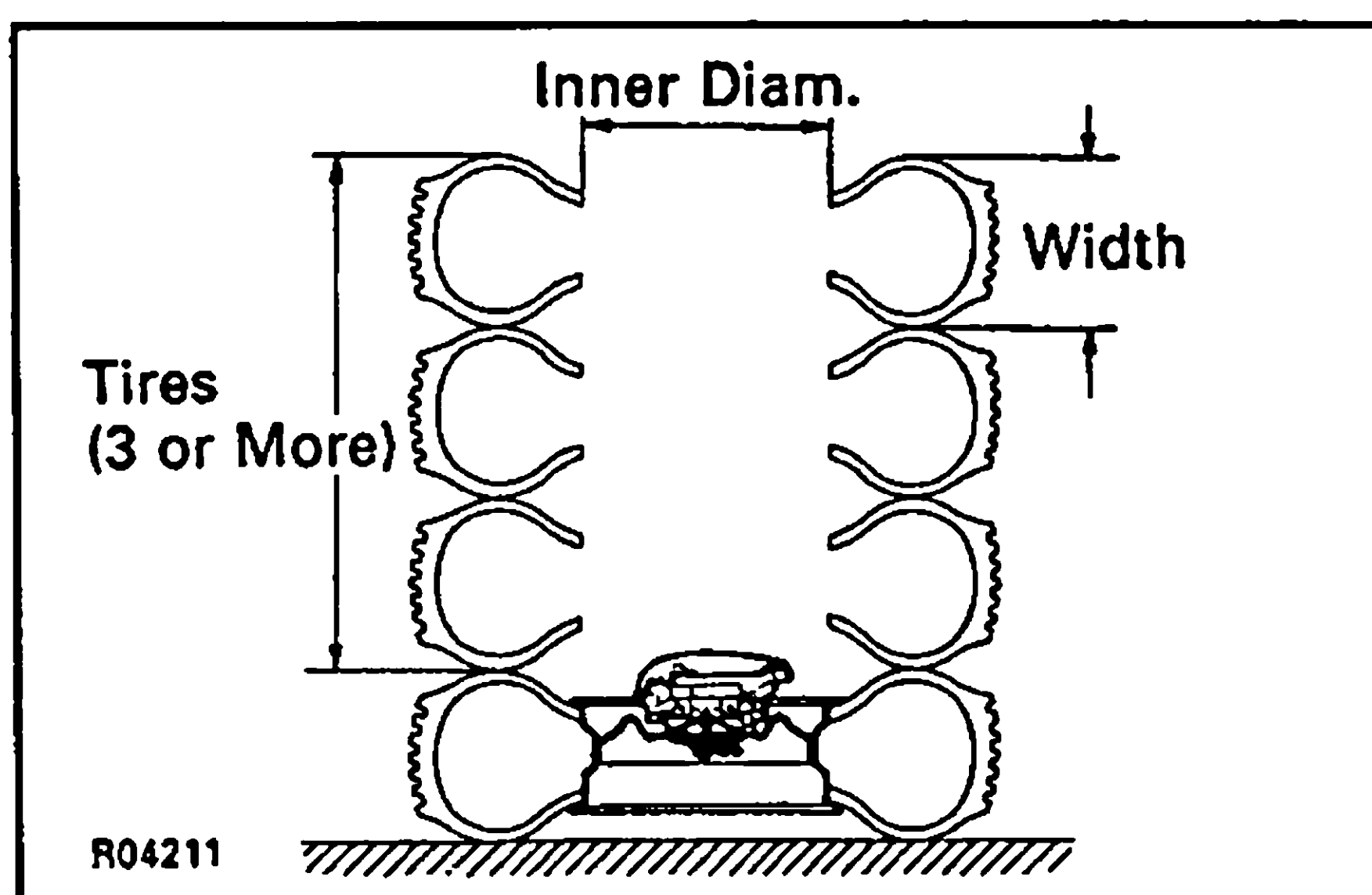
$x = 460 \text{ mm (18.11 in.)}$

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 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.

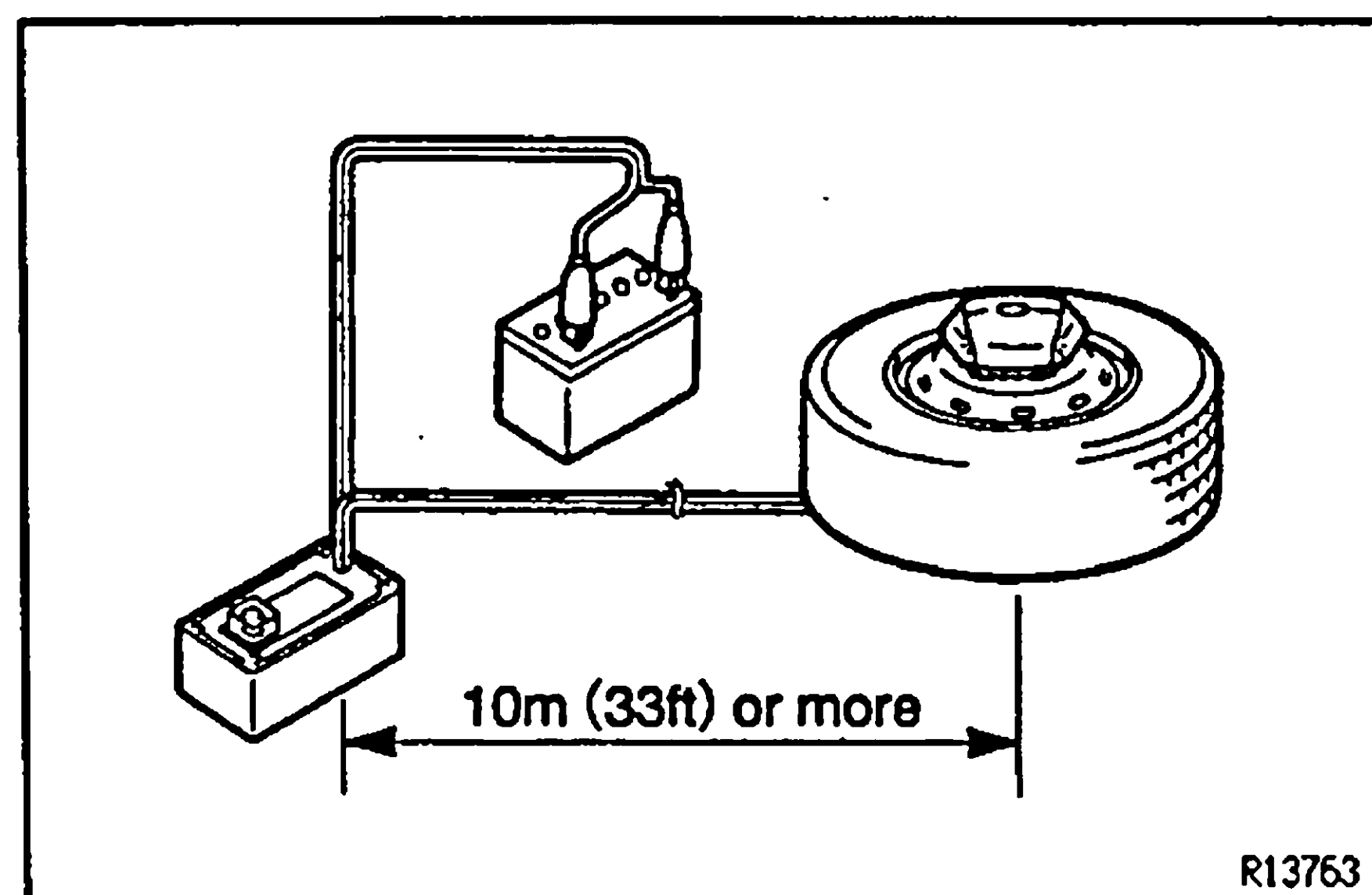
Tire size: Must exceed the following dimensions—

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.



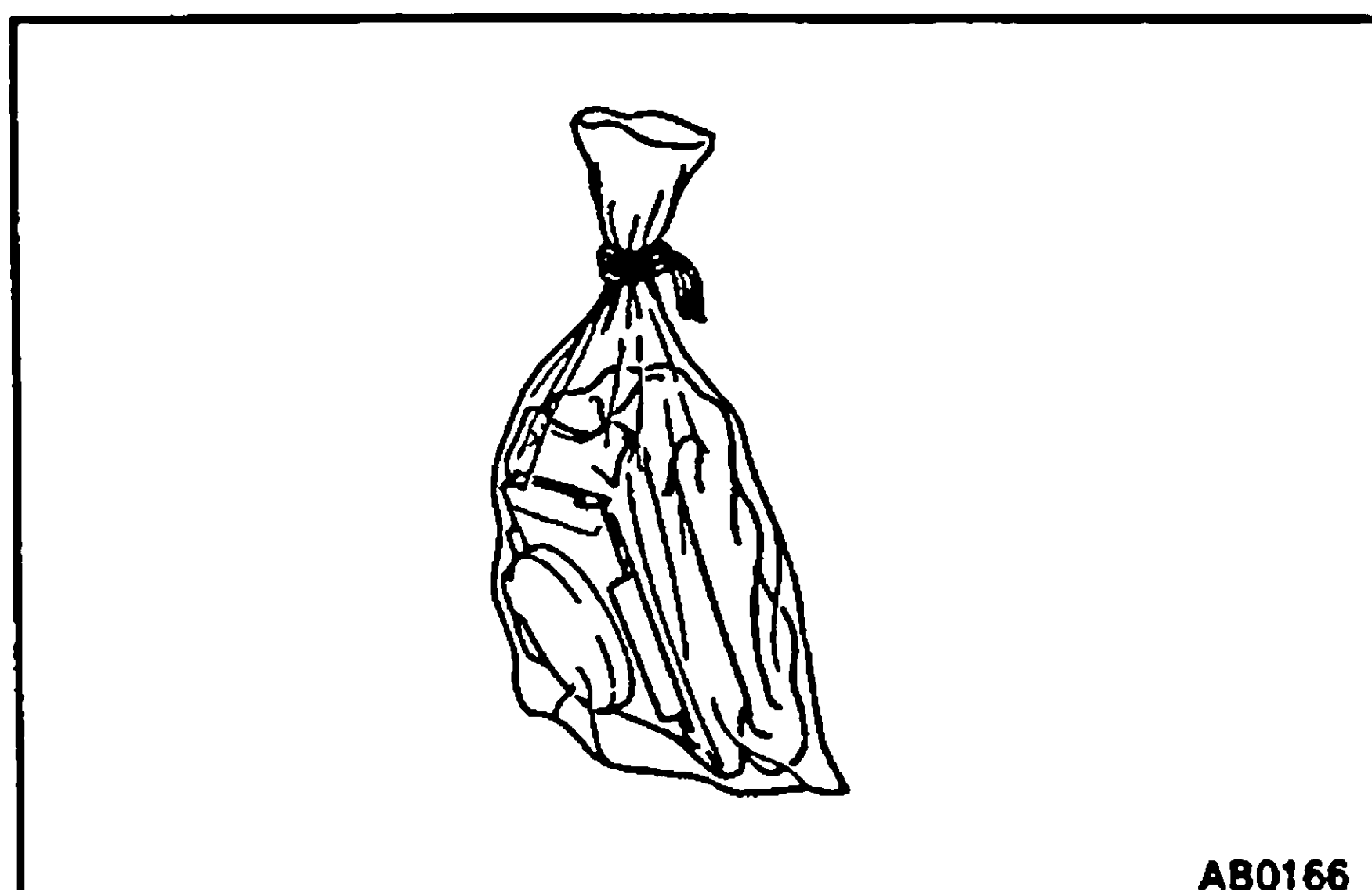
7. AIRBAG DEPLOYMENT

- 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 disc wheel the steering wheel pad 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.

8. DISPOSAL OF STEERING WHEEL PAD (WITH AIRBAG)

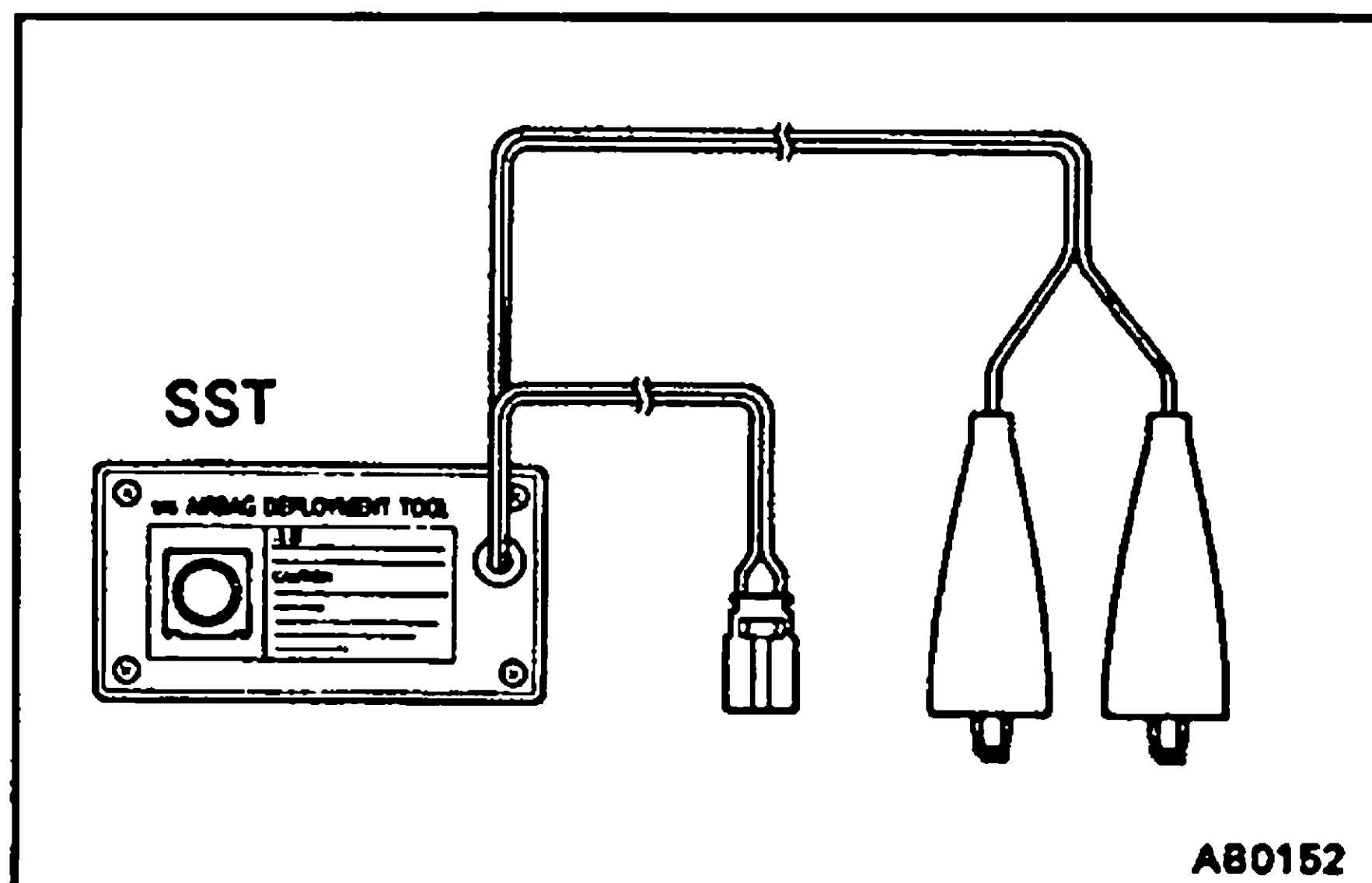
CAUTION:

- The steering wheel pad 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 with deployed airbag.



RS

- Do not apply water, etc. to a steering wheel pad with deployed airbag.
 - Always wash your hands with water after completing the operation.
- (a) Remove the steering wheel pad from the disc wheel.
 - (b) Place the steering wheel pad in a vinyl bag, tie the end tightly and dispose of it the same way as other general parts.

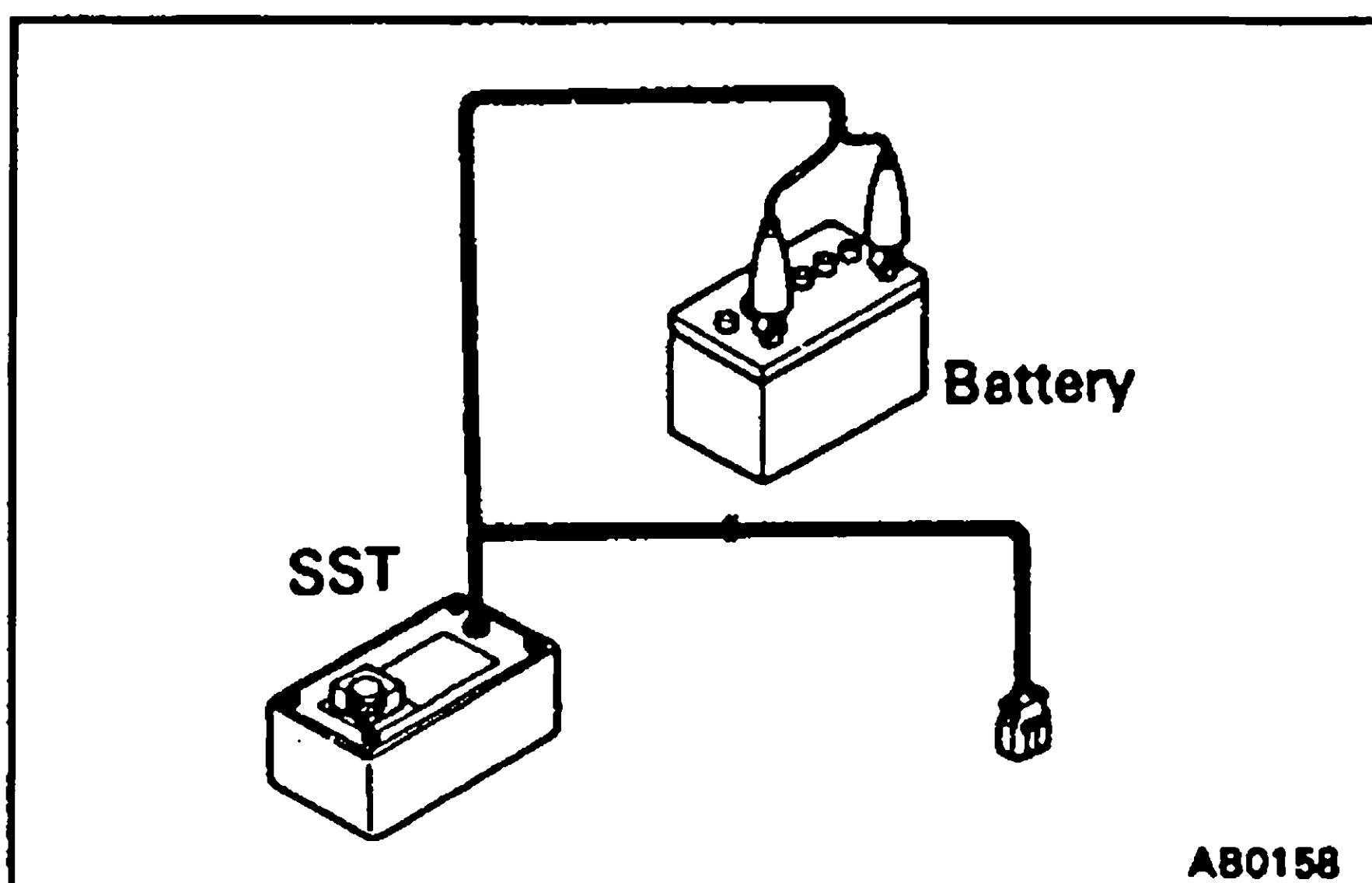


CONFIRM FUNCTIONING OF SST

RB014-03

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

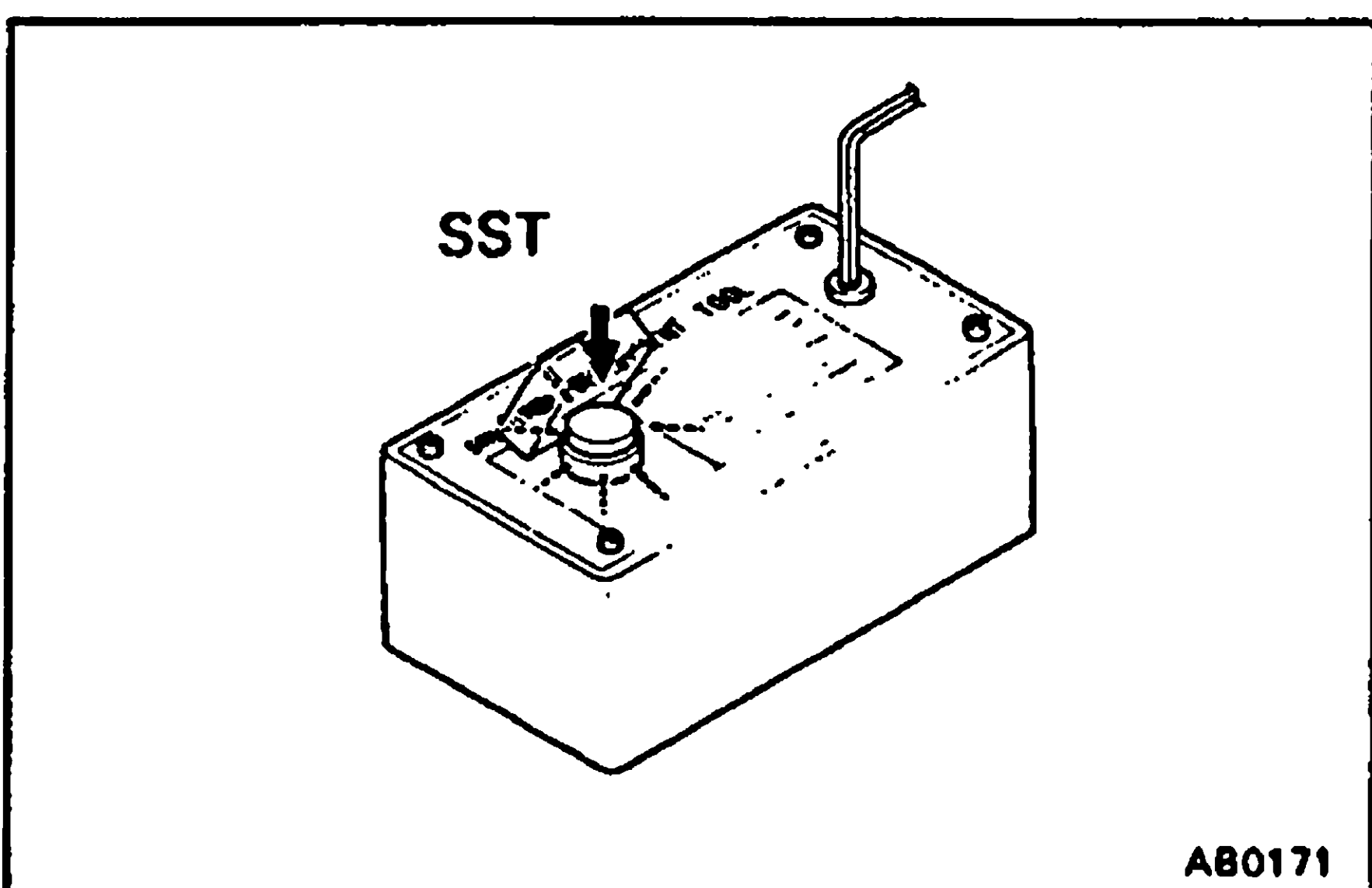
RS



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.

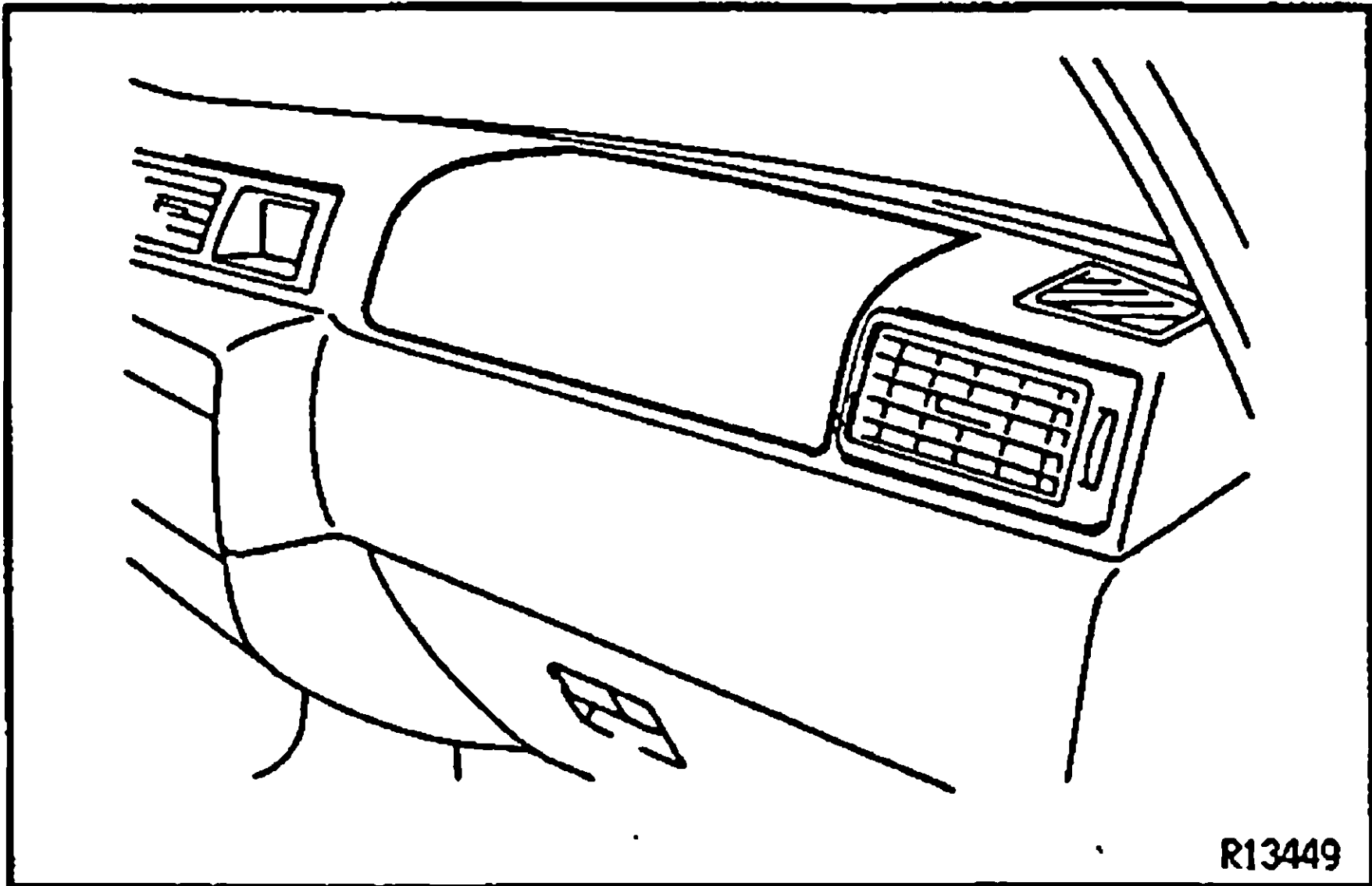
HINT: Do not connect the yellow connector which connects with the supplemental restraint system.



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.

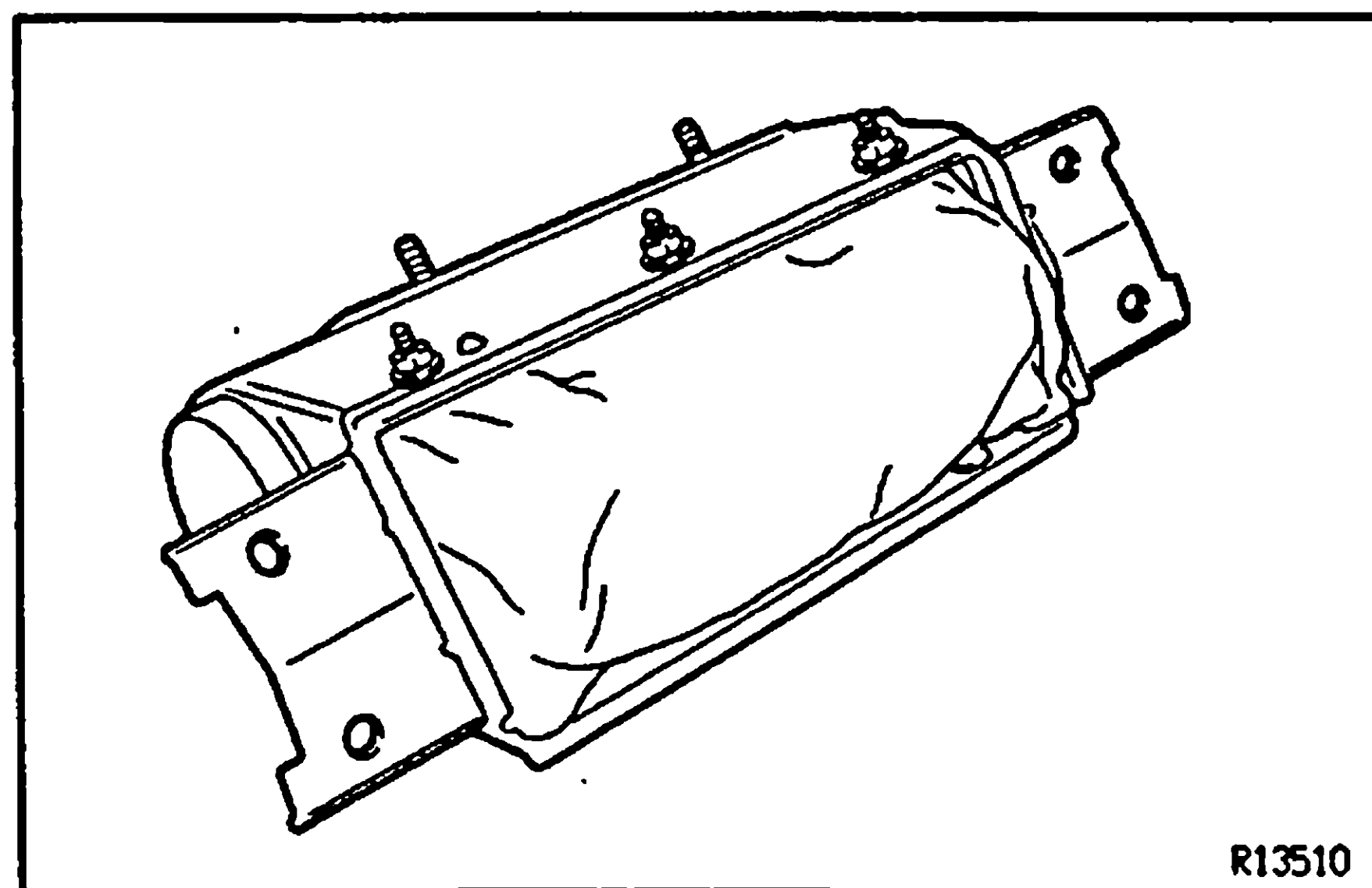


FRONT PASSENGER AIRBAG ASSEMBLY INSPECTION ITEMS

R8032-0A

1. VEHICLES NOT INVOLVED IN A COLLISION

- (a) Do a diagnostic system check.
(See page RS-38)
- (b) Do a visual check which includes the following items with the front passenger airbag assembly installed in the vehicle.
 - Check for cuts, minute cracks or marked discoloration of the front passenger airbag door.



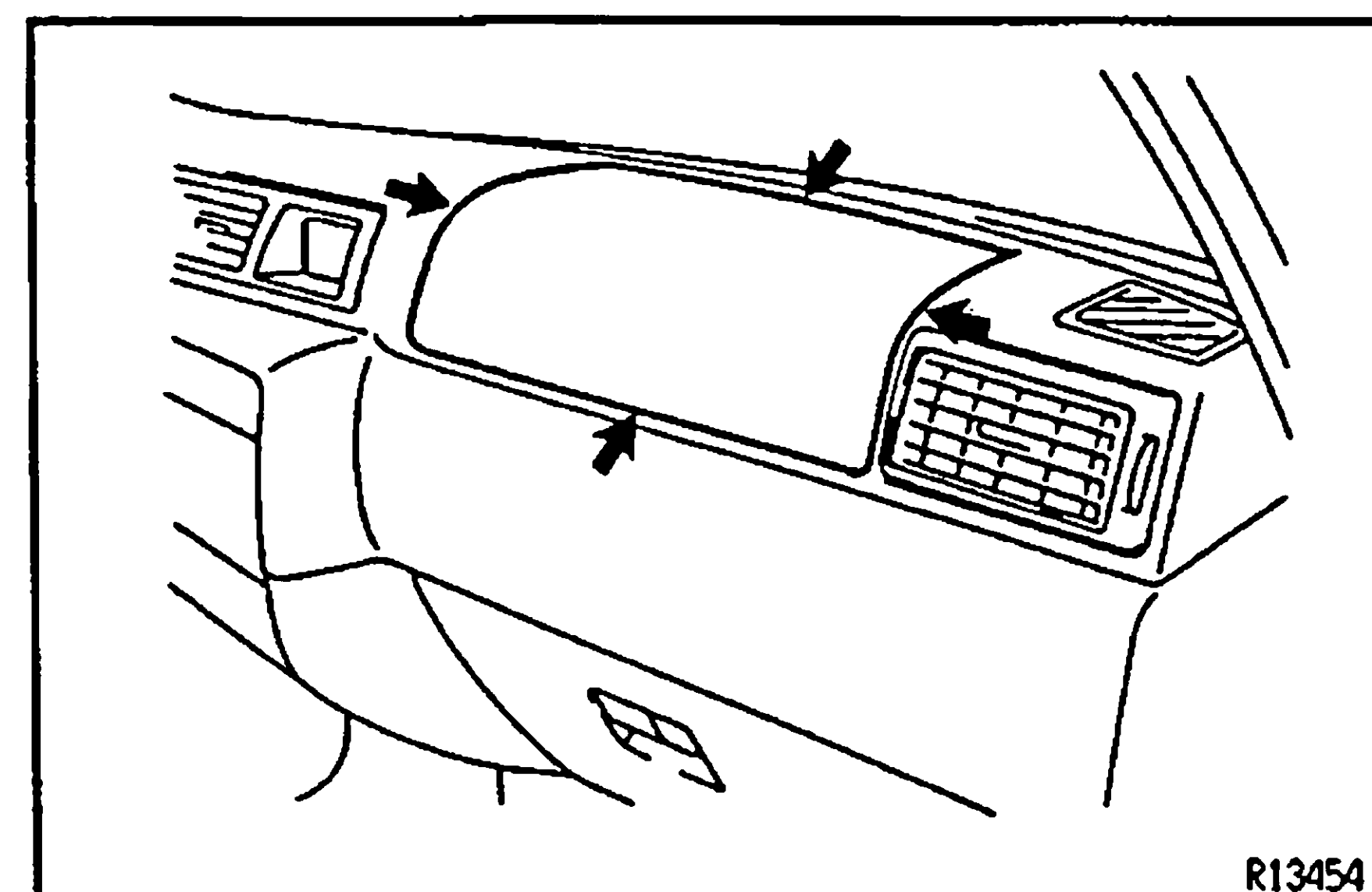
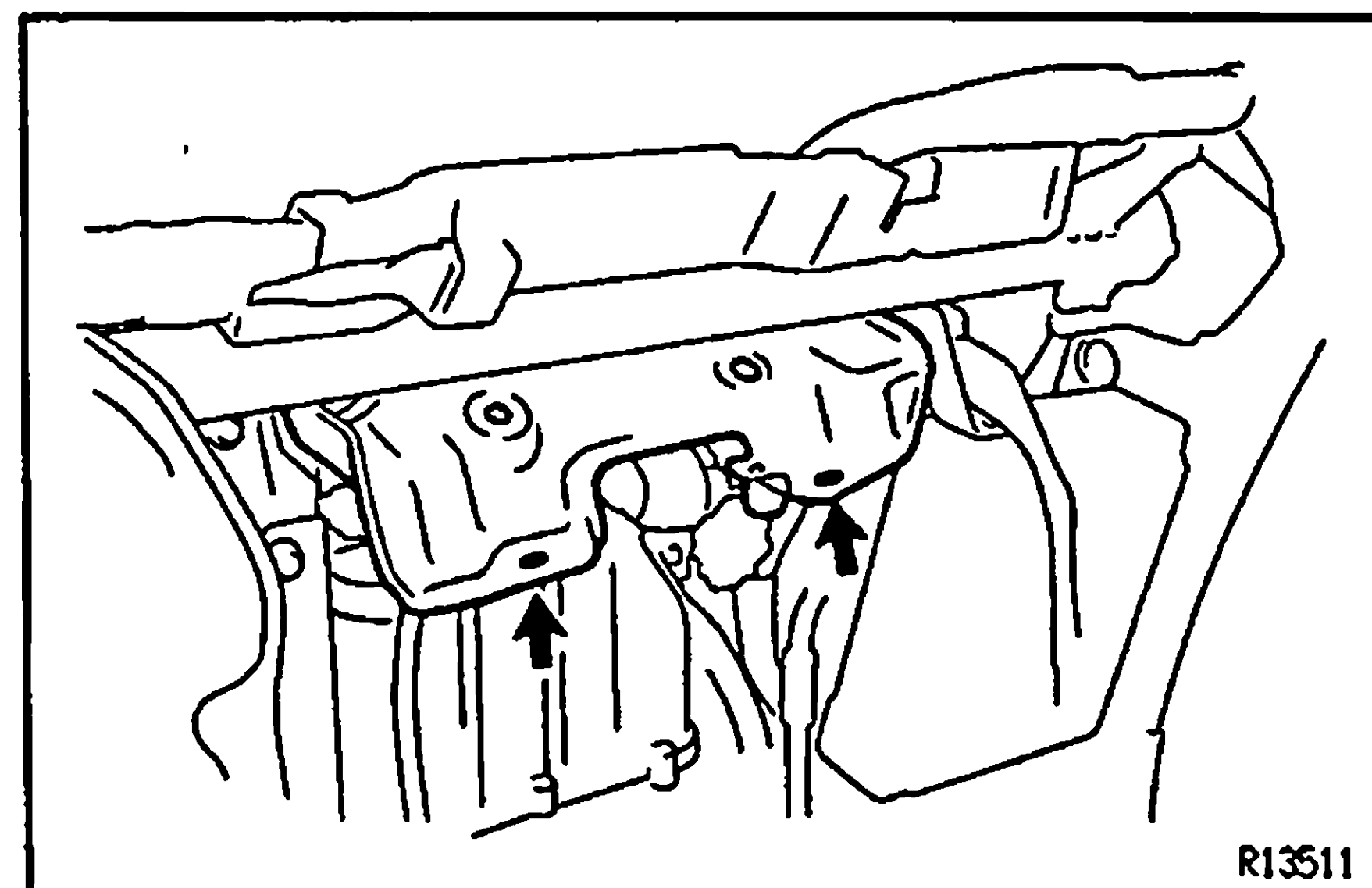
2. VEHICLE INVOLVED IN A COLLISION IF THE AIRBAG IS NOT DEPLOYED

- (a) Do a diagnostic system check.
(See page RS-38)
- (b) Do a visual check which includes the following items with the airbag assembly removed from the vehicle.
 - Check for cuts and cracks in, or marked discoloration of, the front passenger airbag door.
 - Check for cuts and cracks in wire harnesses, and for chipping in connectors.
 - Check for deformation of the instrument panel and instrument panel reinforcement.

HINT:

- If the instrument panel or instrument panel reinforcement is deformed, never repair it. Always replace it with a new one.
- There should be no interference between the instrument panel and front passenger airbag door, or the glove compartment door and front passenger airbag door. The clearance should be uniform all the way around when the new airbag assembly is installed on the instrument panel.

CAUTION: For removal and installation of the front passenger airbag assembly, see page RS-21 and be sure to follow the correct procedure.



RS

IF THE AIRBAG IS DEPLOYED

- (a) Do a diagnostic system check.
(See page RS—38)
- (b) Do a visual check which includes the following items with the airbag assembly removed from the vehicle.
 - Check for deformation of the instrument panel, instrument panel reinforcement and glove compartment door.
 - Check for damage to the connector and wire harness.

HINT:

- If the instrument panel or instrument panel reinforcement is deformed, never repair it. Always replace it with a new one.
- There should be no interference between the instrument panel and front passenger airbag door, or the glove compartment and front passenger airbag door. The clearance should be uniform all the way around when the new airbag assembly is installed on the instrument panel.

RS

RS01M—0P

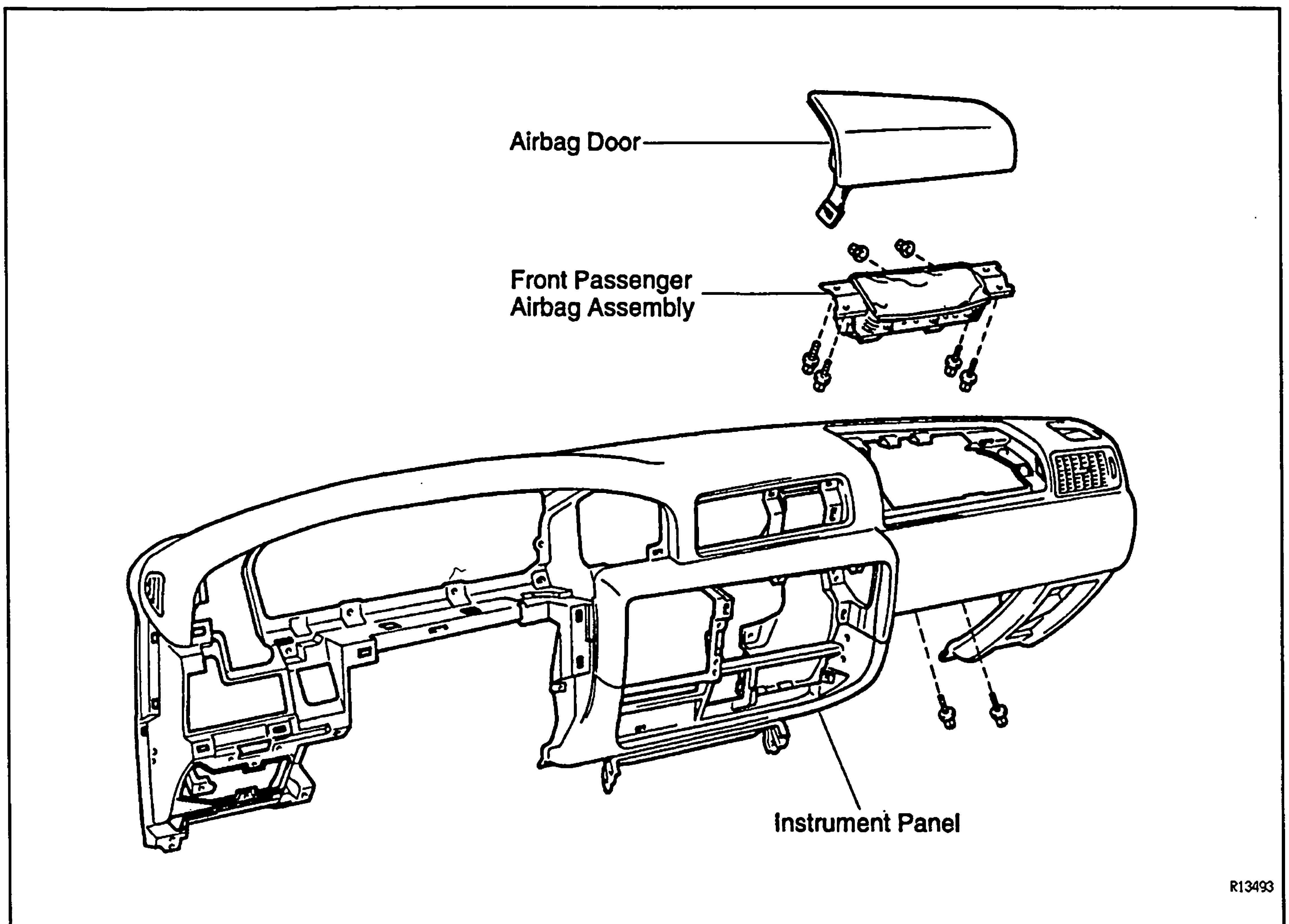
REPLACEMENT REQUIREMENTS

In the following case, replace the front passenger airbag assembly, instrument panel, instrument panel reinforcement and glove compartment door.

- If the airbag has been deployed.
- If the front passenger airbag assembly has been found to be faulty in troubleshooting.
- If the front passenger airbag assembly, instrument panel, instrument panel reinforcement or glove compartment door has been found to be faulty during the check in items 1—(b) or 2—(b).
- If the front passenger airbag assembly has been dropped.

CAUTION: For replacement of the front passenger airbag assembly, see page RS—21, and be sure to follow the correct procedure.

COMPONENTS



RS

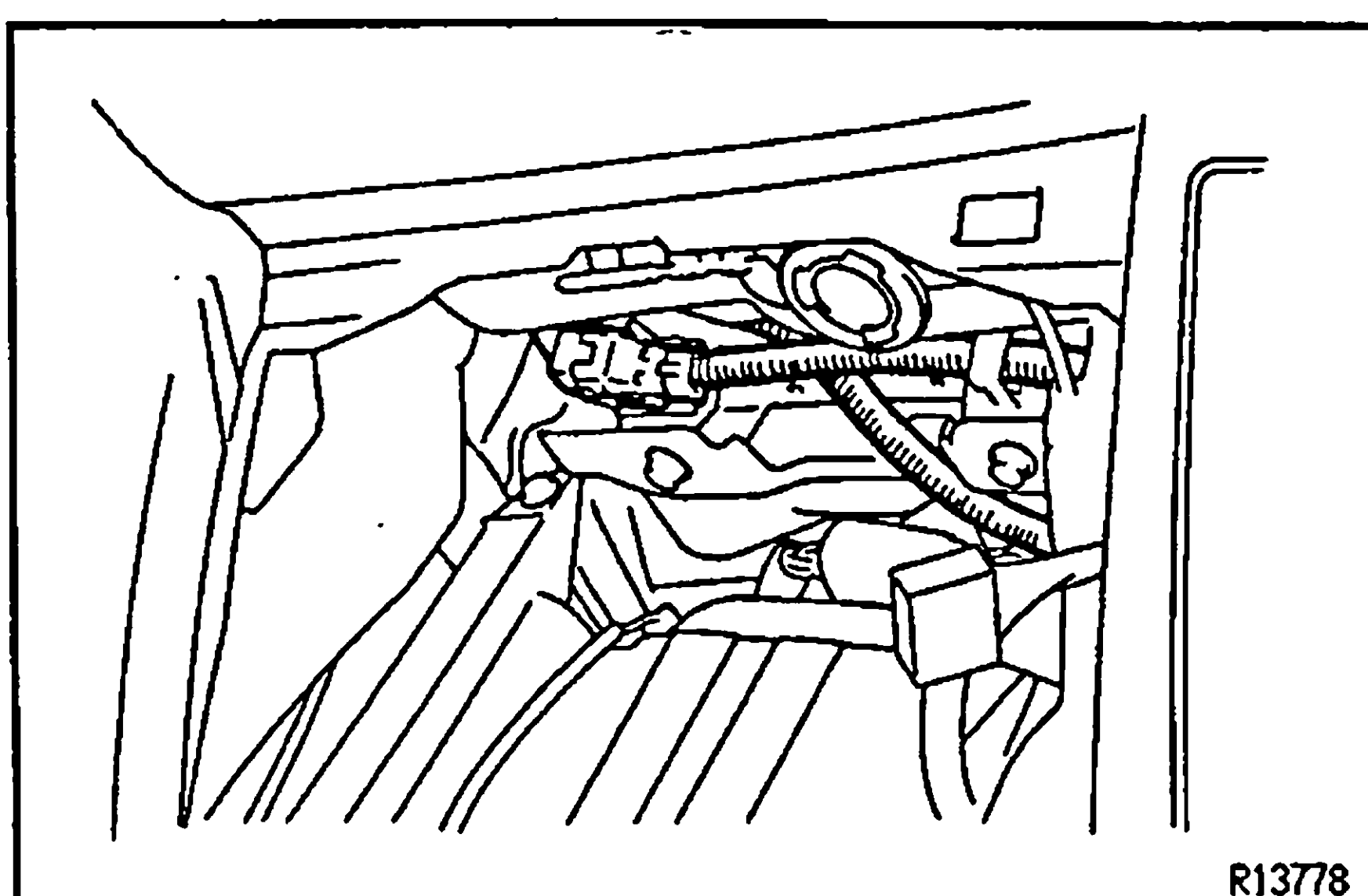
R13493

FRONT PASSENGER AIRBAG ASSEMBLY REMOVAL AND INSTALLATION

R808Q-01

NOTICE:

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



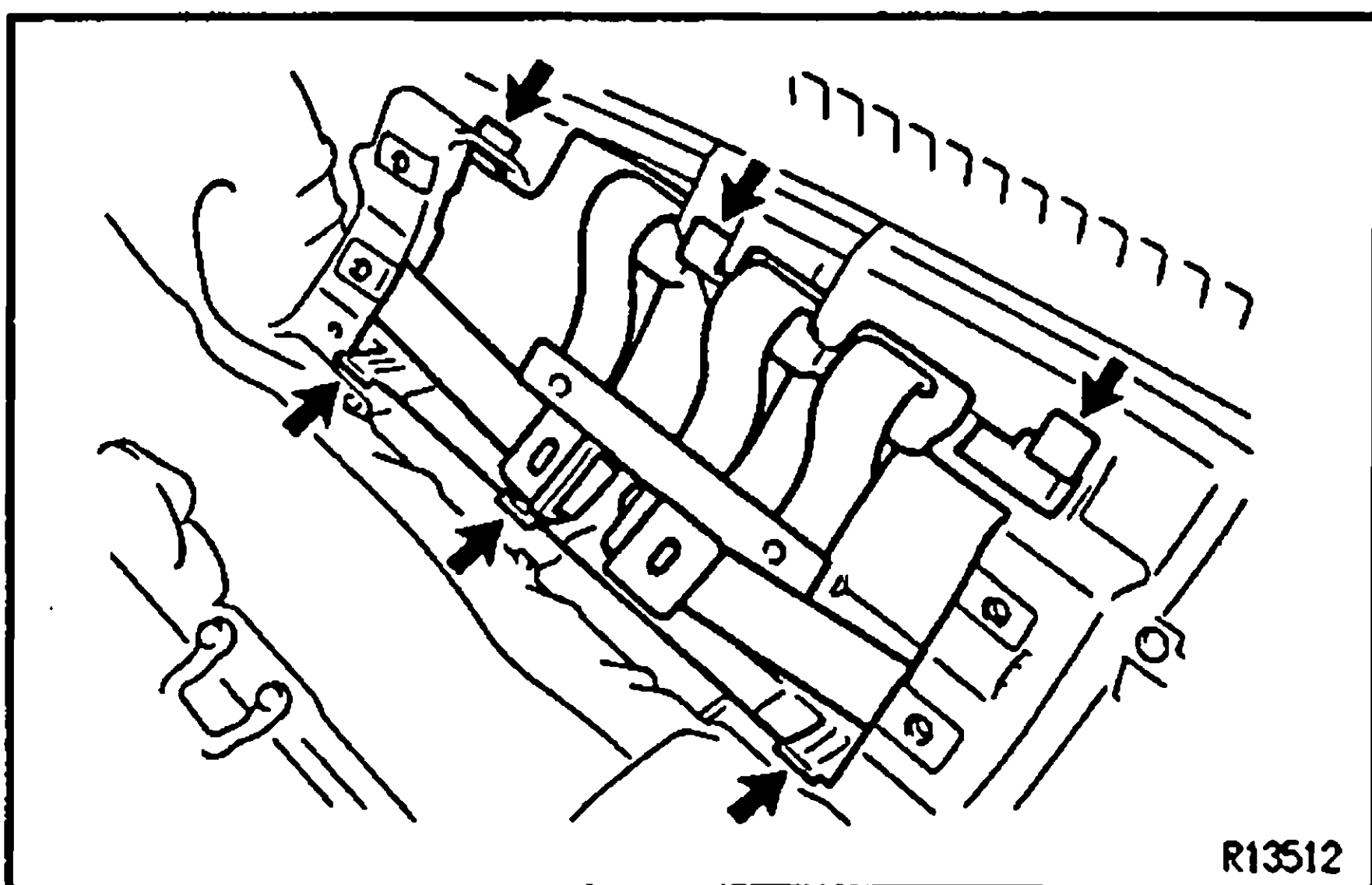
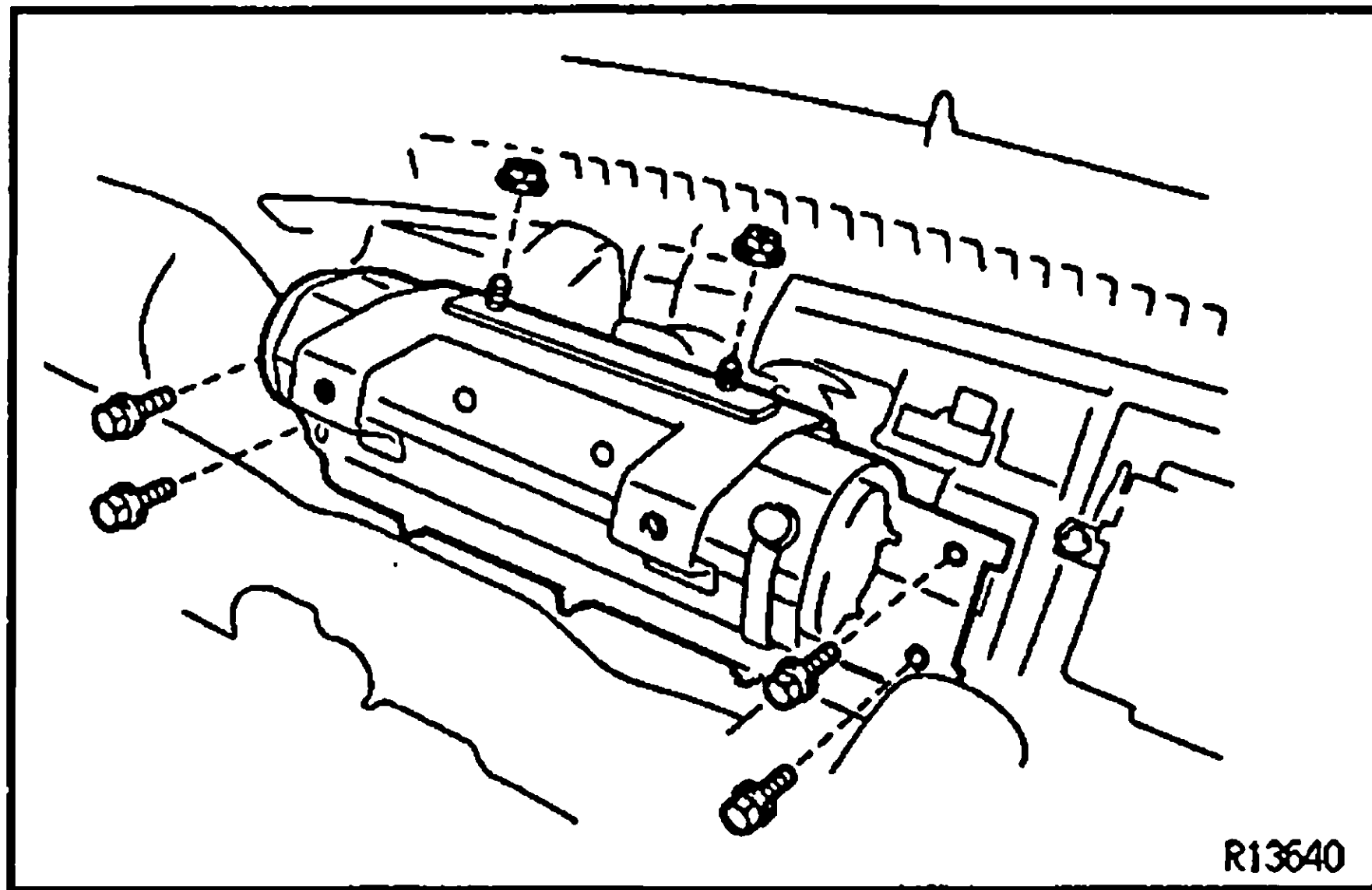
R13778

1. DISCONNECT AIRBAG CONNECTOR

- Remove the glove compartment door.
(See page BO-34)
- Remove the airbag connector from the airbag bracket.

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

- Disconnect the airbag connector.



2. REMOVE INSTRUMENT PANEL

(See pages BO—34)

3. REMOVE AND INSTALL FRONT PASSENGER AIRBAG ASSEMBLY

- Remove the 4 bolts and 2 nuts, and remove front passenger airbag assembly.
- Pry up the 6 clips shown in the illustration and remove the airbag door.

CAUTION:

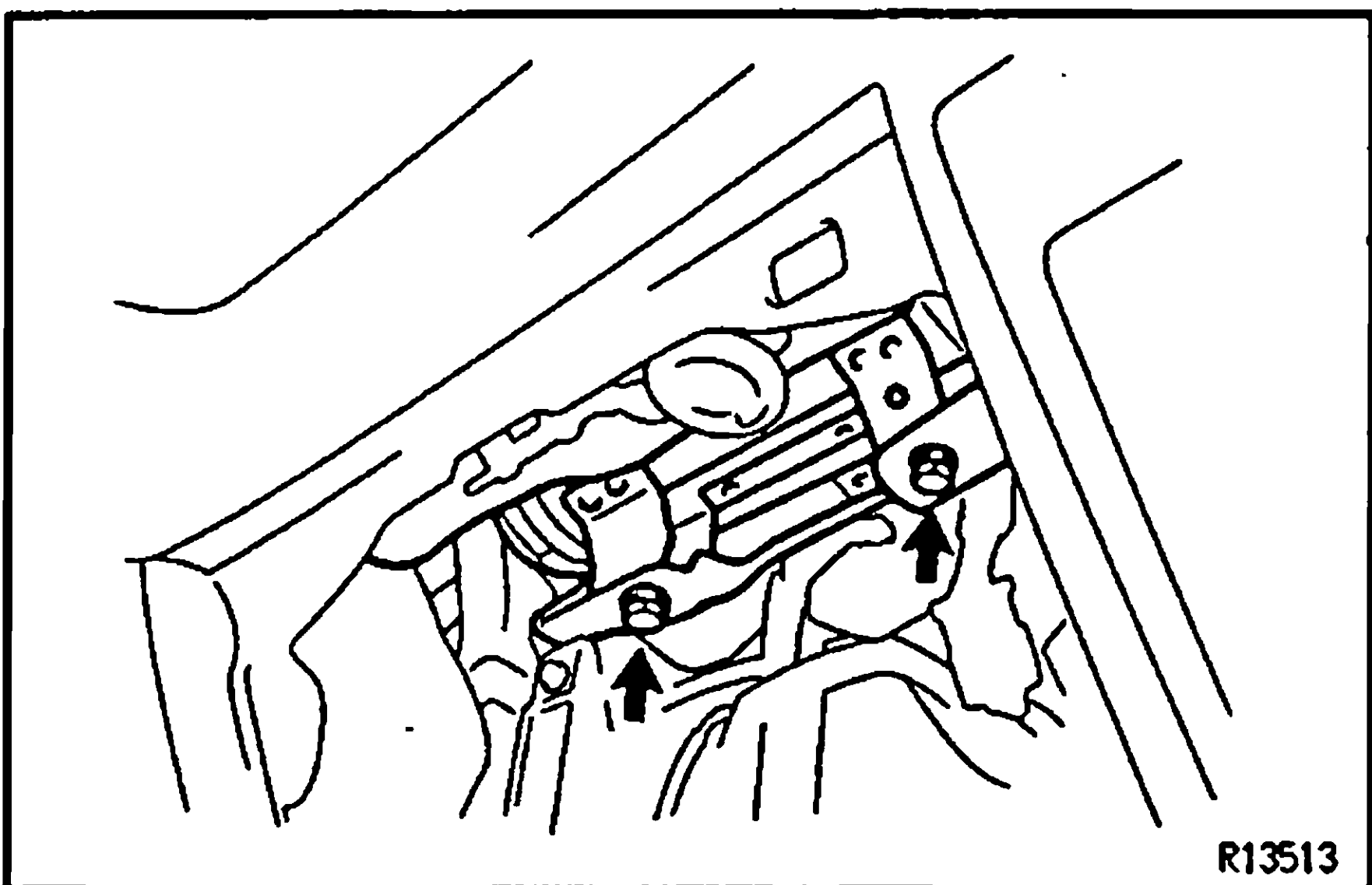
- Do not store the front passenger airbag assembly with the airbag deployment direction facing down.
- Never disassemble the front passenger airbag assembly.

- Install the airbag door 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 airbag door.

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.



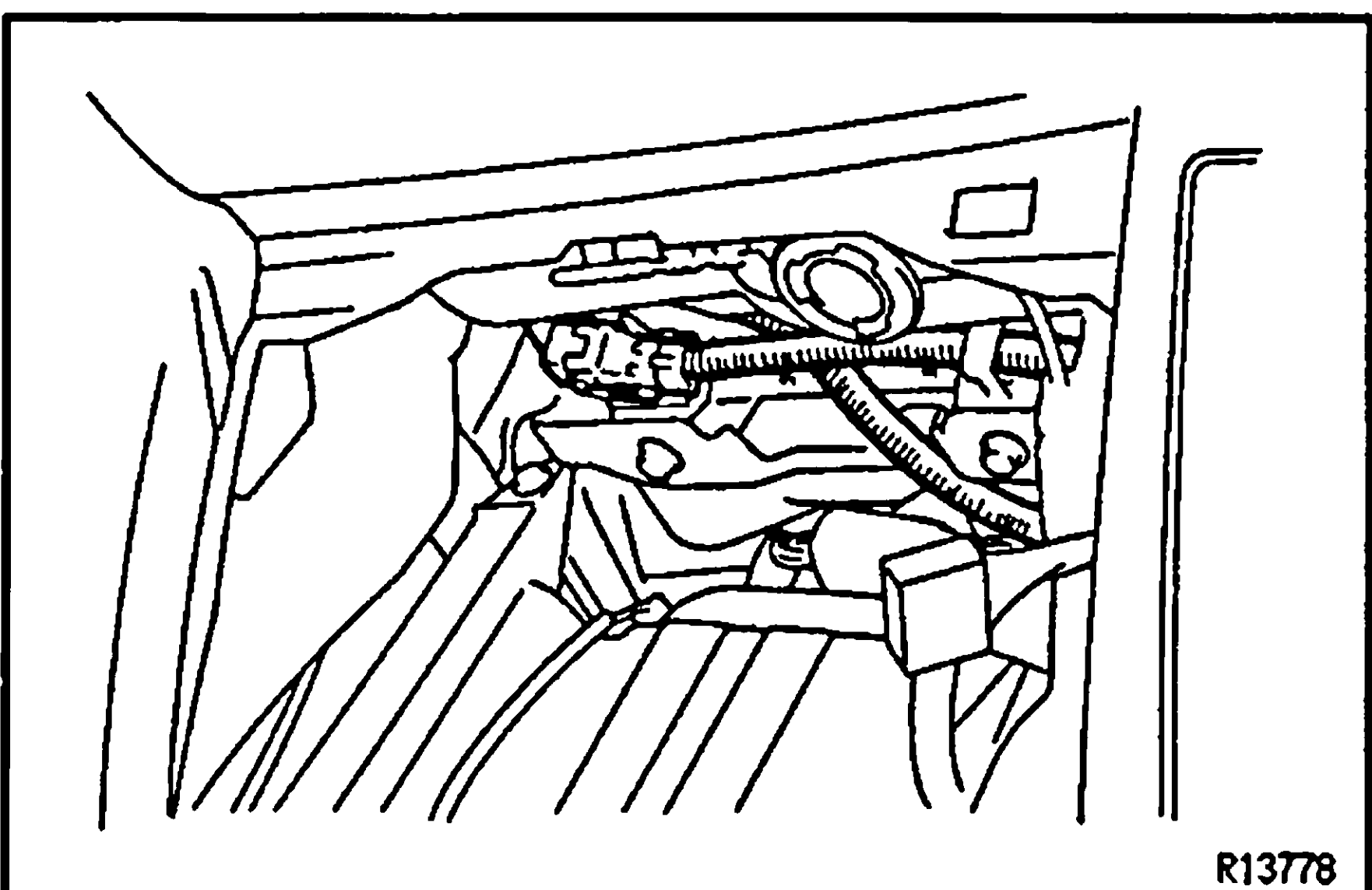
4. INSTALL INSTRUMENT PANEL

(See page BO—34)

Install the 2 bolts to instrument panel reinforcement.
Torque: 20N·m (210kgf·cm, 15ft·lbf)

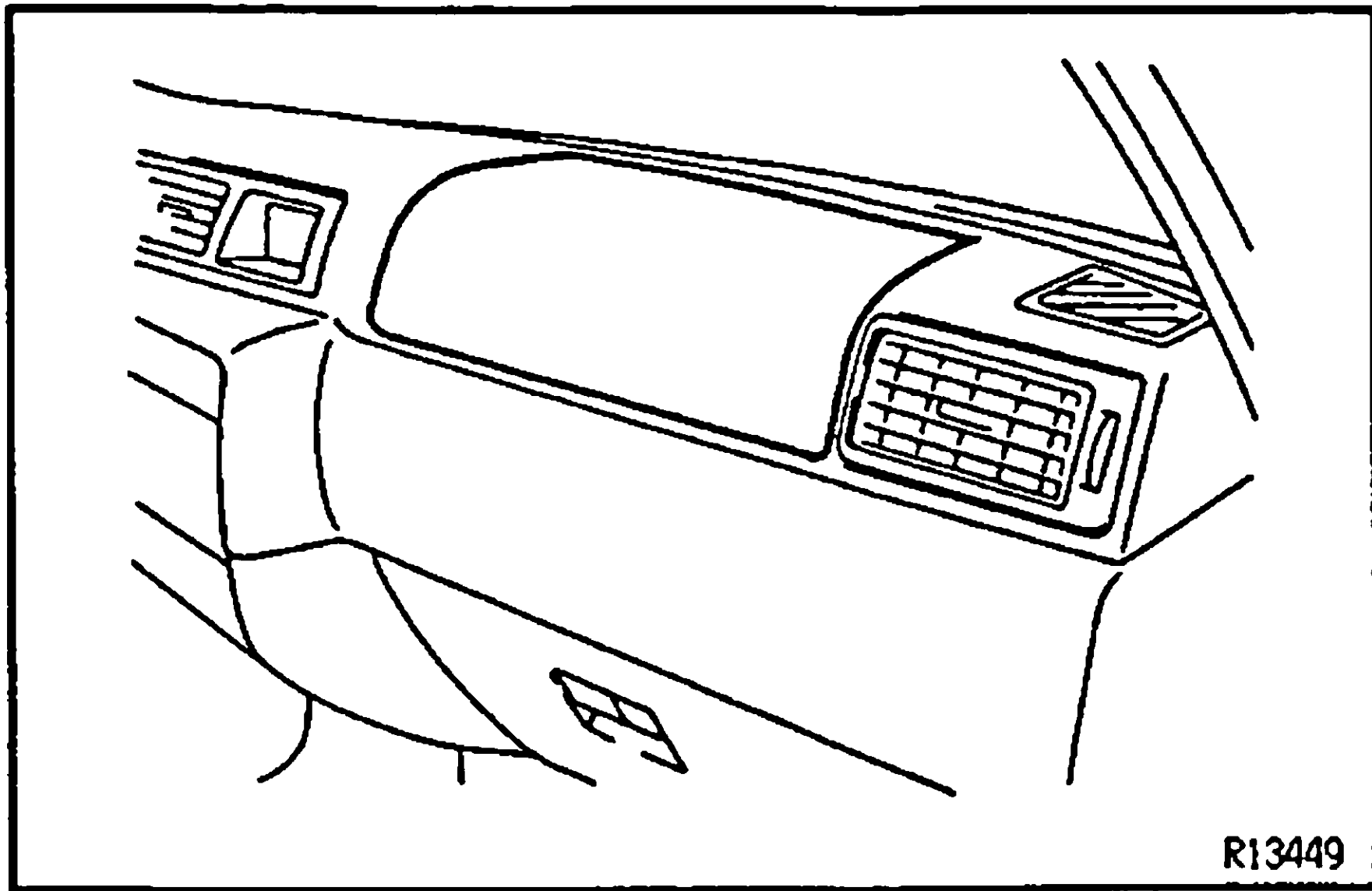
NOTICE:

- Make sure 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.
- Install the airbag connector to the airbag bracket.
- Install the glove compartment door.



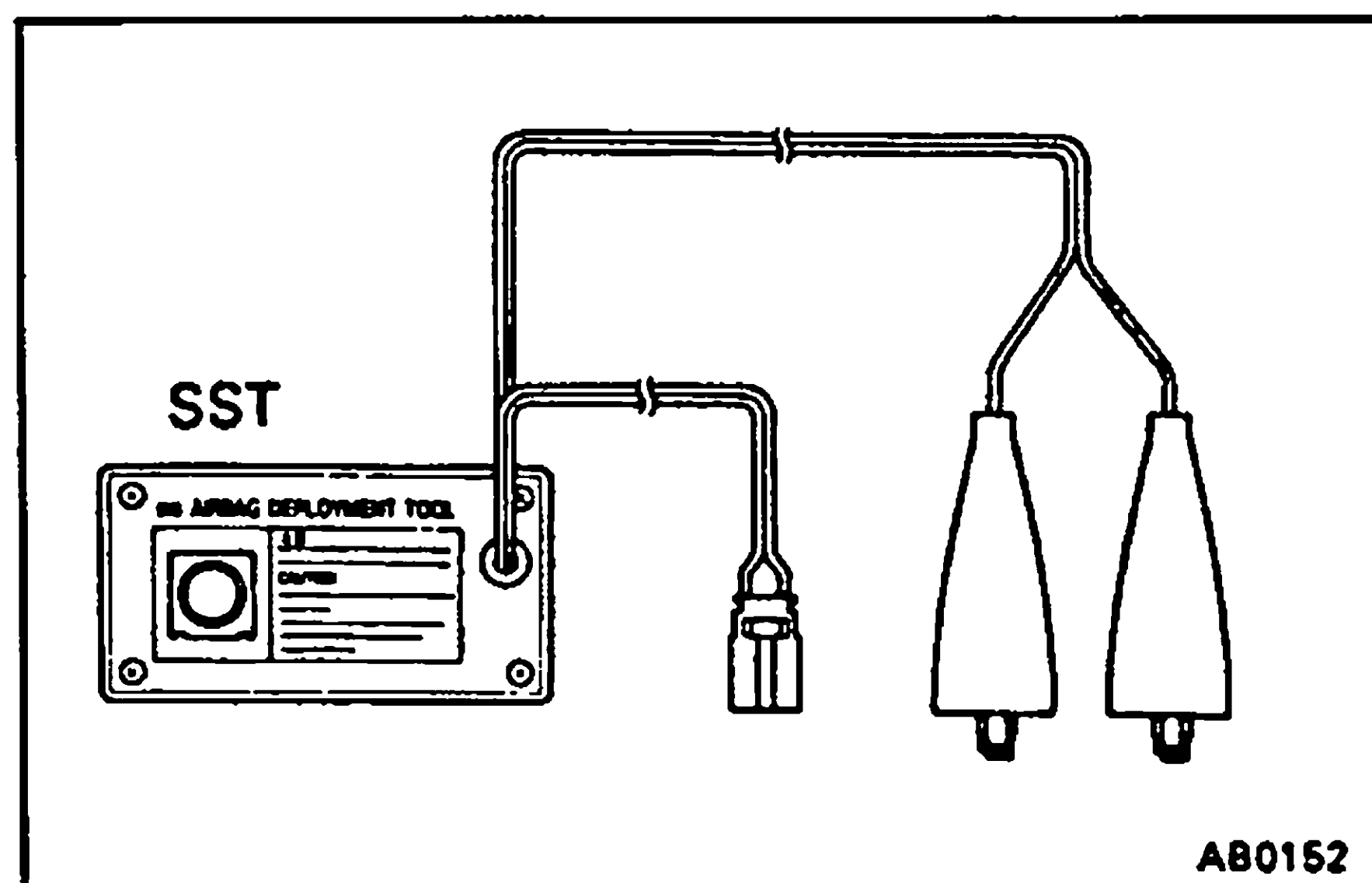
FRONT PASSENGER AIRBAG ASSEMBLY^{RS00R-03} DISPOSAL

When scrapping vehicles equipped with an SRS or disposing of a 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.

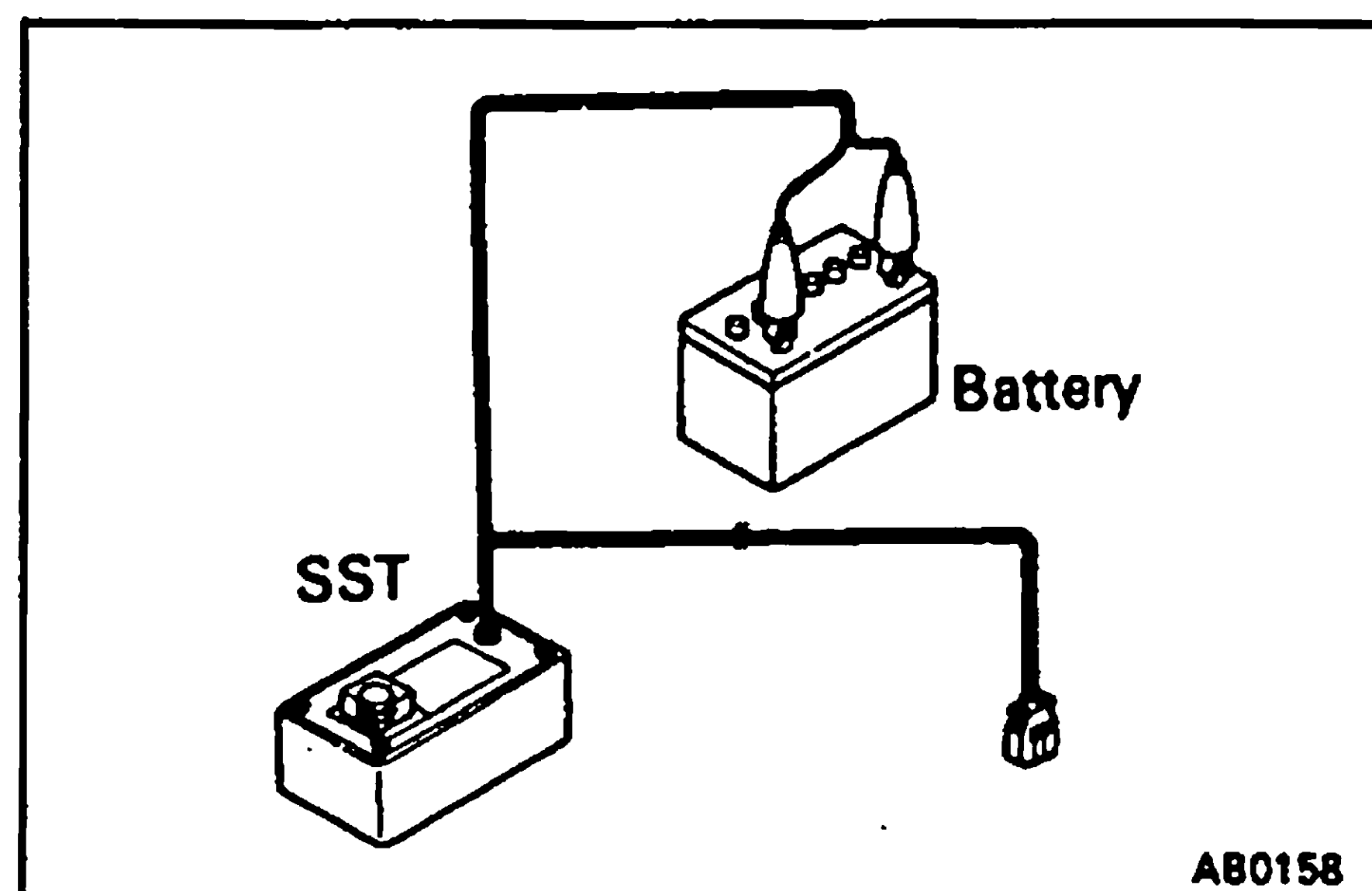
Never dispose of a front passenger airbag assembly which has an undeployed airbag.

When disposing of a front passenger airbag assembly with an airbag deployed in a collision, follow the same procedure given under "When scrapping vehicle, step 5. DISPOSAL OF FRONT PASSENGER AIRBAG ASSEMBLY". (See page RS-25)



PRECAUTIONS FOR AIRBAG DEPLOYMENT

- The airbag produces a sizeable exploding sound when it deploys, so perform 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).
Perform the operation in a place away from electrical noise.
- When deploying an airbag, perform the operation from at least 10 m (33 ft) away from the front passenger airbag assembly.
- The 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 front passenger airbag assembly with deployed airbag.
- Always wash your hands with water after completing the operation.
- Do not apply water, etc., to a front passenger airbag assembly deployed airbag.



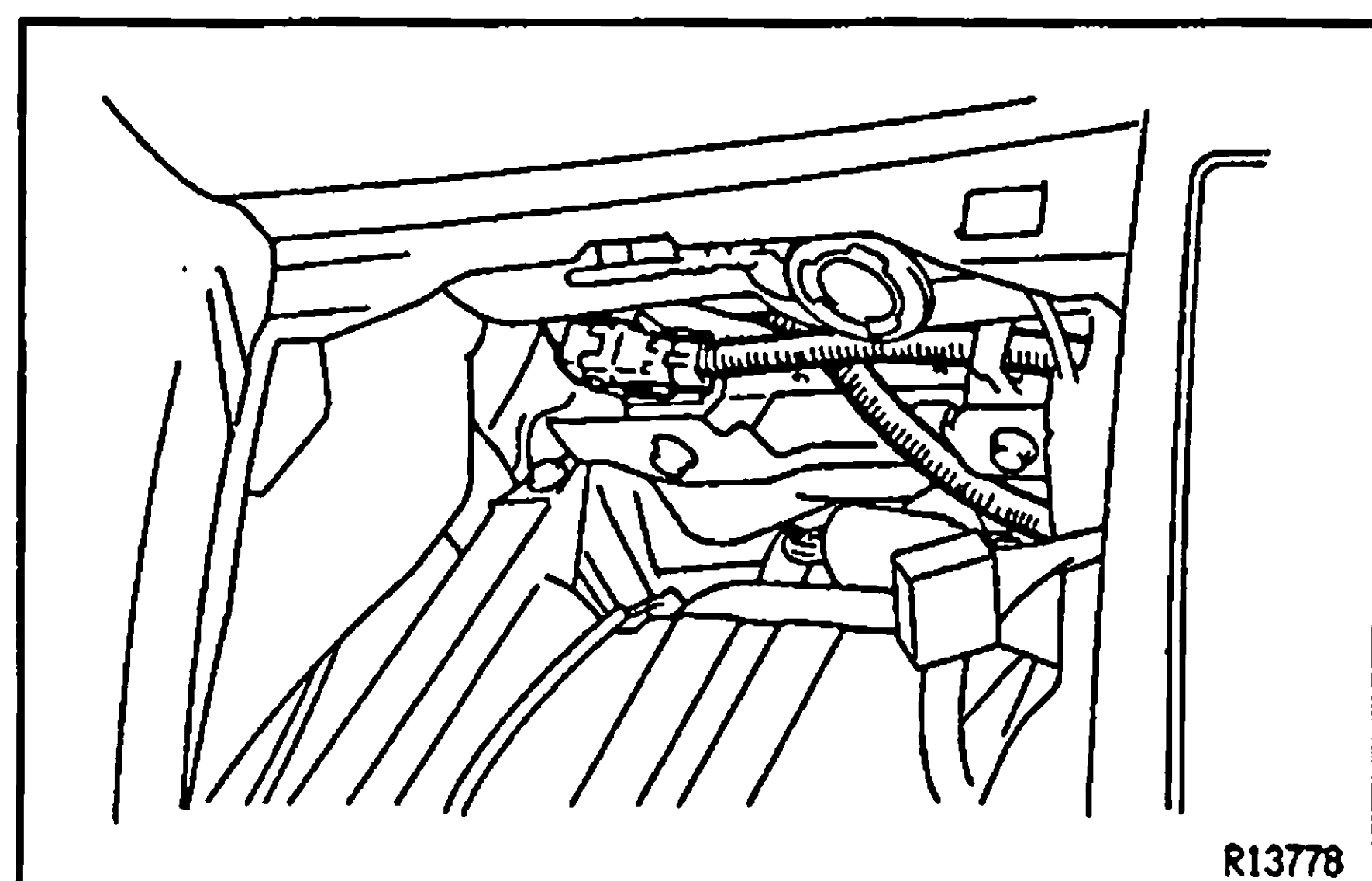
When scrapping vehicle

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

1. CONFIRM FUNCTIONING OF SST

(See page RS-18)

SST 09082-00700

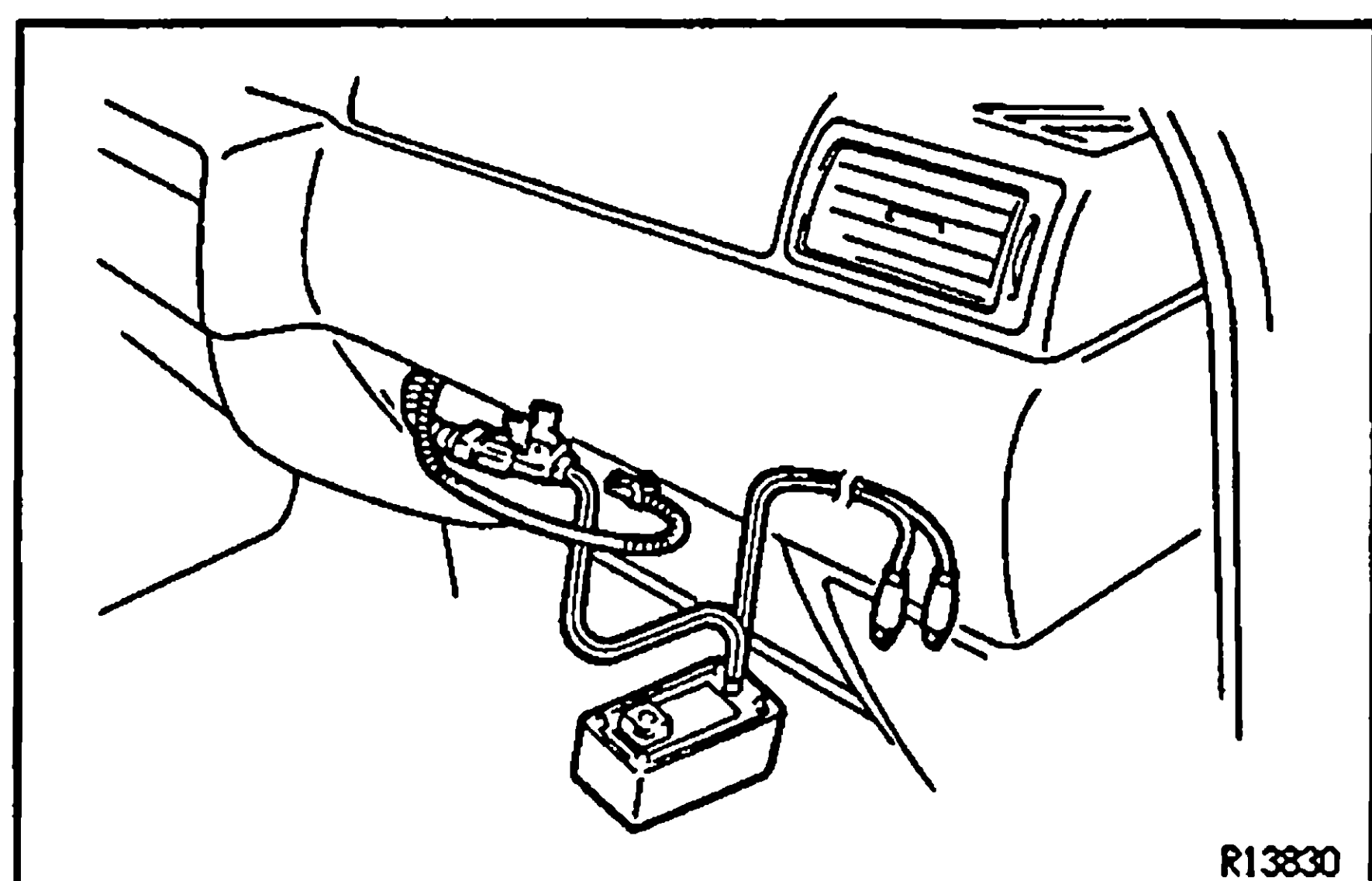


2. DISCONNECT AIRBAG CONNECTOR

- Remove the glove compartment door.
- Remove the airbag connector from the airbag bracket.

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

- Disconnect the airbag connector.

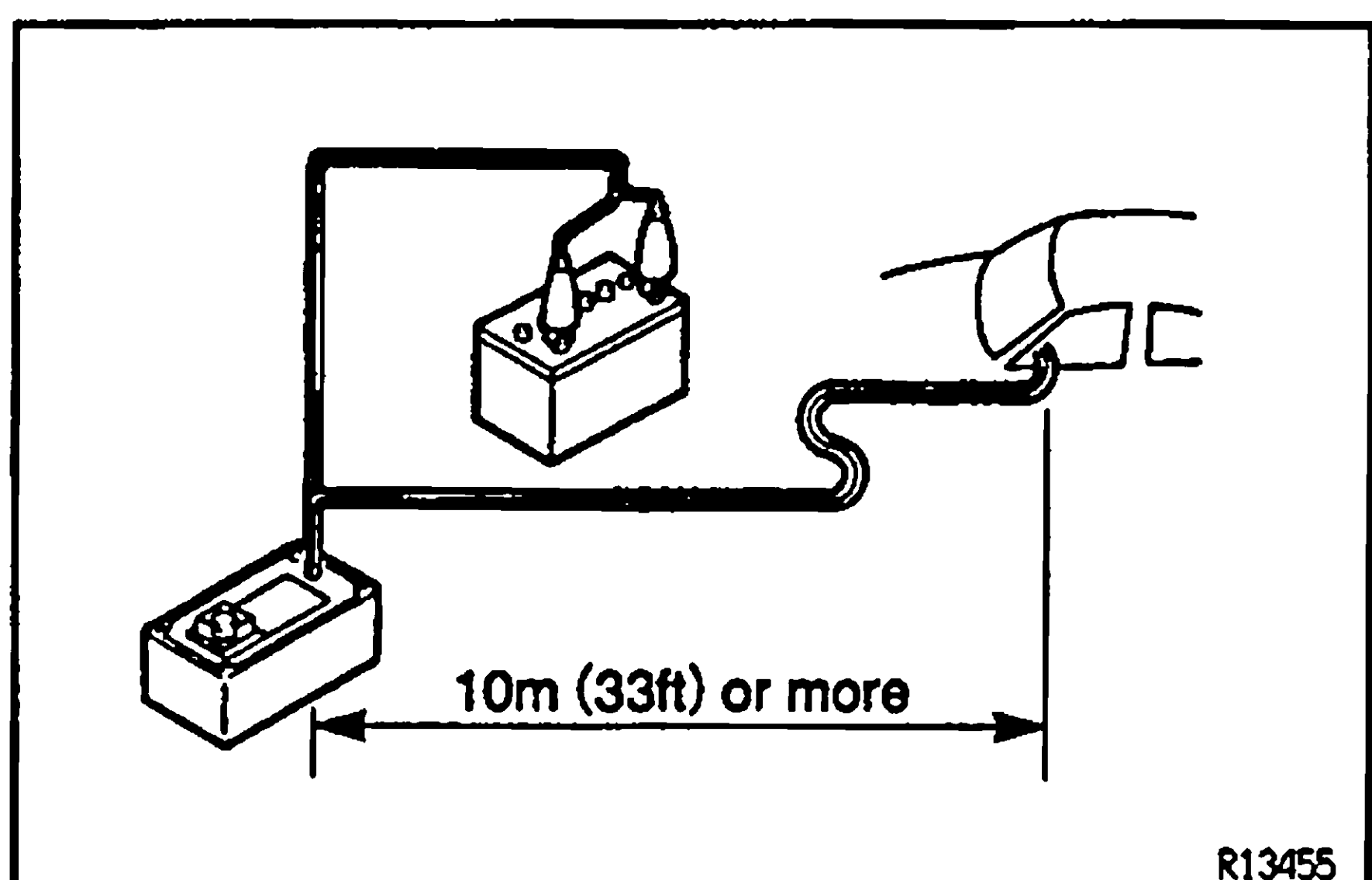


3. INSTALL SST

- 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.

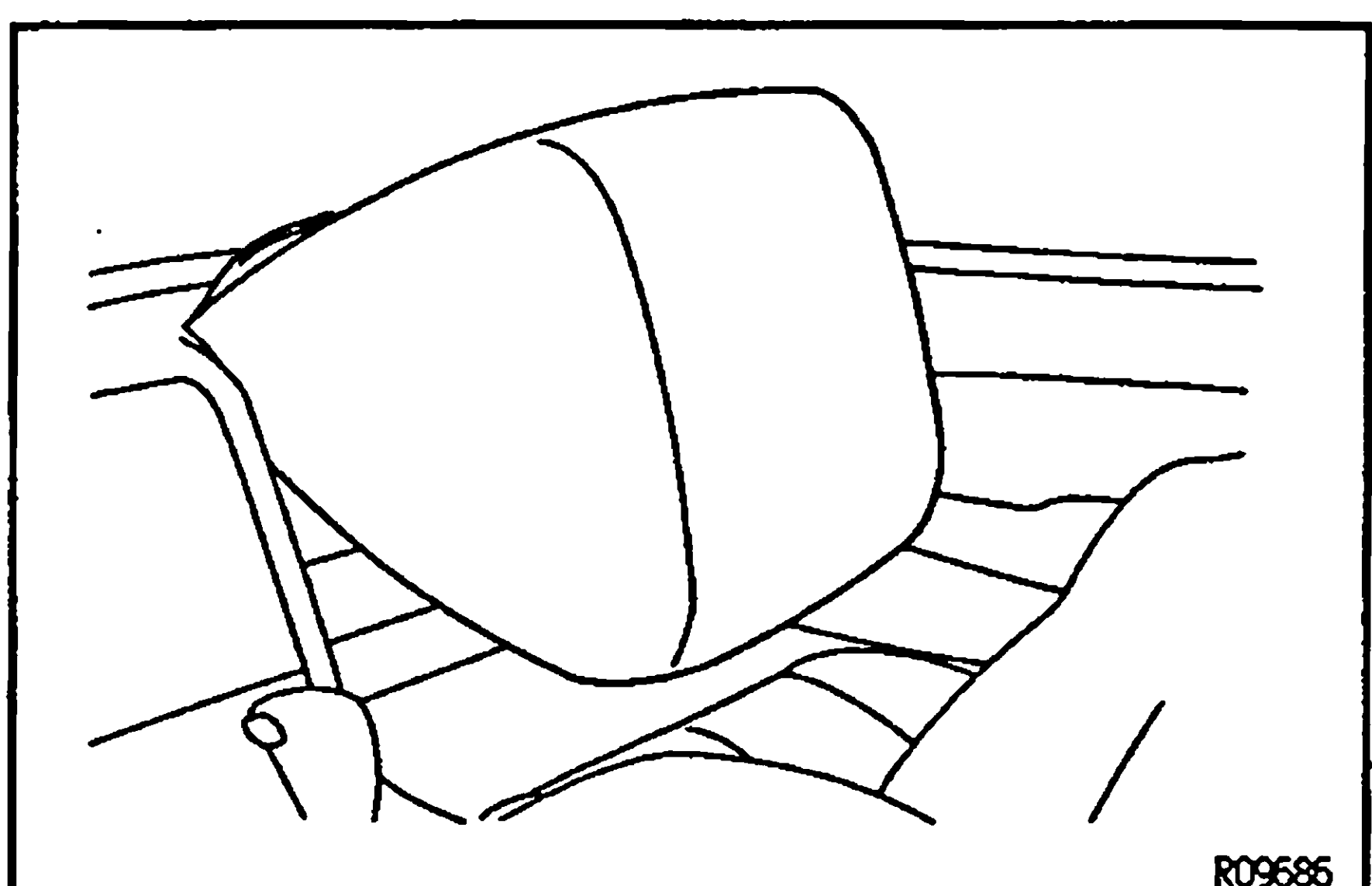


- Move the SST to at least 10 m (33 ft) from the front of the vehicle.

- Close all the doors and windows of the vehicle.

NOTICE: Take care not to damage the SST wire harness.

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



4. DEPLOY AIRBAG

- Confirm that no-one is inside the vehicle or within 10 m (33 ft) of the vehicle.

- 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 FRONT PASSENGER AIRBAG ASSEMBLY

CAUTION:

- The 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 front passenger airbag assembly with deployed airbag.
- Do not apply water, etc., to a 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 front passenger airbag assembly still installed.

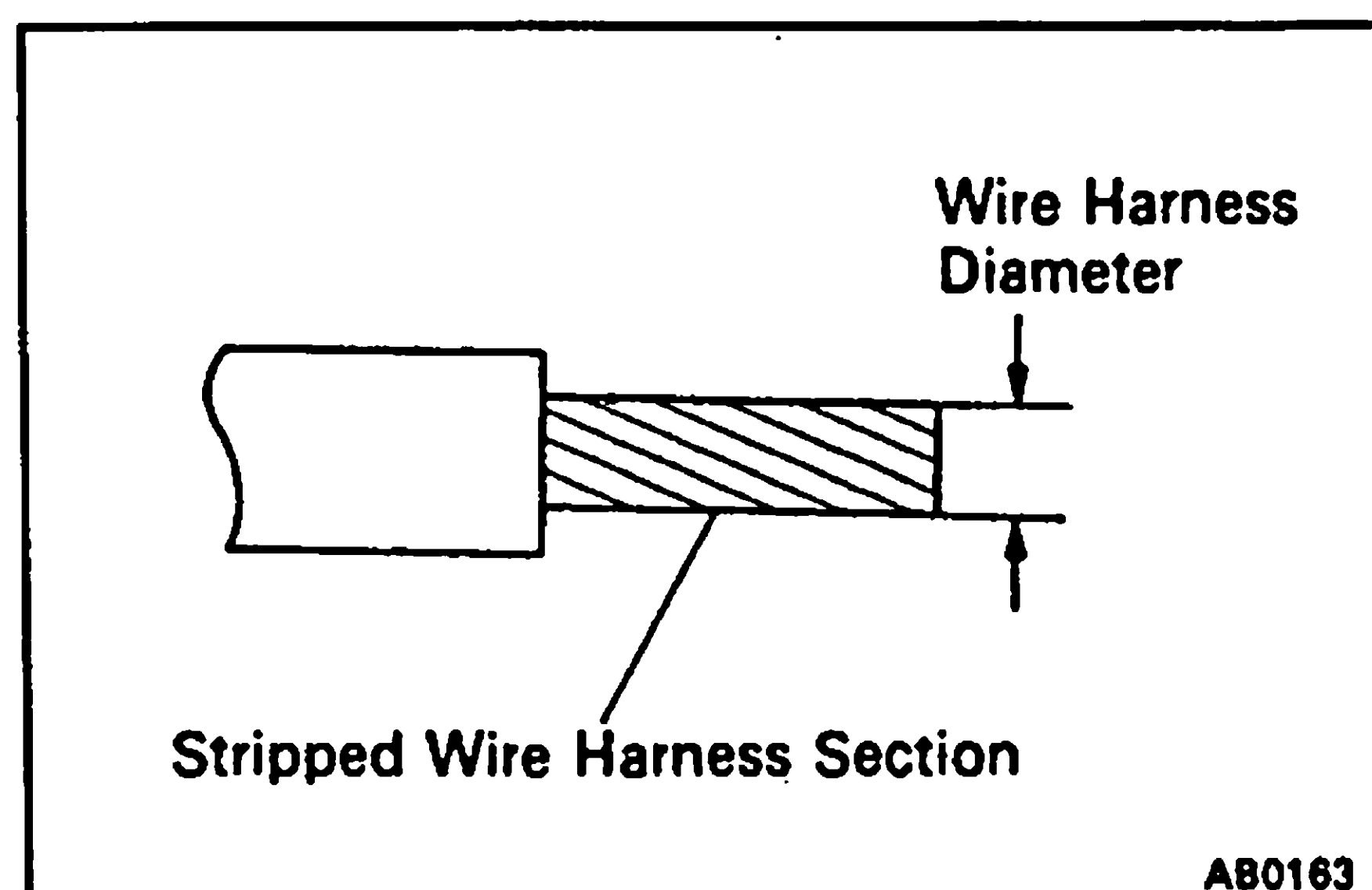
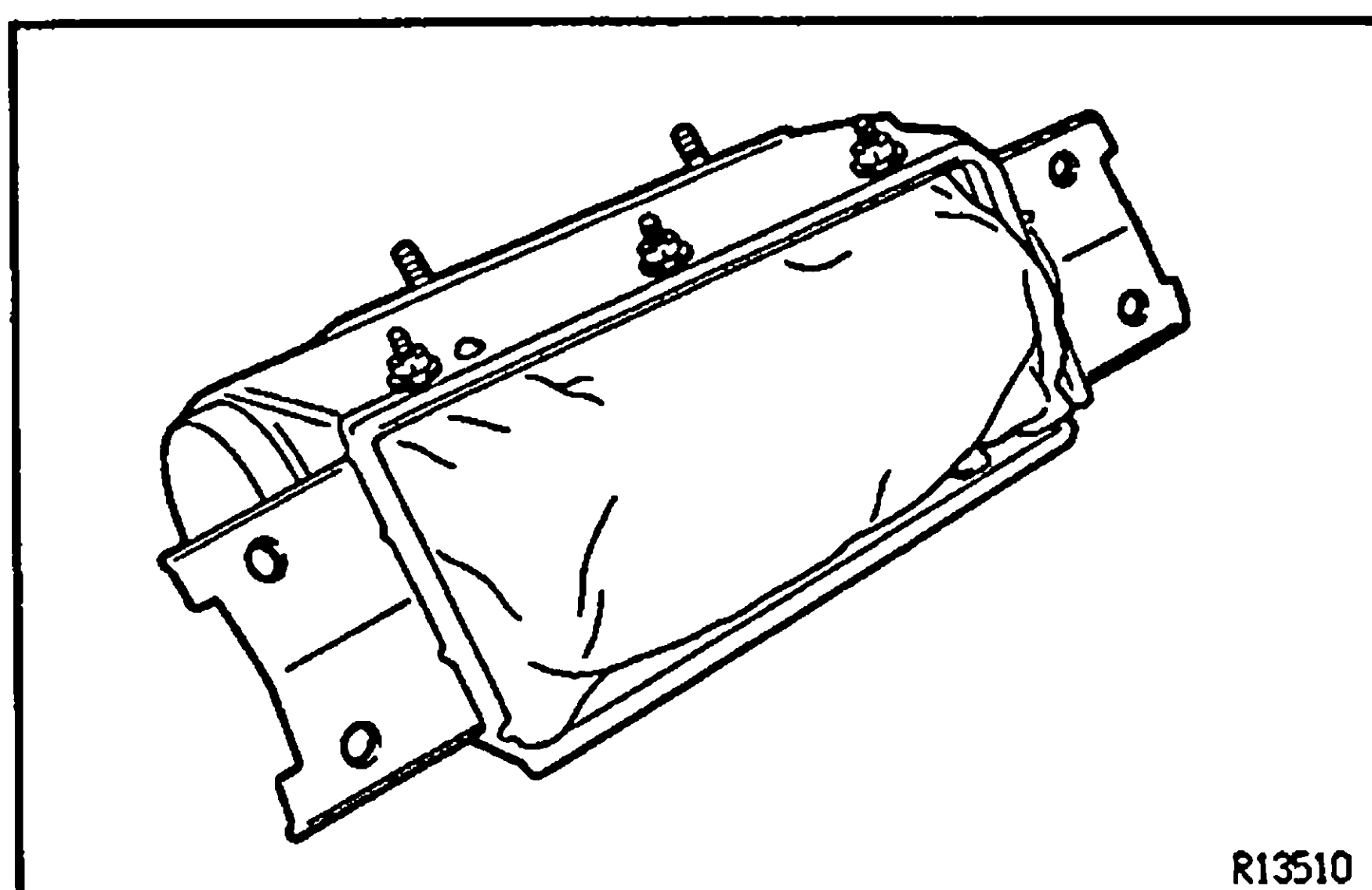
When disposing of front passenger airbag assembly only

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

Remove the 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.

RS



1. REMOVE FRONT PASSENGER AIRBAG ASSEMBLY (See page RS-21)

CAUTION:

- When removing the front passenger airbag assembly, work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (—) terminal cable is disconnected from the battery.
- Store the front passenger airbag assembly with the airbag deployment direction facing up.

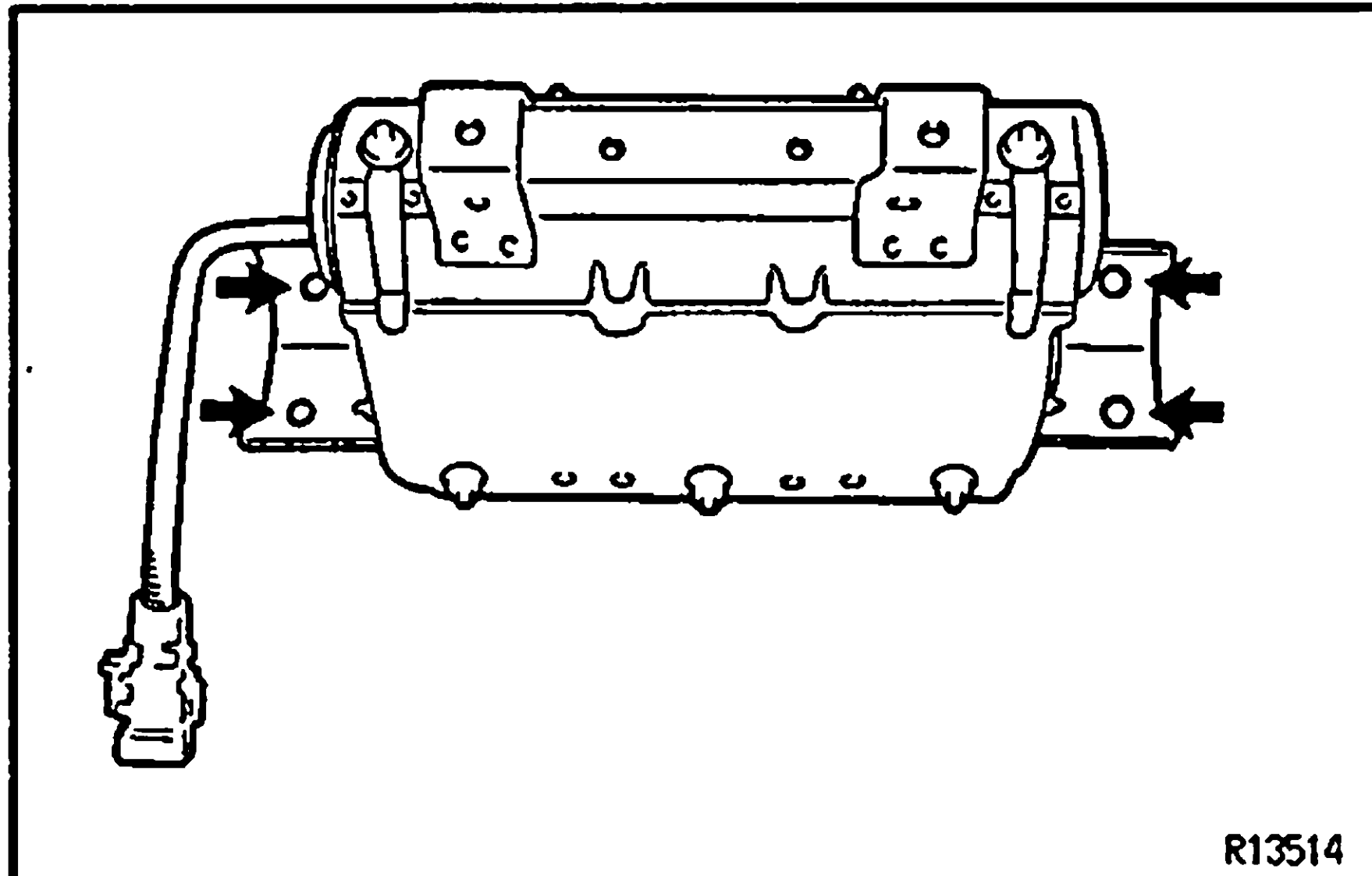
2. FIX FRONT PASSENGER AIRBAG ASSEMBLY TO TIRE

Using a service—purpose wire harness for the vehicle, tie down the front passenger airbag assembly to the tire.

Wire harness: Stripped wire harness section
1.25 mm² or more (0.0019 in.² or more)

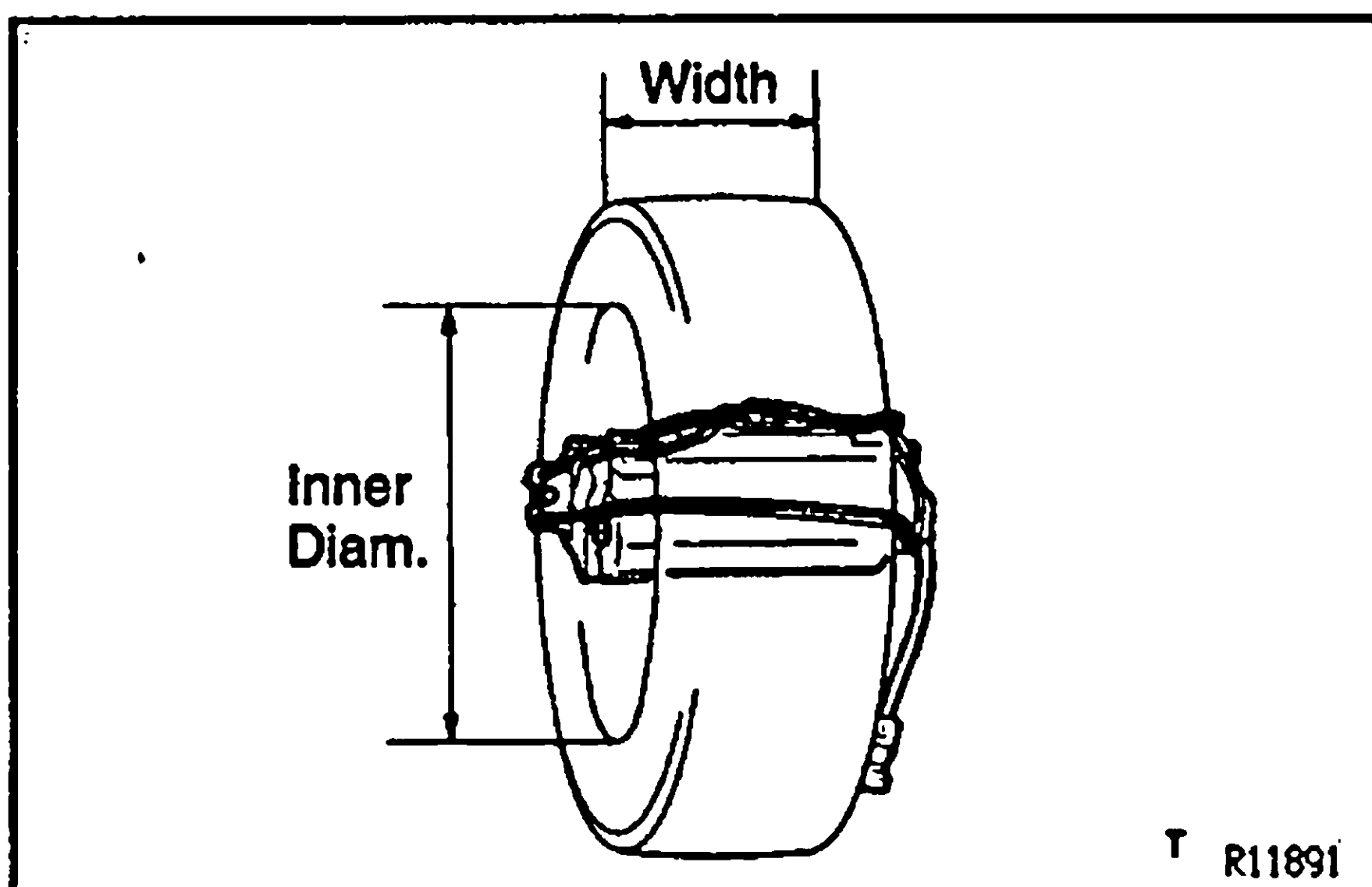
HINT: To calculate the square of the stripped wire harness section :—

$$\text{Square} = 3.14 \times (\text{Diameter})^2 \text{ divided by } 4$$



CAUTION: If the front passenger airbag assembly is tied down by too thin a wire harness, it may snap. This is highly dangerous. Always use a wire harness which is at least 1.25 mm² (0.0019 in.²).

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



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

Tire size: Must exceed the following dimensions :—

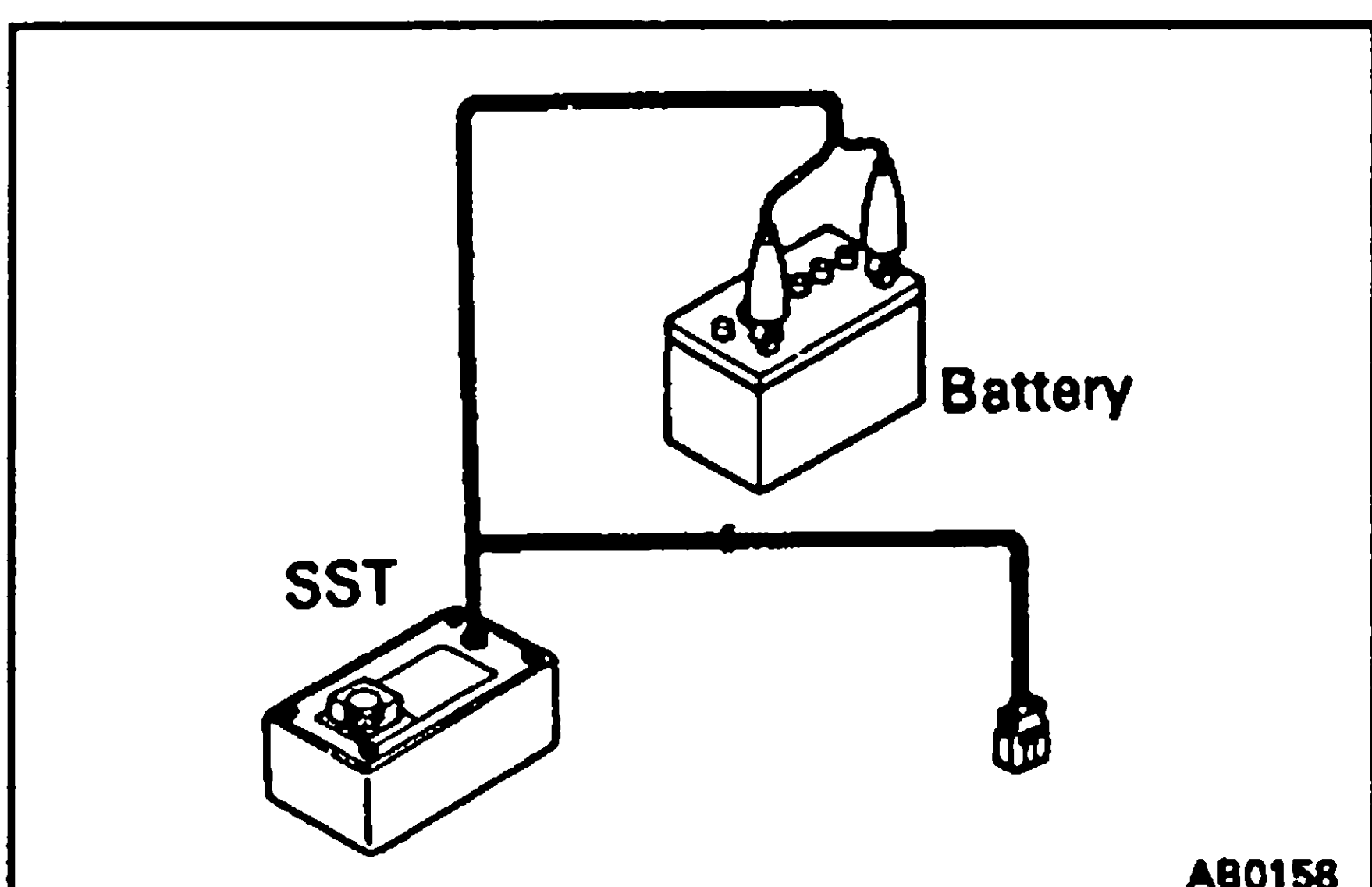
Width 185 mm (7.28 in.)

Inner diameter 360 mm (14.17 in.)

CAUTION:

- Make sure 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.

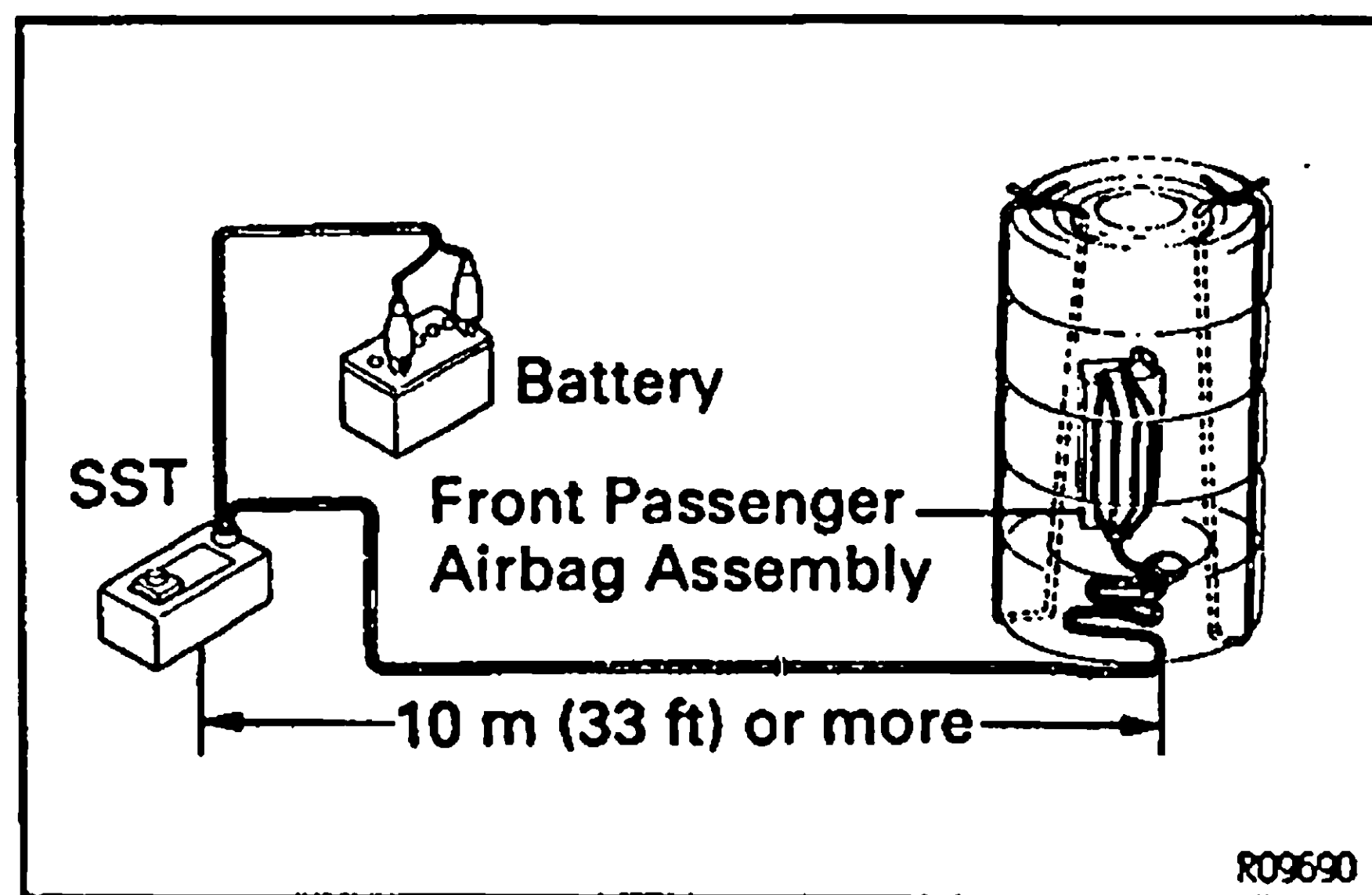
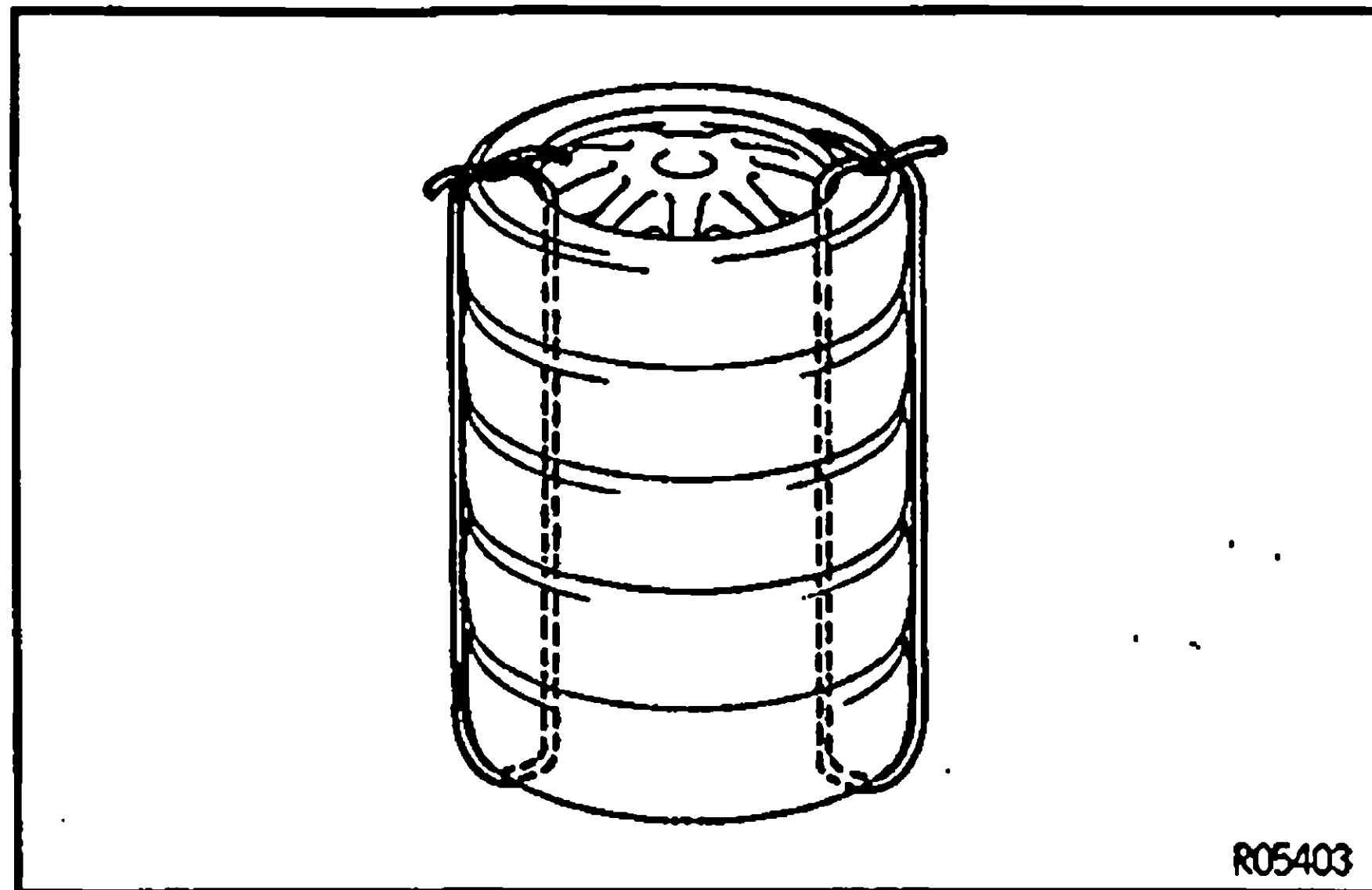
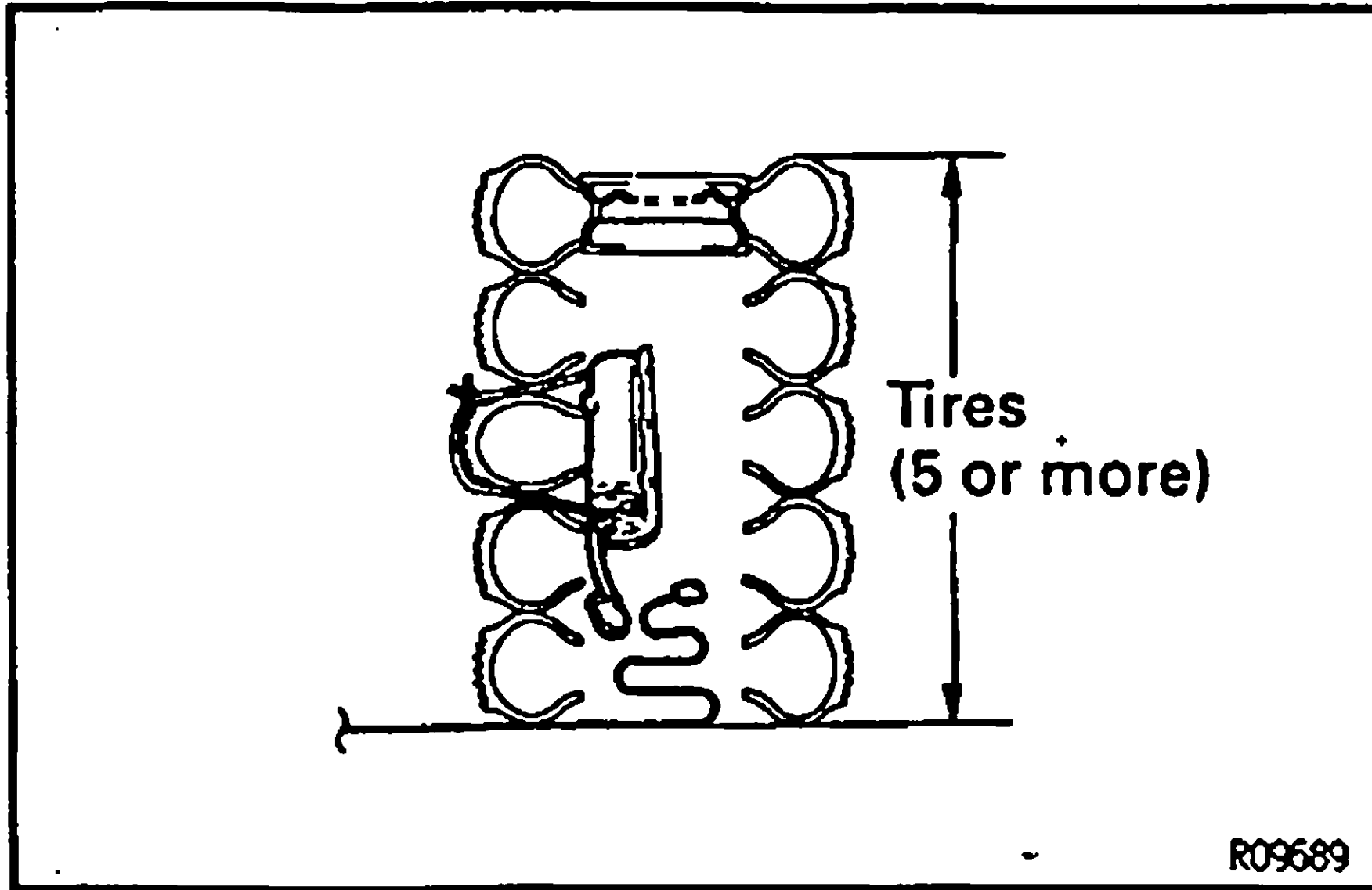
NOTICE: The tire will be marked by the airbag deployment, so use a redundant tire.



3. CONFIRM FUNCTIONING OF SST

(See page RS—18)

SST 09082—00700



4. PLACE TIRES

- (a) Place at least 2 tires under the tire to which the front passenger airbag assembly is tied.
- (b) 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.
- (c) 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.

5. INSTALL SST

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.

6. AIRBAG DEPLOYMENT

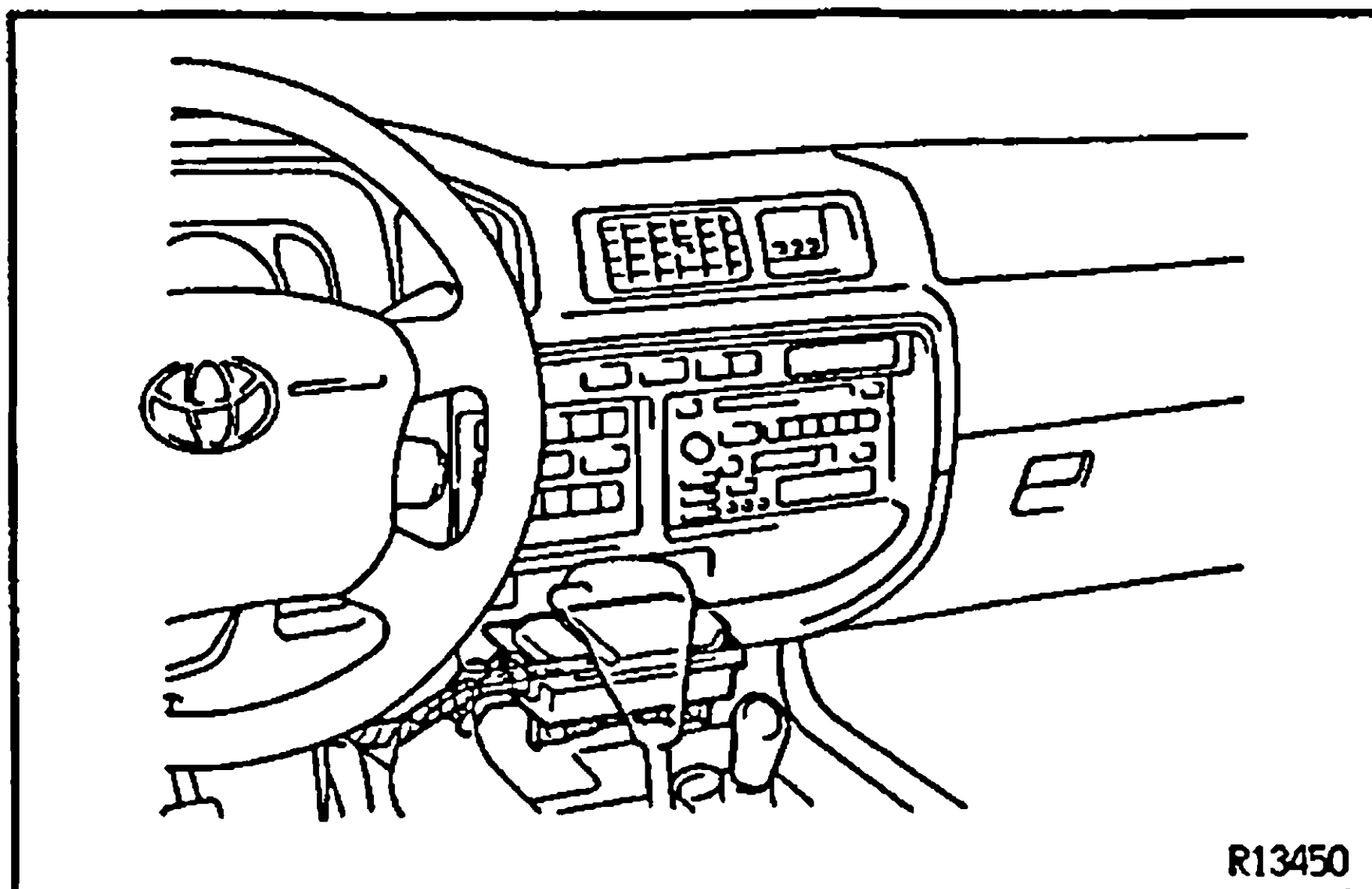
- (a) Connect the SST red clip to the battery positive (+) terminal and the black clip to the battery negative (-) terminal.
 - (b) Confirm that no one is within 10 m (33 ft) of the tire the front passenger airbag assembly is tied to.
 - (c) Press the SST activation switch and deploy the airbag.
- HINT:**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



7. DISPOSAL OF FRONT PASSENGER AIRBAG ASSEMBLY

CAUTION:

- The 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 front passenger airbag assembly with deployed airbag.
 - Do not apply water, etc. to a front passenger airbag assembly with deployed airbag.
 - Always wash your hands with water after completing the operation.
- (a) Remove the front passenger airbag assembly from the tire.
- (b) Place the front passenger airbag assembly in a vinyl bag, tie the end tightly and dispose of it the same way as other general parts.



AIRBAG SENSOR ASSEMBLY INSPECTION ITEMS

R807T-01

1. VEHICLES NOT INVOLVED IN A COLLISION

Do a diagnostic system check.

(See page RS-38)

2. VEHICLES INVOLVED IN A COLLISION IF THE SRS IS NOT DEPLOYED

Do a diagnostic system check.

(See page RS-38)

IF THE SRS IS DEPLOYED

Replace the airbag sensor assembly.

REPLACEMENT REQUIREMENTS

R807U-01

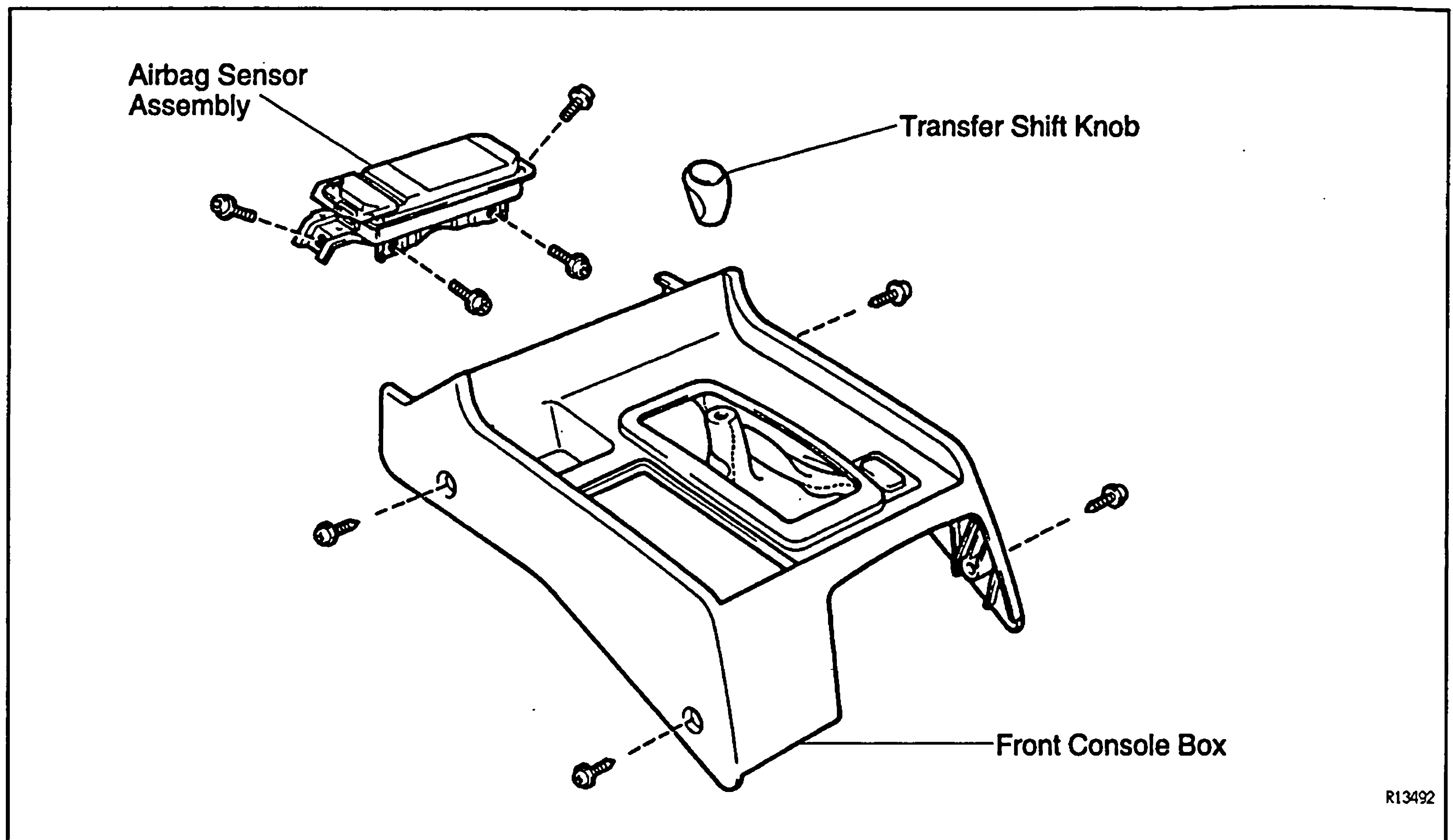
In the following cases, replace the airbag sensor assembly.

- 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 center airbag sensor assembly, see page RS-30, "AIRBAG SENSOR ASSEMBLY REMOVAL AND INSTALLATION" and be sure to follow the correct procedure.

RS

COMPONENTS

AIRBAG SENSOR ASSEMBLY REMOVAL
AND INSTALLATION

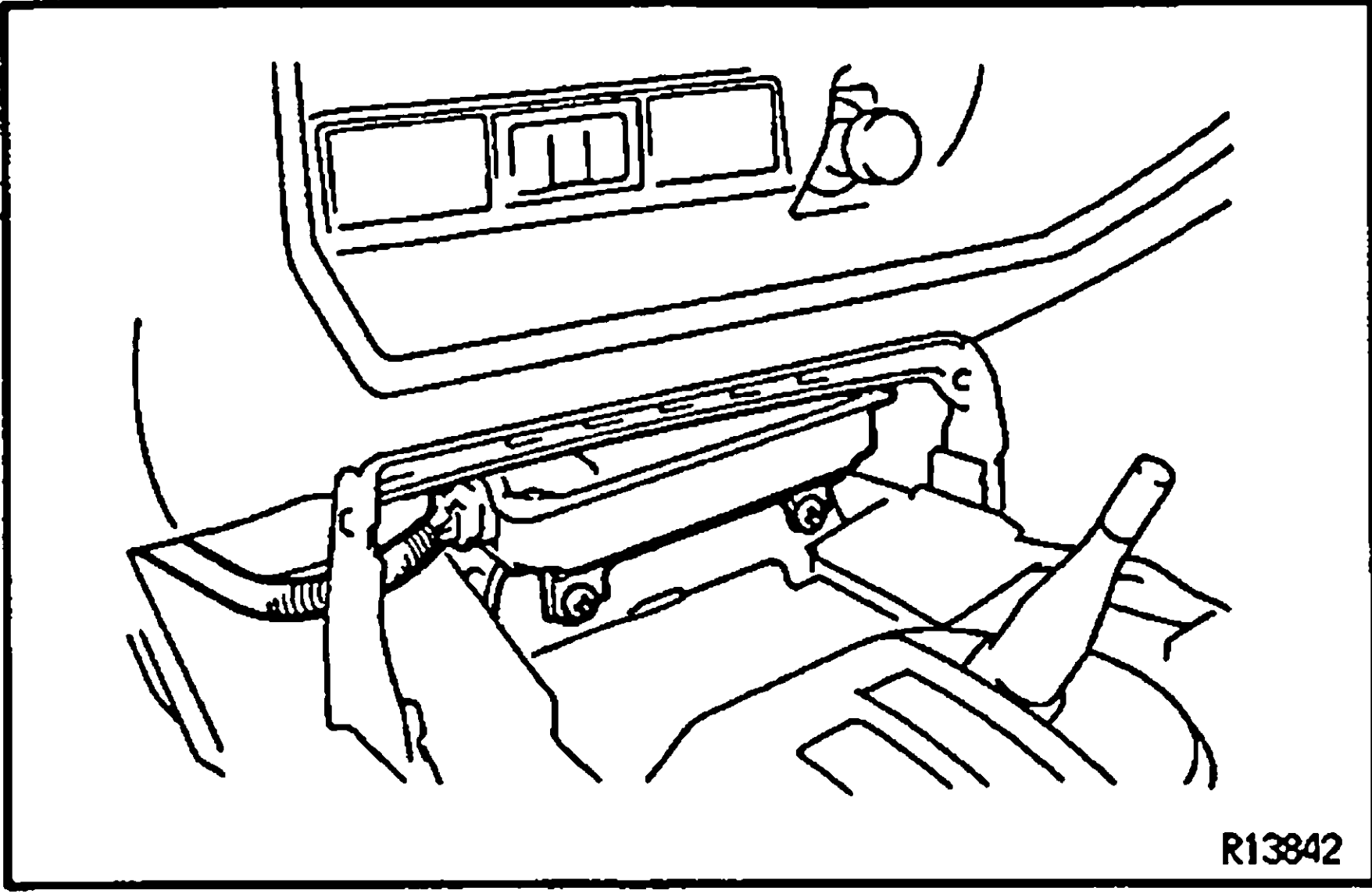
R3068-02

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
- (b) Front 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 4 screws and the 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 4 screws.

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

Torque: 20 N.m (210 kgf.cm, 15 ft.lbf)

- (b) Connect the connector.

NOTICE:

- Installation of the connector is done with the sensor assembly installed.
- Make sure 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.

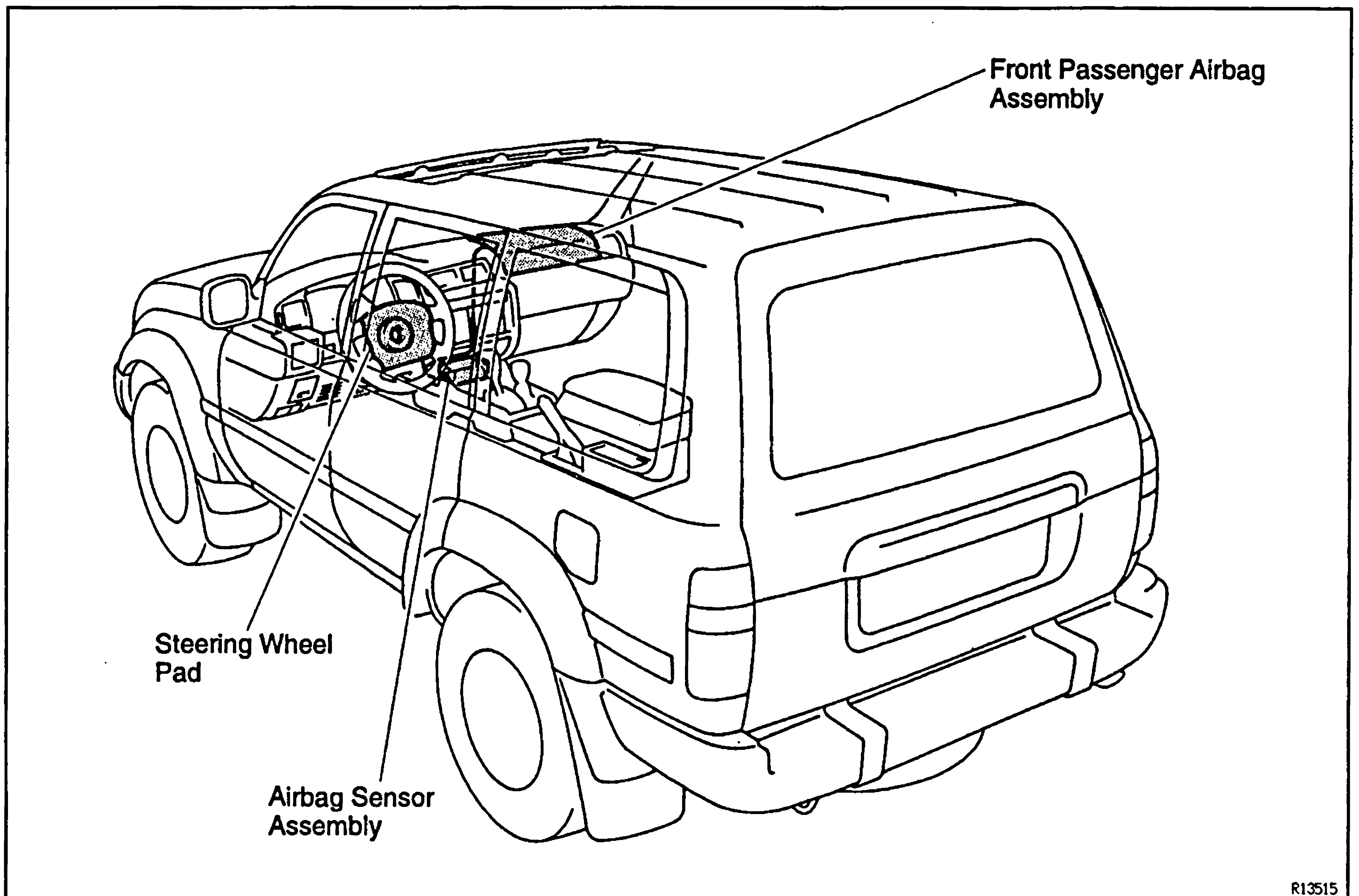
4. INSTALL THESE PARTS:

- (a) Front console box
(b) Transfer shift knob

WIRE HARNESS AND CONNECTOR

R501B-OK
HINT: The SRS wire harness is integrated with the 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.



R13515

INSPECTION ITEMS

R501C-OK

1. VEHICLES NOT INVOLVED IN A COLLISION

Do a diagnostic system check.

(See page RS-38)

2. VEHICLES INVOLVED IN A COLLISION

(a) Do a diagnostic system check.

(See page RS-38)

(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

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.

— MEMO —

RS

TROUBLESHOOTING

HOW TO PROCEED WITH
TROUBLESHOOTING RS-36

CUSTOMER PROBLEM ANALYSIS
CHECK SHEET RS-37

DIAGNOSIS INSPECTION RS-38

SYMPTOM SIMULATION RS-42

AIRBAG SENSOR ASSEMBLY
CONNECTOR RS-44

CIRCUIT INSPECTION RS-45

DTC (Normal) RS-45

DTC 11 RS-48

DTC 12 RS-53

DTC 14 RS-58

DTC 31 RS-63

DTC 54 RS-65

SRS Warning Light System Malfunction
(Always lit up, when ignition switch
is LOCK position.) RS-69

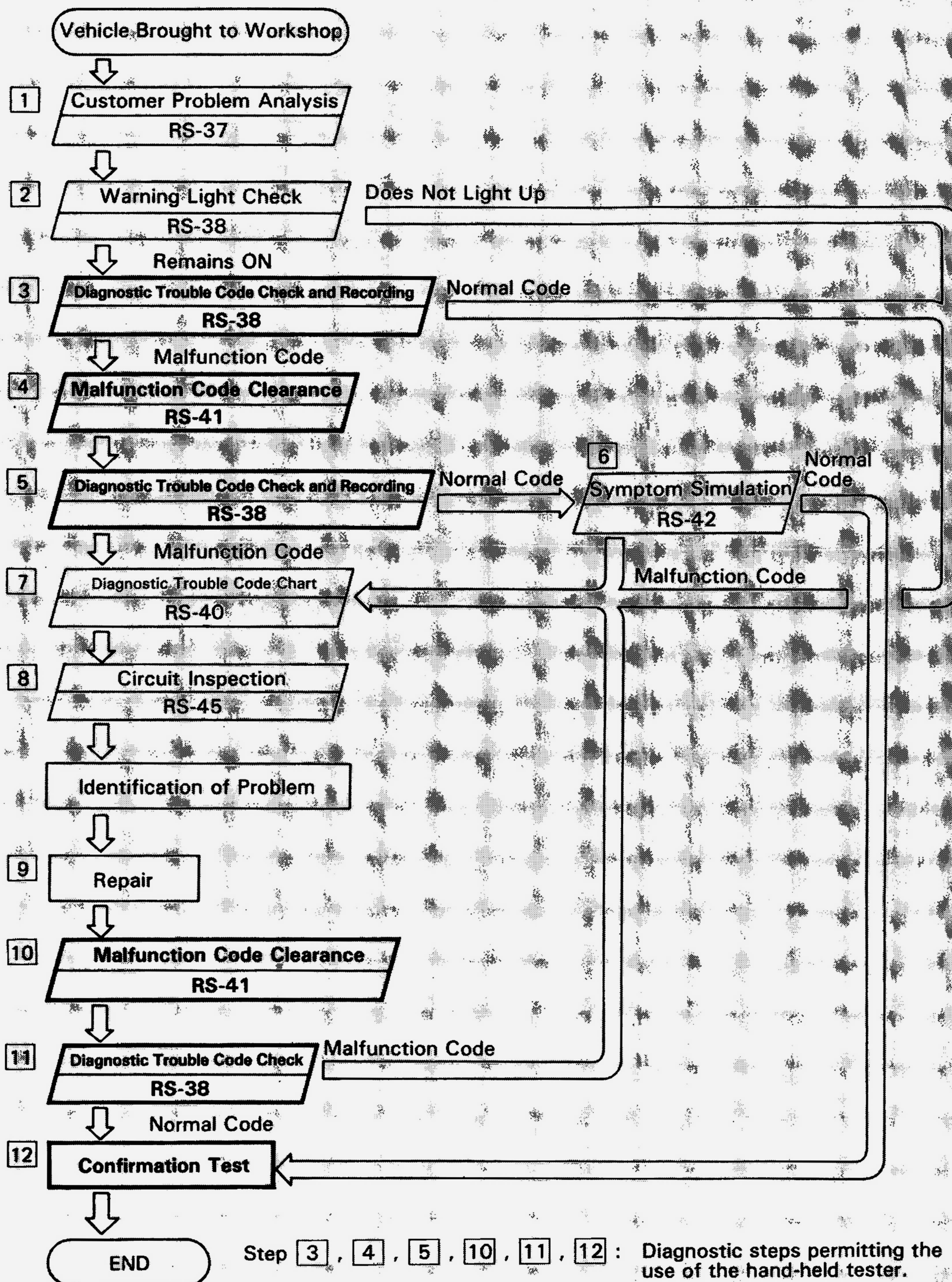
SRS Warning Light System Malfunction
(Does not light up, when ignition switch
is turned to ACC or ON.) RS-71

Tc Terminal Circuit RS-74

RS

HOW TO PROCEED WITH TROUBLESHOOTING

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



CUSTOMER PROBLEM ANALYSIS CHECK SHEET

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

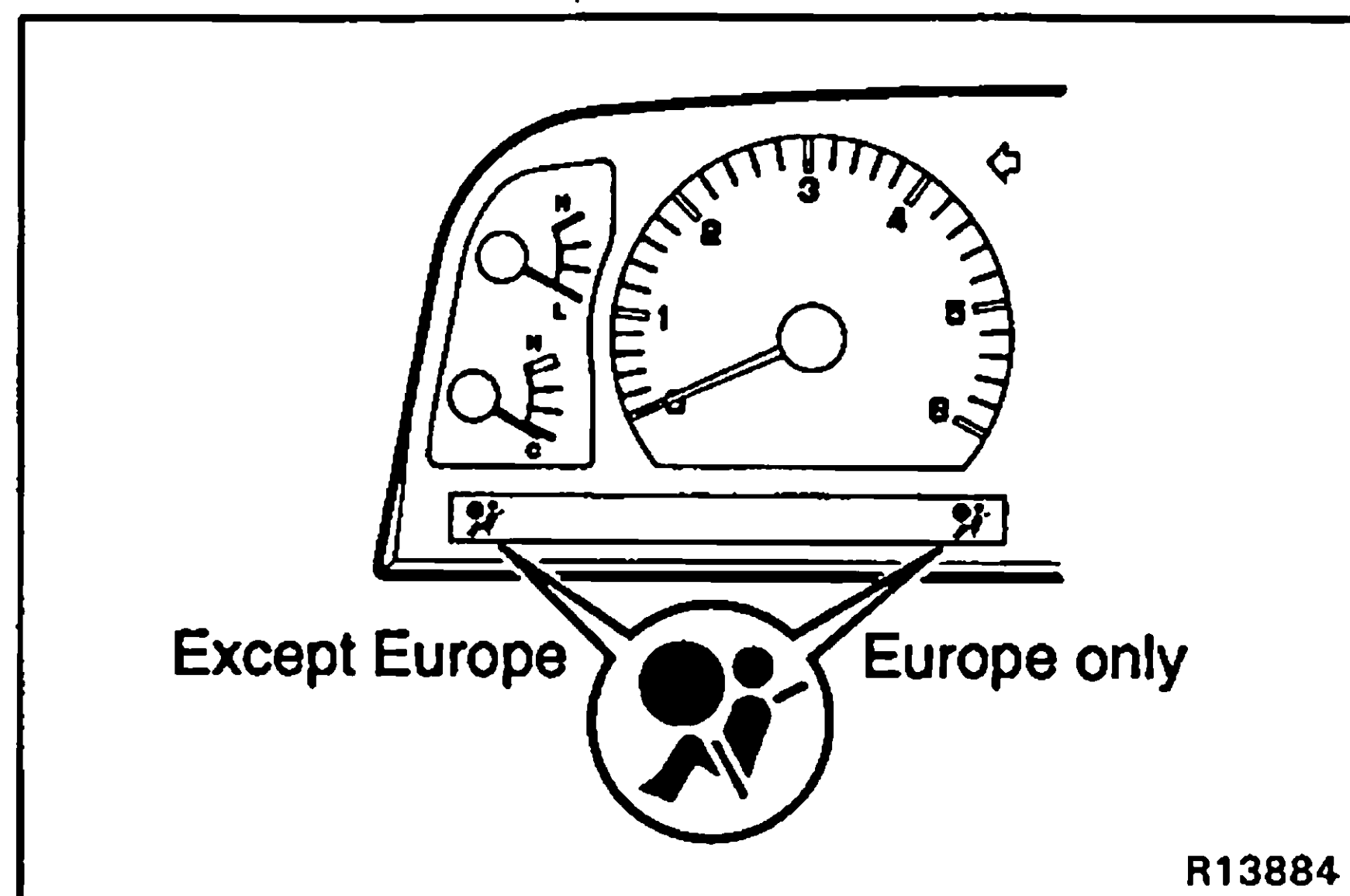
Date Problem First Occured	/ /
Weather	☐ Fine ☐ Cloudy ☐ Rainy ☐ Snowy ☐ Other_____
Temperature	Approx. °C(°F)

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)	
---	--

Diagnosis System Inspection

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



DIAGNOSIS INSPECTION

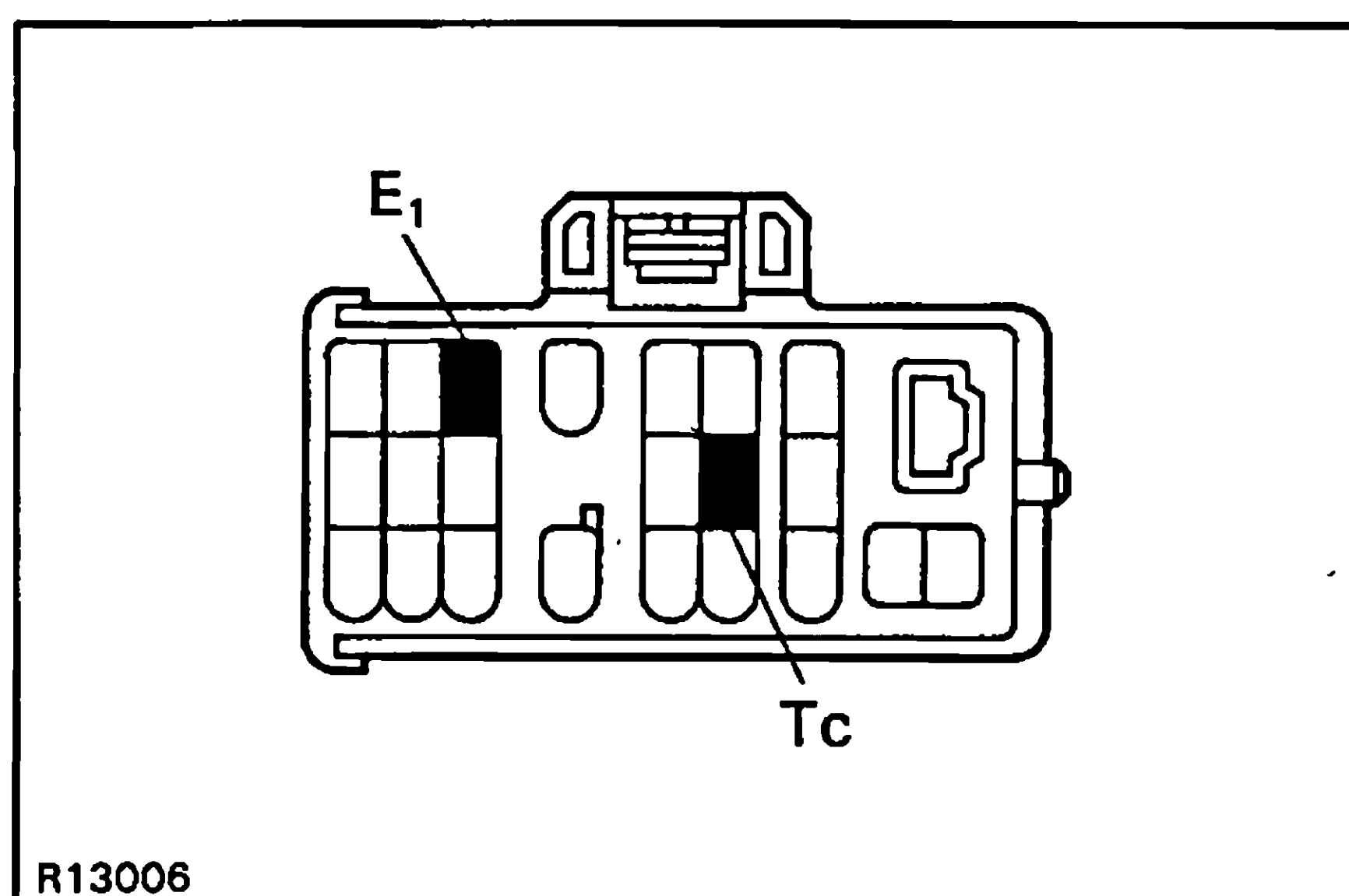
SRS warning light check

- (a) Turn the ignition switch to ACC or ON and check that the SRS warning light lights up.
- (b) 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 system malfunction" on page RS-69, 71.

RS



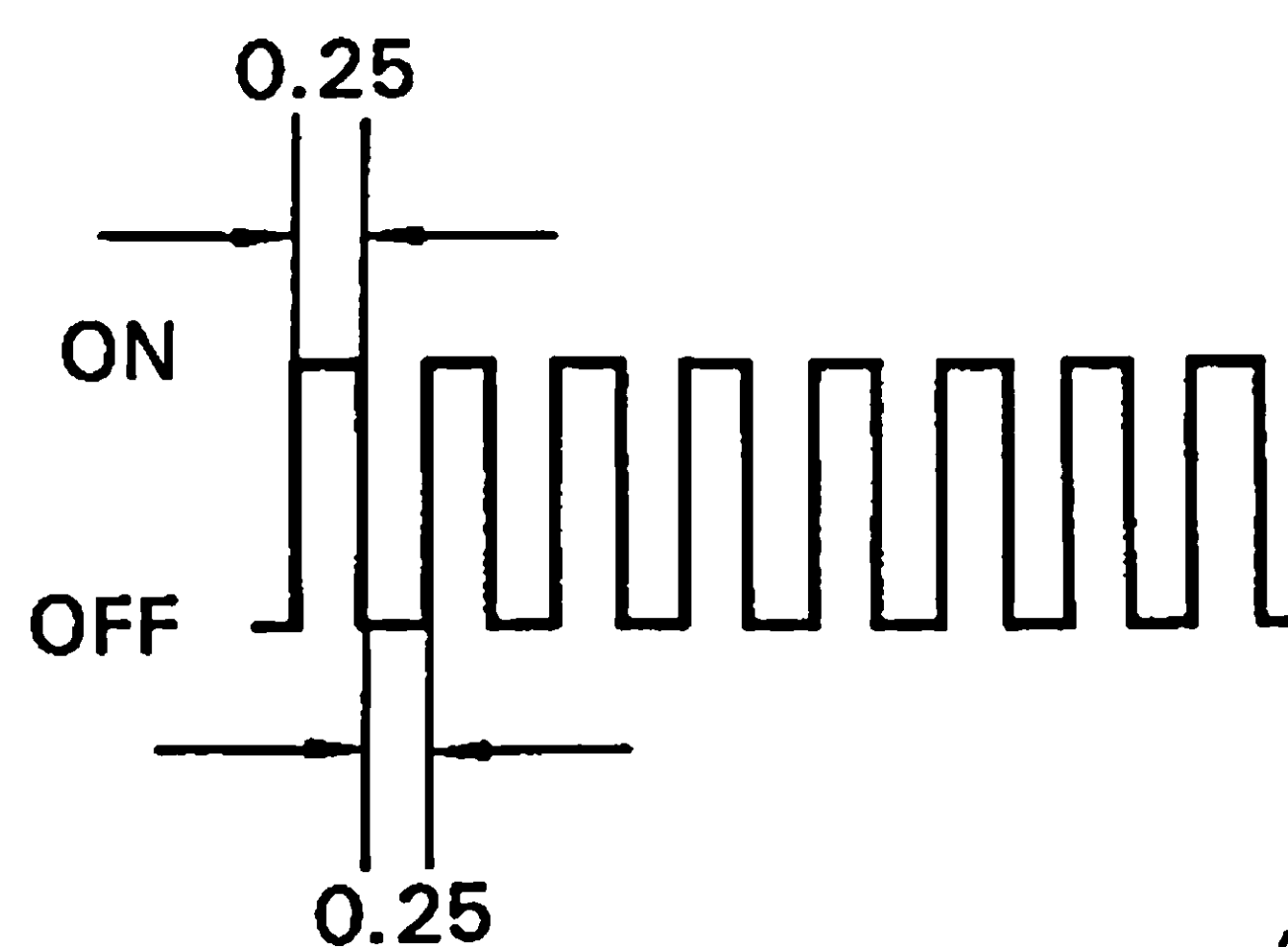
Diagnostic trouble code check

Using diagnosis check wire:

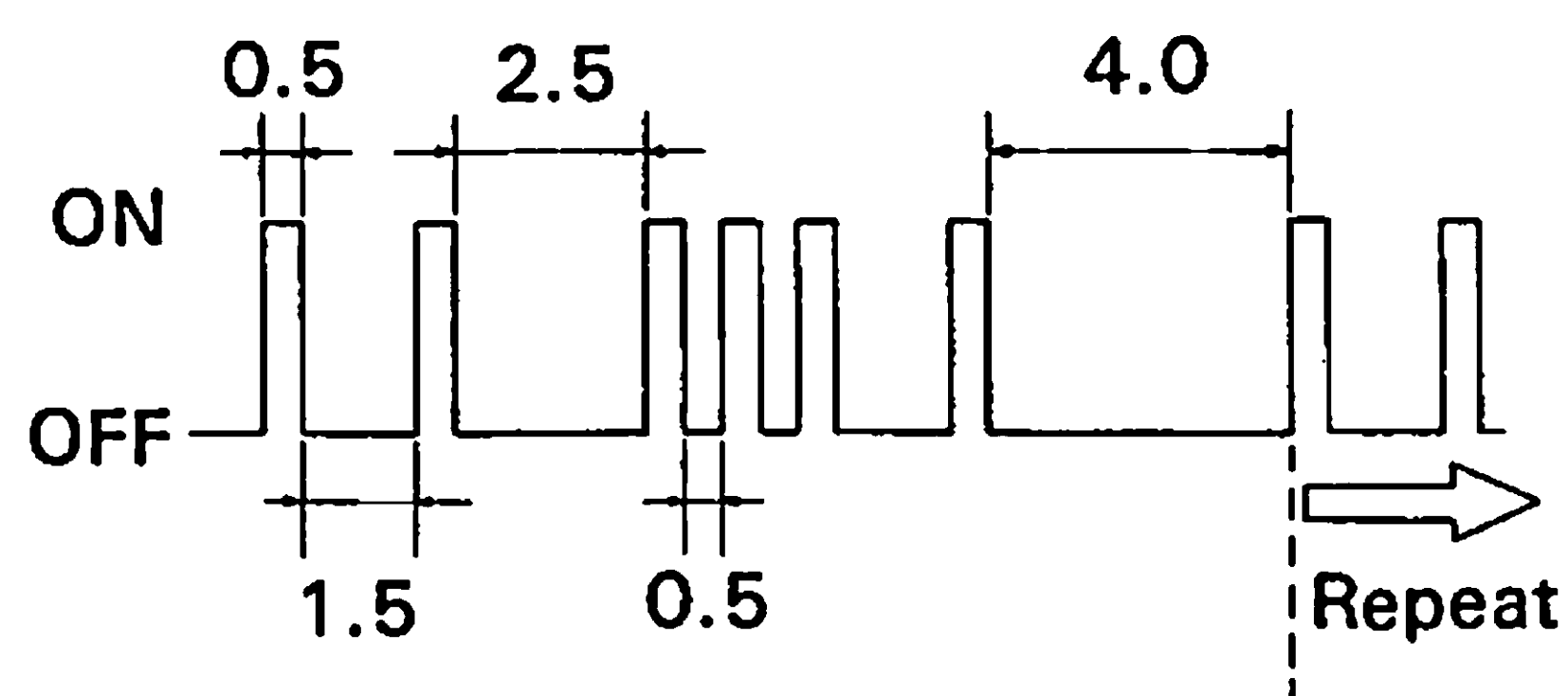
1. OUTPUT DIAGNOSTIC TROUBLE CODE

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

SST 09843 – 18020

Normal Code

AT0716

Code 11 and 31

AB0056

2. READ DIAGNOSTIC TROUBLE CODE

Read the 2-digit diagnostic trouble code 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

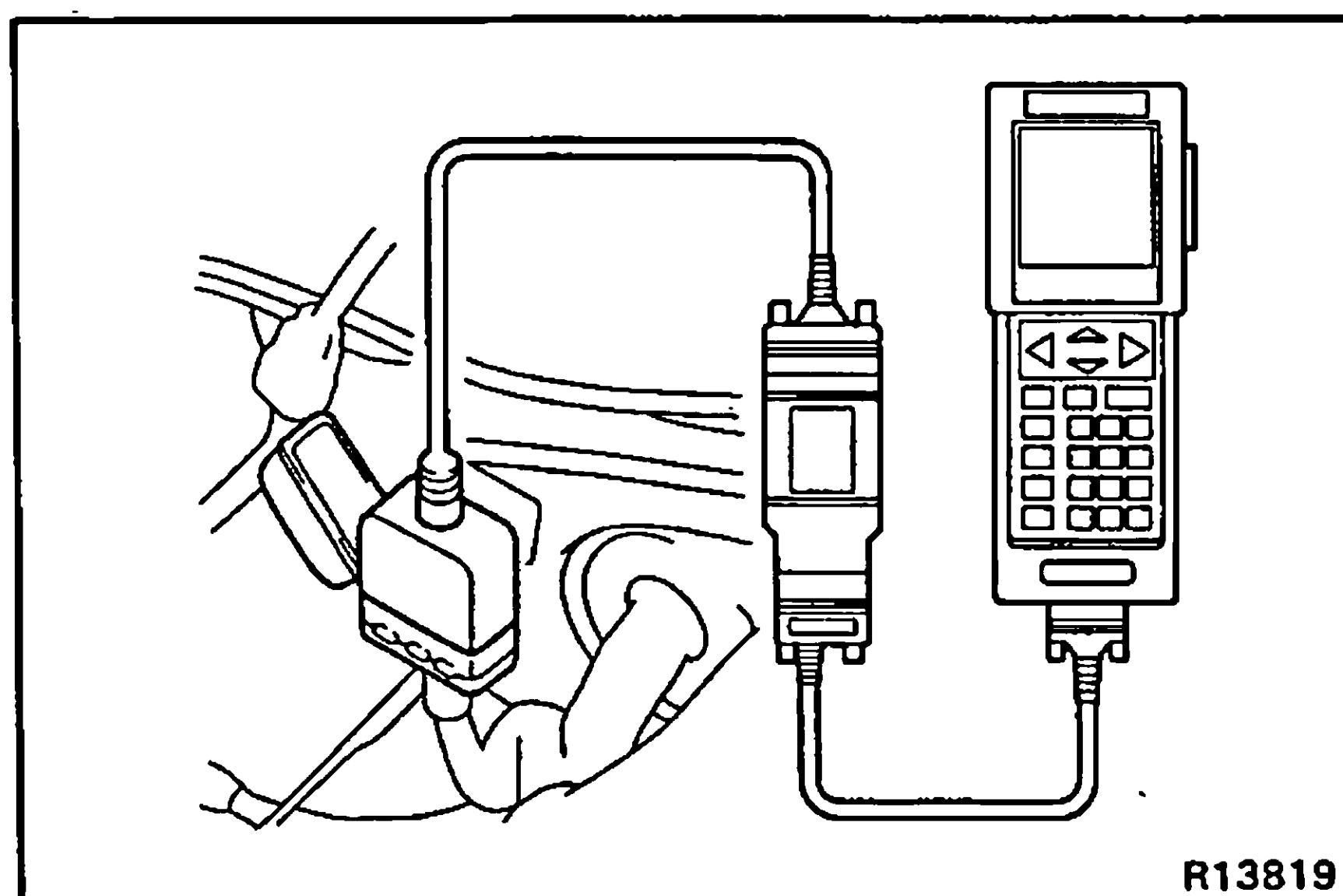
The first blinking output indicates the first digit of a 2-digit diagnostic trouble code. After a 1.5 second pause, the second blinking output will indicate the second digit.

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 to the larger.
- If it does not output a diagnostic trouble code or outputs a diagnostic trouble code without terminal connection, proceed to the Tc terminal circuit inspection on page RS-74.

RS



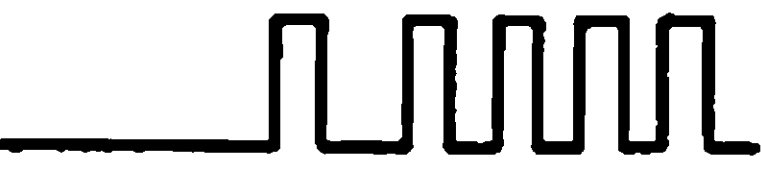
R13819

Using hand-held tester:

- Hook up the hand-held tester to the check connector.
- Read the diagnostic trouble codes by following the prompts on the tester screen.

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

Diagnostic trouble codes

DTC No.	Blink Pattern	Diagnosis	Trouble Area	SRS Warning Light
(Normal)	 FI1401	• System normal	—	OFF
		• Voltage source drop	• Battery • Airbag sensor assembly	ON
11	 AB0057	• Short in squib circuit (to ground)	• Squib (driver airbag and front passenger airbag) • Spiral cable • Airbag sensor assembly • Wire harness	ON
12	 FI1389	• Short in squib circuit (to B+)	• Squib (driver airbag and front passenger airbag) • Spiral cable • Airbag sensor assembly • Wire harness	ON
14	 FI1391	• Open in D squib circuit	• Steering wheel pad (squib) • Spiral cable • Airbag sensor assembly • Wire harness	ON
31	 FI1394	• Airbag sensor assembly malfunction	• Airbag sensor assembly	ON
54	 RQ5170	• Open in P squib circuit	• Front passenger airbag assembly (squib) • Airbag sensor assembly • Wire harness	ON

HINT:

- When the SRS warning light remains lit up and the diagnostic trouble code is the normal code, this means a voltage source drop.
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.

Problem symptom chart

Proceed with troubleshooting of each circuit in the table below.

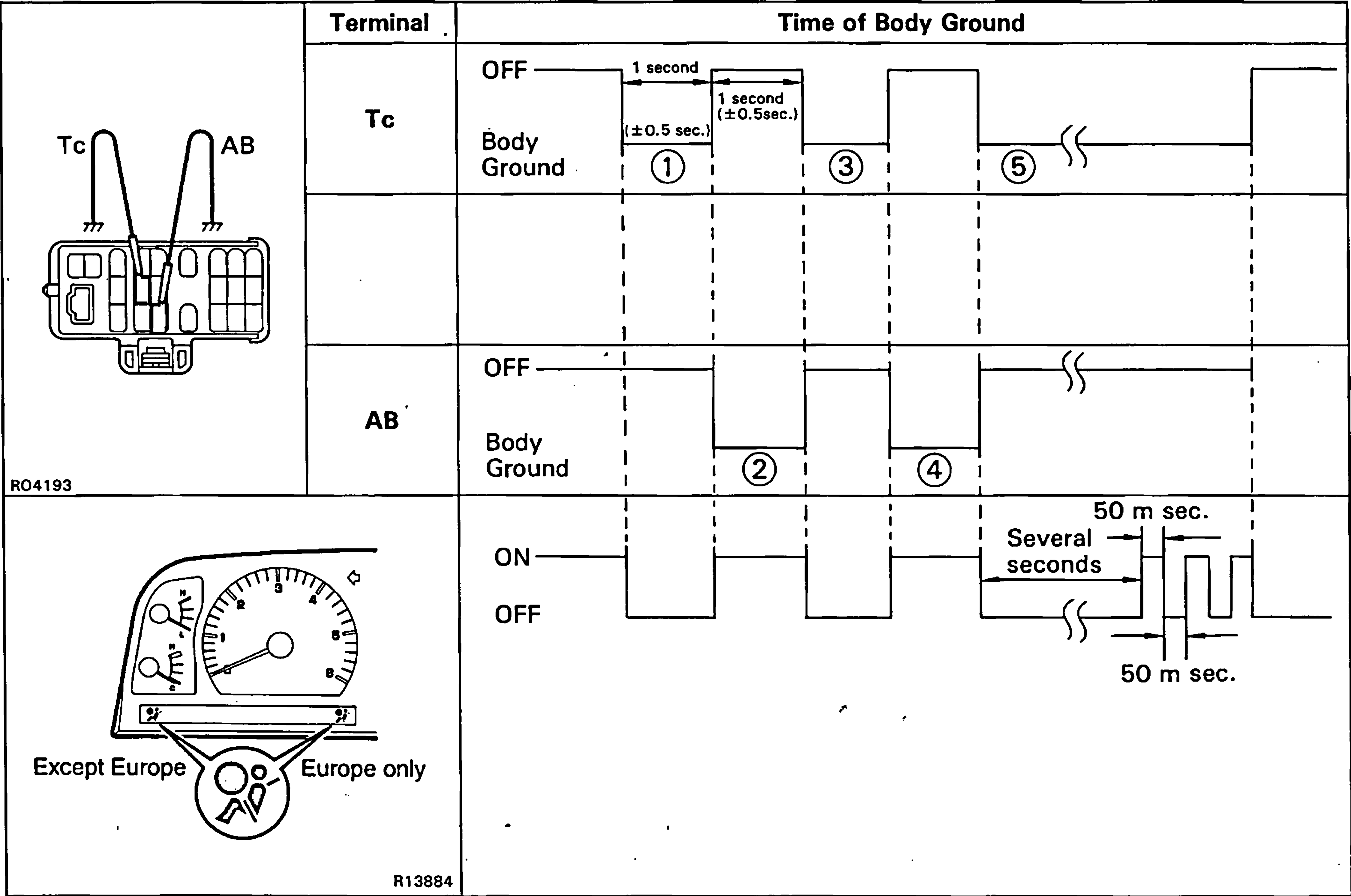
Problem Symptom	Inspection Item
• With the ignition switch at ACC or ON, the SRS warning light sometimes lights up after approx. 6 seconds have elapsed. • SRS warning light lights up even when ignition switch is in the LOCK position.	• SRS warning light system malfunction (Always lit up when ignition switch is LOCK position.)
• With the ignition switch at ACC or ON, the SRS warning lights does not light up.	• SRS warning light system malfunction (Does not light up when ignition switch is turned to ACC or ON.)
• Diagnostic trouble code not displayed. • SRS warning light is always lit up with a DTC check procedure. • Diagnostic trouble code displayed without Tc and E₁ terminal connection.	• Tc terminal circuit

Diagnostic trouble code clearance

Using diagnosis check wire:

- (a) Connect the 2 service wires to terminals Tc and AB of DLC1.
- (b) Turn the ignition switch to ACC or ON and wait approx. 6 seconds.
- (c) Starting with the Tc terminal, apply body ground alternately to terminal Tc and terminal AB twice each in cycles of 1.0 seconds. Confirm that body ground is absolute. Finally, keep applying body ground to terminal Tc.

HINT: When alternately grounding terminals Tc and AB, release ground from one terminal and immediately apply it to the other terminal within an interval of 0.2 second. If diagnostic trouble codes do not clear, repeat the above procedure until the codes are cleared.

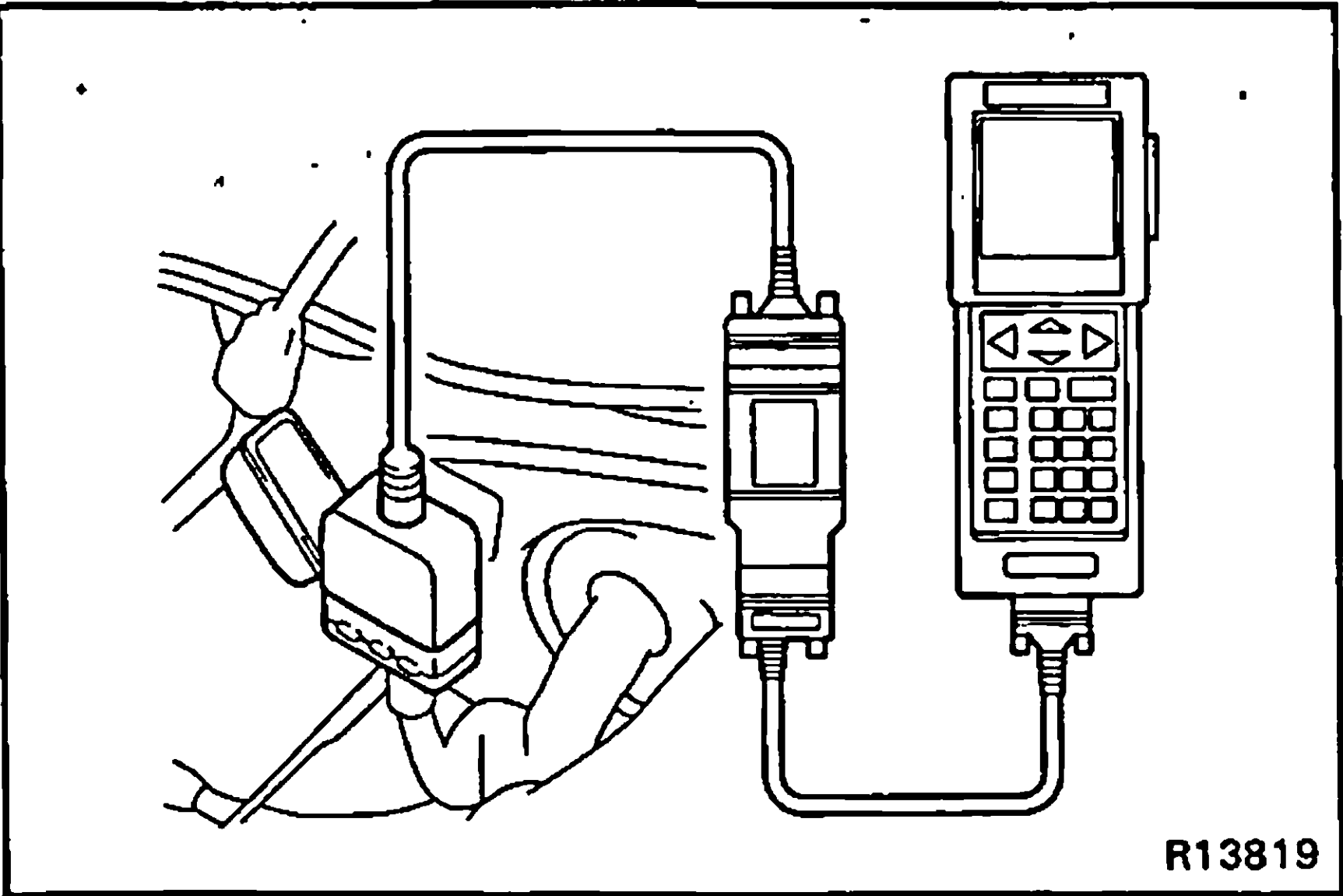


- (d) Several seconds after doing the clearing procedure, the SRS warning light will blink in a 50 m sec. cycle to indicate the codes have been cleared.

Using hand-held tester:

- (a) Hook up the hand-held tester to the check connector.
- (b) Clear the diagnostic trouble codes by following the prompts on the tester screen.

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



SYMPTOM SIMULATION

“Intermittent troubles or problems” are the malfunctions about which the customer has a complaint, but which do not occur and cannot be confirmed in the workshop. The intermittent problems also include complaints about the SRS warning light going on and off erratically.

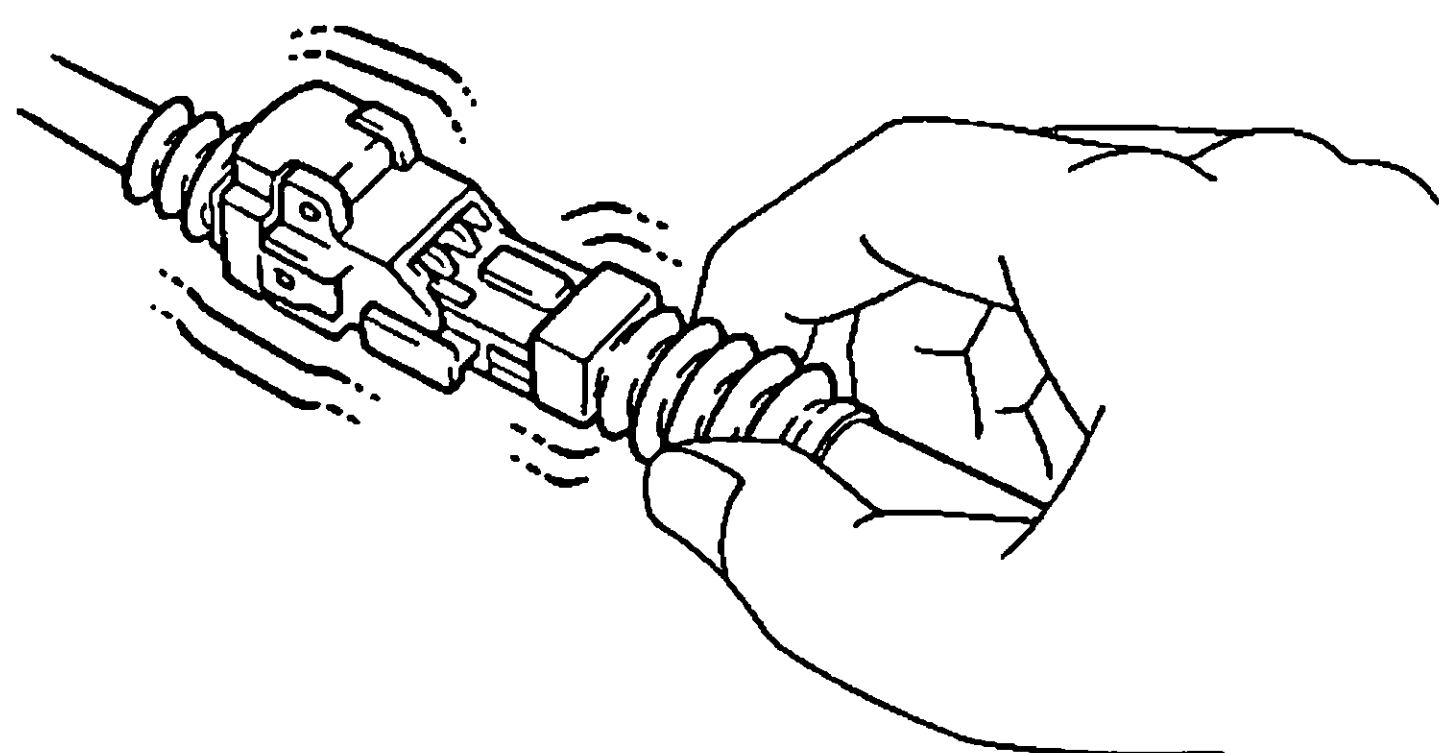
The self-diagnostic system stores the circuit of the intermittent problem in memory even if the ignition switch is turned off.

For accurate diagnosis of the problems, ask the customer to obtain as much information as possible following the customer problem analysis check sheet (See page RS-37, and try to reproduce the intermittent problem.

The problem simulation methods described below are the effective ways to reproduce the problem conditions by applying vibration, heat, and humidity.

1

VIBRATION METHOD: When vibration seems to be the major cause.



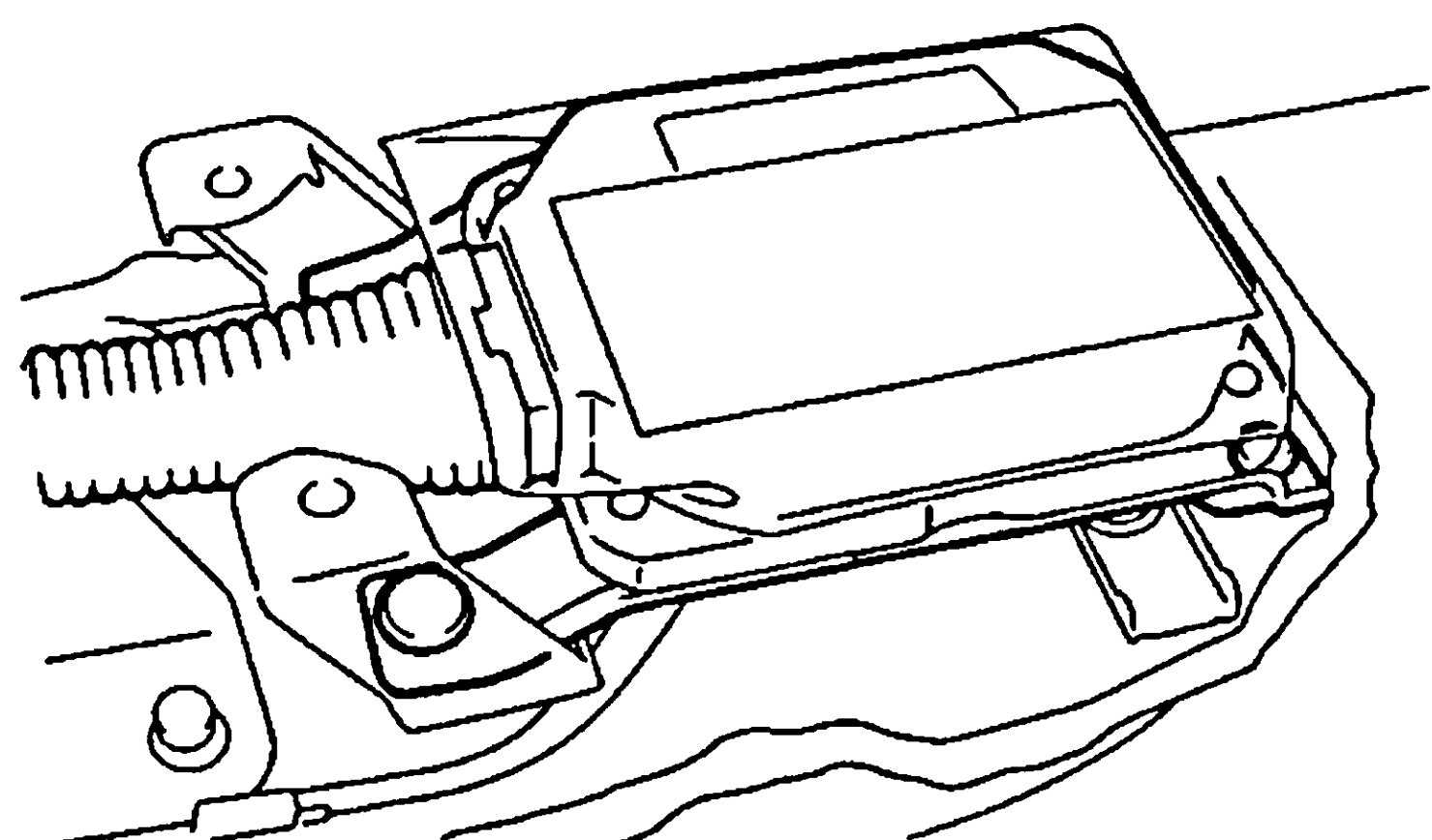
AB0245

CONNECTORS

Slightly shake the connector vertically and horizontally.

Inspection of connectors:

- (a) Does the wire harness connecting with its corresponding part have insufficient slack?
- (b) Are the terminals dirty?
- (c) Are the terminals making loose contact due to terminals spread?



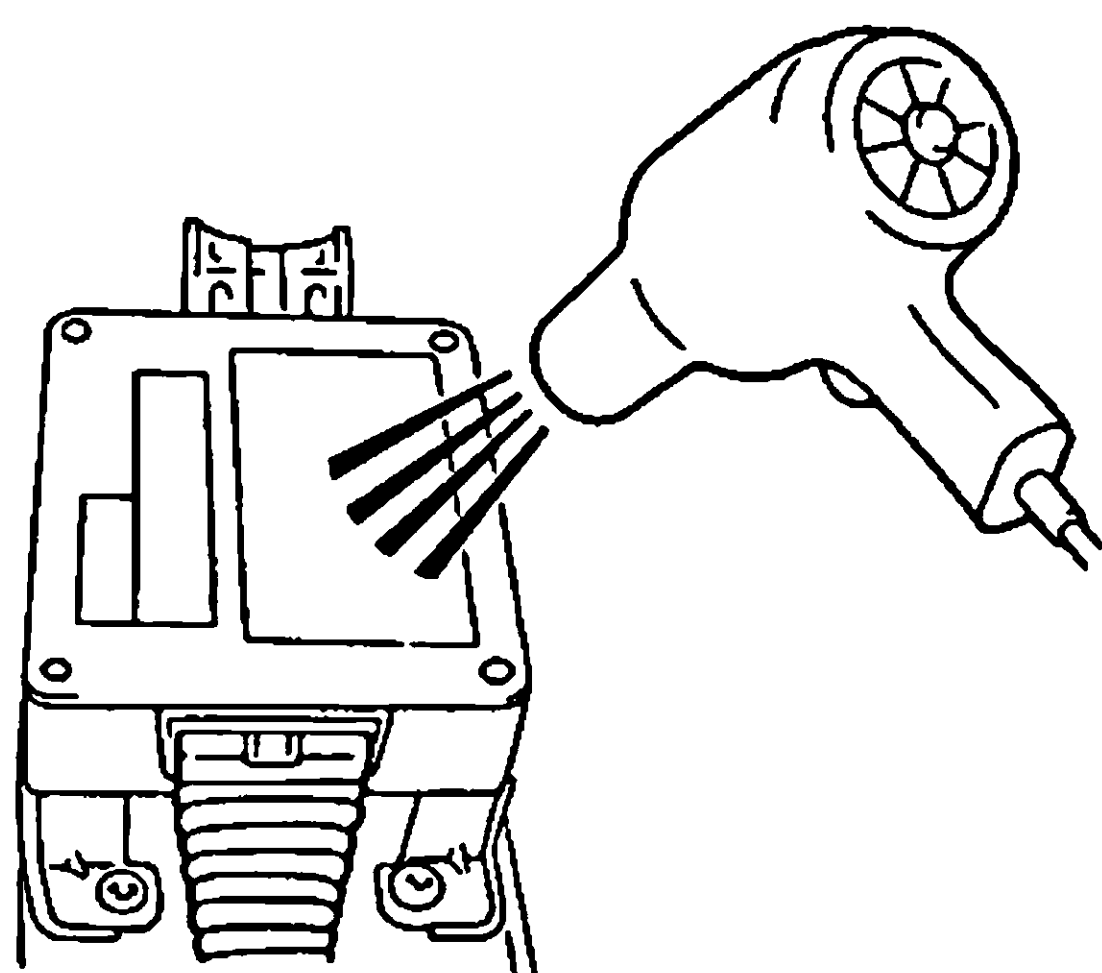
R09170

WIRE HARNESS

Slightly shake the wire harness vertically and horizontally. Thoroughly check the connector joint, the fulcrum of the vibration and the wiring opening in the engine/passenger compartment panel.

2

HEAT METHOD: When the problem seems to occur when the suspect area is heated.



R06854

Heat the component that is likely the cause of the malfunction with a hair dryer or similar object. Check to see if the malfunction will occur.

NOTICE:

- Do not heat to more than 60°C (140°F) (temperature limit that the component can be touched with a hand).
- Do not apply heat directly to any part in the ECU.

3**WATER SPRINKLING METHOD:****When the malfunction seems to occur on a rainy day or in a high-humidity condition.**

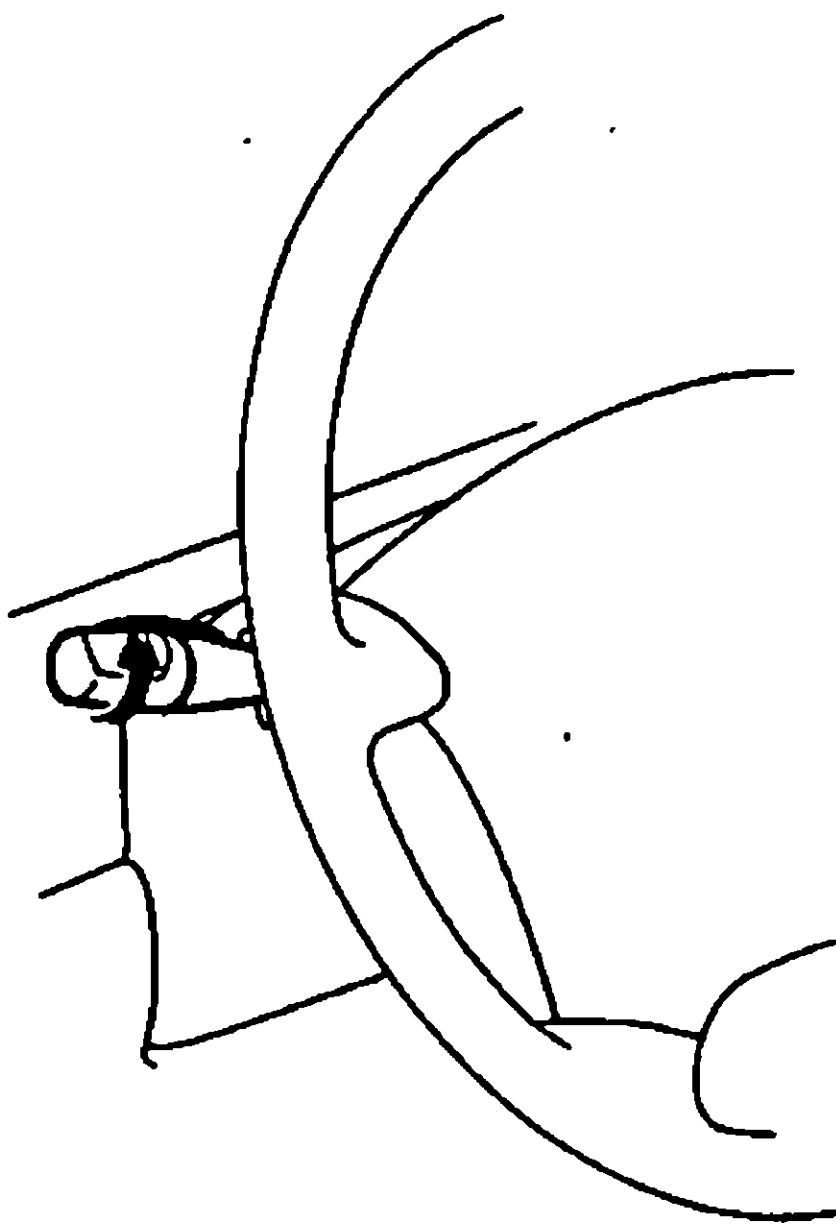
R06855

Sprinkle water onto the vehicle and check to see if the malfunction will occur.

NOTICE: Never apply water directly onto the electronic components.

HINT:

- If the vehicle leaks water, the water may contaminate the ECU. When testing a vehicle with a water leakage problem, special caution must be paid.

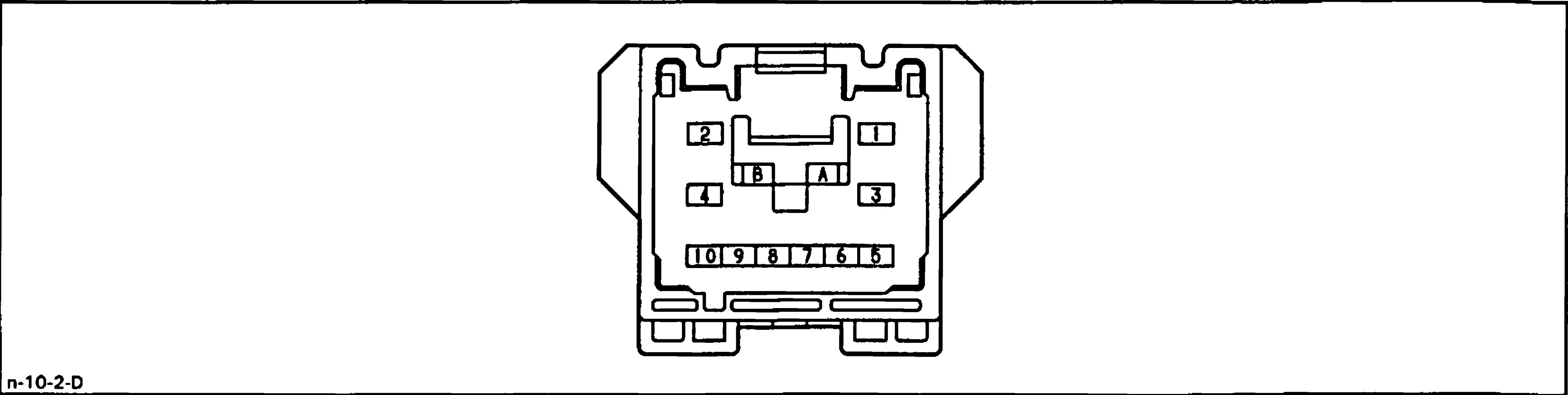
4**OTHER: When a malfunction seems to occur when electrical load is excessive.**

AB0234

Turn on all electrical loads including the heater blower, headlights, rear window defogger, etc. and check to see if the malfunction will occur.

RS

AIRBAG SENSOR ASSEMBLY CONNECTOR



n-10-2-D

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	E ₁	Ground
6	E ₂	Ground
7	Tc	Diagnosis
8	LA	SRS Warning Light
9	IG ₂	Power Source (IGN Fuse)
10	ACC	Power Source (CIG Fuse)

RS

DTC	(Normal)	Source Voltage Drop
-----	----------	---------------------

CIRCUIT DESCRIPTION

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

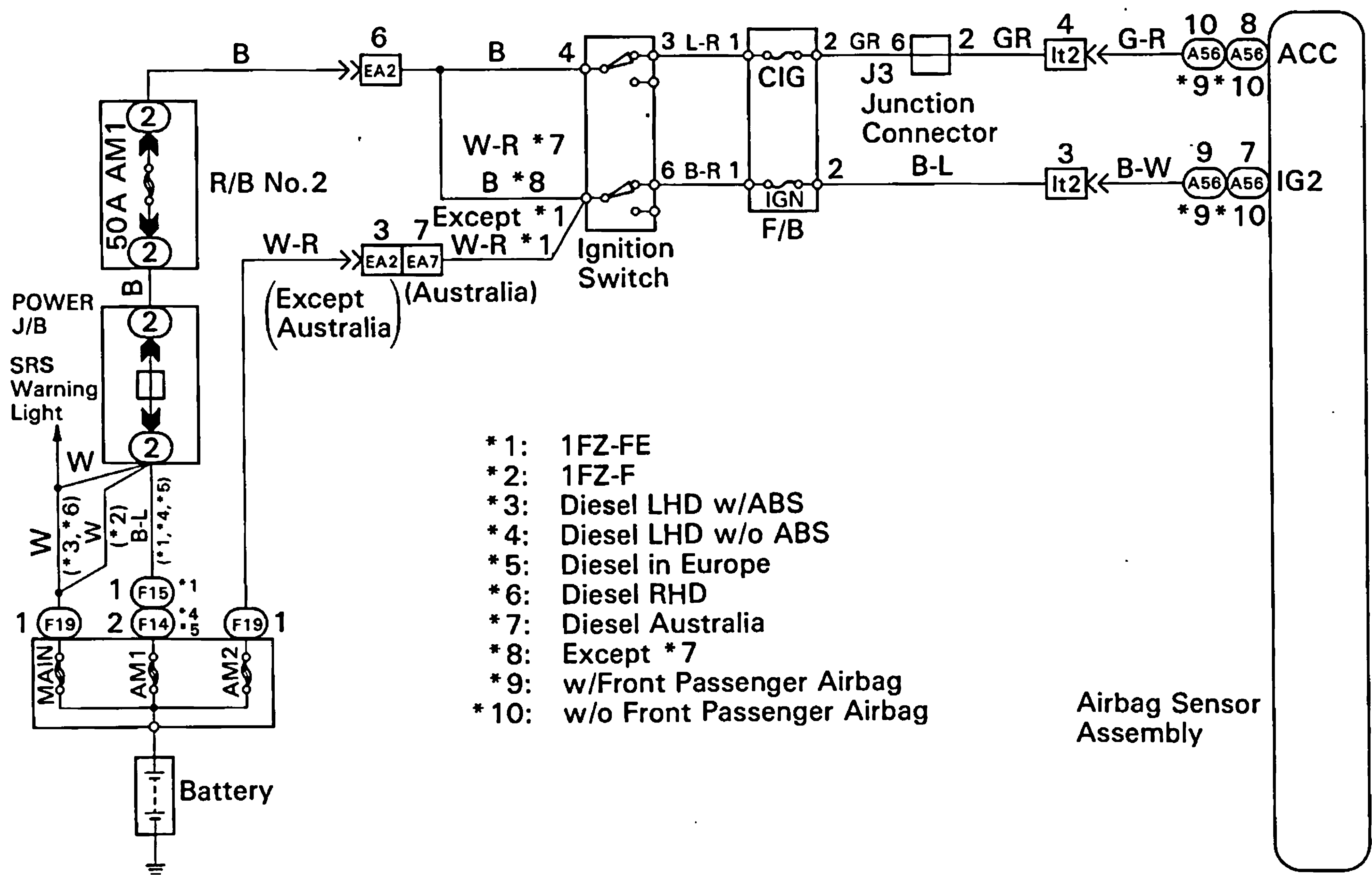
When the battery voltage drops, the voltage-increase circuit (DC-DC converter) functions to increase the voltage of the SRS to normal voltage.

The diagnosis system malfunction display for this circuit is different to other circuits – when the SRS warning light remains lit up and the diagnostic trouble code 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



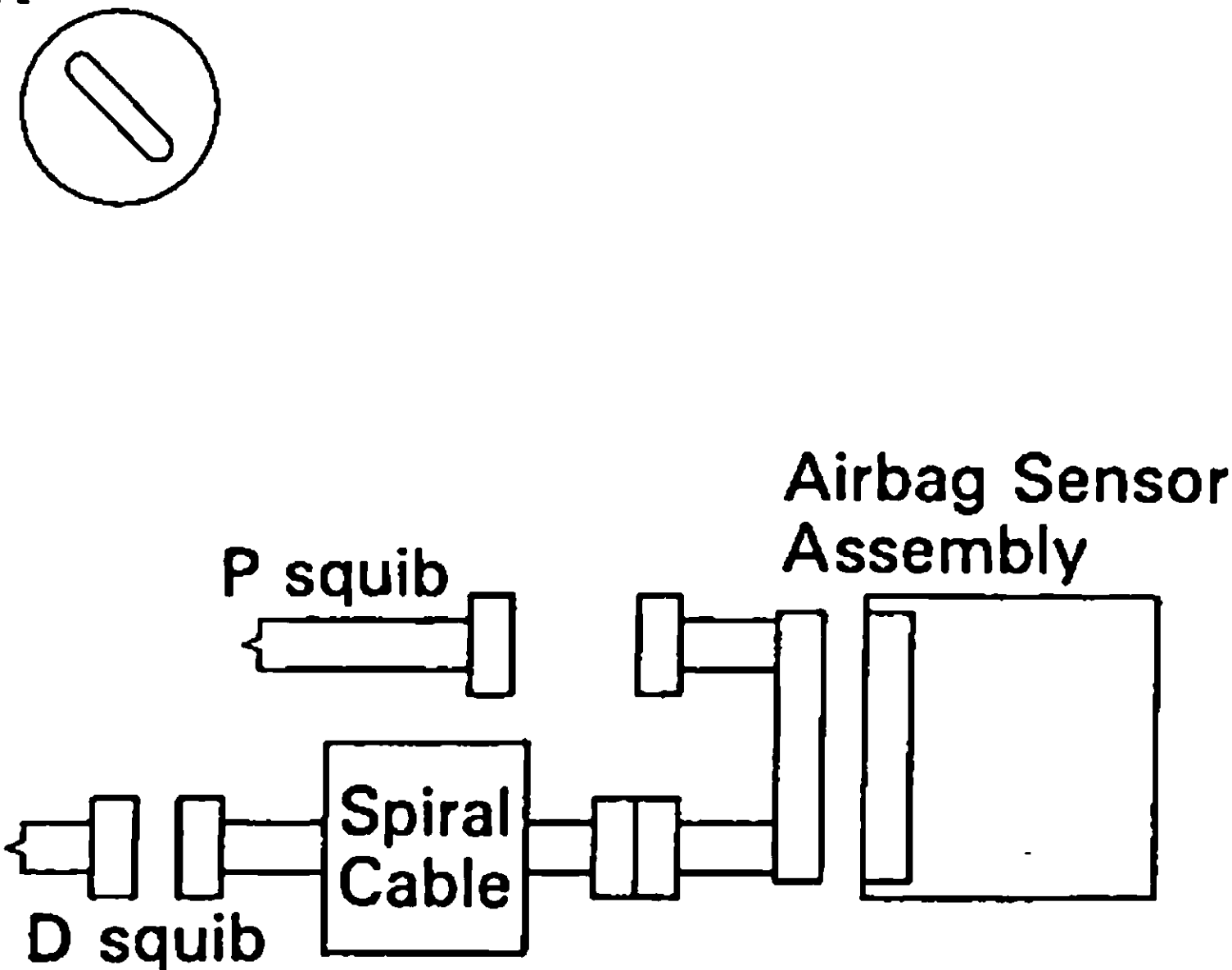
INSPECTION PROCEDURES

P Preparation **C** Check

1

Preparation.

LOCK



AB0117
R05894

P

(1) Disconnect negative (–) terminal cable from the battery, and wait at least 90 seconds.

(2) Remove steering wheel pad. (See SR Section)

(3) Disconnect connector of front passenger airbag assembly (See page RS-21).

(4) Disconnect connector of airbag sensor assembly (See page RS-30).

Caution

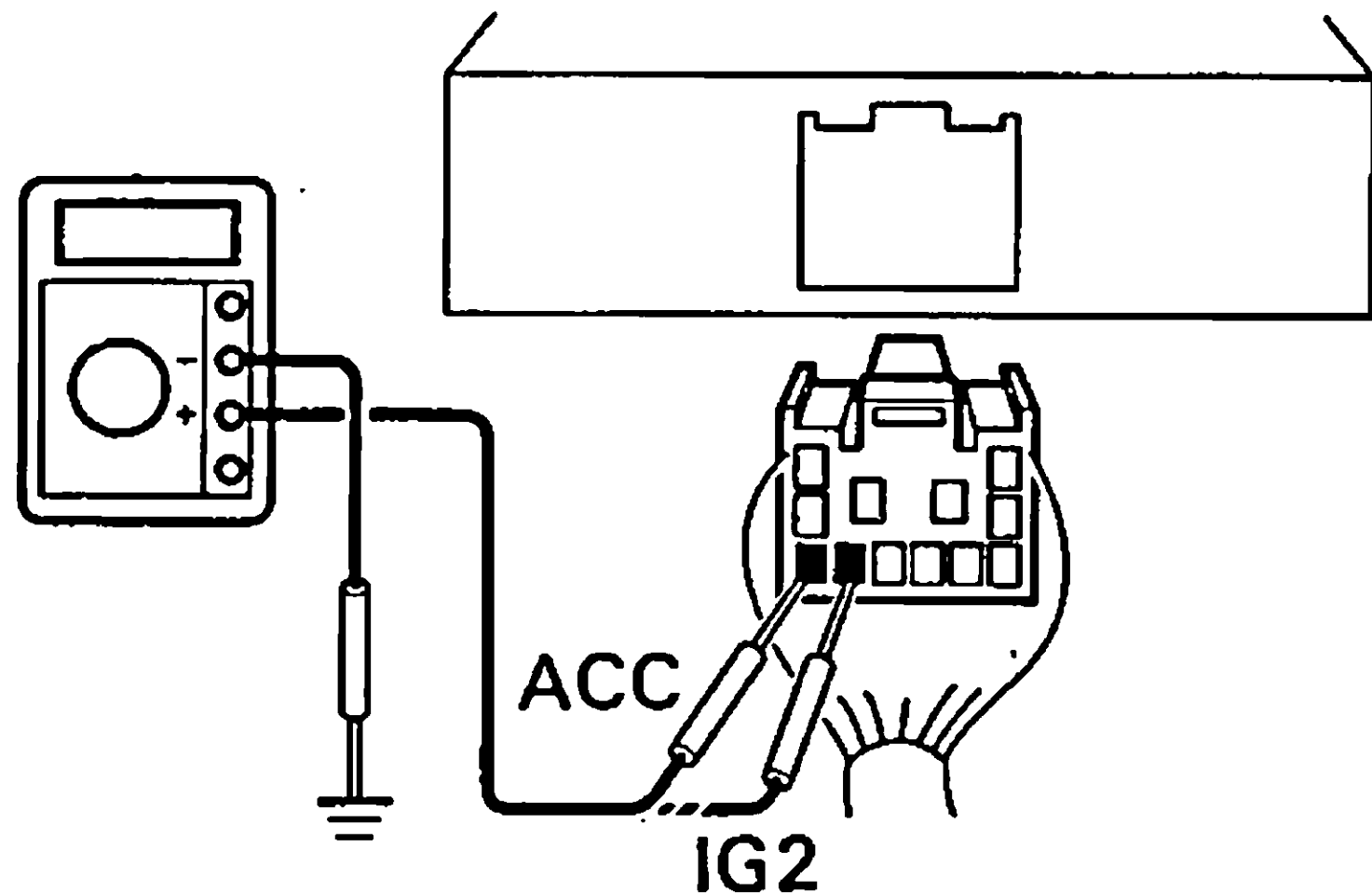
Store the steering wheel pad with the front surface facing upward.

RS

2

Check source voltage.

ON



AB0119
N12637

P

Turn ignition switch ON.

C

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

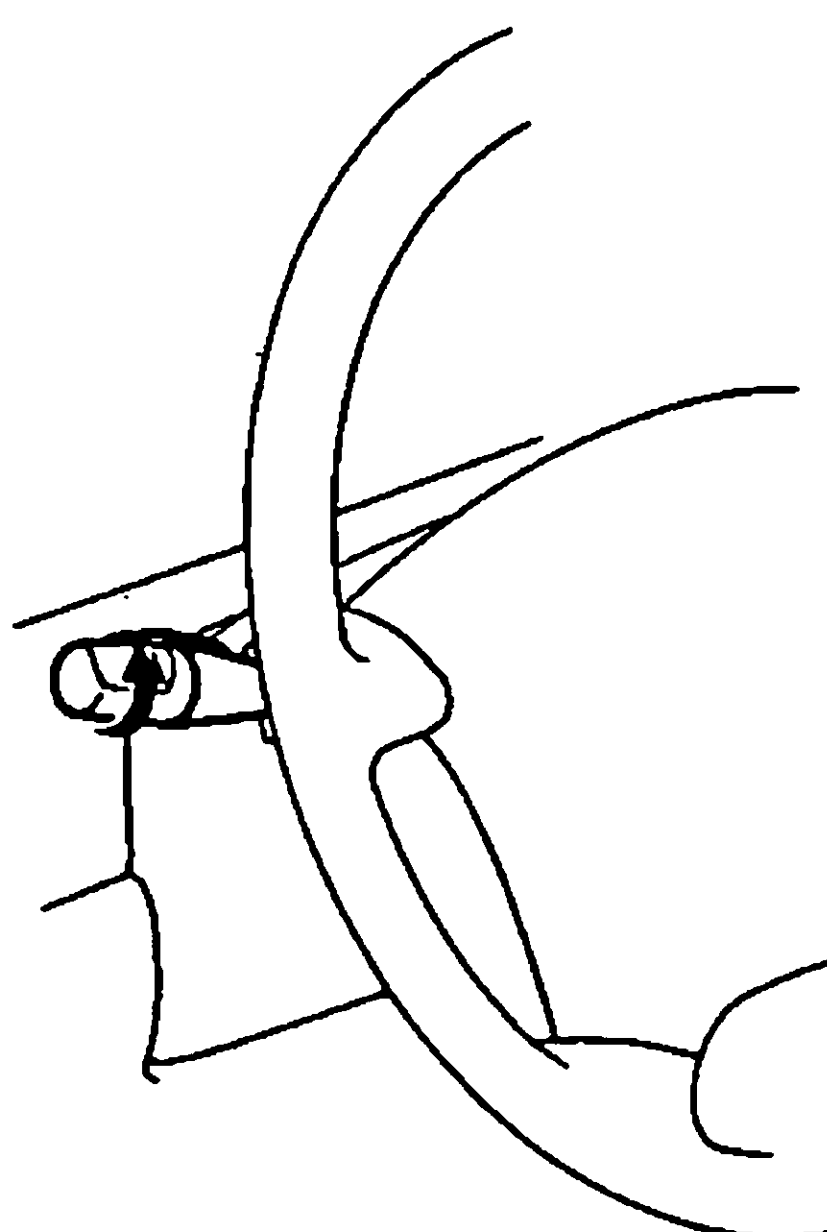
OK

Voltage: 6 V – 11.5 V

OK

NG

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

3 Does SRS warning light turn off?	
ON  AB0119 AB0234	P (1) Turn ignition switch to LOCK. (2) Connect steering wheel pad connector. (3) Connect front passenger airbag assembly. (4) Connect airbag sensor assembly connector. (5) Turn ignition switch ON. C Operate electric system checked in 2 C and check that SRS warning light goes off.
YES	NO Check diagnostic trouble code, and if a malfunction code is output, perform troubleshooting according to malfunction code. If a normal code is output, replace airbag sensor assembly.

RS

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)
-----	----	------------------------------------

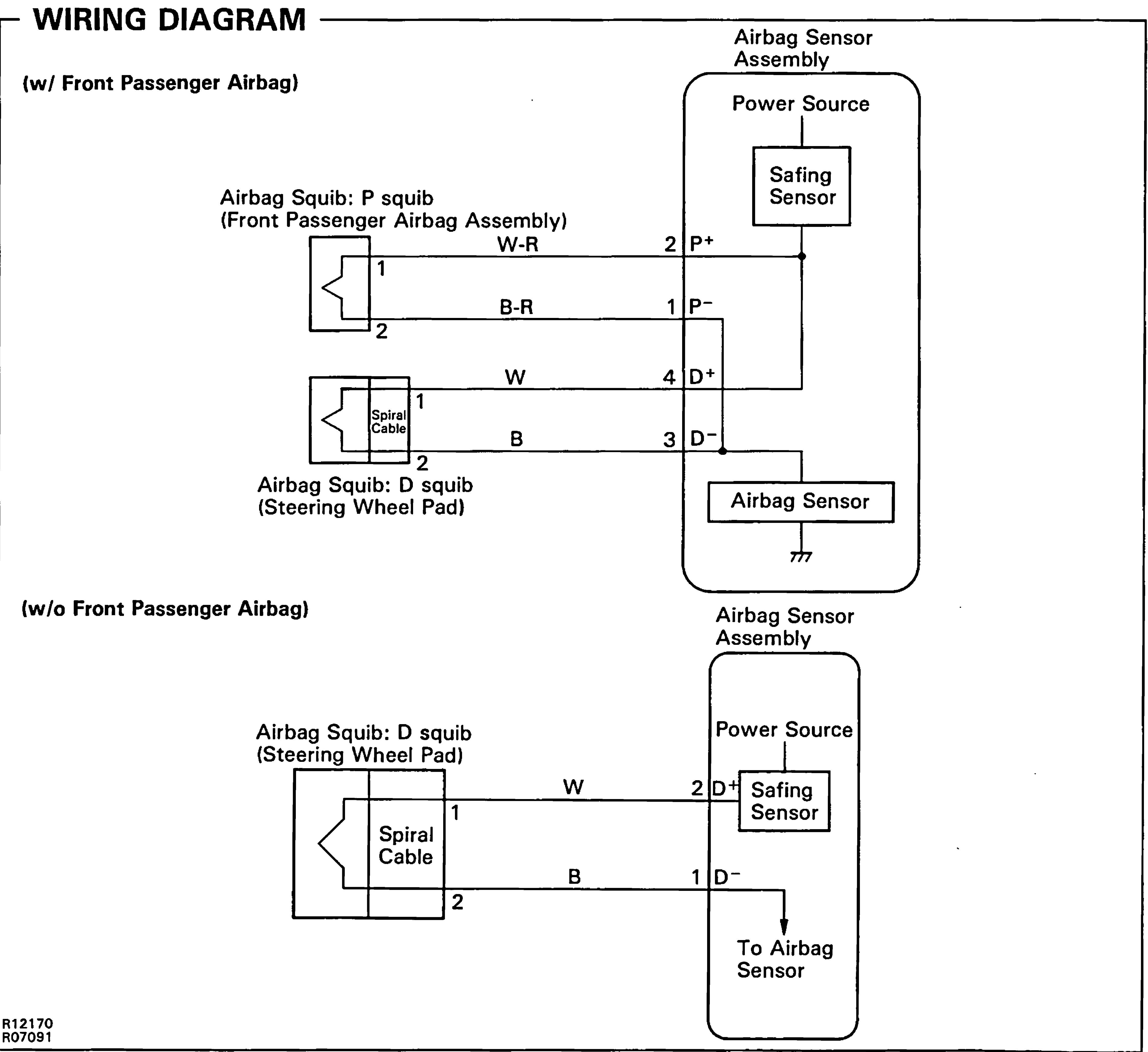
CIRCUIT DESCRIPTION

The squib circuit consists of the airbag sensor assembly, spiral cable, steering wheel pad and front passenger airbag assembly. It 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-3.

Diagnostic trouble code 11 is recorded when ground short is detected in the squib circuit.

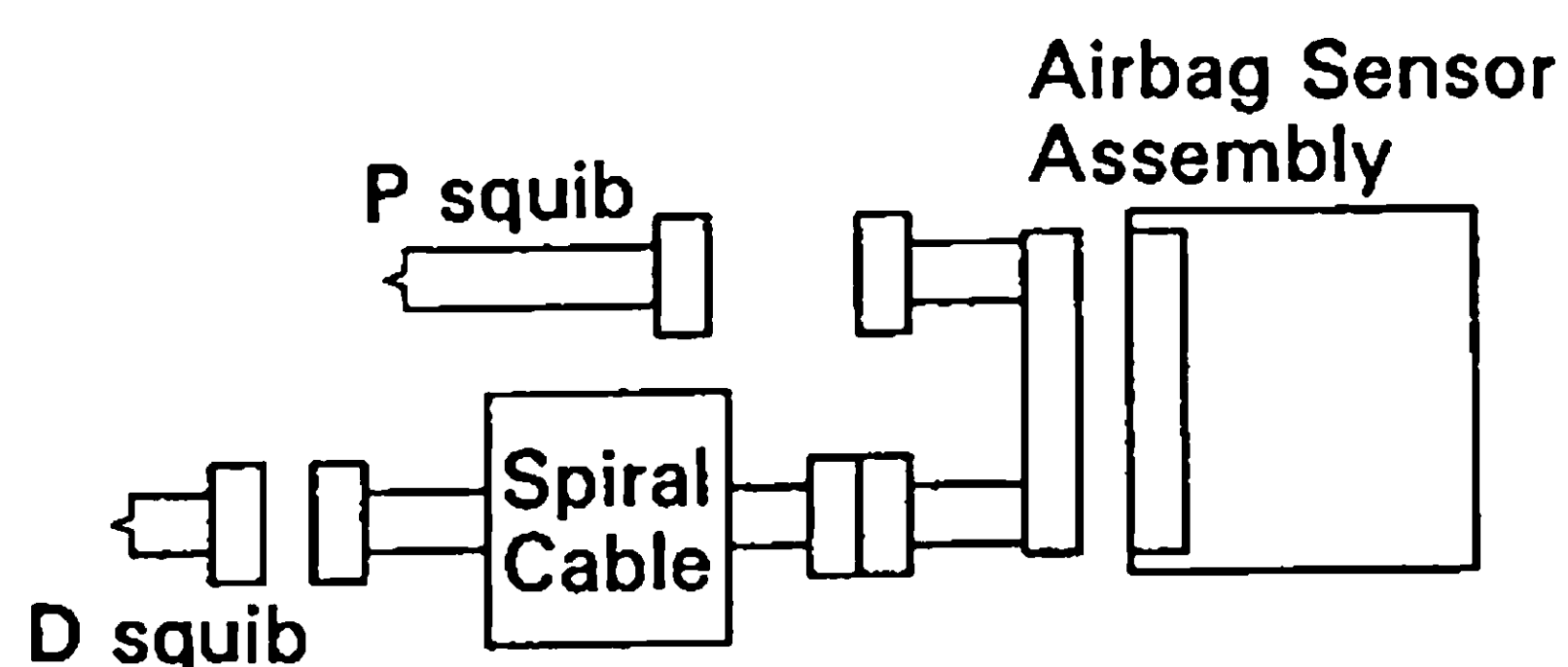
DTC No.	Diagnosis
11	• Short circuit in squib wire harness (to ground). • Squib malfunction. • Spiral cable malfunction. • Airbag sensor assembly malfunction.



INSPECTION PROCEDURES

P Preparation**C** Check**1****Preparation.**

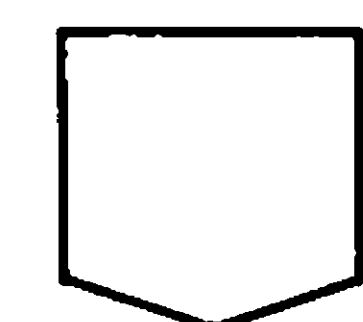
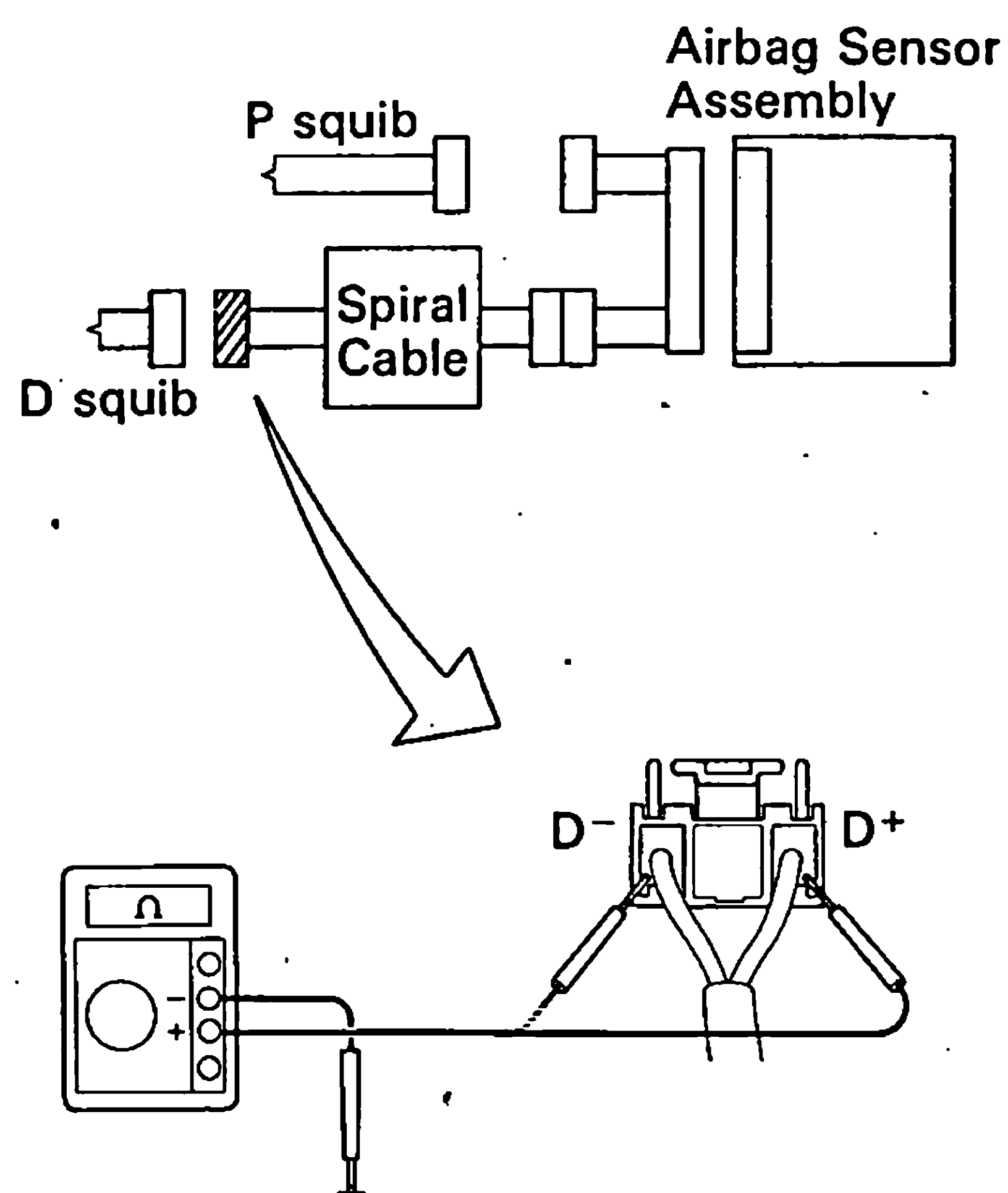
LOCK

AB0117
R05894**P**

- (1) Disconnect negative (–) terminal cable from the battery, and wait at least 90 seconds.
- (2) Remove steering wheel pad. (See SR section)
- (3) Disconnect connector of front passenger airbag assembly (See page RS-21).
- (4) Disconnect connector of airbag sensor assembly (See page RS-30).

Caution

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

**2****Check D squib circuit.**R05894
AB0070**C**

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: 1 MΩ or Higher

RS

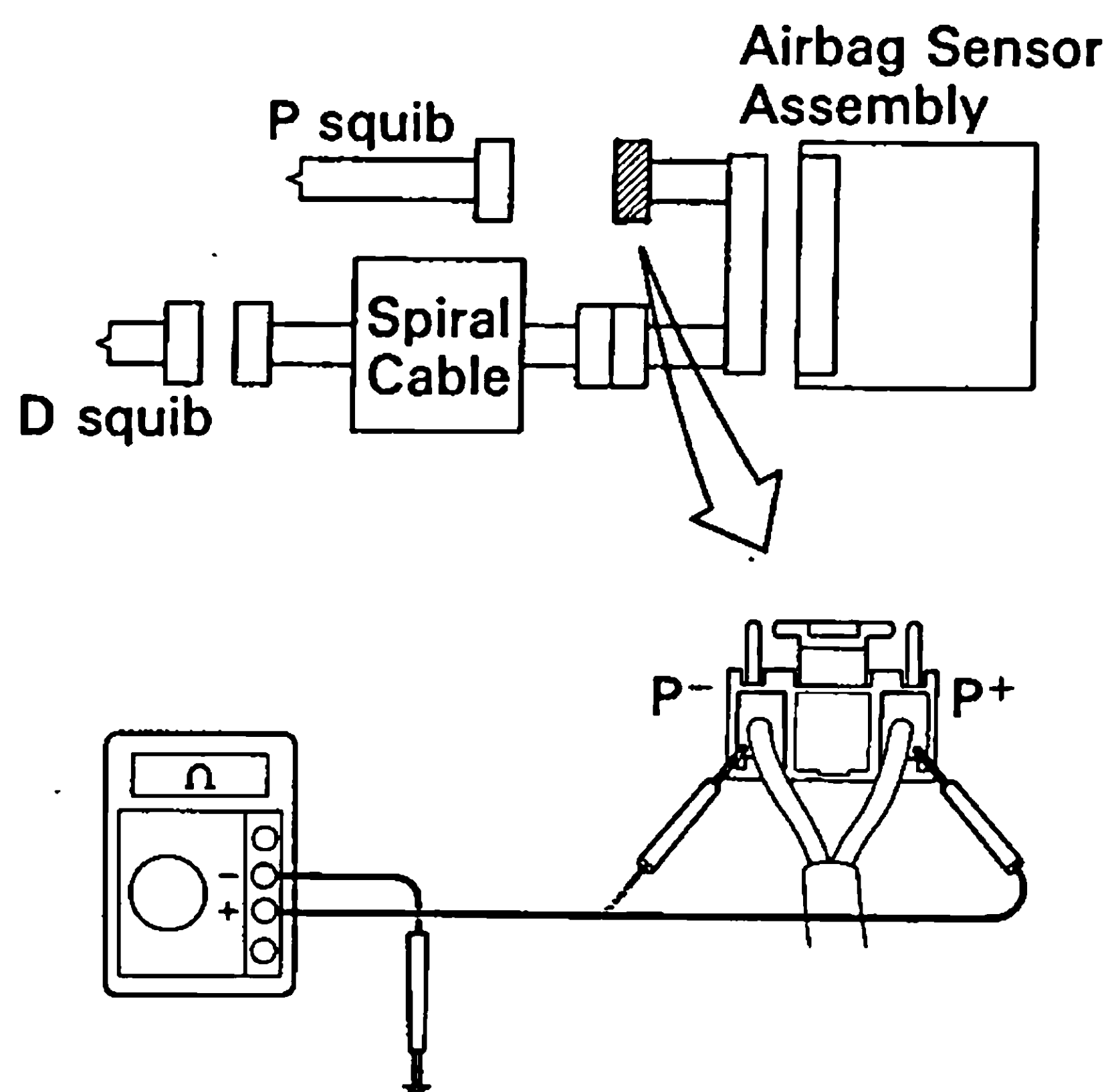
OK**NG**Go to step **7**.

(w/ Front Passenger Airbag)

Go to step **3**.

(w/o Front Passenger Airbag)

Go to step **4**.

3**Check P squib circuit.**R05898
AB0070**P**

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.

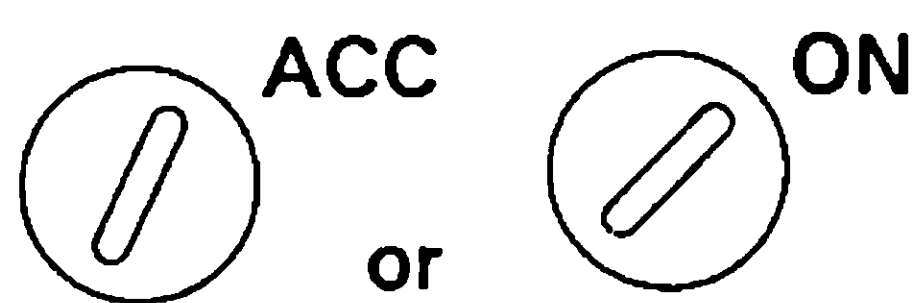
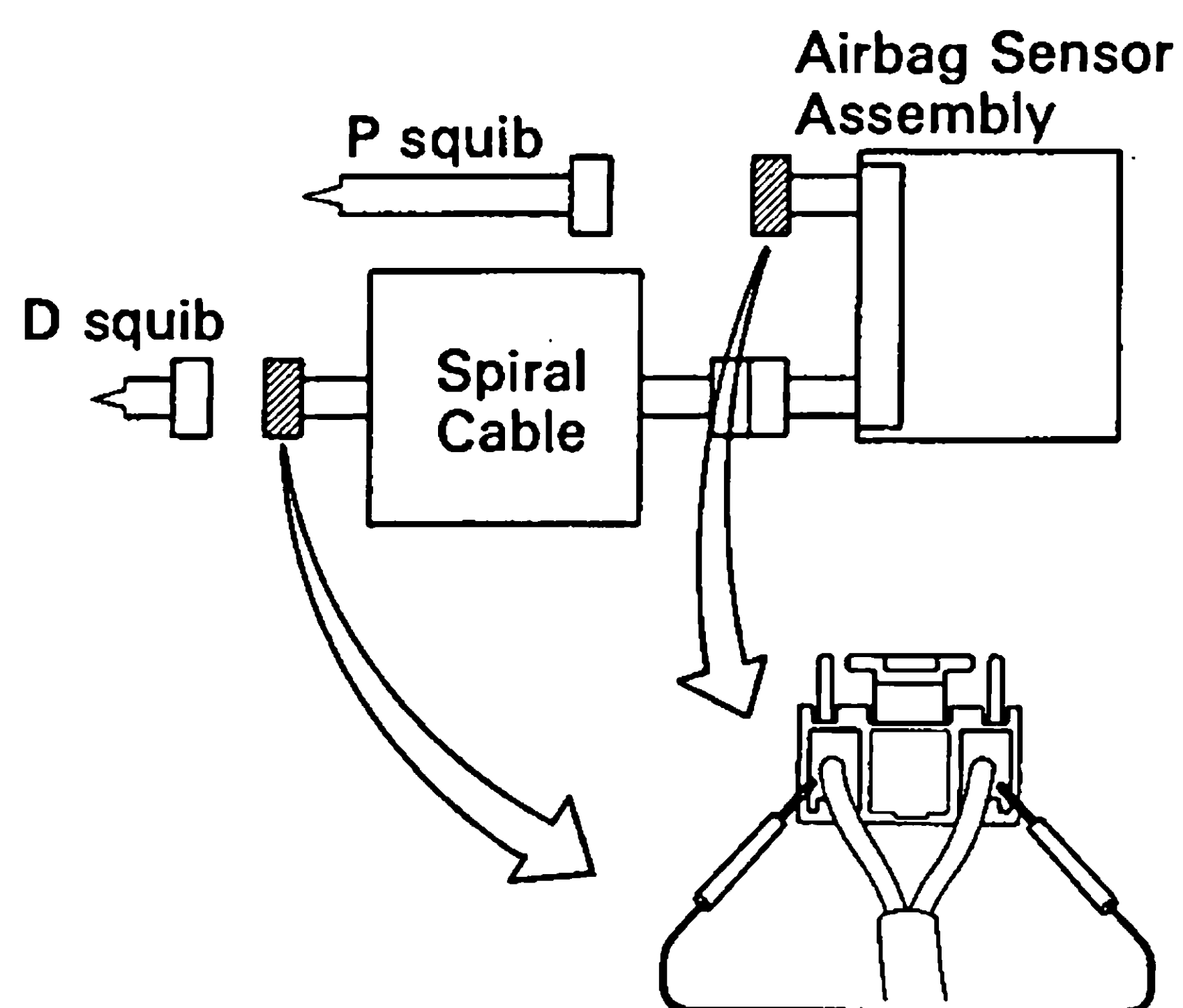
OK

Resistance: 1 MΩ or Higher

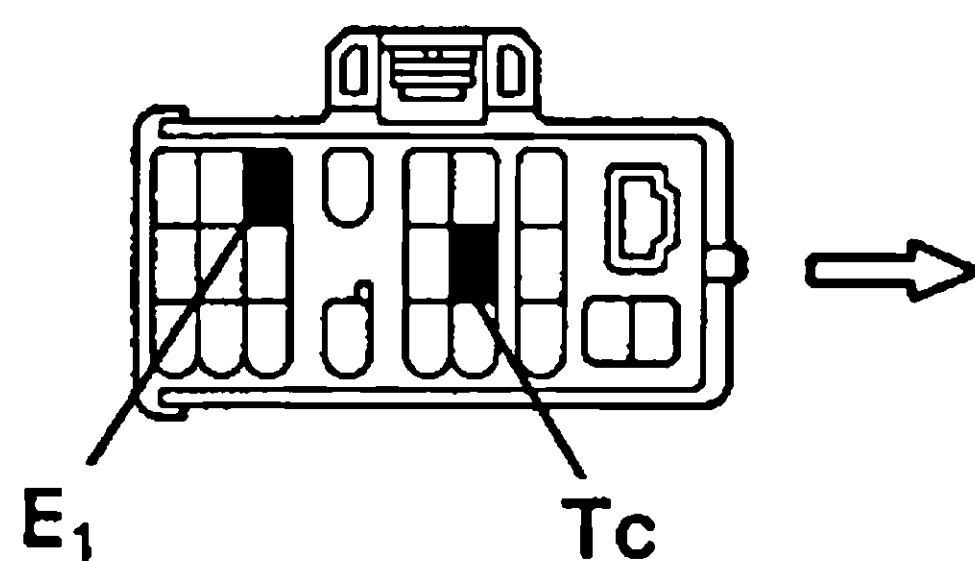
OK**NG**

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

RS

4**Check airbag sensor assembly.**

Check Connector



Code 11

P

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

C

- (1) Turn ignition switch to ACC or ON and wait at least 20 seconds.
- (2) Clear malfunction code stored in memory. (See page RS-41)
- (3) Turn ignition switch to LOCK, and wait at least 20 seconds.
- (4) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (5) Using SST, connect terminals Tc and E₁ of check connector.
SST 09843-18020
- (6) Check diagnostic trouble code.

OK

Diagnostic trouble code 11 is not output.

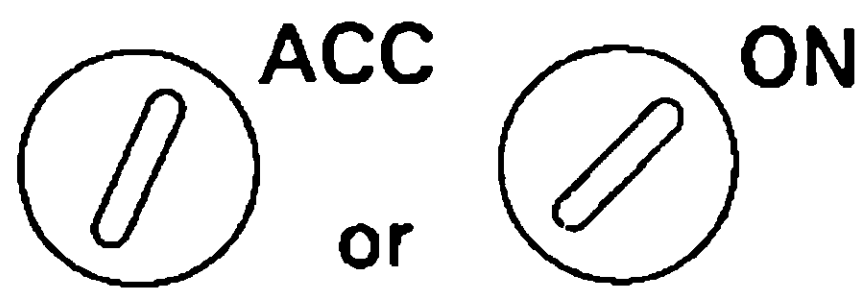
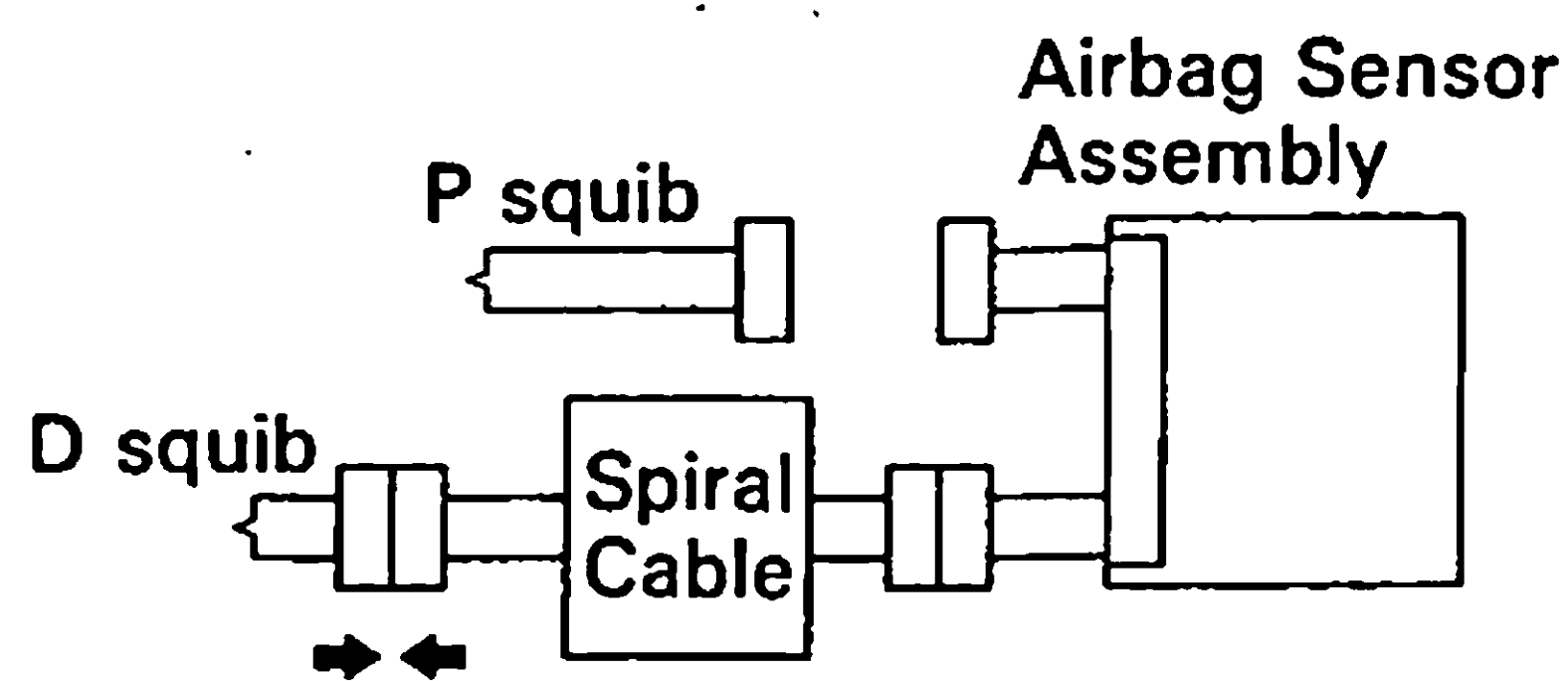
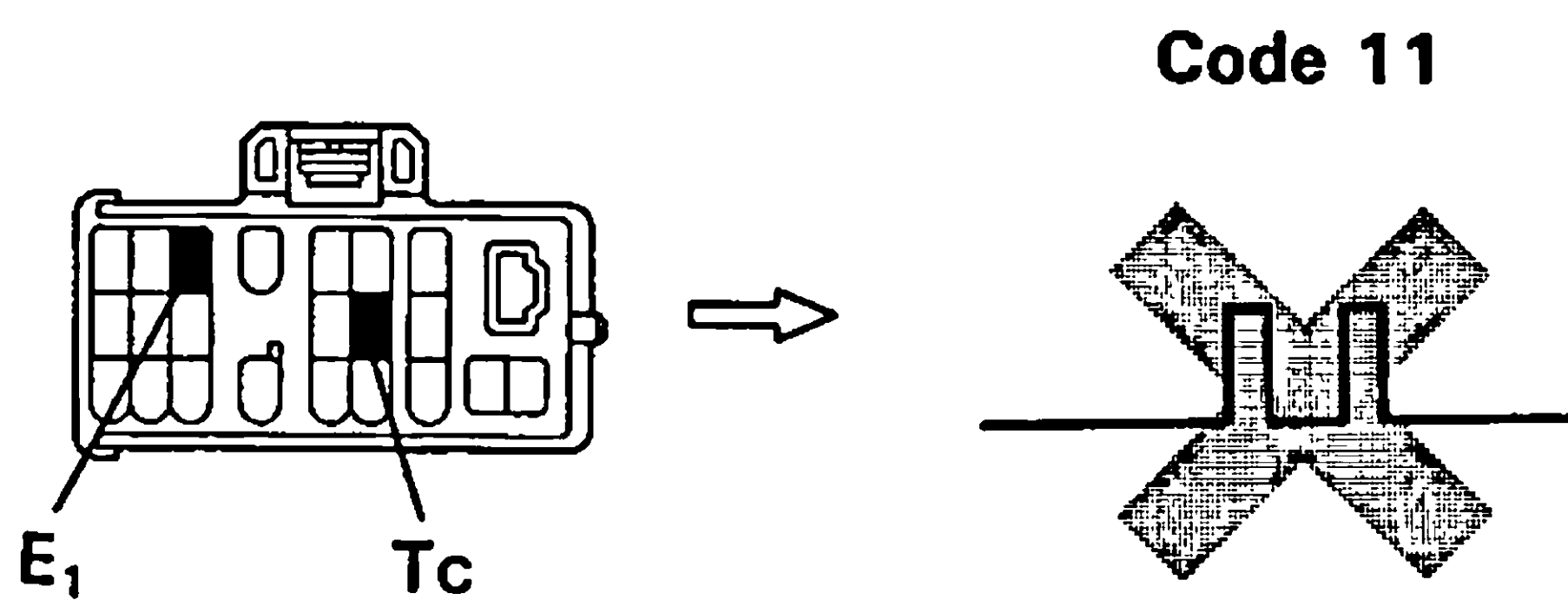
Hint

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

OK**NG**

Replace airbag sensor assembly.

AB0069 P06907
AB0118 AB0119
R13006 AB0057

5**Check D squib.****Check Connector**

R05896
AB0118 AB0119
R13006 AB0057

P

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

C

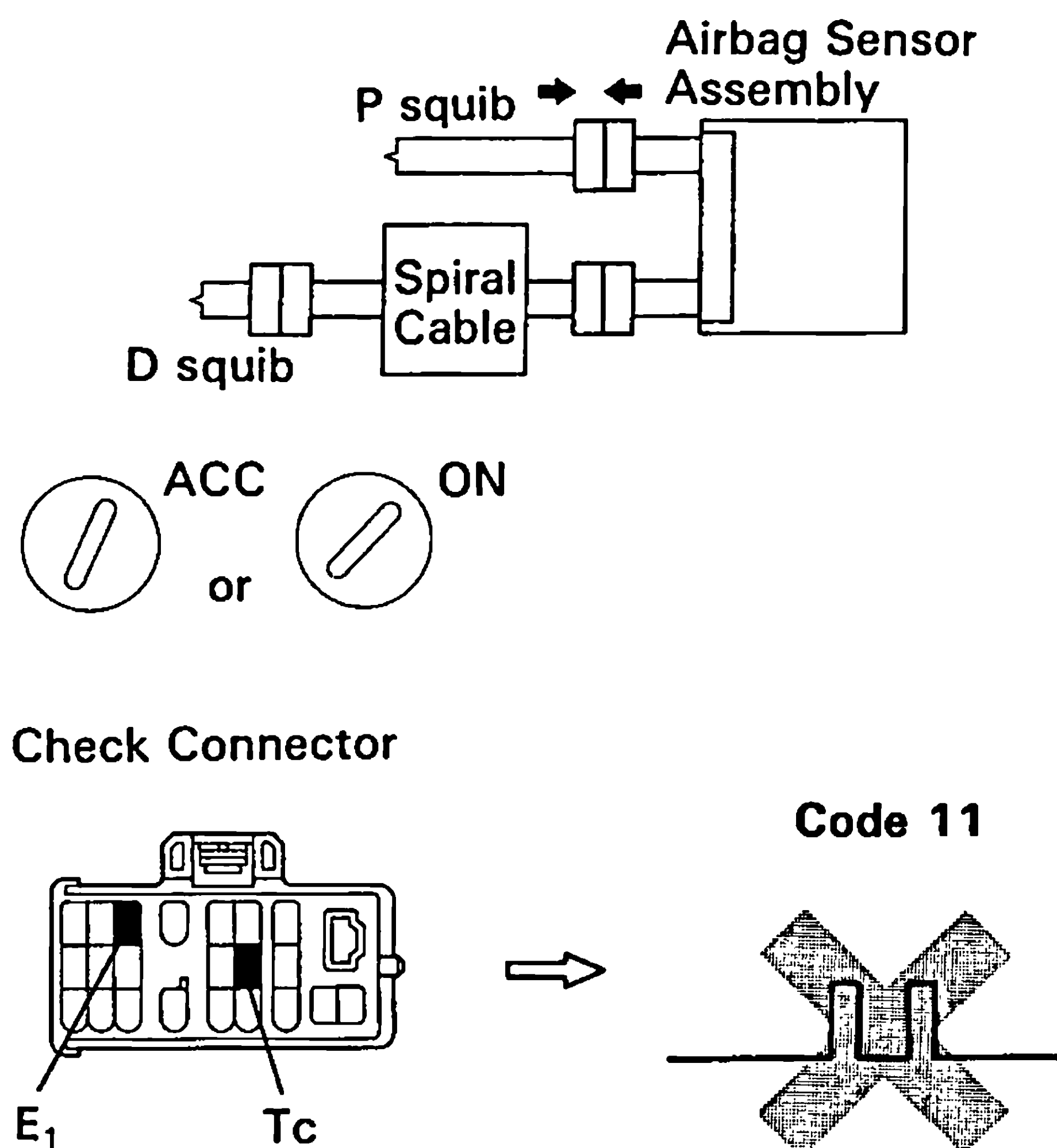
- (1) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (2) Clear malfunction code stored in memory. (See page RS-41)
- (3) Turn ignition switch to LOCK, and wait at least 20 seconds.
- (4) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (5) Using SST, connect terminals Tc and E₁ of check connector.
SST 09843–18020
- (6) Check diagnostic trouble code.

OK**Diagnostic trouble code 11 is not output.****Hint**

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

OK**NG****Replace steering wheel pad.****(w/ Front Passenger Airbag)**Go to step **6**.**(w/o Front Passenger Airbag)**Go to the next step **6**.

RS

6**Check P squib.**

R05897
AB0118 AB0119
R13006 AB0057

OK

- P**
- (1) Turn ignition switch to LOCK.
 - (2) Disconnect negative (–) terminal cable from the battery, and wait at least 90 seconds.
 - (3) Connect front passenger airbag assembly connector.
 - (4) Connect negative (–) terminal cable to battery, and wait at least 2 seconds.
- C**
- (1) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
 - (2) Clear malfunction code stored in memory. (See page RS-41)
 - (3) Turn ignition switch to LOCK, and wait at least 20 seconds.
 - (4) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
 - (5) Using SST, connect terminals Tc and E₁ of check connector.
- SST 09843 – 18020
- (6) Check diagnostic trouble code.

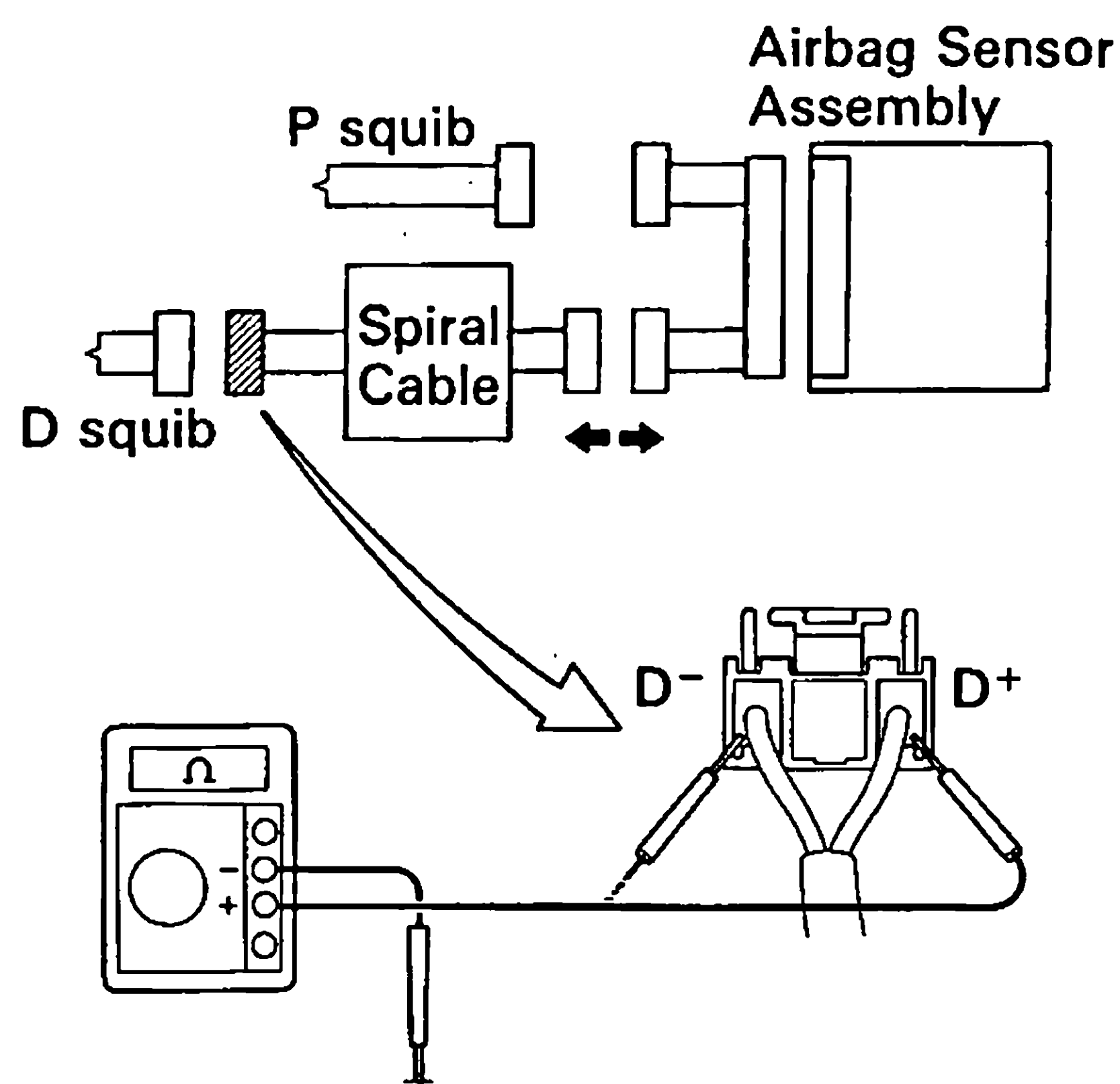
OK Diagnostic trouble code 11 is not output.

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.

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.**

R05899
AB0070

OK

- P** Disconnect connector between airbag sensor assembly and spiral cable.
- C** Measure resistance between D⁺, D[–] on spiral cable side of connector between spiral cable and steering wheel pad and body ground.
- OK** Resistance: 1 MΩ or Higher

NG

Repair or replace spiral cable.

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 (squib) and front passenger airbag assembly. It causes the SRS to deploy when the SRS deployment conditions are satisfied.

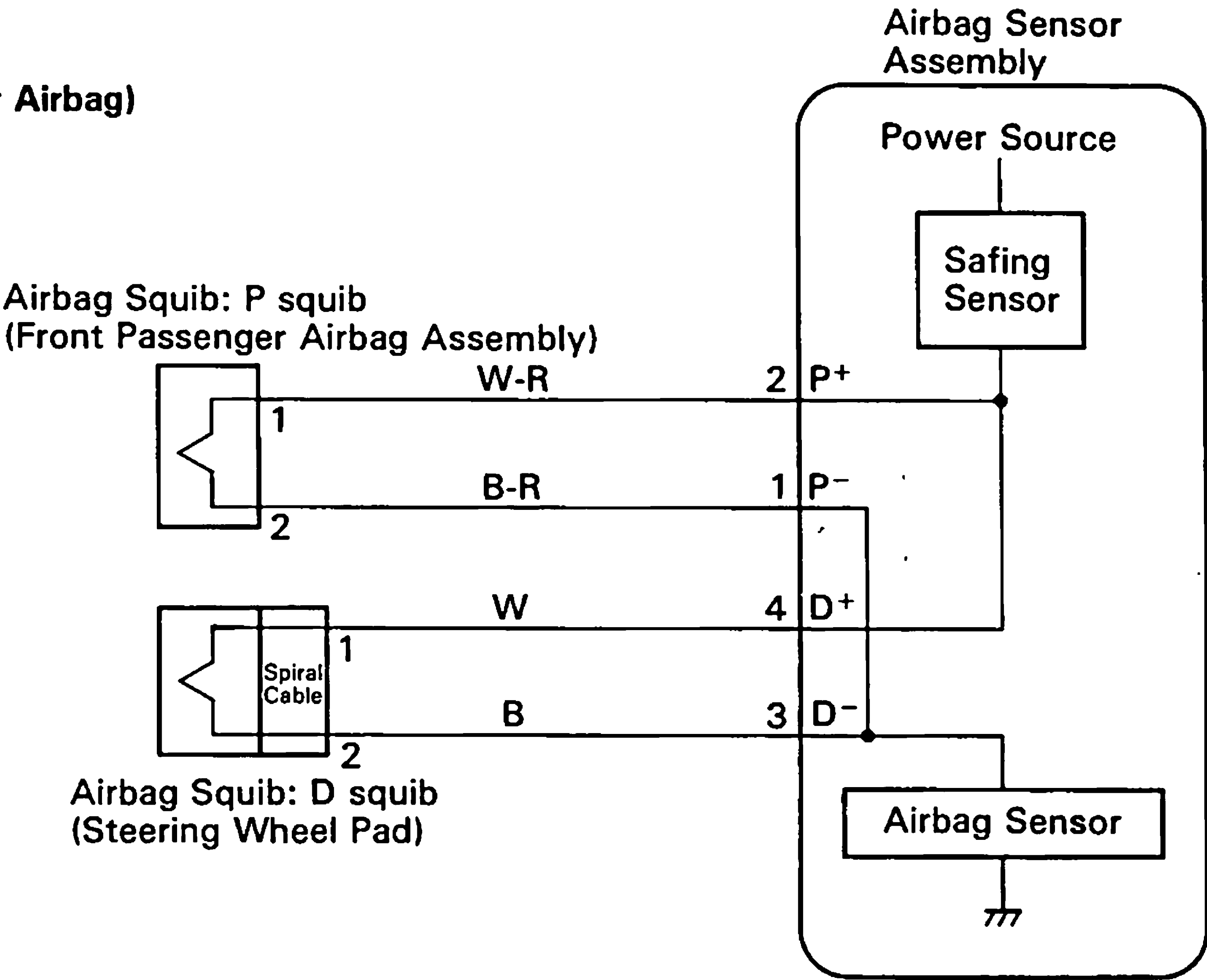
For details of the function of each component, see FUNCTION OF COMPONENTS on page RS-3.

Diagnostic trouble code 12 is recorded when B+ short is detected in the squib circuit.

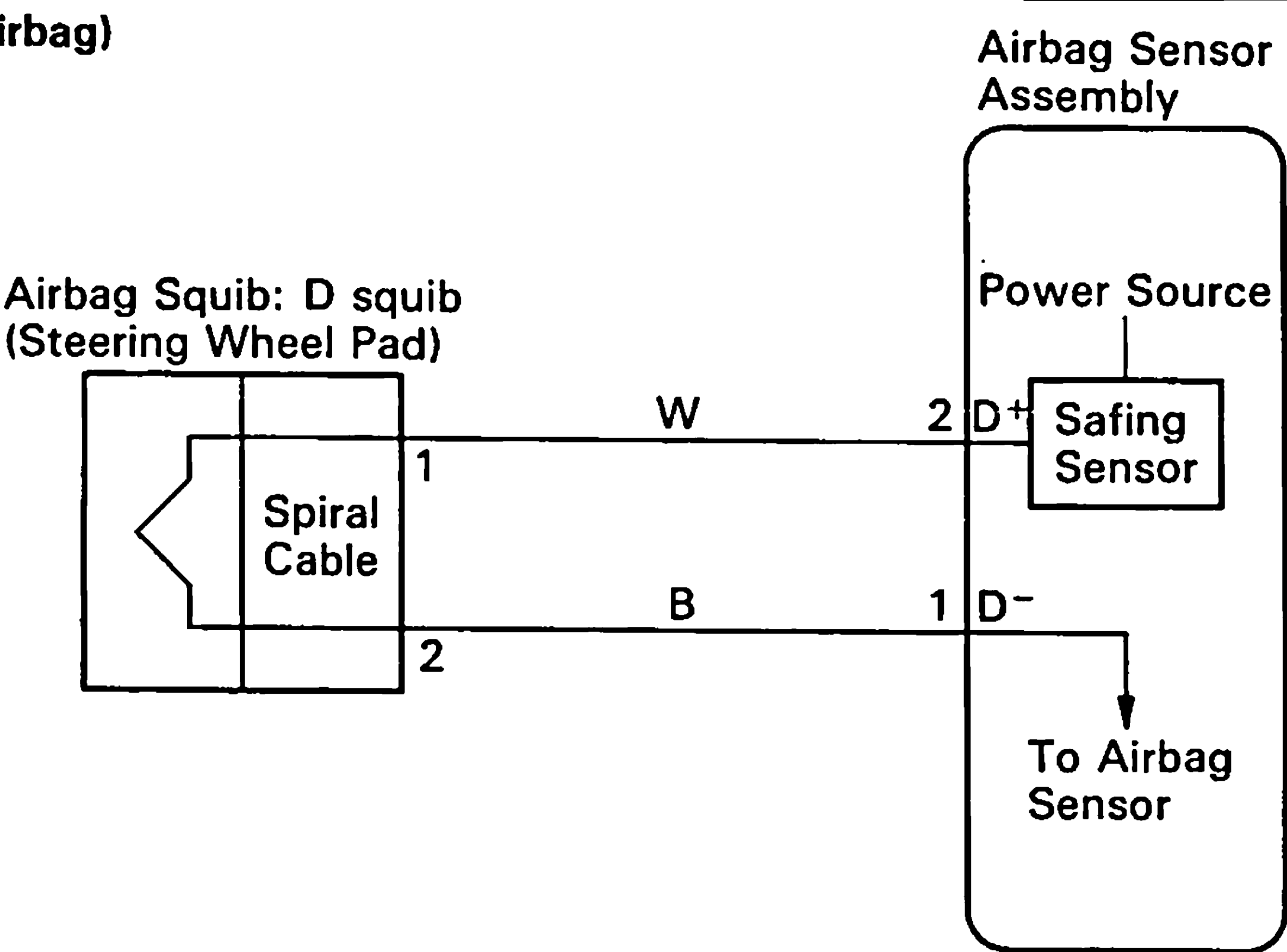
DTC No.	Diagnosis
12	• Short circuit in squib wire harness (to B+). • Squib malfunction. • Spiral cable malfunction. • Airbag sensor assembly malfunction.

WIRING DIAGRAM

(w/ Front Passenger Airbag)



(w/o Front Passenger Airbag)



INSPECTION PROCEDURES

P Preparation **C** Check

1

Preparation.

LOCK

P squib

D squib

Spiral Cable

Airbag Sensor Assembly

AB0117

R05894

P

(1) Disconnect negative (–) terminal cable from the battery, and wait at least 90 seconds.
(2) Remove steering wheel pad. (See SR section)
(3) Disconnect connector of front passenger airbag assembly (See page RS-21).
(4) Disconnect airbag sensor assembly connector. (See page RS-30)

Caution

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

2

Check D squib circuit.

ON

P squib

D squib

Spiral Cable

Airbag Sensor Assembly

D-

D+

AB0119

R05901

R12687

C

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

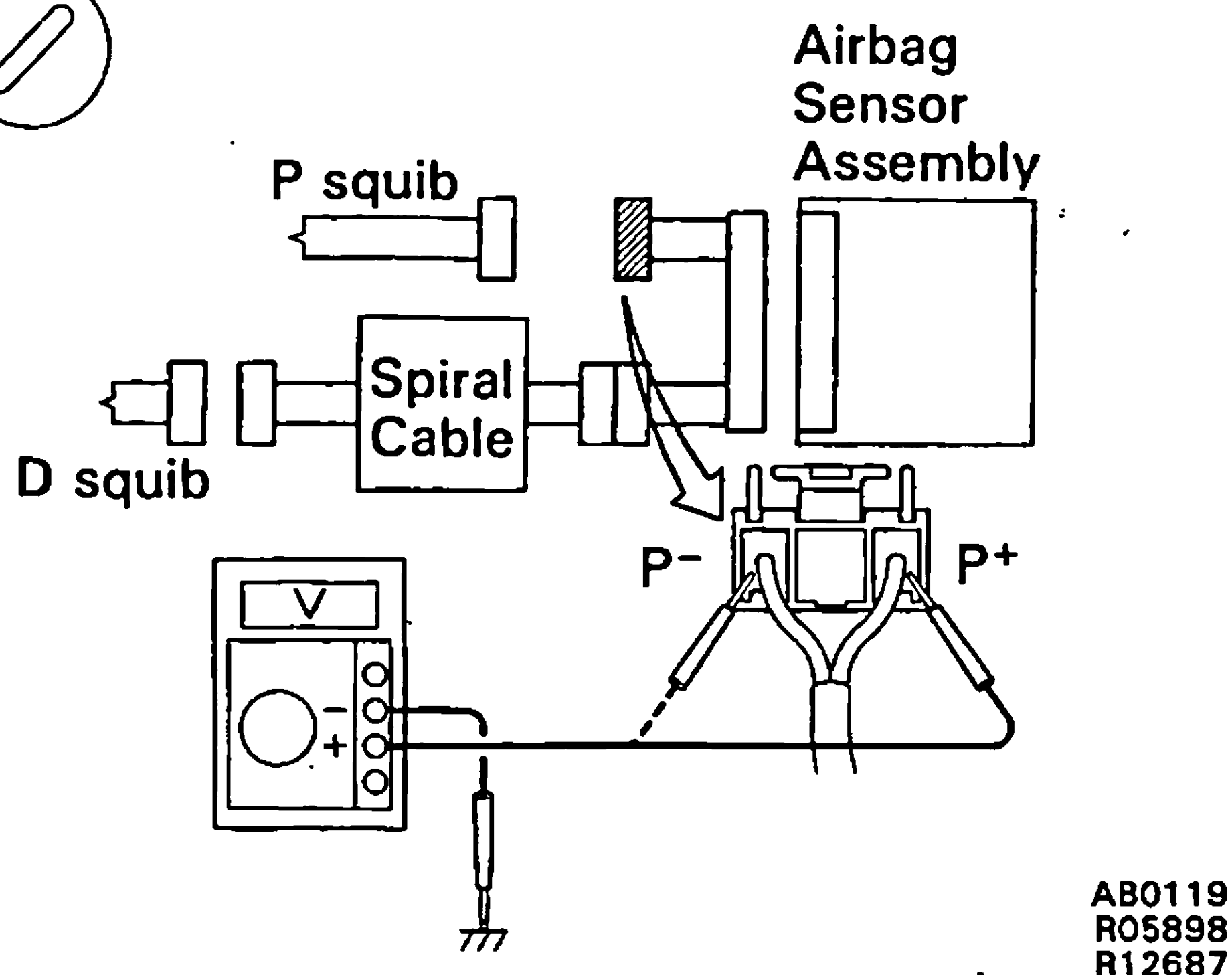
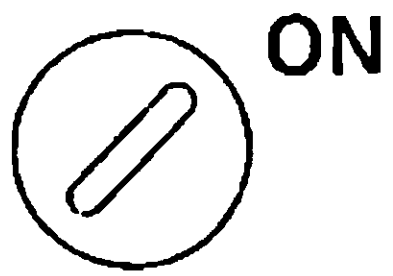
Voltage: 0 V

OK

NG

Go to step 7.

(w/ Front Passenger Airbag)
Go to step 3.
(w/o Front Passenger Airbag)
Go to step 4.

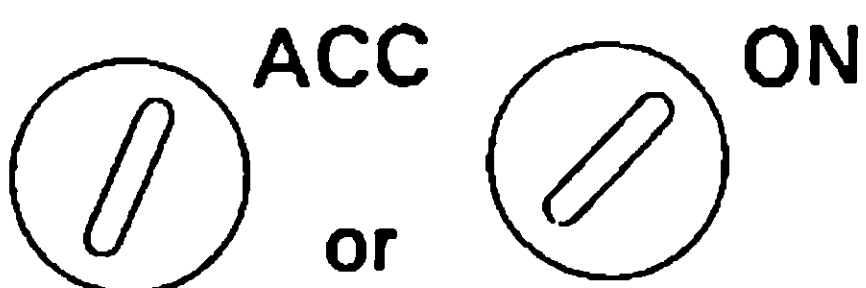
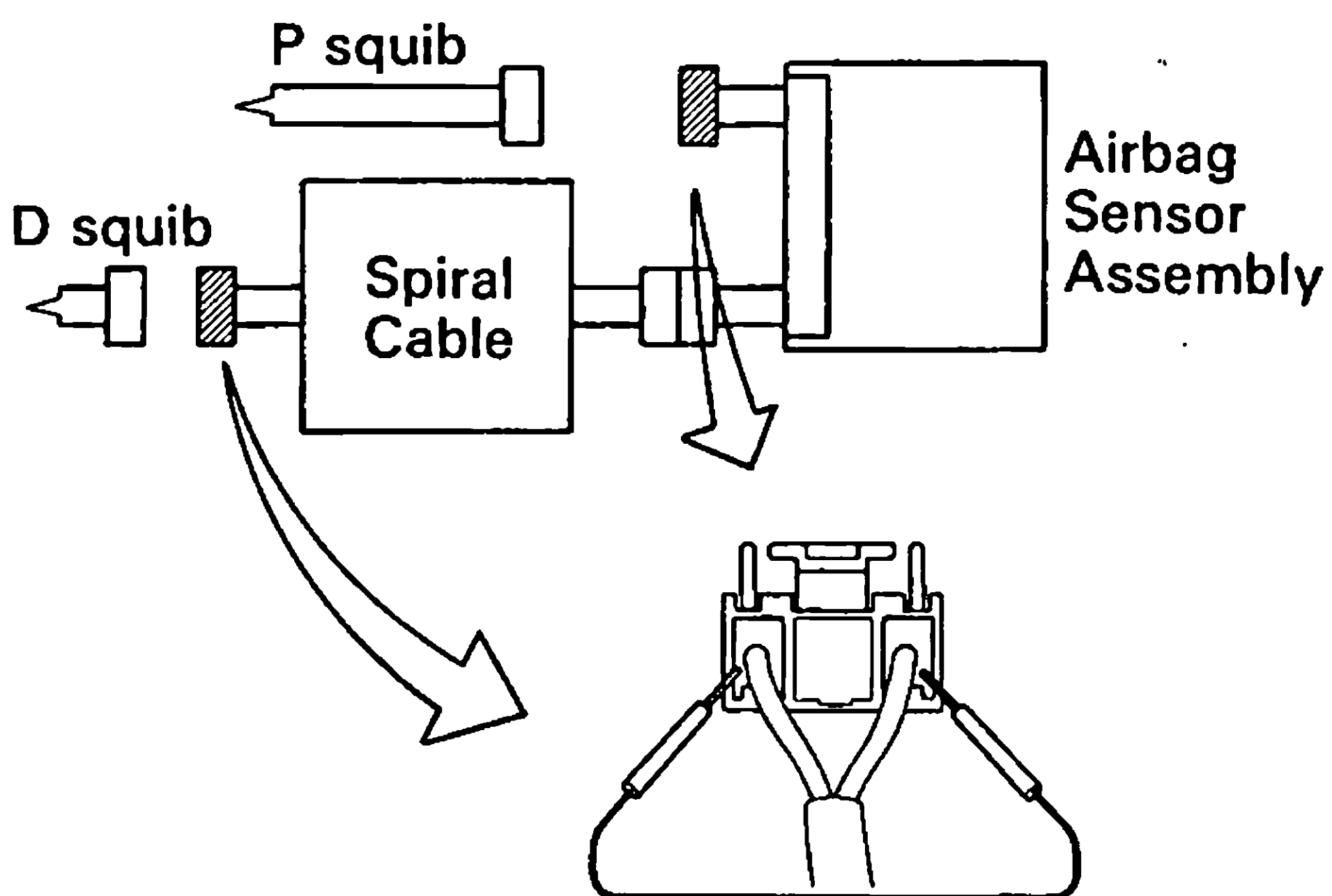
3**Check P squib circuit.**

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

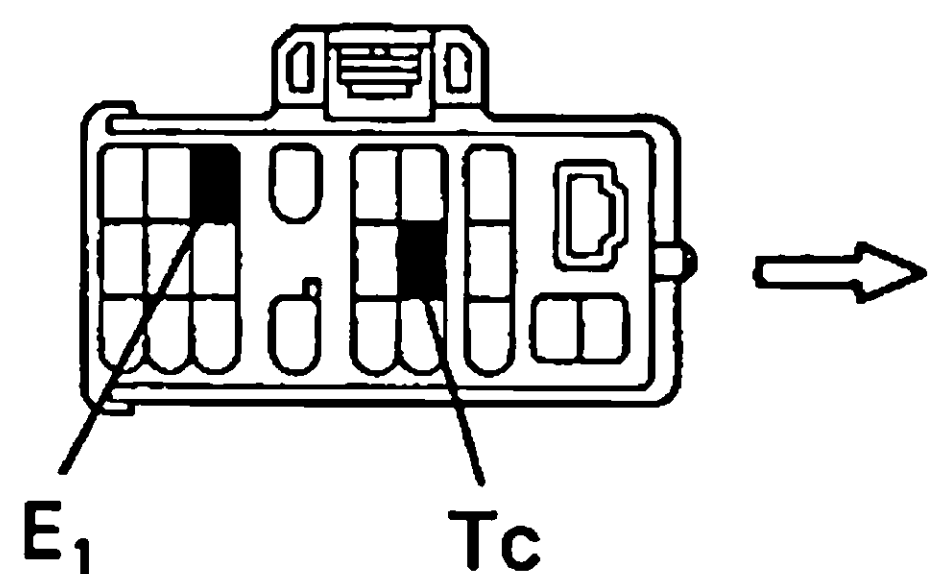
OK Voltage: 0 V

OK**NG**

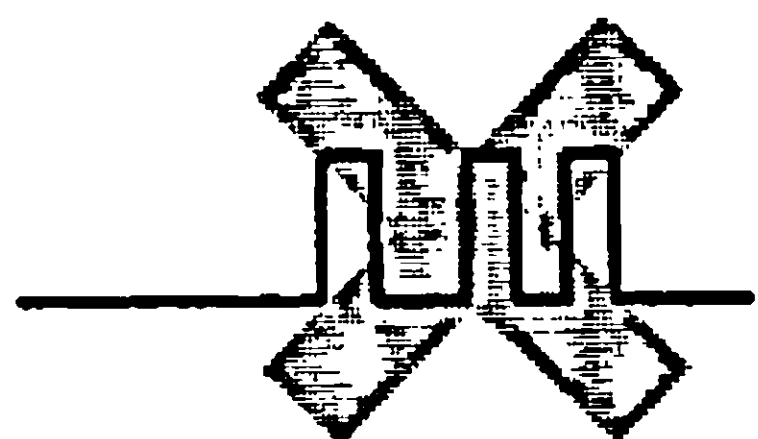
Repair or replace harness or connector between the airbag sensor assembly and front passenger airbag assembly.

4**Check airbag sensor assembly.**

Check Connector



Code 12



- P**
- (1) Turn ignition switch to LOCK.
 - (2) Disconnect negative (–) terminal cable from the battery.
 - (3) Connect connector to airbag sensor assembly.
 - (4) Using a service wire, connect D⁺ and D[–] on spiral cable side of connector between spiral cable and steering wheel pad.
 - (5) Using a service wire, connect P⁺ and P[–] on airbag sensor assembly side of connector between airbag sensor assembly and front passenger airbag assembly.
 - (6) Connect negative (–) terminal cable to battery, and wait at least 2 seconds.

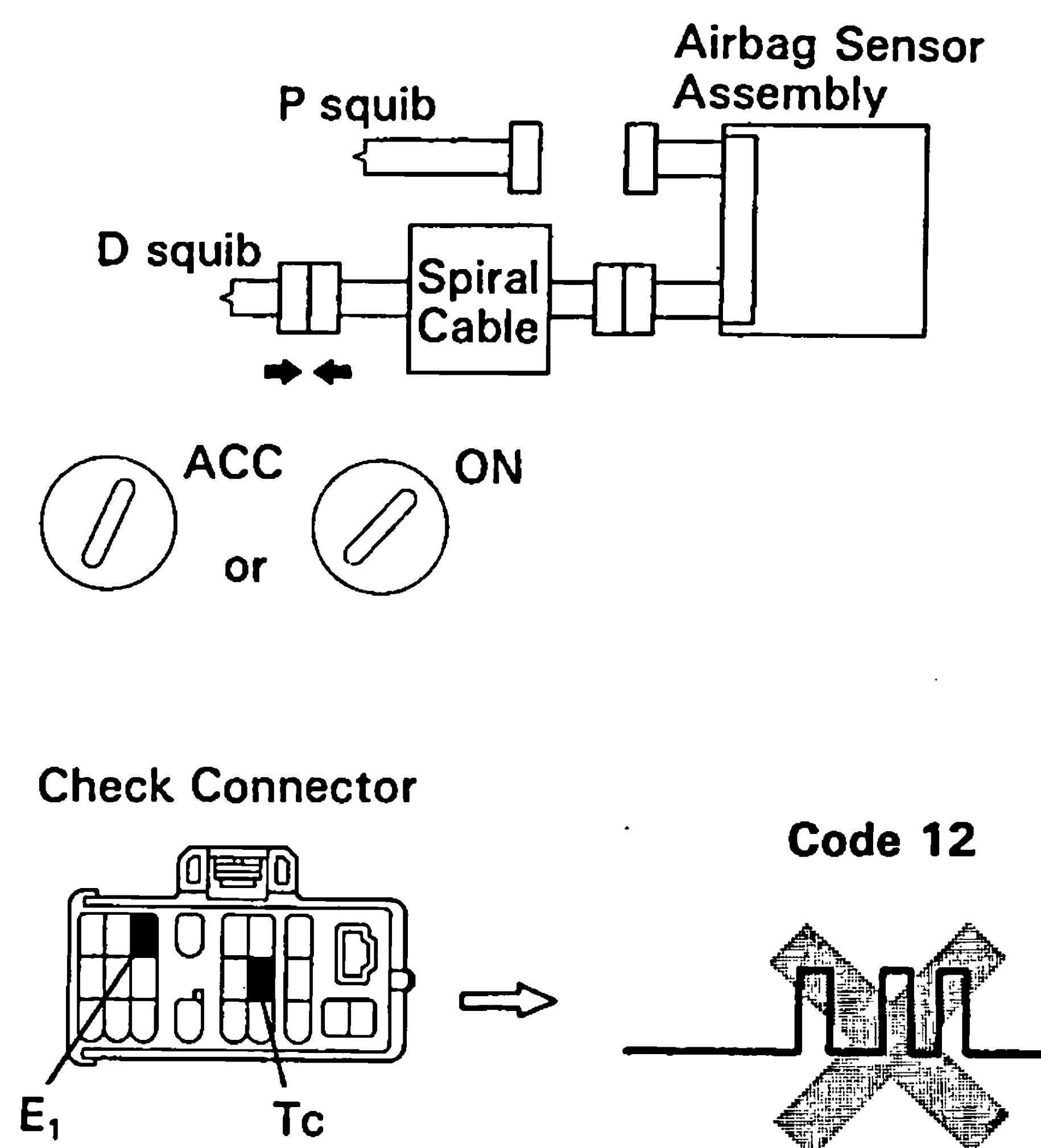
- C**
- (1) Turn ignition switch to ACC or ON and wait at least 20 seconds.
 - (2) Clear malfunction code stored in memory. (See page RS-41)
 - (3) Turn ignition switch to LOCK, and wait at least 20 seconds.
 - (4) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
 - (5) Using SST, connect terminals Tc and E₁ of check connector.
SST 09843–18020
 - (6) Check diagnostic trouble code.

OK Diagnostic trouble code 12 is not output.

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

OK**NG**

Replace airbag sensor assembly.

5**Check D squib.**

R05896
A80118 A80119
R13006 F11389

P

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

C

- (1) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (2) Clear malfunction code stored in memory. (See page RS-41)
- (3) Turn ignition switch to LOCK, and wait at least 20 seconds.
- (4) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (5) Using SST, connect terminals T_c and E₁ of check connector.
SST 09843 – 18020
- (6) Check diagnostic trouble code.

OK

Diagnostic trouble code 12 is not output.

Hint

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

OK**NG**

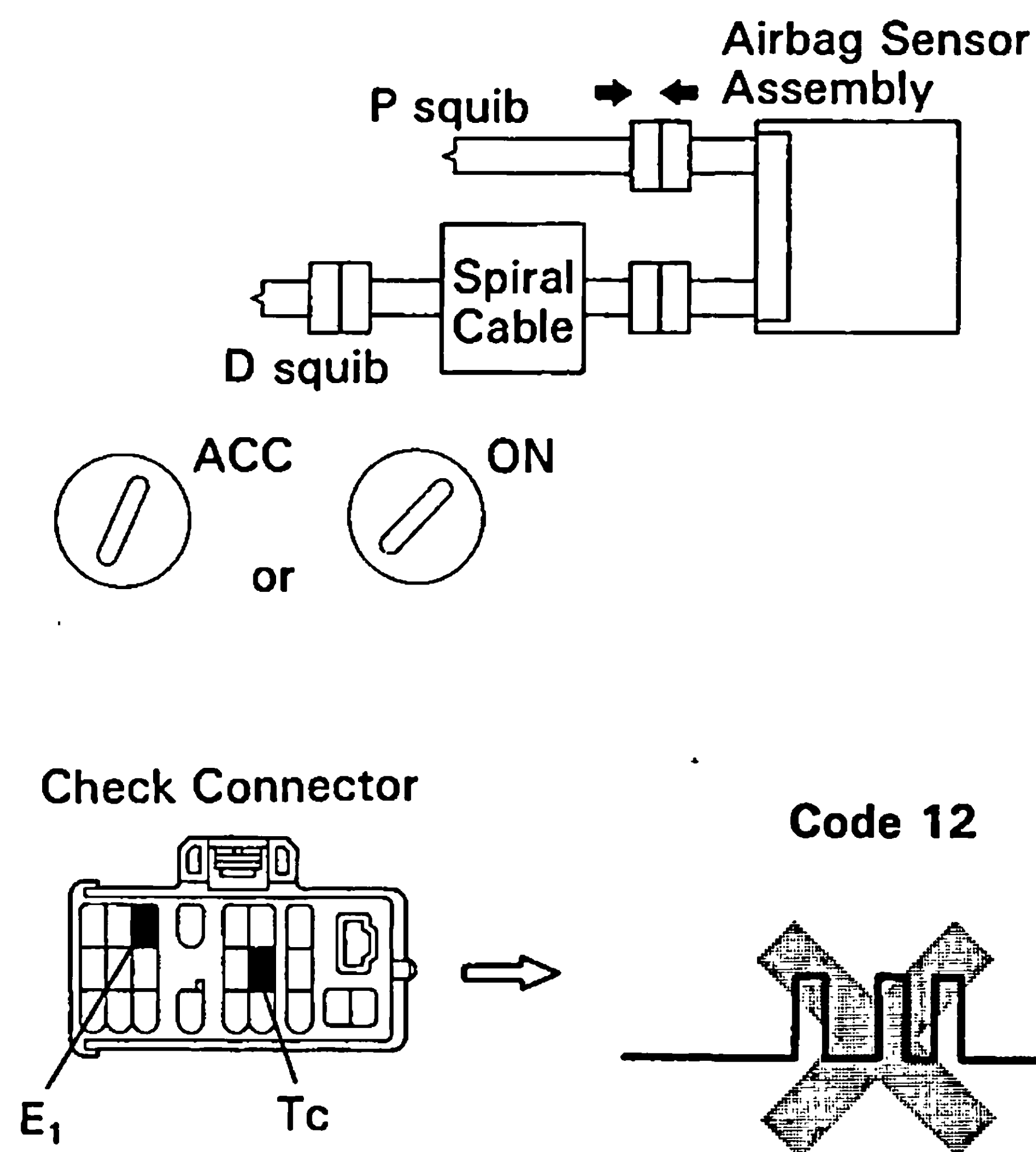
Replace steering wheel pad.

(w/ Front Passenger Airbag)

Go to step **6**.

(w/o Front Passenger Airbag)

Go to the next step **6**.

6**Check P squib.**

R05897
AB0118 AB0119
R13006 FI1389

OK**P**

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

C

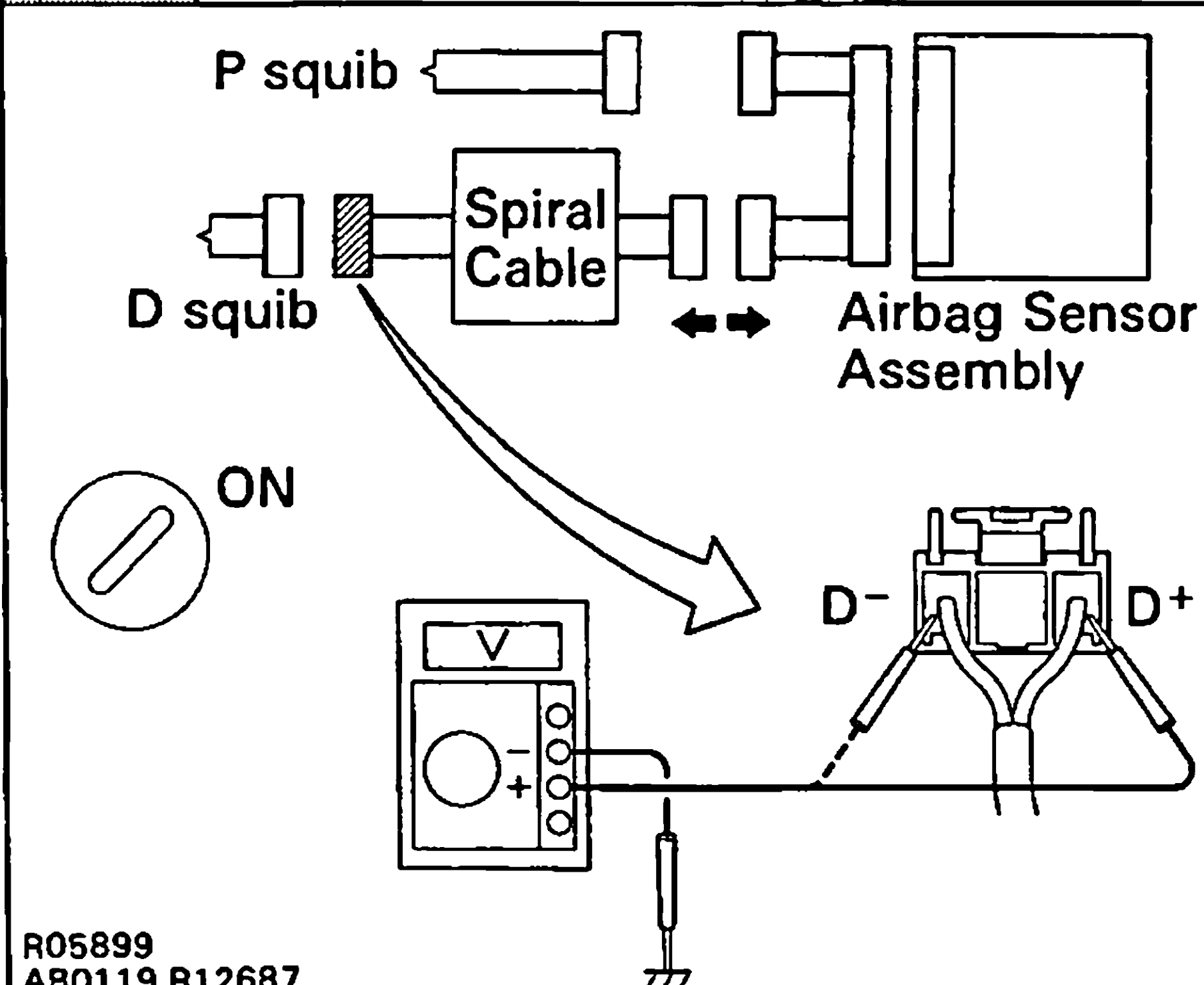
- (1) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (2) Clear malfunction code stored in memory. (See page RS-41)
- (3) Turn ignition switch to LOCK, and wait at least 20 seconds.
- (4) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (5) Using SST, connect terminals Tc and E₁ of check connector.
SST 09843–18020
- (6) Check diagnostic trouble code.

OK**Diagnostic trouble code 12 is not output.****Hint**

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

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

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.**

R05899
AB0119 R12687

OK**P**

- (1) Turn ignition switch to LOCK.
- (2) Disconnect connector between airbag sensor assembly and spiral cable.
- (3) Turn ignition switch ON.

CMeasure voltage at D⁺, D[–] on spiral cable side of connector between spiral cable and steering wheel pad.**OK****Voltage: 0 V****NG****Repair or replace spiral cable.**

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

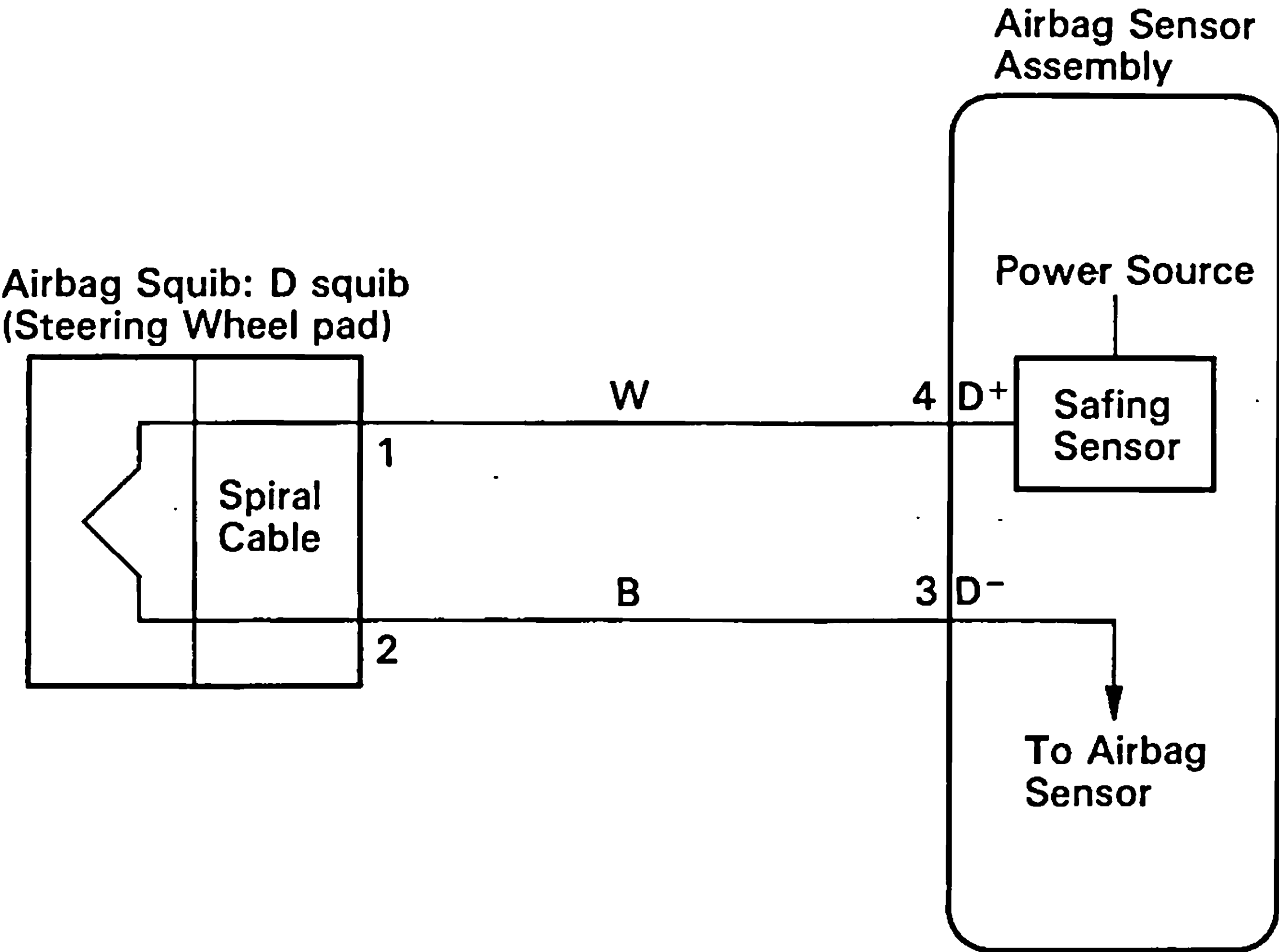
DTC	14	Open in D Squib Circuit
-----	----	-------------------------

CIRCUIT DESCRIPTION

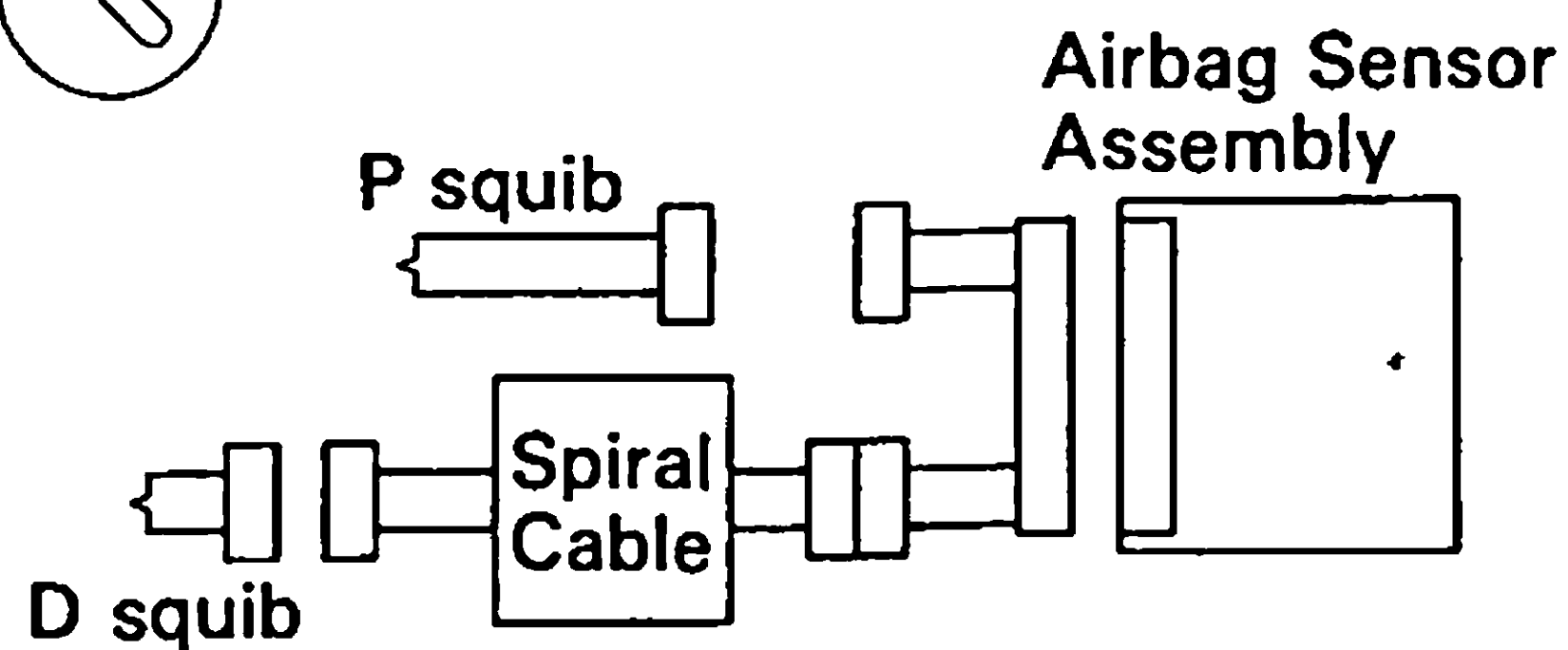
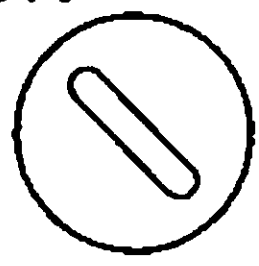
The D squib circuit consists of the airbag sensor assembly, spiral cable and the steering wheel pad. It causes the airbag to deploy when the airbag deployment conditions are satisfied. For details of the function of each component, see FUNCTION OF COMPONENTS on page RS-3. Diagnostic trouble code 14 is recorded when an open is detected in the squib circuit.

DTC No.	Diagnosis
14	• Open circuit in D⁺ wire harness or D⁻ wire harness of squib. • D squib malfunction. • Spiral cable malfunction. • Airbag sensor assembly malfunction.

WIRING DIAGRAM



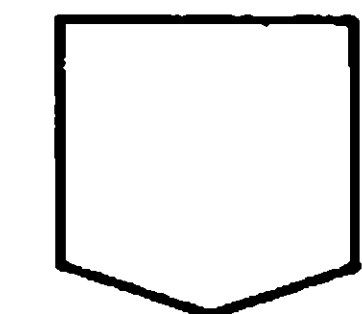
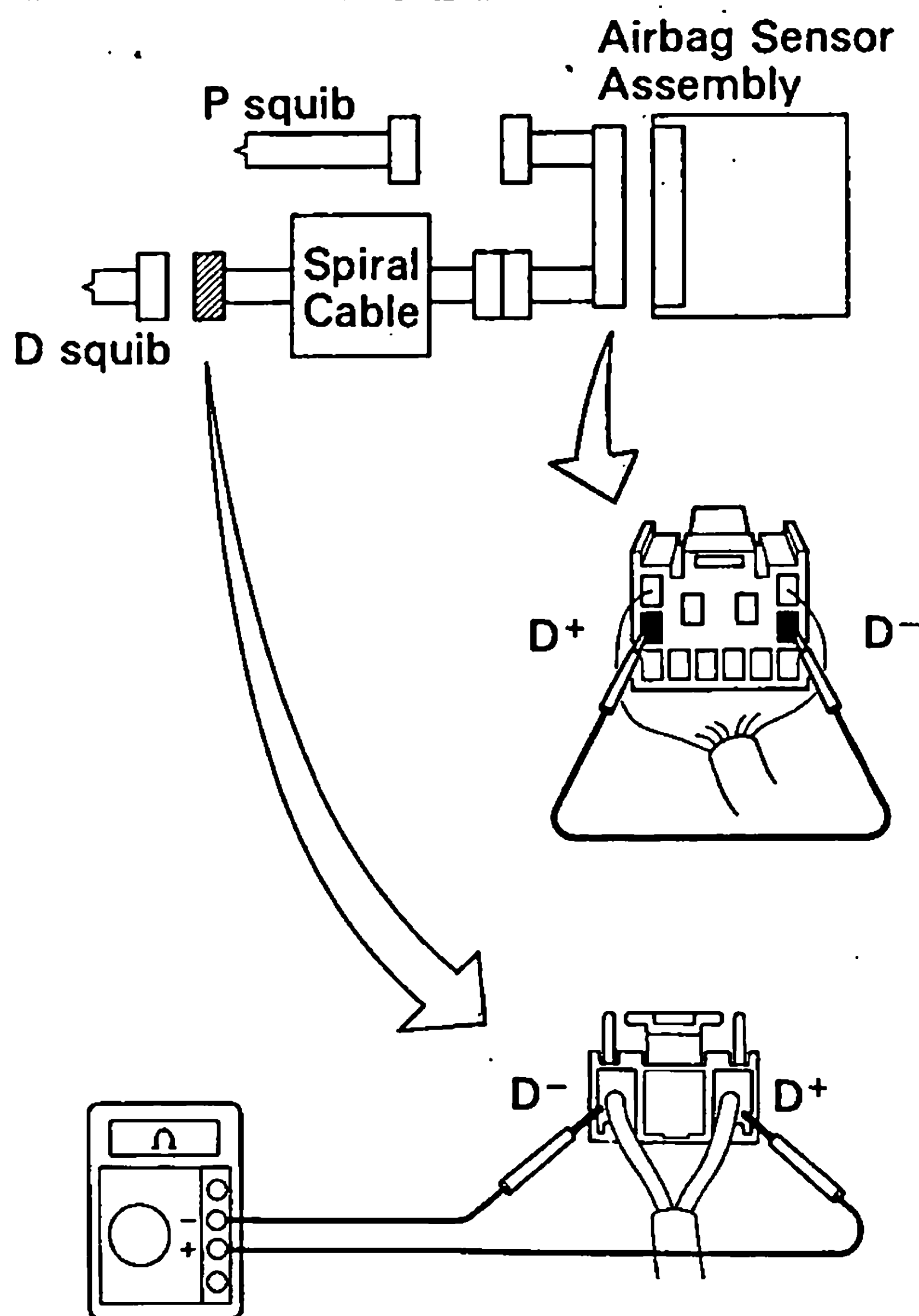
INSPECTION PROCEDURES

P Preparation**C** Check**1****Preparation.****LOCK**AB0117
R05894**P**

- (1) Disconnect negative (—) terminal cable from the battery, and wait at least 90 seconds.
- (2) Remove steering wheel pad. (See SR section)
- (3) Disconnect connector of front passenger airbag assembly. (See page RS-21)
- (4) Disconnect airbag sensor assembly connector. (See page RS-30)

Caution

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

**2****Check D squib circuit.**R05901
AB0068 R12688**P**

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

C

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

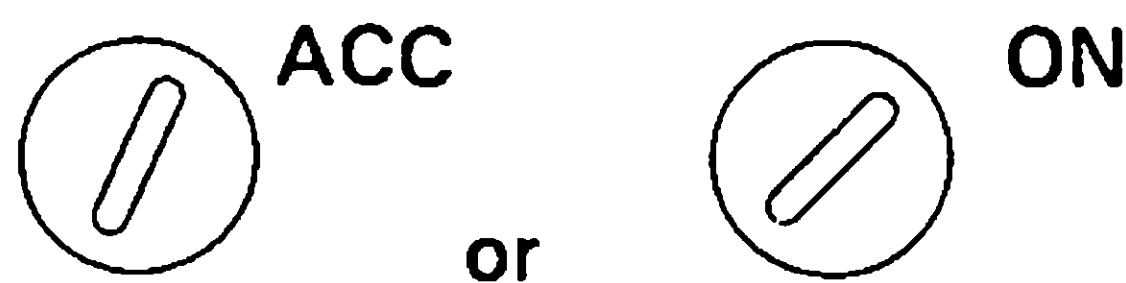
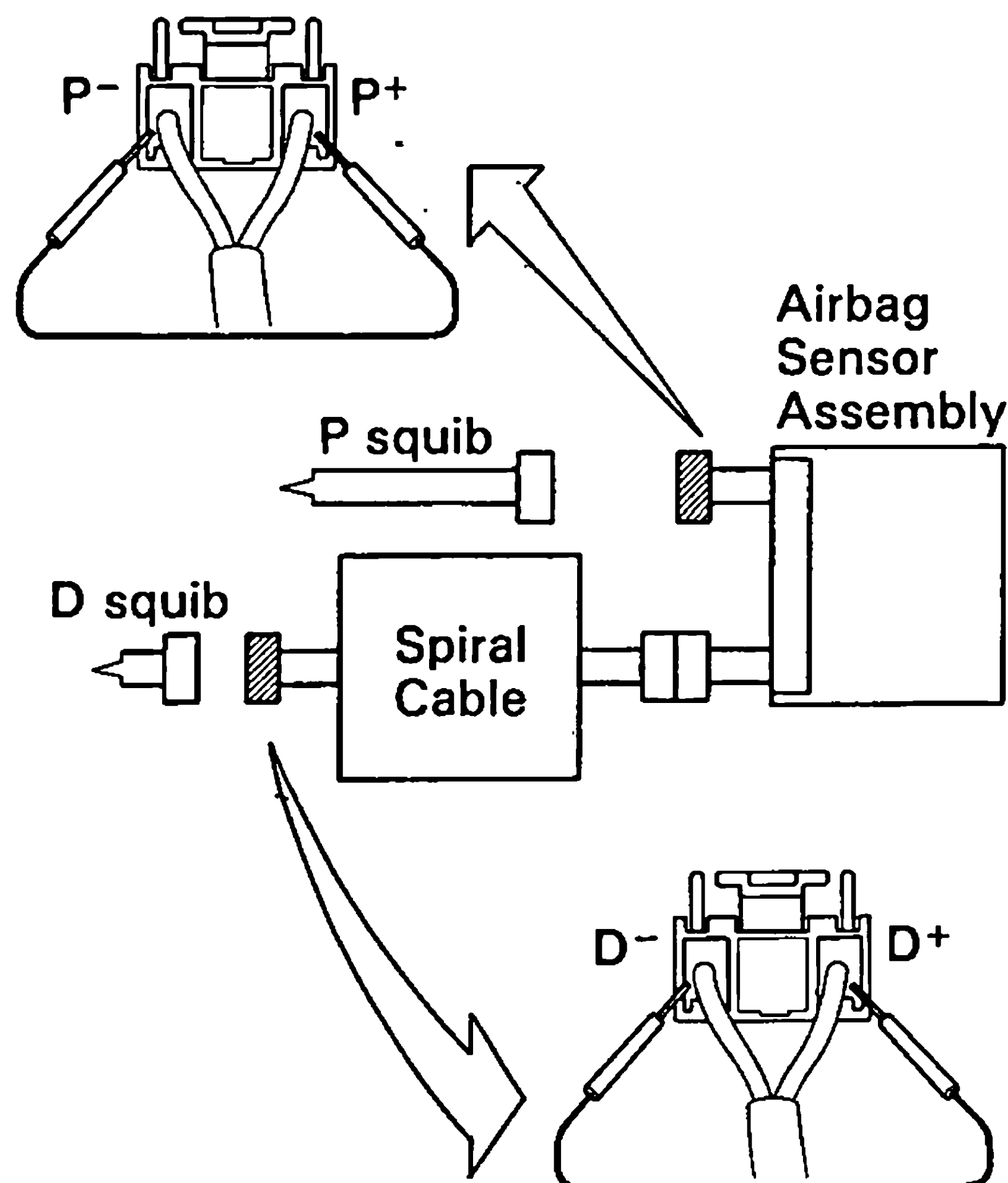
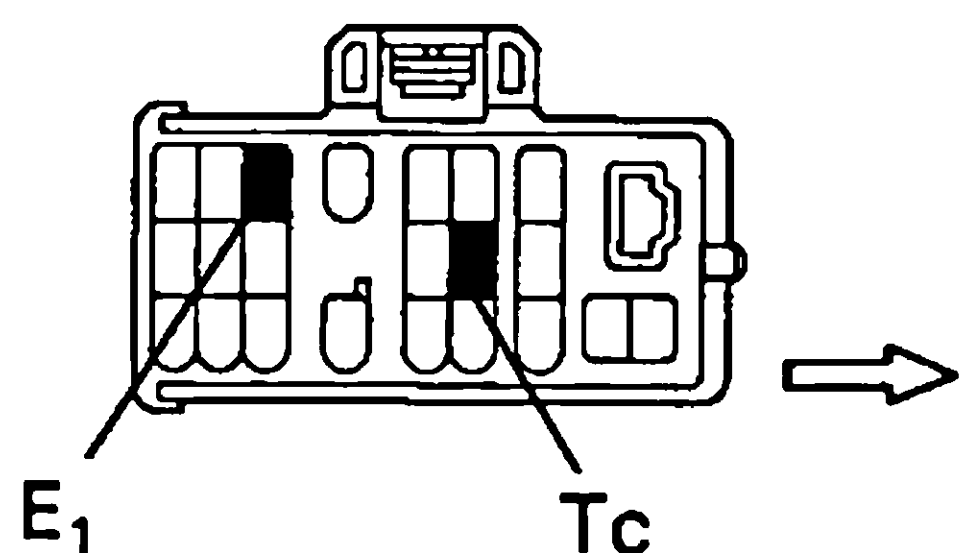
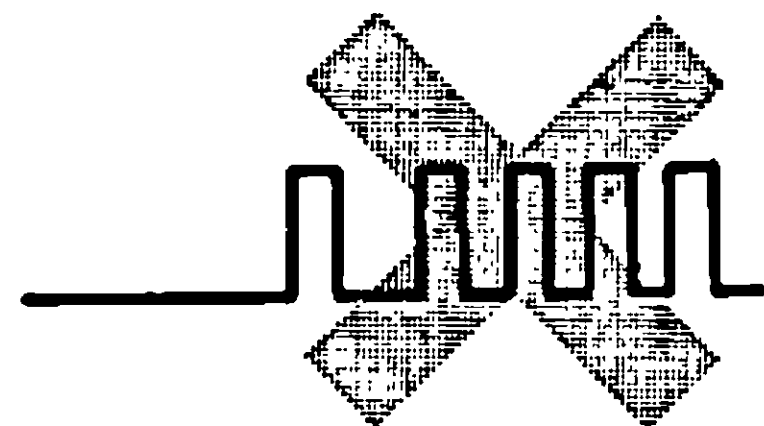
OK

Resistance: Below 1 Ω

RS

OK**NG**

Go to step **5**.

3**Check airbag sensor assembly.****Check Connector****Code 14**

AB0069
AB0069 R06907
AB0118 AB0119
R13006 FI1391

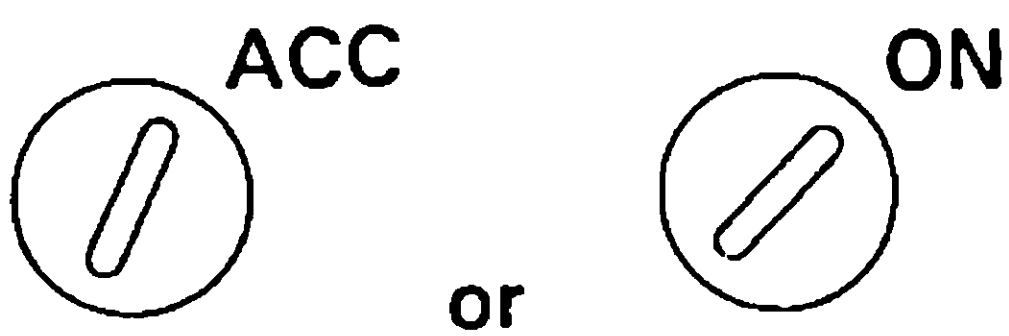
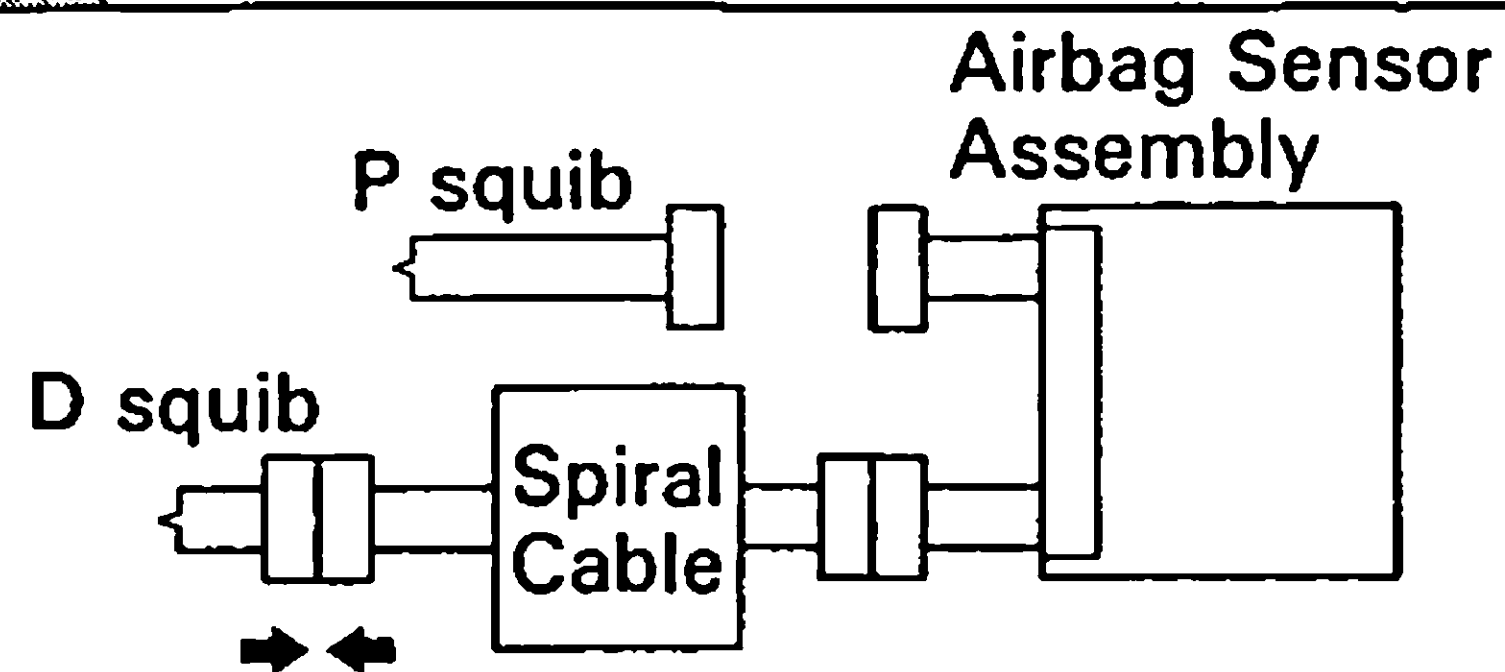
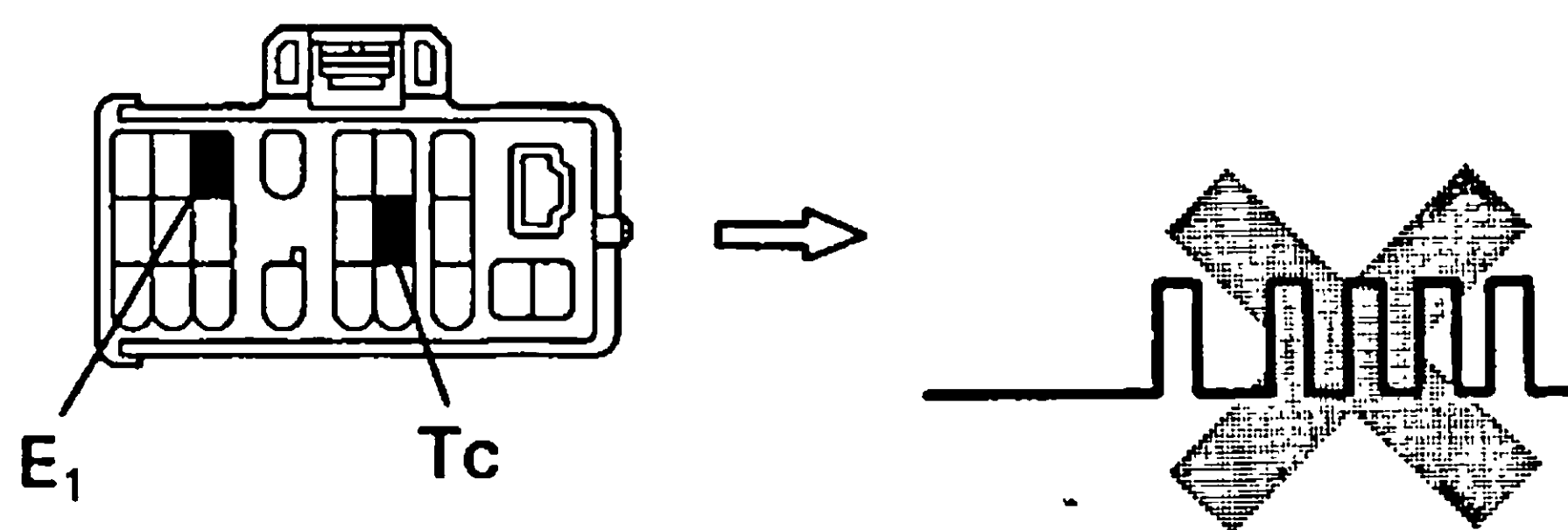
- P**
- (1) Connect connector to airbag sensor assembly.
 - (2) Connect connector between airbag sensor assembly and spiral cable.
 - (3) Using a service wire, connect D⁺ and D⁻ on spiral cable side of connector between spiral cable and steering wheel pad.
 - (4) Using a service wire, connect P⁺ and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

- C**
- (1) Turn ignition switch to ACC or ON and wait at least 20 seconds.
 - (2) Clear malfunction code stored in memory. (See page RS-41)
 - (3) Turn ignition switch to LOCK, and wait at least 20 seconds.
 - (4) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
 - (5) Using SST, connect terminals Tc and E₁ of check connector.
SST 09843-18020
 - (6) Check diagnostic trouble code.

OK Diagnostic trouble code 14 is not output.

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

OK**NG****Replace airbag sensor assembly.**

4**Check D squib.****Check Connector**

R05896
AB0118 AB0119
R13006 FI1391

P

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

C

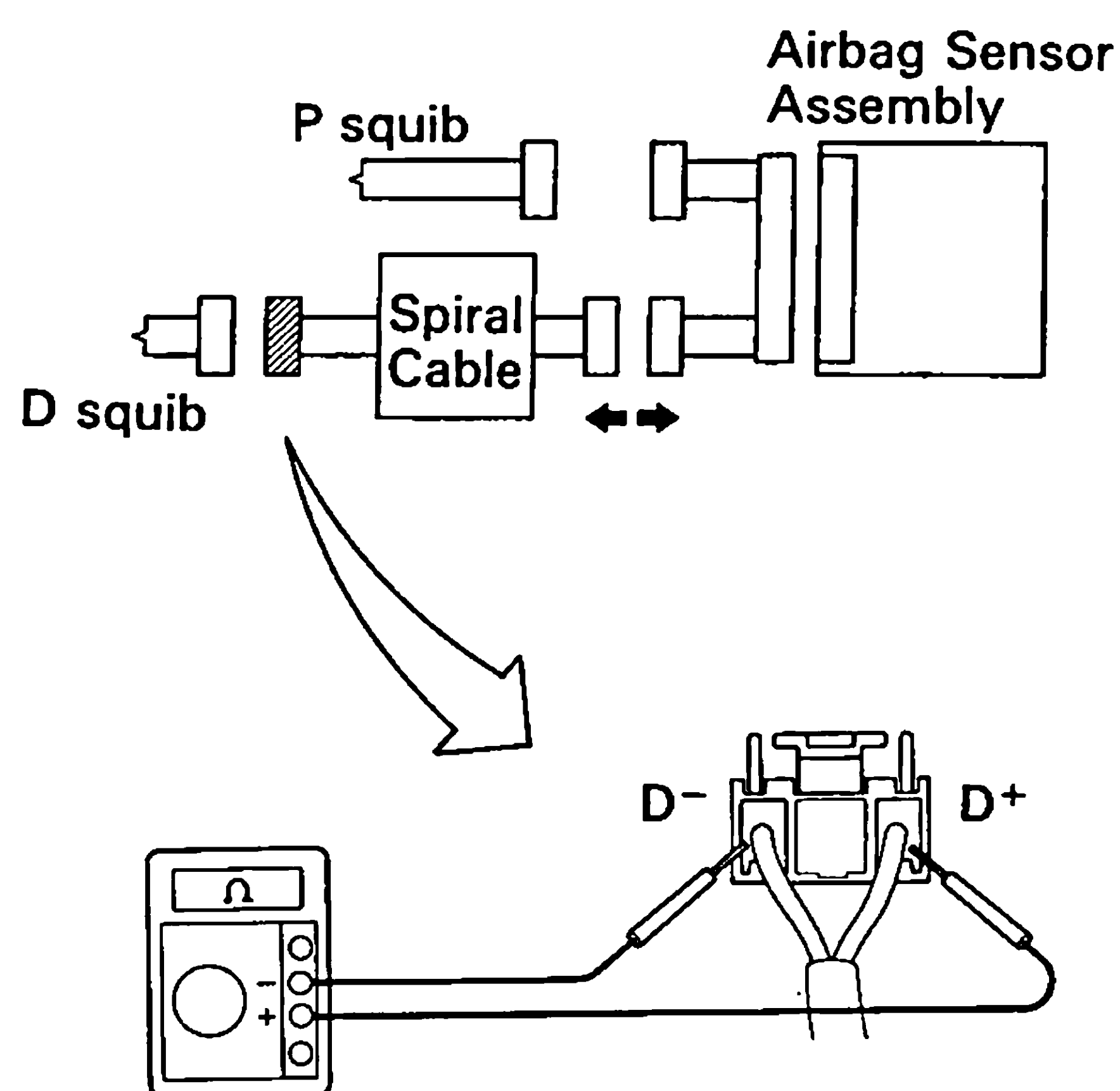
- (1) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (2) Clear malfunction code stored in memory. (See page RS-41)
- (3) Turn ignition switch to LOCK, and wait at least 20 seconds.
- (4) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (5) Using SST, connect terminals Tc and E₁ of check connector.
SST 09843 – 18020
- (6) Check diagnostic trouble code.

OK**Diagnostic trouble code 14 is not output.****Hint**

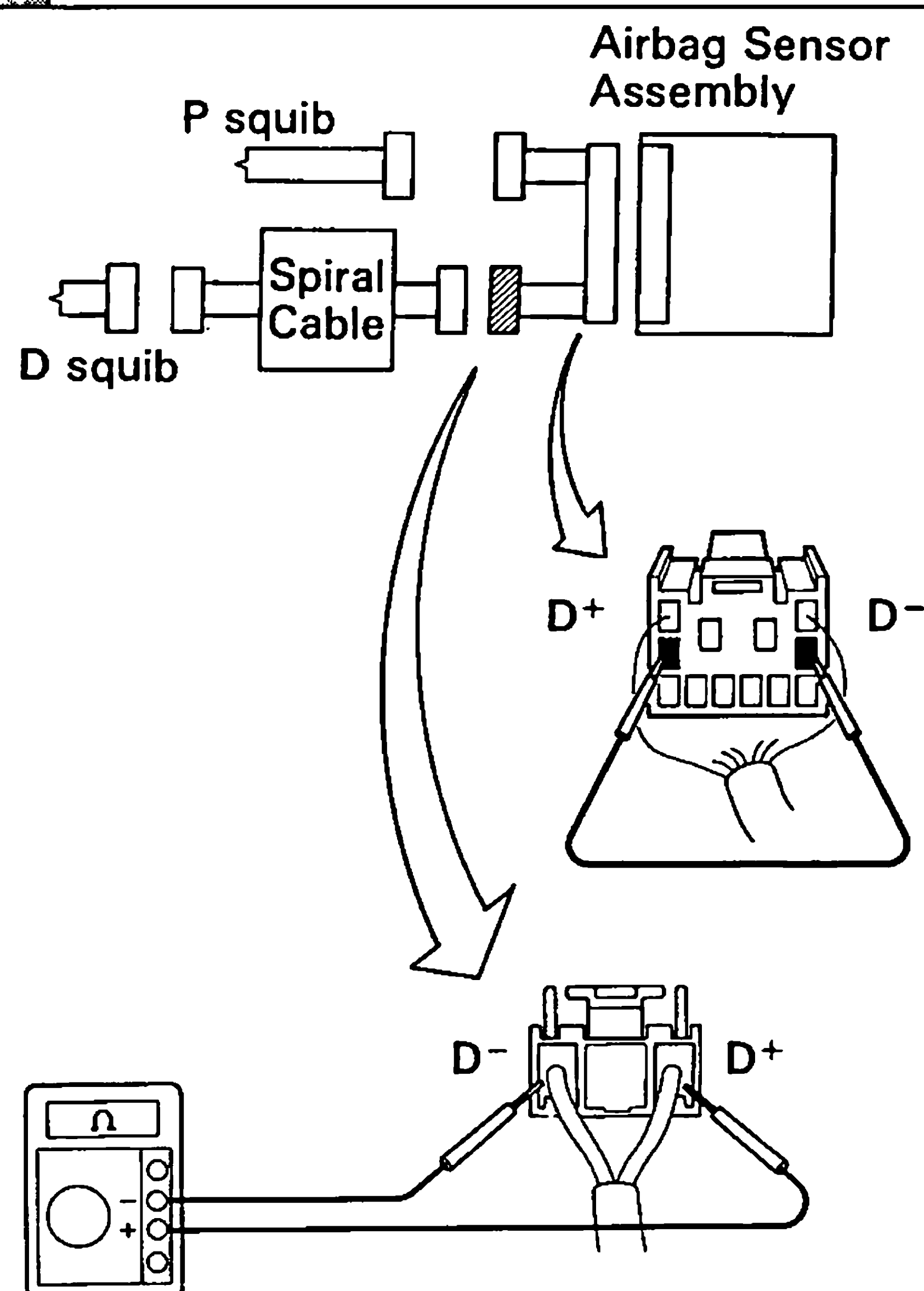
Codes other than code 14 may be output at this time, but they are not relevant to this check.

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

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.**R05899
AB0068

- P** Disconnect connector between airbag sensor assembly and spiral cable.
- C** 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

OK**NG** Repair or replace spiral cable.**6****Check harness between airbag sensor assembly and spiral cable.**R05899
AB0068 R12688

- P** Using a service wire, connect D⁺ and D⁻ on airbag sensor assembly connector.
- C** For the connector (on the airbag sensor assembly side) between the airbag sensor assembly and spiral cable, measure the resistance between D⁺ and D⁻.
- OK** Resistance: Below 1 Ω

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

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.

Diagnostic trouble code 31 is recorded when occurrence of a malfunction in the airbag sensor assembly is detected.

DTC No.	Diagnosis
31	Airbag sensor assembly malfunction

INSPECTION PROCEDURES

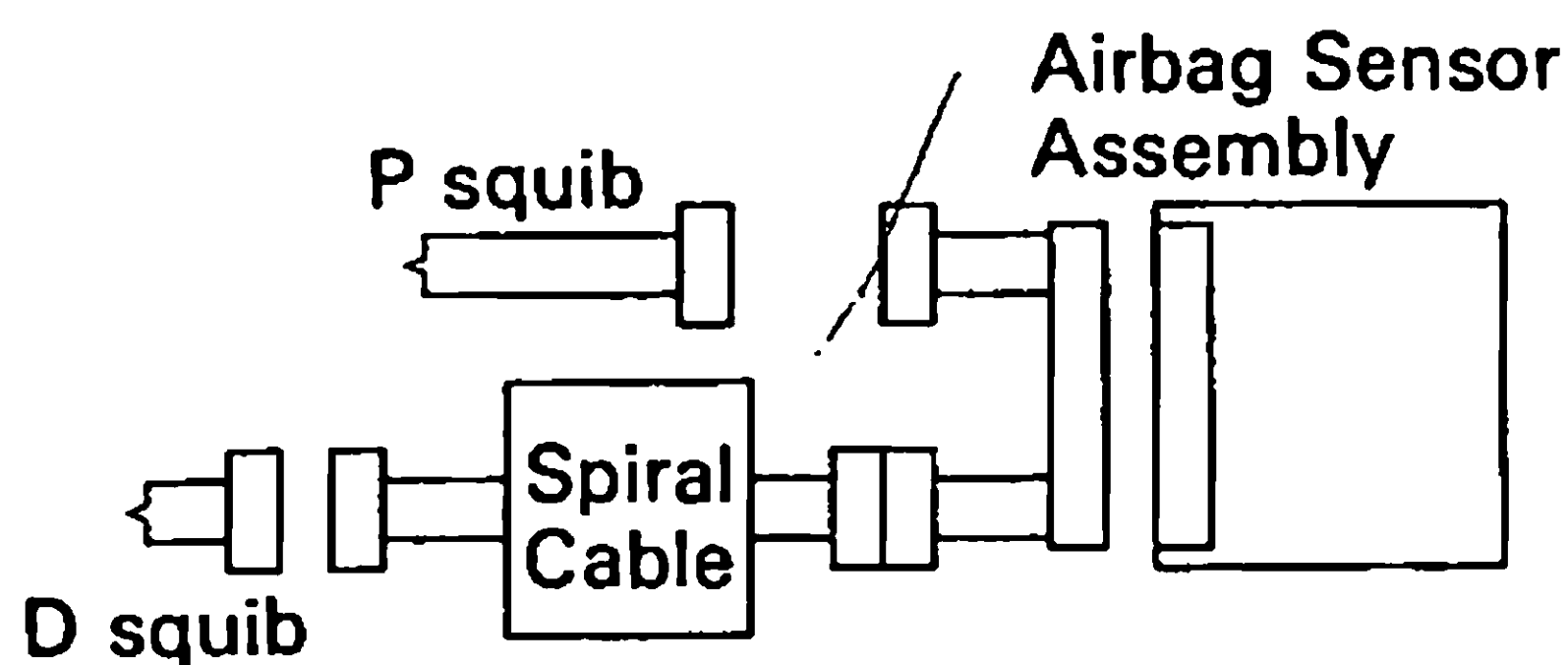
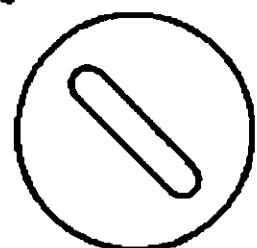
HINT: When a malfunction code other than code 31 is displayed at the same time, first repair the malfunction indicated by the malfunction code other than code 31.

P Preparation

C Check

Preparation.

LOCK



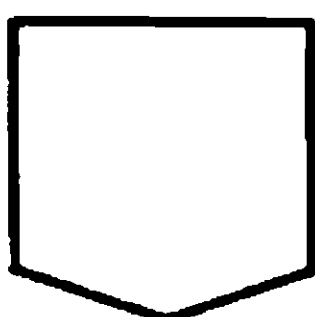
AB0117
R05894

P

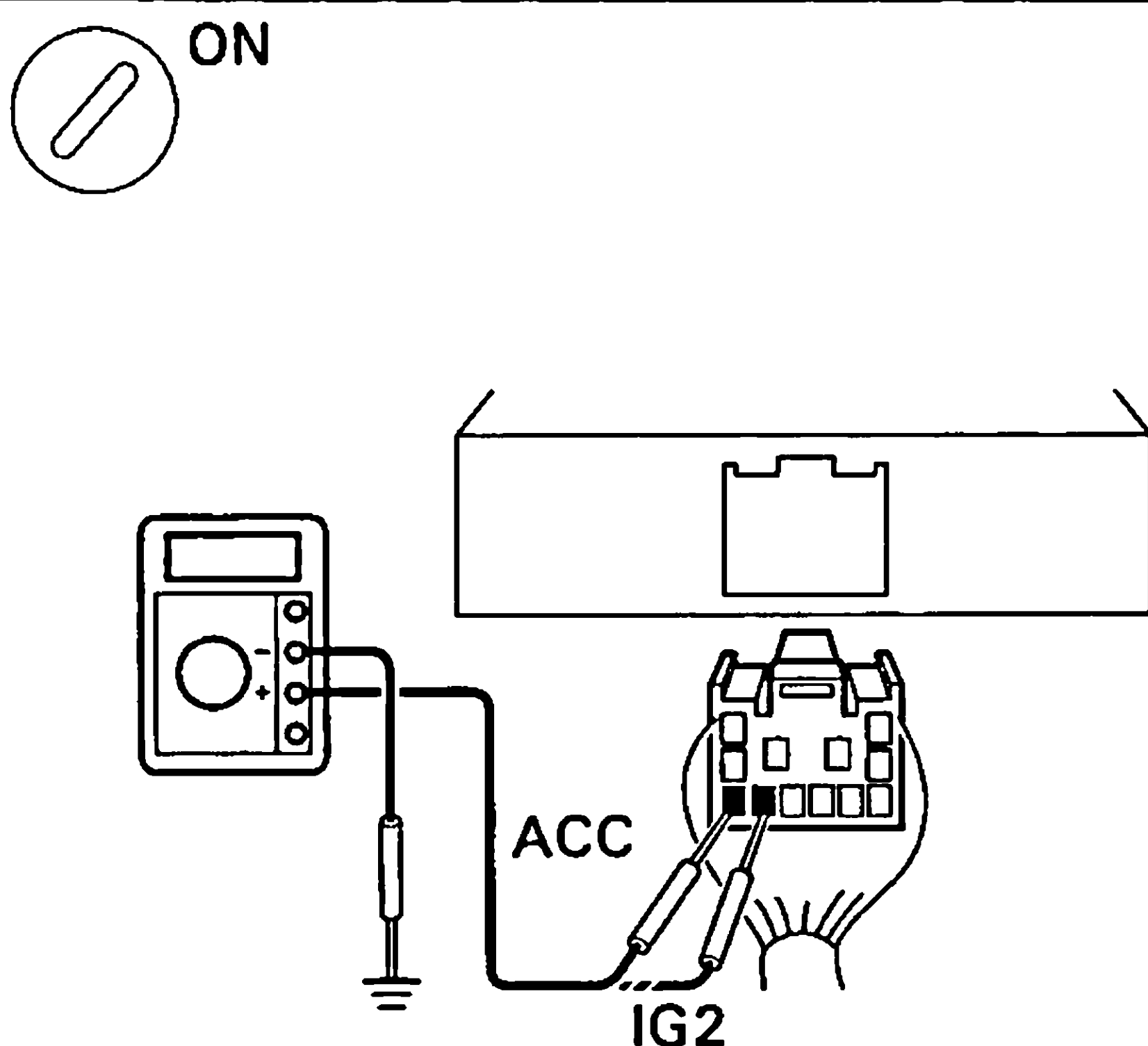
- (1) Disconnect negative (–) terminal cable from the battery, and wait at least 90 seconds:
- (2) Remove steering wheel pad. (See SR section)
- (3) Disconnect connector of front passenger airbag assembly. (See page RS-21)
- (4) Disconnect connector of airbag sensor assembly. (See page RS-30)

Caution

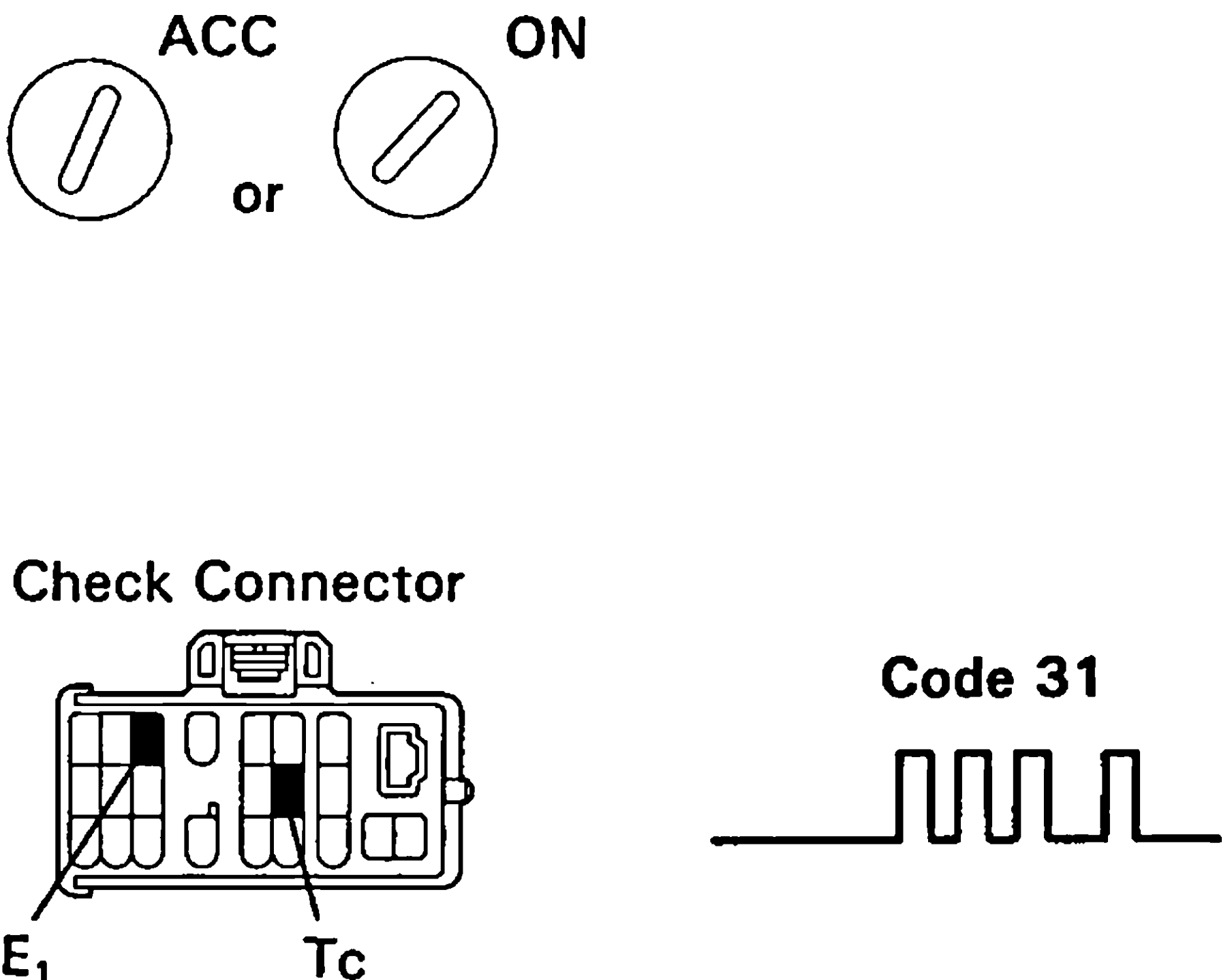
Store the steering wheel pad with the front surface facing upward.



3

2 Check voltage at IG2 and ACC of airbag sensor assembly.	
 AB0119 N12637	P Turn ignition switch ON. C Measure voltage between terminals IG2 and ACC of airbag sensor assembly and body ground. OK Voltage: Below 16 V
OK	NG Check battery and charging system. (See charging system section)

RS

3 Is diagnostic trouble code 31 output again?	
 AB0118 AB0119 R13006 FI1394	P Clear malfunction code. C (1) Turn ignition switch to LOCK, and wait at least 20 seconds. (2) Turn ignition switch to ACC or ON, and wait at least 20 seconds. (3) Repeat operation in step (1) and (2) at least 5 times. (4) Using SST, connect terminals Tc and E₁ of check connector. SST 09843 – 18020 (5) Check diagnostic trouble code.
YES	NO Using simulation method, reproduce malfunction symptoms (See page RS-42).

Replace airbag sensor assembly.

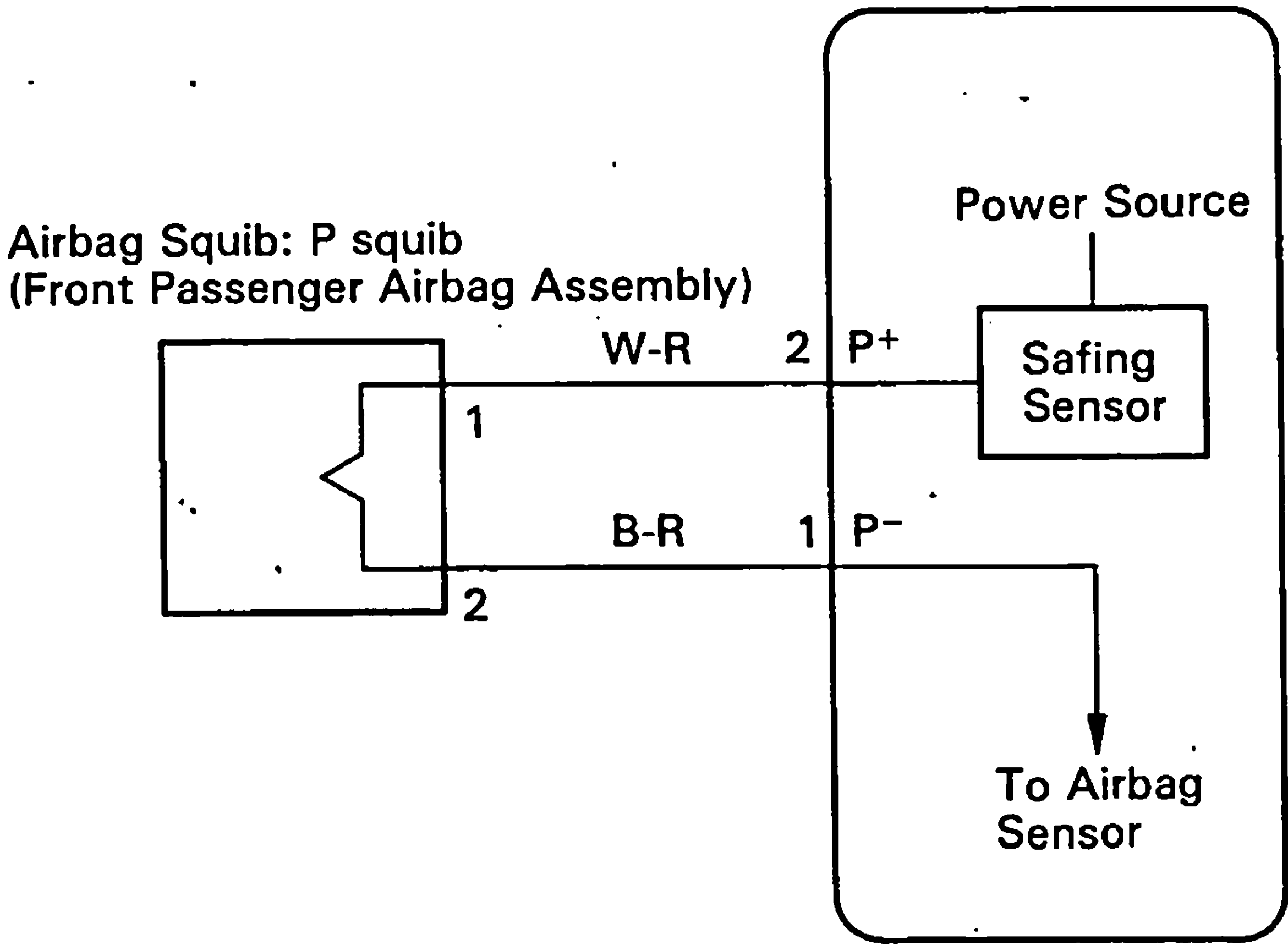
DTC	54	Open in P Squib Circuit
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CIRCUIT DESCRIPTION

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 component, see FUNCTION OF COMPONENTS on page RS-3. Diagnostic trouble code 54 is recorded when an open is detected in the P squib circuit.

DTC No.	Diagnosis
54	• Open circuit in P⁺ wire harness or P⁻ wire harness of squib. • P squib malfunction. • Airbag sensor assembly malfunction.

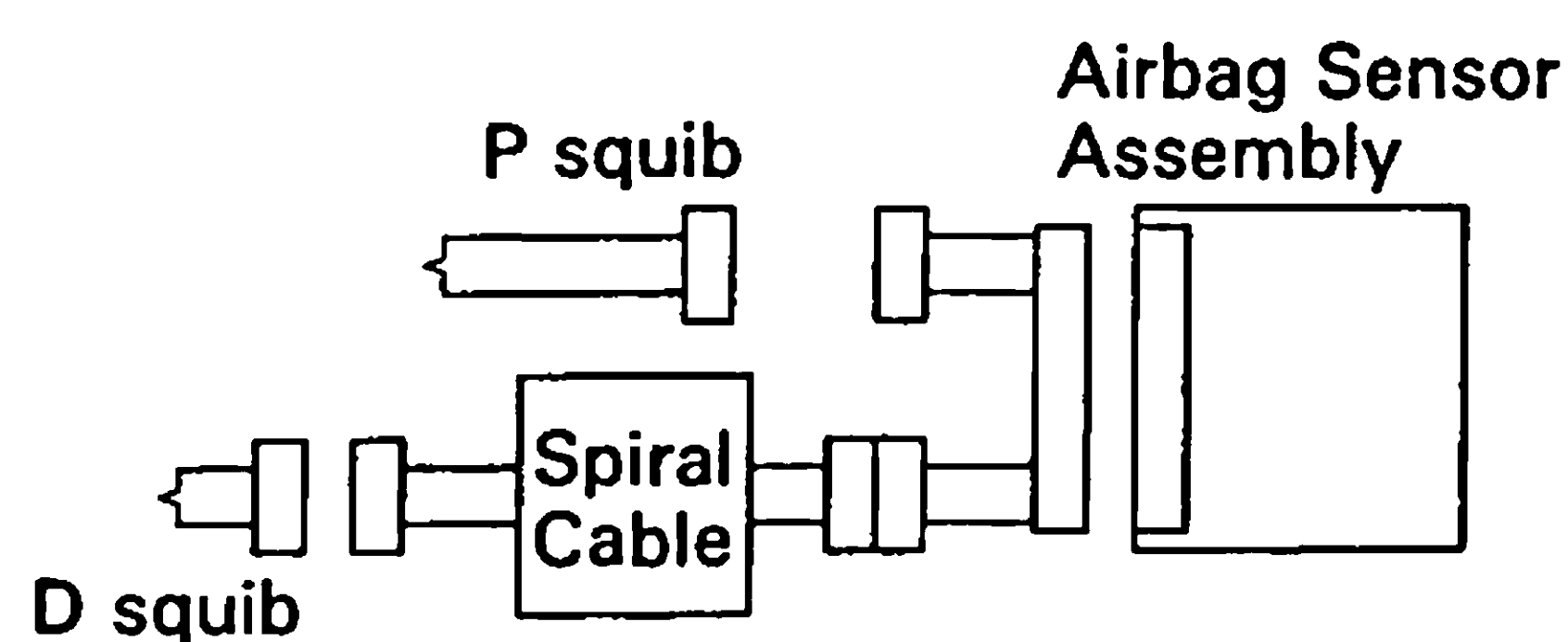
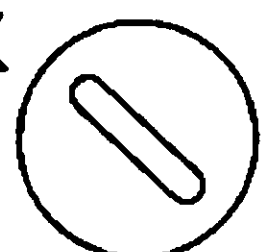
WIRING DIAGRAM



INSPECTION PROCEDURES

P Preparation**C** Check**1****Preparation.**

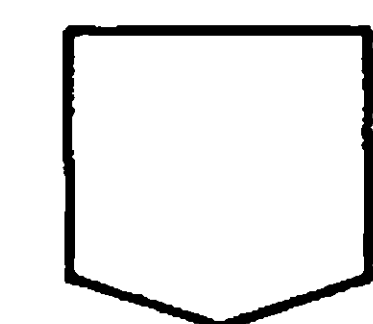
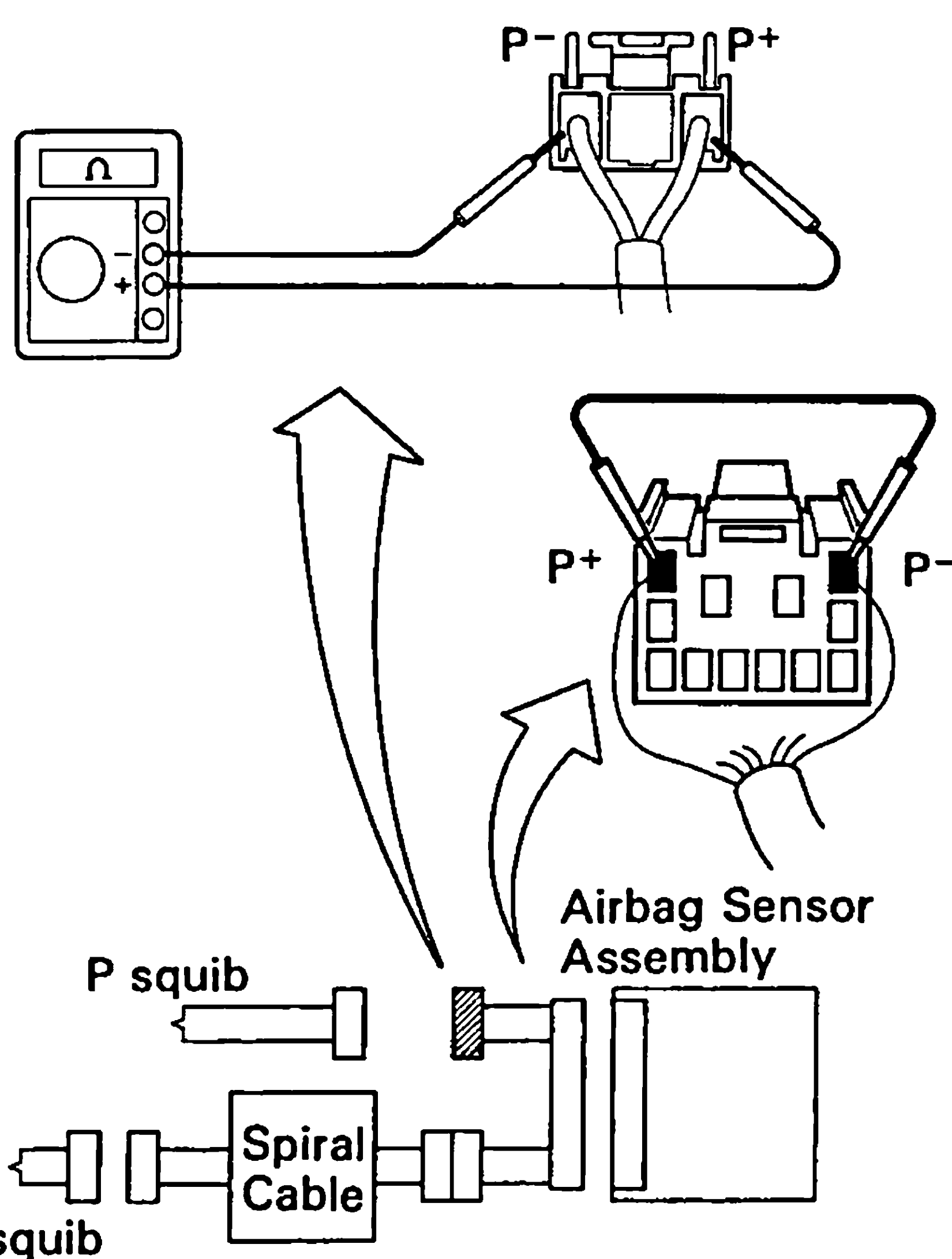
LOCK

AB0117
R05894

- P**
- (1) Disconnect negative (—) terminal cable from the battery, and wait at least 90 seconds.
 - (2) Remove steering wheel pad. (See SR section)
 - (3) Disconnect connector of front passenger airbag assembly. (See page RS-21)
 - (4) Disconnect airbag sensor assembly connector. (See page RS-30)

Caution

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

**2****Check P squib circuit.**AB0068
R05898 R12689

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

- C** 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

Notice

Do not press the service wire too strongly against the terminals of the airbag sensor assembly connector.

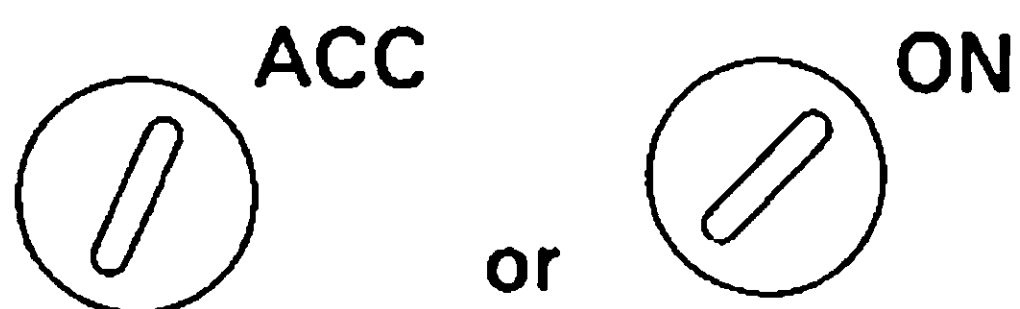
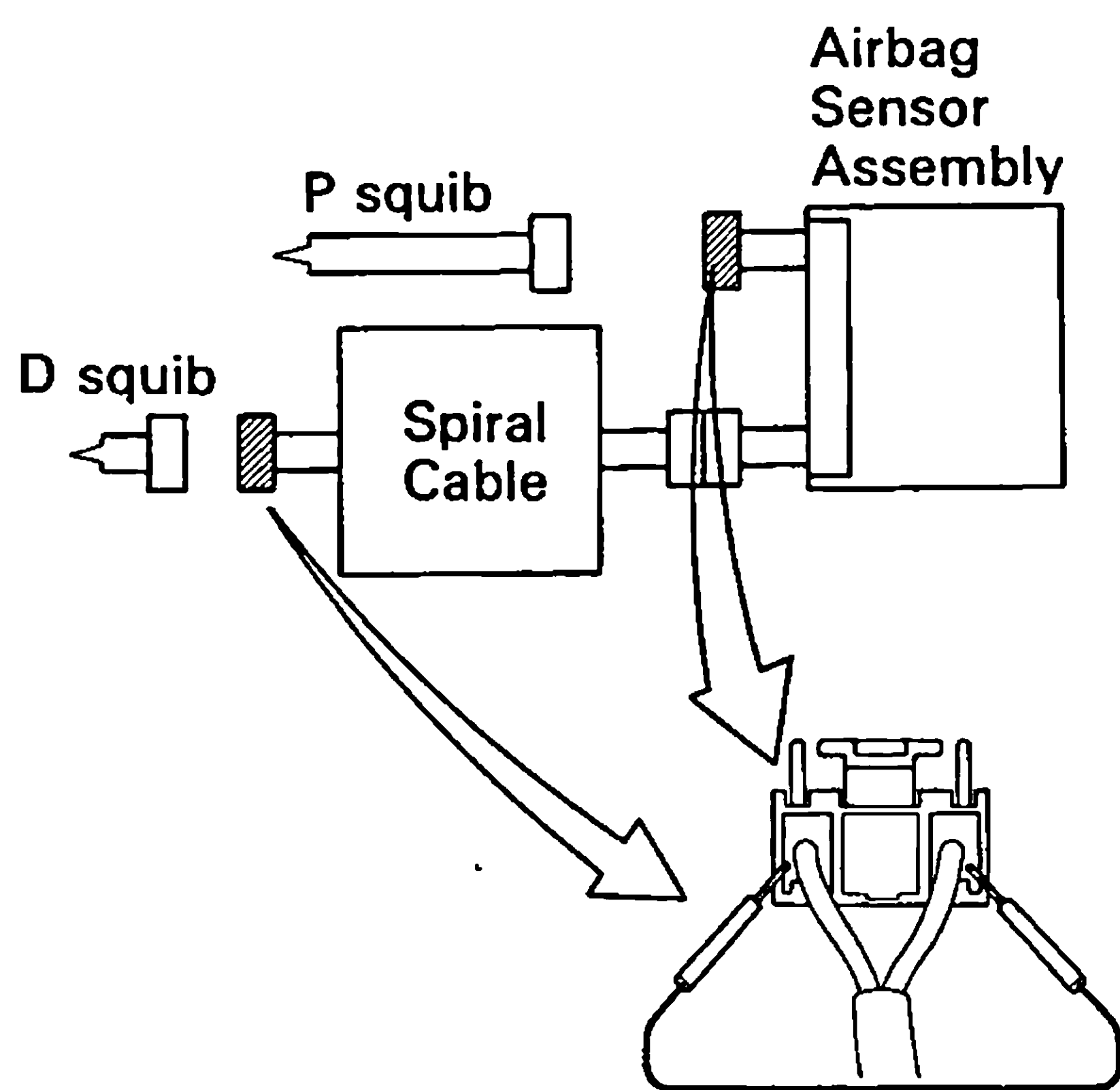
OK**NG**

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

RS

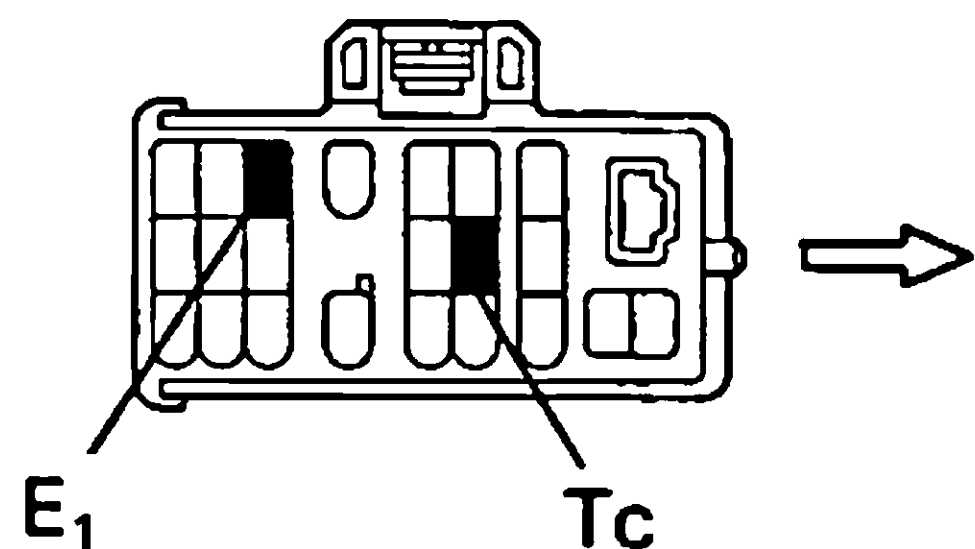
3

Check airbag sensor assembly.



Check Connector

Code 54



AB0069 R06907
AB0118 AB0119
R13006 R05170

OK

P

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

C

- (1) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (2) Clear malfunction code stored in memory. (See page RS-41)
- (3) Turn ignition switch to LOCK, and wait at least 20 seconds.
- (4) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (5) Using SST, connect terminals Tc and E₁ or check connector.
SST 09843-18020
- (6) Check diagnostic trouble code.

OK

Diagnostic trouble code 54 is not output.

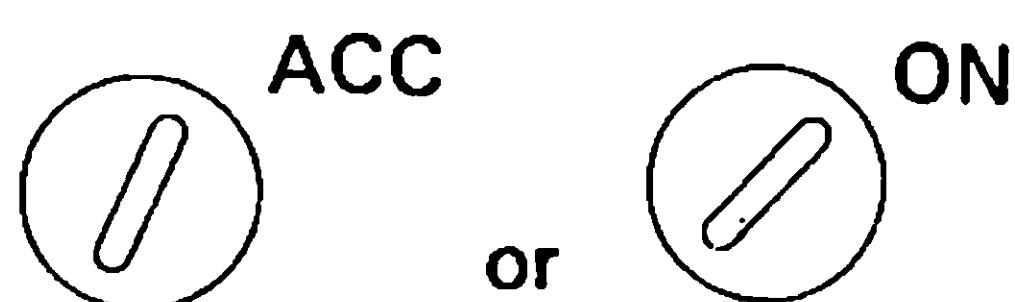
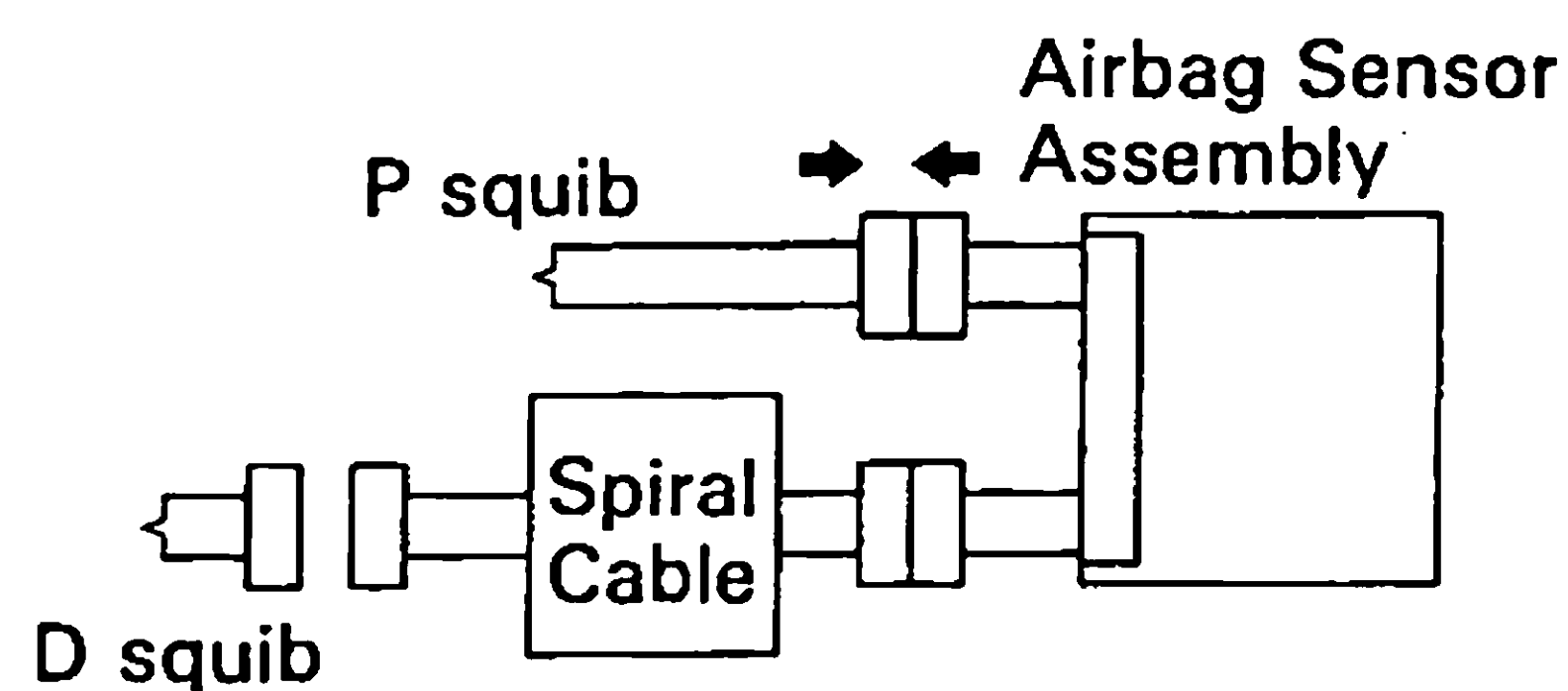
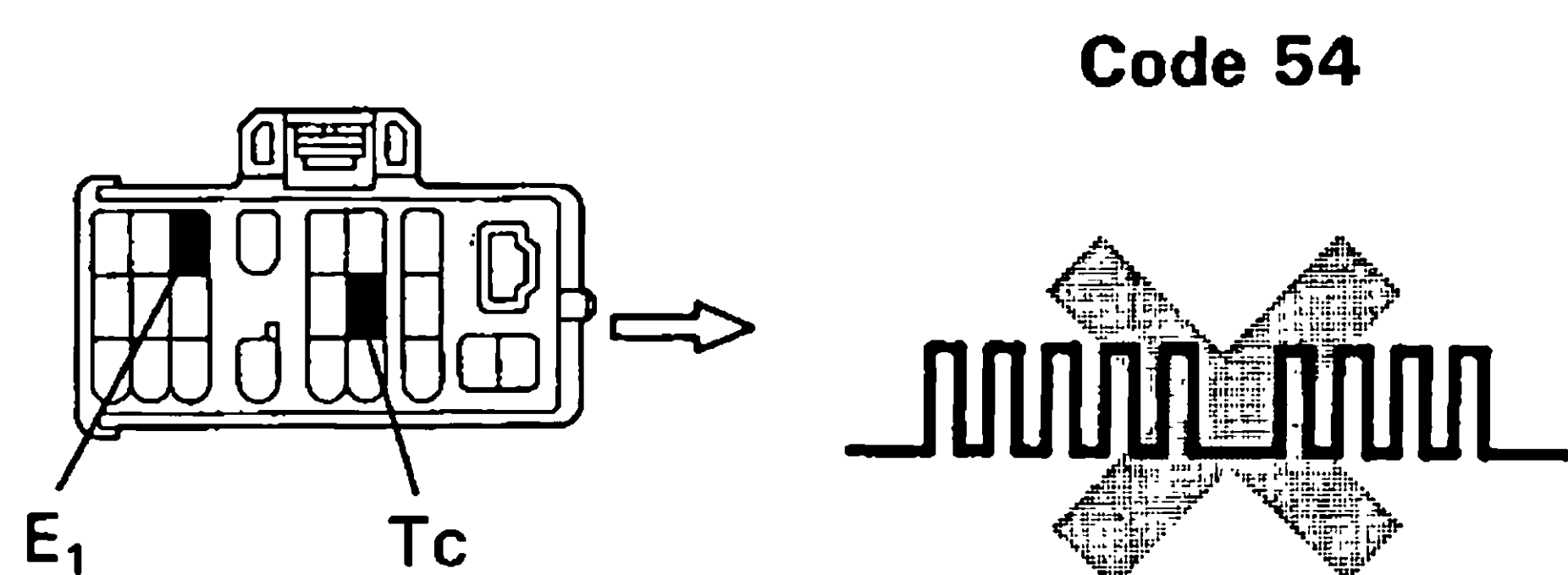
Hint

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

NG

Replace airbag sensor assembly.

RS

4**Check P squib.****Check Connector**

R05909
AB0118 AB0119
R13006 R05170

P

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

C

- (1) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (2) Clear malfunction code stored in memory. (See page RS-41)
- (3) Turn ignition switch to LOCK, and wait at least 20 seconds.
- (4) Turn ignition switch to ACC or ON, and wait at least 20 seconds.
- (5) Using SST, connect terminals Tc and E₁ of check connector.
SST 09843–18020
- (6) Check diagnostic trouble code.

OK**Diagnostic trouble code 54 is not output.****Hint**

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

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

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 System Malfunction (Always lit up, when ignition switch is LOCK position.)

CIRCUIT DESCRIPTION

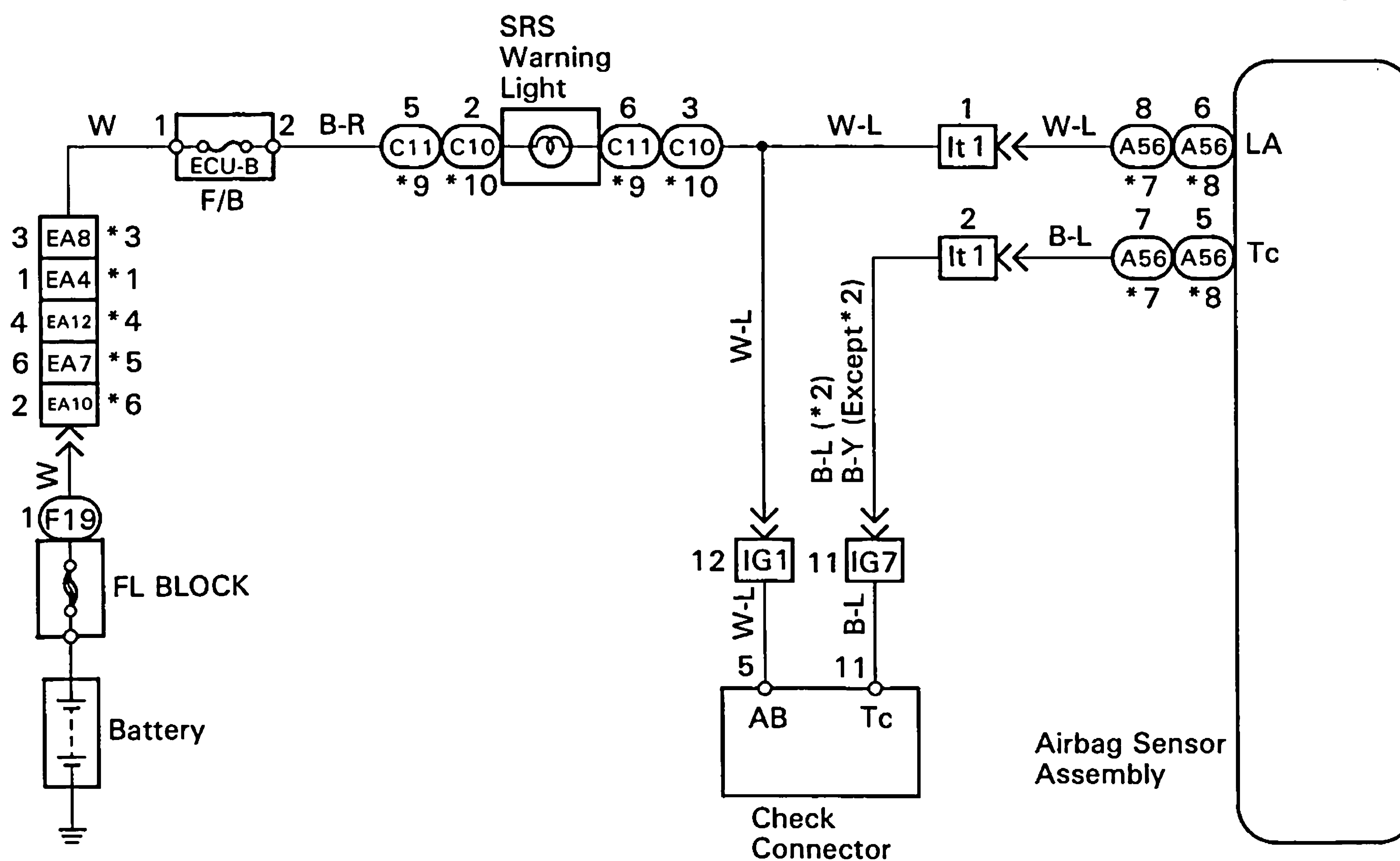
The SRS warning light is located on the combination meter.

When the SRS is normal, the SRS warning light lights up for approx. 6 seconds after the ignition switch is turned from 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 diagnostic trouble code is displayed by the blinking of the SRS warning light.

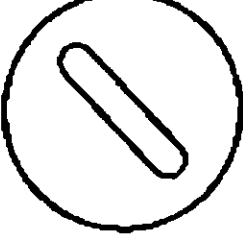
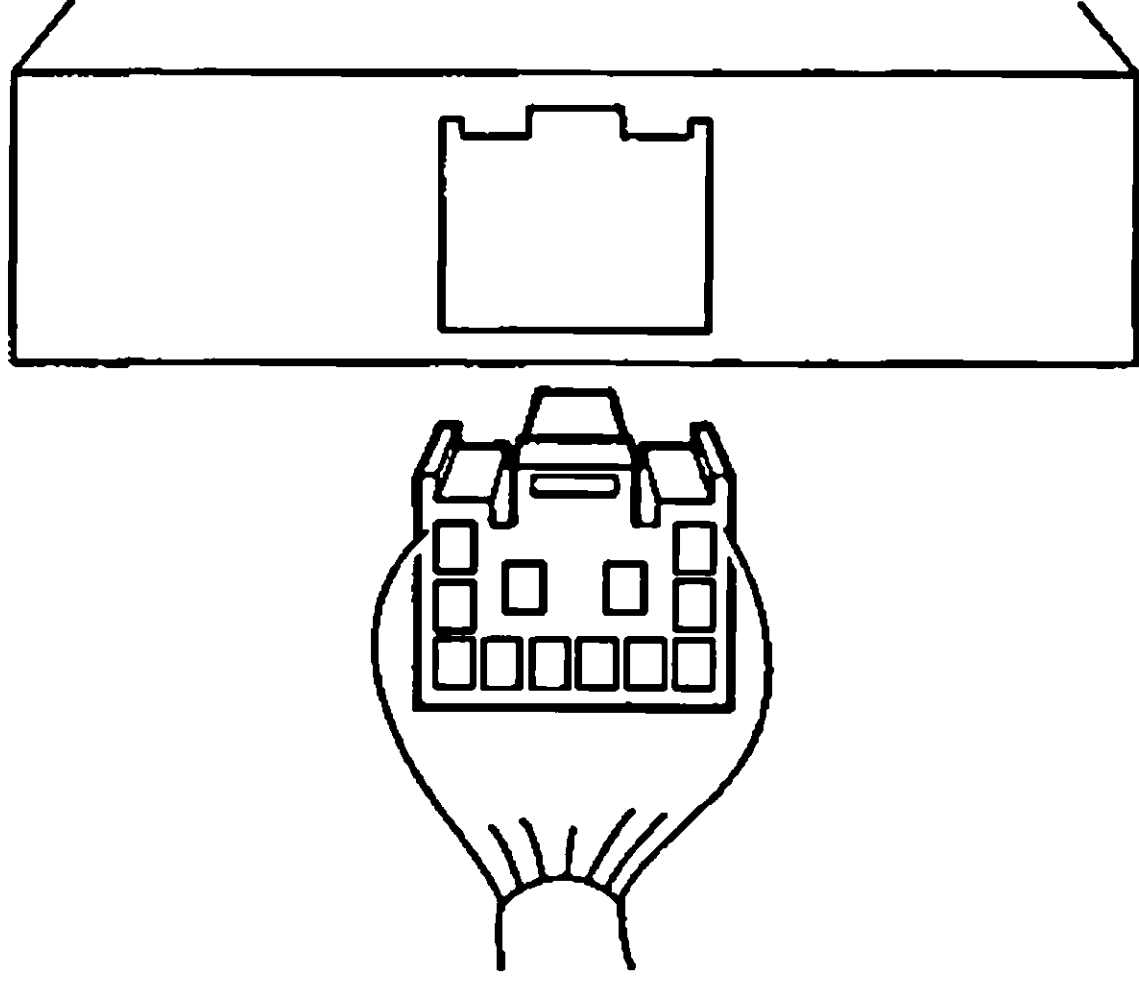
WIRING DIAGRAM



- * 1: 1FZ-F
- * 2: 1HD-FT LHD in Europe
- * 3: 1FZ-FE Except Australia
- * 4: Diesel LHD W/ABS
- * 5: 1FZ-FE for Australia and Diesel RHD
- * 6: Diesel LHD w/o ABS
- * 7: w/ Front Passenger Airbag
- * 8: w/o Front Passenger Airbag
- * 9: Europe
- * 10: Except Europe

INSPECTION PROCEDURES

P Preparation **C** Check

1 Does SRS warning light turn off?	
LOCK   AB0117 N12639	P (1) Turn ignition switch to LOCK. (2) Disconnect negative (–) terminal cable from the battery, and wait at least 90 seconds. (3) Disconnect airbag sensor assembly connector. (4) Connect negative (–) terminal cable to battery. C Check operation of SRS warning light.
OK	NG Check SRS warning light circuit or terminal AB circuit of check connector.
RS Replace airbag sensor assembly.	

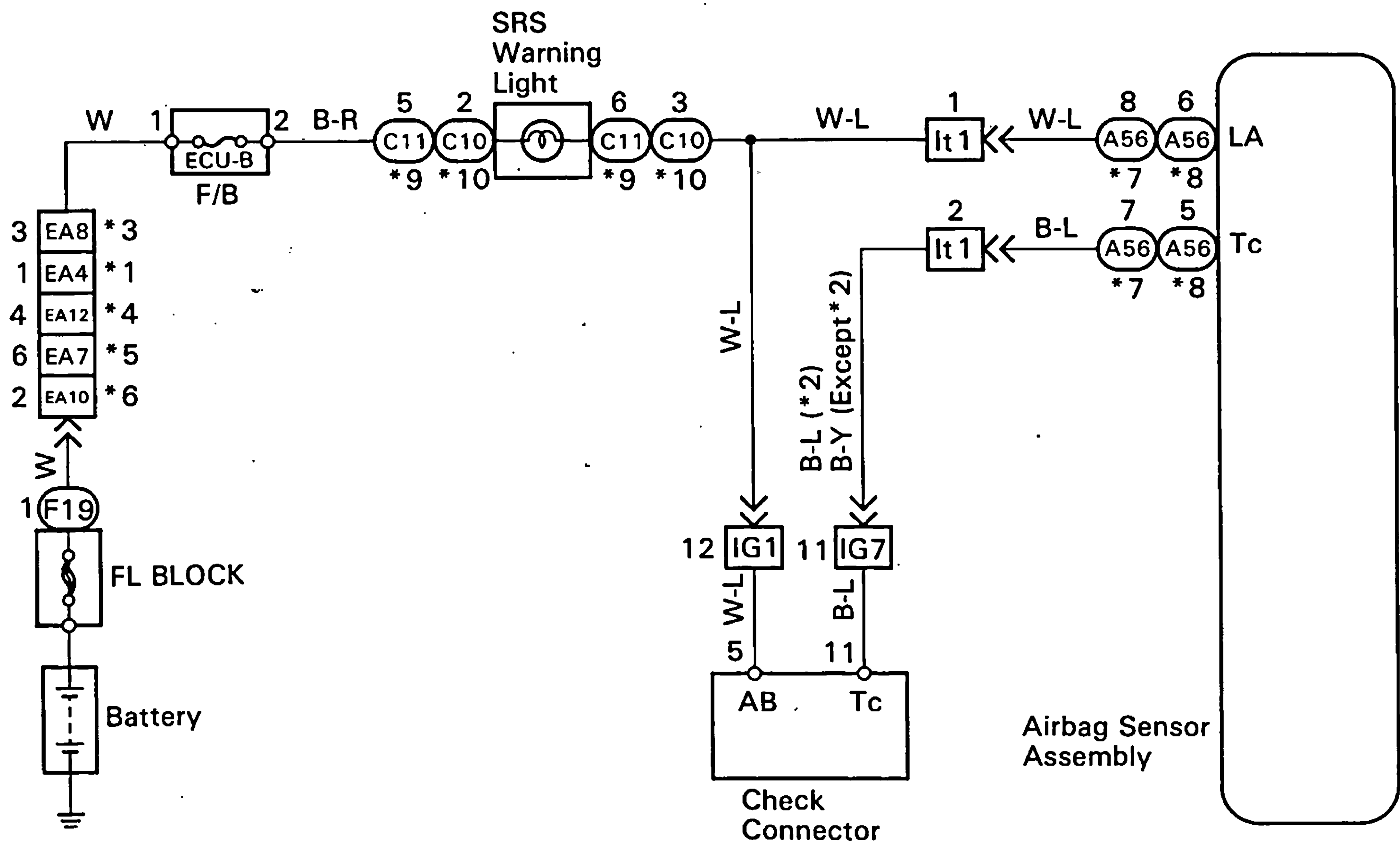
SRS Warning Light System Malfunction (Does not light up, when ignition switch is turned to ACC or ON.)

CIRCUIT DESCRIPTION

The SRS warning light is located on the combination meter.

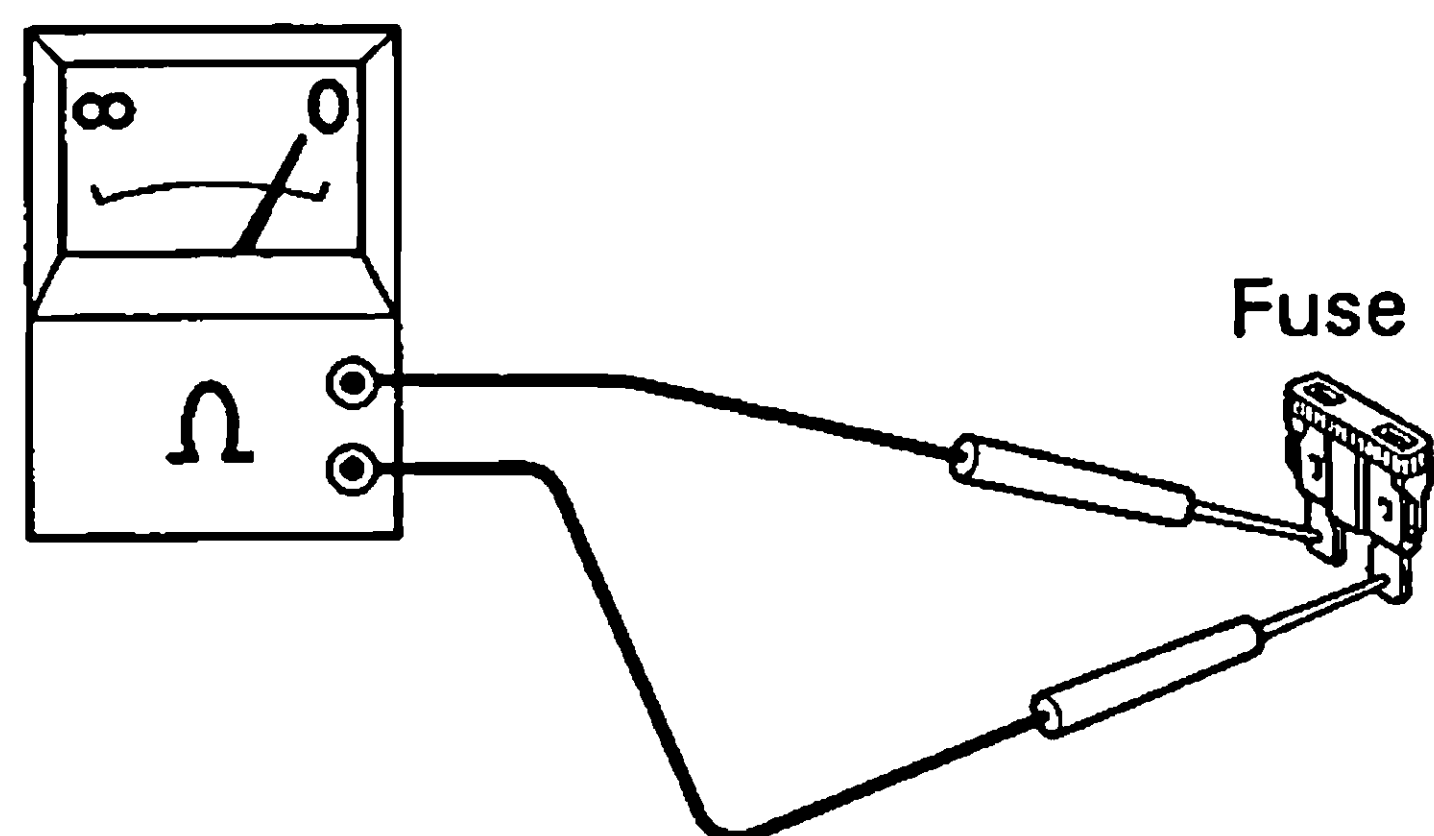
When the SRS is normal, the SRS warning light lights up for approx. 6 seconds after the ignition switch is turned from LOCK position to ACC or ON position, and then turns off automatically. If there is a malfunction in the SRS, the SRS warning light lights up to inform the driver of the abnormality. When terminals Tc and E₁ of the check connector are connected, the diagnostic trouble code is displayed by the blinking of the SRS warning light.

WIRING DIAGRAM



- * 1: 1FZ-F
- * 2: 1HD-FT LHD in Europe
- * 3: 1FZ-FE Except Australia
- * 4: Diesel LHD W/ABS
- * 5: 1FZ-FE for Australia and Diesel RHD
- * 6: Diesel LHD w/o ABS
- * 7: w/ Front Passenger Airbag
- * 8: w/o Front Passenger Airbag
- * 9: Europe
- * 10: Except Europe

INSPECTION PROCEDURES

P Preparation**C** Check**1****Check ECU-B Fuse.**

FI0044

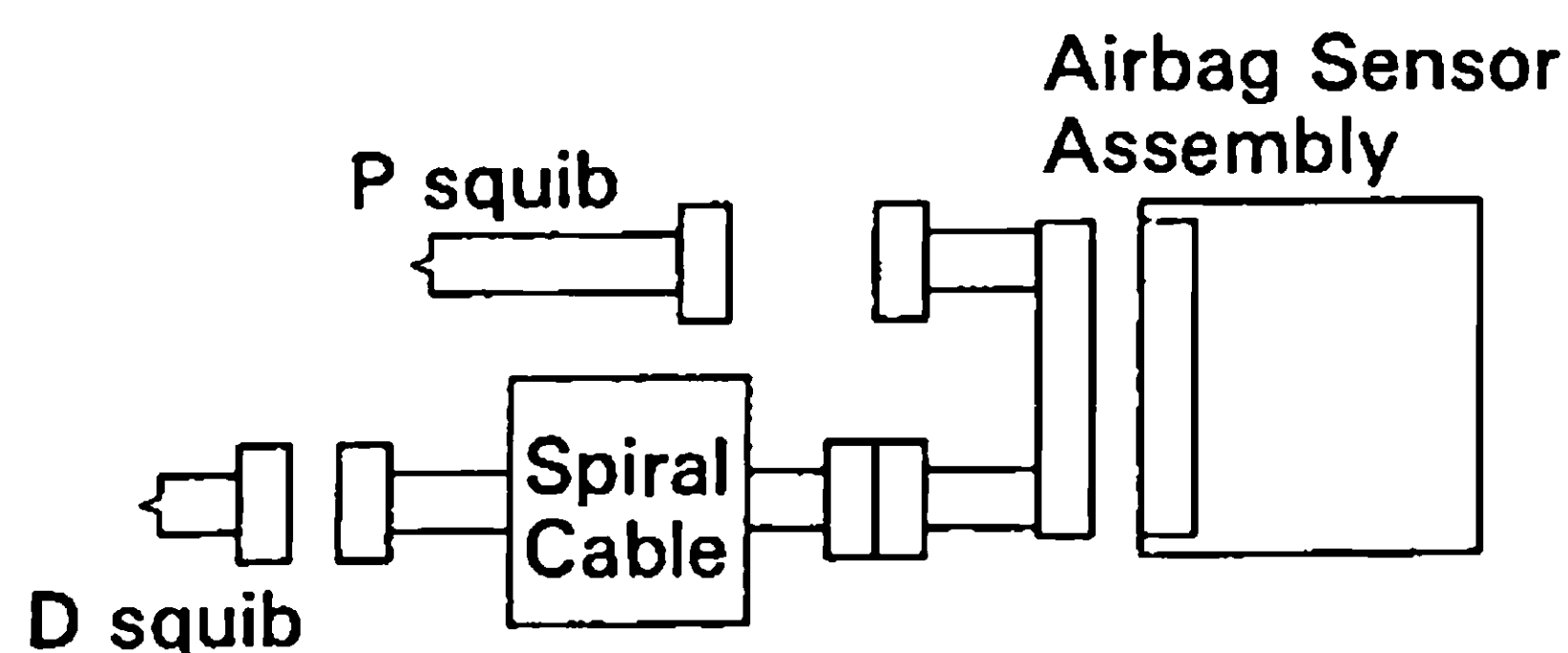
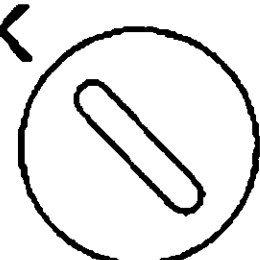
P Remove ECU-B fuse.**C** Check continuity of SRS fuse.**OK** Continuity

Hint

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

OK**NG**Go to step **5**.**2****Preparation.**

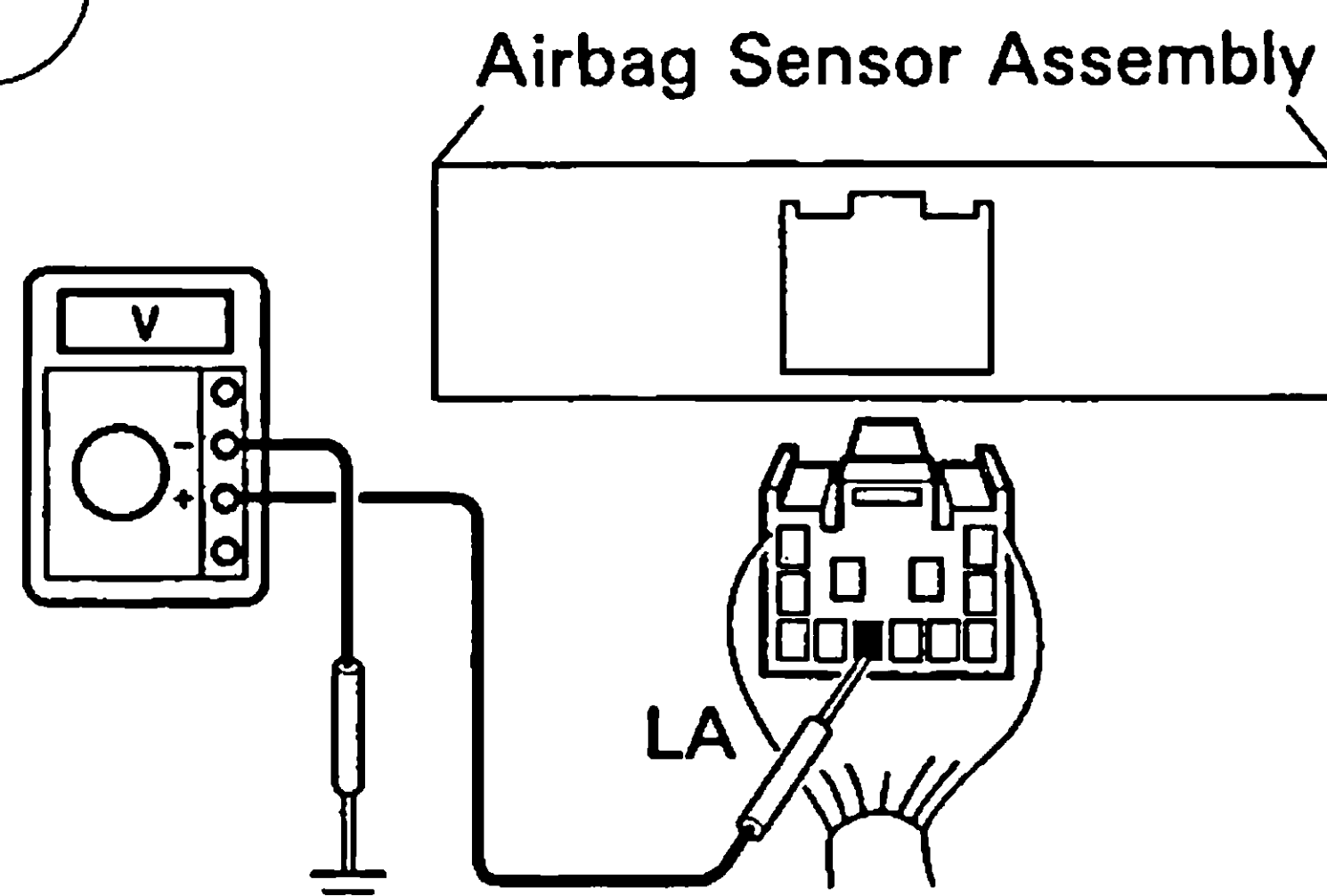
LOCK

AB0117
R05894

- P**
- (1) Disconnect negative (—) terminal cable from the battery, and wait at least 90 seconds.
 - (2) Remove steering wheel pad. (See SR section)
 - (3) Disconnect connector of front passenger airbag assembly. (See page RS-21)
 - (4) Disconnect airbag sensor assembly connector. (See page RS-30)

Caution

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

3**Check SRS warning light circuit.**AB0119
N12638

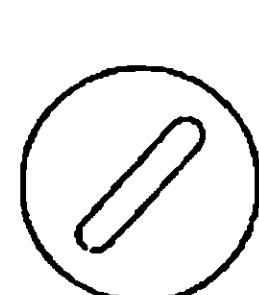
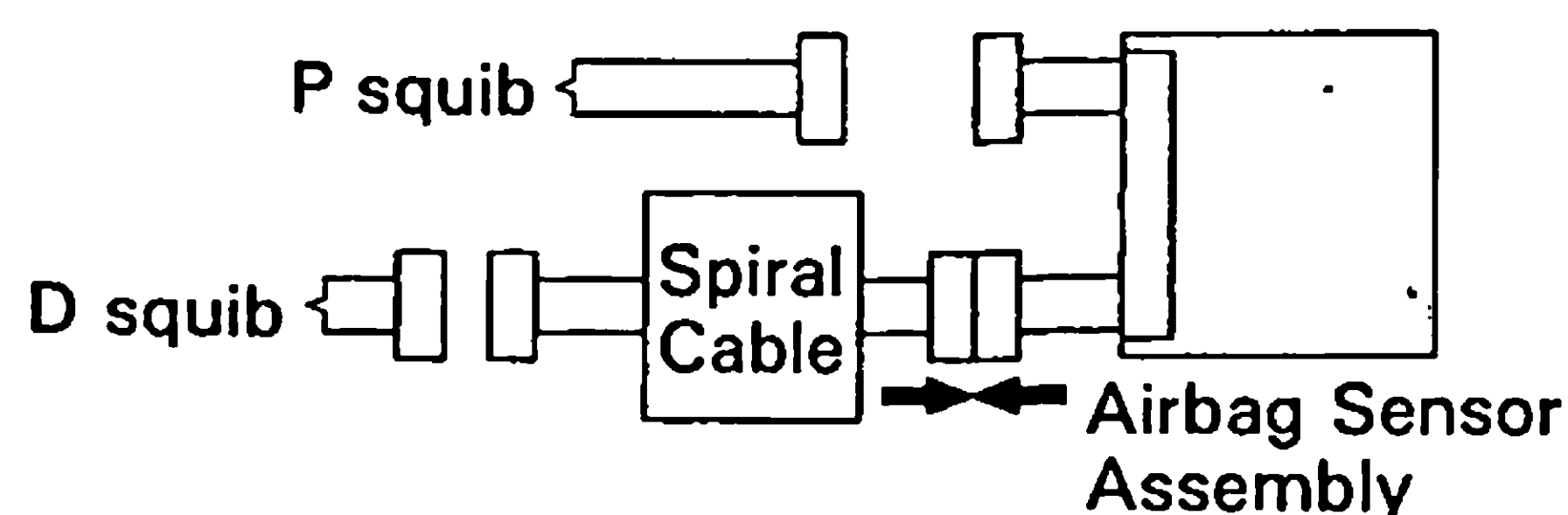
- P**
- (1) Connect negative (—) terminal cable to battery.
 - (2) Turn ignition switch to ACC or ON.

C Measure voltage LA terminal of harness side connector of airbag sensor assembly.

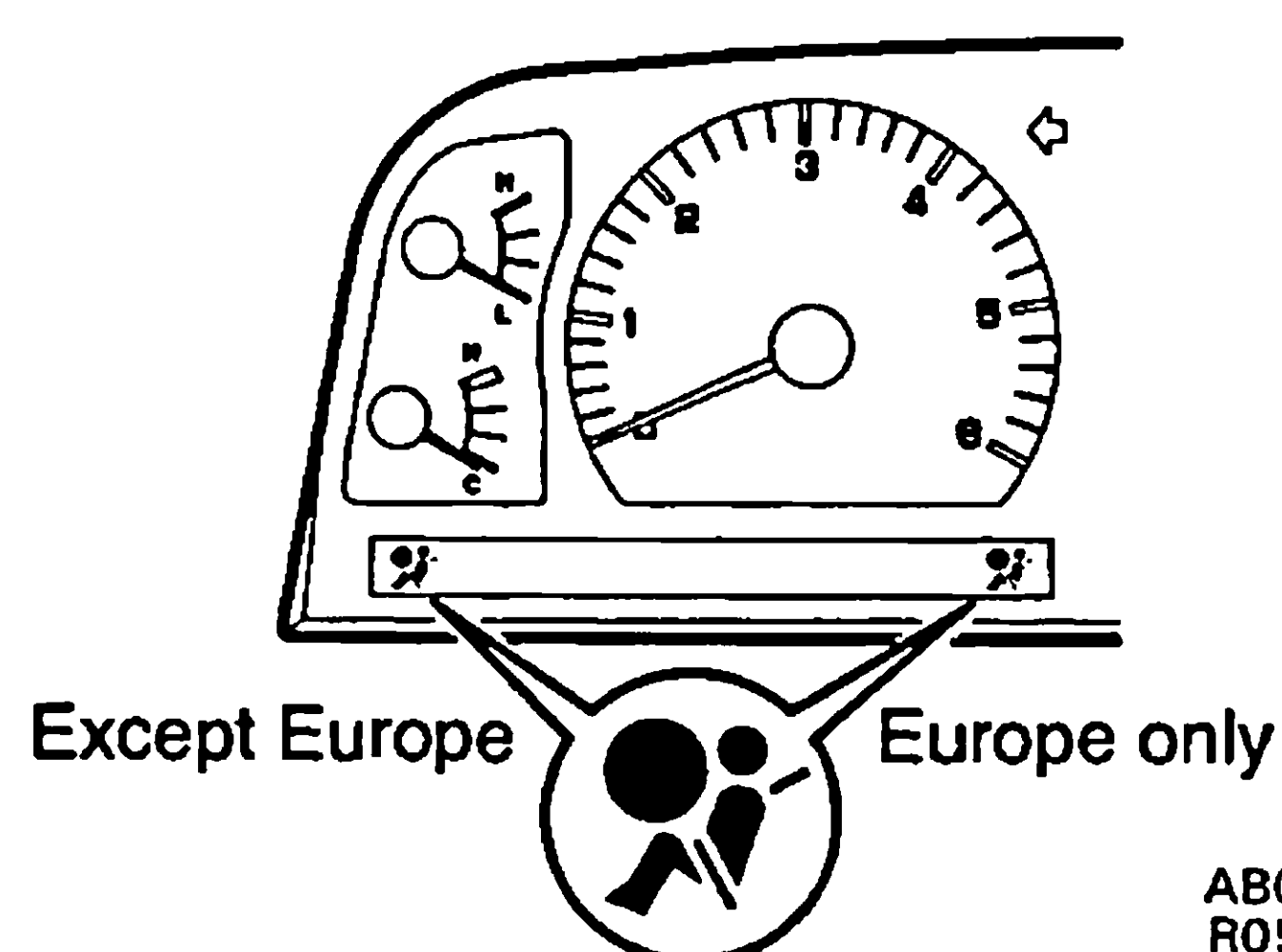
OK Voltage: 10 – 14 V

OK**NG**

Repair SRS warning light circuit.

4**Does SRS warning light come on?**

ON

AB0119
R05902
R13884**P**

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

C

Check operation of SRS warning light.

OK

SRS warning light comes on.

YES**NO**

Check terminal LA of airbag sensor assembly and electrical connection check mechanism. If normal, replace airbag sensor assembly.

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**Is new SRS fuse burnt out again?****YES****NO**

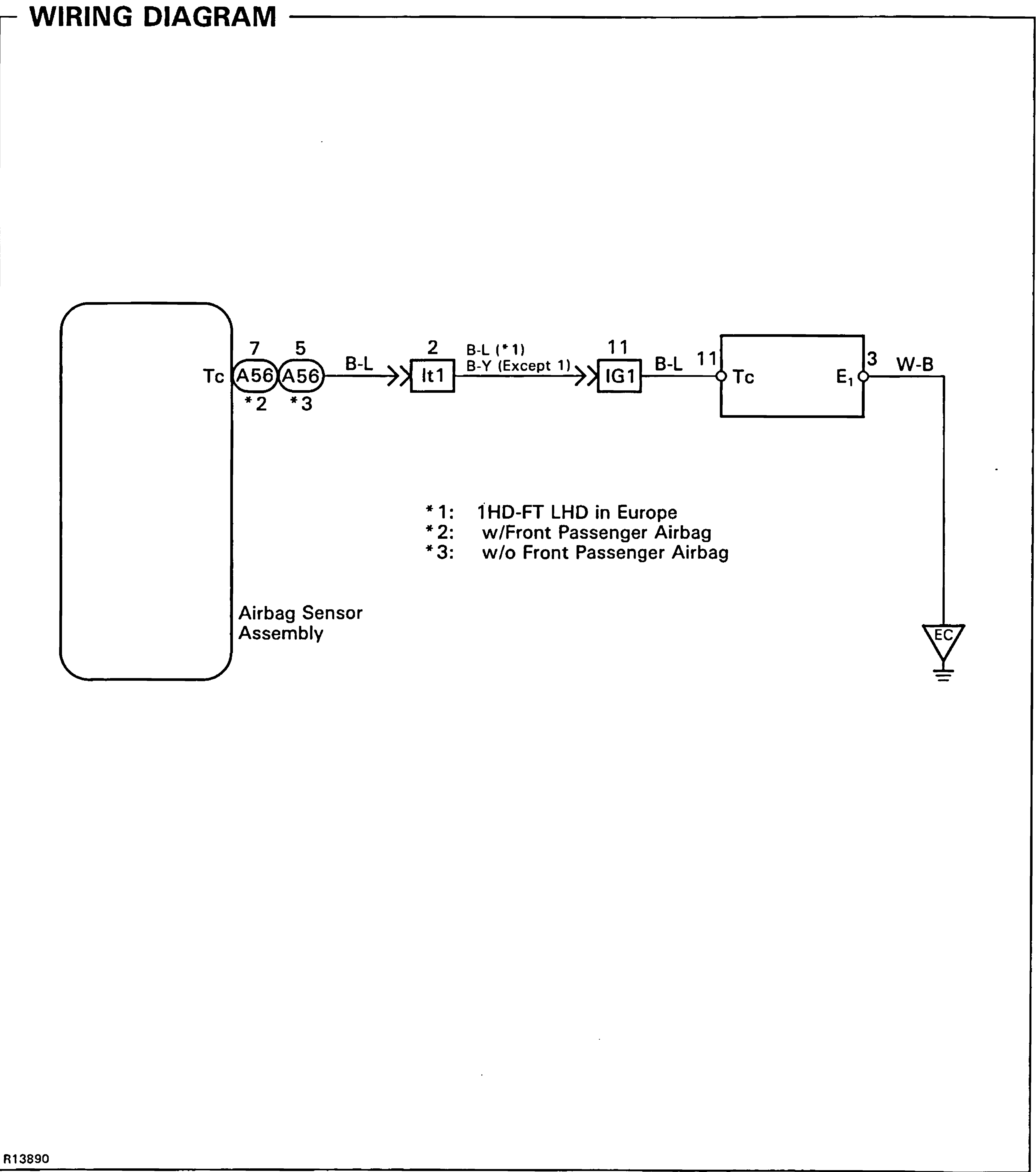
Using simulation method, reproduce malfunction symptoms (See page RS-42).

Check harness between SRS 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 diagnostic trouble code output mode. The diagnostic trouble codes are displayed by the blinking of the SRS warning light.



INSPECTION PROCEDURES

P Preparation C Check

HINT: If the diagnostic trouble code is not displayed, perform the following troubleshooting:

1

Does SRS warning light light up for approx. 6 seconds?

LOCK → ACC or ON

AB0117 AB0118
AB0119 R13884

C

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

YES

NO

Check SRS warning light system.
(See page RS-38)

2

Check voltage between terminals Tc and E₁ of check connector.

ACC or ON

Check Connector

AB0118 AB0119
R13006

P

Turn ignition switch to ACC or ON.

C

Measure voltage between terminals Tc and E₁ of check connector.

OK

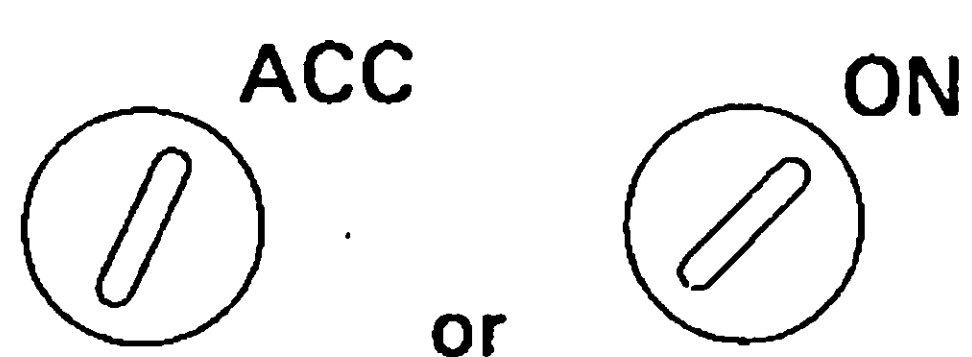
Voltage: 10 – 14 V

NG

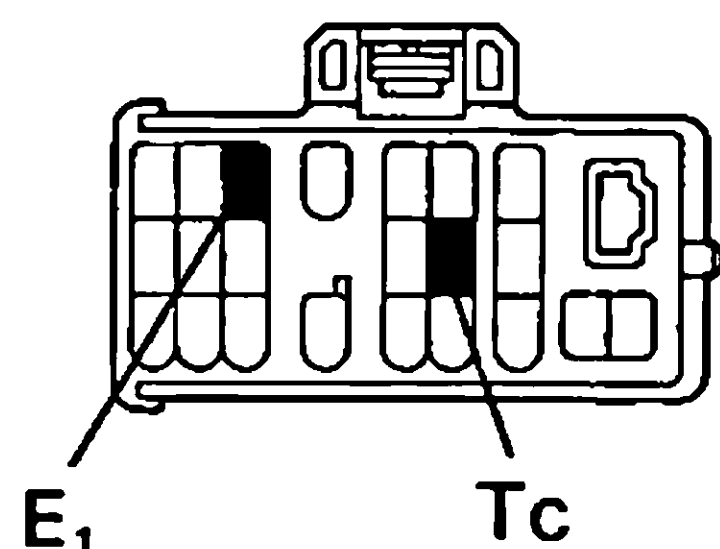
OK

Go to step 4.

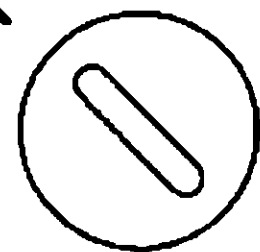
RS

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

Check Connector

AB0118 AB0119
R13006**C** Measure voltage between terminals Tc of check connector and body ground.**OK** Voltage: Battery positive voltage**NG****OK**Check harness between terminal E₁ of check connector and body ground.**4****Check airbag sensor assembly.**

LOCK



ACC

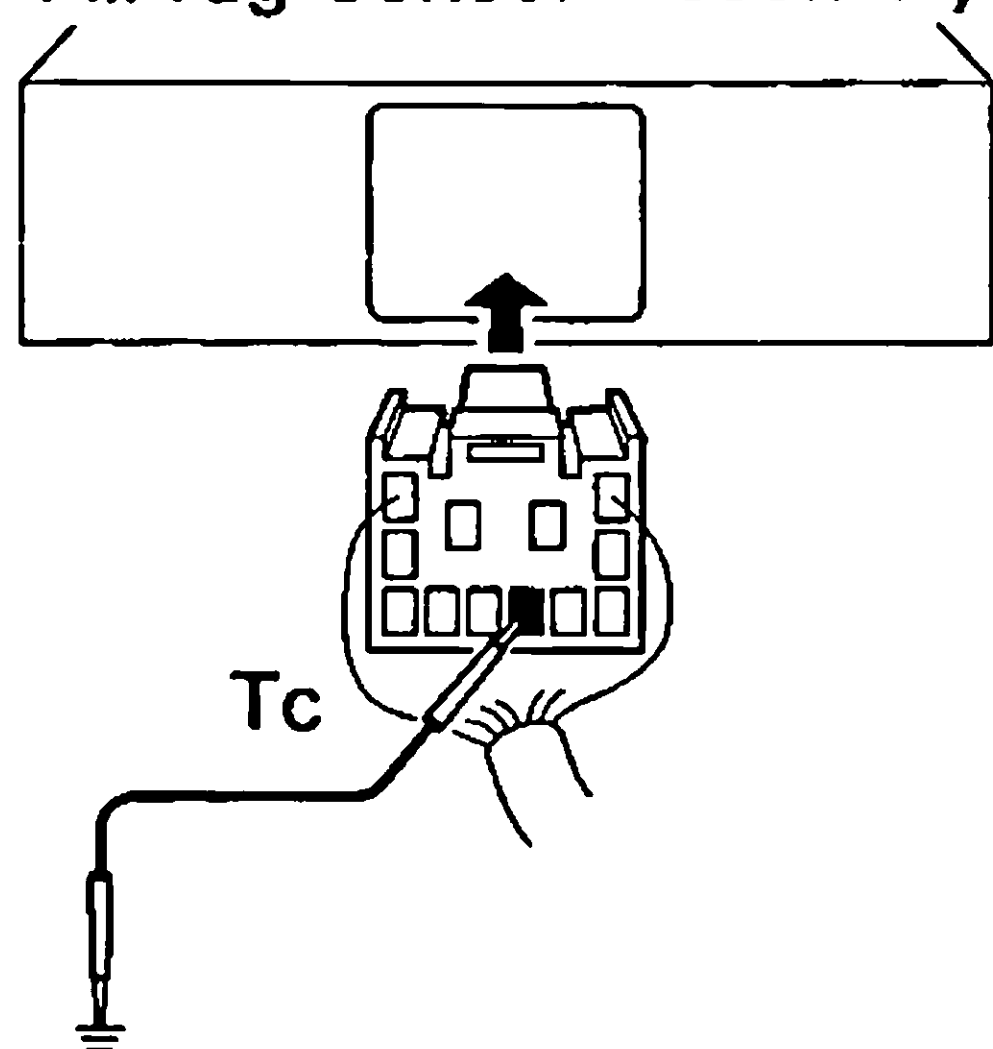


or

ON



Airbag Sensor Assembly

AB0117 AB0118 AB0119
R12658

- P**
- (1) Turn ignition switch to LOCK.
 - (2) Disconnect negative (–) terminal cable from the battery, and wait at least 90 seconds.
 - (3) Disconnect airbag sensor assembly connector.
 - (4) Insert service wire into terminal Tc from back side as shown.
 - (5) Connect airbag sensor assembly connector with service wire.
 - (6) Connect negative (–) terminal cable to battery.
 - (7) Turn ignition switch to ACC or ON and wait at least 20 seconds.
 - (8) Connect service wire of terminal Tc to body ground.

C 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.

NG**OK**

Check harness between airbag sensor assembly and check connector.

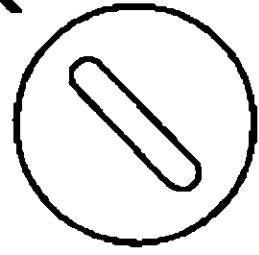
Replace airbag sensor assembly.

HINT: If the diagnostic trouble code is displayed without a DTC check procedure, perform the following troubleshooting.

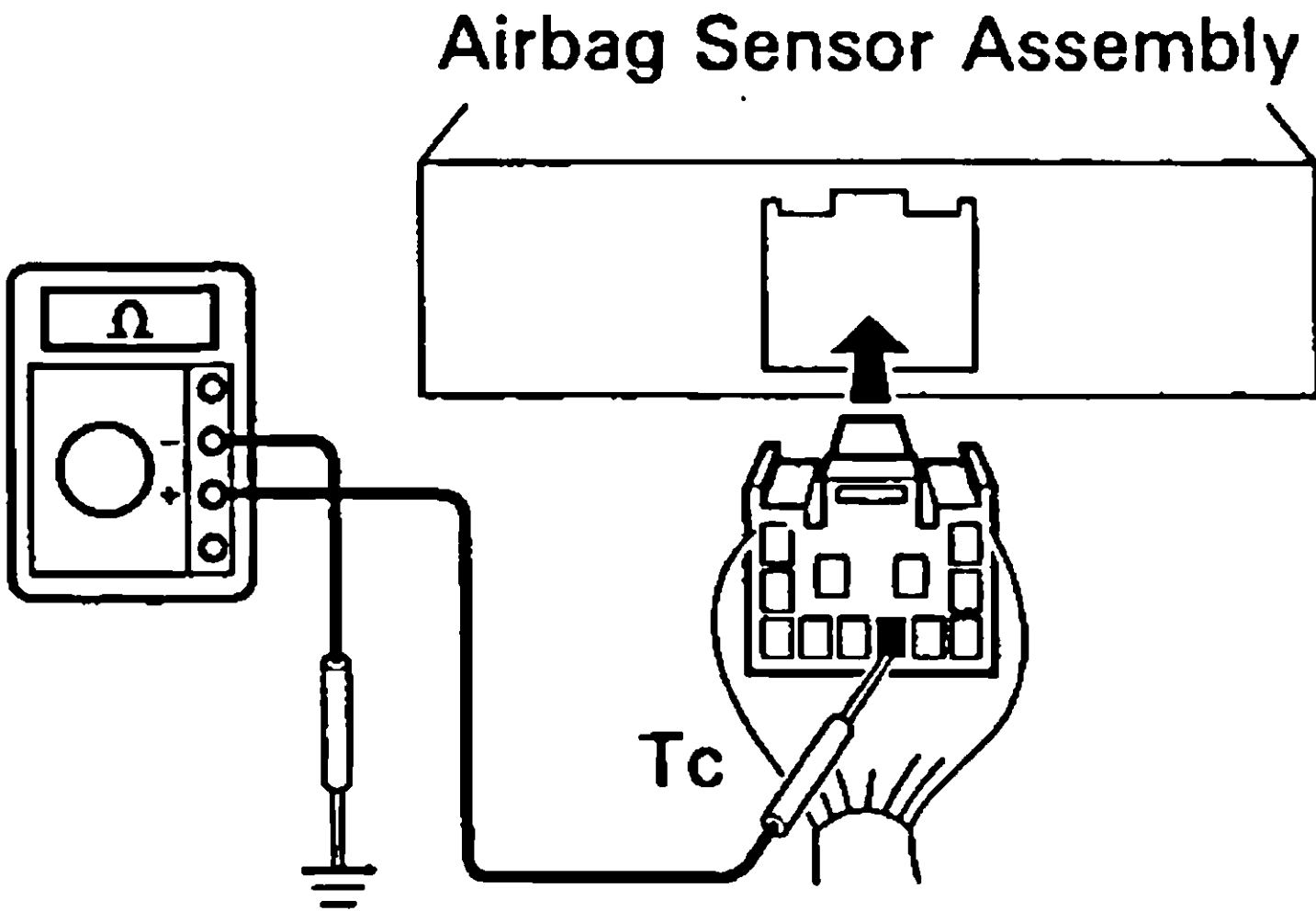
1

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

LOCK



Airbag Sensor Assembly



AB0117

N12636

P

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

C

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

OK

Resistance: 1 MΩ or Higher

OK

NG

Replace airbag sensor assembly.

Repair or replace harness or connector.

RS

SERVICE SPECIFICATIONS
TORQUE SPECIFICATIONS

R903T-0P

Part tightened	N·m	kgf·cm	ft·lbf
Steering wheel	34	350	26
Steering wheel pad	9.0	90	80 in·lbf
Front passenger airbag assembly x Instrument panel reinforcement	20	210	15
Airbag sensor assembly	20	210	15

BODY ELECTRICAL SYSTEM

POWER SOURCE	BE— 2
IGNITION SYSTEM	BE— 4
LIGHTING SYSTEM	BE— 6
HEADLIGHT CLEANER SYSTEM	BE— 10
WIPER AND WASHER SYSTEM	BE— 13
COMBINATION METER	BE— 15
DEFOGGER SYSTEM	BE— 34
POWER WINDOW CONTROL SYSTEM ...	BE— 36
POWER DOOR LOCK CONTROL SYSTEM...	BE— 39
SLIDING ROOF SYSTEM	BE— 40
POWER MIRROR CONTROL SYSTEM.....	BE— 41
POWER SEAT CONTROL SYSTEM	BE— 42
SEAT HEATER SYSTEM	BE— 43
EXTRA (SUB) TANK SYSTEM	BE— 44
FUEL TRANSFER SYSTEM	BE— 45
CRUISE CONTROL SYSTEM	BE— 47
AUDIO SYSTEM.....	BE— 52
CLOCK	BE— 61
SERVICE SPECIFICATIONS	BE— 63

BE

REFER TO FOLLOWING REPAIR MANUALS:

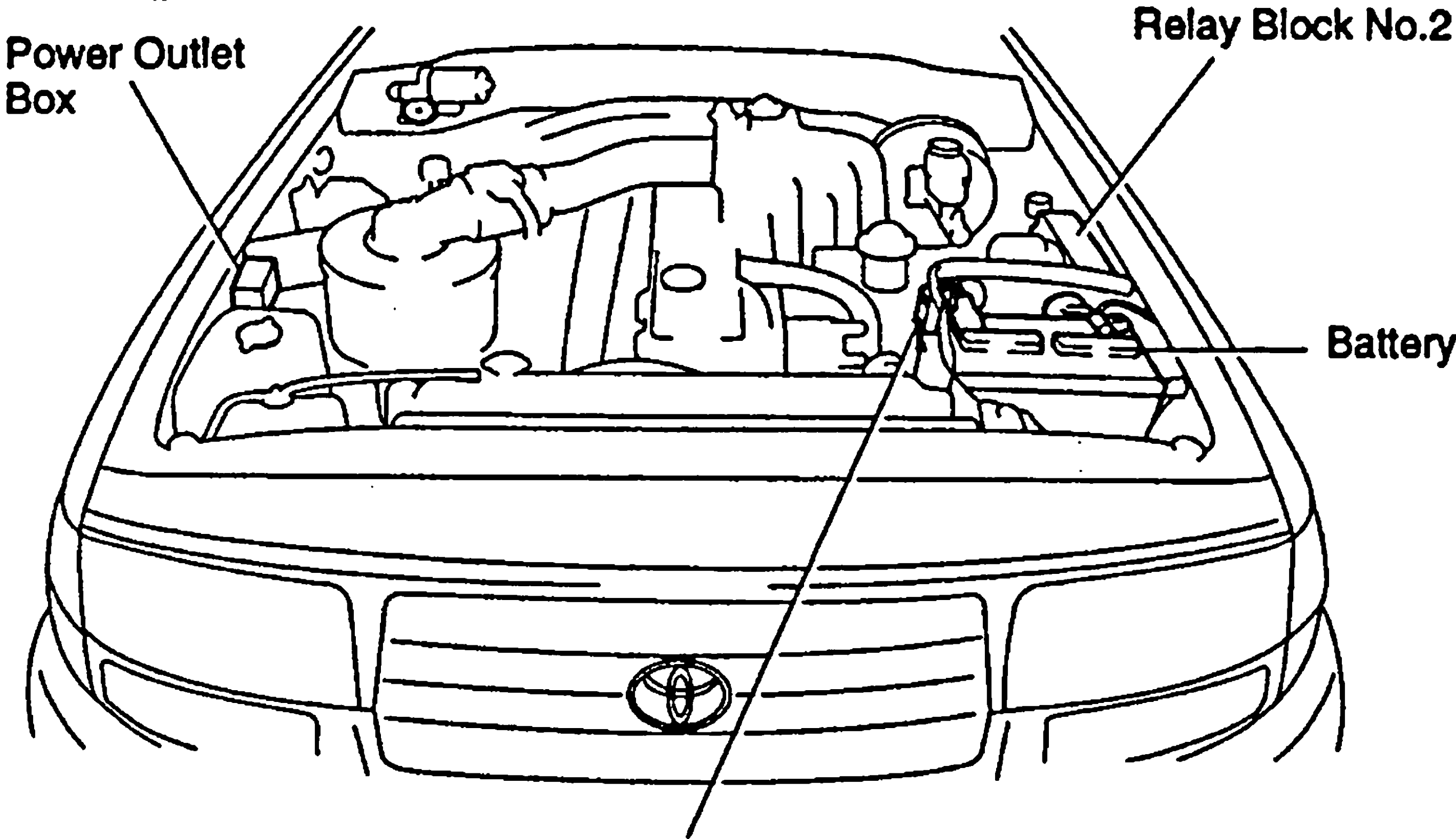
Manual Name	Pub. No.
• Land Cruiser (Station Wagon) Chassis and Body Repair Manual	RM184E
• Land Cruiser (Hardtop, Canvas Top and Station Wagon) Chassis and Body Repair Manual Supplement	Jan., 1992 RM290E Aug., 1992 RM315E

NOTE: The above pages contain only the points which differ from the above listed manuals.

POWER SOURCE
PARTS LOCATION

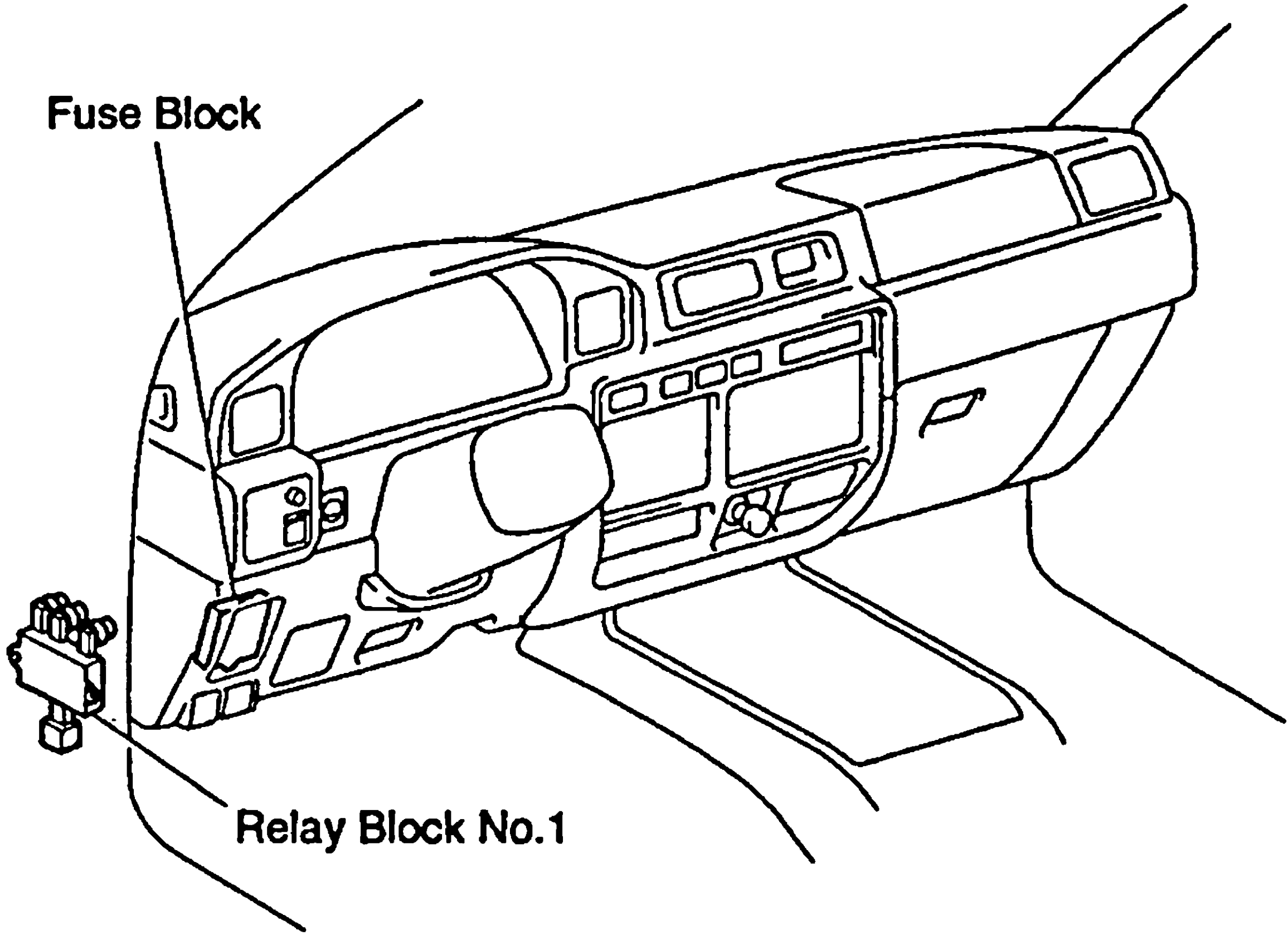
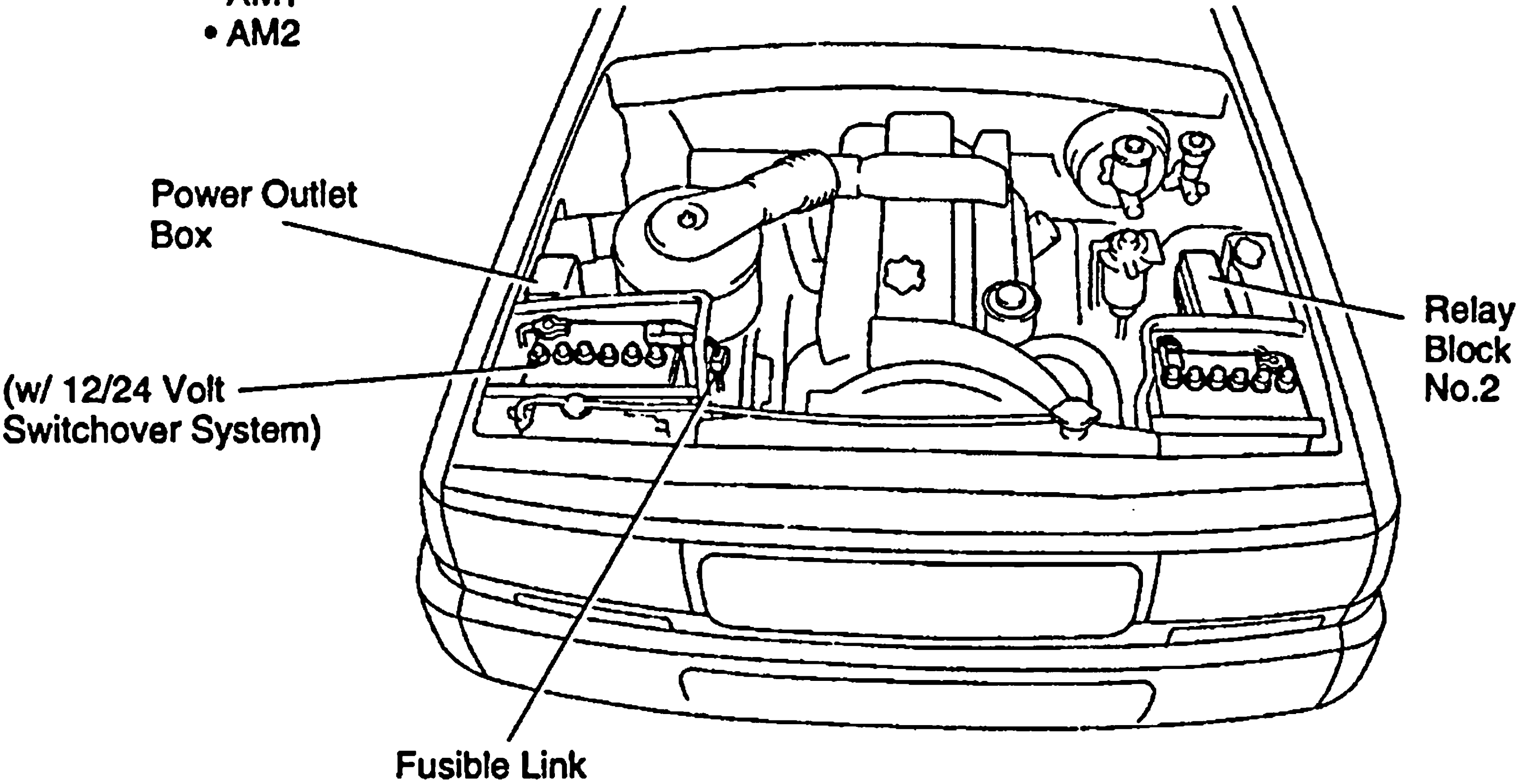
BE2LR-01

Gasoline Engine



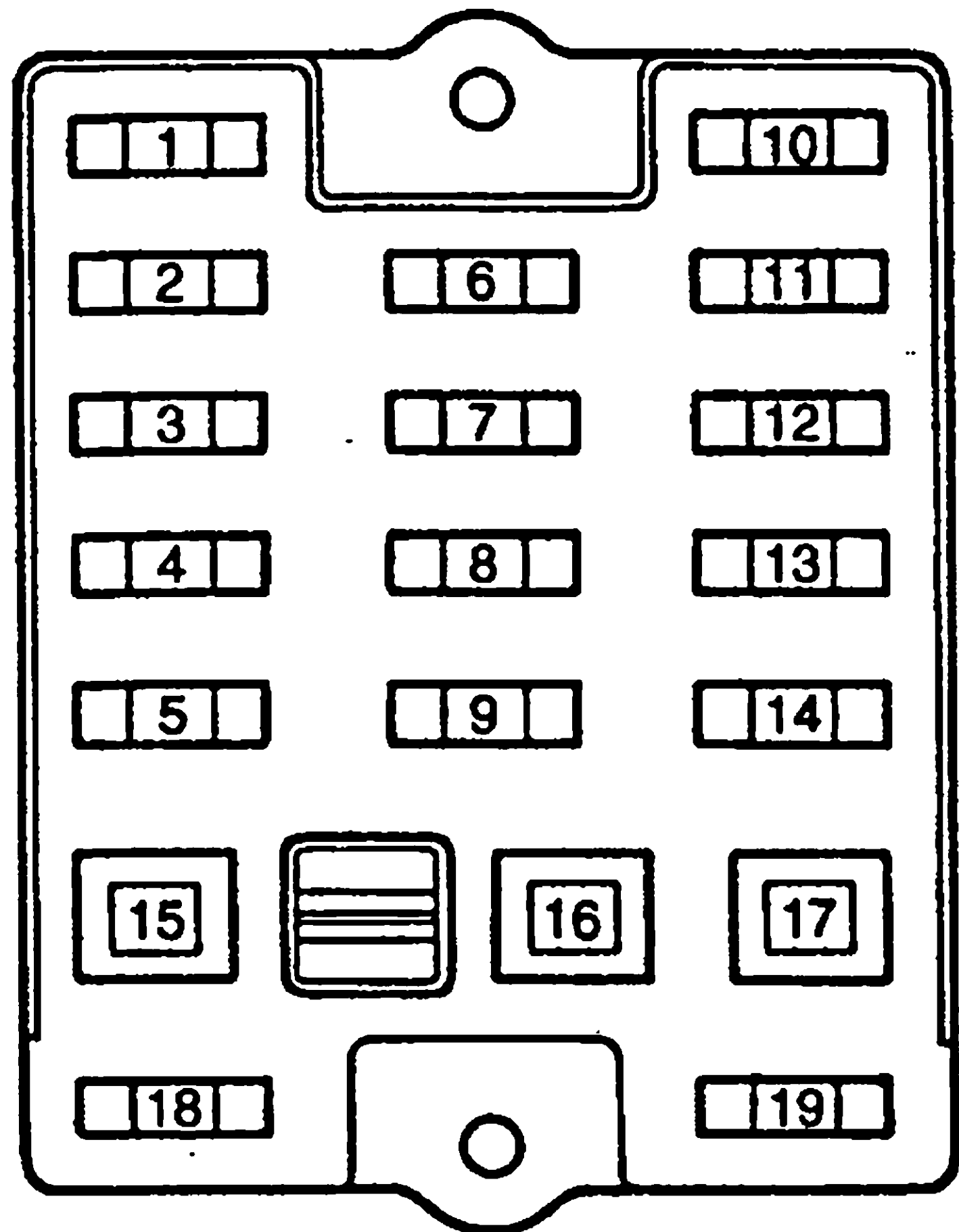
- Fusible Link
- MAIN
 - AM1
 - AM2

Diesel Engine



N14463
BE5126
N14464

Fuse Block



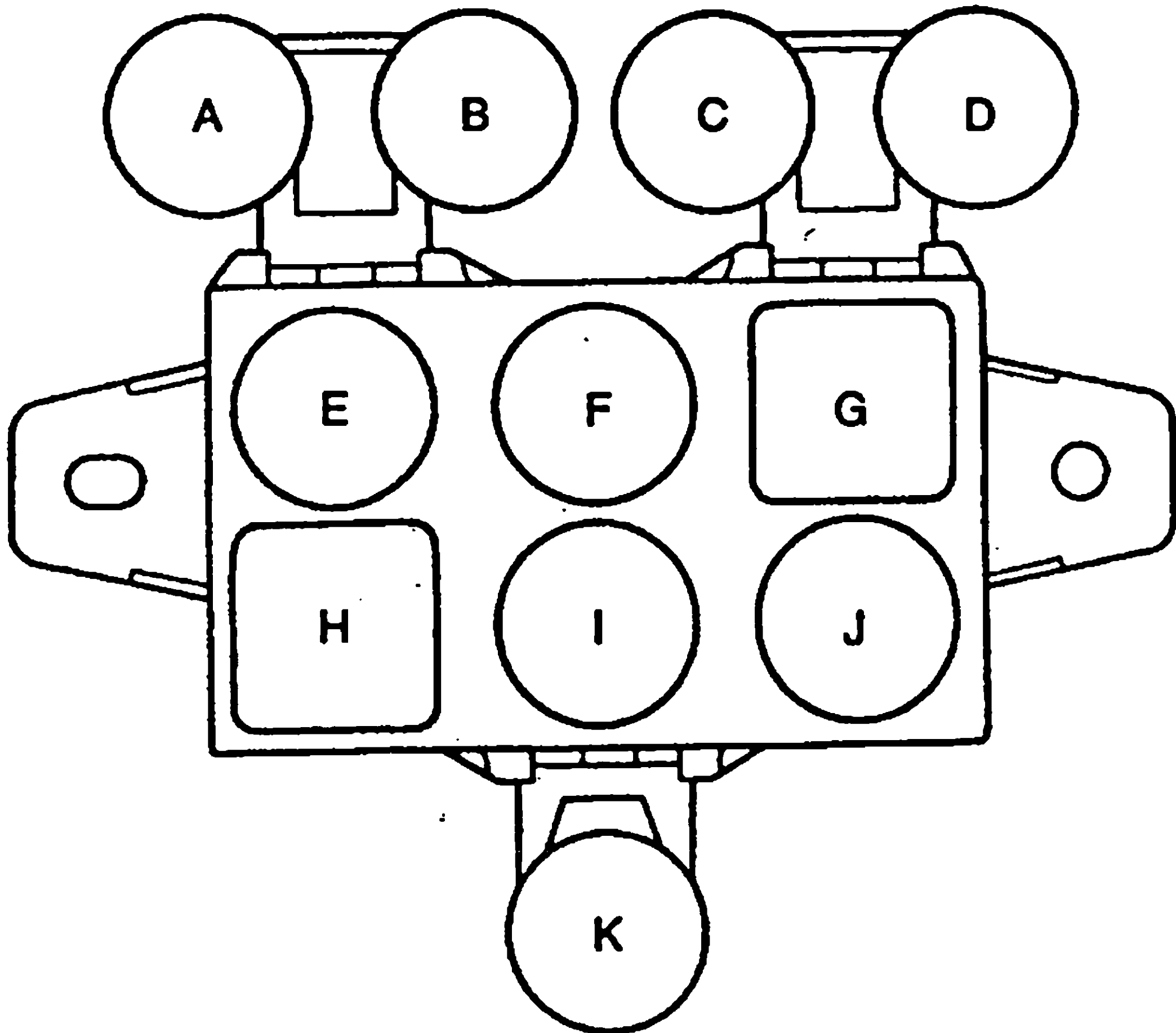
* 1: Europe

Fuses and Midium Current Fuse

1. CIG	15A	10. ECU-B	10A
2. TAIL	15A	11. REAR-HTR	20A
3. —	—	12. IGN	7.5A
4. STOP	10A	13. A/C	10A
5. DEFOG	20A	14. DIFF	30A
6. WIPER	20A	16. HEATER	40A
7. GAUGE	10A	17. POWER	30A
8. TURN	7.5A	18. Spare	
9. ECU-IG	15A	19. Spare	

BE

Relay Block No.1

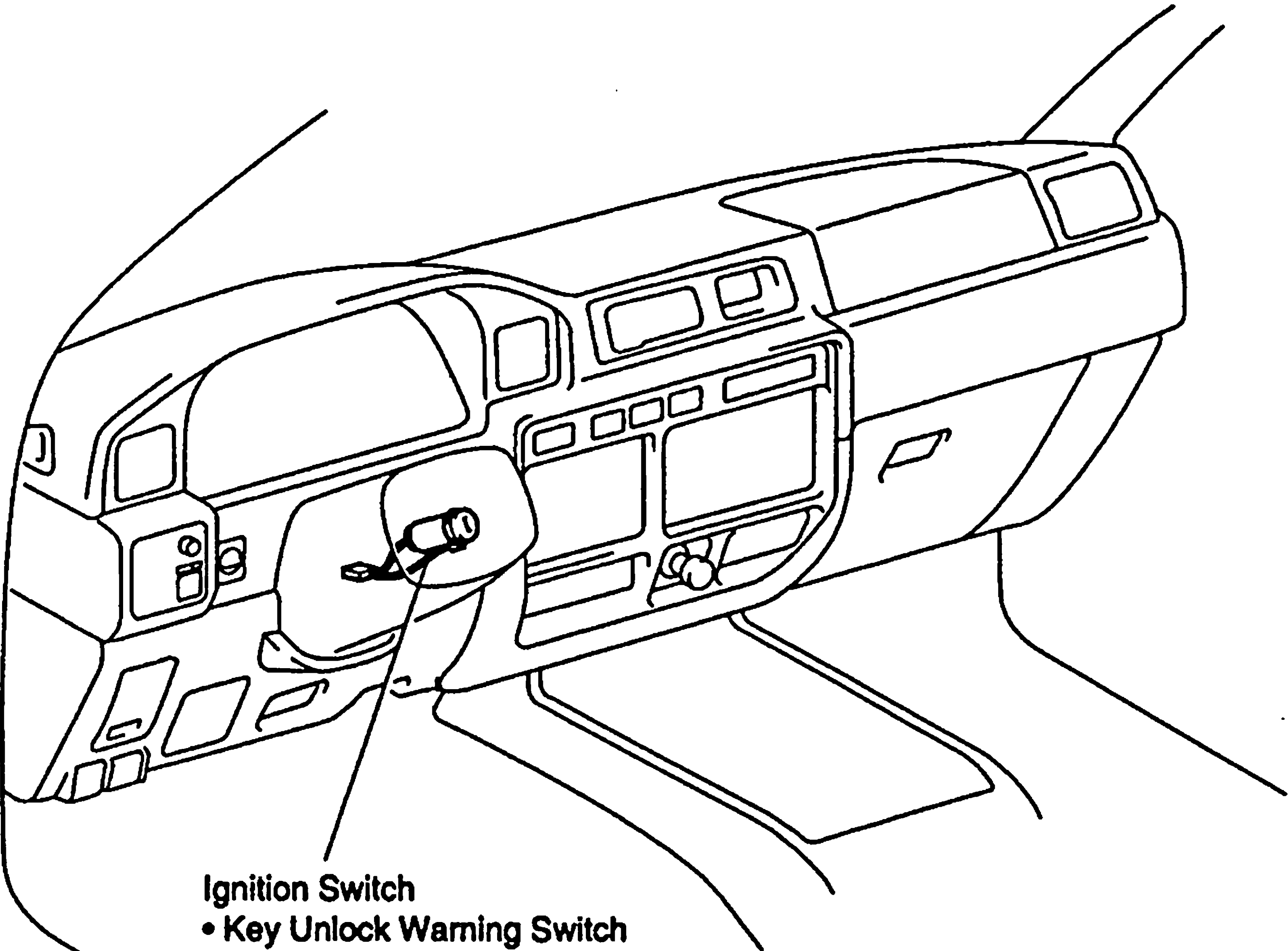


Relays

- A. Cooling Fan Relay
- B. Bulb Check Relay (Australia)
- C. Rear Fog Light Relay (Europe)
Blower Hi Relay (G.C.C. w/ A/C)
- D. —
- E. Deffoger Relay
- F. Power Main Relay
- G. Turn Signal Flasher
- H. Heater Relay
- I. Taillight Control Relay
- J. —
- K. Circuit Opening Relay

IGNITION SYSTEM
PARTS LOCATION

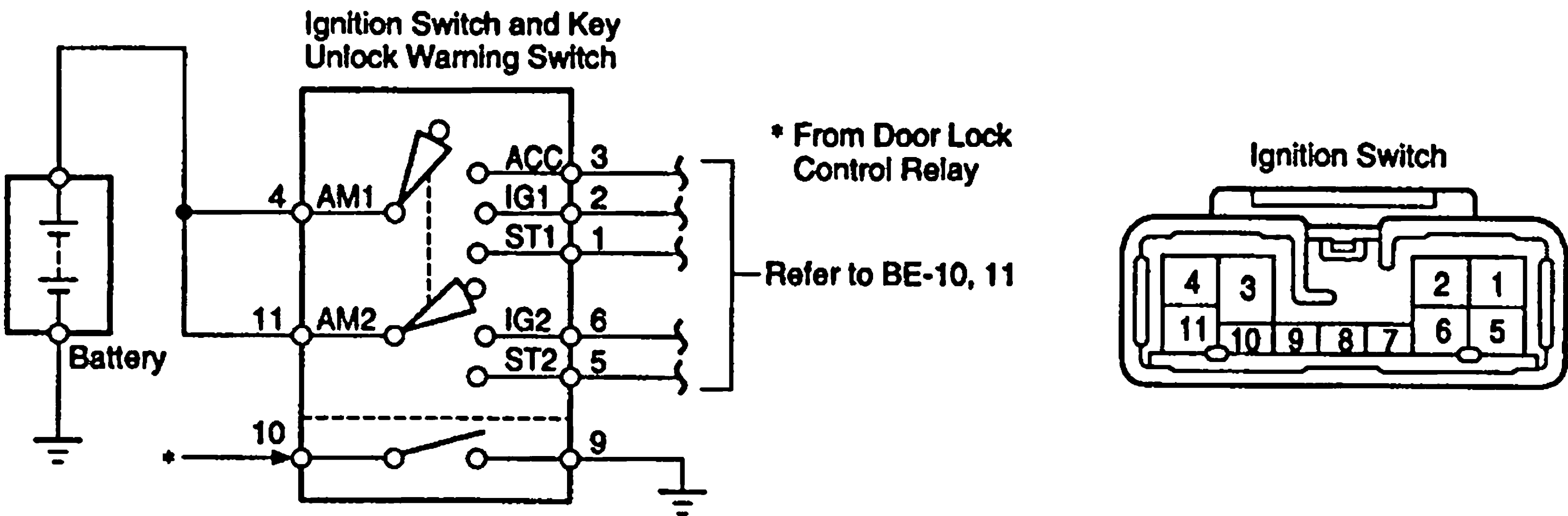
BE2L8-01



Y N14298

WIRING AND CONNECTOR DIAGRAMS

BE2L7-01



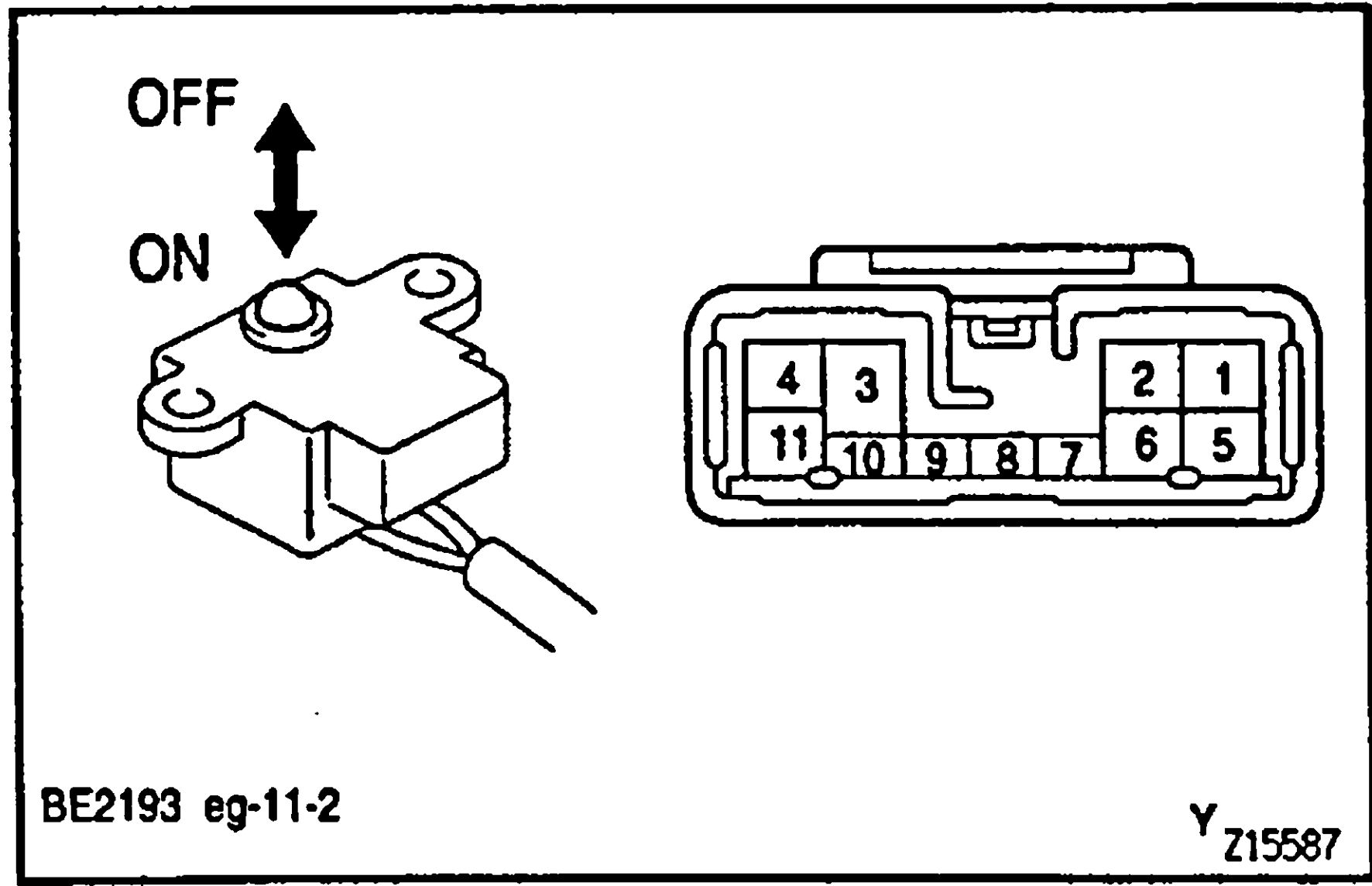
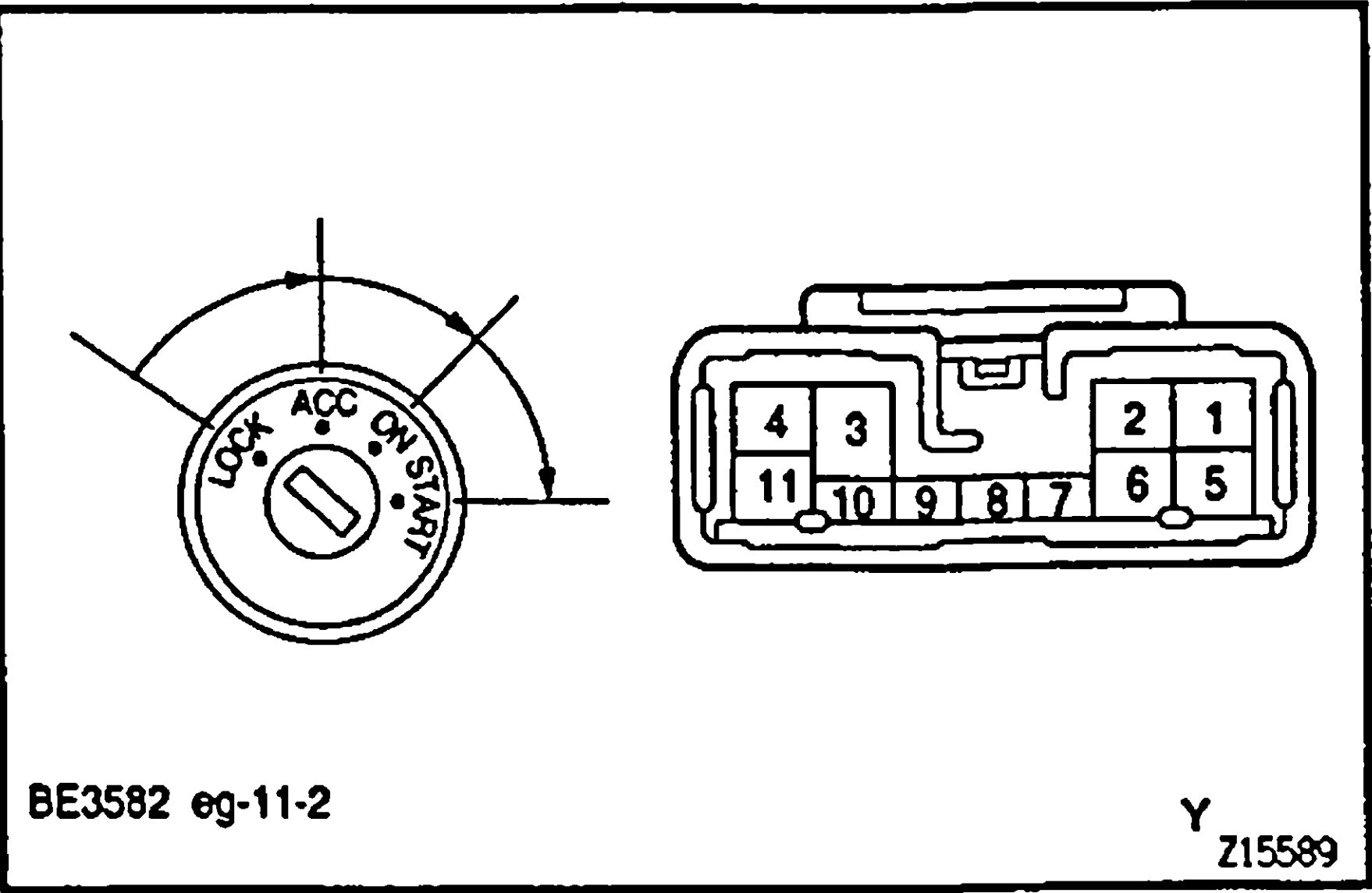
The POWER SOURCE CIRCUIT has been simplified. For full details, see pub. No. RM184E pages BE-10, 11.

IGNITION SWITCH INSPECTION

INSPECT SWITCH CONTINUITY

Switch position	Tester connection to terminal number	Specified condition
LOCK	—	No continuity
ACC	3 – 4	Continuity
ON	2 – 3 – 4 6 – 11	Continuity
START	1 – 2 – 4 5 – 6 – 11	Continuity

If continuity is not as specified, replace the switch.



KEY UNLOCK WARNING SWITCH INSPECTION

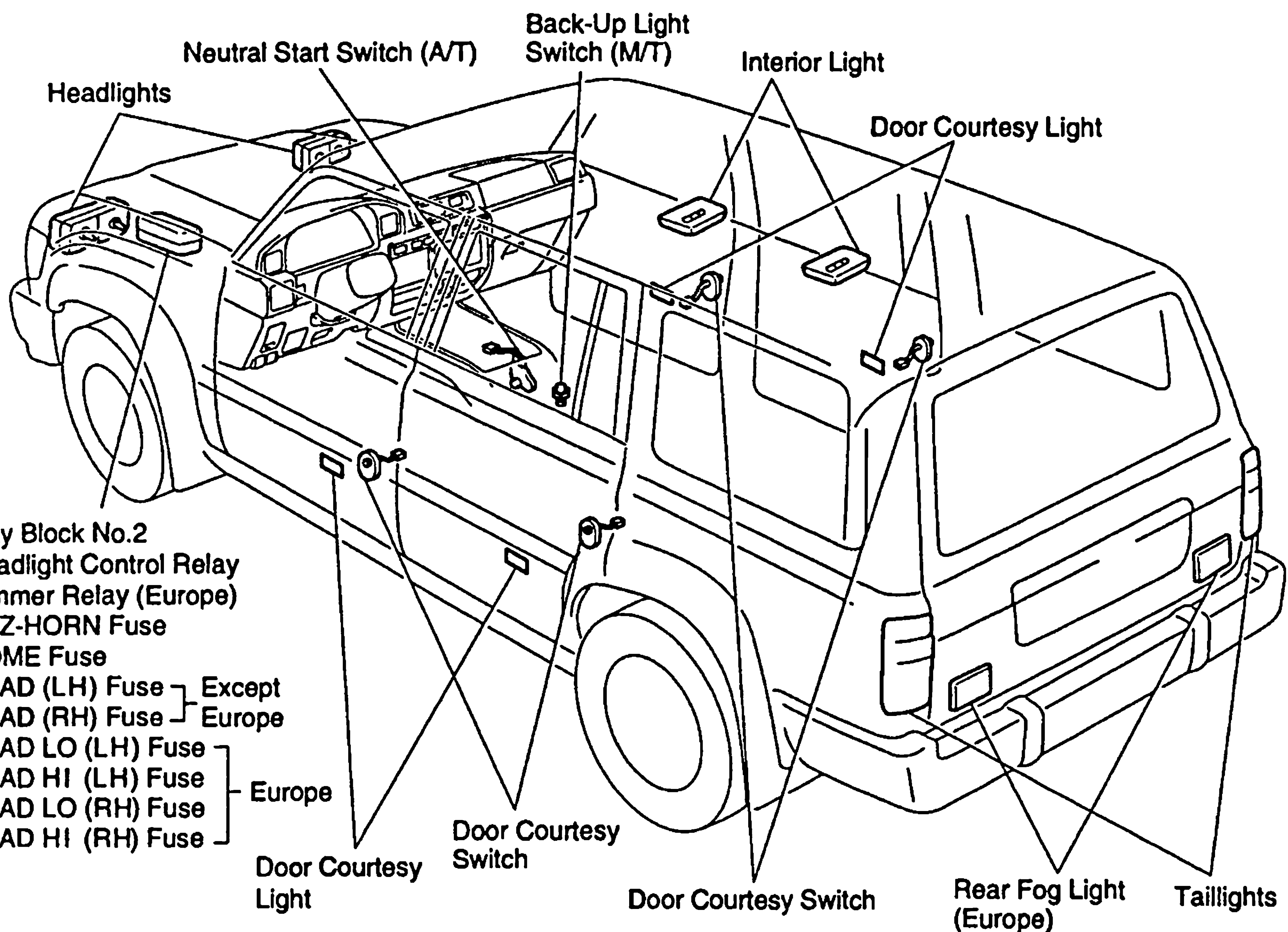
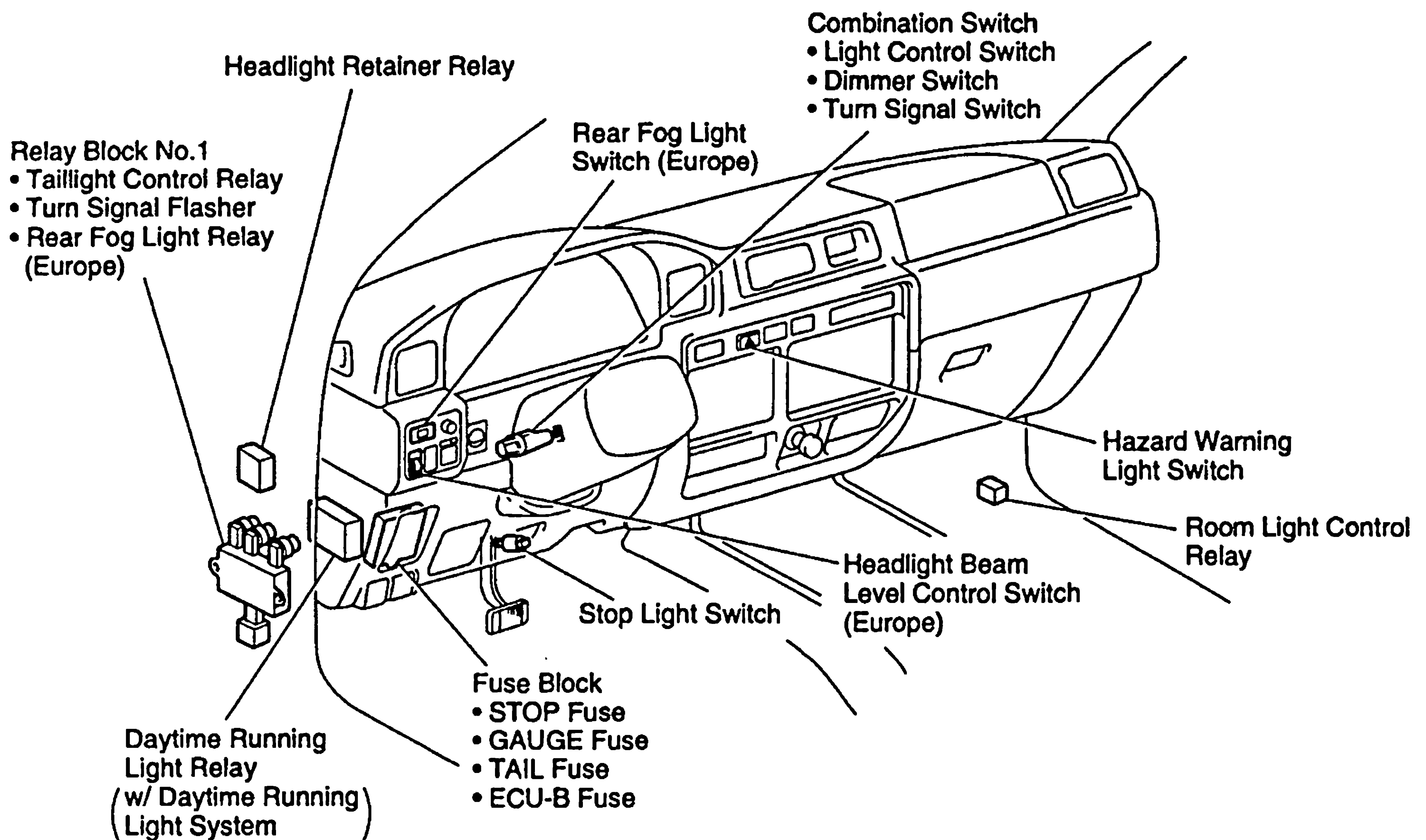
INSPECT SWITCH CONTINUITY

Switch position	Tester connection to terminal number	Specified condition
OFF (Ignition key removed)	—	No continuity
ON (Ignition key set)	9 – 10	Continuity

If continuity is not as specified, replace the switch.

LIGHTING SYSTEM PARTS LOCATION

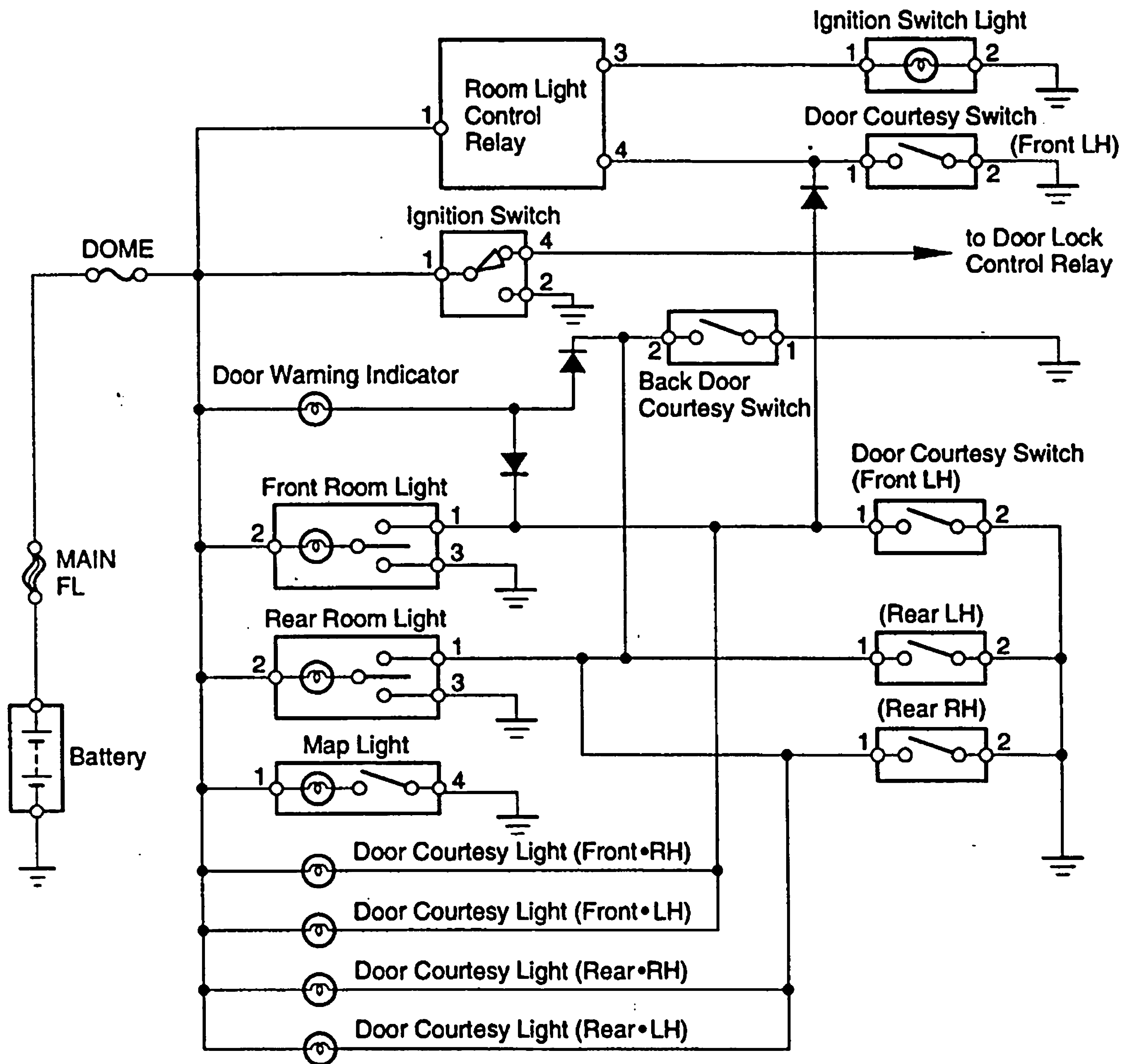
BE2LW-01



WIRING AND CONNECTOR DIAGRAMS

062LX-01

with No.2 Rear Seat

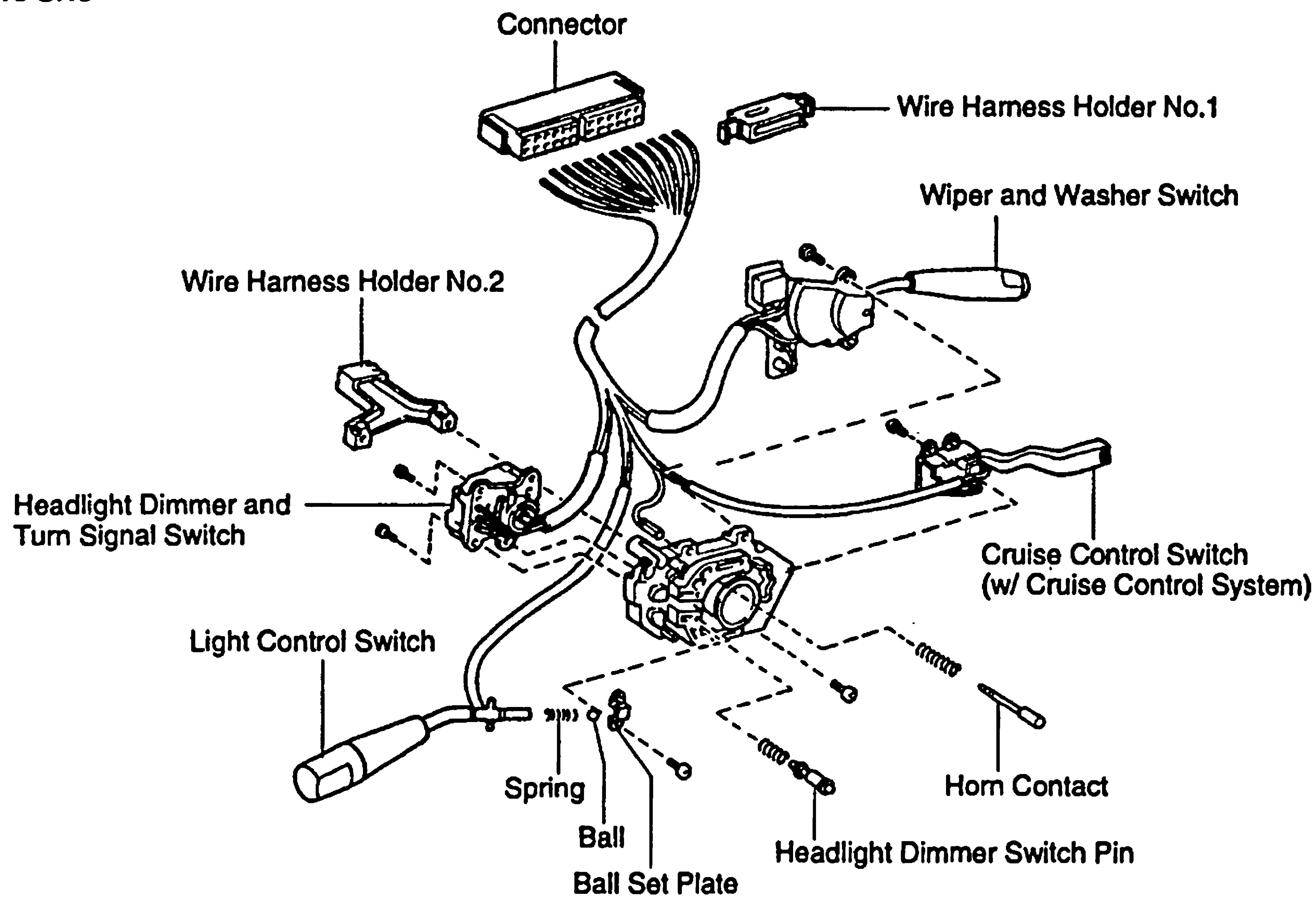


The POWER SOURCE CIRCUIT has been simplified.
For full details, see pub. No. RM184E pages BE-10, 11.

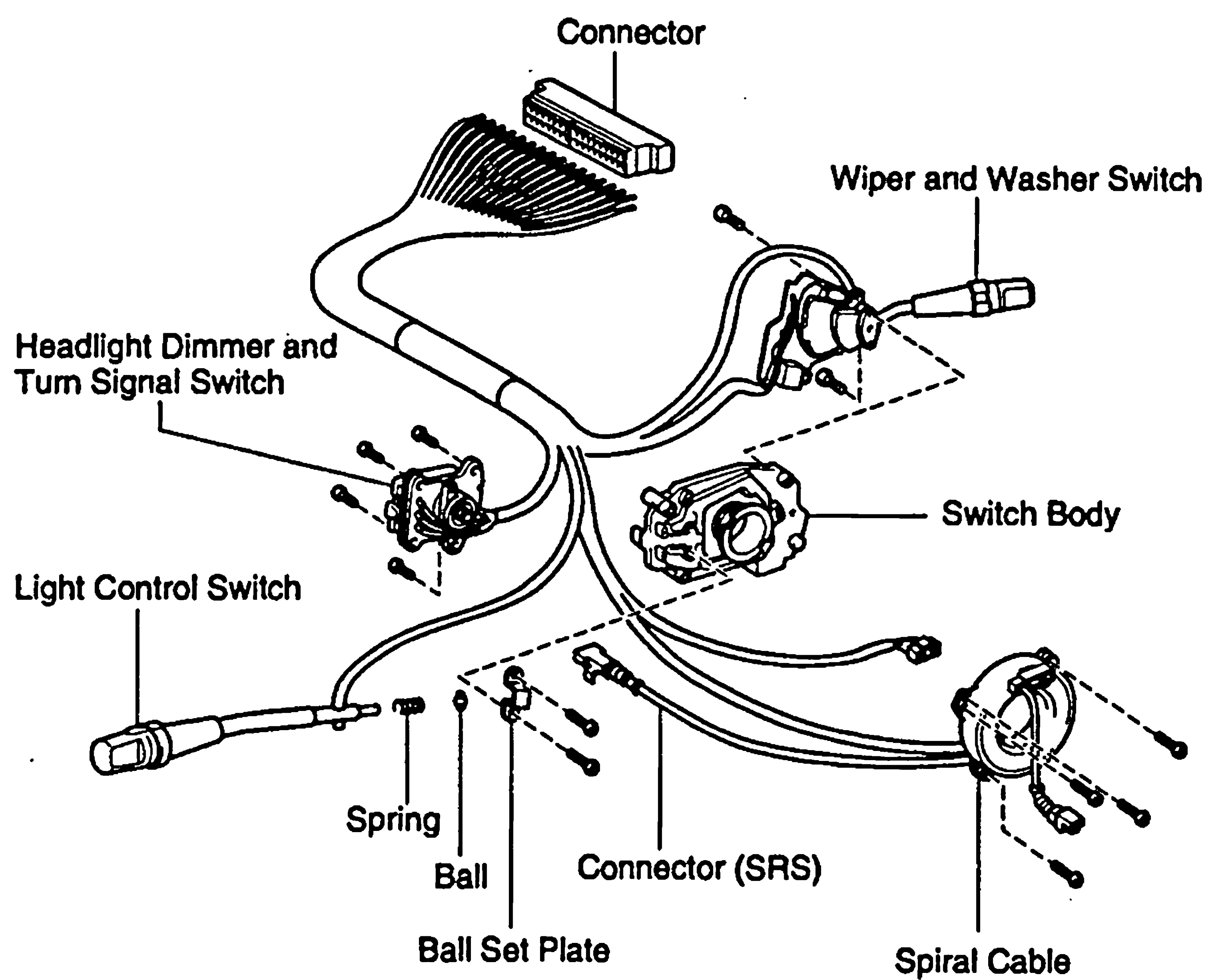
COMBINATION SWITCH DISASSEMBLY AND ASSEMBLY

DE3LY-01

w/o SRS



w/ SRS



N14472
N14473

Y

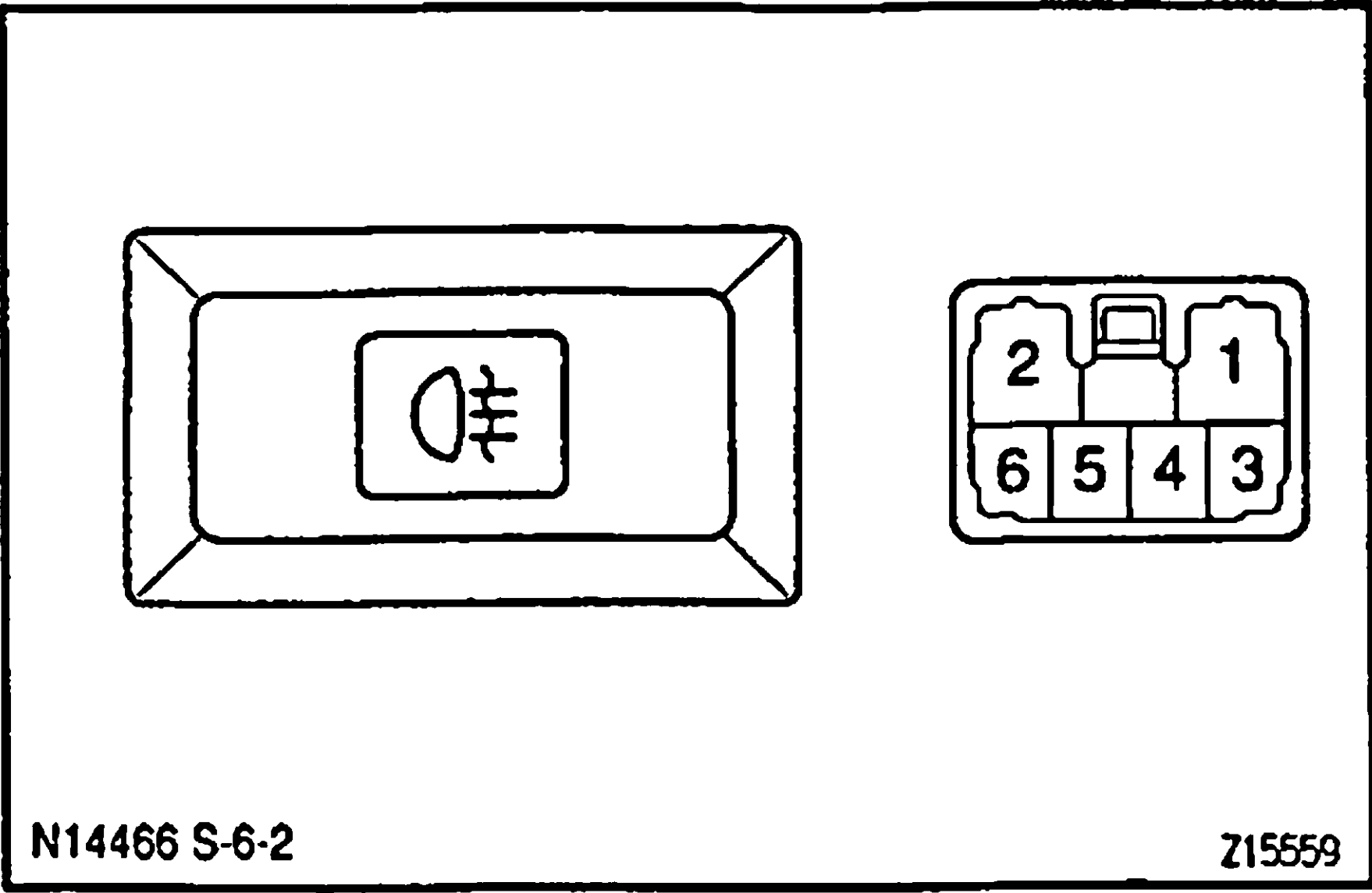
Z15564

REAR FOG LIGHT SWITCH INSPECTION

INSPECT SWITCH CONTINUITY

Switch position	Tester connection to terminal number	Specified condition
OFF	—	No continuity
ON	4 – 5	Continuity
Illumination circuit	1 – 2	Continuity

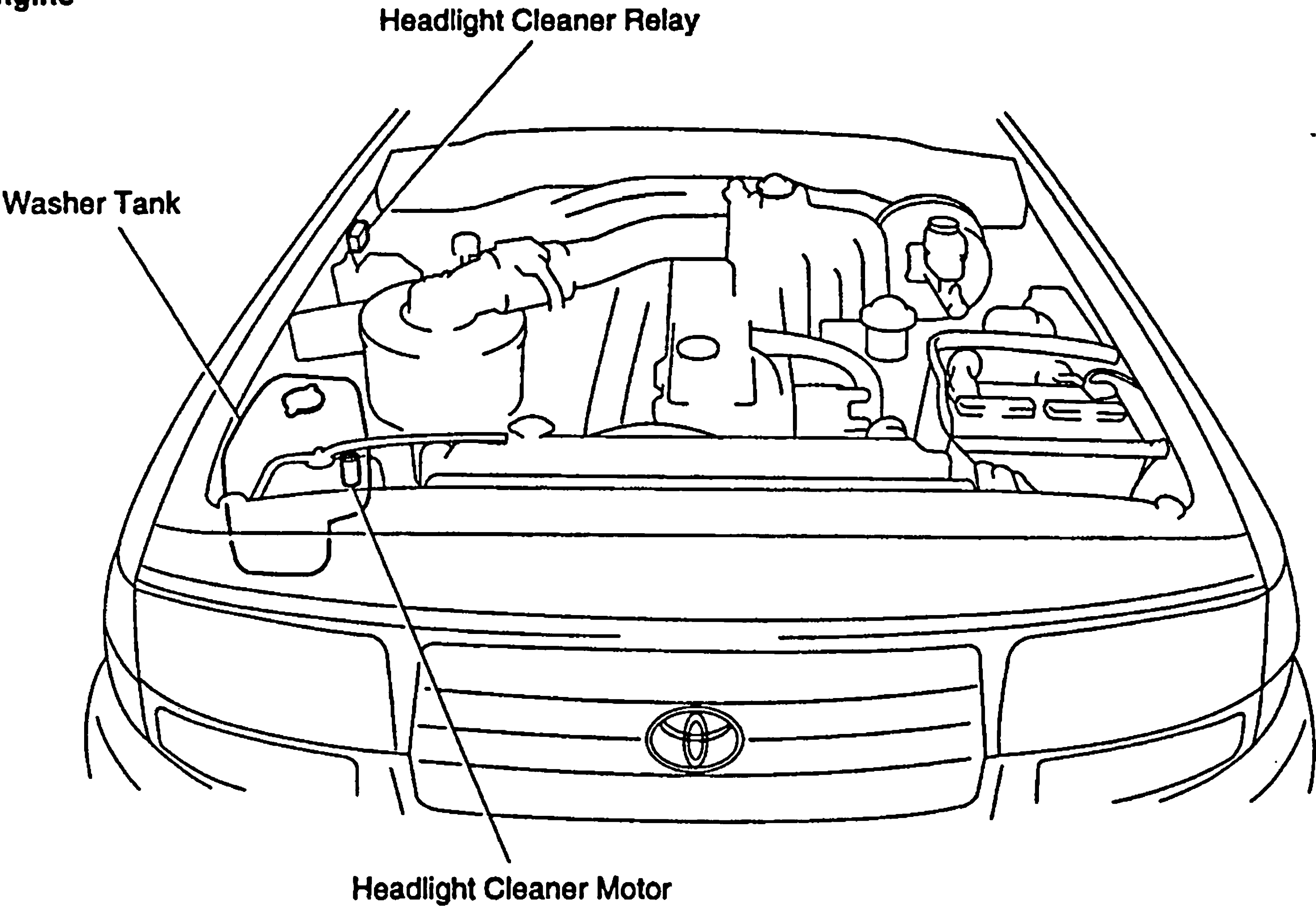
If continuity is not as specified, replace the switch.



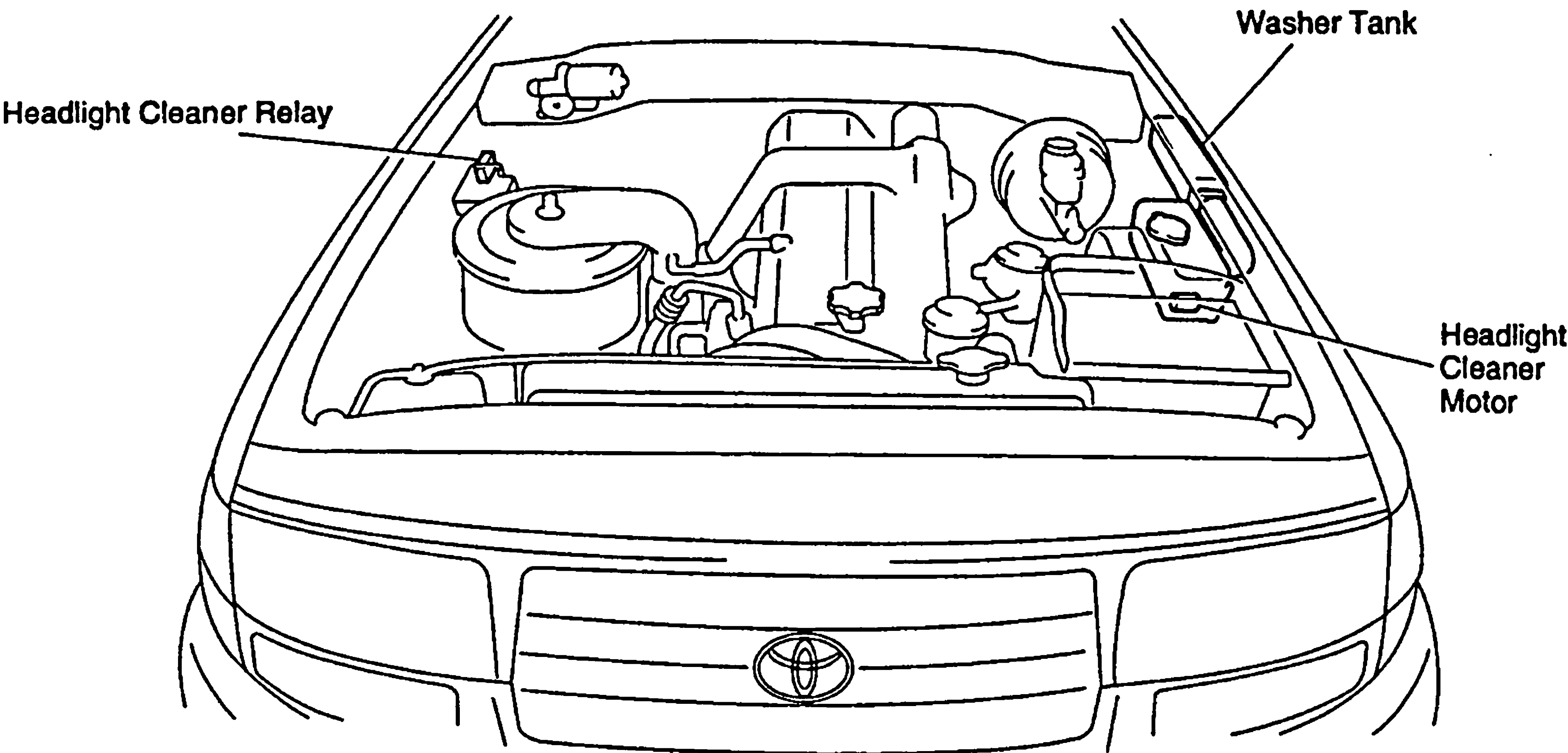
HEADLIGHT CLEANER SYSTEM
PARTS LOCATION

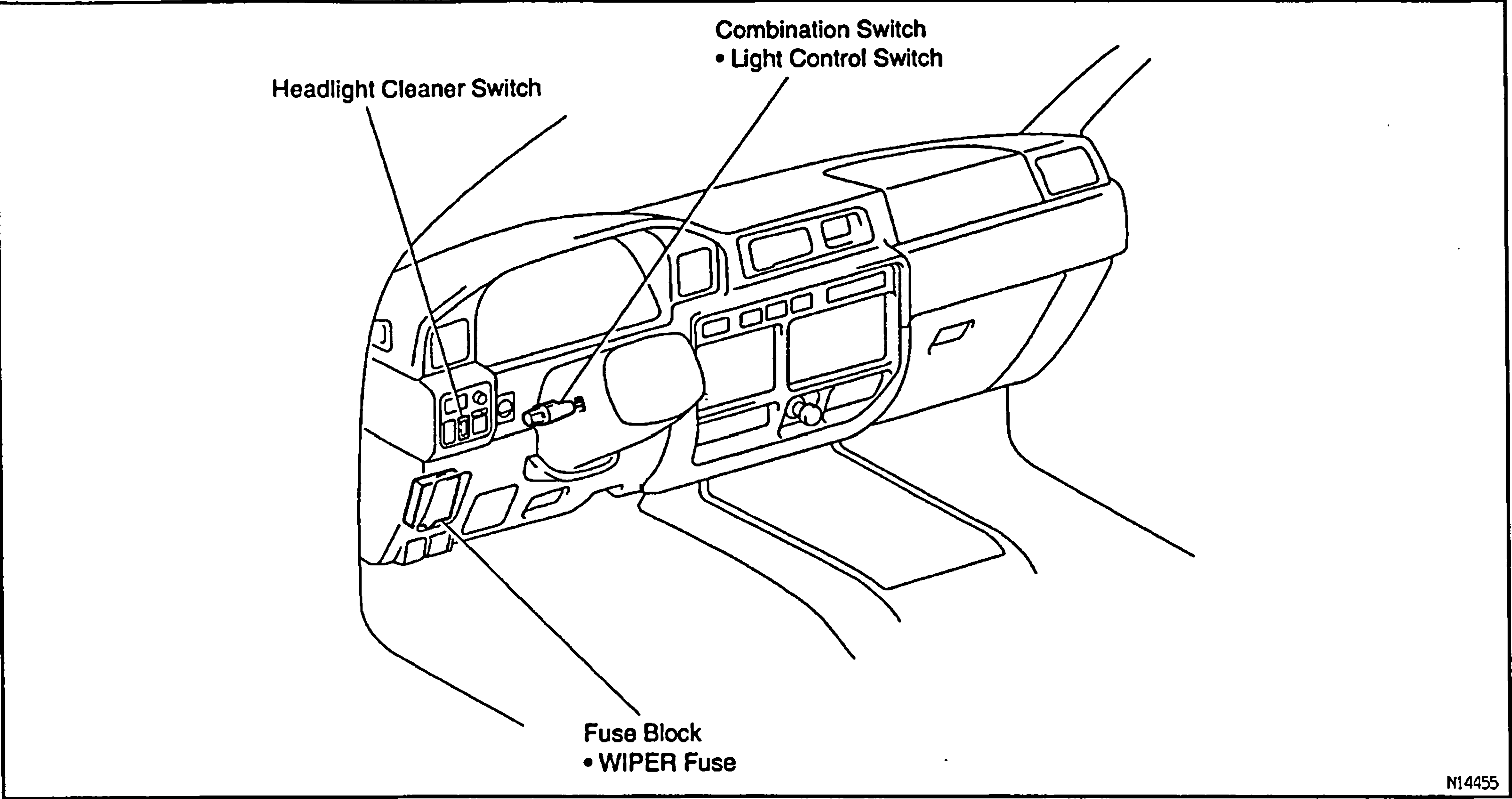
ME2M0-01

Gasoline Engine



Diesel Engine

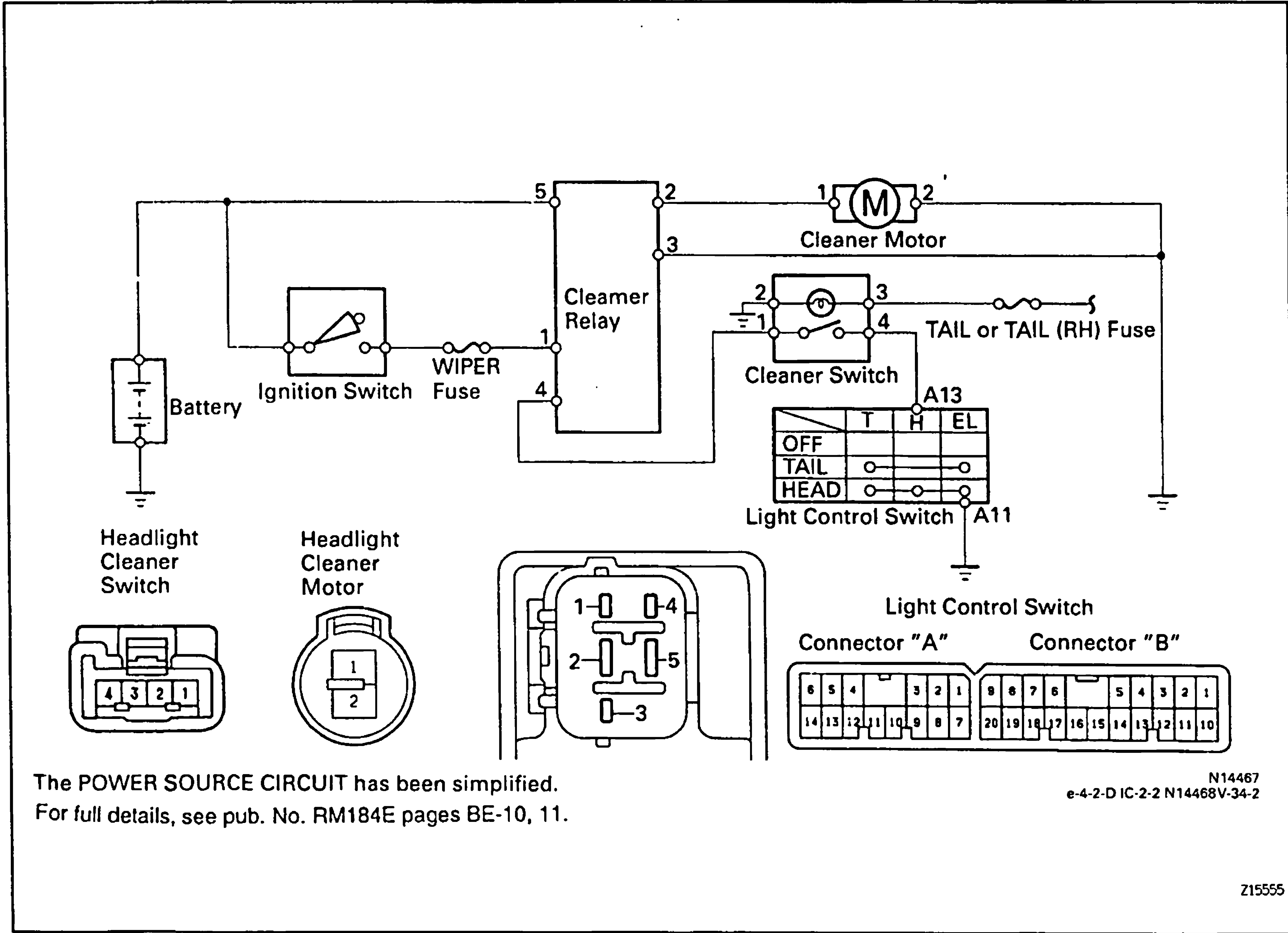


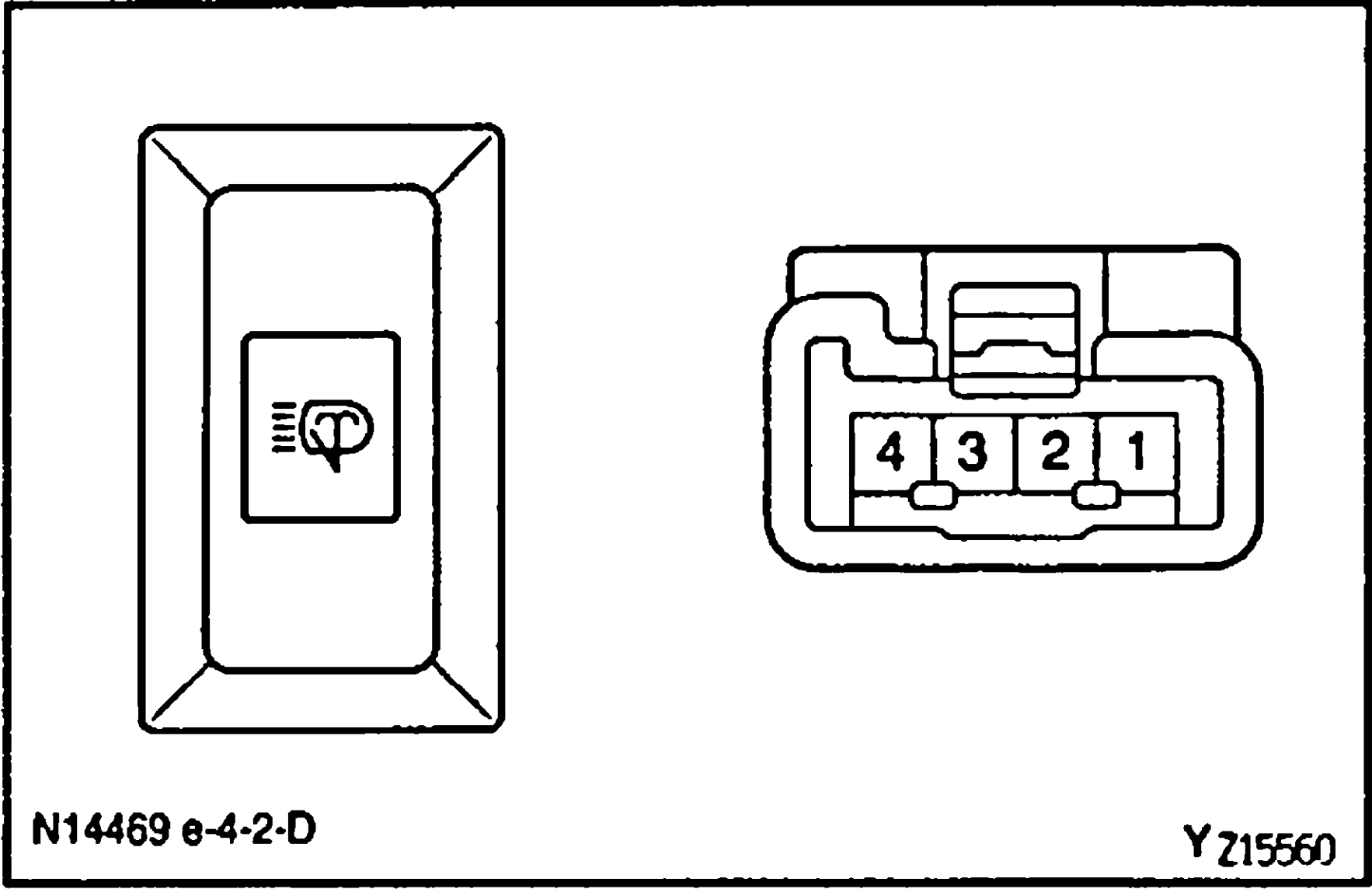


WIRING AND CONNECTOR DIAGRAMS

BE2M1-01

BE



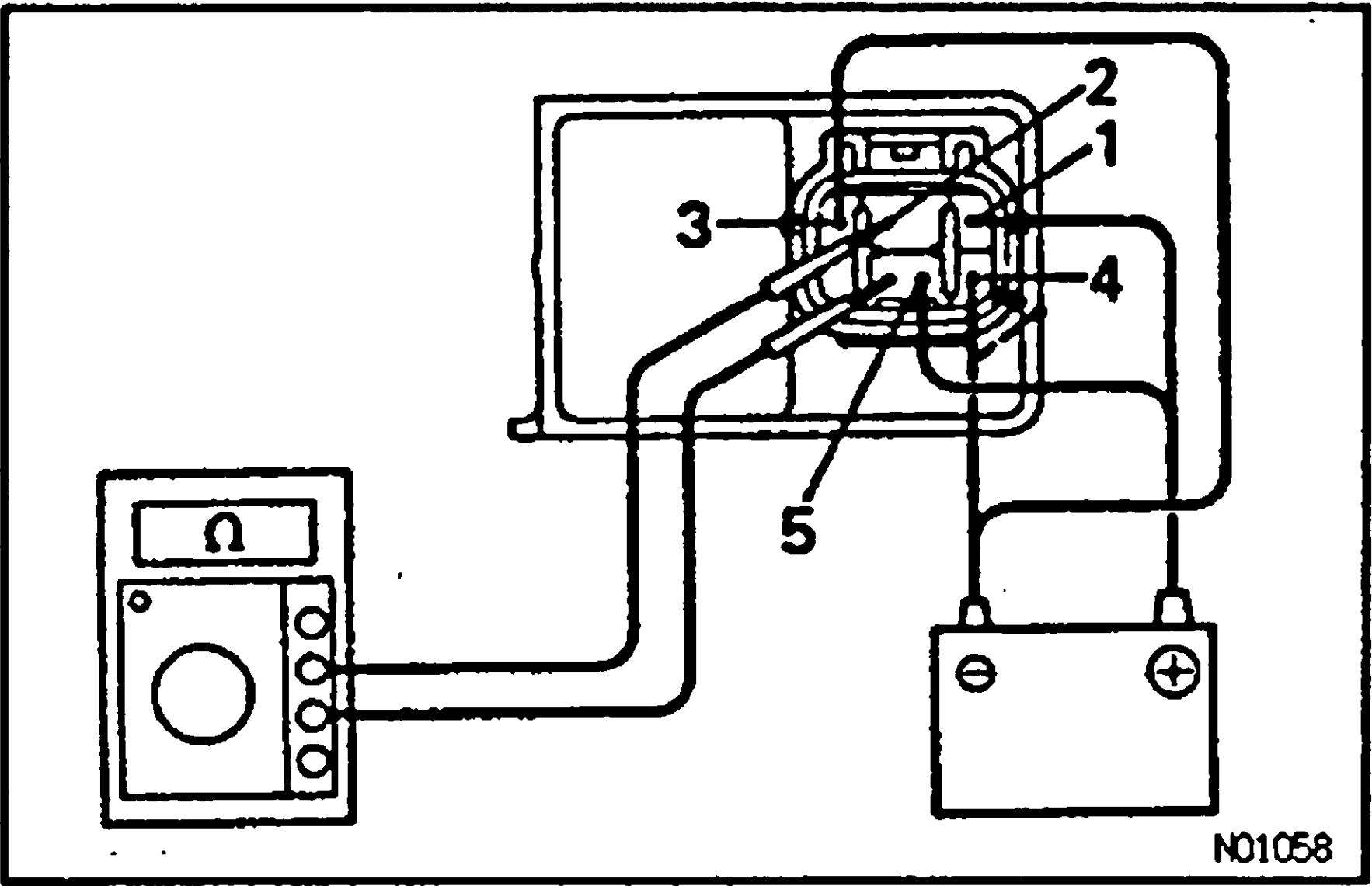


HEADLIGHT CLEANER SWITCH INSPECTION

INSPECT SWITCH CONTINUITY

Switch position	Tester connection to terminal number	Specified condition
OFF	—	No continuity
ON	1 – 4	Continuity
Illumination circuit	2 – 3	Continuity

If continuity is not as specified, replace the switch.



HEADLIGHT CLEANER RELAY INSPECTION

INSPECT RELAY OPERATION

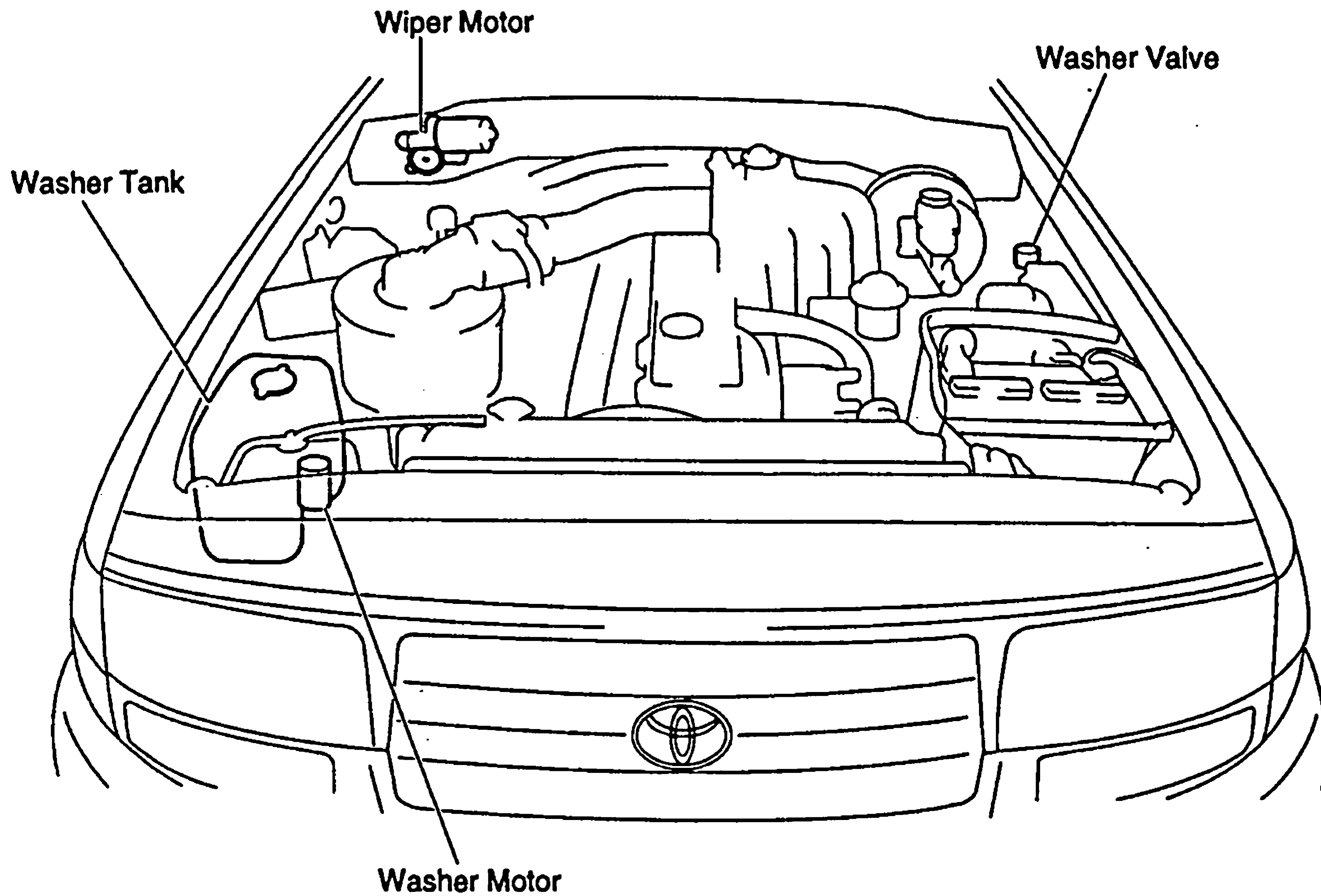
- (a) Check that there is no continuity between terminals 2 and 5.
- (b) Connect the positive (+) lead from the battery to terminals 1 and 5 and the negative (–) lead to terminal 3.
- (c) Connect the negative (–) lead from the battery to terminal 4, check that there is continuity between terminals 2 and 5 for 0.4 – 0.6 seconds, then there is no continuity.

If operation is not as specified, replace the relay.

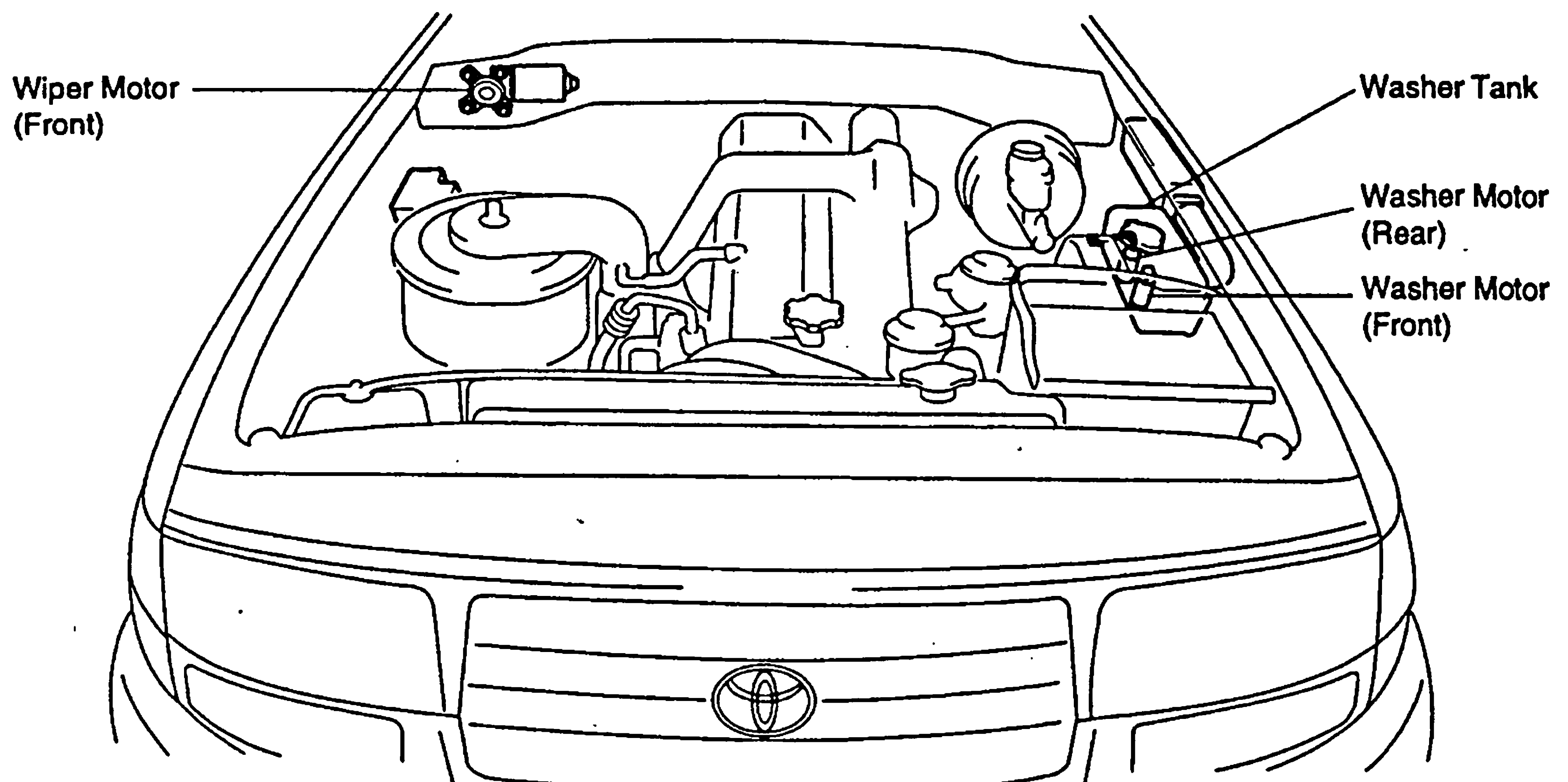
WIPER AND WASHER SYSTEM PARTS LOCATION

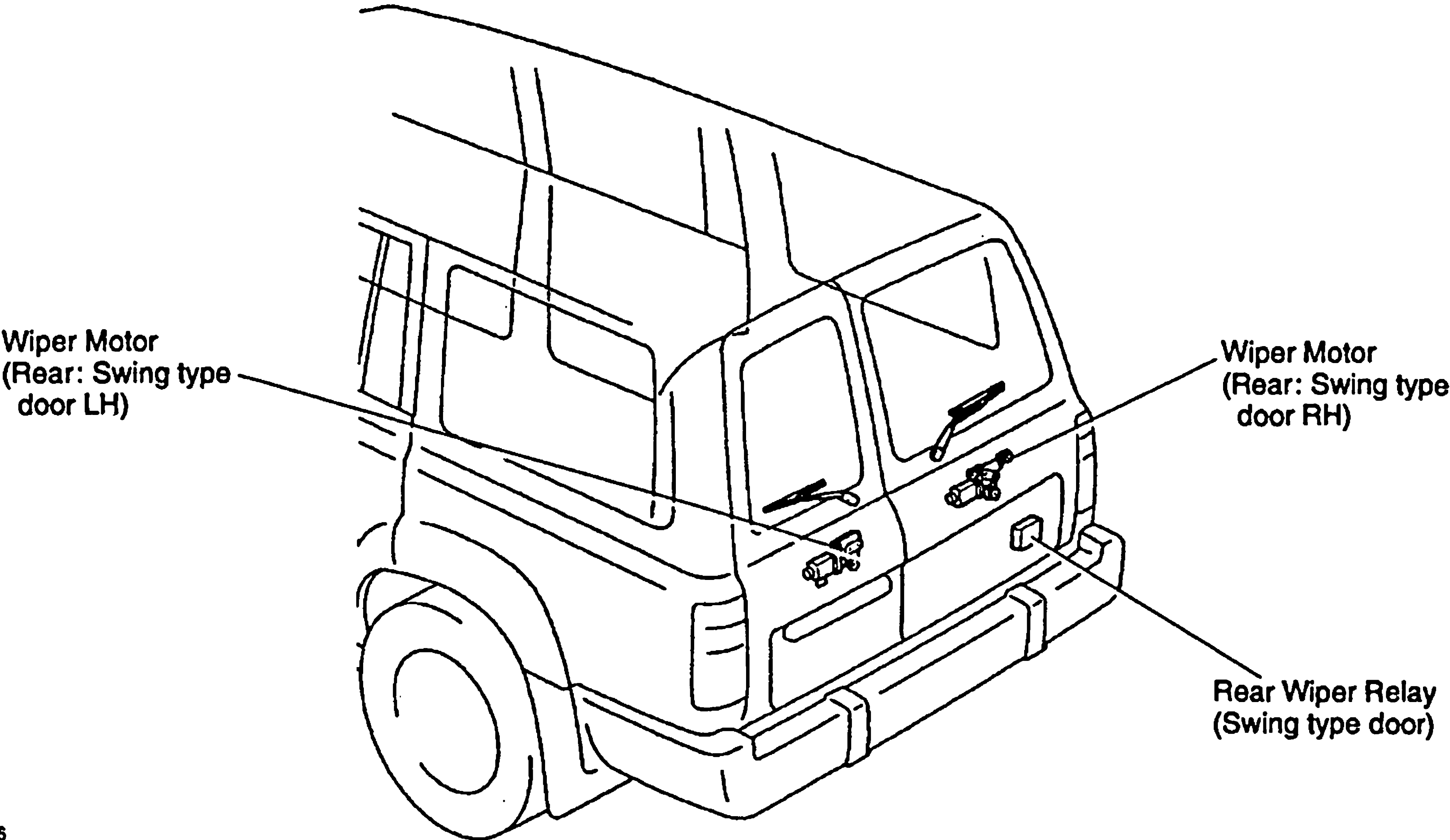
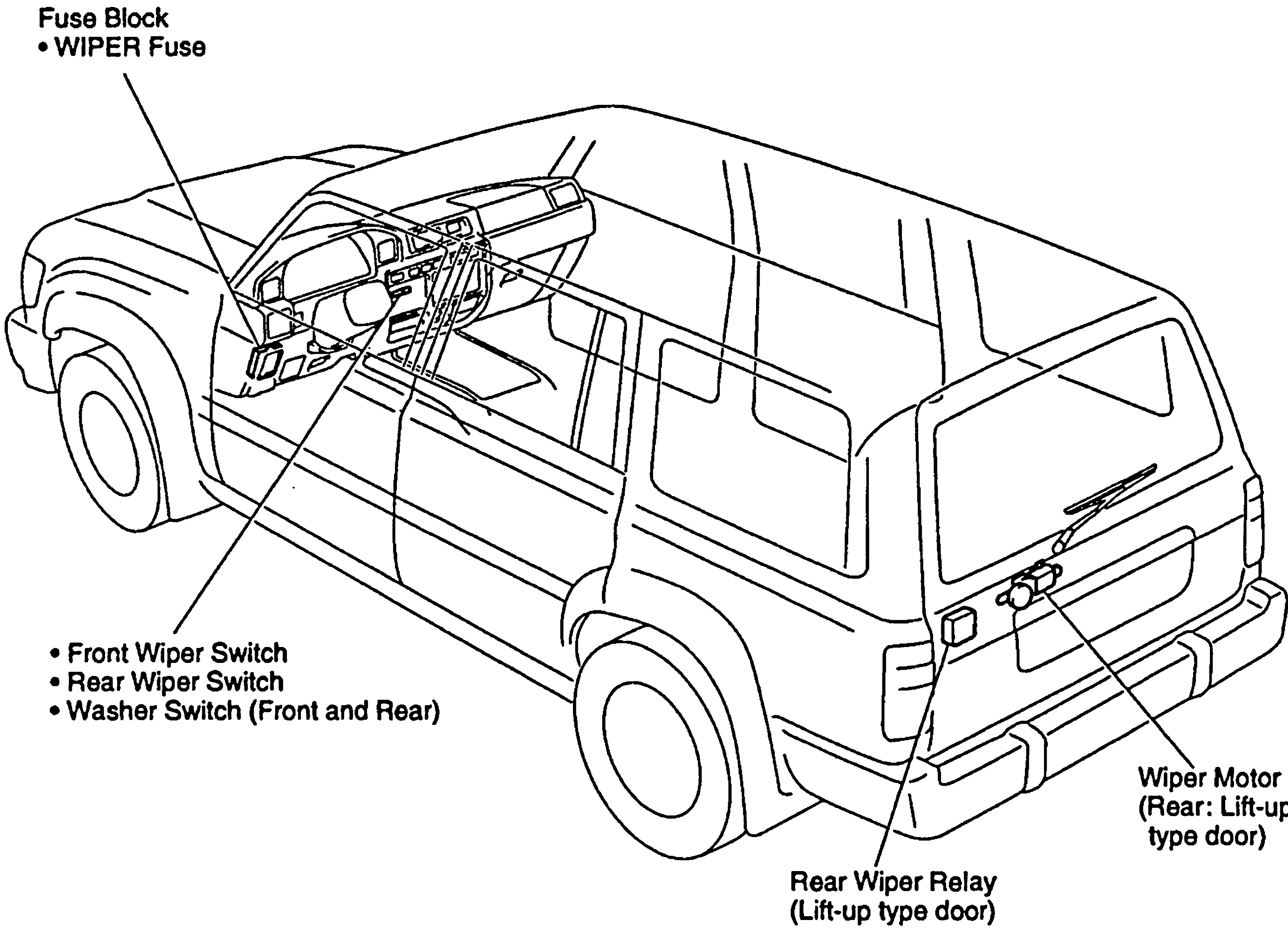
BE2M-01

Gasoline Engine



Diesel Engine





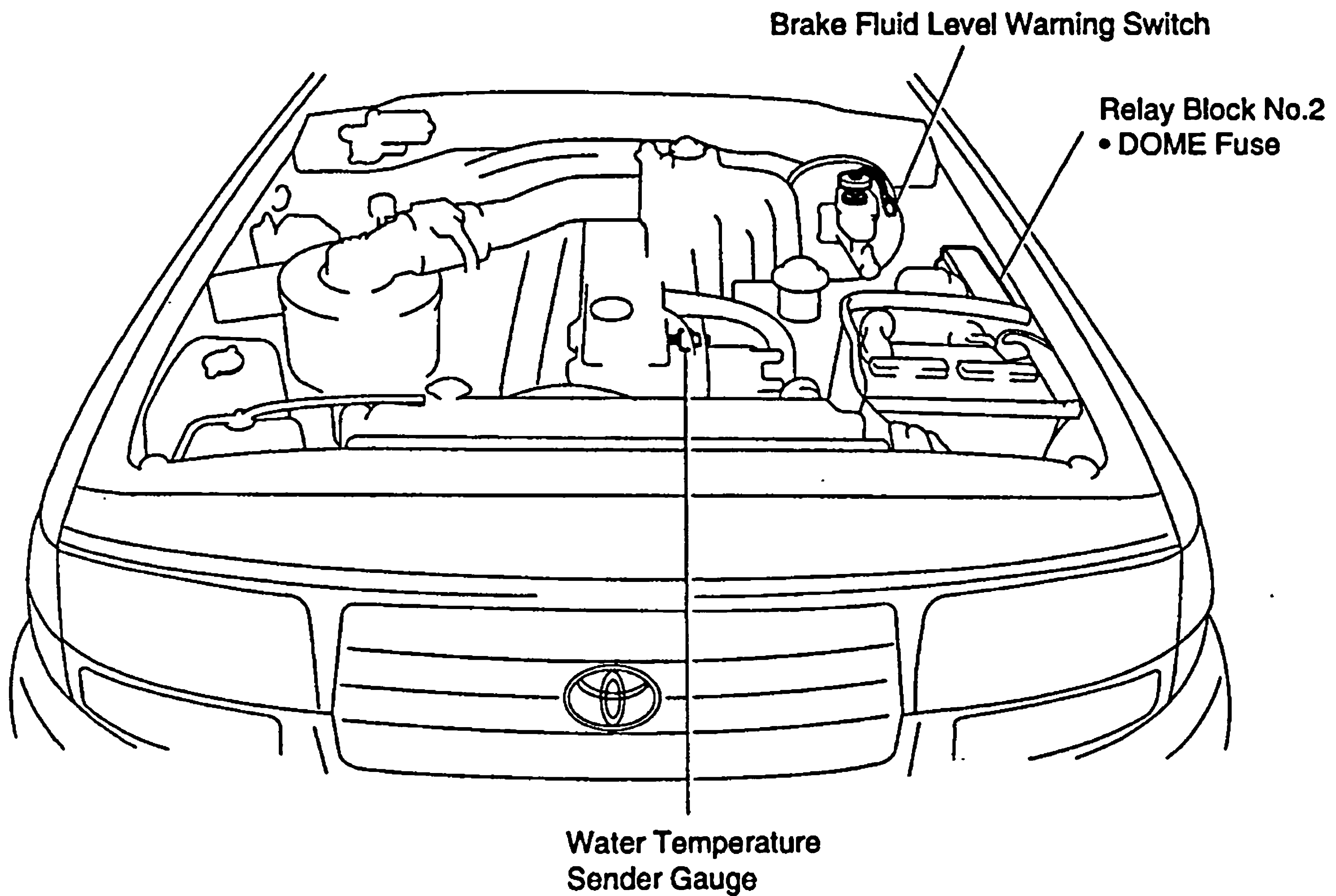
N14206
BE5110

Y

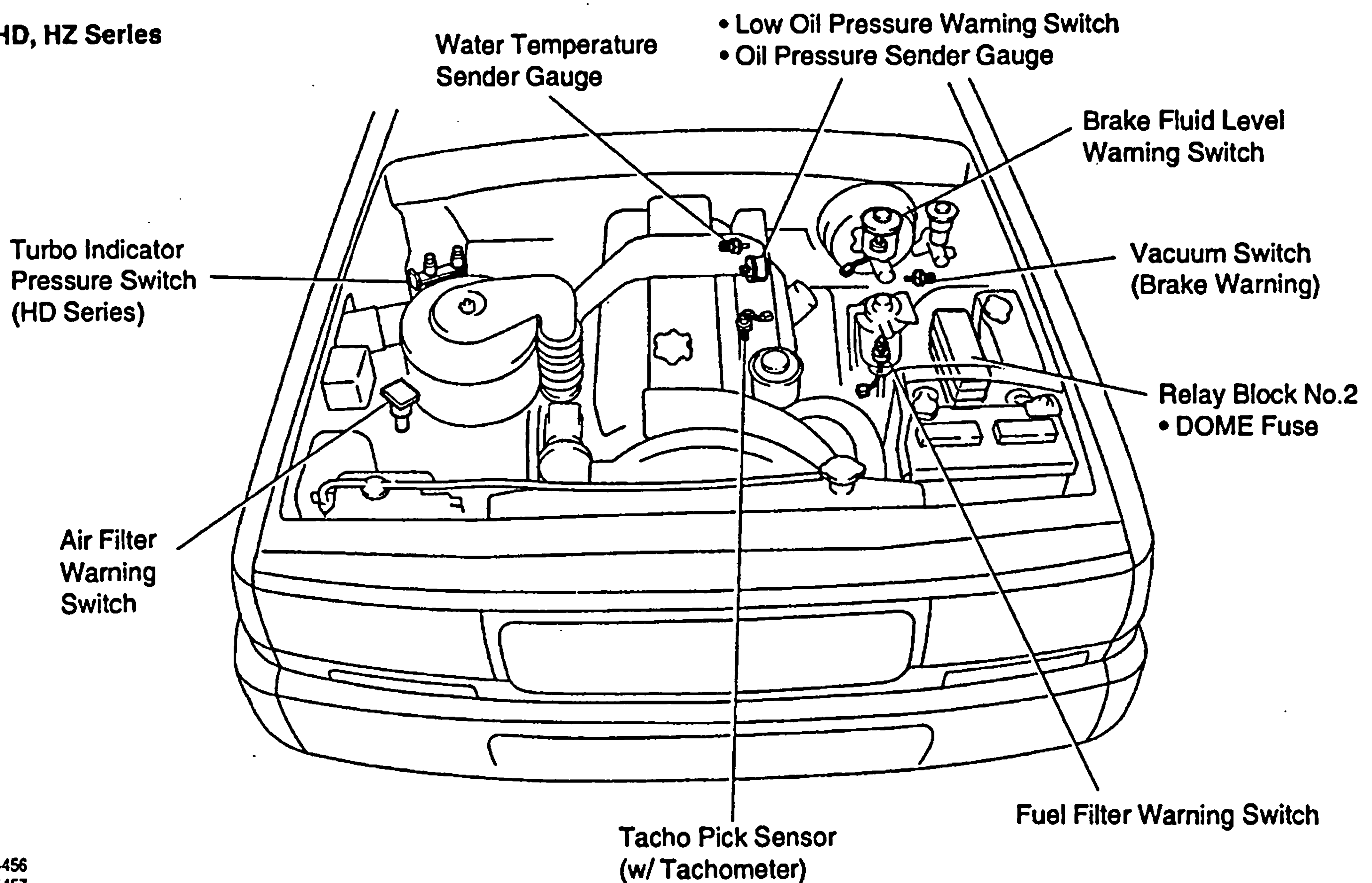
COMBINATION METER PARTS LOCATION

DE2M6-01

FZ Series



HD, HZ Series

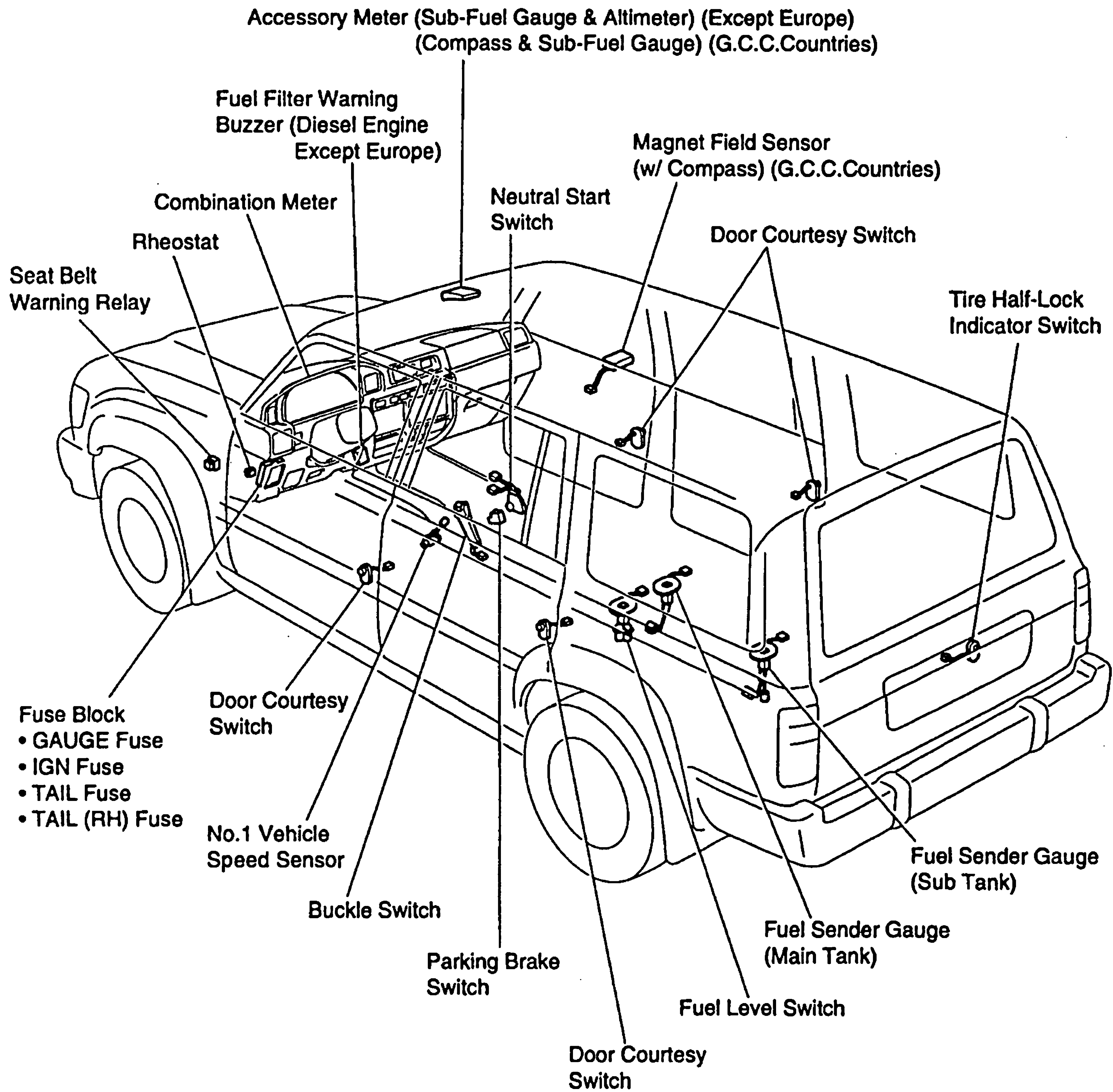


N14456
N14457

Y

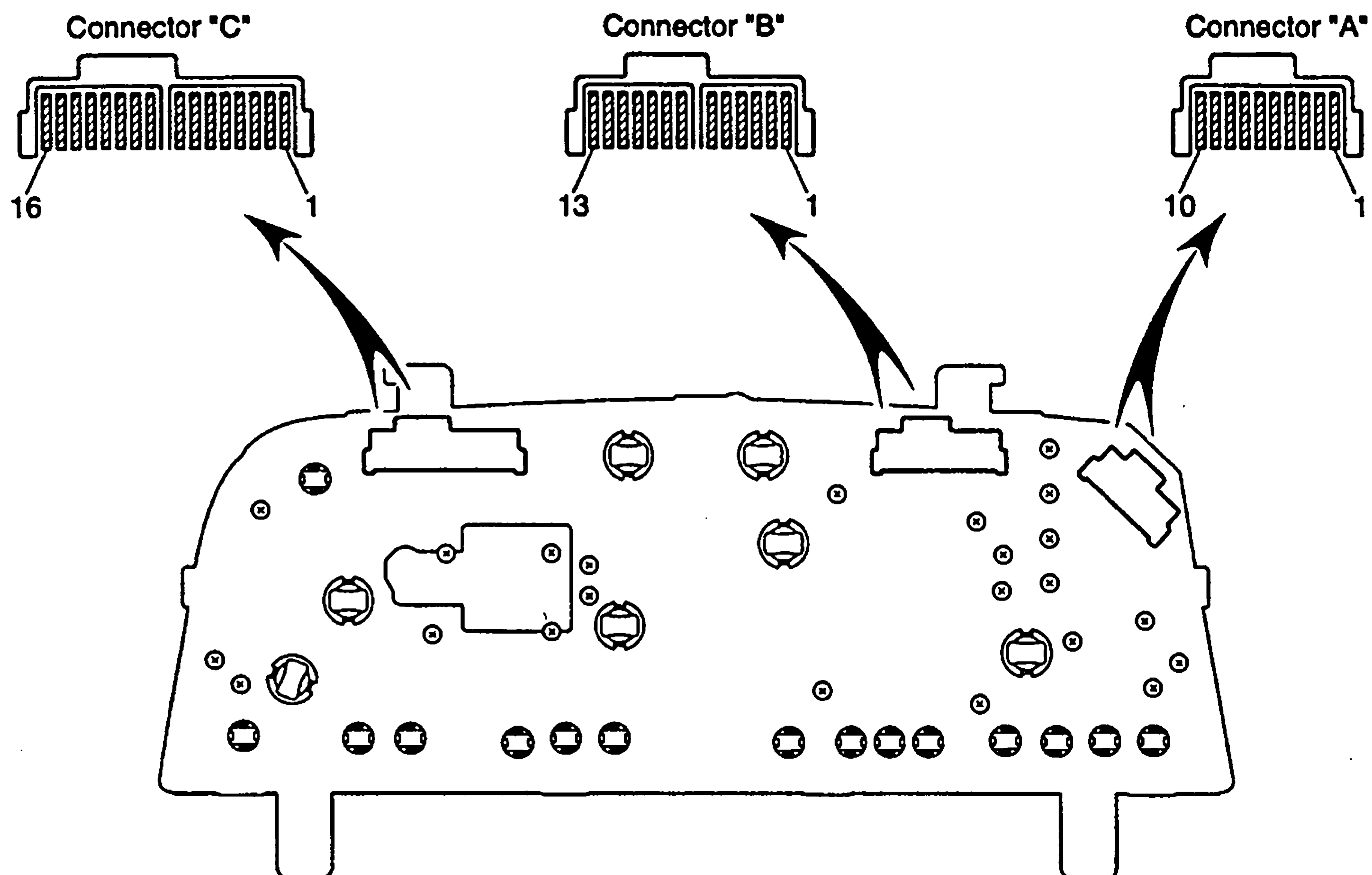
Z15527

BE

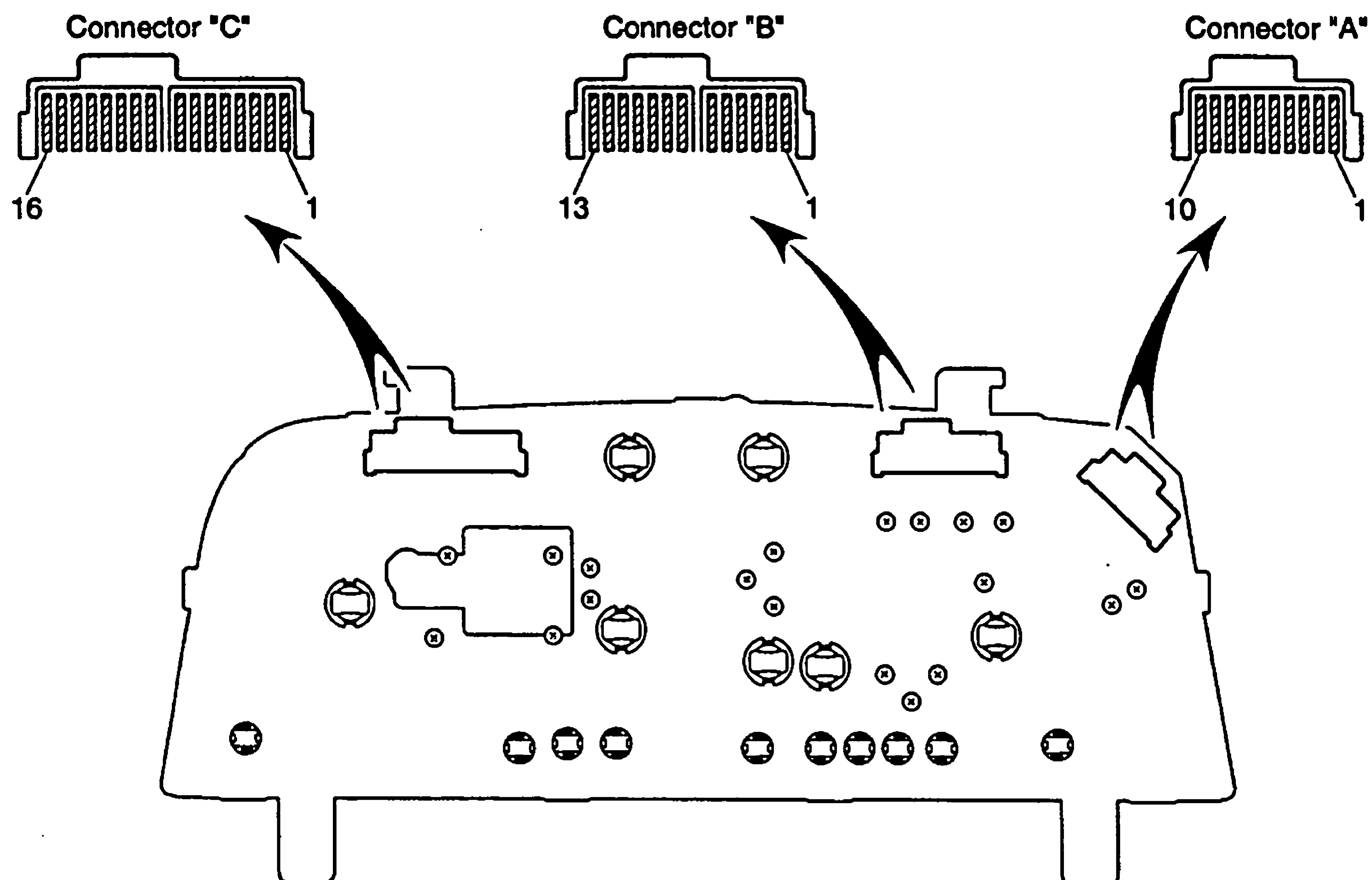


METER CIRCUIT

Hi-Grade

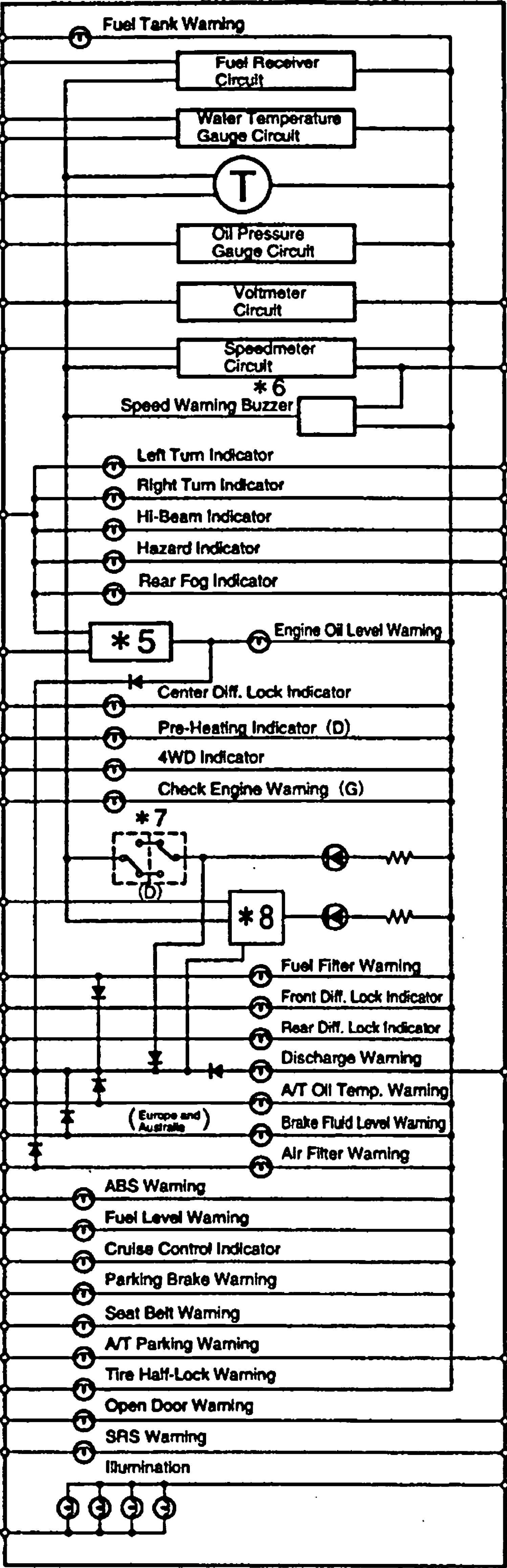


Lo-Grade



Hi-Grade

* 1	* 2	* 3	* 4
—	B4	B3	—
C14	C14	C14	C14
A1	A1	A1	A1
B12	B9	B9	B9
B8	B10	B10	B10
A6	A6	A6	A5
B13	C1	C1	C1
C3	C4	C4	C4
B2	B1	B1	B1
B5	B3	—	—
C7	B2	B2	C8
A8	B5	—	A2
—	—	C8	B4
A8	B5	B4	—
B11	B13	—	B13
A7	B4	—	B3
C8	C9	C9	C9
C9	C10	C10	C10
B7	B6	B5	B5
C16	A7	A7	A7
C12	A8	A8	A8
—	C12	C12	C12
C10	A4	A4	A3
C11	C11	C11	C11
A5	A9	A9	—
C15	—	—	—
—	—	A10	B6
A9	C6	C6	C6
—	—	B6	A9
B3	C15	C15	C15
C6	A3	A3	—
C1	B12	B12	B12



* 1	* 2	* 3	* 4
B6	A5	A5	A4
C2	C3	C3	C3
B9	B7	B7	B7
B10	B8	B8	B8
A2	C5	C5	C5
A4	A10	—	A10
A3	—	—	B2

* 1	* 2	* 3	* 4
C13	C13	C13	C13
A10	C7	C7	C7
B4	C16	C16	C16
C5	A2	A2	—
C4	C2	C2	C2

- * 1: Europe

* 2: Australia

* 3: Except Europe and Australia (Gasoline Engine)

* 4: Except Europe and Australia (Diesel Engine)

* 5: Engine Oil Level Circuit
- * 6: G.C.C. Countries

* 7: Warning Cansel Switch

* 8: Turbo Circuit
- Ⓣ : Tachometer

Diff. : Differential

Temp. : Temperature

(D) : (Diesel Engine)

(G) : (Gasoline Engine)

Hi-Grade

No.		Wiring Connector Side	
		Europe	Australia
A	1	Ground (TEMP)	Ground (TEMP)
	2	Headlight Hi-Beam	DOME Fuse
	3	Rear Fog Light Switch	Airbag ECU
	4	Hazard Warning Light Switch	ABS ECU
	5	Cruise Control ECU	GAUGE Fuse
	6	Oil Pressure Sender Gauge	Oil Pressure Sender Gauge
	7	Fuel Filter Warning Switch	A/T Fluid Temperature Sensor
	8	EFI ECU (Gasoline Engine), Glow Timer Relay (Diesel Engine)	Brake Fluid Level Warning Switch
	9	L4 Position Switch	Cruise Control ECU
	10	Neutral Start Switch	Hazard Warning Light Switch
B	1	_____	Ground
	2	Ground	Center Differential Lock Indicator Switch
	3	Door Courtesy Switch	Engine Oil Level Sensor
	4	DOME Fuse	Fuel Filter Warning Switch and Buzzer (Diesel Engine) or Fuel Tank ECU
	5	Engine Oil Level Sensor	EFI ECU (Gasoline Engine), Glow Timer Relay (Diesel Engine)
	6	GAUGE Fuse	Charge Light Relay
	7	Charge Light Relay	Light Control Switch (Left)
	8	Igniter (Gasoline Engine), Tacho Pick Sensor (Diesel Engine M/T), ECT ECUT (Diesel Engine A/T)	Light Control Switch (Right)
	9	Light Control Switch (Left)	Water Temperature Sender Gauge
	10	Light Control Switch (Right)	Igniter (Gasoline Engine), Tacho Pick Sensor (Diesel Engine M/T), ECT ECU (Diesel Engine A/T)
	11	Turbo Pressure Switch	_____
	12	Water Temperature Sender Gauge	Light Control Rheostat, Illumination (–)
	13	Ground (Gauge)	Turbo Pressure Switch
C	1	Light Control Rheostat, Illumination (–)	Ground (Gauge)
	2	Speed Control Unit	TAIL Fuse
	3	Speed Sensor	Speed Control Unit
	4	TAIL Fuse	Speed Sensor
	5	DOME Fuse	Headlight Hi-Beam
	6	Airbag ECU	L4 Position Switch
	7	Center Differential Lock Indicator Switch	Neutral Start Switch
	8	Front Differential Lock Indicator Switch	_____
	9	Rear Differential Lock Indicator Switch	Front Differential Lock Indicator Switch
	10	ABS ECU	Rear Differential Lock Indicator Switch
	11	Fuel Level Warning Switch	Fuel Level Warning Switch
	12	Brake Fluid Level Warning Switch	Air Filter Warning Switch
	13	IGN Fuse	IGN Fuse
	14	Fuel Sender Gauge	Fuel Sender Gauge
	15	Parking Brake Switch	Door Courtesy Switch
	16	A/T Fluid Temperature Sensor	DOME Fuse

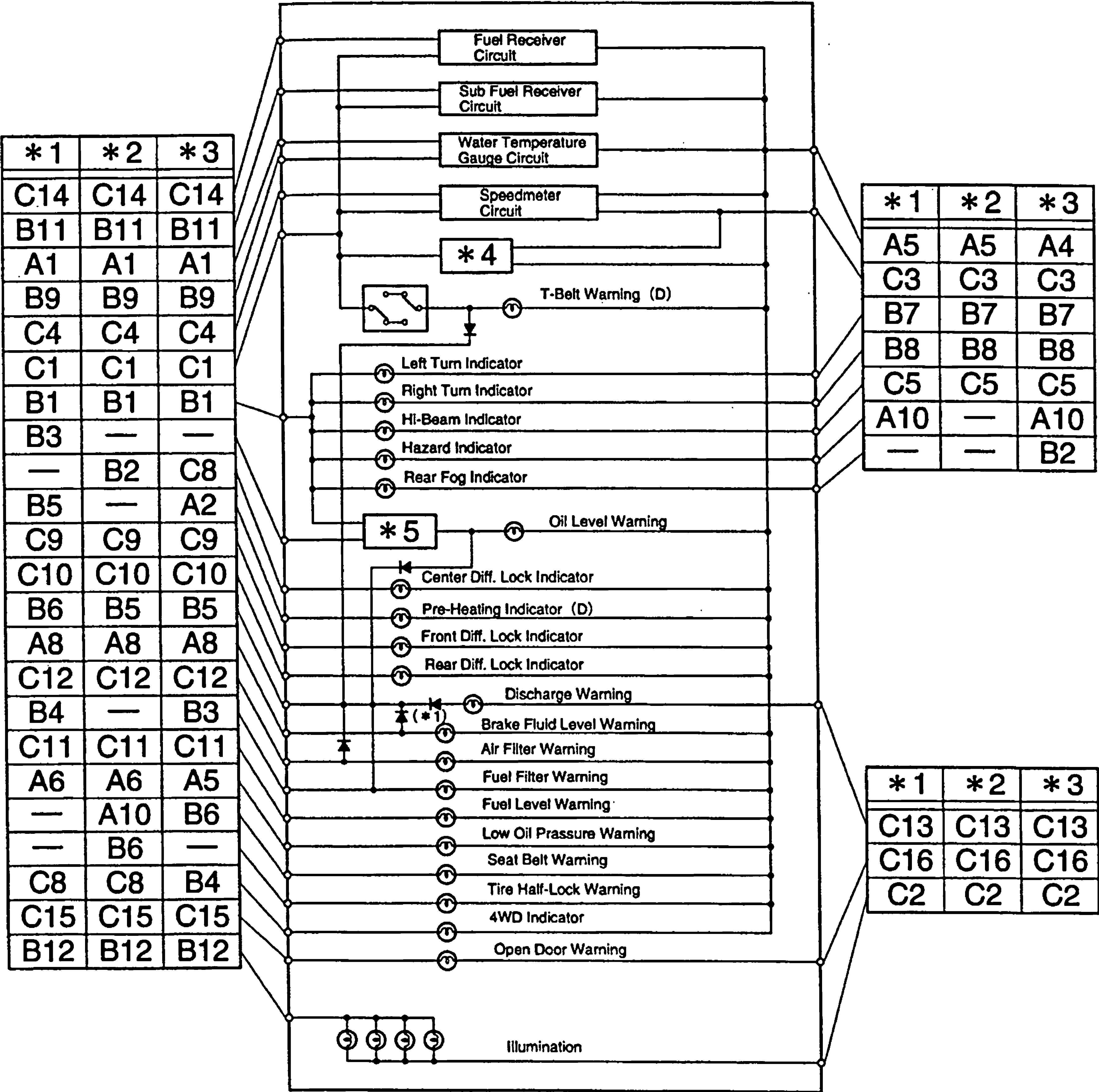
BE

Hi-Grade

No.		Wiring Connector Side	
		Except Europe and Australia	
		Gasoline Engine	Diesel Engine
A	1	Ground (TEMP)	Ground (TEMP)
	2	DOME Fuse	Glow Timer Relay
	3	Airbag ECU	ABS ECU
	4	ABS ECU	GAUGE Fuse
	5	GAUGE Fuse	Oil Pressure Sender Gauge
	6	Oil Pressure Sender Gauge	
	7	A/T Fluid Temperature Sensor	A/T Fluid Temperature Sensor
	8	Brake Fluid Level Warning Switch	Brake Fluid Level Warning Switch
	9	Cruise Control ECU	Tire Half-Lock Indicator Switch
	10	Seat Belt Warning Relay	Hazard Warning Light Switch
B	1	Ground	Ground
	2	Center Differential Lock Indicator Switch	Rear Fog Light Switch
	3	Fuel Tank ECU	Fuel Filter Warning Switch and Buzzar (Diesel Engine)
	4	EFI ECU	4WD Indicator Switch
	5	Charge Light Relay	Charge Light Relay
	6	Tire Half-Lock Indicator Switch	Seat Belt Warning Relay
	7	Light Control Switch (Left)	Light Control Switch (Left)
	8	Light Control Switch (Right)	Light Control Switch (Right)
	9	Water Temperature Sender Gauge	Water Temperature Sender Gauge
	10	Igniter	Tacho Pick Sensor (M/T), ECT ECU (A/T)
	11		
	12	Light Control Rheostat, Illumination (–)	Light Control Rheostat, Illumination (–)
	13		Turbo Pressere Switch
C	1	Ground (Gauge)	Ground (Gauge)
	2	TAIL Fuse	TAIL Fuse
	3	Speed Control Unit	Speed Control Unit
	4	Speed Sensor	Speed Sensor
	5	Headlight Hi-Beam	Headlight Hi-Beam
	6	L4 Position Switch	L4 Position Switch
	7	Neutral Start Switch	Neutral Start Switch
	8	4WD Indicator Switch	Center Differential Lock Indicator Switch
	9	Front Differential Lock Indicator Switch	Front Differential Lock Indicator Switch
	10	Rear Differential Lock Indicator Switch	Rear Differential Lock Indicator Switch
	11	Fuel Level Warning Switch	Fuel Level Warning Switch
	12	Air Filter Warning Switch	Air Filter Warning Switch
	13	IGN Fuse	IGN Fuse
	14	Fuel Sender Gauge	Fuel Sender Gauge
	15	Door Courtesy Switch	Door Courtesy Switch
	16	DOME Fuse	DOME Fuse

BE

Lo-Grade



BE

- * 1: Australia
 - * 2: Except Australia (Gasoline Engine)
 - * 3: Except Australia (Diesel Engine)
 - * 4: Speed Warning Buzzer (G.C.C.Countries)
 - * 5: Engine Oil Level Circuit (Australia)
- (D) : Diesel Engine
Diff. : Differential

Lo-Grade

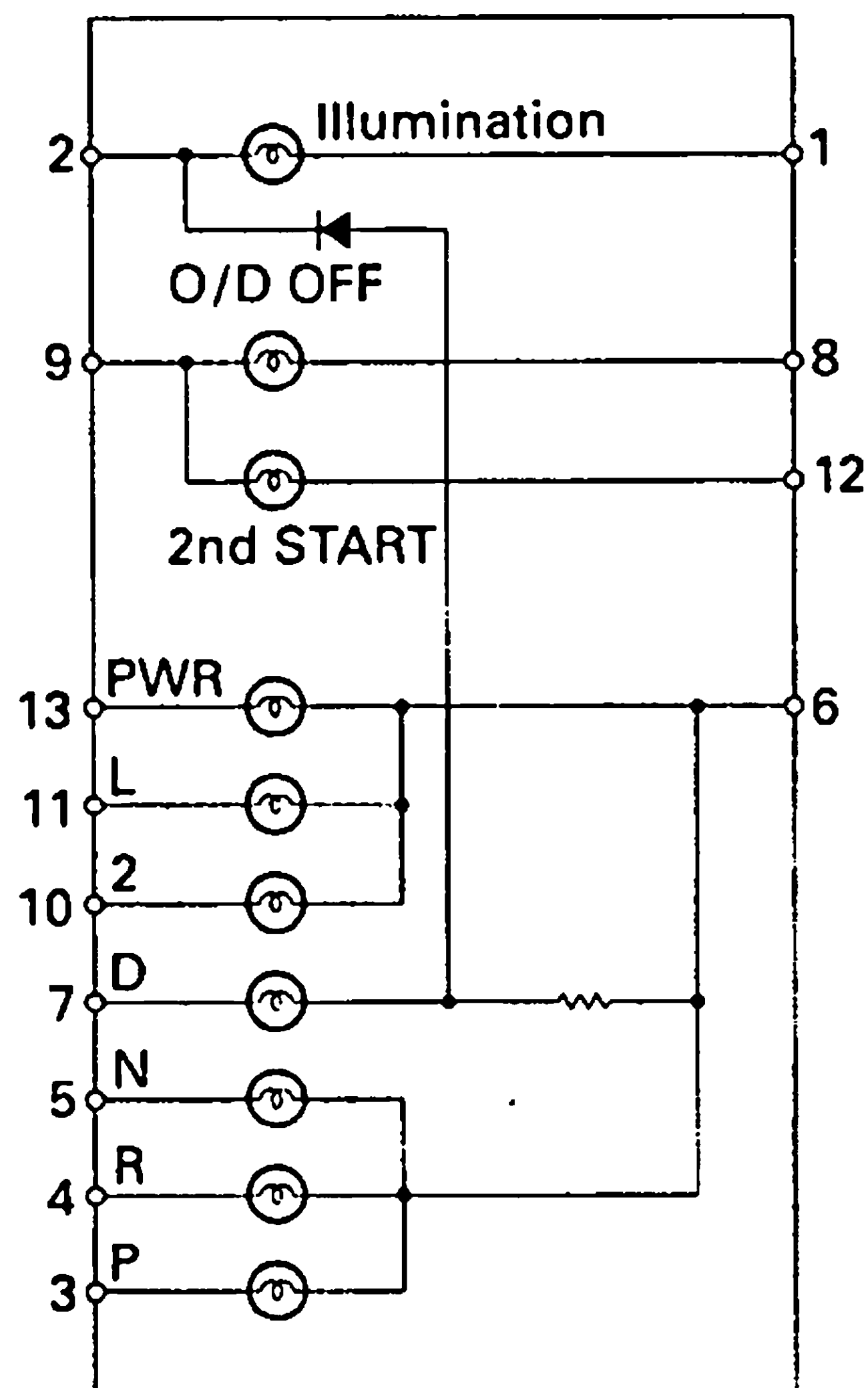
No.		Wiring Connector Side
		Australia (Diesel Engine)
A	1	Ground (TEMP)
	2	_____
	3	_____
	4	_____
	5	GAUGE Fuse
	6	Low Oil Prassure Warning Switch
	7	_____
	8	Brake Fluid Level Warning Switch
	9	_____
	10	Hazard Warning Light Switch
B	1	Ground
	2	_____
	3	Engine Oil Level Sensor
	4	Fuel Filter Warning Switch and Buzzar (Diesel Engine)
	5	Glow Timer Relay
	6	Charge Light Relay
	7	Light Control Switch (Left)
	8	Light Control Switch (Right)
	9	Water Temperature Sender Gauge
	10	_____
	11	Sub Fuel Sender Gauge
	12	Light Control Rheostat, Illumination (-)
	13	_____
C	1	Ground (Gauge)
	2	TAIL Fuse
	3	Speed Control Unit
	4	Speed Sensor
	5	Headlight Hi-Beam
	6	_____
	7	_____
	8	4WD Indicator Switch
	9	Front Diff. Lock Indicator Switch
	10	Rear Diff. Lock Indicator Switch
	11	Fuel Level Warning Switch
	12	Air Filter Warning Switch
	13	IGN Fuse
	14	Fuel Sender Gauge
	15	Door Courtesy Switch
	16	DOME Fuse

Lo-Grade

No.		Wiring Connector Side	
		Except Australia	
		Gasoline Engine	Diesel Engine
A	1	Ground (TEMP)	Ground (TEMP)
	2	_____	Glow Timer Relay
	3	_____	_____
	4	_____	GAUGE Fuse
	5	GAUGE Fuse	Low Oil Prassure Warning Switch
	6	Low Oil Prassure Warning Switch	_____
	7	_____	_____
	8	Brake Fluid Level Warning Switch	Brake Fluid Level Warning Switch
	9	_____	_____
	10	Seat Belt Warning Relay	Hazard Warning Light Switch
B	1	Ground	Ground
	2	Center Diff. Lock Indicator Switch	Rear Fog Light Switch
	3	_____	Fuel Filter Warning Switch and Buzzar (Diesel Engine)
	4	_____	4WD Indicator Switch
	5	Charge Light Relay	Charge Light Relay
	6	Tire Half-Lock Indicator Switch	Seat Belt Warning Relay
	7	Light Control Switch (Left)	Light Control Switch (Left)
	8	Light Control Switch (Right)	Light Control Switch (Right)
	9	Water Temperature Sender Gauge	Water Temperature Sender Gauge
	10	_____	_____
	11	Sub Fuel Sender Gauge	Sub Fuel Sender Gauge
	12	Light Control Rheostat, Illumination (-)	Light Control Rheostat, Illumination (-)
	13	_____	_____
C	1	Ground (Gauge)	Ground (Gauge)
	2	TAIL Fuse	TAIL Fuse
	3	Speed Control Unit	Speed Control Unit
	4	Speed Sensor	Speed Sensor
	5	Headlight Hi-Beam	Headlight Hi-Beam
	6	_____	_____
	7	_____	_____
	8	4WD Indicator Switch	Center Diff. Lock Indicator Switch
	9	Front Diff. Lock Indicator Switch	Front Diff. Lock Indicator Switch
	10	Rear Diff. Lock Indicator Switch	Rear Diff. Lock Indicator Switch
	11	Fuel Level Warning Switch	Fuel Level Warning Switch
	12	Air Filter Warning Switch	Air Filter Warning Switch
	13	IGN Fuse	IGN Fuse
	14	Fuel Sender Gauge	Fuel Sender Gauge
	15	Door Courtesy Switch	Door Courtesy Switch
	16	DOME Fuse	DOME Fuse

BE

SHIFT POSITION INDICATOR



Terminal	Wiring connector side
1	Light Control Rheostat-terminal A
2	TAIL Fuse
3	Neutral Start Switch-terminal 6
4	Neutral Start Switch-terminal 1
5	Neutral Start Switch-terminal 5
6	Ground
7	Neutral Start Switch-terminal 7
8	O/D OFF Switch
9	GAUGE Fuse
10	Neutral Start Switch-terminal 3
11	Neutral Start Switch-terminal 8
12	ECM
13	Pattern Select Switch

N14141

V06656

BE2M7-01

TROUBLESHOOTING

The table below will be useful for you in troubleshooting these electrical problems. The most likely causes of the malfunction are shown in the order of their probability. Inspect each part in the order shown, and replace the part when it is found to be faulty.

METER, GAUGES AND ILLUMINATION

Trouble	Parts name	(See page)
Tachometer, voltmeter, fuel gauge and water temperature gauge do not operate.	1. GAUGE Fuse	(BE-3)
	2. Combination Meter Wiring Circuit	(BE-18,19)
	3. Wire Harness	
	4. Meter Circuit Plate	(BE-17)
Speedometer does not operate.	1. No.1 Vehicle Speed Sensor	*(BE-10)
	2. Combination Meter Wiring Circuit	(BE-18,19)
	3. Speedometer Driven Gear and Drive Gear	

Trouble	Parts name (See page)
Tachometer does not operate.	1. Combination Meter Wiring Circuit (BE-18,19) 2. Wire Harness 3. Igniter (Gasoline Engine), Tacho Pick Sensor (Diesel Engine M/T), ECT ECU (Diesel Engine A/T) 4. Meter Circuit Plate (BE-17)
Voltmeter does not operate.	1. Voltmeter Receiver Gauge (BE-31) 2. Combination Meter Wiring Circuit (BE-18,19) 3. Wire Harness
Fuel gauge does not operate or abnormal operation. (Main)	1. Fuel Receiver Gauge (BE-29) 2. Fuel Sender Gauge *(BE-12) 3. Combination Meter Wiring Circuit (BE-18,19) 4. Wire Harness
Water temperature gauge does not operate or abnormal operation.	1. Water Temperature Receiver Gauge (BE-31) 2. Water Temperature Sender Gauge *(BE-13) 3. Combination Meter Wiring Circuit (BE-18,19) 4. Wire Harness
Oil pressure gauge does not operate or abnormal operation.	1. Oil Pressure Receiver Gauge (BE-32) 2. Oil Pressure Sender Gauge *(BE-15) 3. Combination Meter Wiring Circuit (BE-18,19) 4. Wire Harness
All illumination lights do not light up.	1. TAIL Fuse (BE-3) 2. Light Control Rheostat *(BE-19) 3. Wire Harness
Brightness does not change even when rheostat turned.	1. Bulb 2. Wire Harness
Only one illumination light does not light up.	1. Bulb 2. Combination Meter Wiring Circuit. (BE-18,19) 3. Wire Harness
Fuel gauge does not operate or abnormal operation. (Sub)	1. Fuel Receiver Gauge (BE-30) 2. Fuel Sender Gauge ** (BE-58) 3. Combination Meter wiring Circuit (BE-18,19) 4. Wire Harness

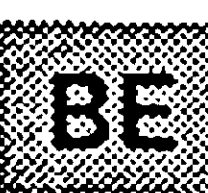
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WARNING LIGHTS

Trouble	Parts name (See page)
Engine oil level warning light does not light up.	1. Bulb 2. Engine Oil Level Sensor *(BE-19) 3. Combination Meter Wiring Circuit (BE-18,19)
Check engine warning light does not light up.	1. Bulb 2. EFI ECU (Gasoline Engine) 3. Fuel Level Warning Switch *(BE-12) 4. Combination Meter Wiring Circuit (BE-18,19)
Timing belt warning light does not light up.	1. Bulb 2. Timing Belt Warning Switch (BE-32) 3. Combination Meter Wiring Circuit (BE-18,19)

Trouble	Parts name	(See page)
Fuel filter warning light does not light up, warning buzzer does not sound.	1. Bulb 2. Fuel Filter Warning Switch 3. Warning Buzzer 4. Combination Meter Wiring Circuit	 ** (BE-60) ** (BE-60) (BE-18,19)
Discharge warning light does not light up.	1. IGN Fuse 2. Bulb 3. Charge Light Relay 4. Combination Meter Wiring Circuit 5. Wire Harness	 (BE-3) (BE-18,19)
A/T oil temp. warning light does not light up.	1. Bulb 2. A/T Fluid Temperature Sensor 3. Combination Meter Wiring Circuit 4. Wire Harness	 * (BE-42) (BE-18,19)
Brake fluid level warning light does not light up.	1. Bulb 2. Brake Fluid Level Warning Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	 ** (BE-16) (BE-18,19)
Air filter warning light does not light up.	1. Bulb 2. Air Filter Warning Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	 ** (BE-66) (BE-18,19)
ABS warning light does not light up.	1. Bulb 2. ABS ECU 3. Combination Meter Wiring Circuit 4. Wire Harness	 * (BR-55) (BE-18,19)
Fuel level warning light does not light up.	1. Bulb 2. Fuel Level Warning Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	 * (BE-12) (BE-18,19)
Parking brake warning light does not light up.	1. Bulb 2. Parking Brake Warning Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	 * (BE-16) (BE-18,19)
Seat belt warning light does not light up.	1. Bulb 2. Seat Belt Warning Relay 3. Seat Belt Buckle Switch 4. Combination Meter Wiring Circuit 5. Wire Harness	 * (BE-17) * (BE-17) (BE-18,19)
A/T parking warning light does not light up.	1. Bulb 2. L4 Position Switch 3. Neutral Start Switch 4. Combination Meter Wiring Circuit 5. Wire Harness	 ** (TR-58) * (AT-41) (BE-18,19)

Trouble	Parts name	(See page)
Tire half—lock warning light does not light up.	1. Bulb 2. Tire Half—Lock Indicator Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	*1(BE—18) (BE—18,19)
Open door warning light does not light up.	1. DOME Fuse 2. Bulb 3. Door Courtesy Switch 4. Combination Meter Wiring Circuit 5. Wire Harness	**2(BE—8) *1(BE—16) (BE—18,19)
SRS warning light does not light up.	1. DOME Fuse 2. Bulb 3. Airbag ECU 4. Combination Meter Wiring Circuit 5. Wire Harness	**2(BE—61) (RS—29) (BE—18,19)
Low oil pressure warning light does not light up.	1. Bulb 2. Low Oil Pressure Warning Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	**2(BE—61) (BE—18,19)
Warning light do not light up. (Except Discharge, A/T parking, open door, SRS)	1. GAUGE Fuse 2. Combination Meter Wiring Circuit 3. Wire Harness	(BE—3) (BE—18,19)



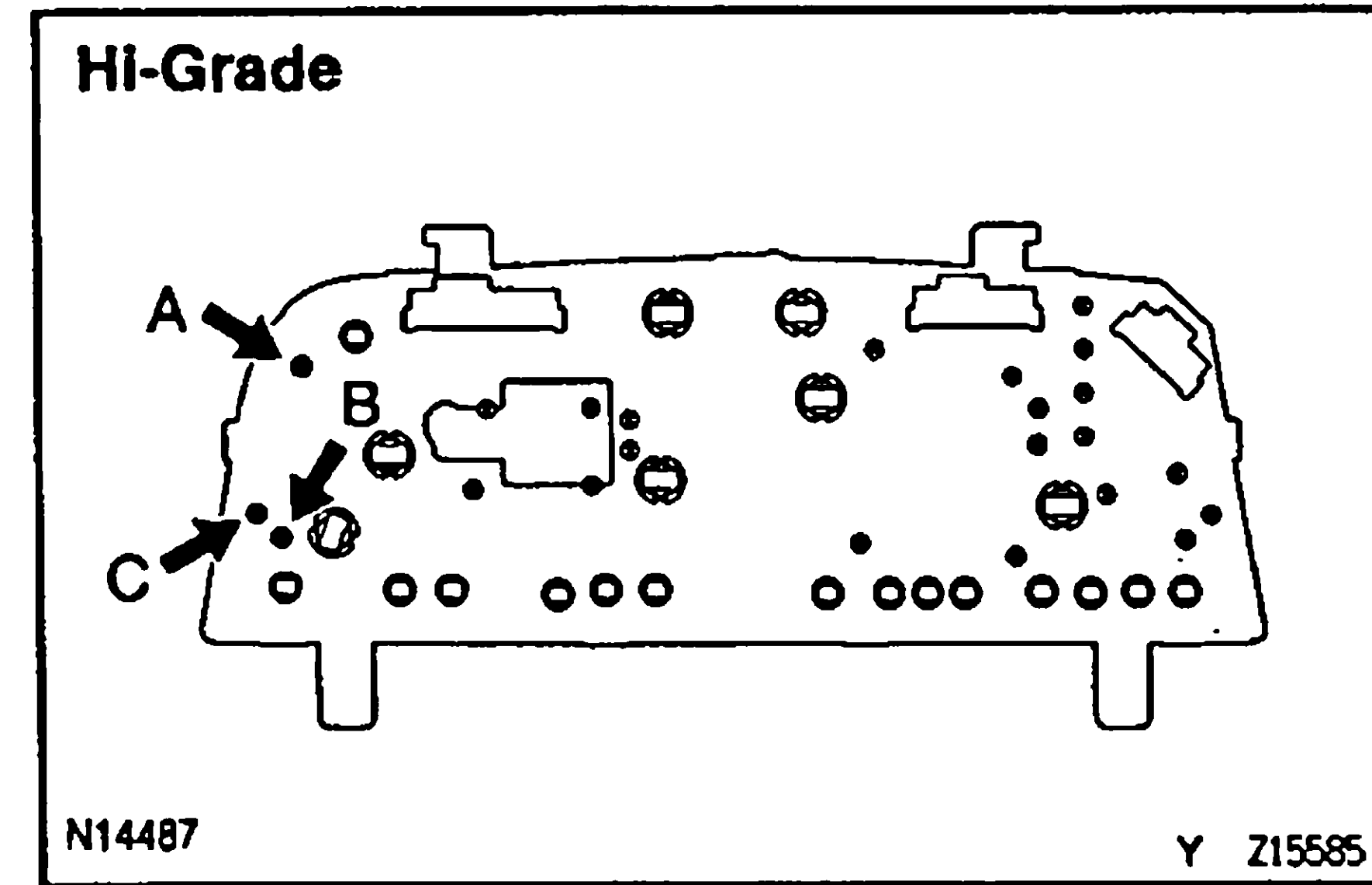
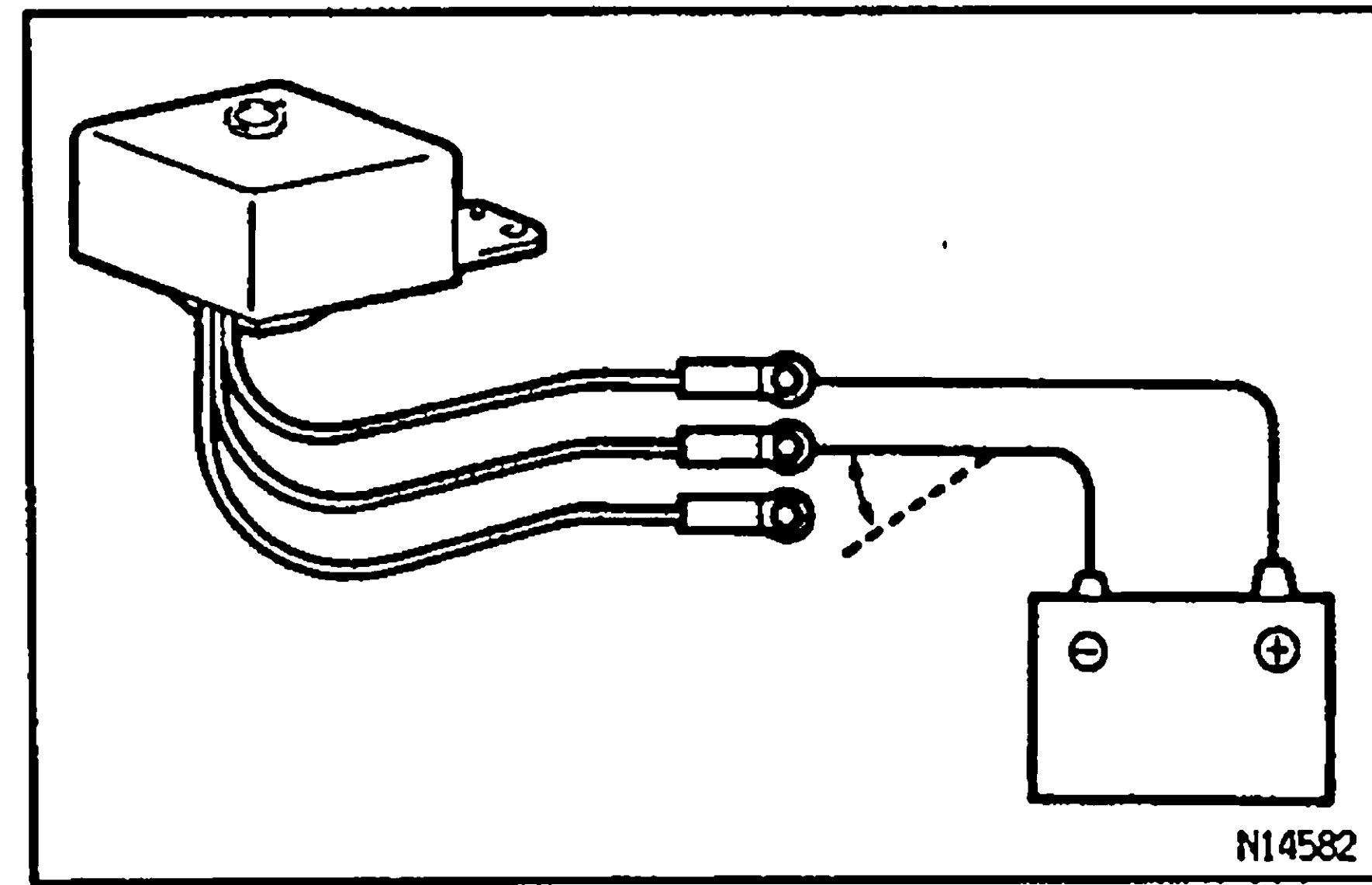
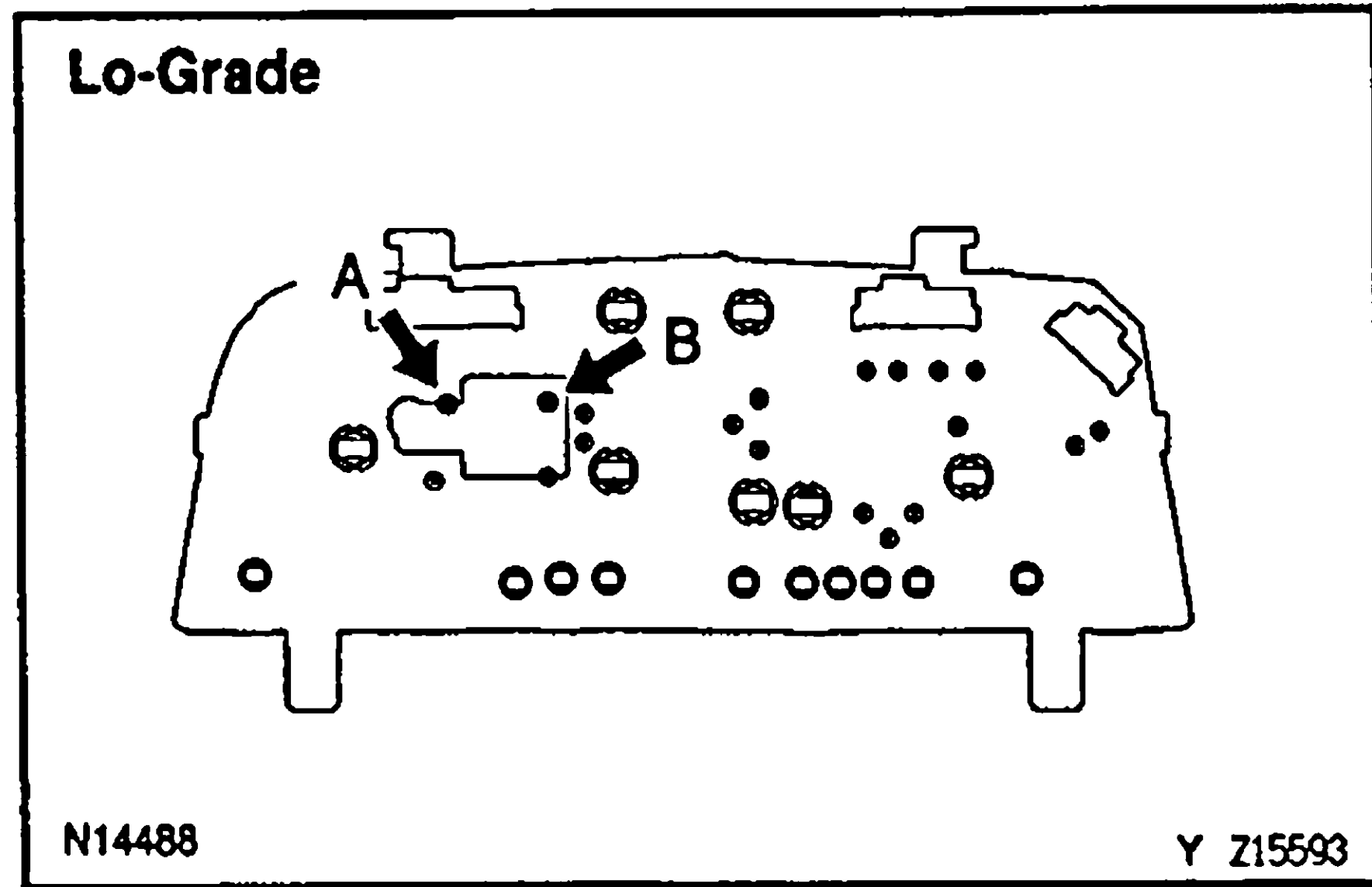
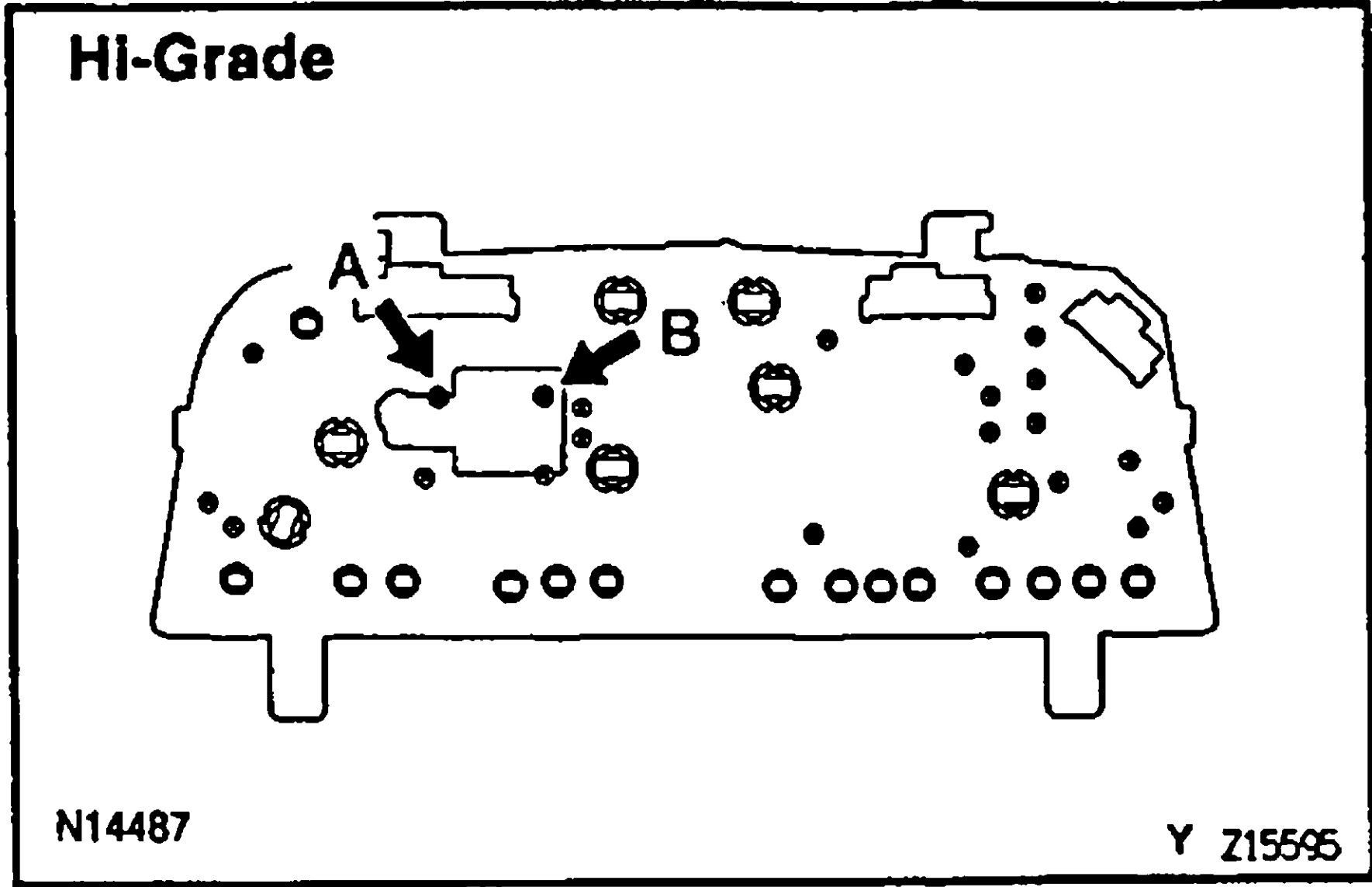
INDICATOR LIGHTS

Trouble	Parts name	(See page)
O/D OFF indicator light does not light up.	1. Bulb 2. Shift Position Indicator Wiring Circuit 3. O/D OFF Switch 4. Wire Harness	(BE—24) *1(AT—41)
High beam indicator light does not light up.	1. Bulb 2. Combination Meter Wiring Circuit 3. Wire Harness 4. Headlight System	(BE—18,19) **2(BE—27)
Turn and hazard indicator light does not light up.	1. Bulb 2. Combination Meter Wiring Circuit 3. Wire Harness 4. Turn Signal and Hazard Warning System	(BE—18,19) **2(BE—29)
Shift indicator lights do not light up. (All)	1. Bulb 2. Neutral Start Switch 3. Shift Position Indicator Wiring Circuit 4. Wire Harness	*1(AT—41) (BE—24)
Shift indicator light do not light up. (D)	1. Bulb 2. Neutral Start Switch 3. Light Control Rheostat 4. Shift Position Indicator Wiring Circuit 5. Wire Harness	*1(AT—41) *1(BE—19) (BE—24)

Trouble	Parts name	(See page)
Shift indicator light do not light up. (PWR)	1. Bulb 2. Pattern Select Switch 3. Shift Position Indicator Wiring Circuit 4. Wire Harness	*(AT-41) (BE-24)
Shift indicator lights do not light up. (2nd START)	1. Bulb 2. Shift Position Indicator Wiring Circuit 3. ECM 4. Wire Harness	(BE-24)
Only one shift indicator light does not light up.	1. Bulb 2. Shift Position Indicator Wiring Circuit	(BE-24)
Rear fog indicator light does not light up.	1. Bulb 2. Rear Fog Light Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	(BE-9) (BE-18,19)
Pre-heating indicator light does not light up.	1. Bulb 2. Glow Timer Relay (Diesel Engine) 3. Combination Meter Wiring Circuit 4. Wire Harness	(BE-18,19)
4WD indicator light does not light up.	1. Bulb 2. 4WD Position Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	*(TR-11) (BE-18,19)
Turbo indicator light does not light up.	1. Turbo Indicator Drive Circuit 2. Turbo Pressure Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	(BE-33) *(BE-67) (BE-18,19)
Cruise control indicator light does not light up.	1. Bulb 2. Cruise Control ECU 3. Combination Meter Wiring Circuit 4. Wire Harness	*(BE-46) (BE-18,19)
Front differential lock indicator does not light up.	1. Bulb 2. Front Differential Lock Indicator Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	*(SA-114) (BE-18,19)
Rear differential lock indicator does not light up.	1. Bulb 2. Rear Differential Lock Indicator Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	*(SA-114) (BE-18,19)
Center differential lock indicator does not light up.	1. Bulb 2. 4WD Indicator Switch 3. Combination Meter Wiring Circuit 4. Wire Harness	*(TR-11) (BE-18,19)

*1: See Pub.No. RM315E.

*2: See Pub.No. RM184E.



SPEED WARNING INSPECTION

1. INSPECT SWITCH

- Press down on the tabs and remove the combination meter glass from the combination meter case.
NOTICE: Be careful not to dirty or damage the speedometer panel.
- Move the speedometer needle to the 124 km/h mark and fix it there.
- Keep on turning the speedometer shaft, check that the continuity between terminals A and B repeatedly fluctuates.
If operation is not as specified, replace the speedometer.

2. INSPECT CHIME

Apply battery voltage intermittently between terminals of the chime and check that the chime sounds.
HINT: The sound will be distorted if the chime is tilted.
If operation is not as specified, replace the chime.

BE

FUEL GAUGE INSPECTION (MAIN)

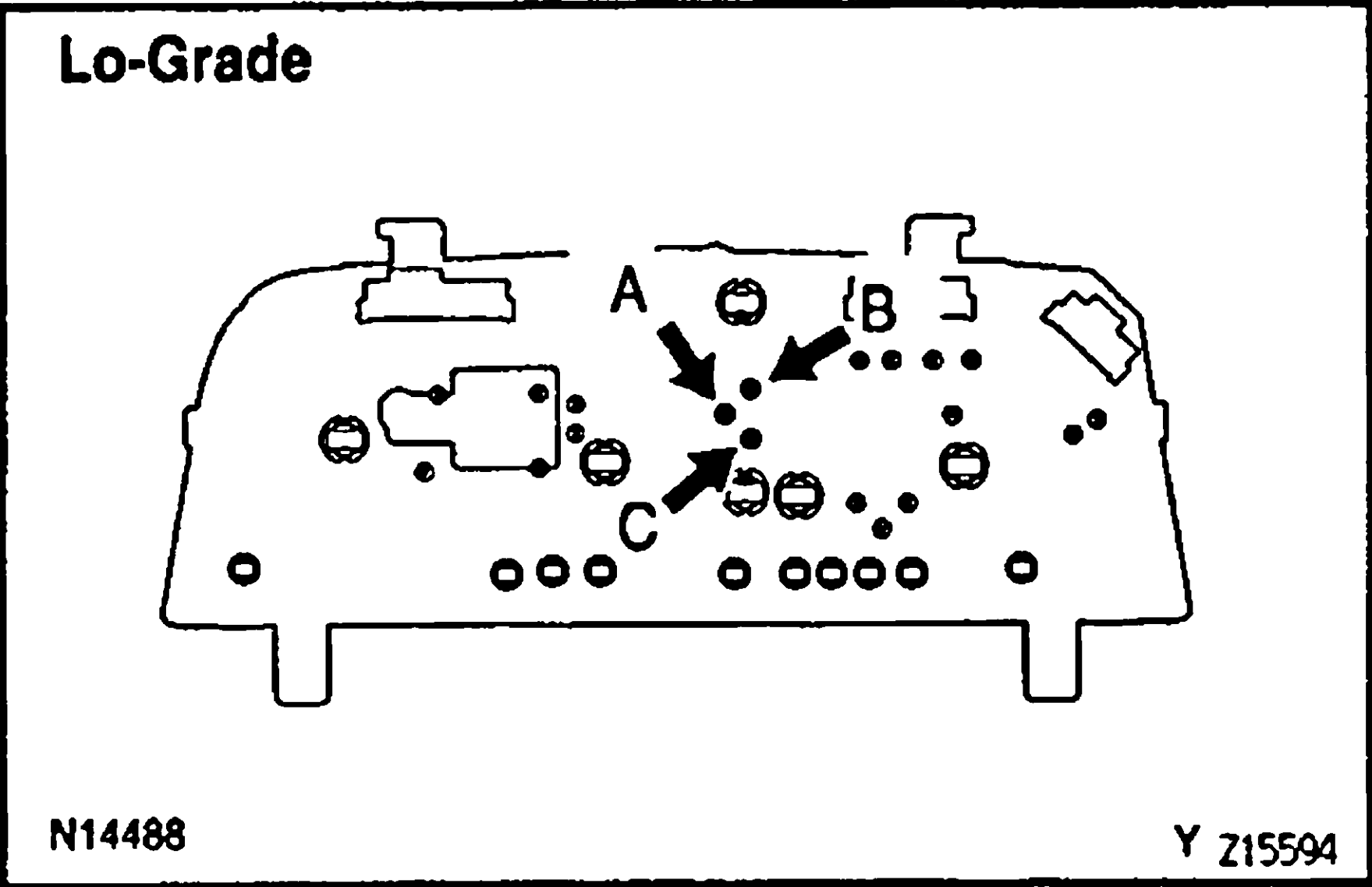
INSPECT RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals.

Hi-Grade:

Between terminals	Resistance (Ω)
A - B	85.5 - 105.5
A - C	126 - 150
B - C	*90 - 110

*: Include voltmeter resistance



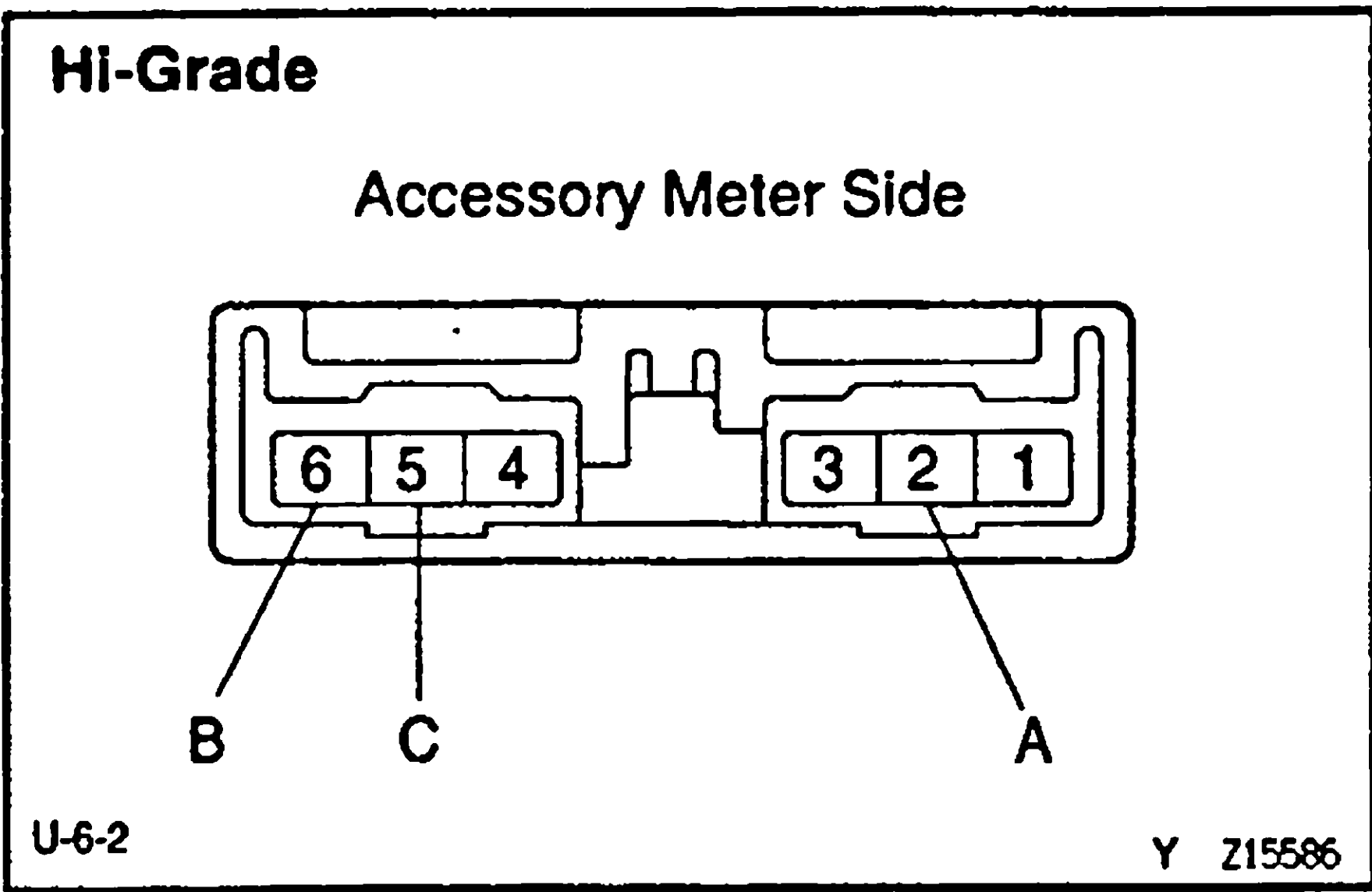
Lo-Grade:
(w/ Sub-Fuel Gauge)

Between terminals	Resistance (Ω)
A – B	Approx. 95
A – C	Approx. 131
B – C	Approx. 101

(w/o Sub-Fuel Gauge)

Between terminals	Resistance (Ω)
A – B	Approx. 125
A – C	Approx. 262
B – C	Approx. 137

If resistance value is not as specified, replace the receiver gauge.



FUEL GAUGE INSPECTION (SUB)

BEZMA-01

INSPECT RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals.

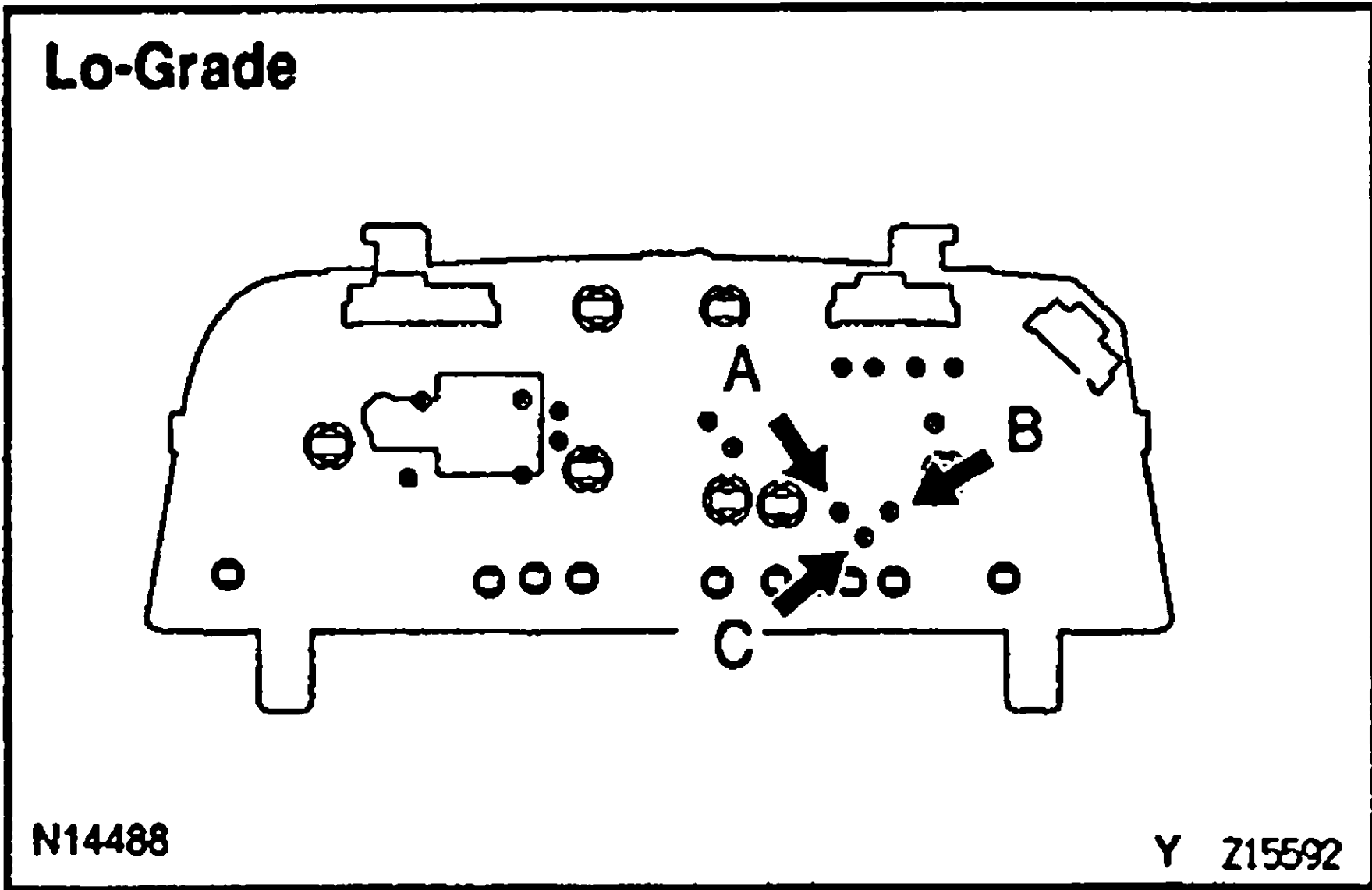
Hi-Grade:

Between terminals	Resistance (Ω)
A – B	Approx. 86
A – C	Approx. 241
B – C	Approx. 155

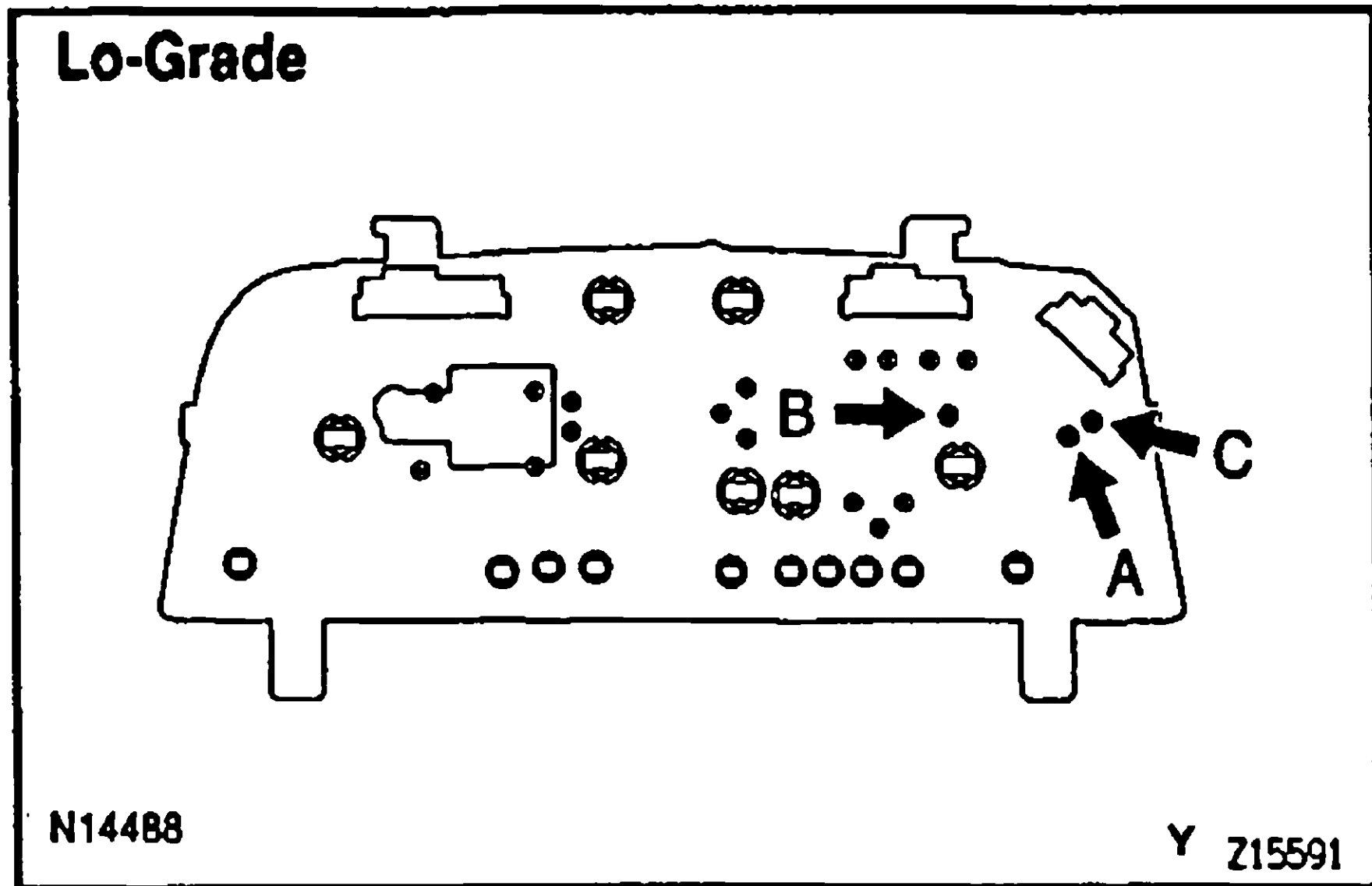
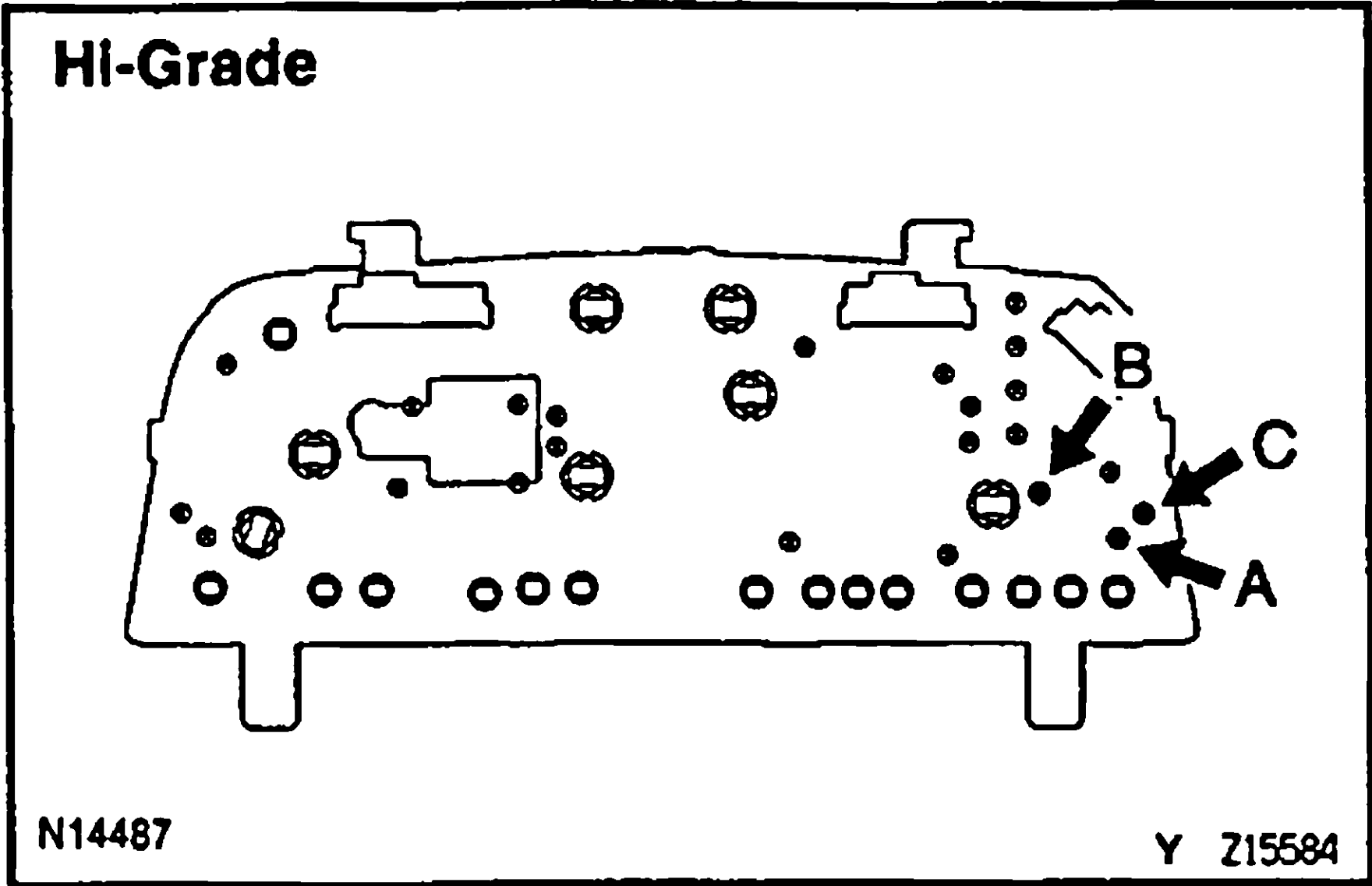
Lo-Grade:

Between terminals	Resistance (Ω)
A – B	Approx. 95
A – C	Approx. 131
B – C	Approx. 101

If resistance value is not as specified, replace the receiver gauge.



BE2M8-01



WATER TEMPERATURE GAUGE INSPECTION

INSPECT RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals.

Hi-Grade:

Between terminals	Resistance (Ω)
A – B	71 – 79
A – C	117 – 141
B – C	185 – 215

Lo-Grade:

(Except G.C.C. Countries)

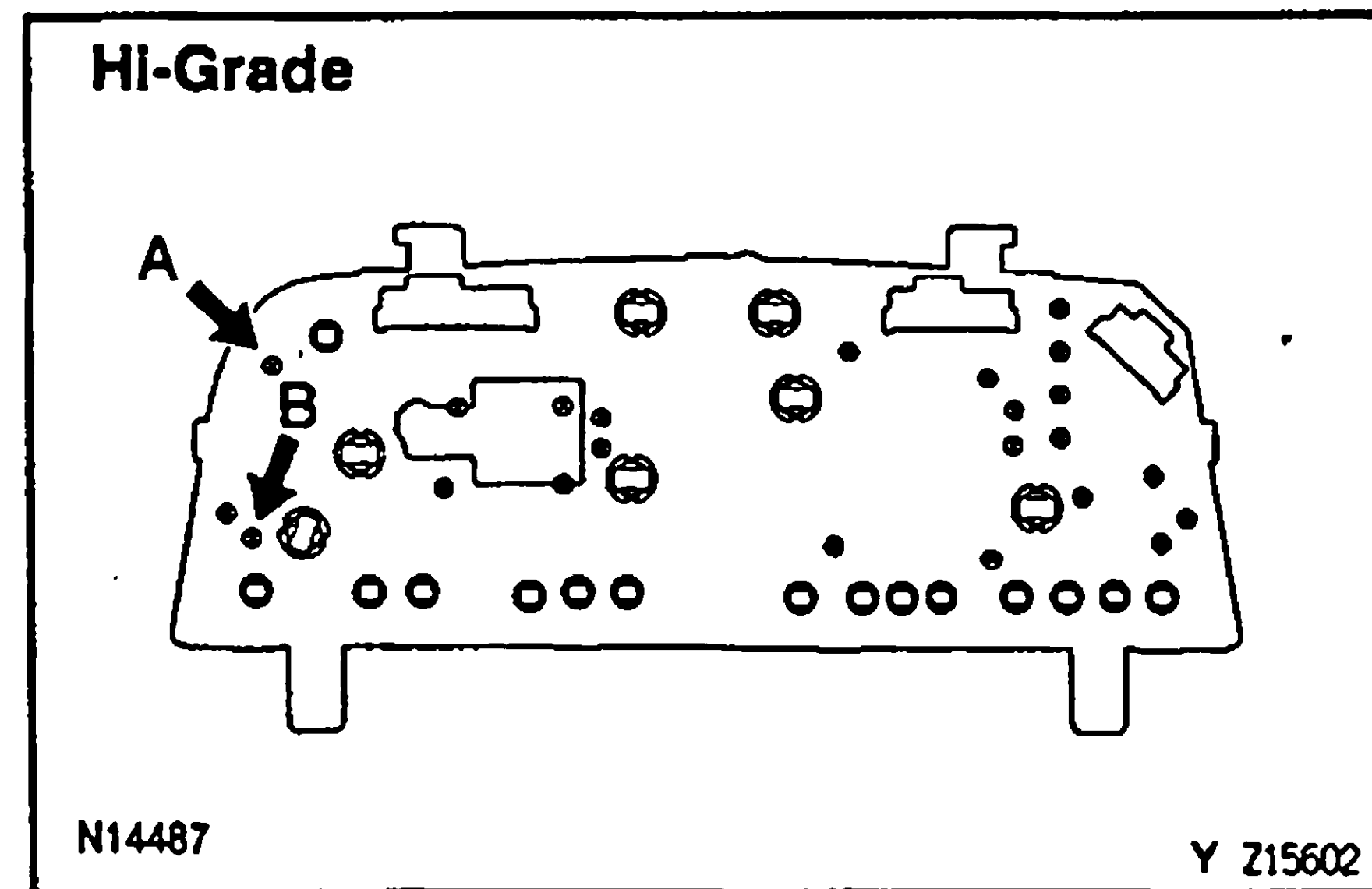
Between terminals	Resistance (Ω)
A – B	Approx. 75
A – C	Approx. 130
B – C	Approx. 213

(G.C.C. Countries)

Between terminals	Resistance (Ω)
A – B	Approx. 75
A – C	Approx. 150
B – C	Approx. 225

HINT: Connect the test leads so that the current from the ohmmeter can flow according to the above order. This circuit includes the diode. If resistance value is not as specified, replace the receiver gauge.

BE



Hi-Grade Only VOLTMMETER INSPECTION

BE2M8-01

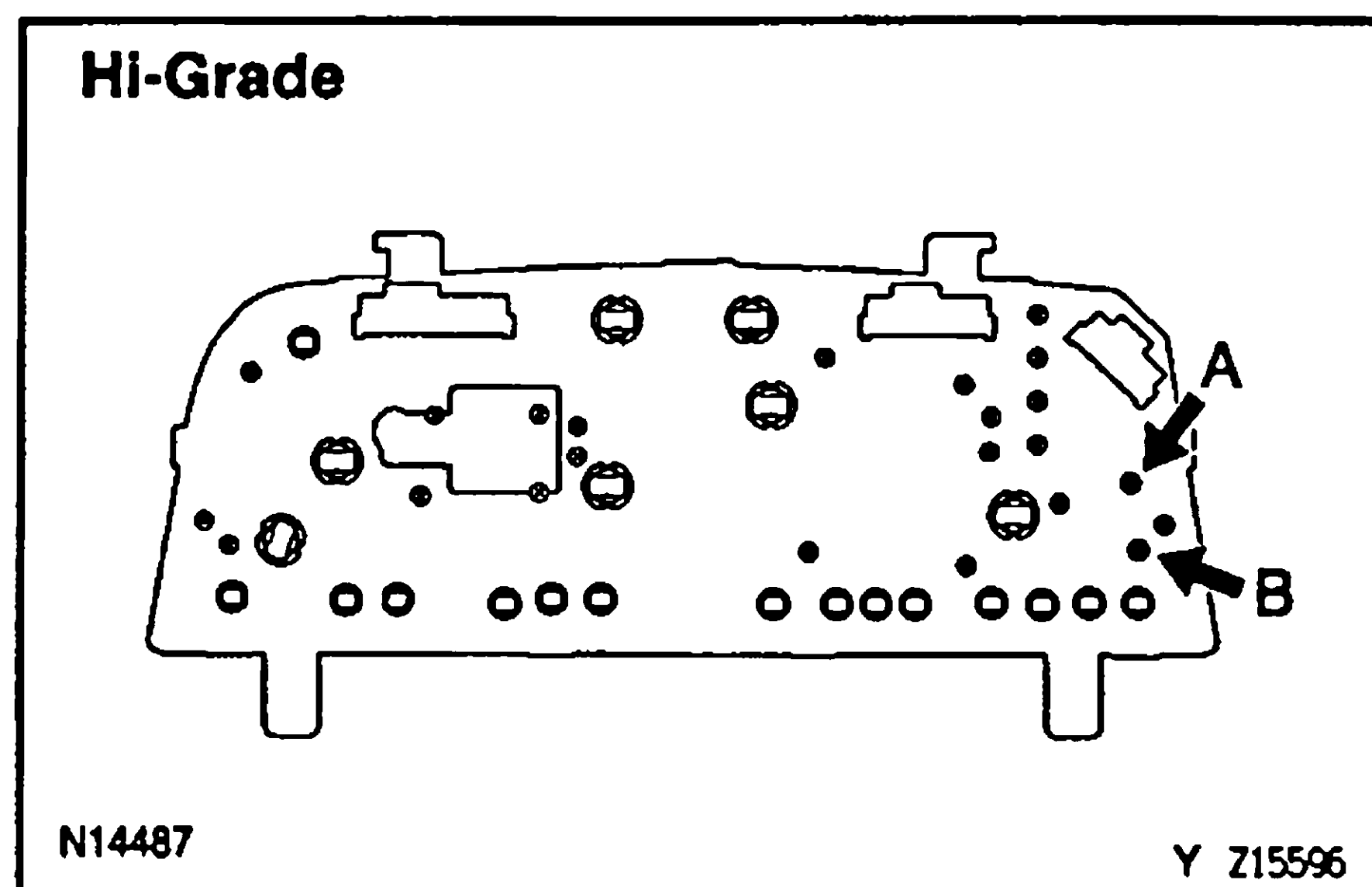
INSPECT VOLTMETER RESISTANCE

Measure the receiver gauge resistance between terminals A and B.

Resistance: 126 – 150 Ω

If resistance value is not as specified, replace the receiver gauge.

HINT: This resistance include fuel receiver gauge resistance.



Hi—Grade Only

OIL PRESSURE GAUGE INSPECTION

INSPECT PRESSURE GAUGE RESISTANCE

Measure the receiver gauge resistance between terminals A and B.

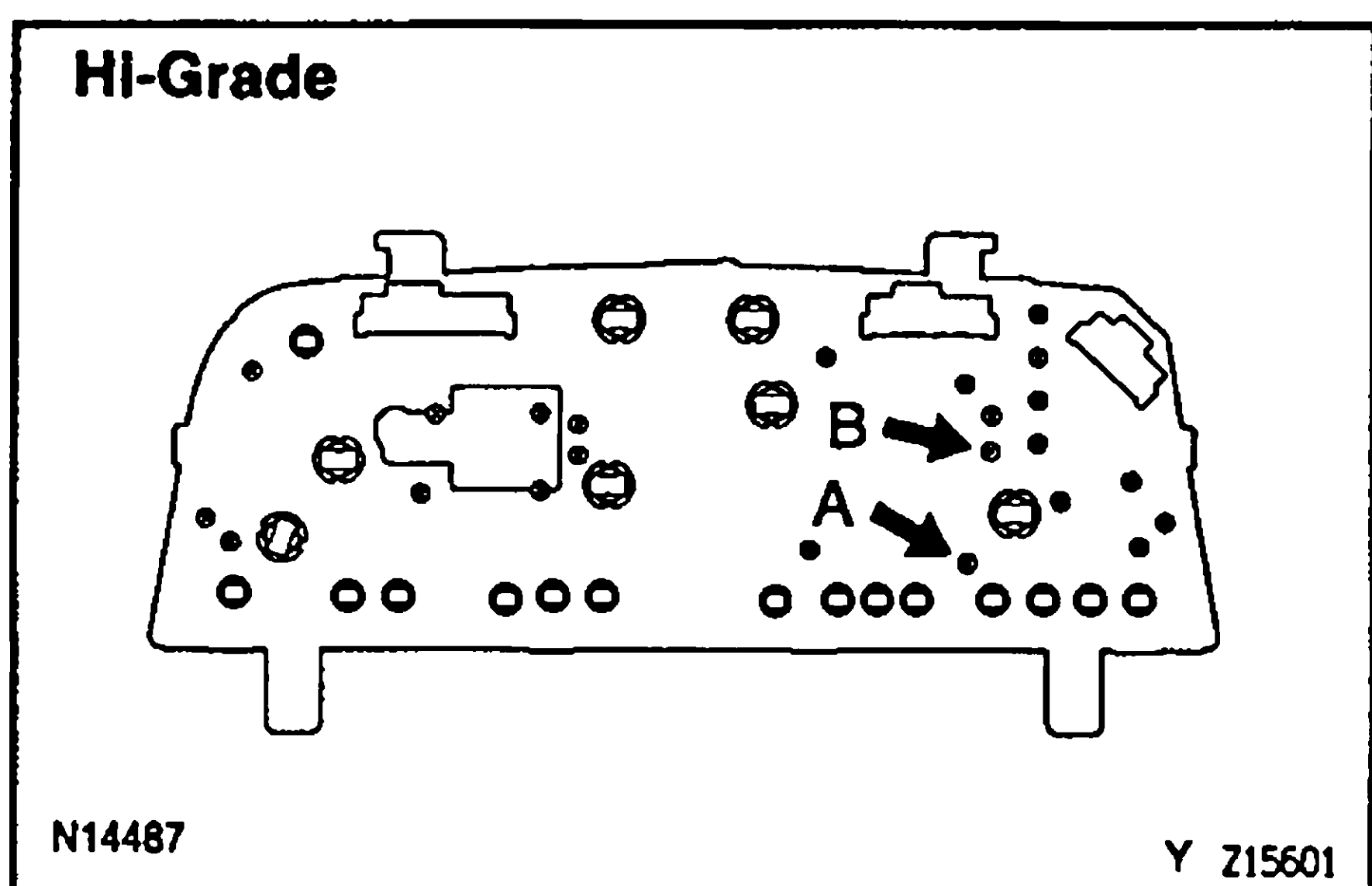
Resistance:

Diesel Engine: 22 — 28 Ω

Gasoline Engine: 40 — 48 Ω

If resistance value is not as specified, replace the receiver gauge.

BE



Diesel Engine Only

TIMING BELT WARNING INSPECTION

INSPECT WARNING LIGHT

(a) Remove the combination meter with connectors connected.

(b) Hi—Grade:
Connect terminal A and B.

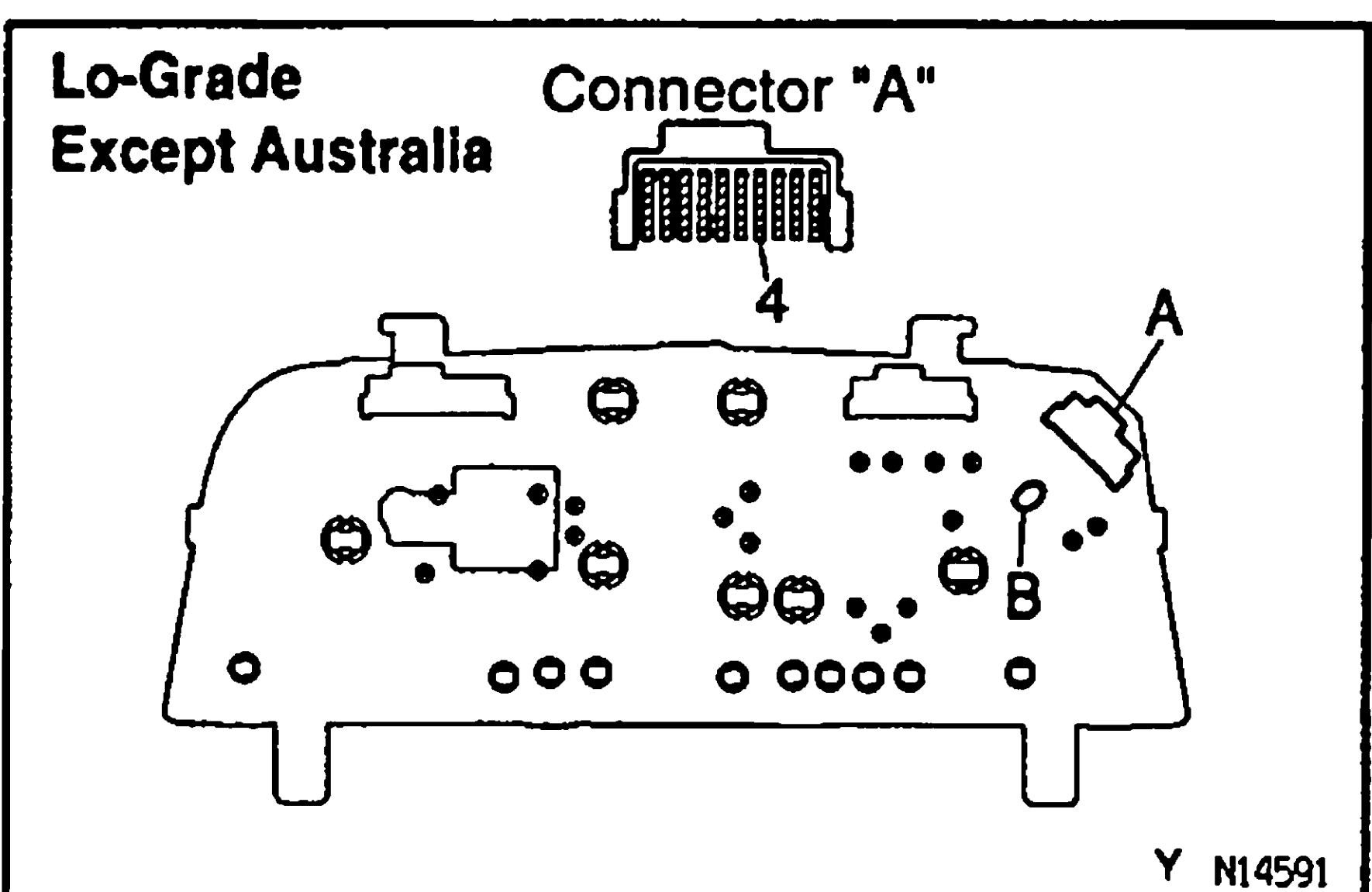
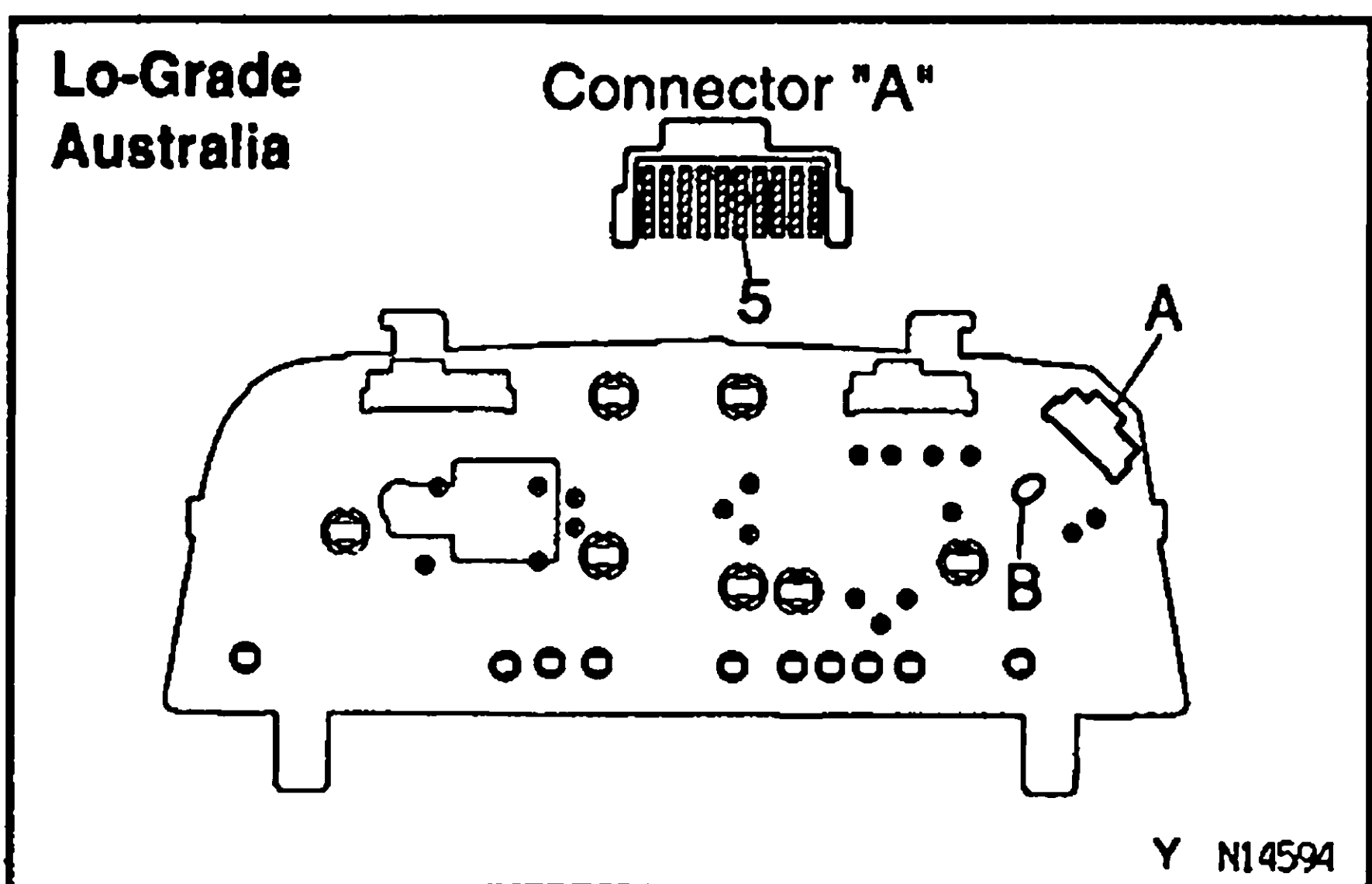
Lo—Grade:

(): Except Australia

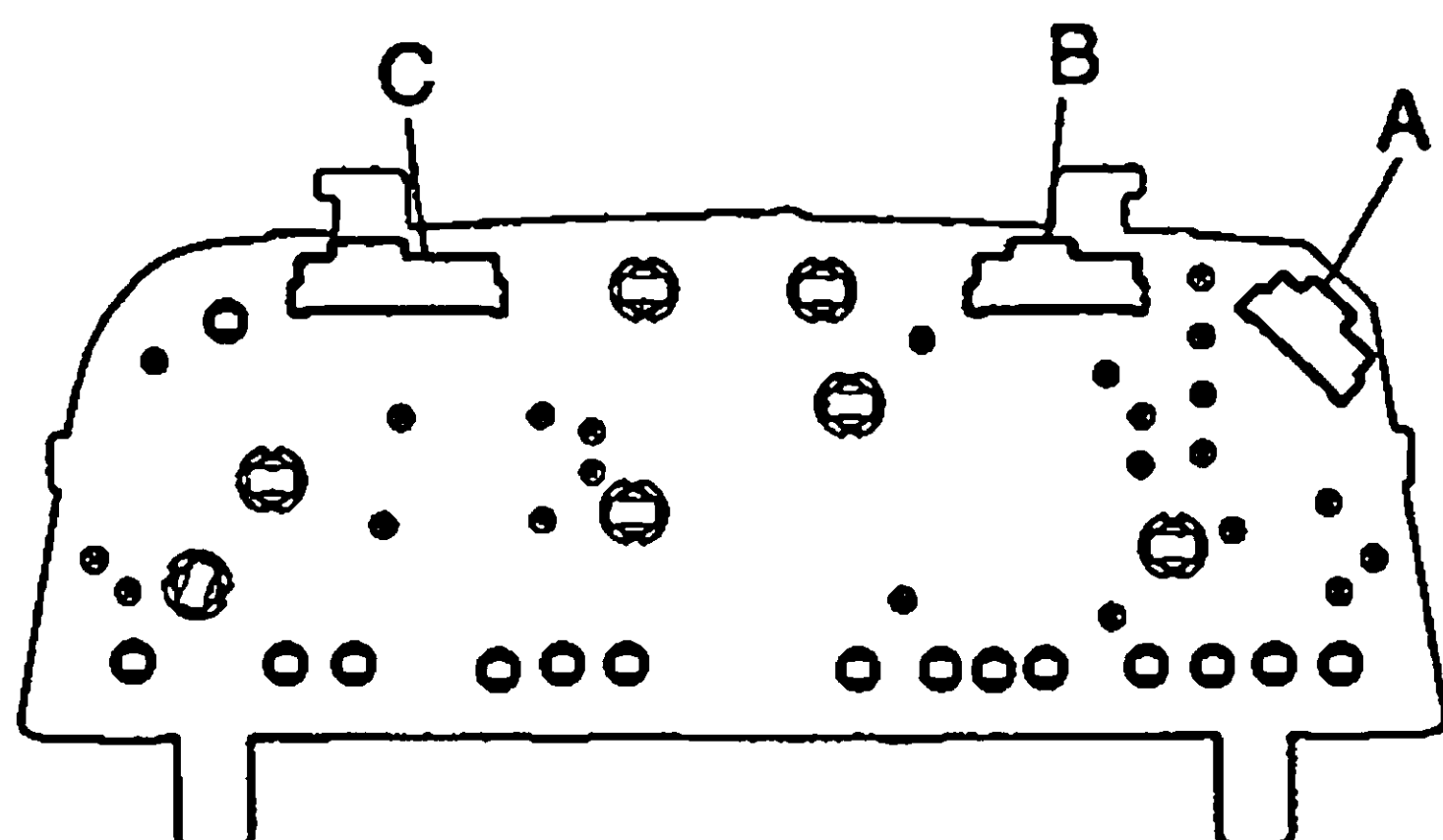
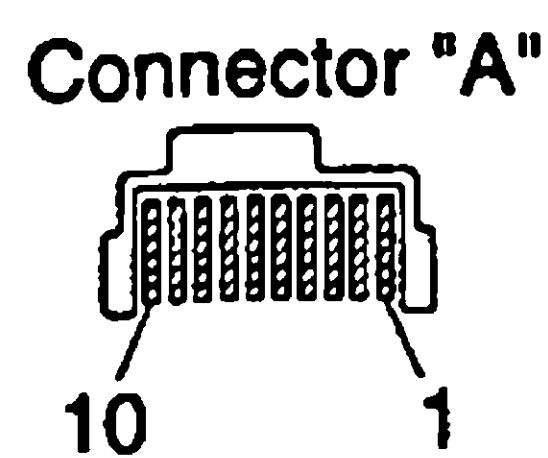
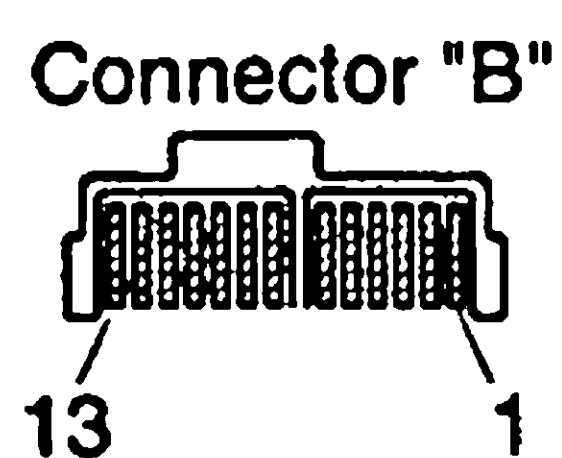
Connect terminal A5(A4) and B(B).

(c) Remove CHARGE fuse, turn the ignition switch ON, and check that the warning light lights up.

If the warning light does not light up, test the bulb.



HI-Grade



Y N14585

1HD—FT Engine Only TURBO INDICATOR AND WARNING INSPECTION

INSPECT TURBO INDICATOR AND WARNING LIGHT DRIVE CIRCUIT

Europe Only:

- Remove the combination meter.
- Connect the positive (+) lead from the battery to terminal B6 and the negative (—) lead to terminal B13, then check that the indicator light lights up.

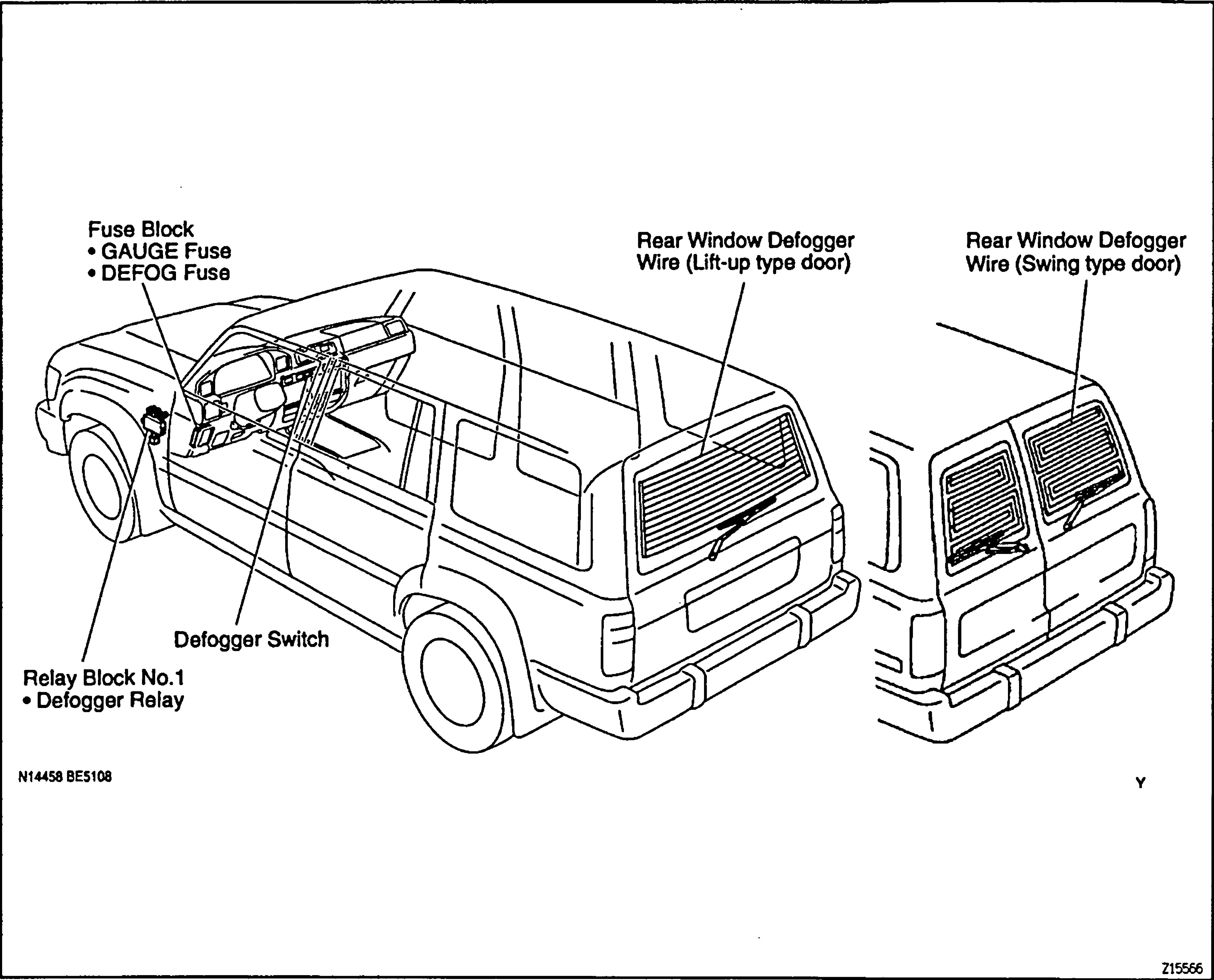
Except Europe:

():Except Australia

- Remove the combination meter.
- Connect the positive (+) lead from the battery to terminal A5 (A4) and the negative (—) lead to terminal C1 (C1), then check that the indicator light lights up.
- Connect the battery negative (—) lead to the terminal B13(B13).
- Check that the indicator light goes out.

DEFOGGER SYSTEM
PARTS LOCATION

DE2N6-01



DEFOGGER SWITCH INSPECTION

1. INSPECT SWITCH CONTINUITY
w/o Timer

Condition	Tester connection to terminal number	Specified condition
Switch OFF	—	No continuity
Switch ON	2 — 3 — 6	Continuity
Illumination circuit	1 — 4	Continuity

w/ Timer

Condition	Tester connection to terminal number	Specified condition
Switch OFF	—	No continuity
Switch ON	2 — 4 — 6	Continuity
Illumination circuit	1 — 3	Continuity

If continuity is not as specified, check the bulb or replace the switch.

w/ Timer

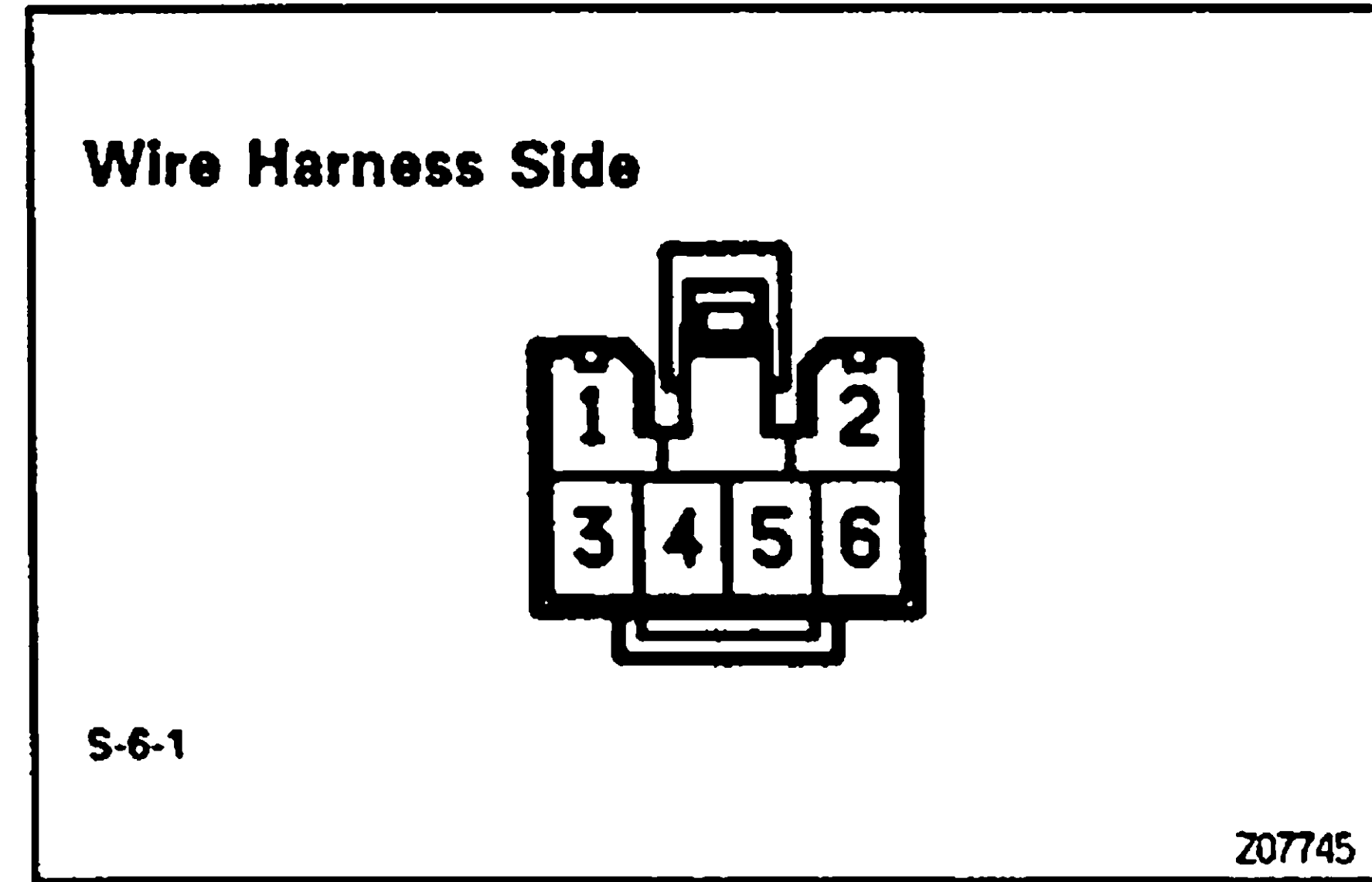
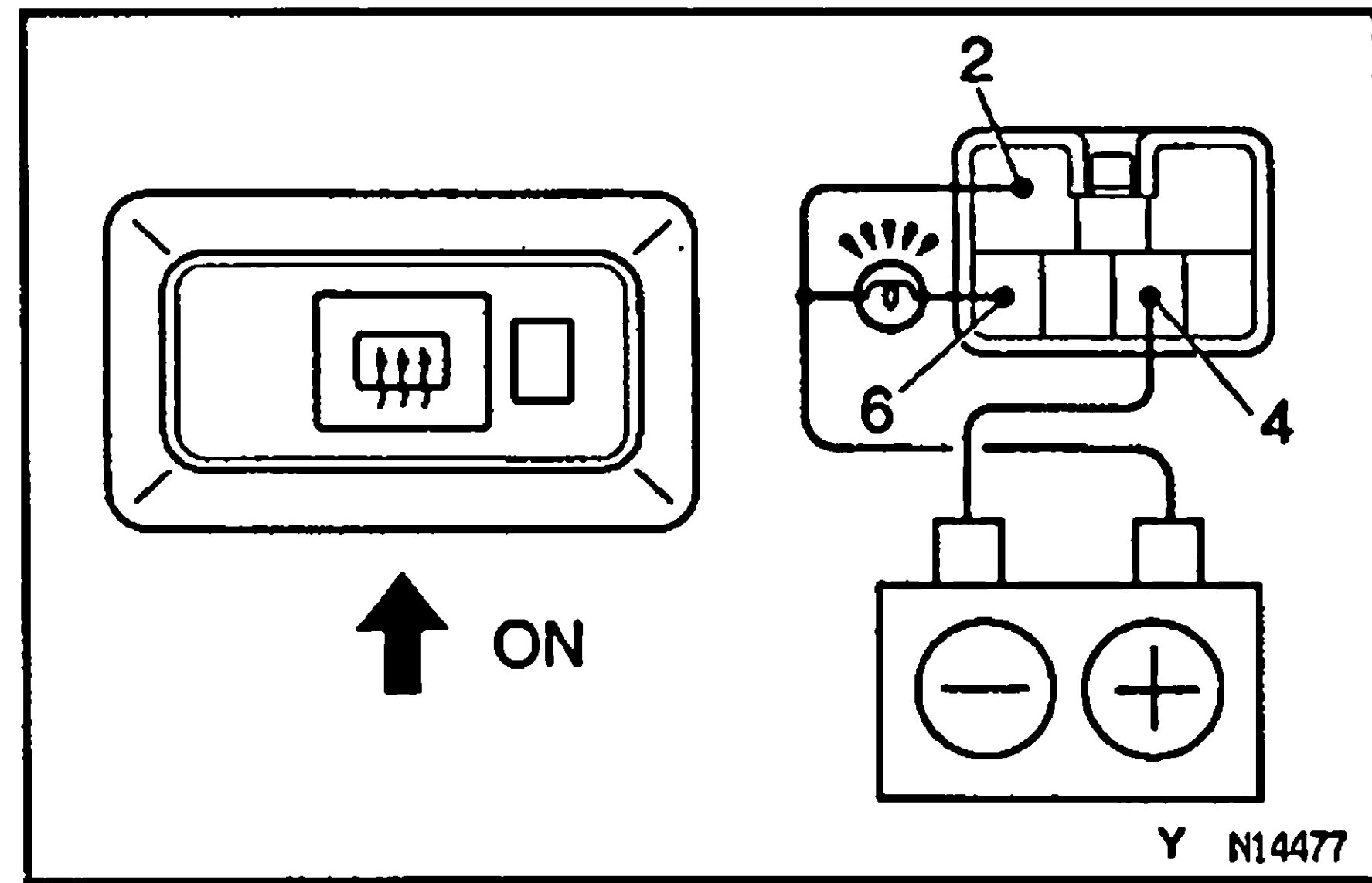
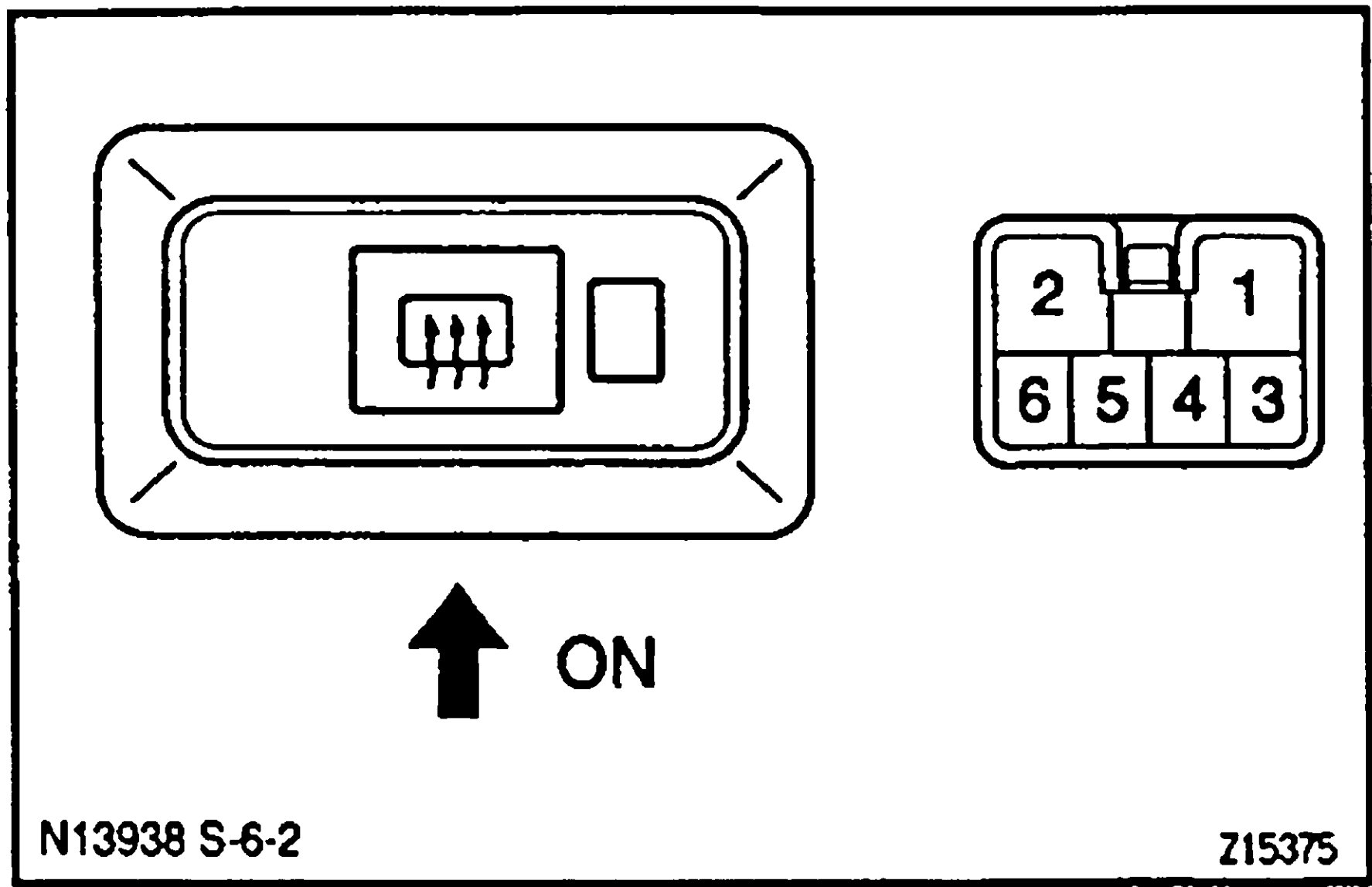
- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (—) lead to terminal 4.
- (b) Connect the positive (+) lead from the battery to terminal 6 through a 3.4 watts test bulb.
- (c) Push the defogger switch ON, check that the indicator light and test bulb light up for 12 to 18 minutes, then go out.

If operation is not as specified, replace the switch.

2. INSPECT TIMER CIRCUIT

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown in the chart.

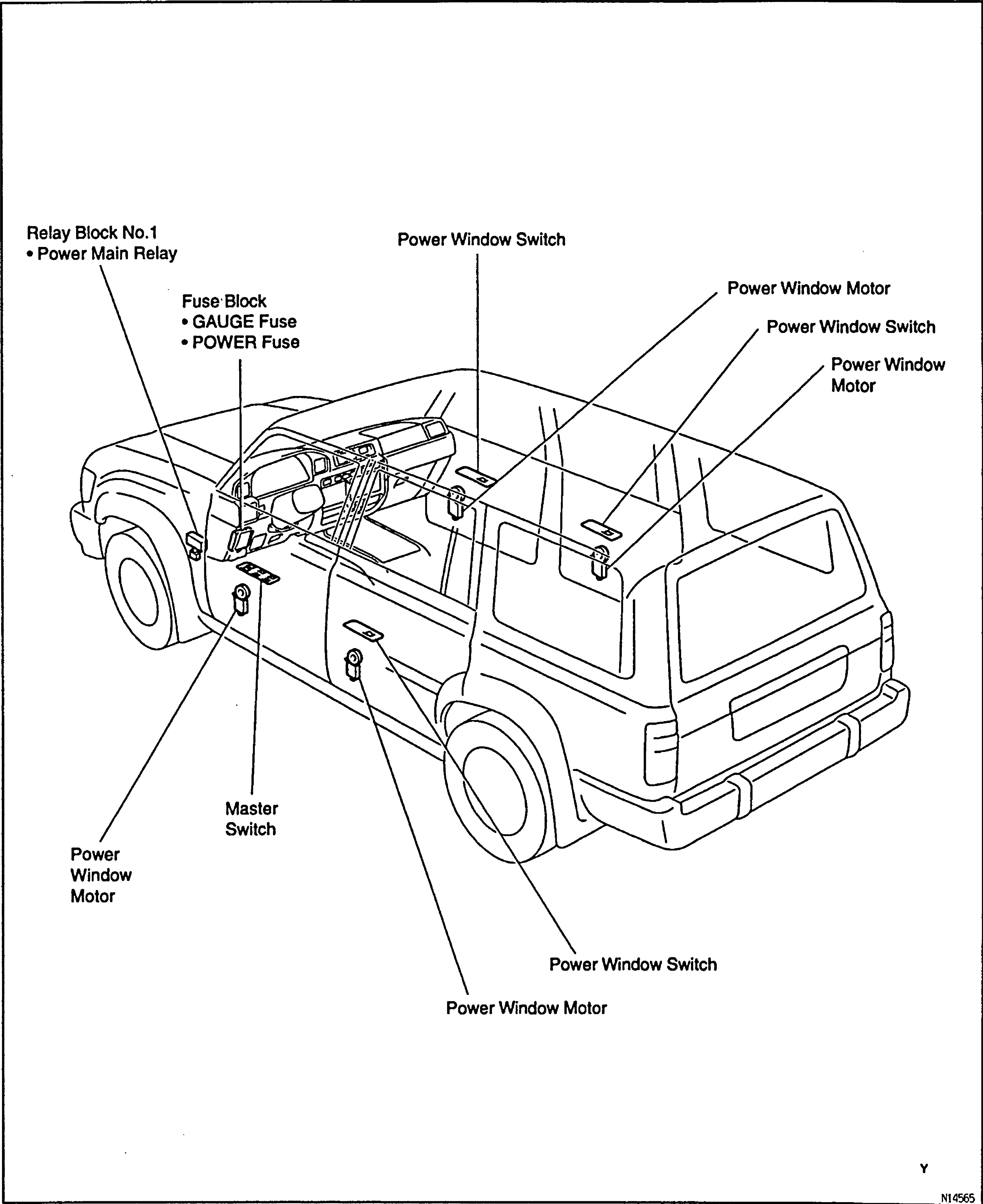
If the circuit is not as specified, replace the switch.



Tester connection to terminal number	Condition	Specified condition
4 — Ground	Constant	Continuity
2 — Ground	Ignition switch position LOCK or ACC	No voltage
2 — Ground	Ignition switch position ON	Battery voltage
6 — Ground	Ignition switch position LOCK or ACC	No voltage
6 — Ground	Ignition switch position ON	Battery voltage
—	Connect the terminals 6 and 3	Defogger system operation is normal

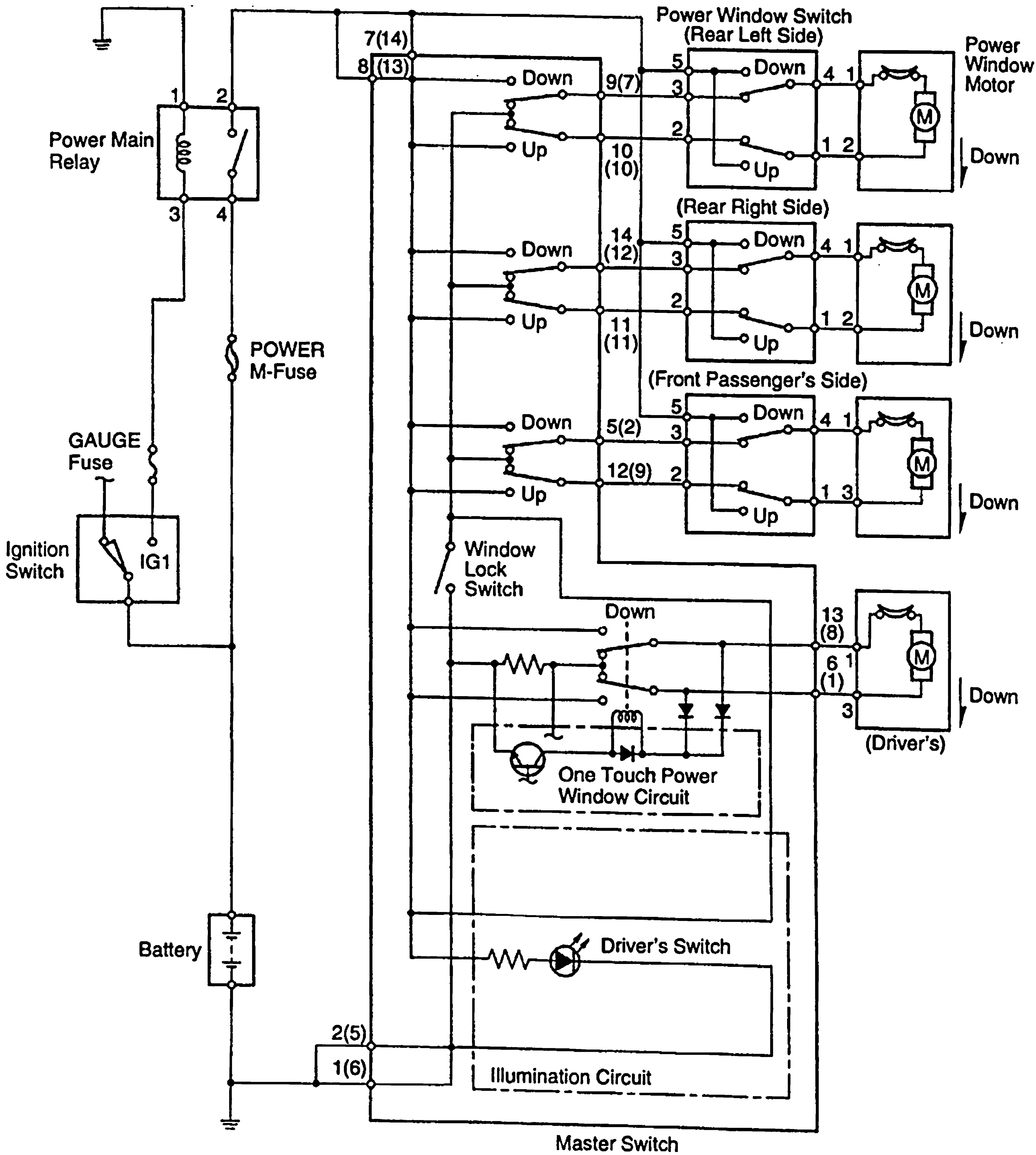
POWER WINDOW CONTROL
SYSTEM
PARTS LOCATION

BE2MG-01

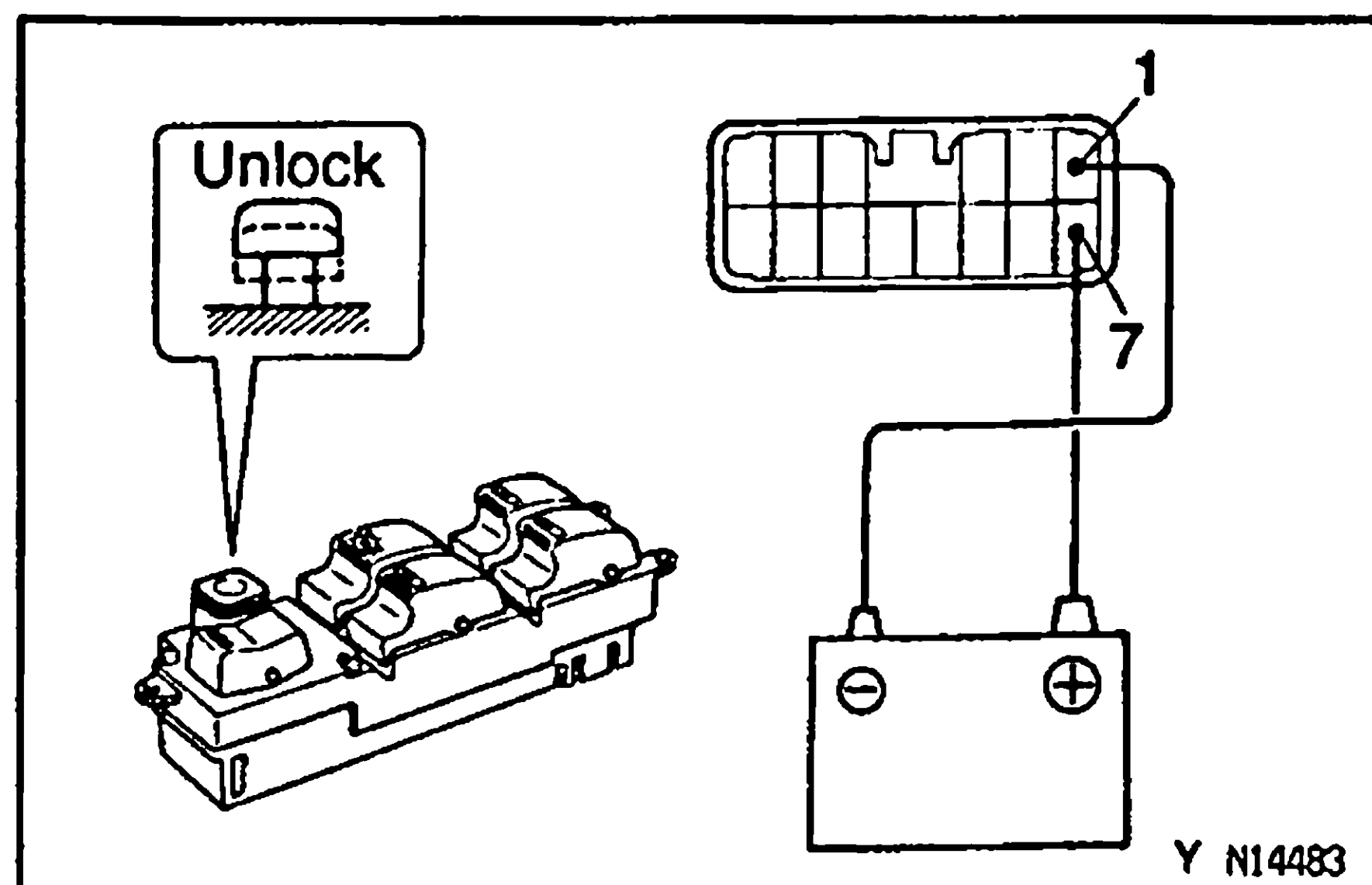


WIRING DIAGRAM

HINT: The numbers in () mean for RHD vehicles.



The POWER SOURCE CIRCUIT has been simplified. For full details, see pub. No. RM184E pages BE-10, 11.



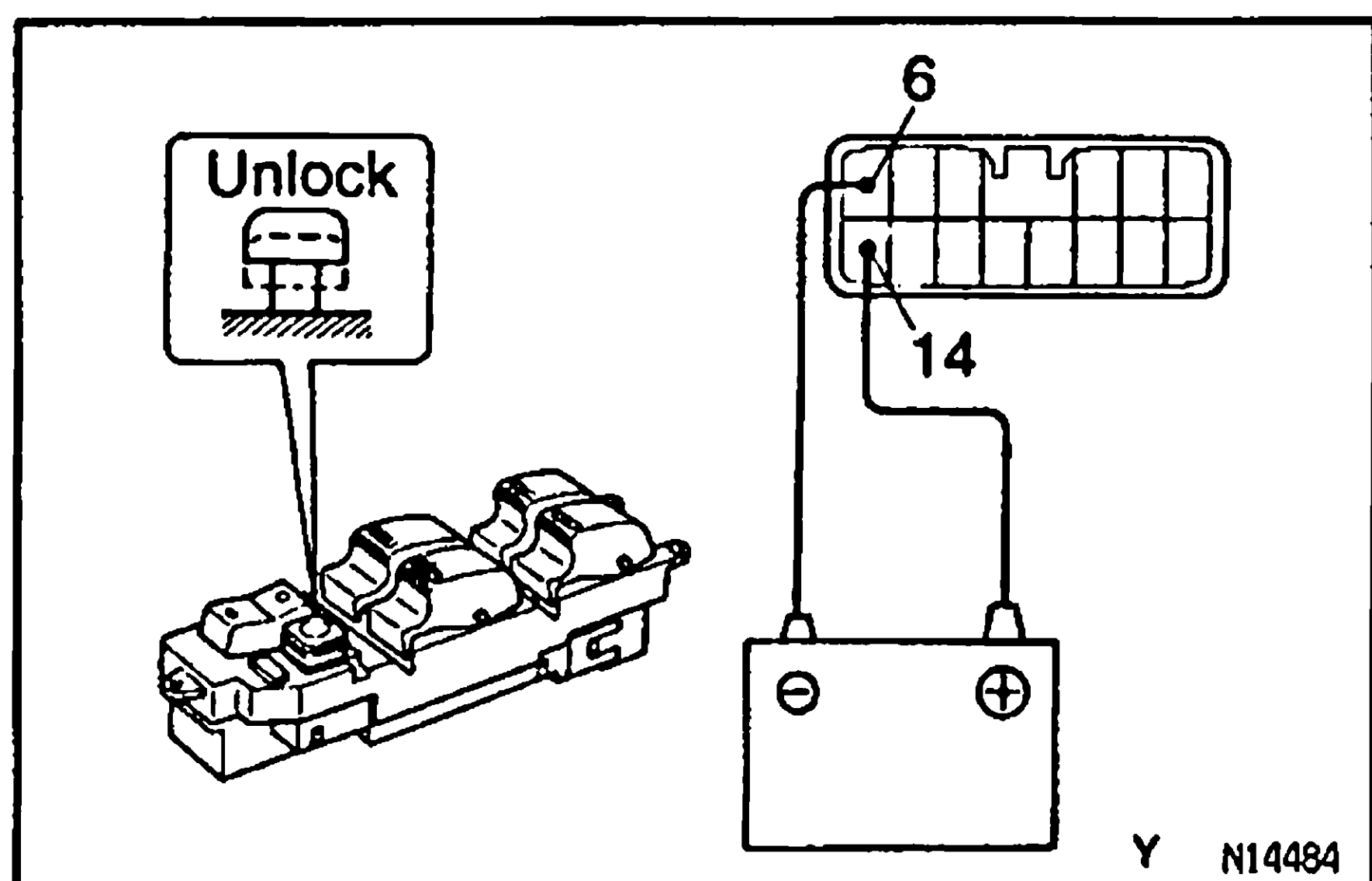
POWER WINDOW MASTER SWITCH INSPECTION

INSPECT SWITCH ILLUMINATION

LHD:

- Set the window lock switch to the unlock position.
- Connect the positive (+) lead from the battery to terminal 7 and the negative (—) lead to terminal 1, then check that all the illuminations light up.

If operation is not as specified, replace the master switch.



RHD:

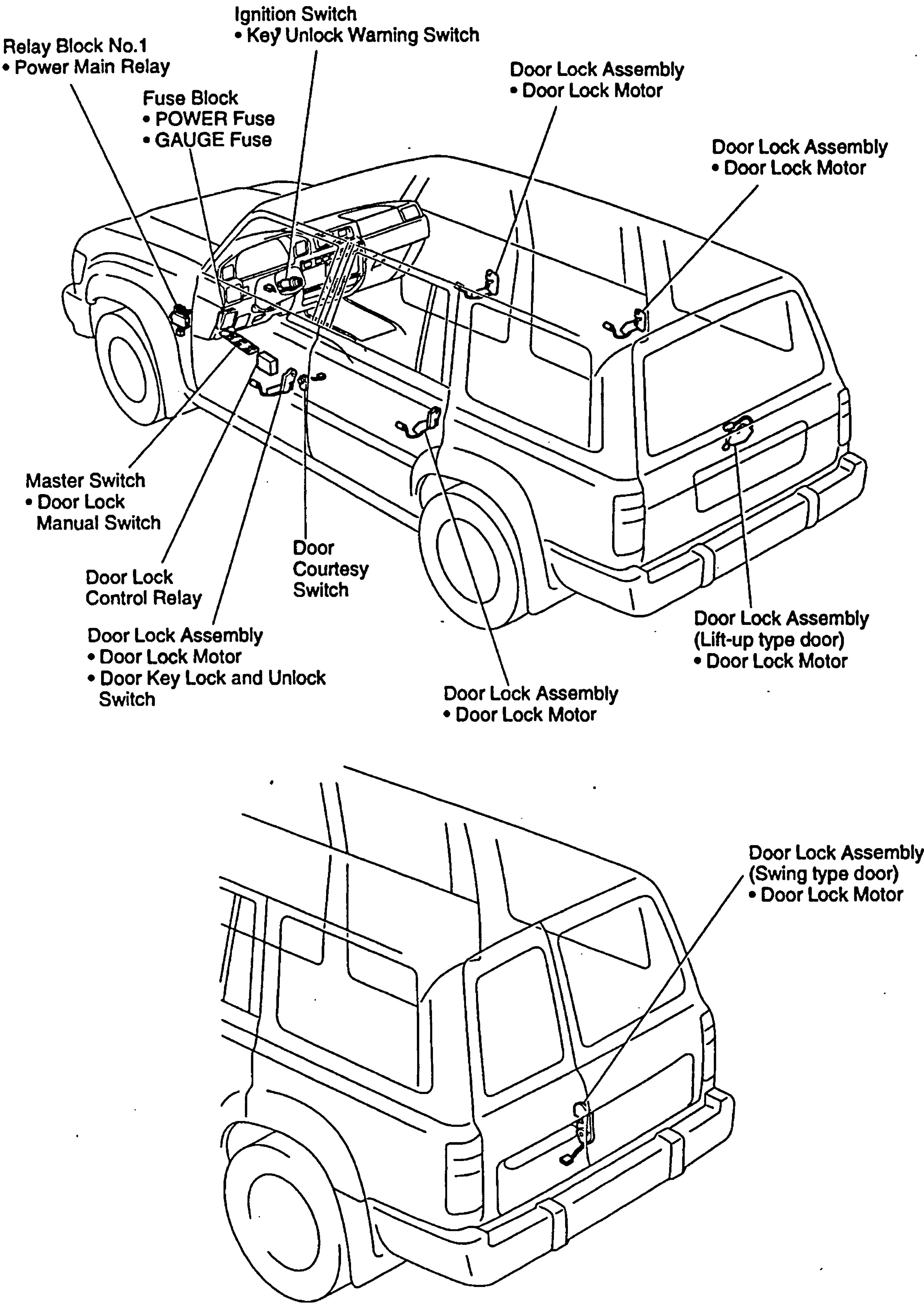
- Set the window lock switch to the unlock position.
- Connect the positive (+) lead from the battery to terminal 14 and the negative (—) lead to terminal 6, then check that all the illuminations light up.

If operation is not as specified, replace the master switch.

POWER DOOR LOCK CONTROL SYSTEM

PARTS LOCATION

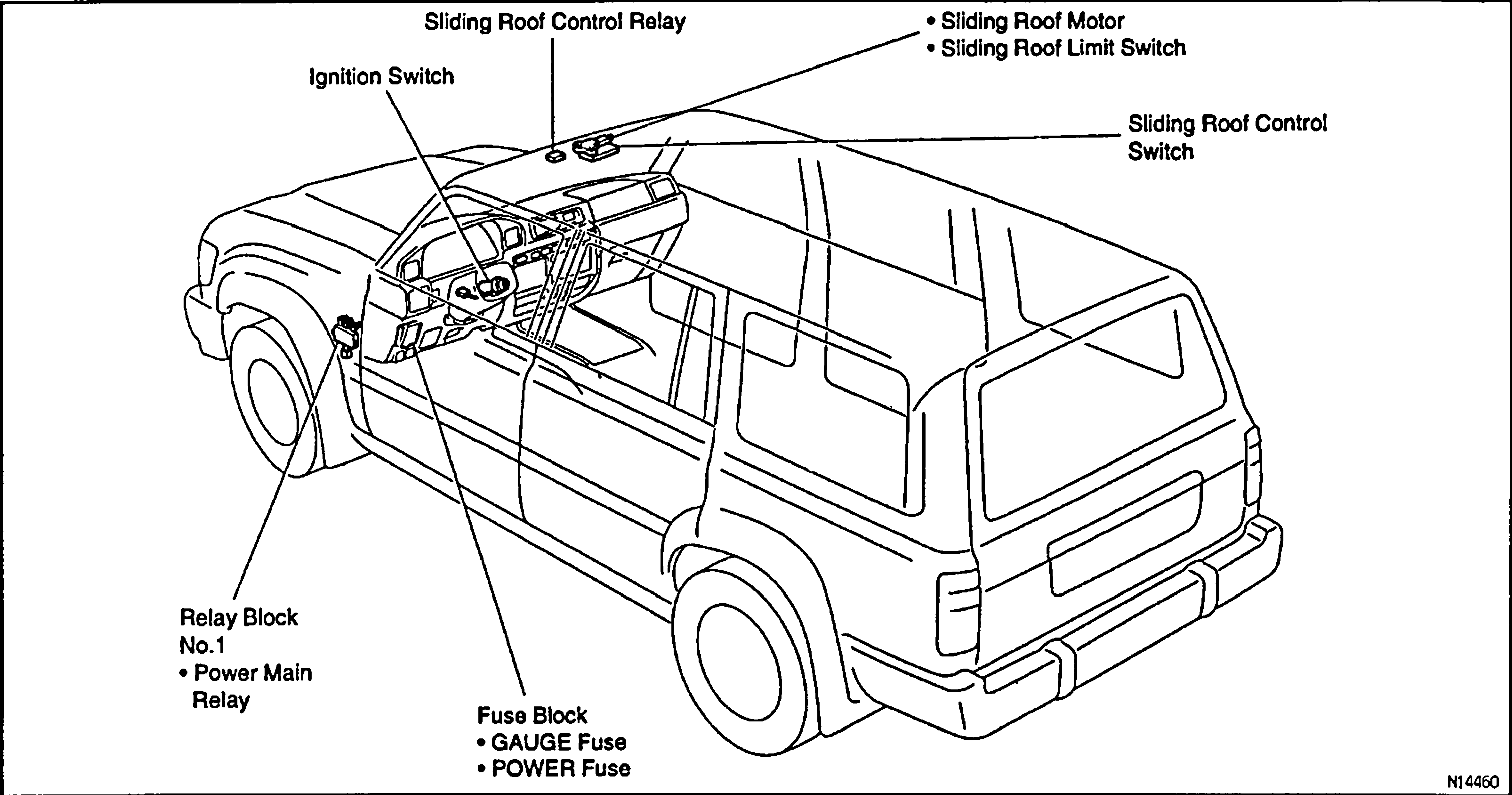
BE3MK-01



BE

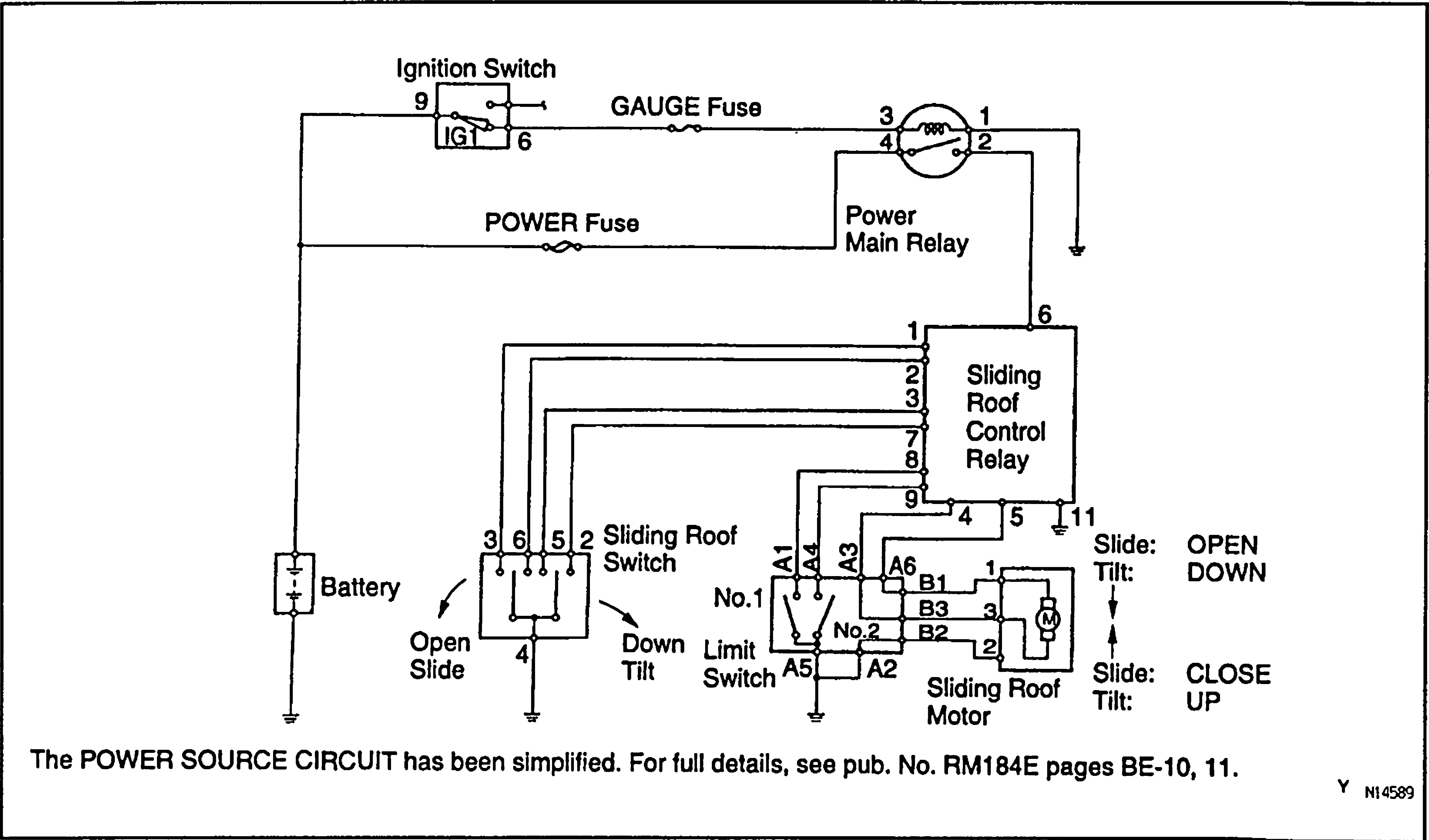
SLIDING ROOF SYSTEM
PARTS LOCATION

BE2ML-01



WIRING DIAGRAM

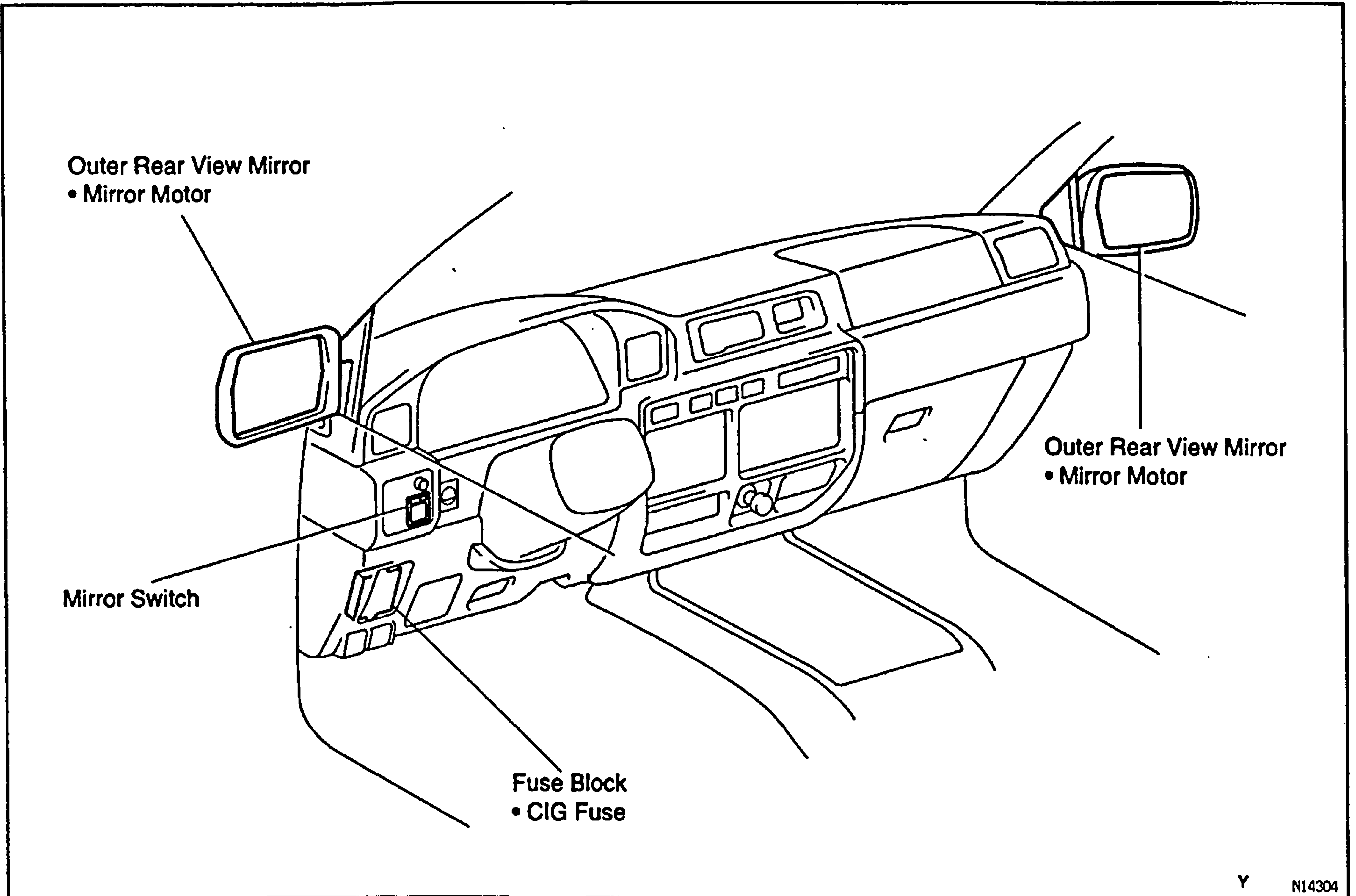
BE2MM-01



POWER MIRROR CONTROL SYSTEM

PARTS LOCATION

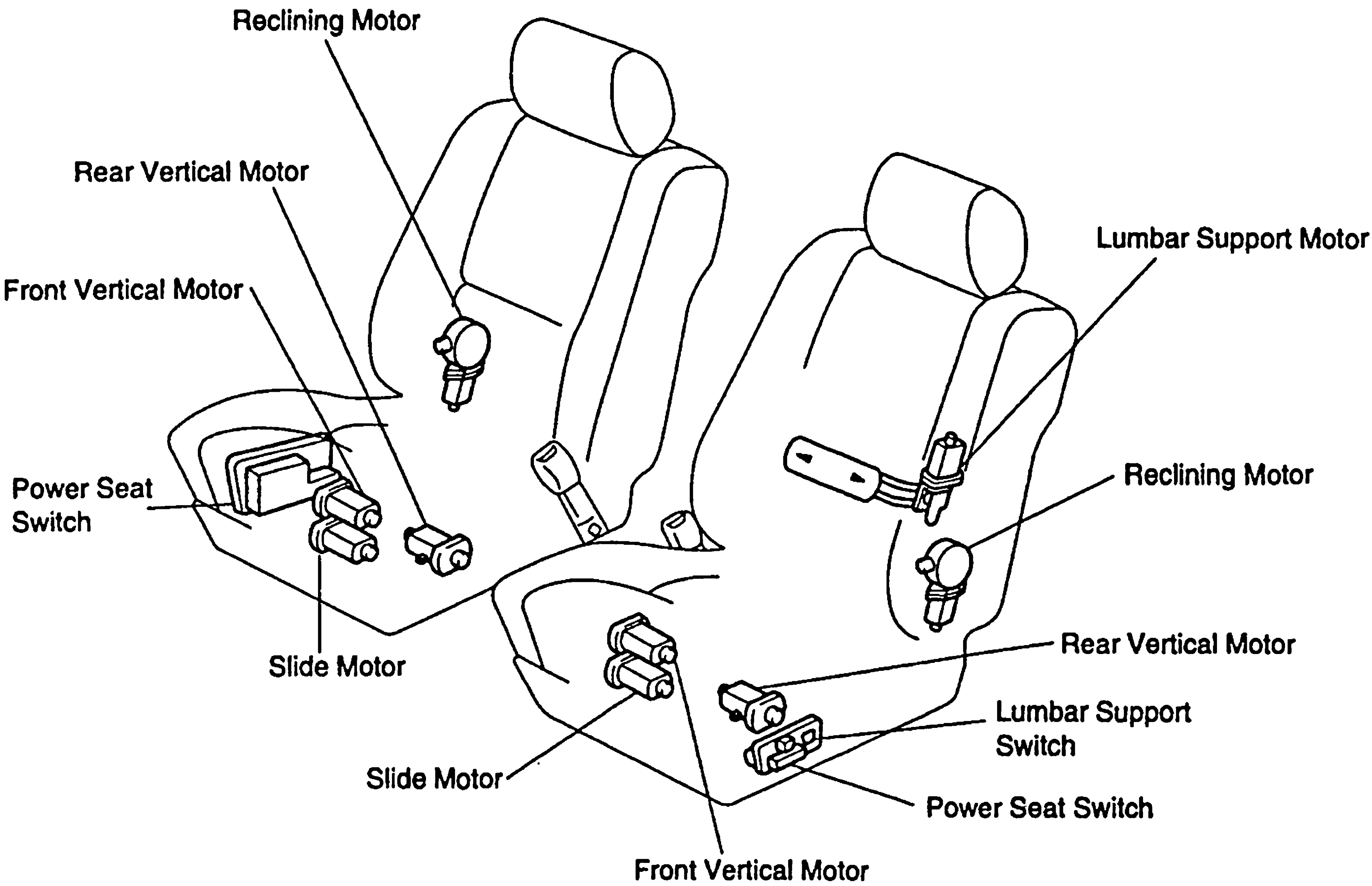
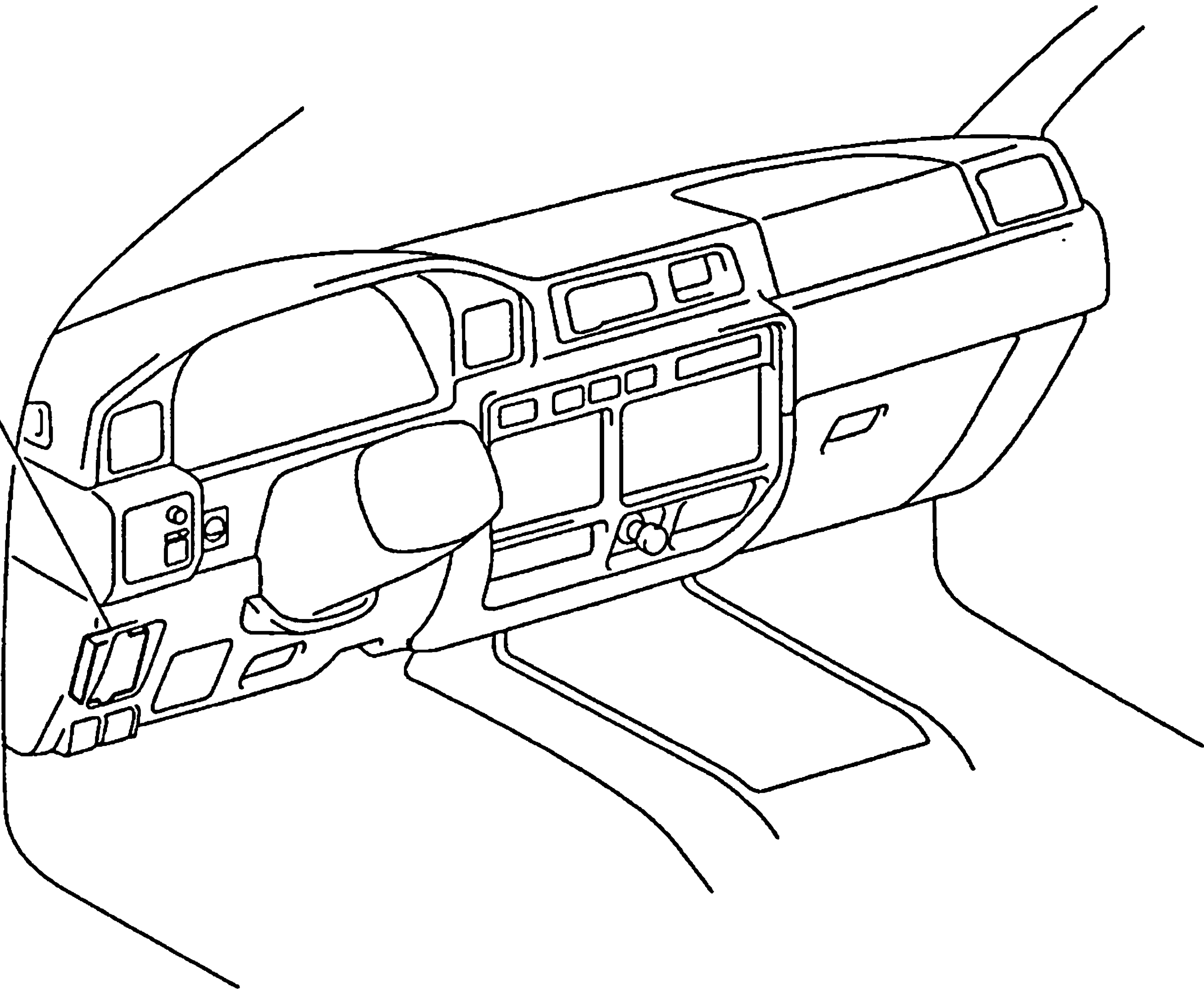
BE2MR-01



POWER SEAT CONTROL SYSTEM
PARTS LOCATION

BE2MP-01

Fuse Block
• POWER Fuse

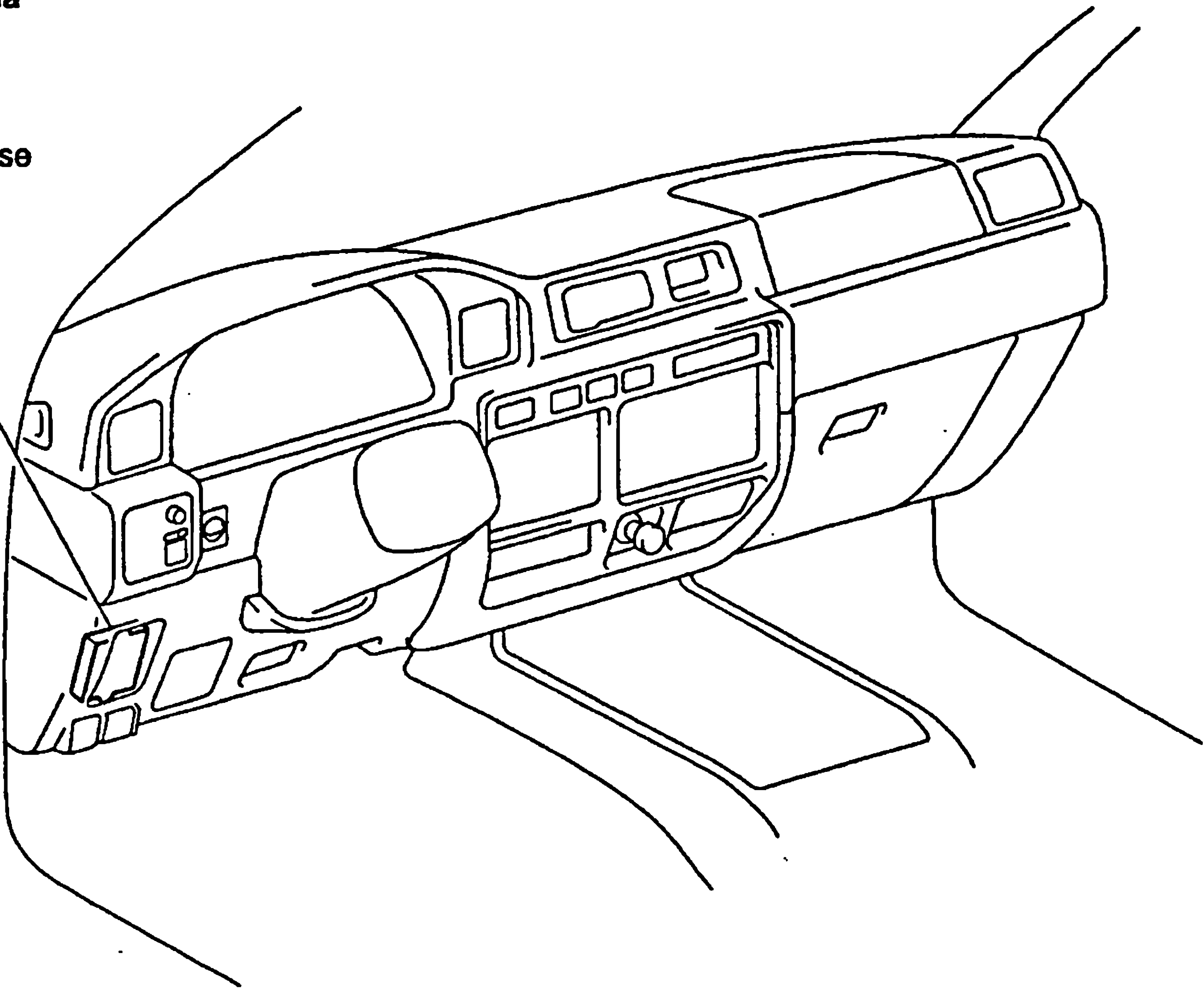


SEAT HEATER SYSTEM
PARTS LOCATION

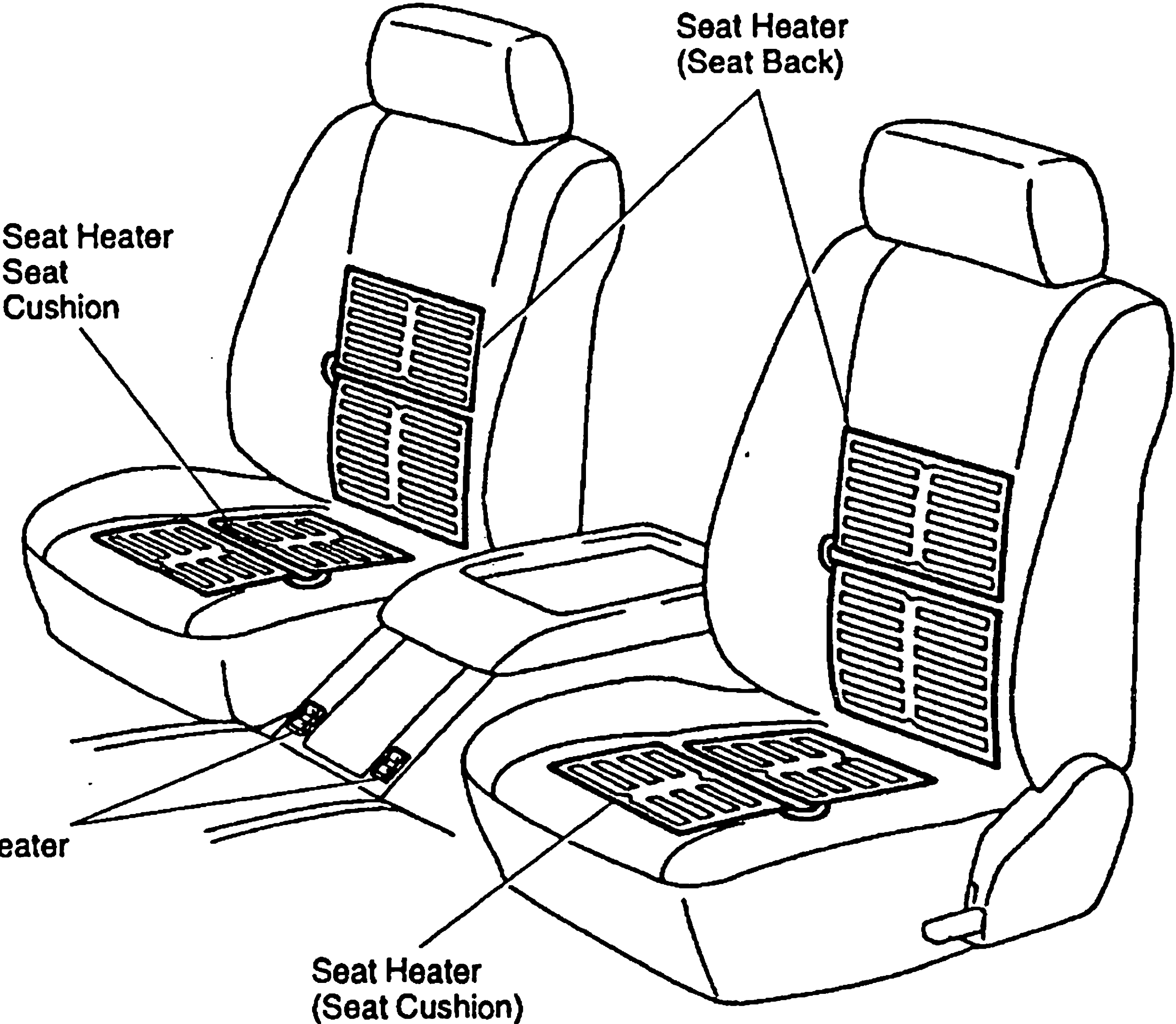
BE2MQ-01

Except G.C.C. and Australia

Fuse Block
• REAR-HTR Fuse

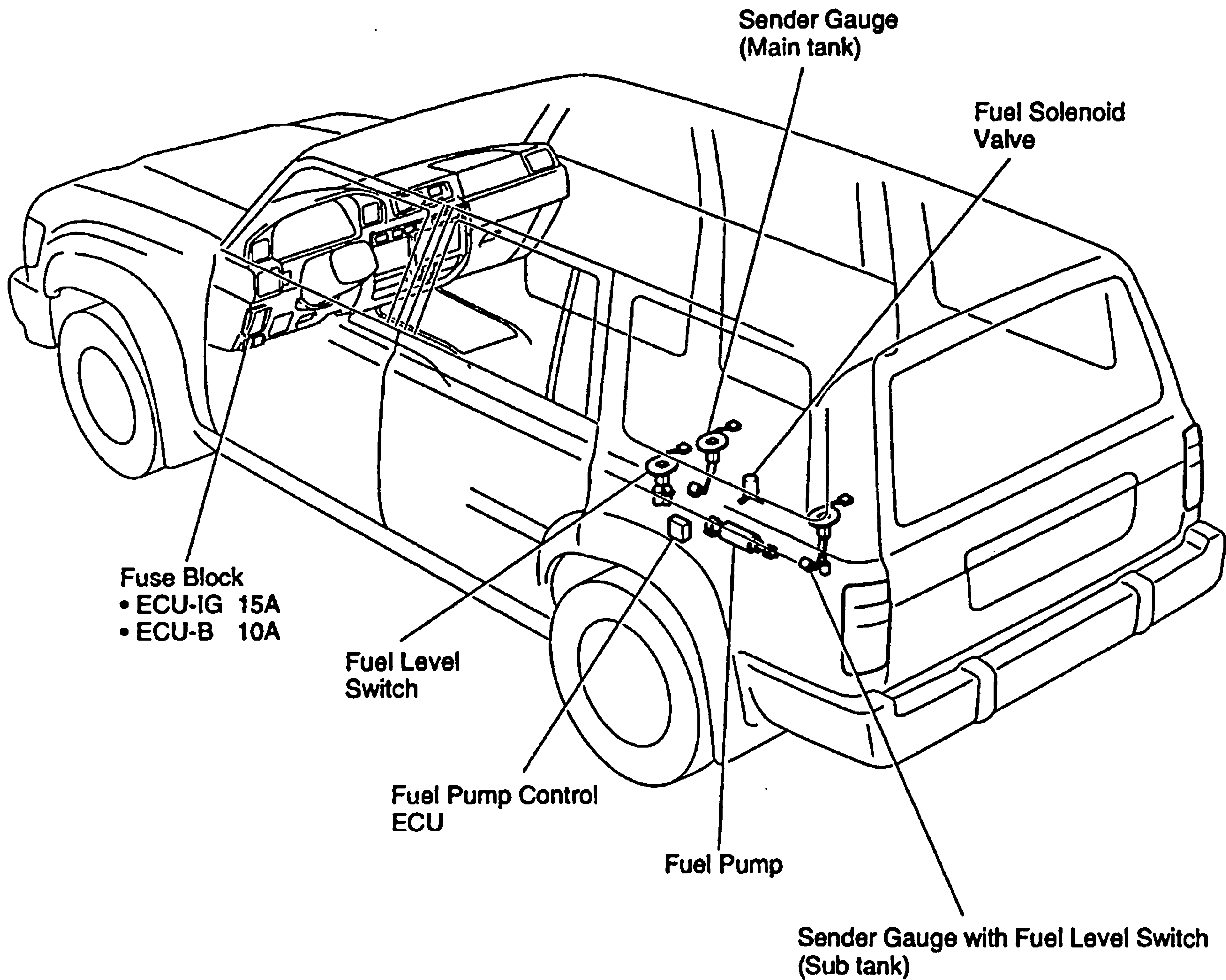


BE



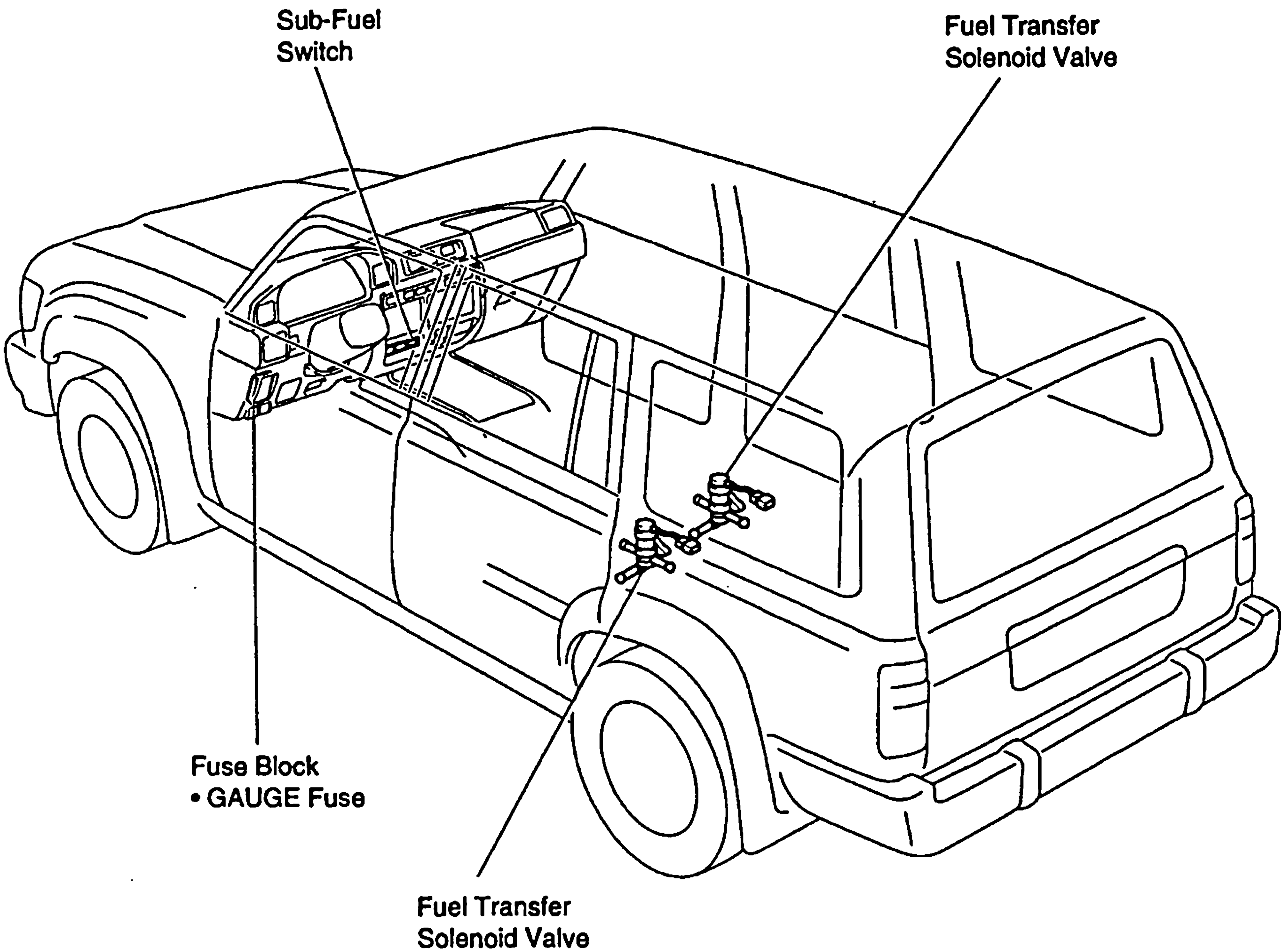
EXTRA (SUB) TANK SYSTEM
PARTS LOCATION
1FZ—FE Engine Only

DE2MR-01



FUEL TRANSFER SYSTEM
PATS LOCATION
Except 1FZ – FE Engine

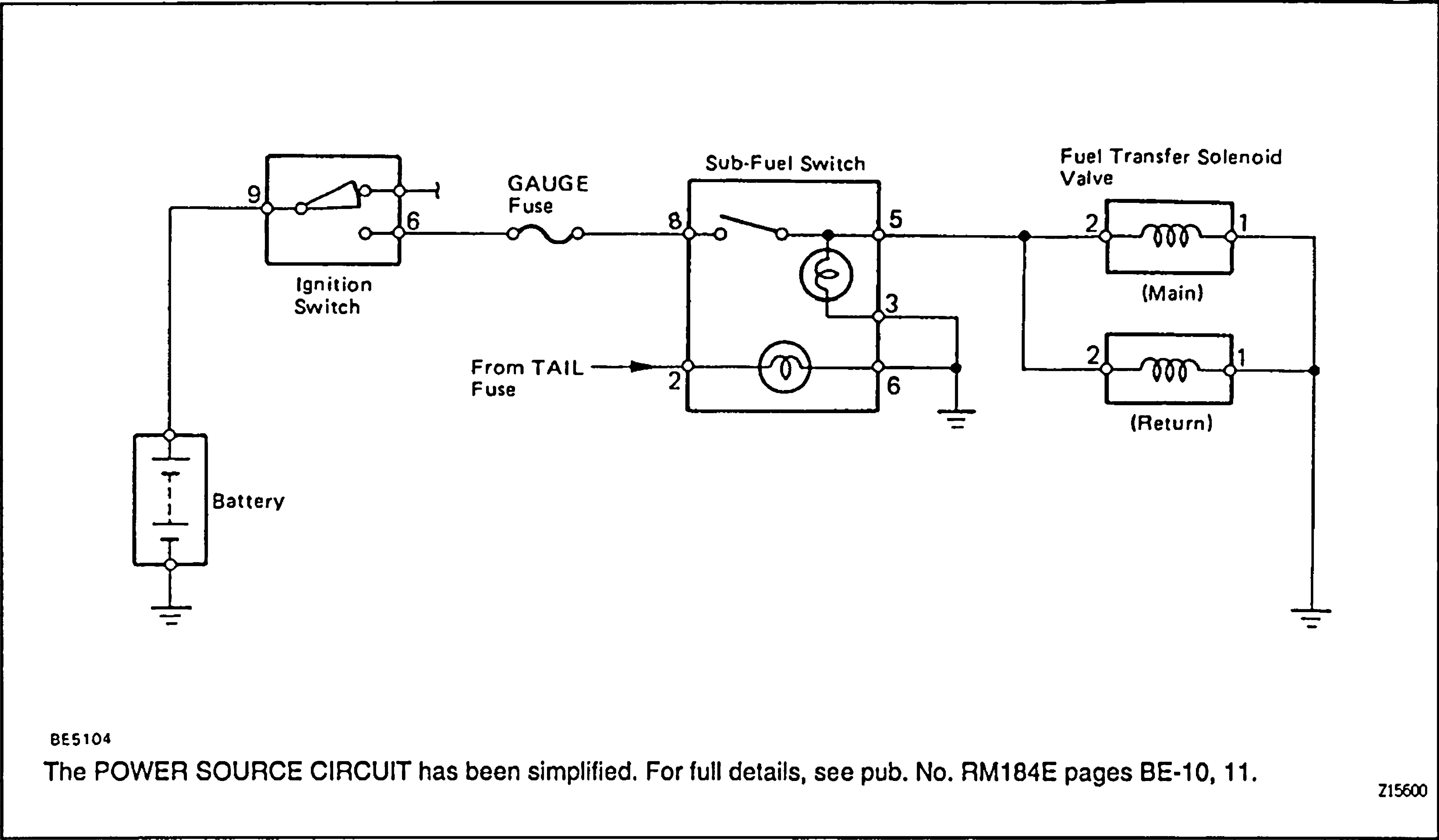
BE2M8-01



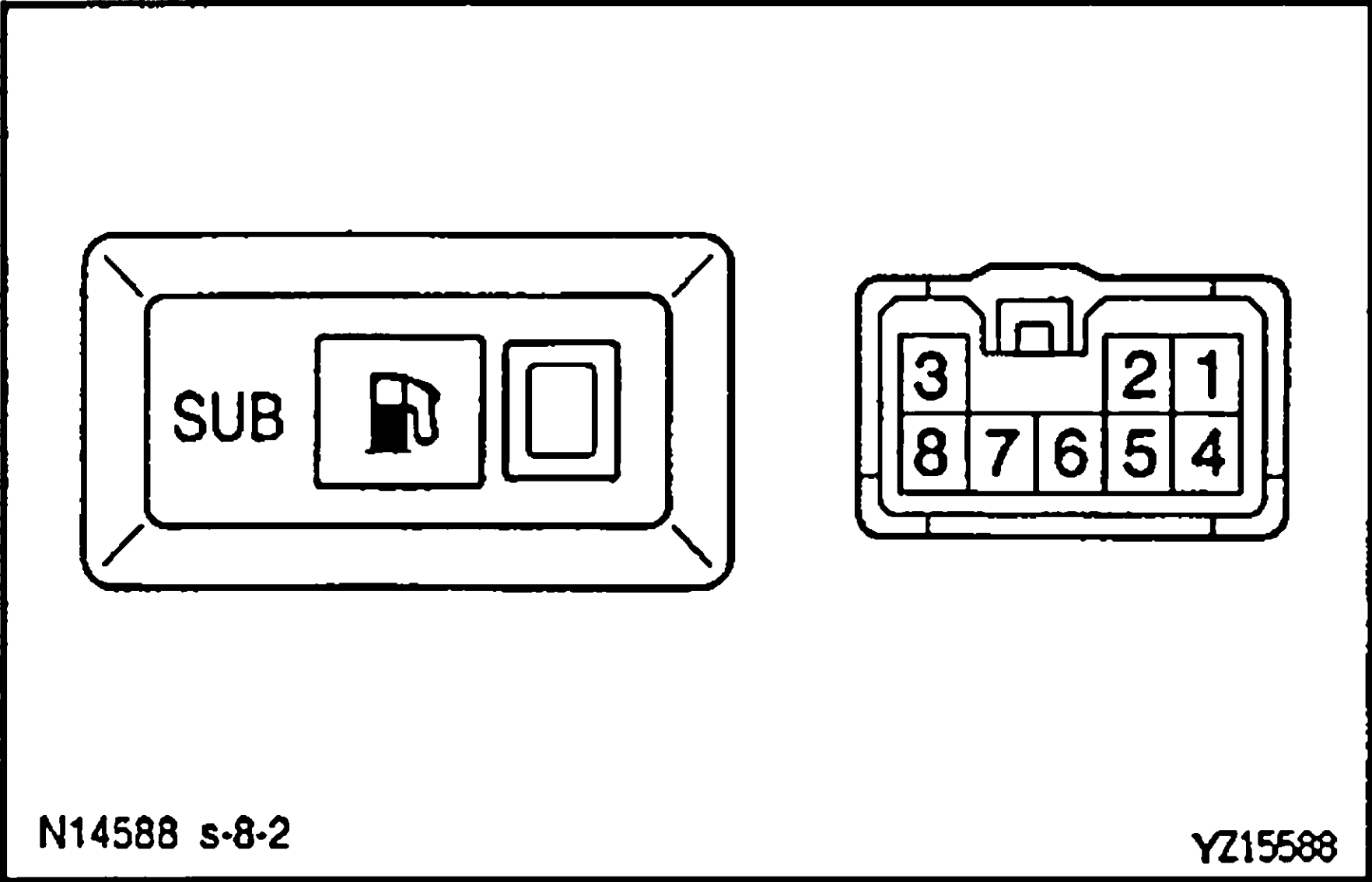
BE

Y

WIRING DIAGRAM



BE



SUB FUEL SWITCH INSPECTION

INSPECT SWITCH CONTINUITY

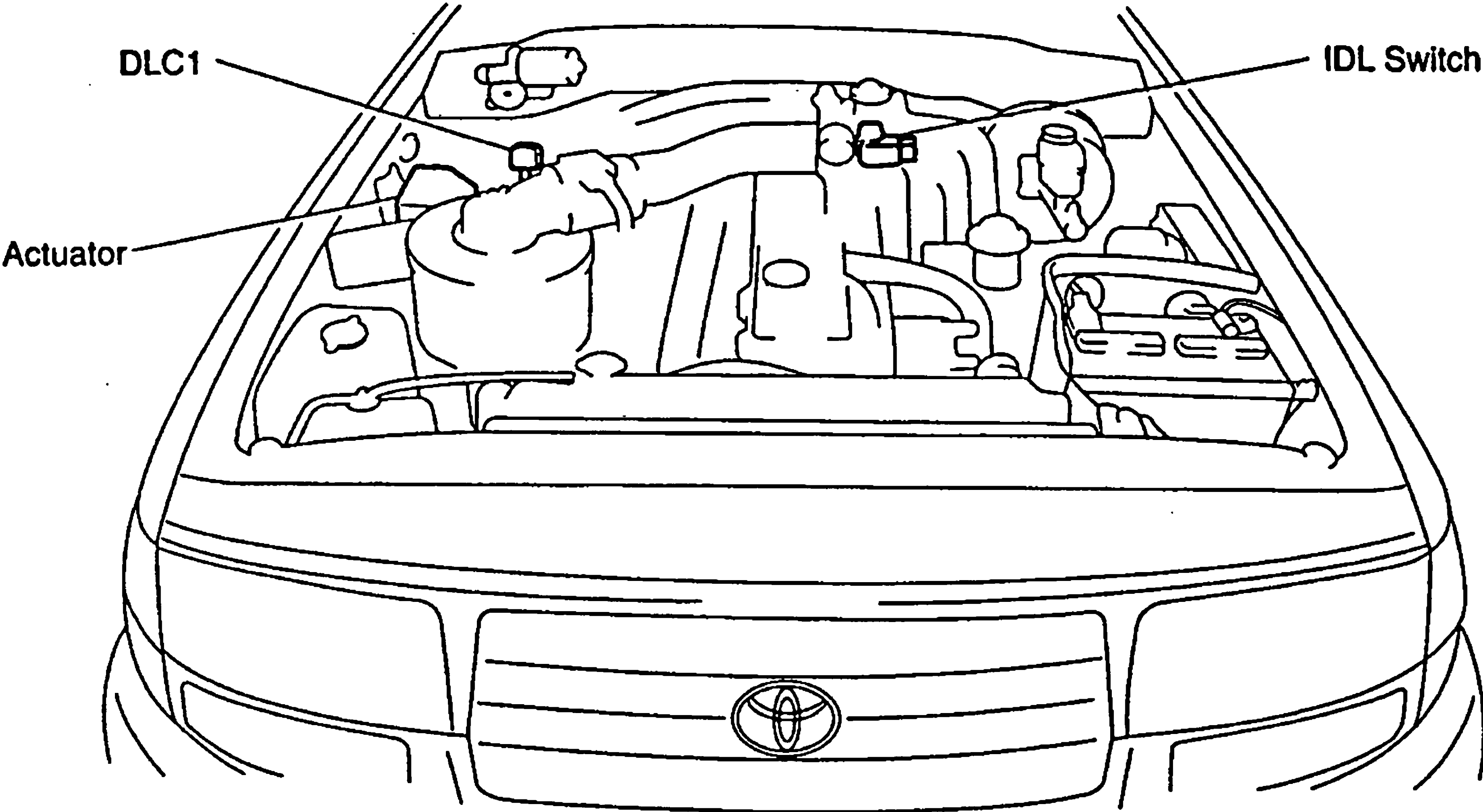
Switch position	Tester connection to terminal number	Specified condition
Free	—	No continuity
Pushed in	3 — 5 — 8	Continuity
Illumination circuit	2 — 6	Continuity
	3 — 5	

If continuity is not as specified, check the bulb or replace the switch.

CRUISE CONTROL SYSTEM
PARTS LOCATION

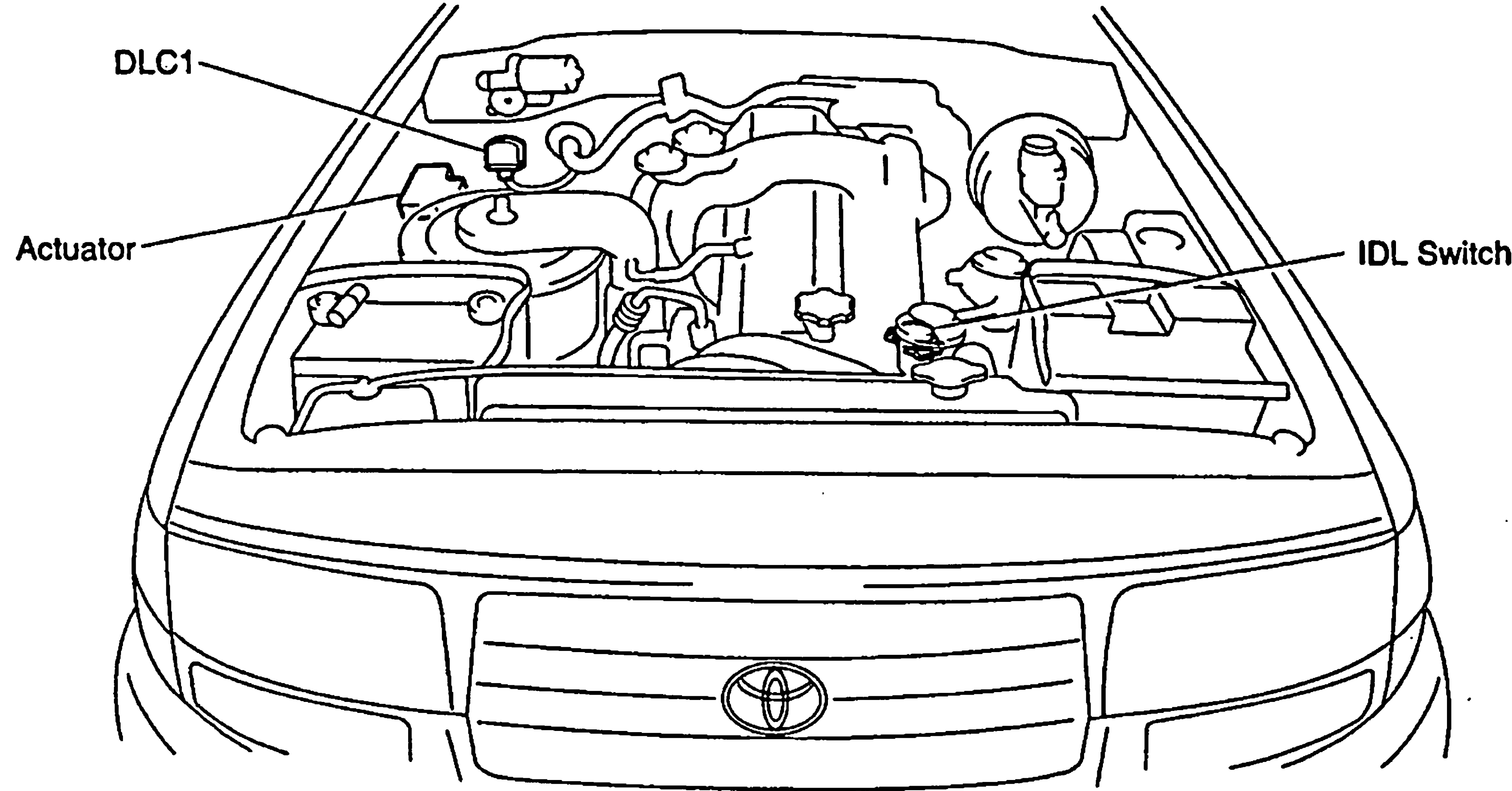
BE2MV-01

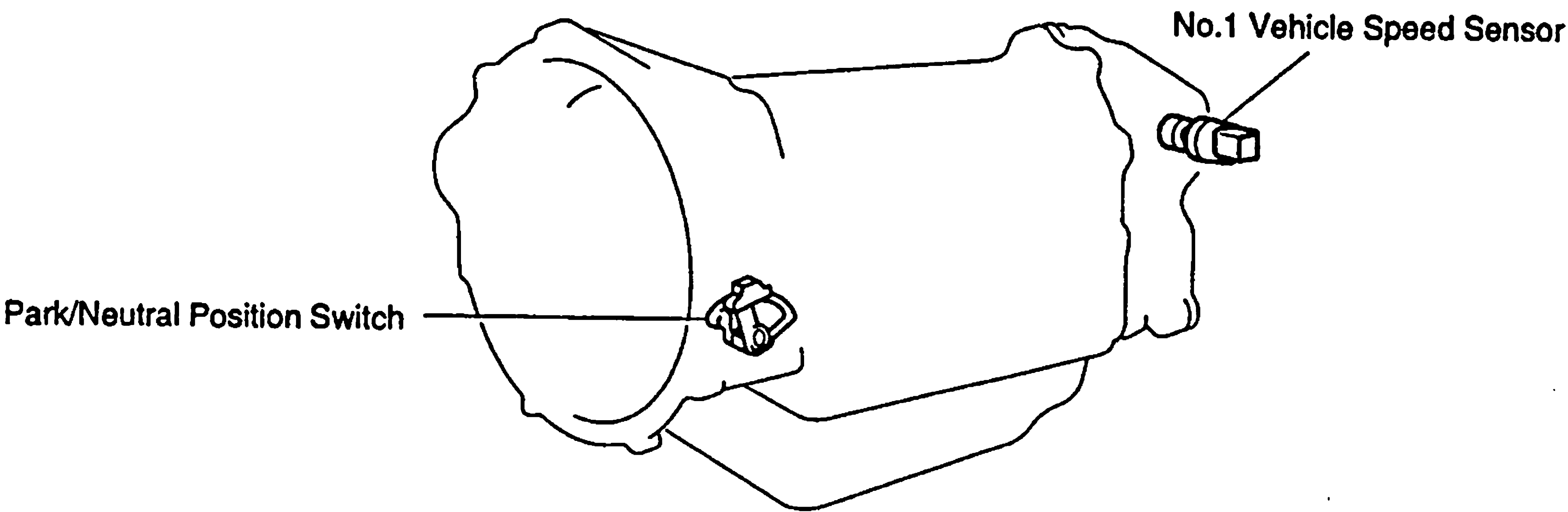
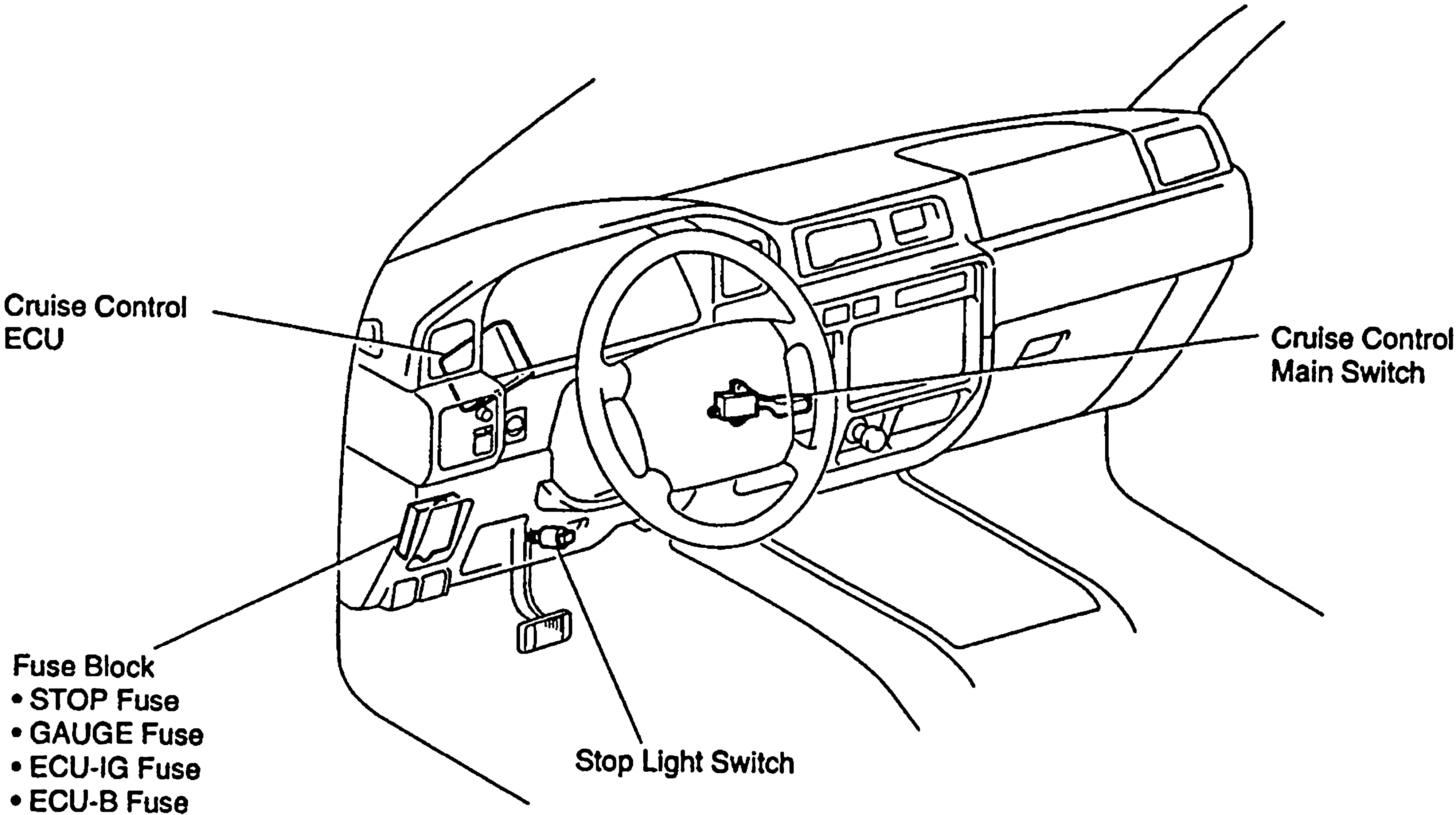
Gasoline Engine



BE

Diesel Engine

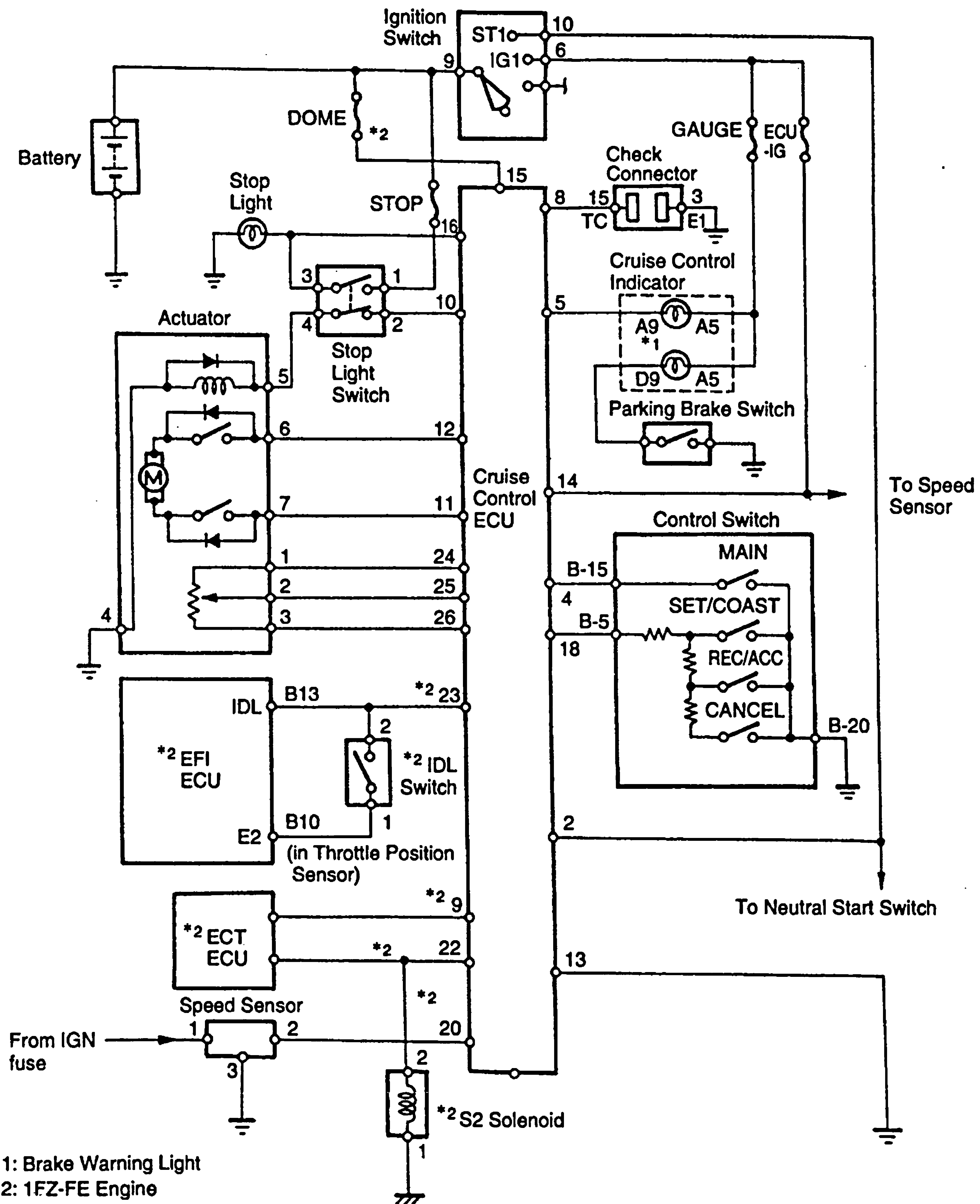




N14470
N14471

Y

WIRING AND CONNECTOR DIAGRAM



* 1: Brake Warning Light

* 2: 1FZ-FE Engine

[]: Combination Meter

The POWER SOURCE CIRCUIT has been simplified. For full details, see pub. No. RM184E, pages BE-10, 11.

Y

N14485

TROUBLESHOOTING

B CRUISE CONTROL INDICATOR CIRCUIT

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



CC: Cruise Control
(): Europe

CRUISE CONTROL MAIN SWITCH
INSPECTION

INSPECT SWITCH

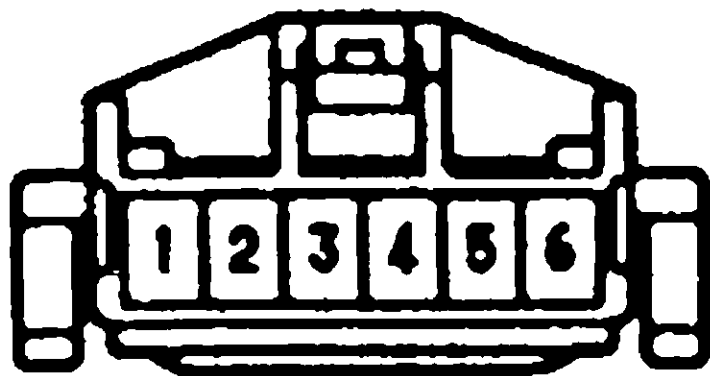
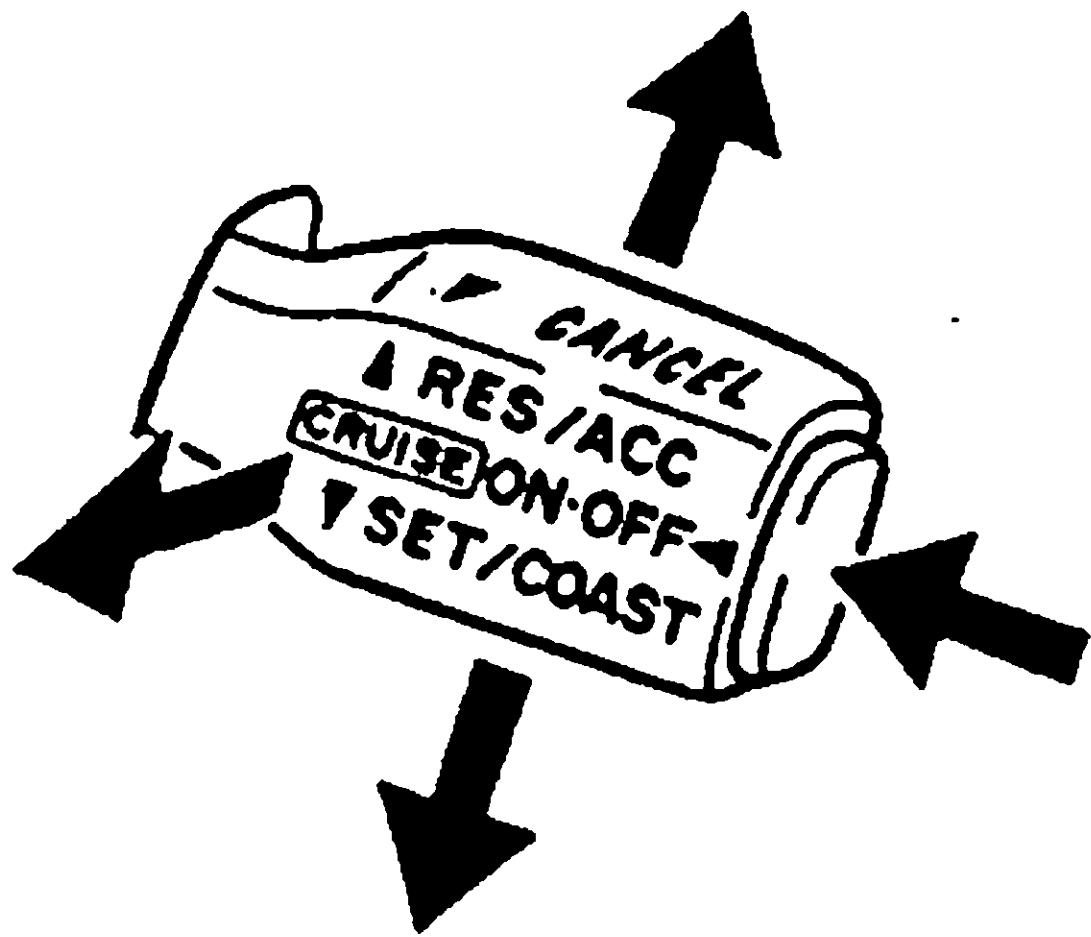
(a) Check continuity between terminals 3 and 5.

Switch position	Condition
OFF	No continuity
ON	Continuity

(b) Measure resistance between terminals 3 and 4.

Switch position	Resistance (Ω)
OFF	No continuity
RES/ACC	Approx. 68
SET/COAST	Approx. 198
CANCEL	Approx. 418

If resistance value is not as specified, replace the control switch.

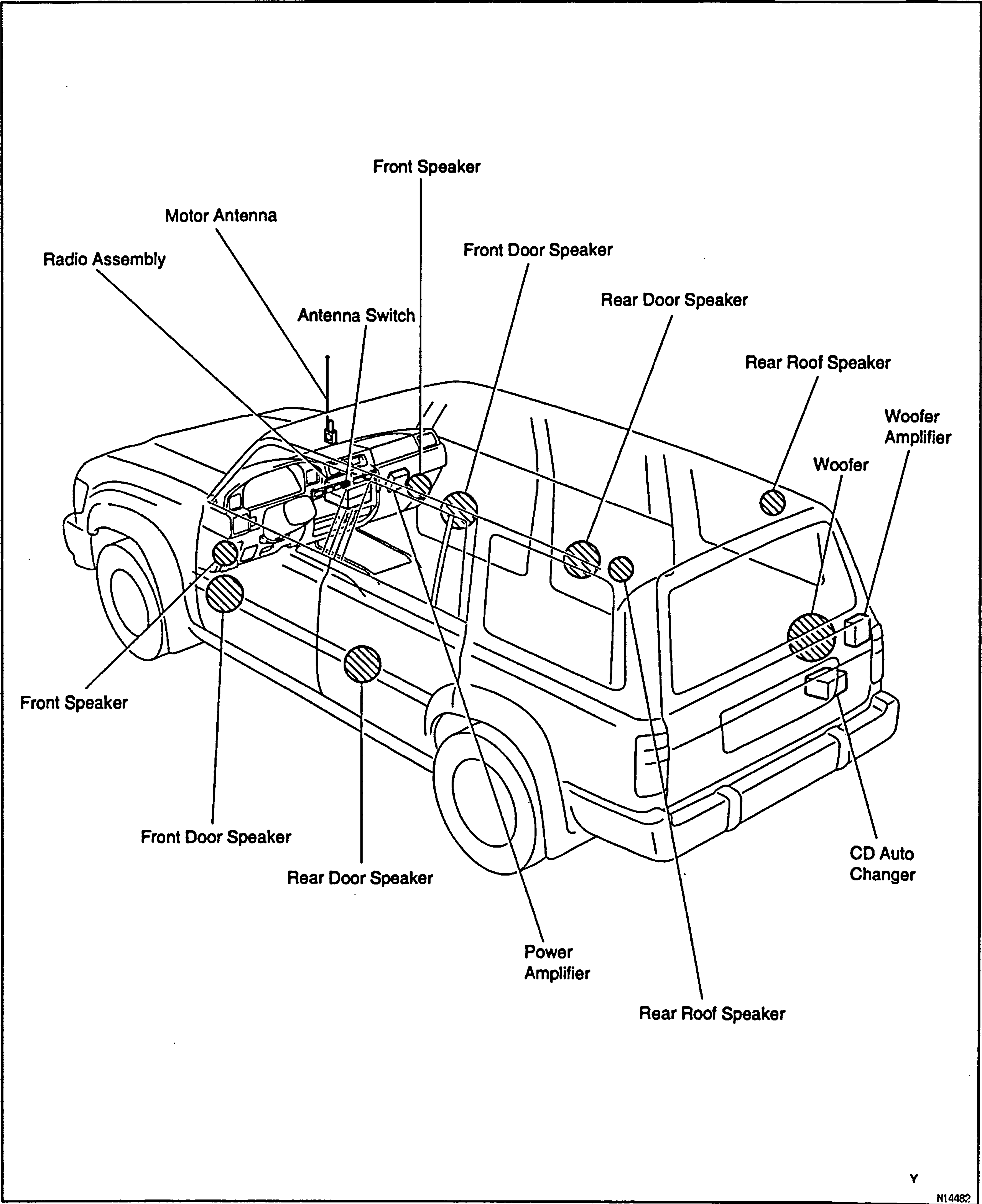


N09819
e-6-1-C

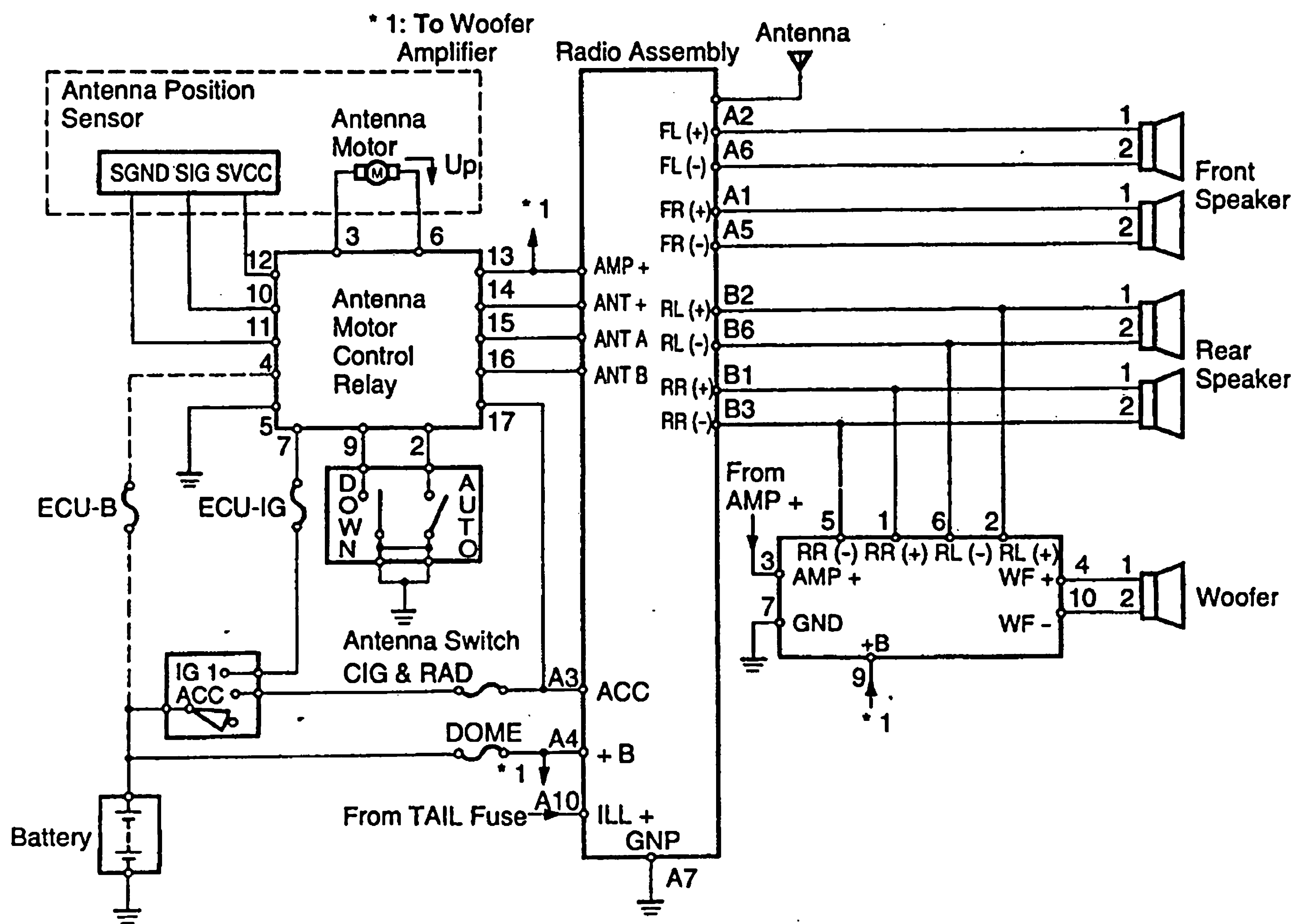
Z10385

AUDIO SYSTEM
PARTS LOCATION

8E2M2-01

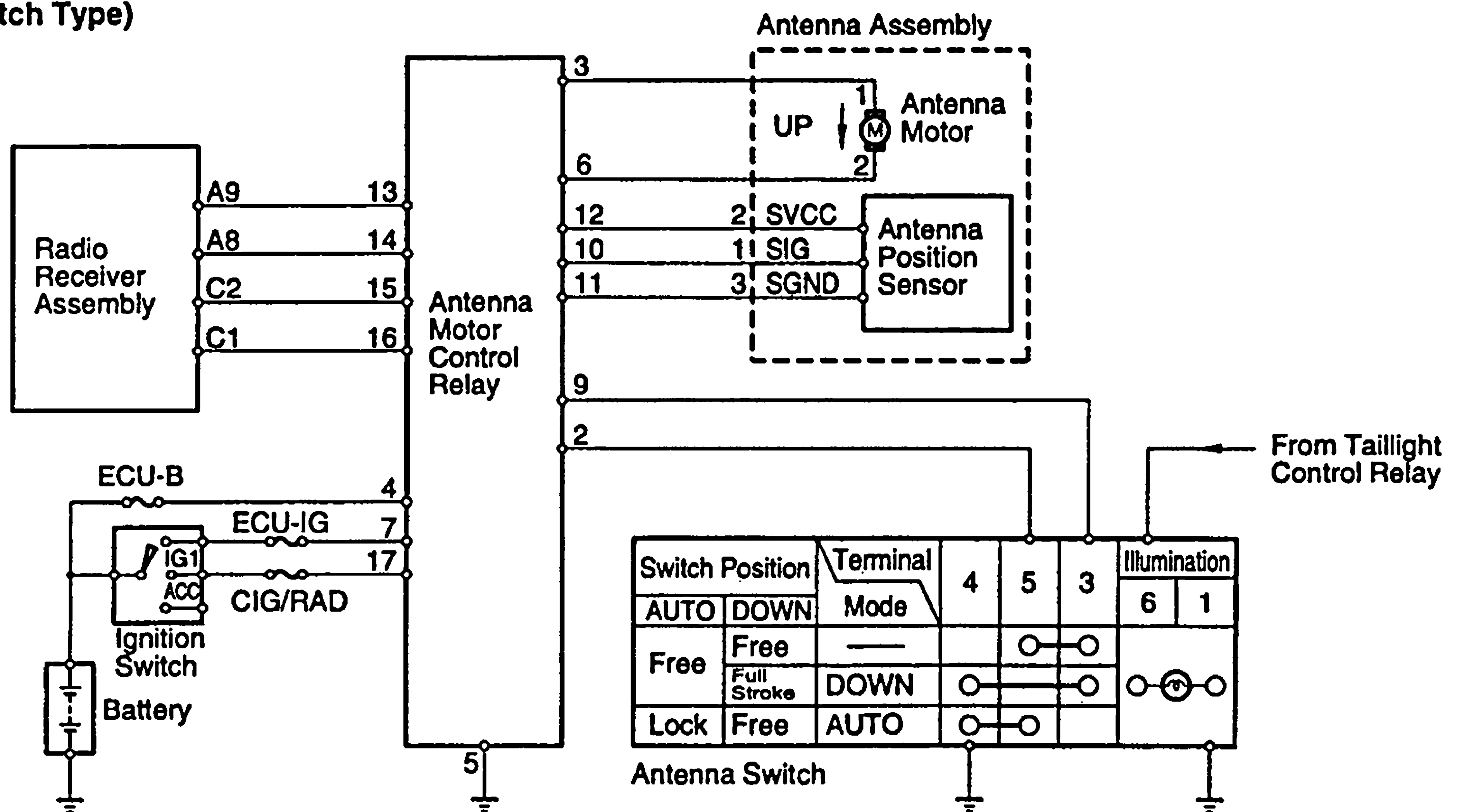


WIRING AND CONNECTOR DIAGRAM

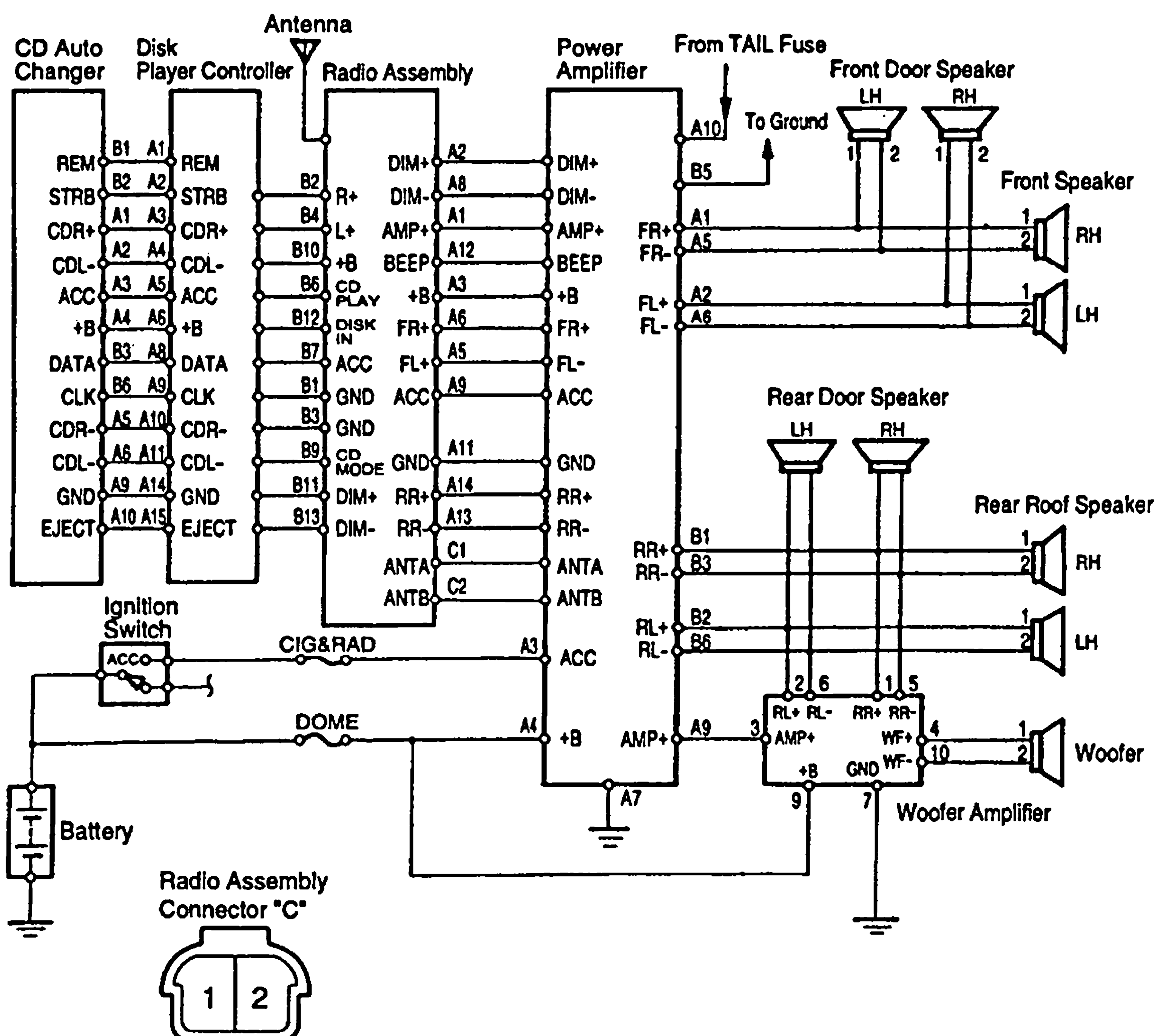
Radio-Tape Player, 5 Speaker, w/Radio Linked Motor Antenna: Symbol U

The POWER SOURCE CIRCUIT has been simplified. For full details, see pub. No. RM184E, pages BE-10, 11.

**Motor Antenna
(w/ Auto Switch Type)**



Radio-Tape Player, 9 Speaker + CD Auto Changer: Symbol A



The POWER SOURCE CIRCUIT has been simplified. For full details, see pub. No. RM184E, page BE-10, 11.

TROUBLESHOOTING

NOTICE: When replacing the internal mechanism (computer part) of the audio system, be careful that no part of your body or clothing comes in contact with the terminals of the leads from the IC, etc. of the replacement part (spare part).

HINT: This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

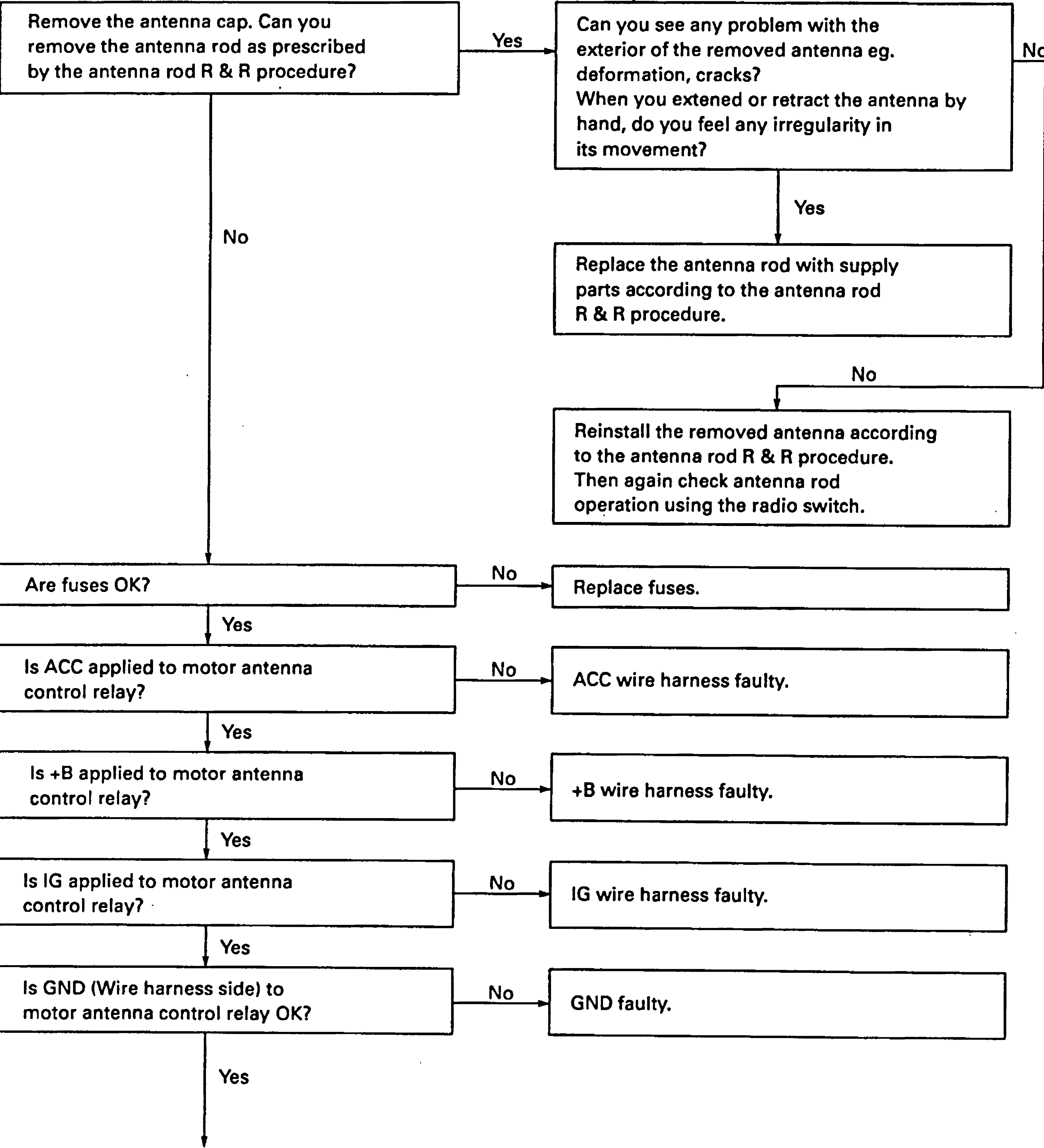
Always inspect the trouble taking the following items into consideration.

- Open or short circuit of the wire harness
- Connector or terminal connection fault
- For audio systems with anti-theft system, troubleshooting items marked (*) indicate that "Troubleshooting for ANTI-THEFT SYSTEM" should be carried out first.

	Problem	No.
Radio	No power coming in.	*1
	Power coming in, but radio not operating.	*2
	Noise present, but AM — FM not operating.	3
	Either speaker does not work.	4
	Either AM or FM does not work.	5
	Reception poor (Volume faint).	5
	Few preset tuning bands.	5
	Sound quality poor.	6
	Auto—Radio Information (ARI) not received.	7
	Cannot set station select button.	8
	Preset memory disappears.	8
Tape Player	Cassette tape cannot be inserted.	9
	Cassette tape inserts, but no power.	*10
	Power coming in, but tape player not operating.	11
	Either speaker does not work.	12
	Sound quality poor (Volume faint).	13
	Tape jammed, malfunction with tape speed or auto—reverse.	14
	APS, SKIP, RPT buttons not operating.	15
CD Player	Cassette tape will not eject.	*16
	CD cannot be inserted.	17
	CD inserts, but no power.	18
	Power coming in, but CD player not operating.	19
	Sound jumps.	20
	Sound quality poor (Volume faint).	21
	Either speaker does not work.	22
CD Auto Changer	CD will not eject.	23
	Magazine cannot be inserted into CD auto changer.	24
	Magazine inserts, but no power.	25
	Power coming in, but CD auto changer not operating.	26
	Sound jumps.	27
	Sound quality poor (Volume faint).	28
	Any speaker does not work.	29
CD Auto Changer (Cont'd)	Woofer speaker does not work.	30
	Magazine will not eject.	31

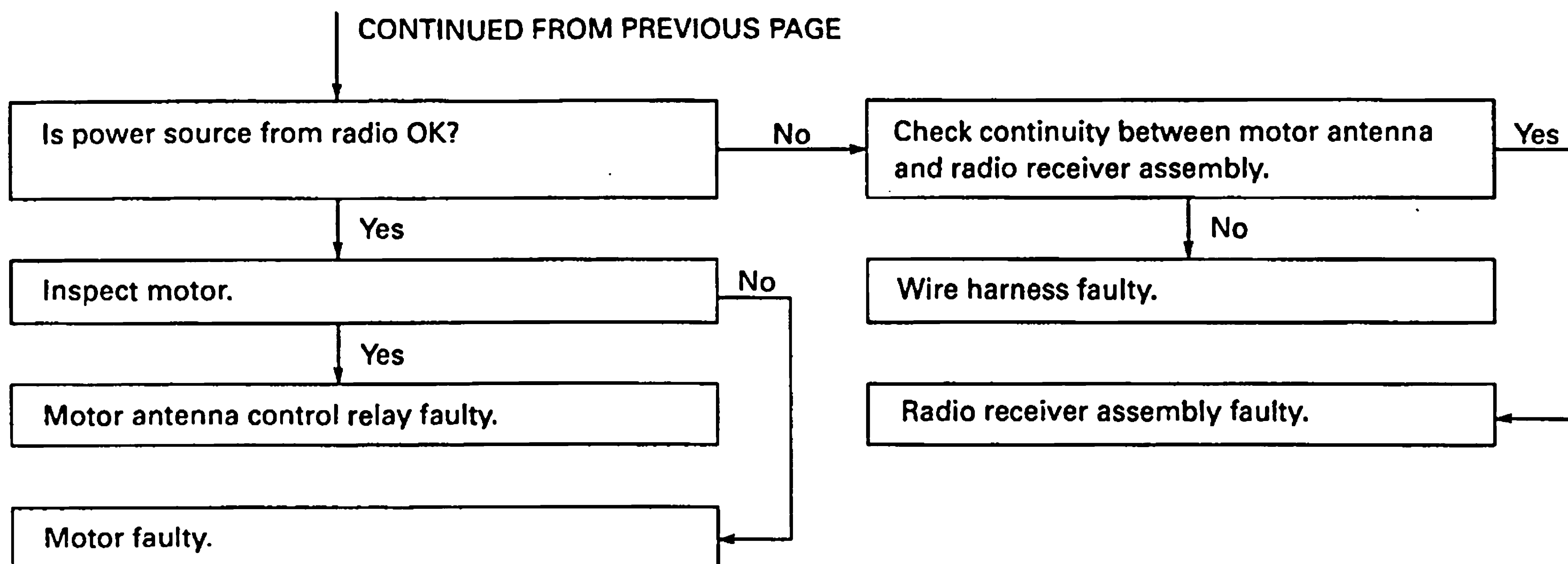
Antenna	Antenna dose not fully extend or fully retract	32
	Antenna — related.	33
Noise	Noise produced by vibration or shock while driving.	34
	Noise produced when engine starts.	35

32	Antenna	ANTENNA DOES NOT FULLY EXTENDED OR FULLY RETRACT
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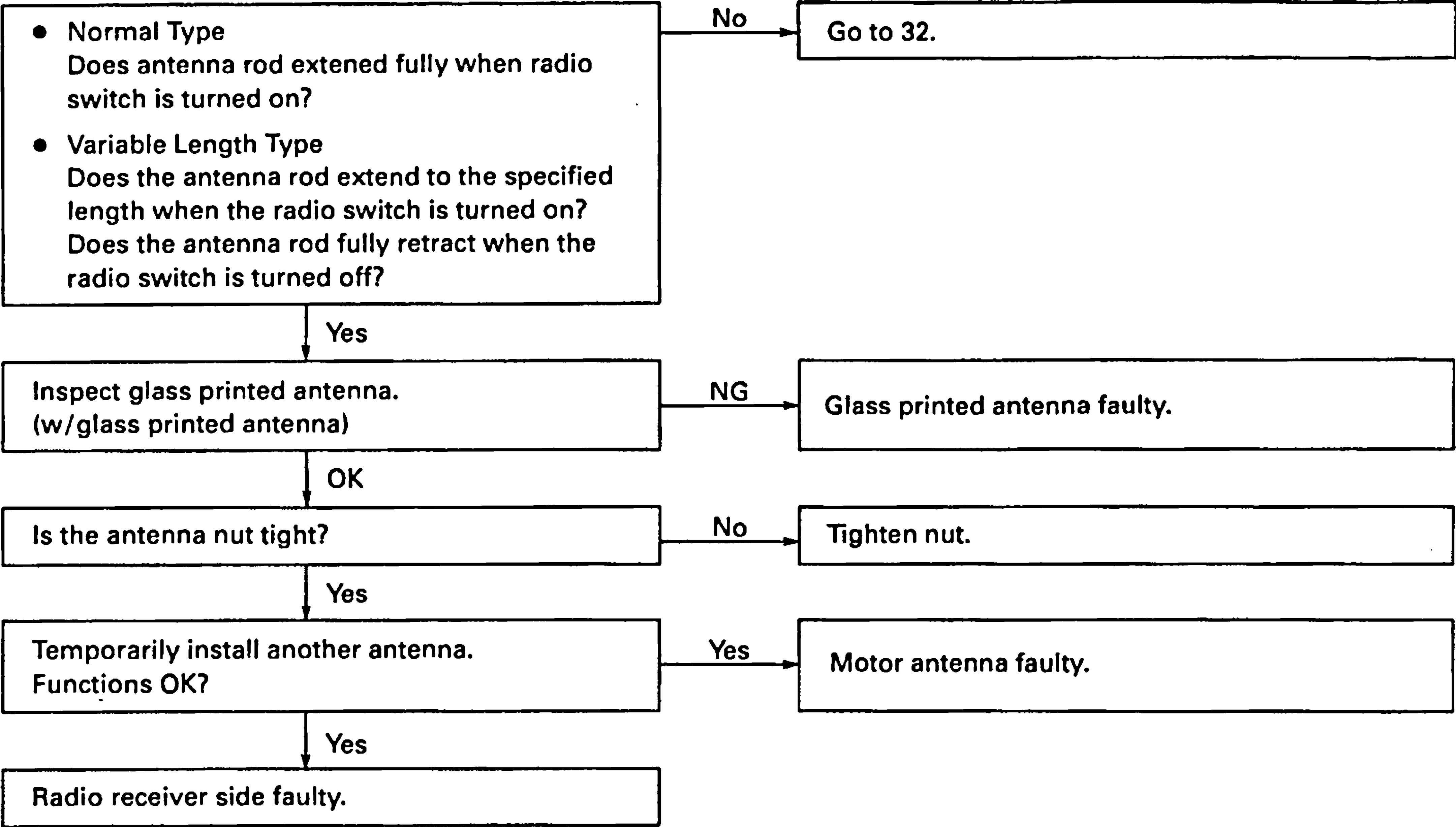
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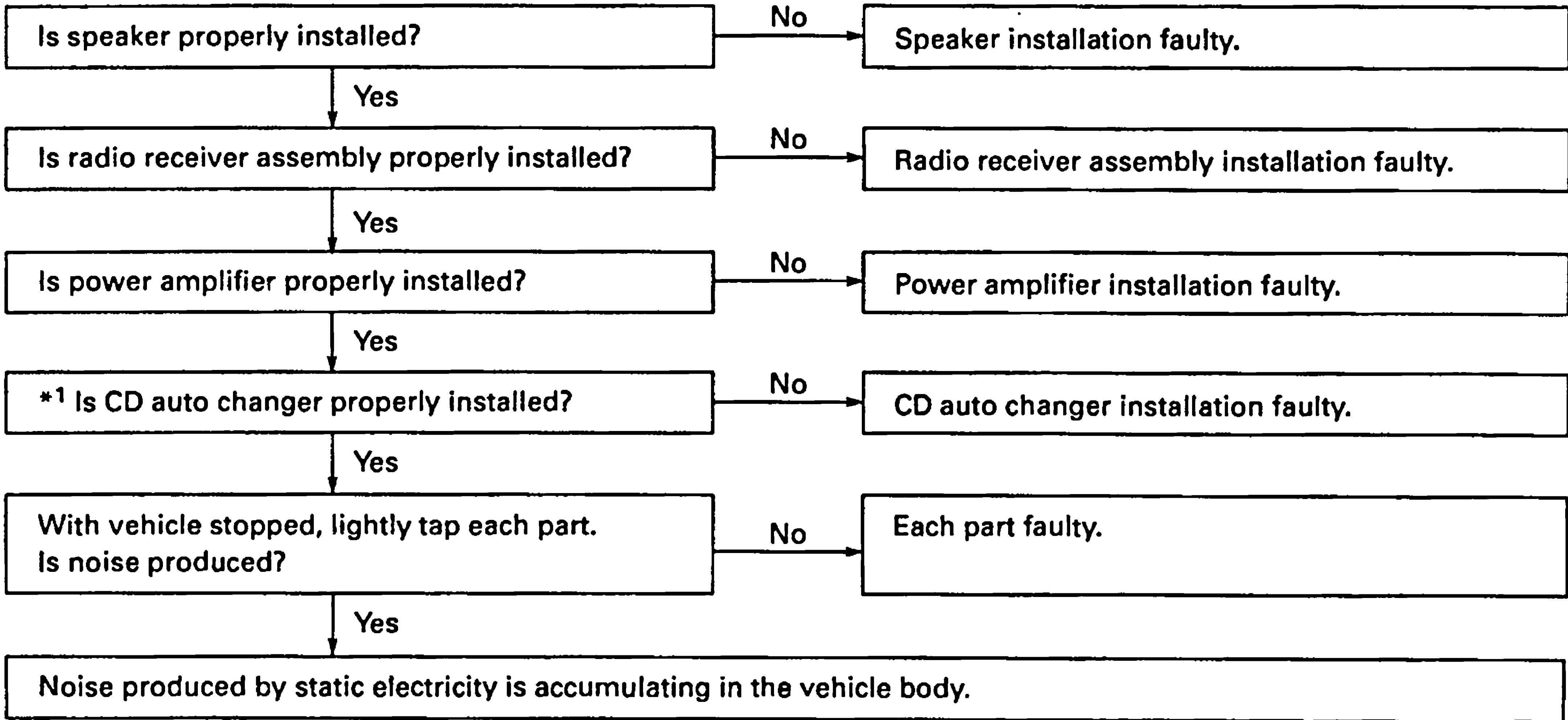


V06672

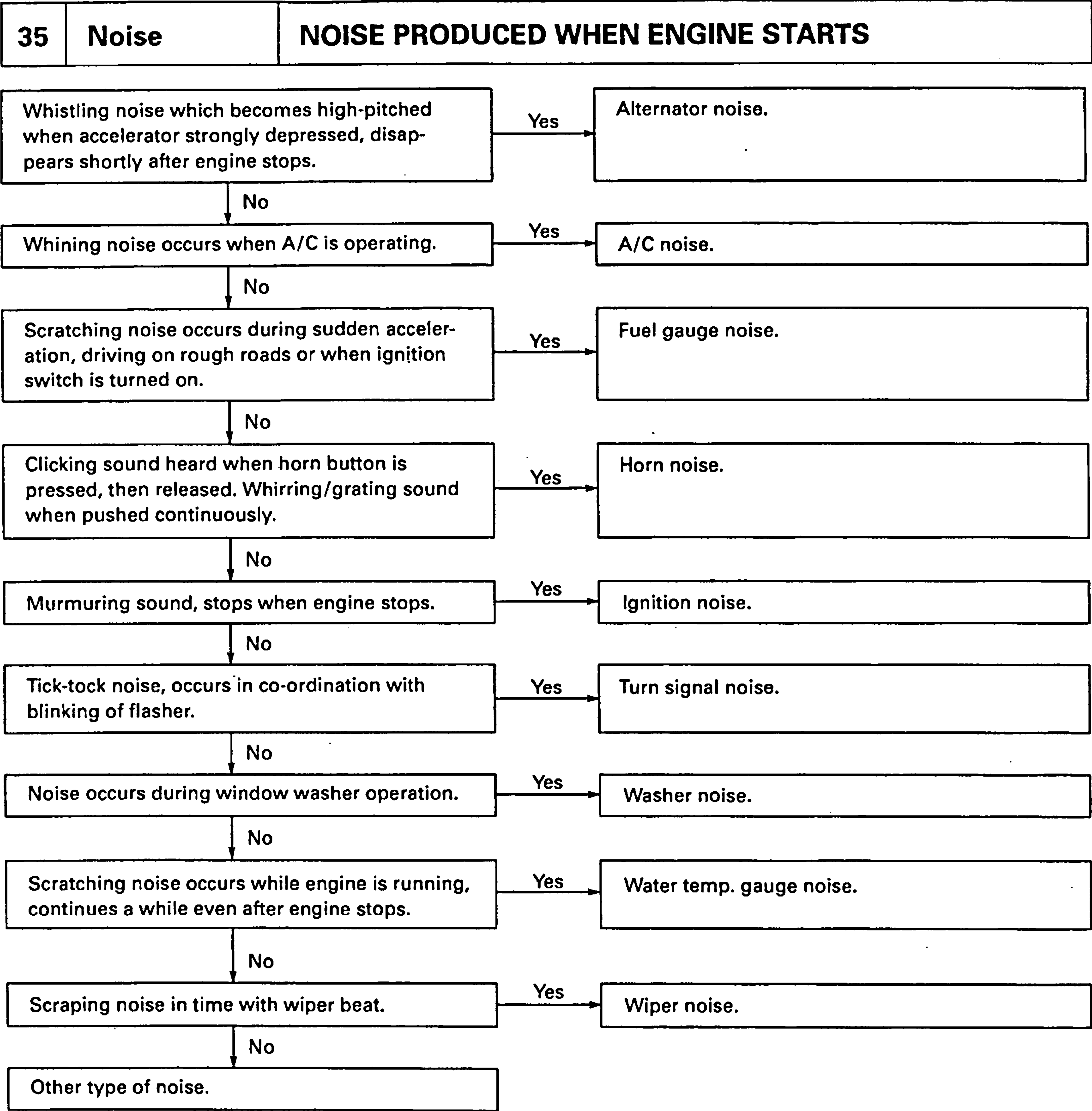
33	Antenna	ANTENNA-RELATED
----	---------	-----------------



34	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING
----	-------	--



*1: only for vehicles with CD player.



BE

ANTENNA SWITCH INSPECTION

1. w/ Motor Antenna:
INSPECT SWITCH CONTINUITY
w/o AUTO Switch Type:

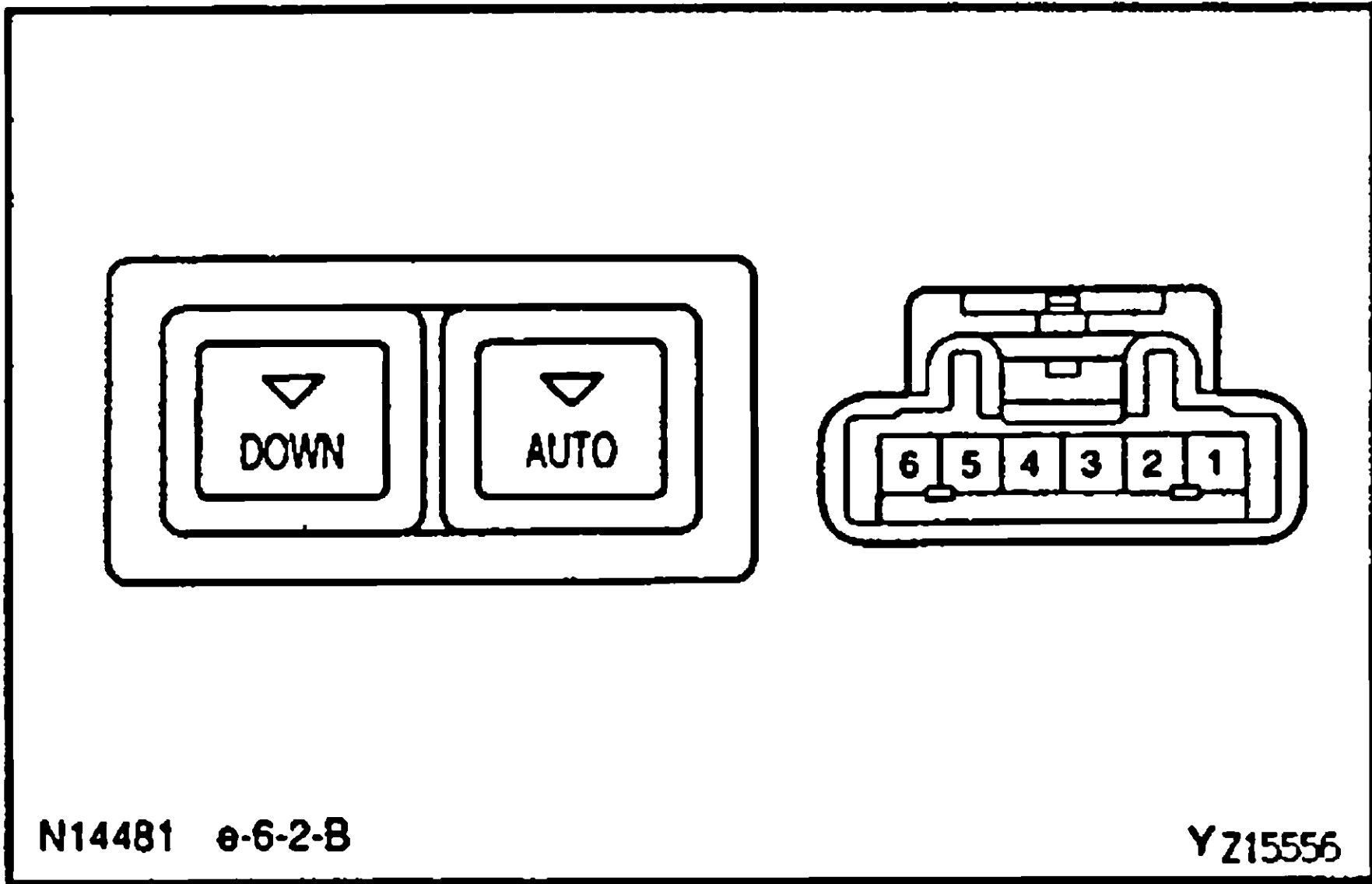
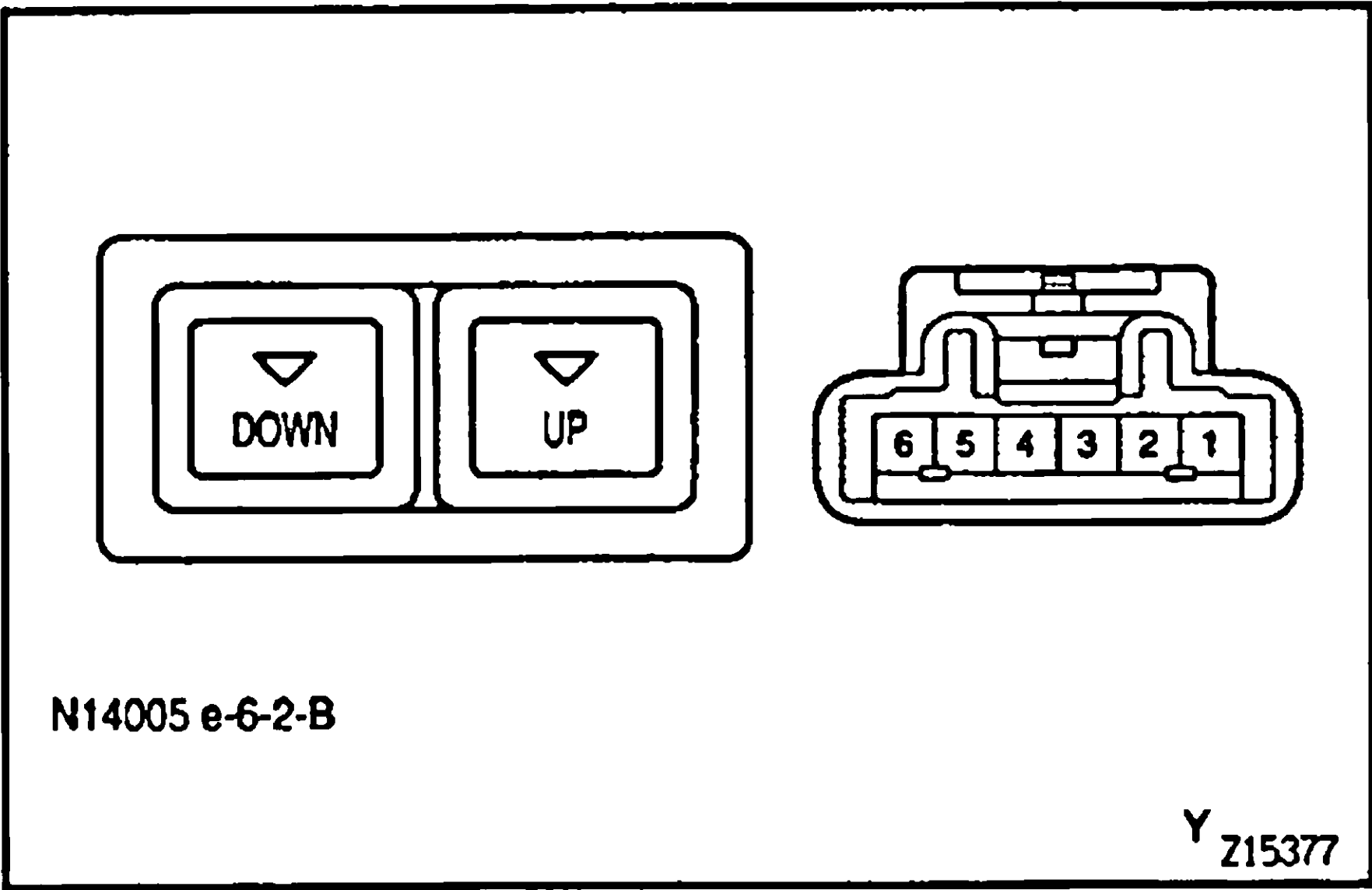
Condition	Tester connection to terminal number	Specified condition
UP Button Position Free	2 – 5	Continuity
UP Button Position Pushed in	4 – 5	Continuity
DOWN Button Position Free	2 – 3	Continuity
DOWN Button Position in	3 – 4	Continuity
Illumination circuit	1 – 6	Continuity

If continuity is not as specified, replace the switch.

2. w/ AUTO Switch Type:

Condition	Tester connection to terminal number	Specified condition
AUTO and DOWN Switch Free	2 – 3 – 5	Continuity
AUTO Free and DOWN Pushed in	3 – 4	Continuity
AUTO Pushed in and DOWN Switch Free	4 – 5	Continuity
Illumination circuit	1 – 6	Continuity

If continuity is not as specified, replace the switch.



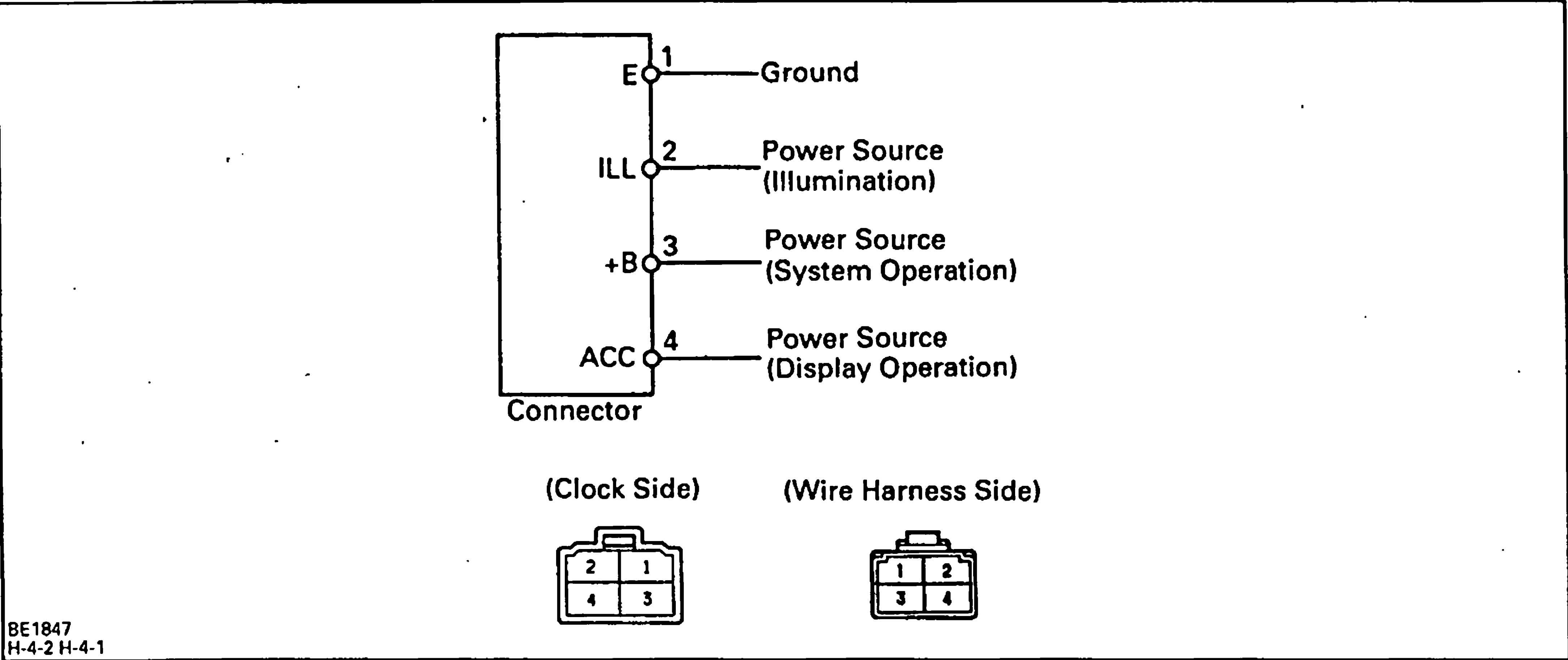
CLOCK
TROUBLESHOOTING

BE243-01

HINT: Troubleshoot the lock according to the table below.

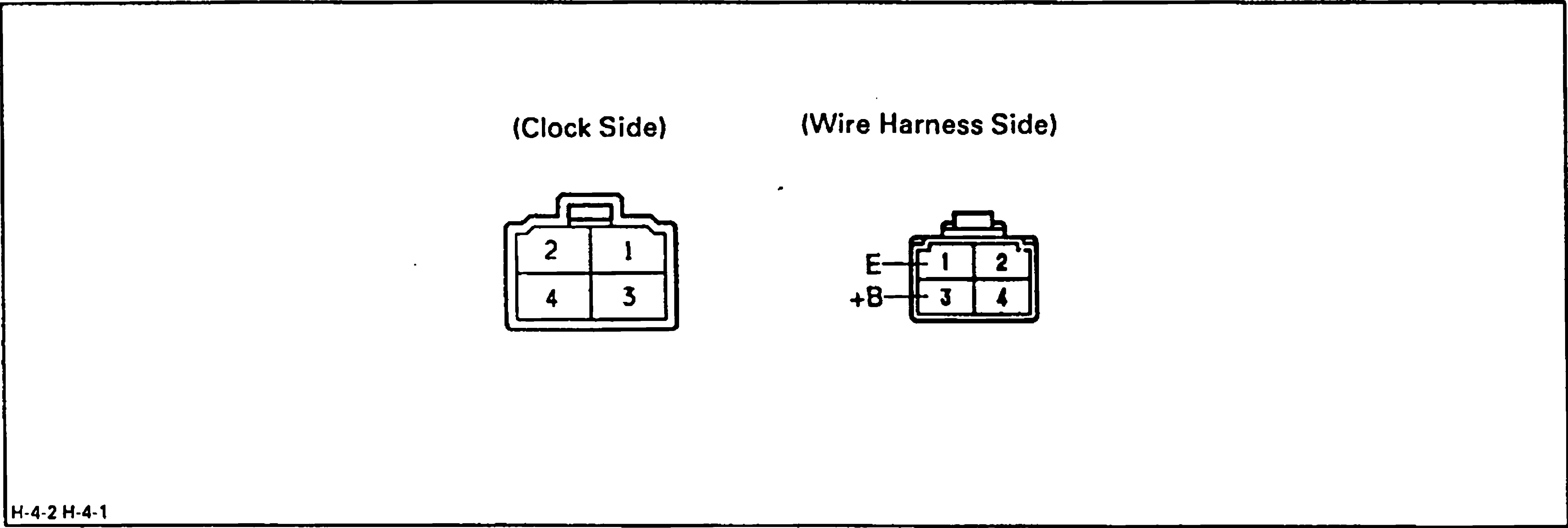
Clock will operate	1
Clock loses or gains time	2

± 1.5 seconds/day

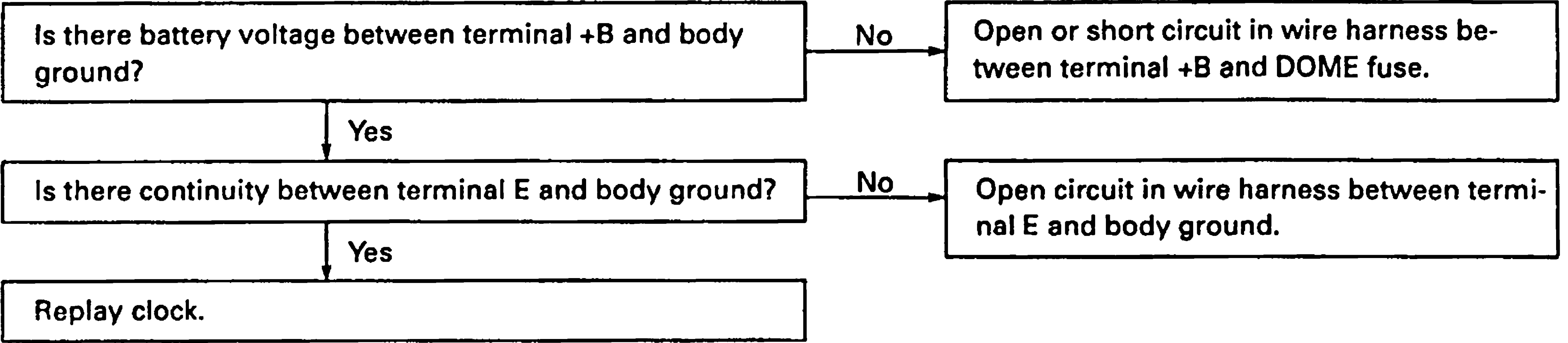


BE

1 CLOCK WILL NOT OPERATE



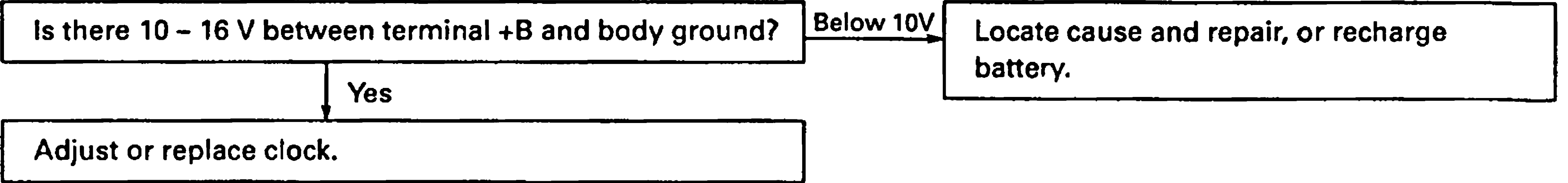
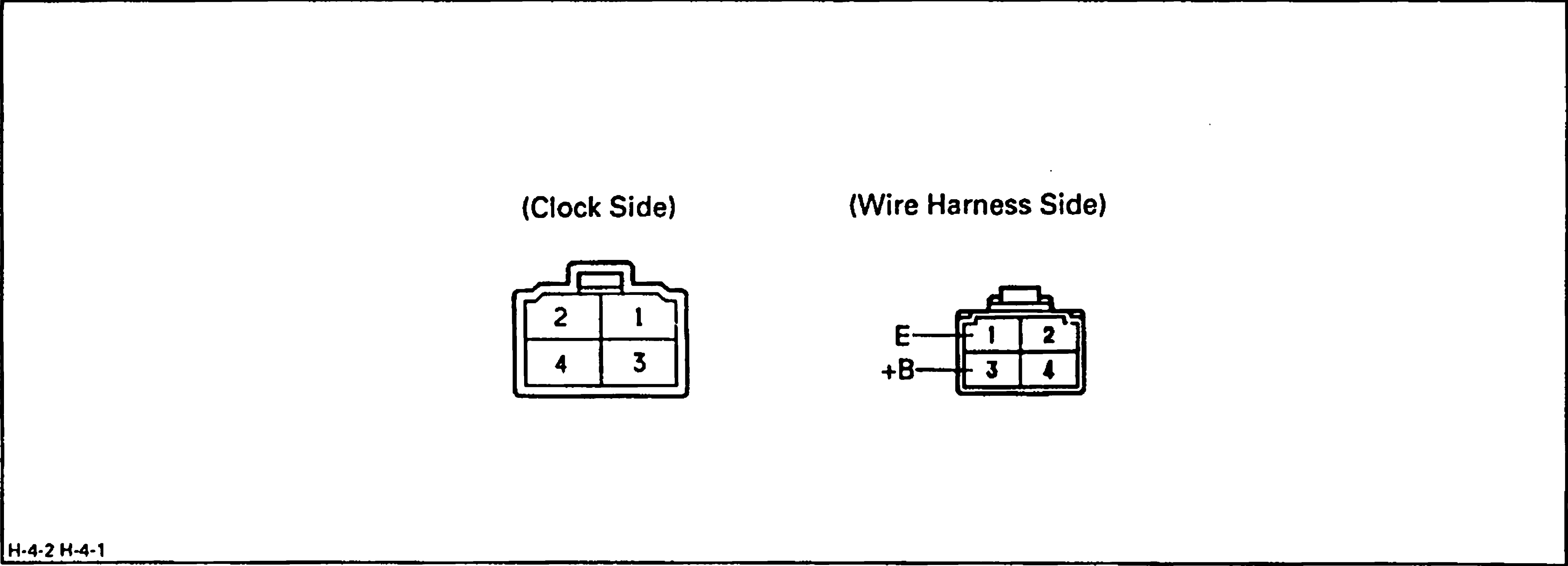
- (a) Check that the battery voltage is 10 – 16 V.
If voltage is not as specified, replace the battery.
- (b) Check that the DOME fuse is not blown.
If the fuse is blown, replace the fuse and check for short.
- (c) Troubleshoot the clock as follows.
HINT: Inspect the connector on the wire harness side.



2

CLOCK LOSES OR GAINS TIME

- (a) Check that the battery voltage is 10 – 16 V.
If voltage is not as specified, replace the battery.
- (b) Inspect the error of the clock.
Allowable error (per day): ± 1.5 seconds
- (c) Check that the clock adjusting button is sticking in position and has failed to return.
If the button is not returned, repair or replace the clock.
- (d) Troubleshoot the clock as follows.
HINT: Inspect the connector on the wire harness side.



SERVICE SPECIFICATIONS
SERVICE DATA

BE2M4-01

FUEL RECEIVER GAUGE (MAIN)	
Hi-Grade:	
A – B	85.5 – 105.5 Ω
A – C	126 – 150 Ω
B – C	90 – 110 Ω
Lo-Grade:	
(w/ Sub-Fuel Gauge)	
A – B	Approx. 95 Ω
A – C	Approx. 131 Ω
B – C	Approx. 101 Ω
(w/o Sub-Fuel Gauge)	
A – B	Approx. 125 Ω
A – C	Approx. 262 Ω
B – C	Approx. 137 Ω
FUEL RECEIVER GAUGE (SUB)	
Hi-Grade:	
A – B	Approx. 86 Ω
A – C	Approx. 241 Ω
B – C	Approx. 155 Ω
Lo-Grade:	
A – B	Approx. 95 Ω
A – C	Approx. 131 Ω
B – C	Approx. 101 Ω
WATER TEMPERATURE GAUGE	
Hi-Grade:	
A – B	71 – 79 Ω
A – C	117 – 141 Ω
B – C	185 – 215 Ω
Lo-Grade:	
(Except G.C.C. Countries)	
A – B	Approx. 75 Ω
A – C	Approx. 130 Ω
B – C	Approx. 213 Ω
(G.C.C. Countries)	
A – B	Approx. 75 Ω
A – C	Approx. 150 Ω
B – C	Approx. 225 Ω
VOLTMETER	
A – B	126 – 150 Ω
OIL PRESSURE GAUGE	
A – B	Diesel Engine: 22 – 28 Ω Gasoline Engine: 40 – 48 Ω

BE

DEFOGGER SWITCH (w/ Timer)	
2 – Ground (Ignition switch position LOCK or ACC)	No voltage
2 – Ground (Ignition switch position ON)	Battery voltage
6 – Ground (Ignition switch position LOCK or ACC)	No voltage
6 – Ground (Ignition switch position ON)	Battery voltage
CRUISE CONTROL MAIN SWITCH	
3 – 4 (Control switch position: OFF)	No continuity
3 – 4 (Control switch position: RES/ACC)	Approx. 68 Ω
3 – 4 (Control switch position: SET/COAST)	Approx. 198 Ω
3 – 4 (Control switch position: CANCEL)	Approx. 418 Ω

BODY

GENERAL INFORMATION BO— 2

PREPARATION BO— 3

FRONT BUMPER BO— 4

REAR BUMPER BO— 6

WIPER AND WASHER..... BO— 7

WHEEL OPENING EXTENSION BO— 12

WINDSHIELD BO— 16

QUARTER WINDOW GLASS..... BO— 21

SLIDING ROOF BO— 25

INSTRUMENT PANEL BO— 34

SEAT..... BO— 40

SEAT BELT BO— 52

SIDE STEP BO— 54

SERVICE SPECIFICATIONS..... BO— 55

REFER TO FOLLOWING REPAIR MANUALS:

Manual Name	Pub. No.
• Land Cruiser (Station Wagon) Chassis and Body Repair Manual	RM184E
• Land Cruiser (Hardtop, Canvas Top and Station Wagon) Chassis and Body Repair Manual Supplement (Jan., 1992)	RM290E

NOTE: The above pages contain only the points which differ from the above listed manuals.

BO

GENERAL INFORMATION

SRS (Supplemental Restraint System)

BO1M-02

The LAND CRUISER 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 diagnostic trouble codes become the most important source of information when troubleshooting. When troubleshooting the SRS, always inspect the diagnostic trouble codes before disconnecting the battery.

(See page RS—38)

2. Work must be started after 90 seconds from the time 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 be deployed.)

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, 19, and 29)

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—38)
12. If the vehicle is equipped with a mobile communication system, refer to the precaution in the IN section.

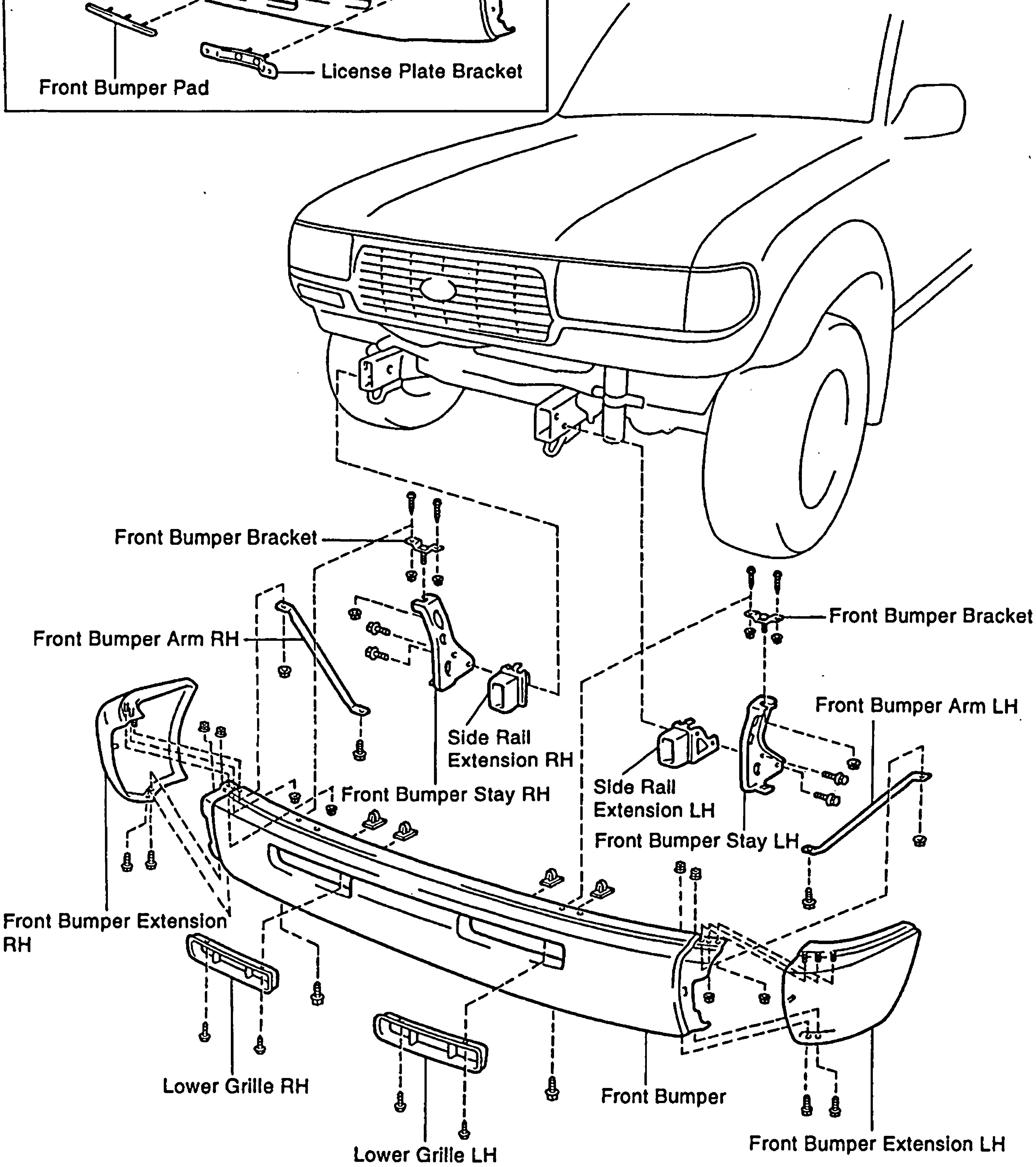
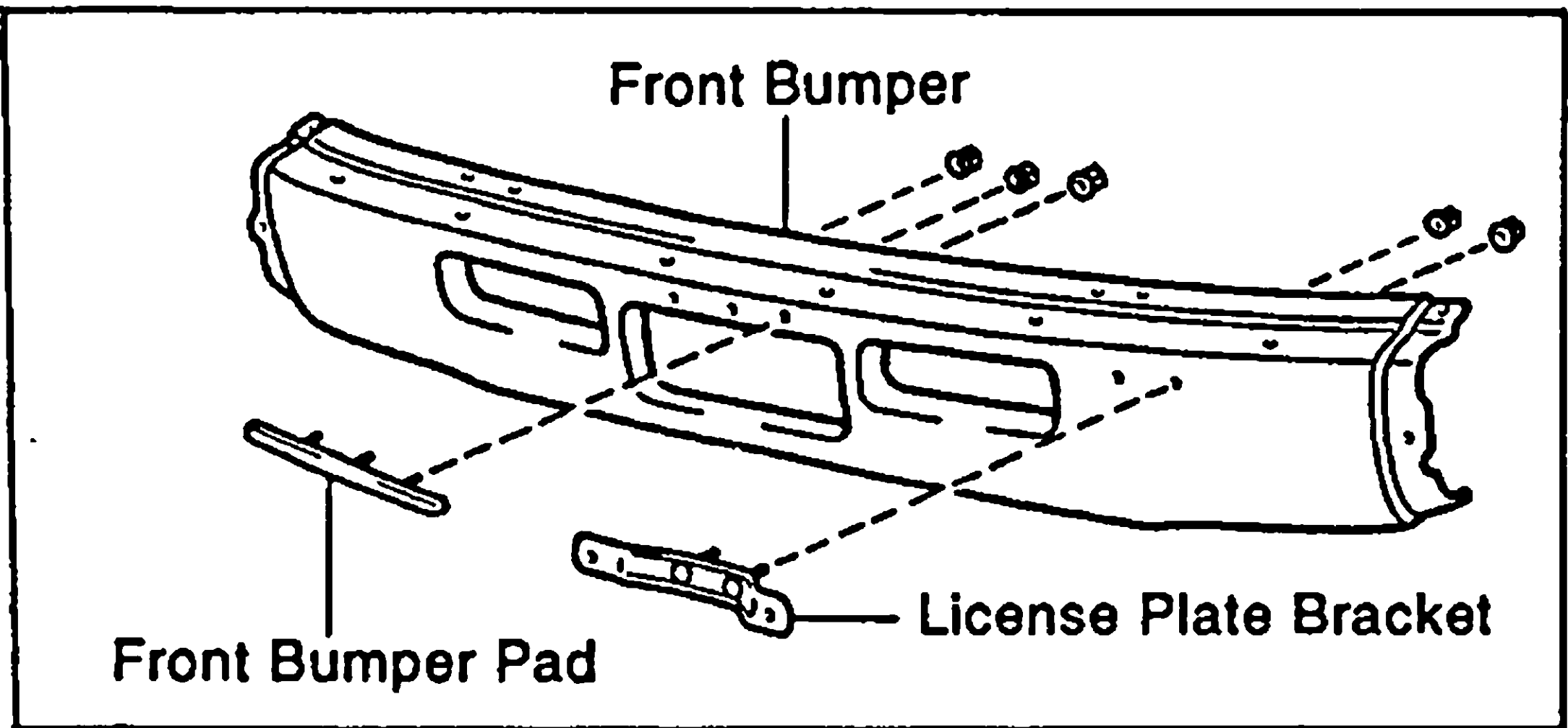
PREPARATION
SSM (SPECIAL SERVICE MATERIALS)

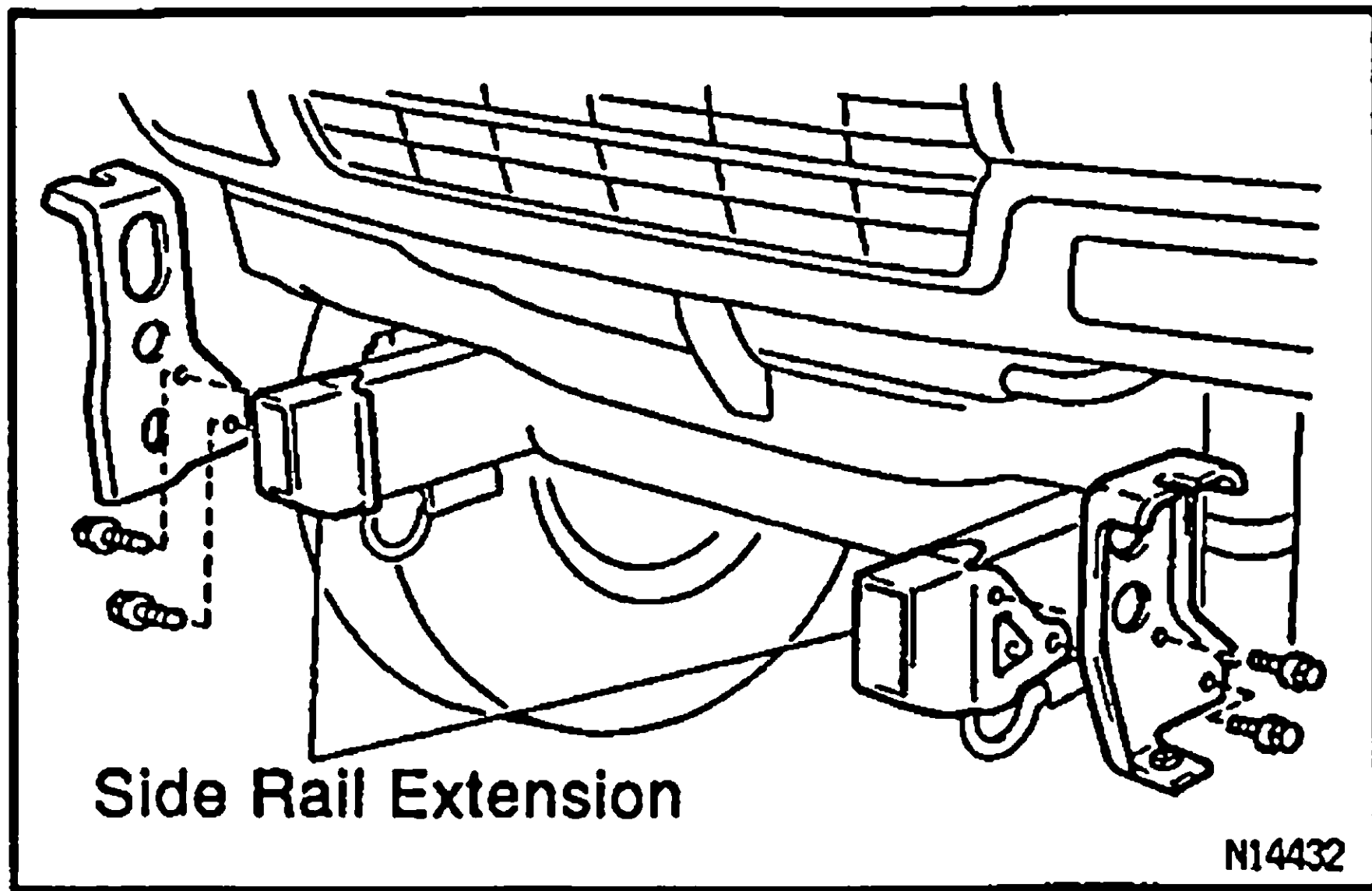
BO1R9-01

08833 — 00070	Adhesive 1324, THREE BOND 1324 or equivalent	Front Door Rear Door Power Seat Regulator
08850 — 00051	Adhesive (Super Special) or equivalent	Side Protection Moulding
	Sikaflex — 256 HV or equivalent	Windshield
	Sunstar — 9002 T or equivalent	Windshield
08833 — 00030	Three cement black or equivalent	Back Door Glass

FRONT BUMPER
COMPONENTS

BO1RA-02





w/o Winch

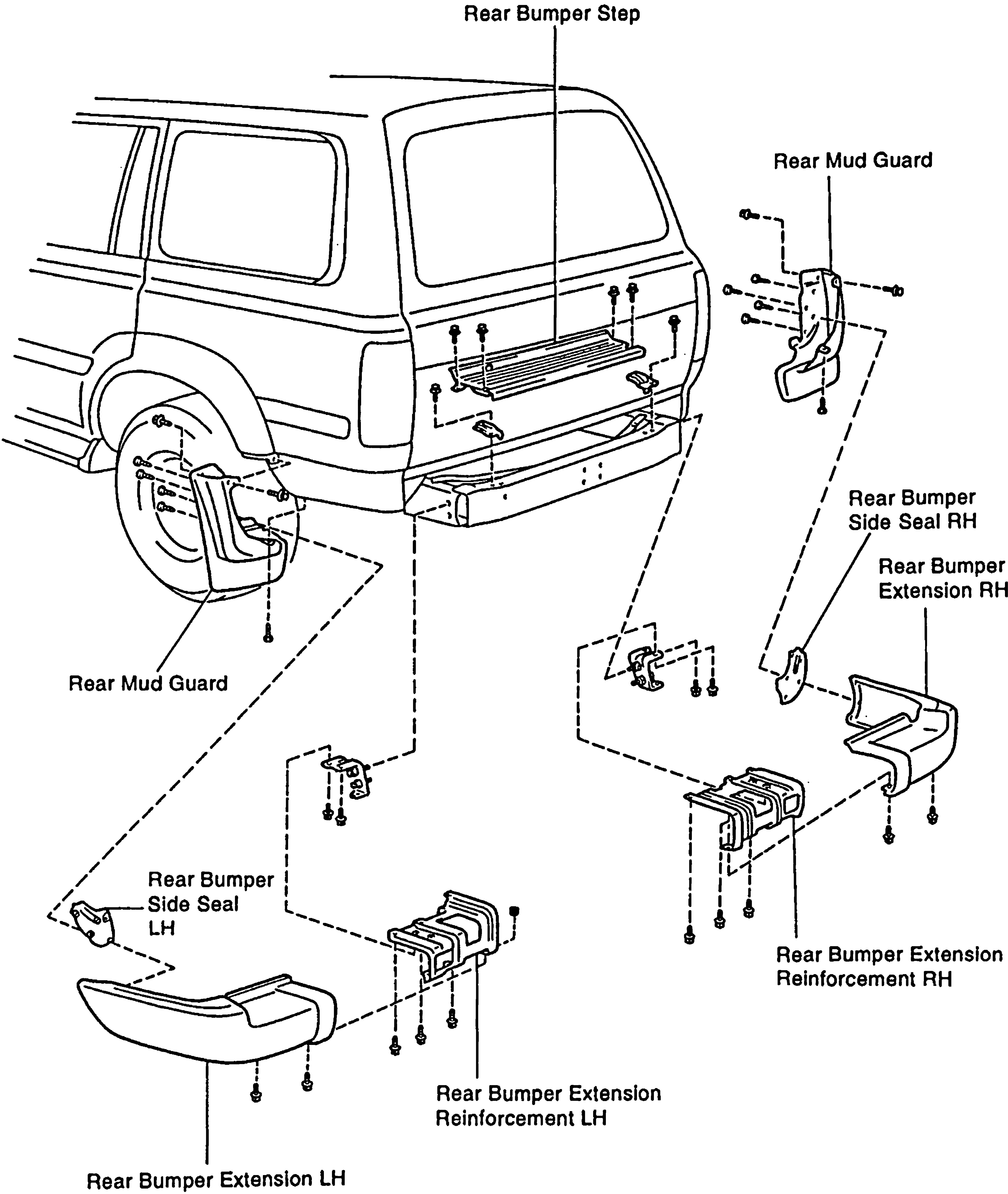
CAUTION:

- The side rail extensions are necessary for normal functioning of the SRS airbag, so make sure that they are correctly installed.
- When replacing the bumper, always inspect the side rail extensions. If they are deformed or cracked, replace them.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

REAR BUMPER
COMPONENTS

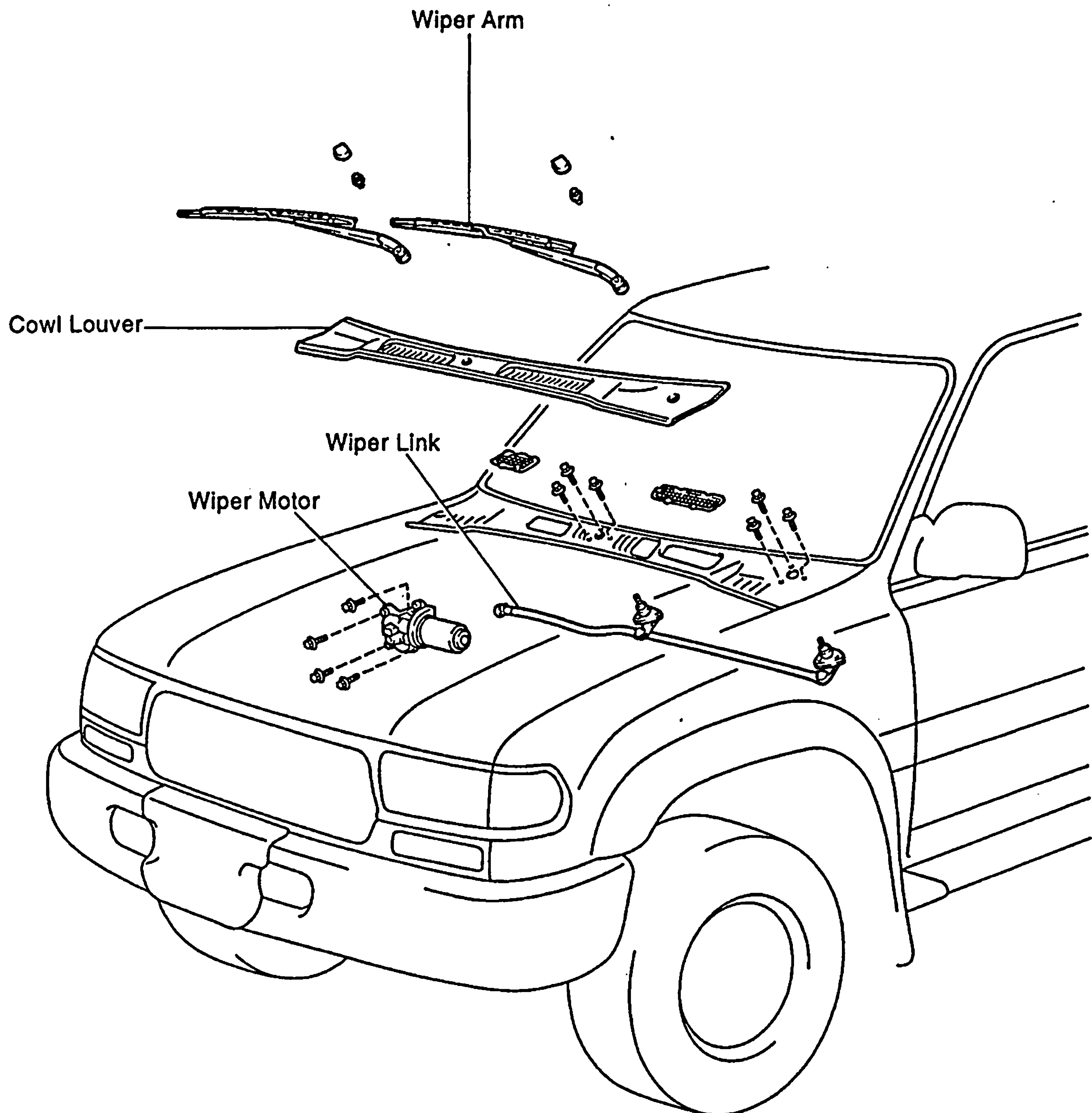
BO1RB-01



WIPER AND WASHER COMPONENTS

BO100-01

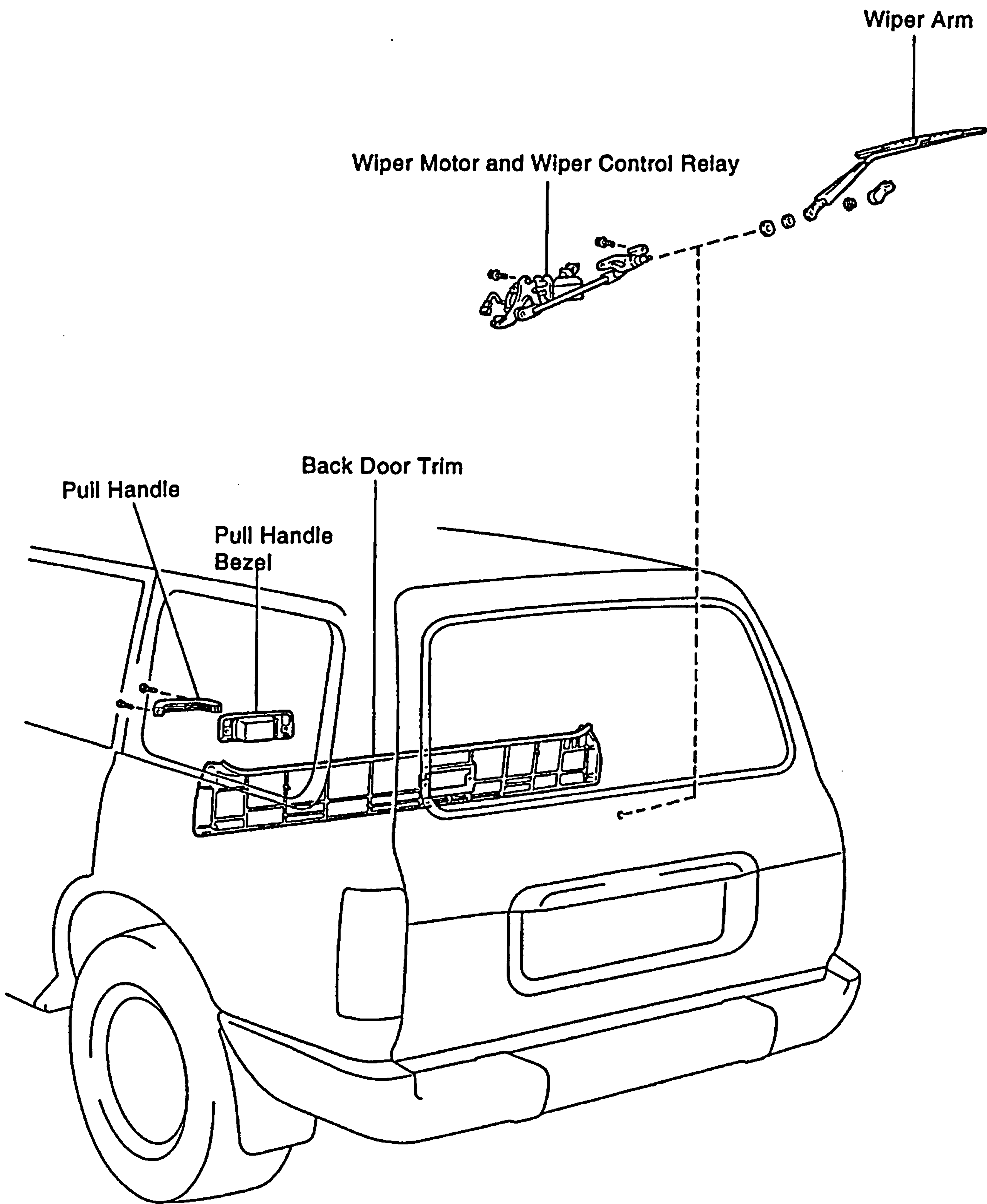
Front Wiper



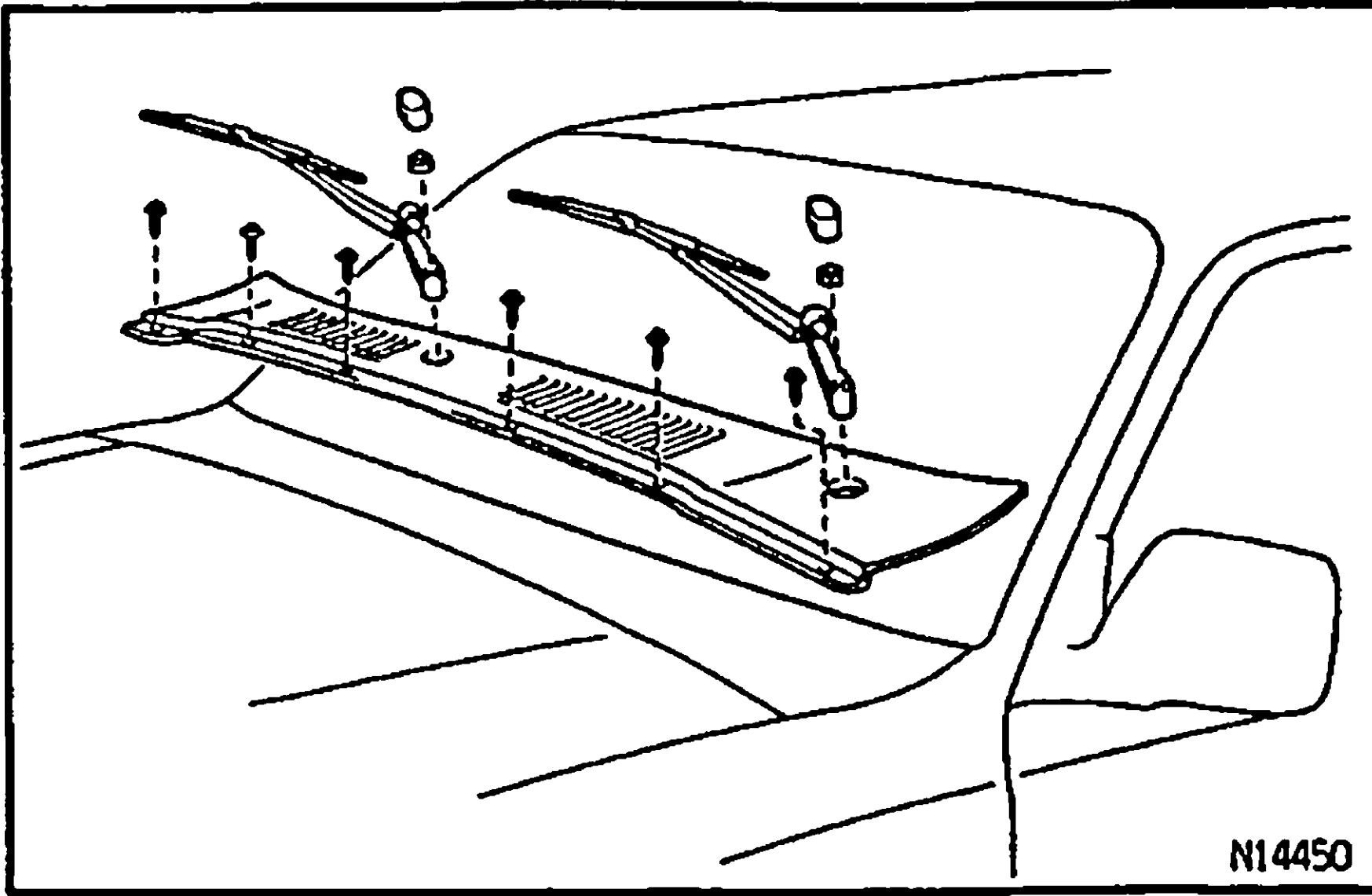
BO

COMPONENTS (Cont'd)

Rear Wiper



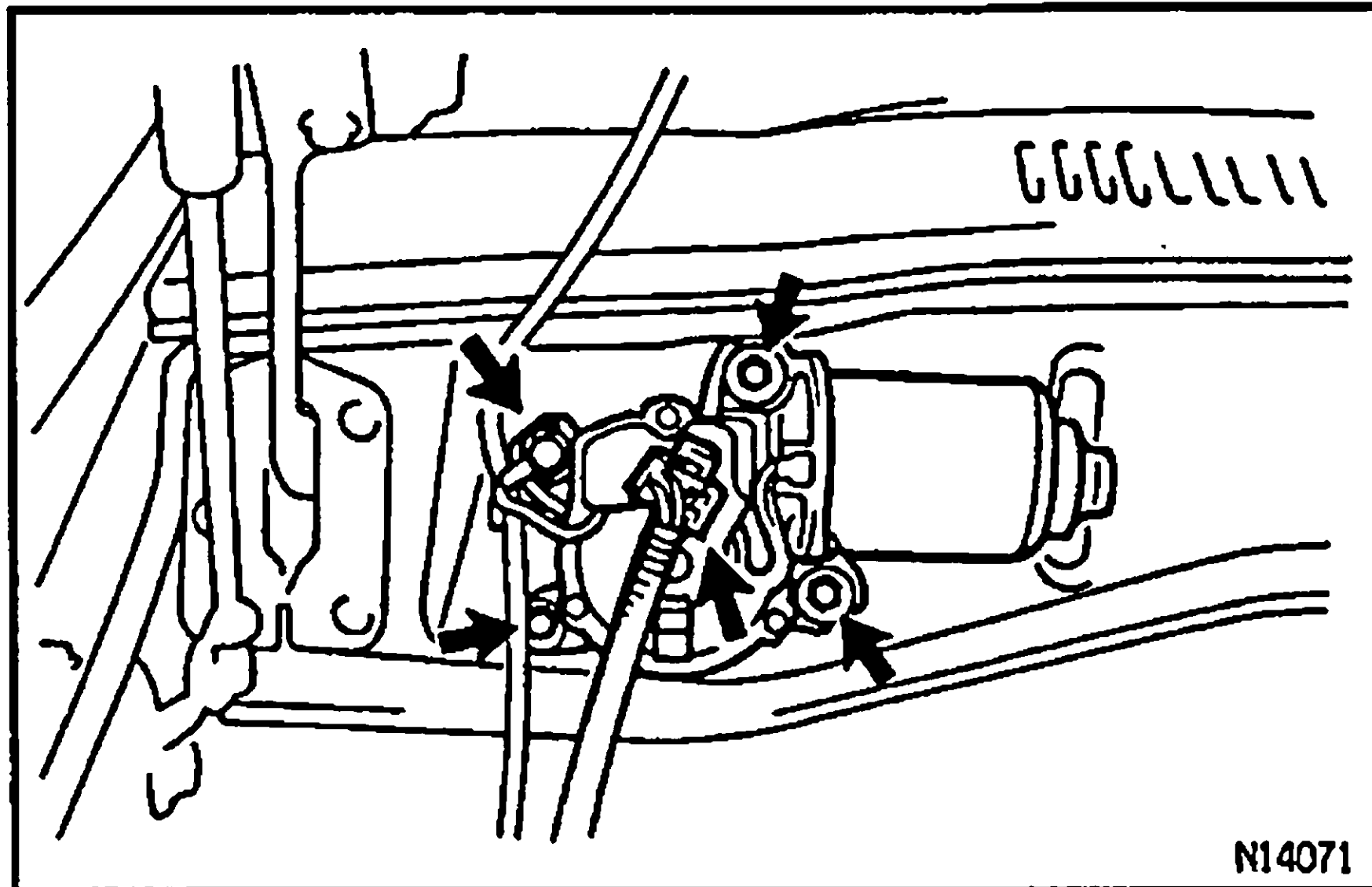
BO



FRONT WIPER REMOVAL

1. REMOVE THESE PARTS:

- (a) Wiper arms
- (b) Cowl louver



2. REMOVE WIPER MOTOR AND WIPER LINK

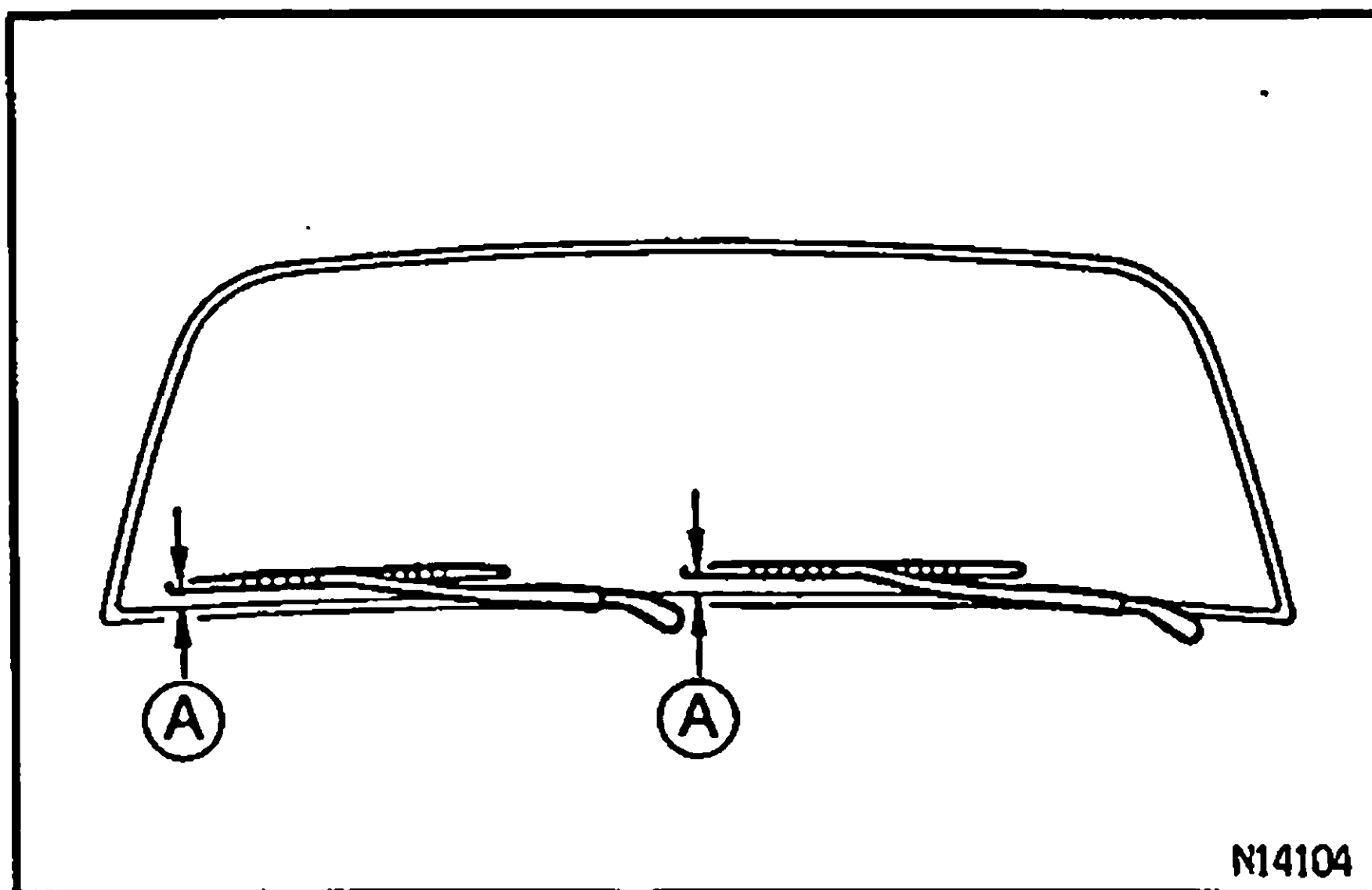
- (a) Disconnect the connector, then unfasten 4 bolts and the wiper motor.
- (b) Remove the wiper link.

FRONT WIPER INSTALLATION

1. INSTALL THESE PARTS:

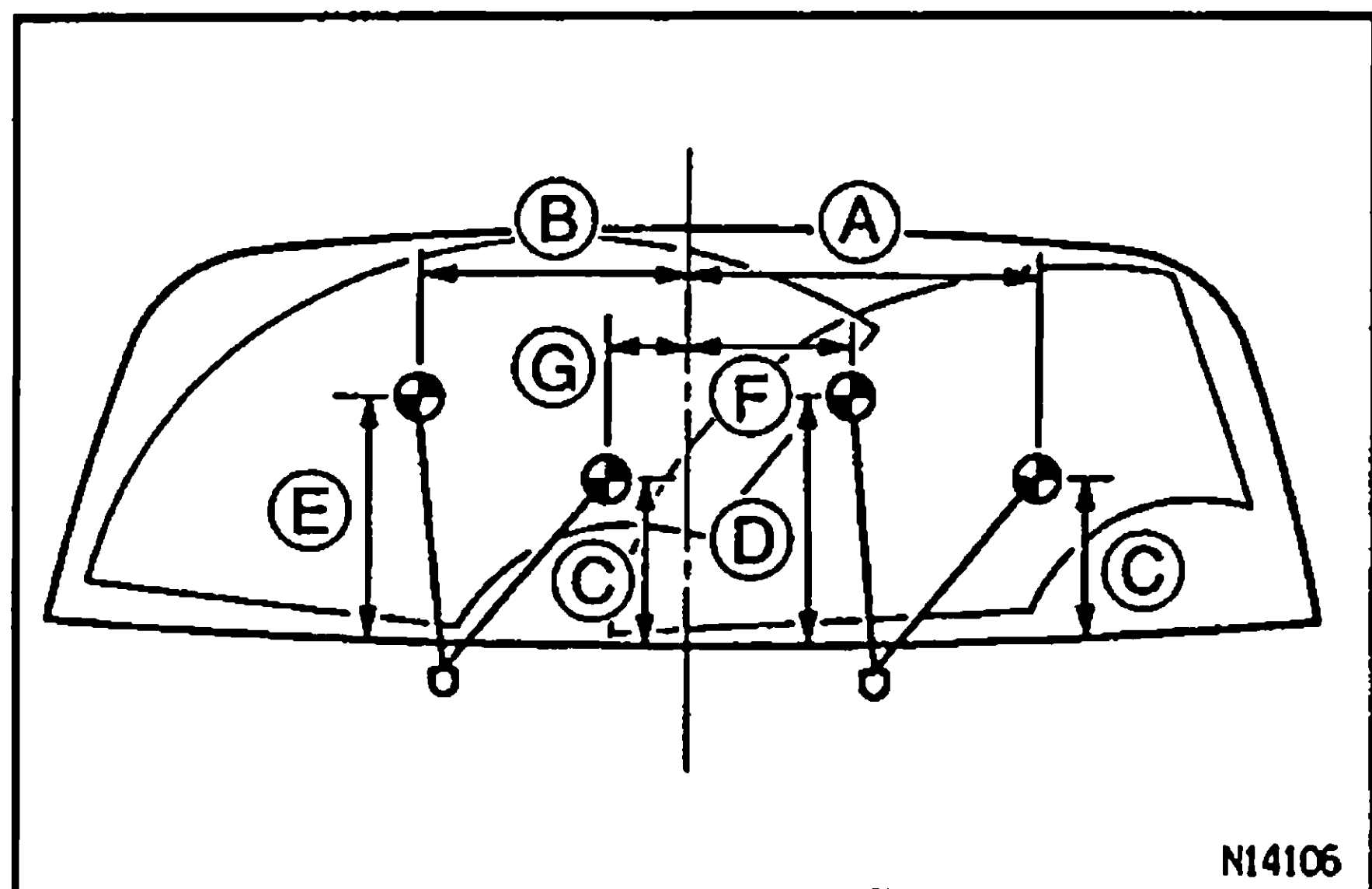
- (a) Wiper link
Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)
- (b) Wiper motor
Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)
- (c) Cowl louver

BO



2. INSTALL FRONT WIPER ARMS

- (a) Install the wiper arms and operate the wipers once and turn the wiper switch OFF.
- (b) Adjust the installation positions of the wiper arms to the positions as shown in the illustration.
Ⓐ Approx. 25 mm (0.98 in.)
- (c) Torque the nut.
Torque: 20 N·m (210 kgf·cm, 15 ft.-lbf)



FRONT WASHER NOZZLE ADJUSTMENT^{BO18G-01}

1. INSPECT FRONT WASHER NOZZLE

- (a) While operating the washer, check that both the point where the washer fluid from the upper nozzles hits the windshield, and the upsurge area, are within the range indicated by the hatched line.

Ⓐ Approx. 460 mm (18.1 in.)

Ⓑ Approx. 300 mm (11.8 in.)

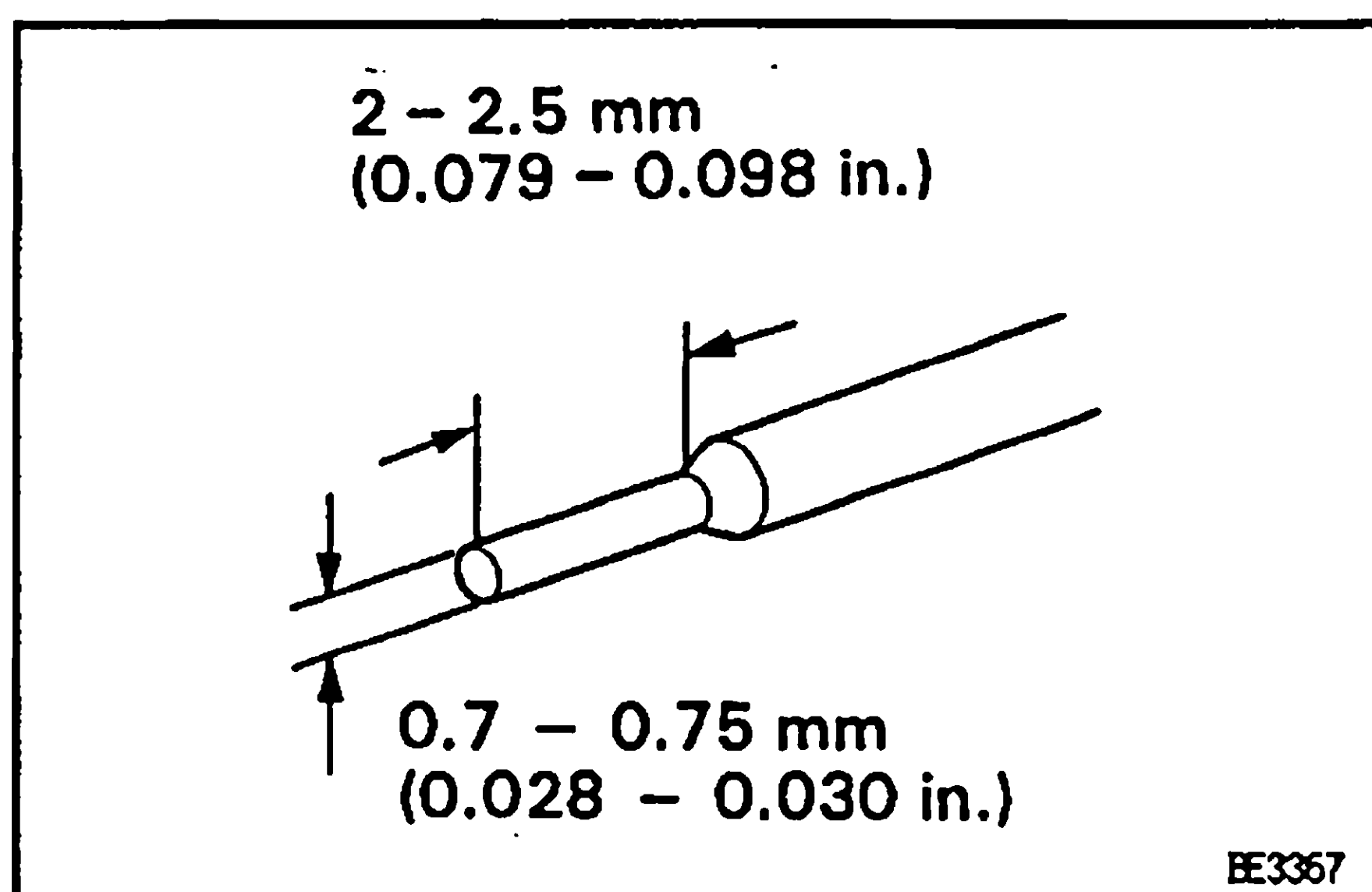
Ⓒ Approx. 250 mm (9.84 in.)

Ⓓ Approx. 400 mm (15.7 in.)

Ⓔ Approx. 410 mm (16.1 in.)

Ⓕ Approx. 220 mm (8.66 in.)

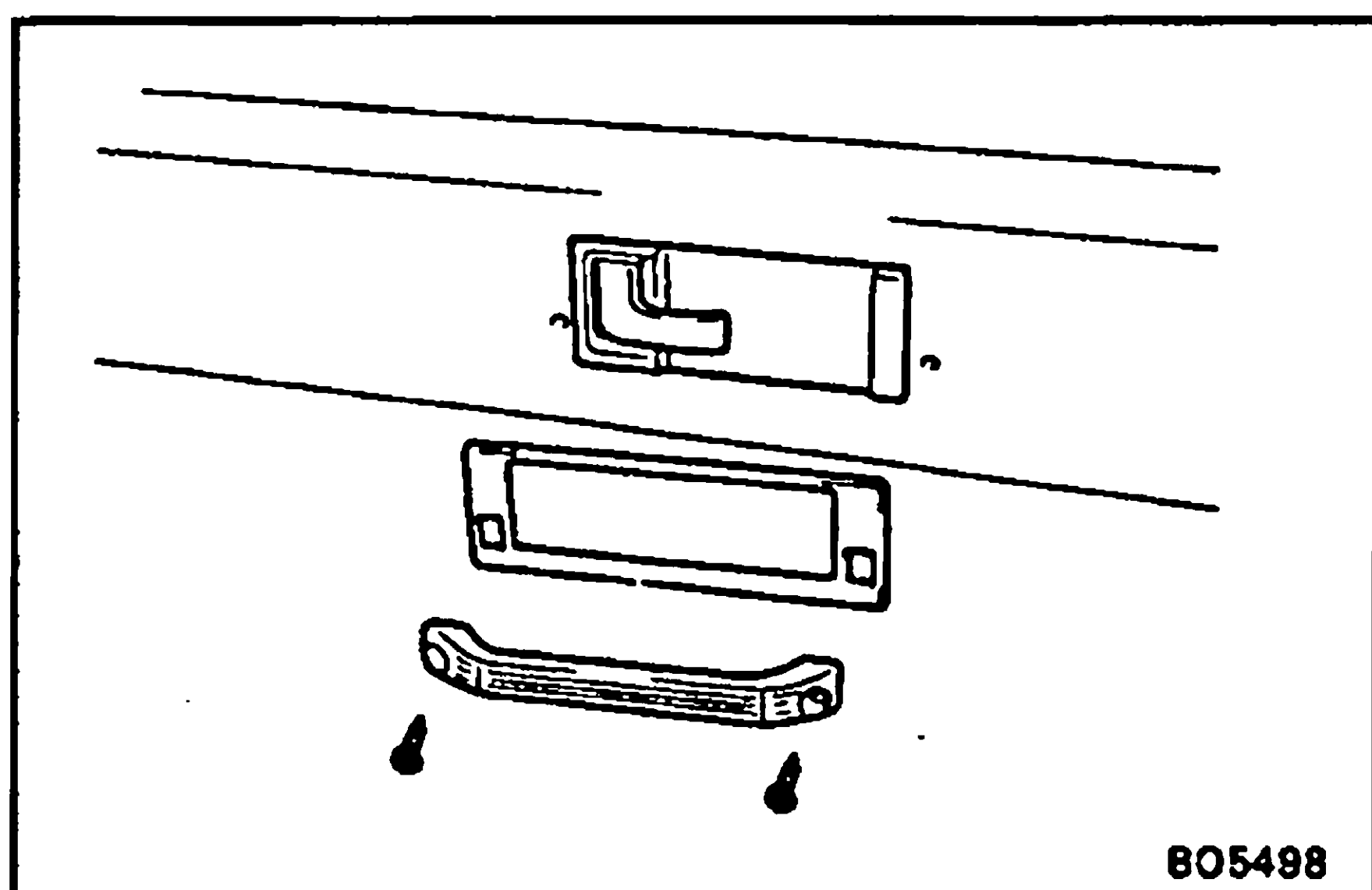
Ⓖ Approx. 60 mm (2.36 in.)



- (b) Check if the lower point where the washer fluid hits the windshield is within the range of the wiping pattern (the area of the glass which is wiped by the wiper blades).

2. ADJUST FRONT WASHER NOZZLE

Using a tool like that shown in the illustration, change the direction of the nozzle hole to adjust the point where washer fluid strikes the windshield.



REAR WIPER REMOVAL^{BO18D-01}

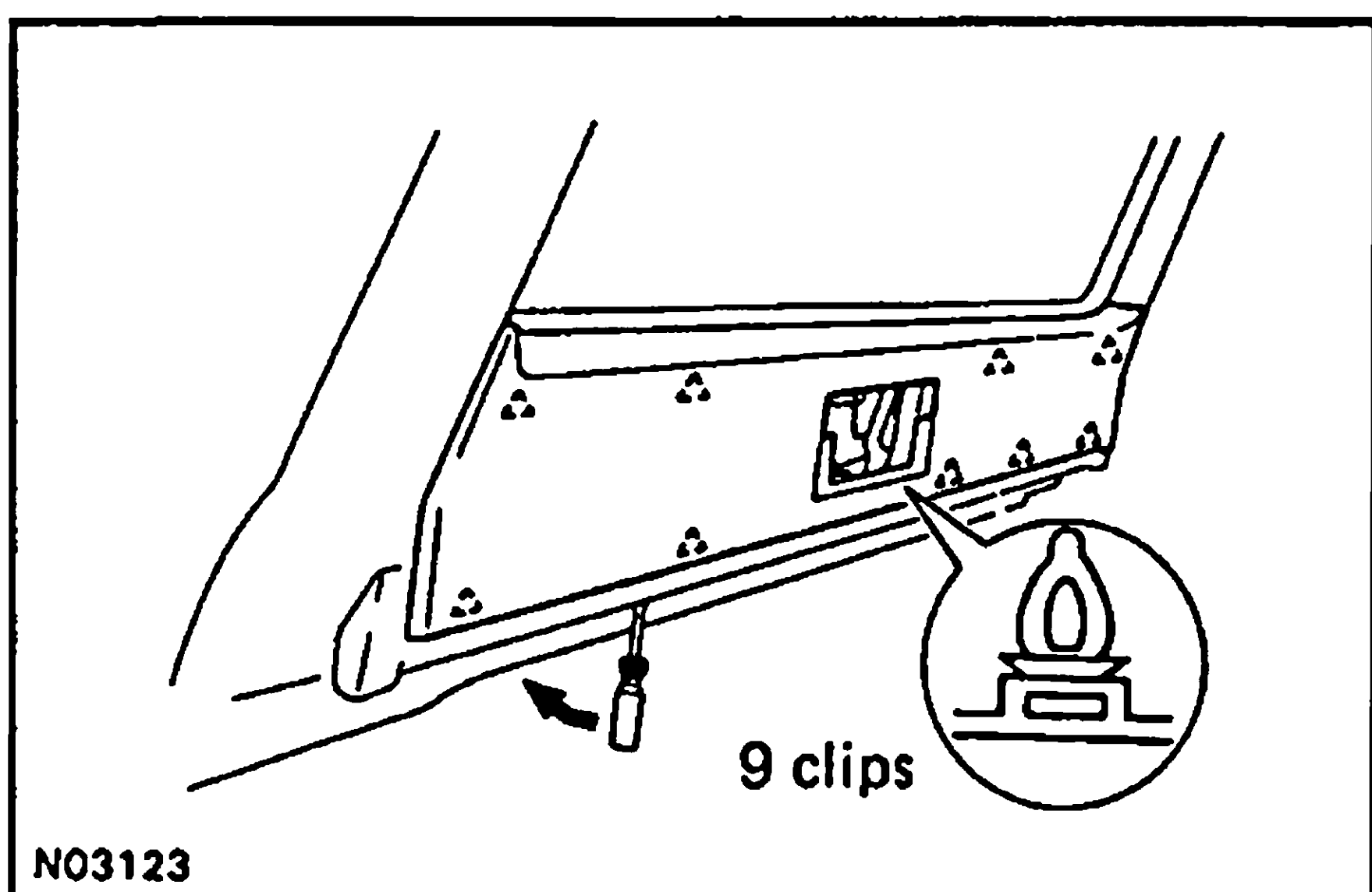
1. REMOVE PULL HANDLE AND PULL HANDLE BEZEL

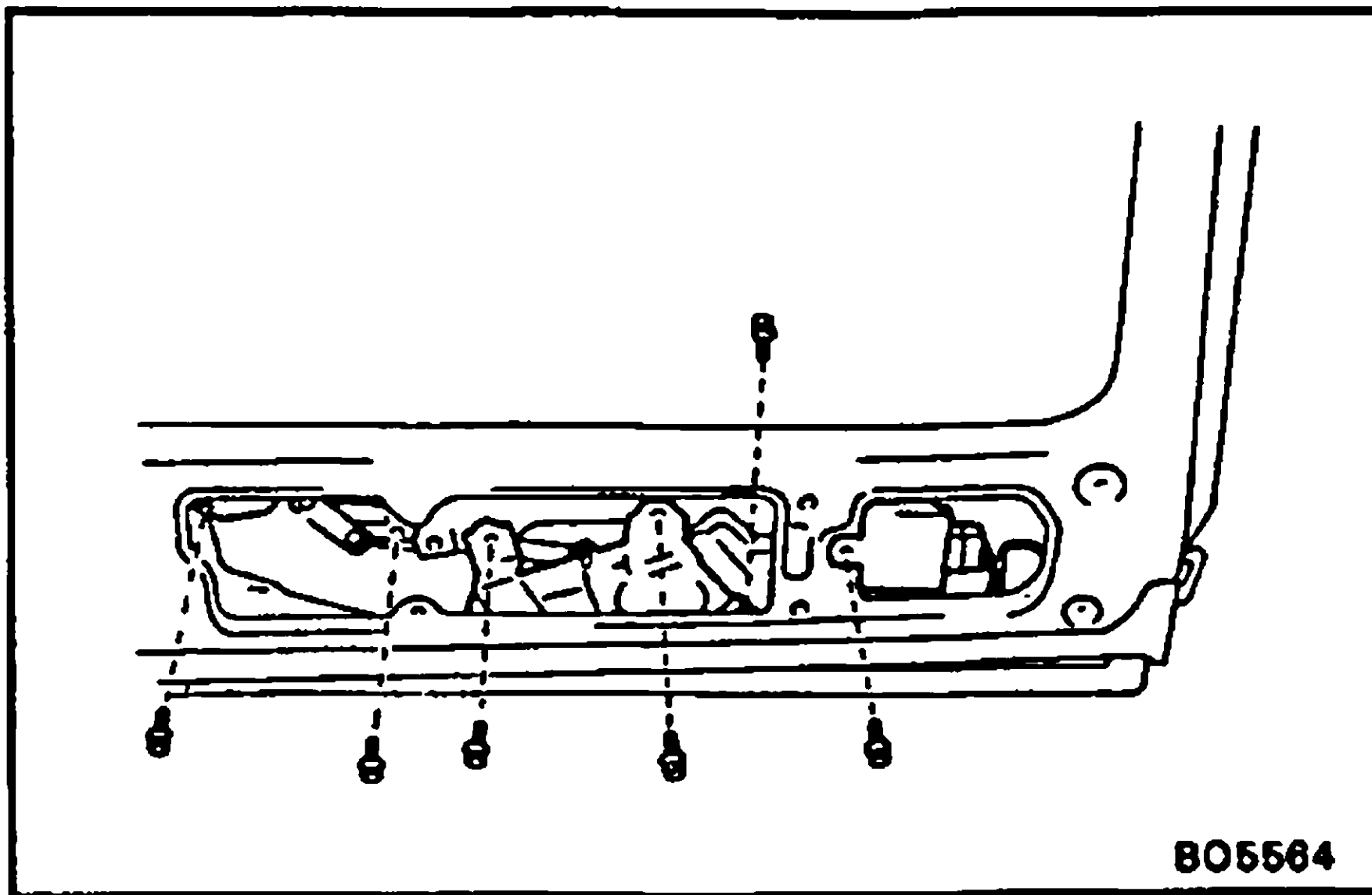
2. REMOVE BACK DOOR TRIM

- (a) Insert the screwdriver between the retainers and the door trim to pry it loose.

HINT: Tape a screwdriver tip before use.

- (b) Remove the back door trim.





3. REMOVE WIPER ARM, MOTOR AND REAR WIPER CONTROL RELAY
 - (a) Open the cap.
 - (b) Remove the nut and the wiper arm.
 - (c) Remove the 5 bolts and the motor, then disconnect the connector.
 - (d) Remove the bolts and the rear wiper control relay, then disconnect the connector.

REAR WIPER INSTALLATION

B018E-01

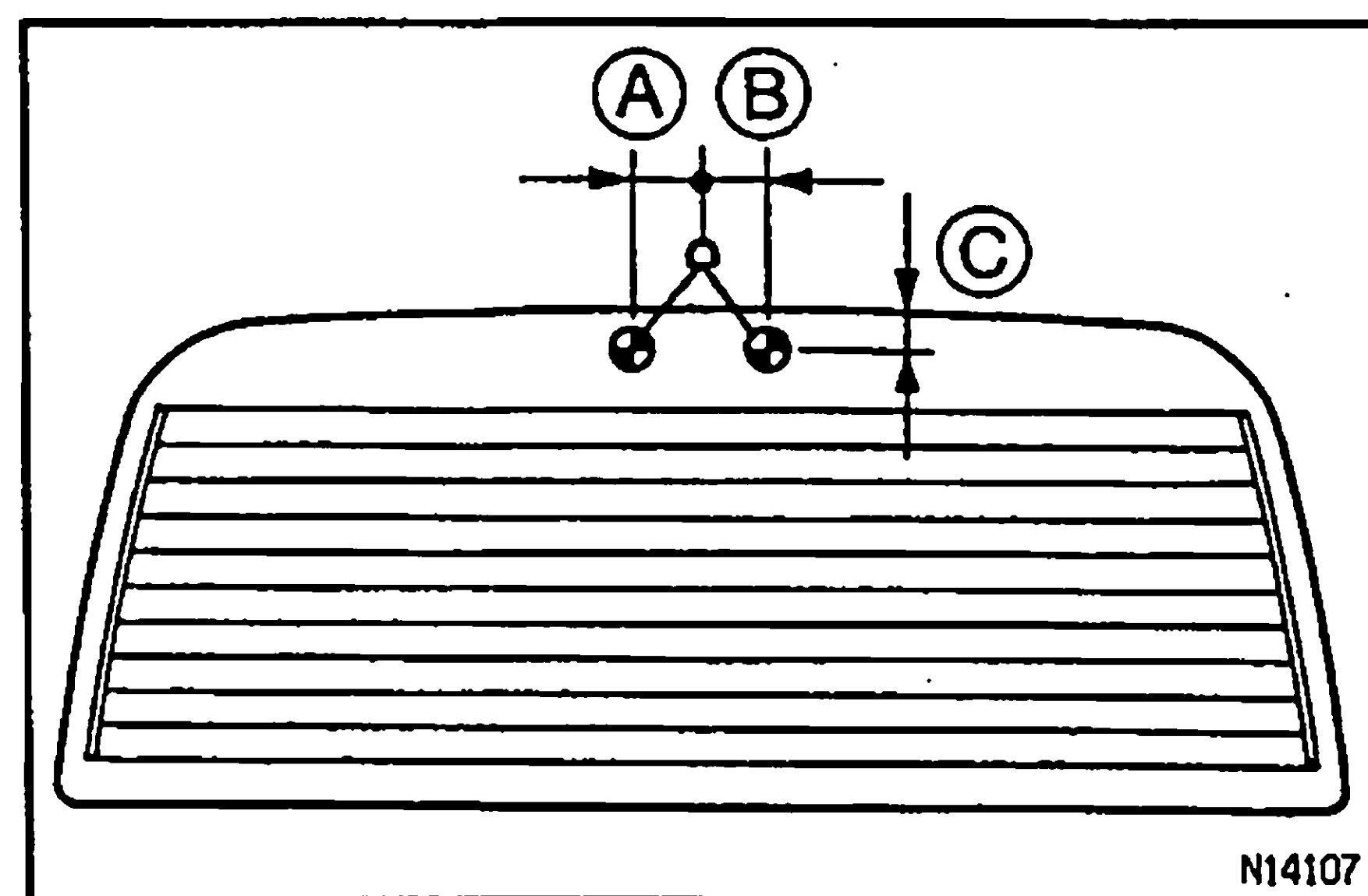
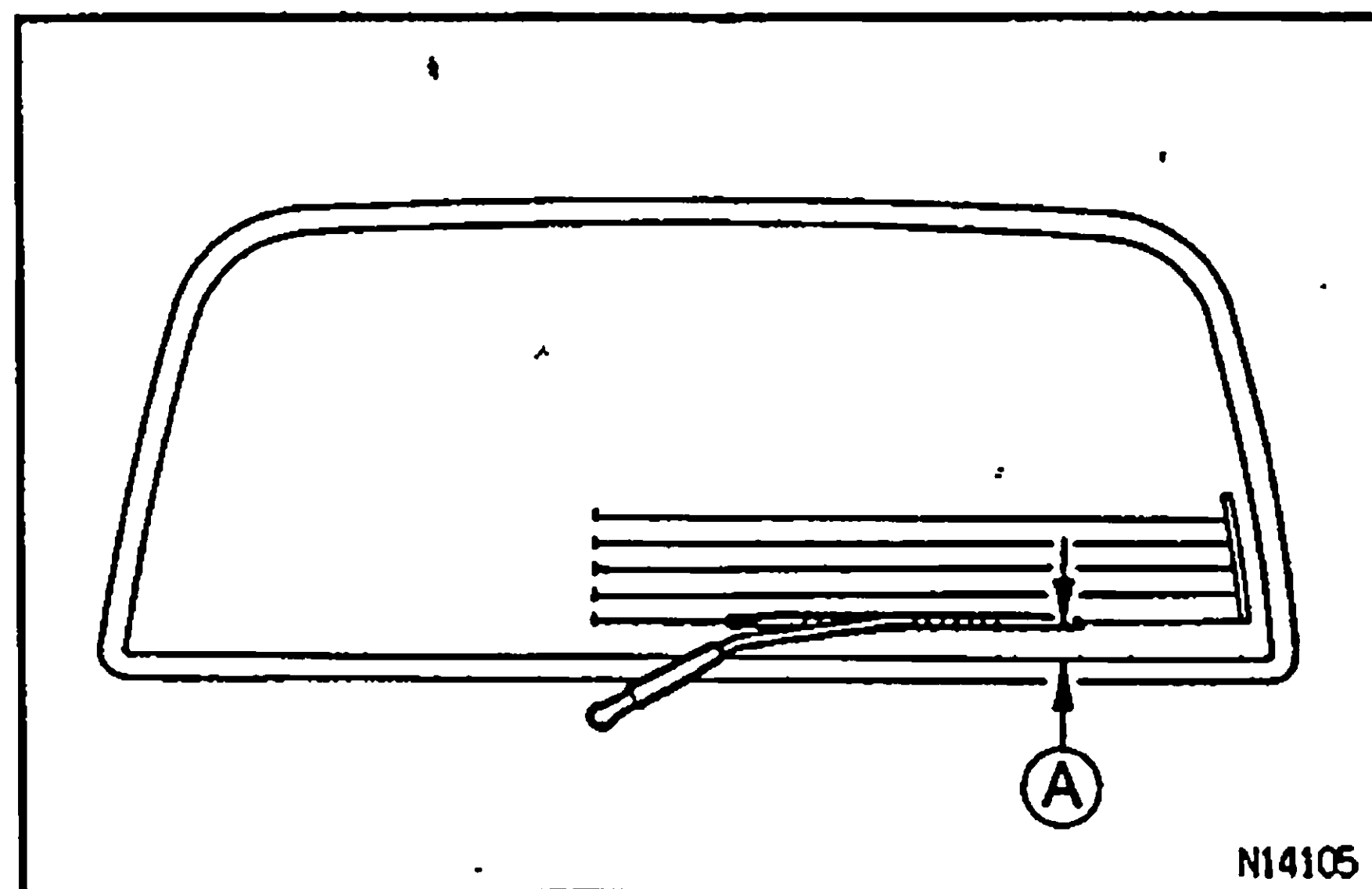
1. INSTALL THESE PARTS:

- (a) Wiper control relay
- (b) Wiper motor
Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)

- (c) Back door trim
- (d) Pull handle bezel
- (e) Pull handle

2. INSTALL REAR WIPER ARM

- (a) Install the wiper arm and operate the wipers once and turn the wiper switch OFF.
- (b) Adjust the installation positions of the wiper arm to the positions shown in the illustration.
Ⓐ Approx. 40 mm (1.57 in.)
- (c) Torque the nut.
Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)



REAR WASHER NOZZLE ADJUSTMENT

B018F-01

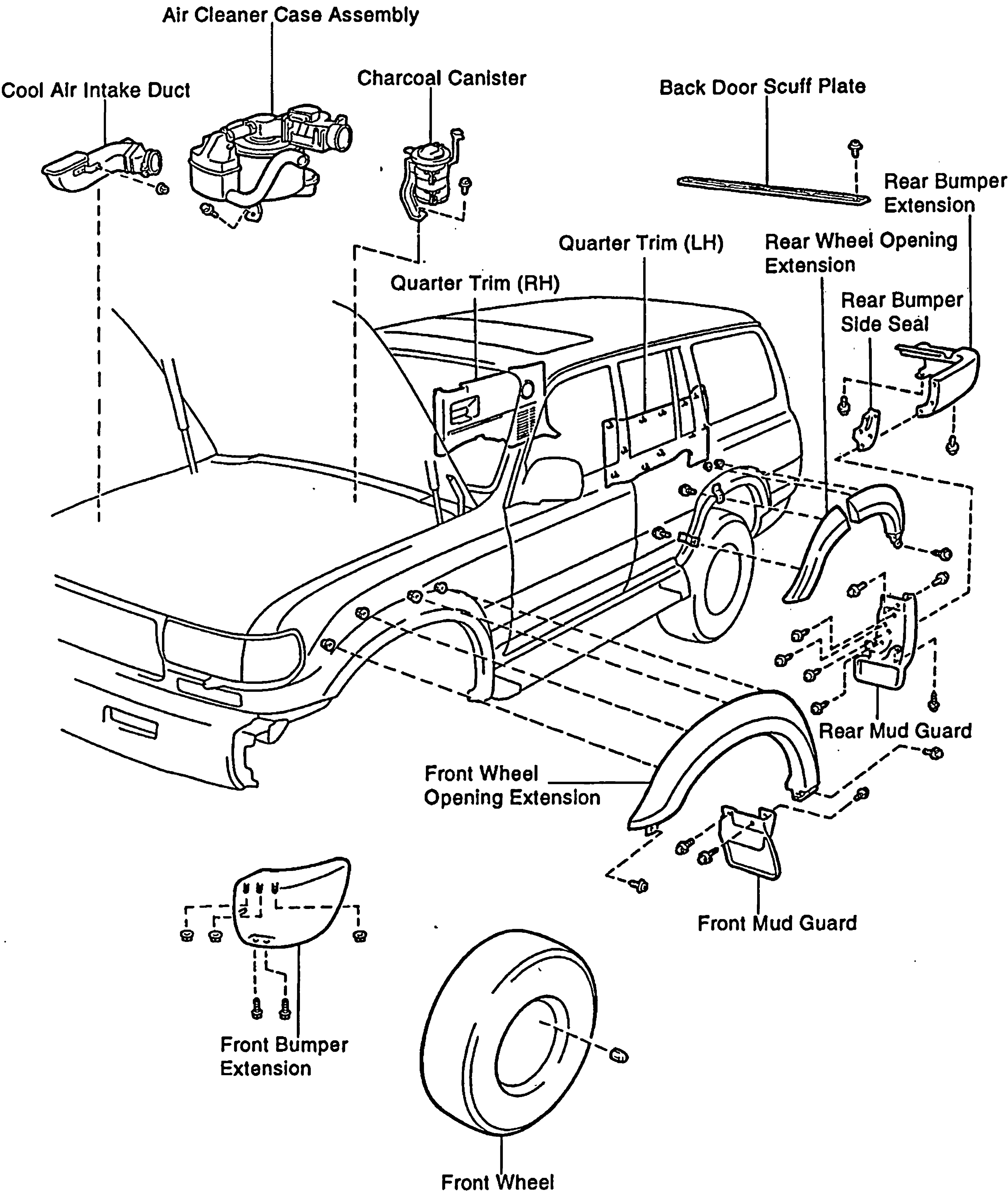
INSPECT REAR WASHER NOZZLE

While operating the washer, check whether the point where the washer fluid hits the back door glass and the upsurge area are within the range indicated by the hatched line.

- Ⓐ Approx. 120 mm (4.72 in.)
- Ⓑ Approx. 120 mm (4.72 in.)
- Ⓒ Approx. 90 mm (3.54 in.)

WHEEL OPENING EXTENSION
COMPONENTS

BO1RQ-01



BO

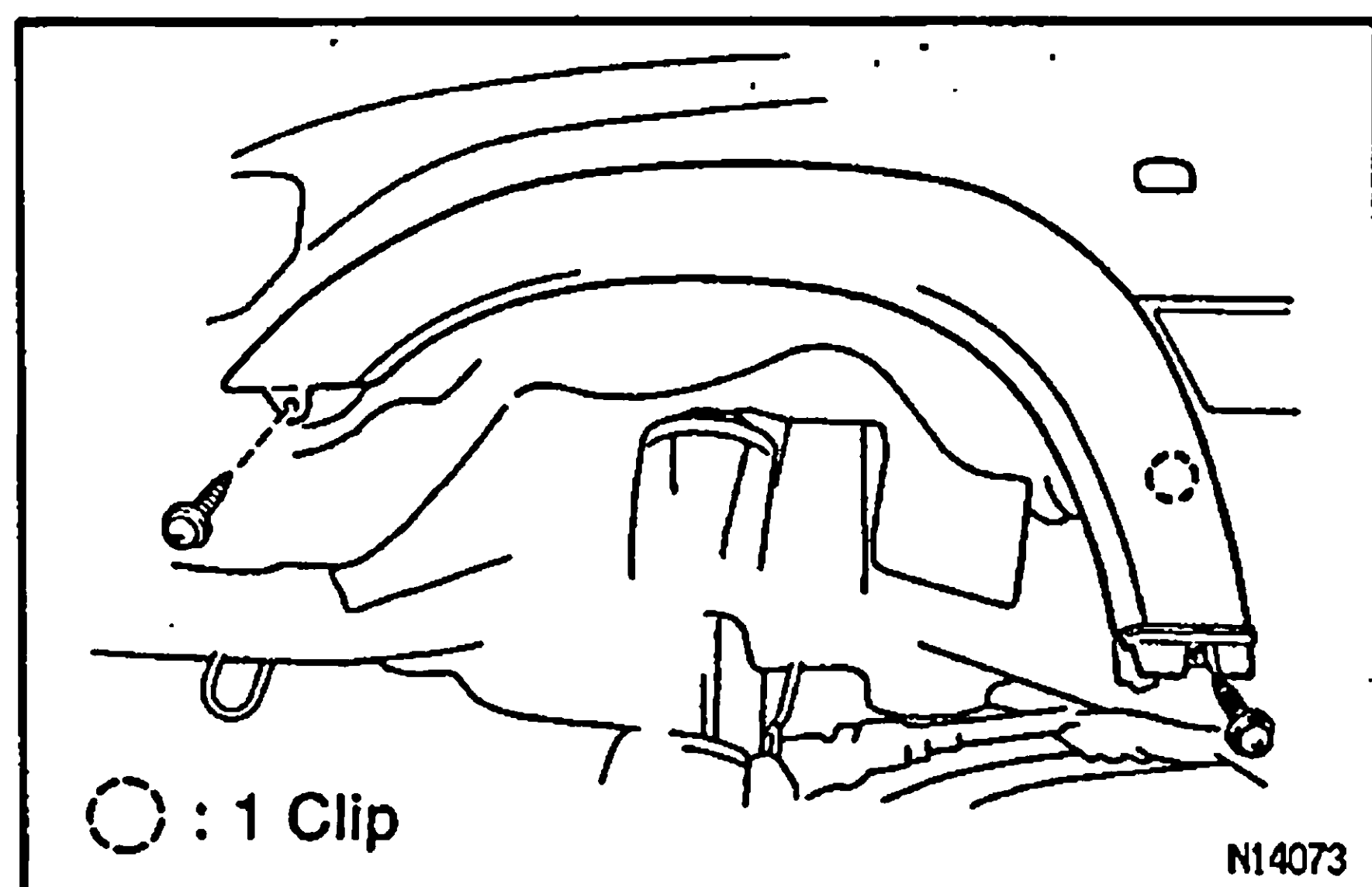
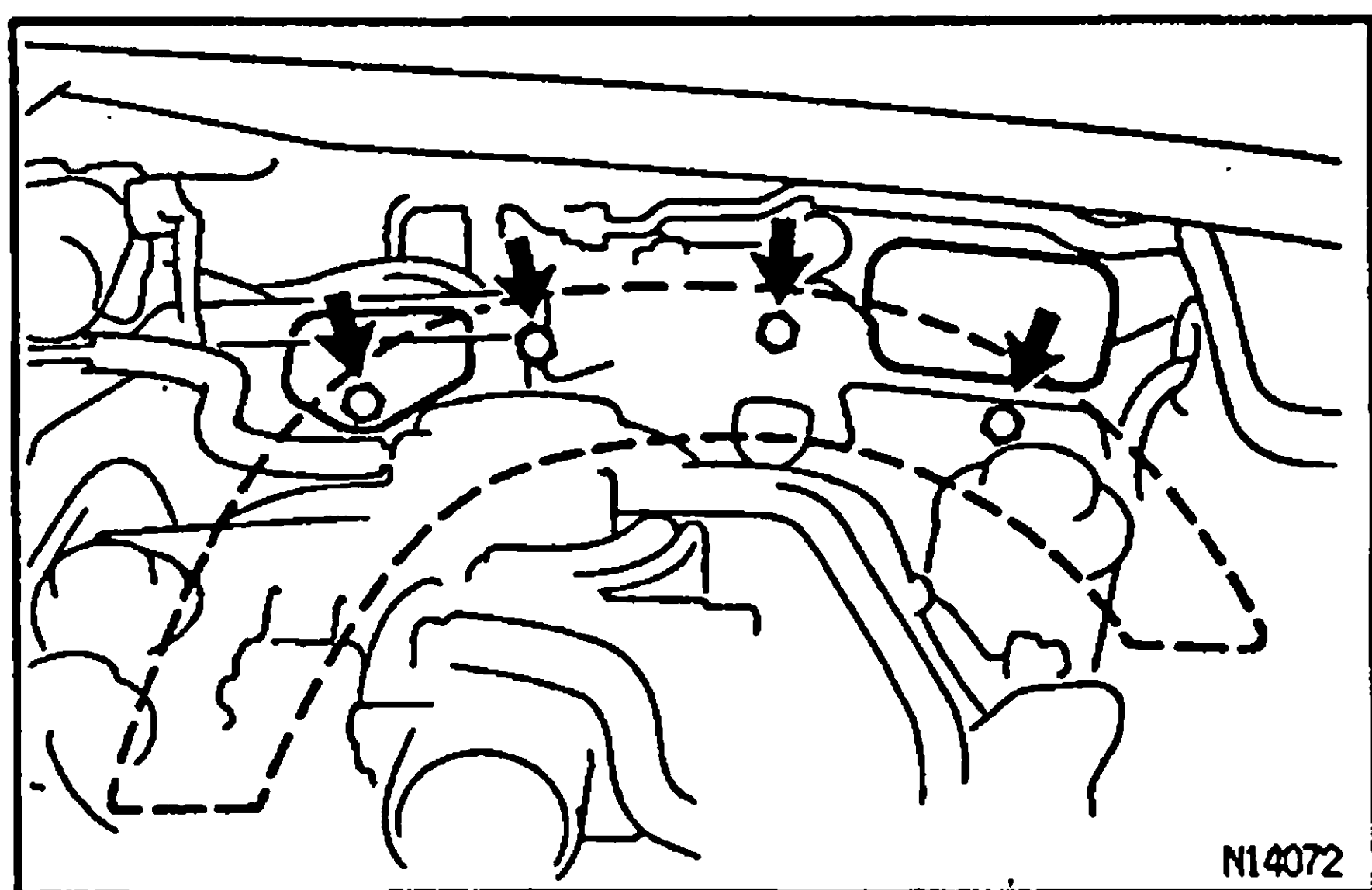
FRONT WHEEL OPENING EXTENSION REMOVAL

1. REMOVE THESE PARTS:

- (a) Charcoal canister
- (b) Air cleaner case assembly
- (c) Cool air intake duct
- (d) Front wheel
- (e) Front mud guard
- (f) Front bumper extension

2. REMOVE FRONT WHEEL OPENING EXTENSION

- (a) Remove the 4 nuts from engine room inside service hole.



- (b) Remove the 2 screws.
- (c) Remove the front wheel opening extension.

BO

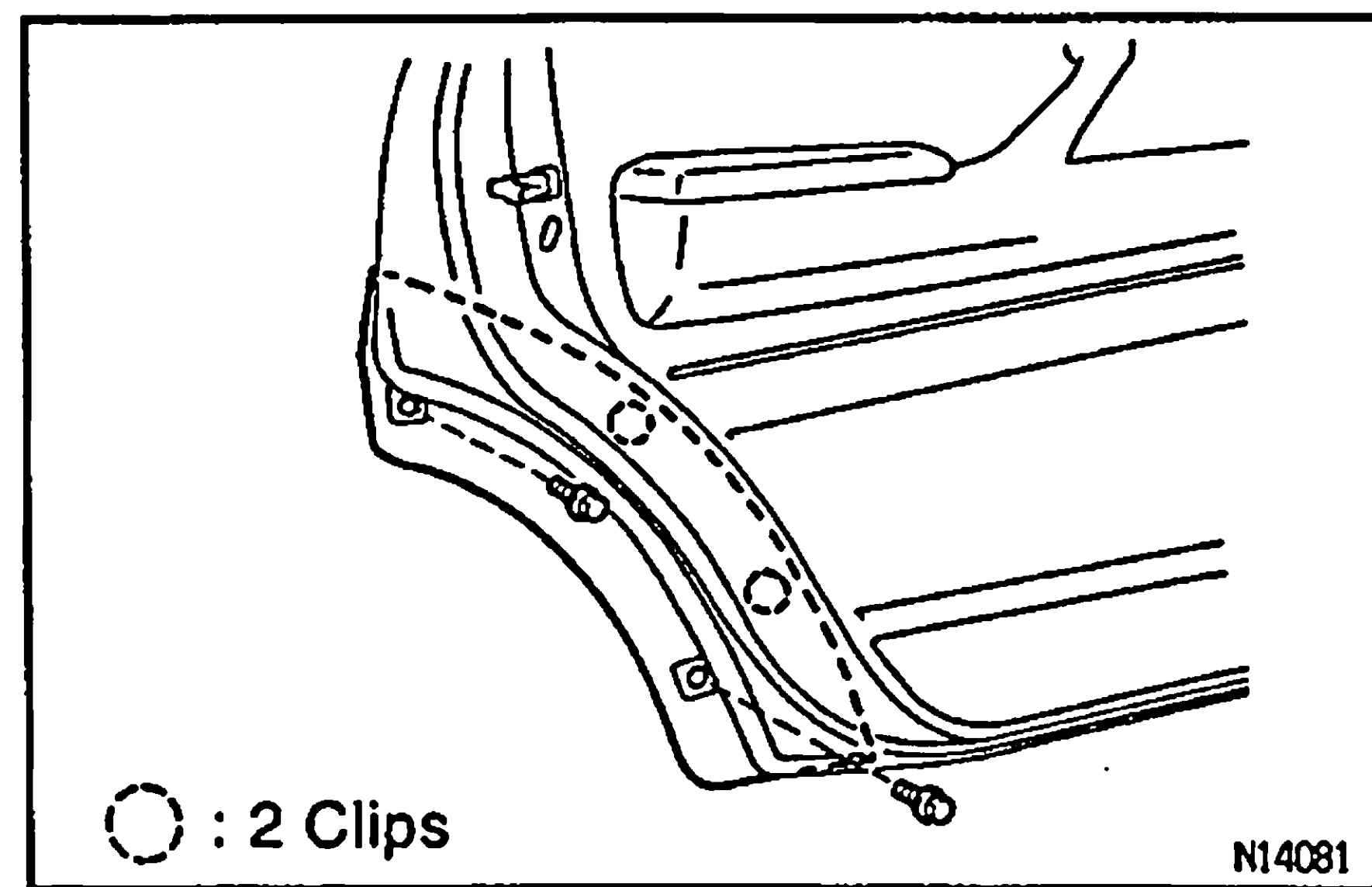
REAR WHEEL OPENING EXTENSION REMOVAL

B01RS-01

REAR DOOR SIDE:

REMOVE REAR WHEEL OPENING EXTENSION

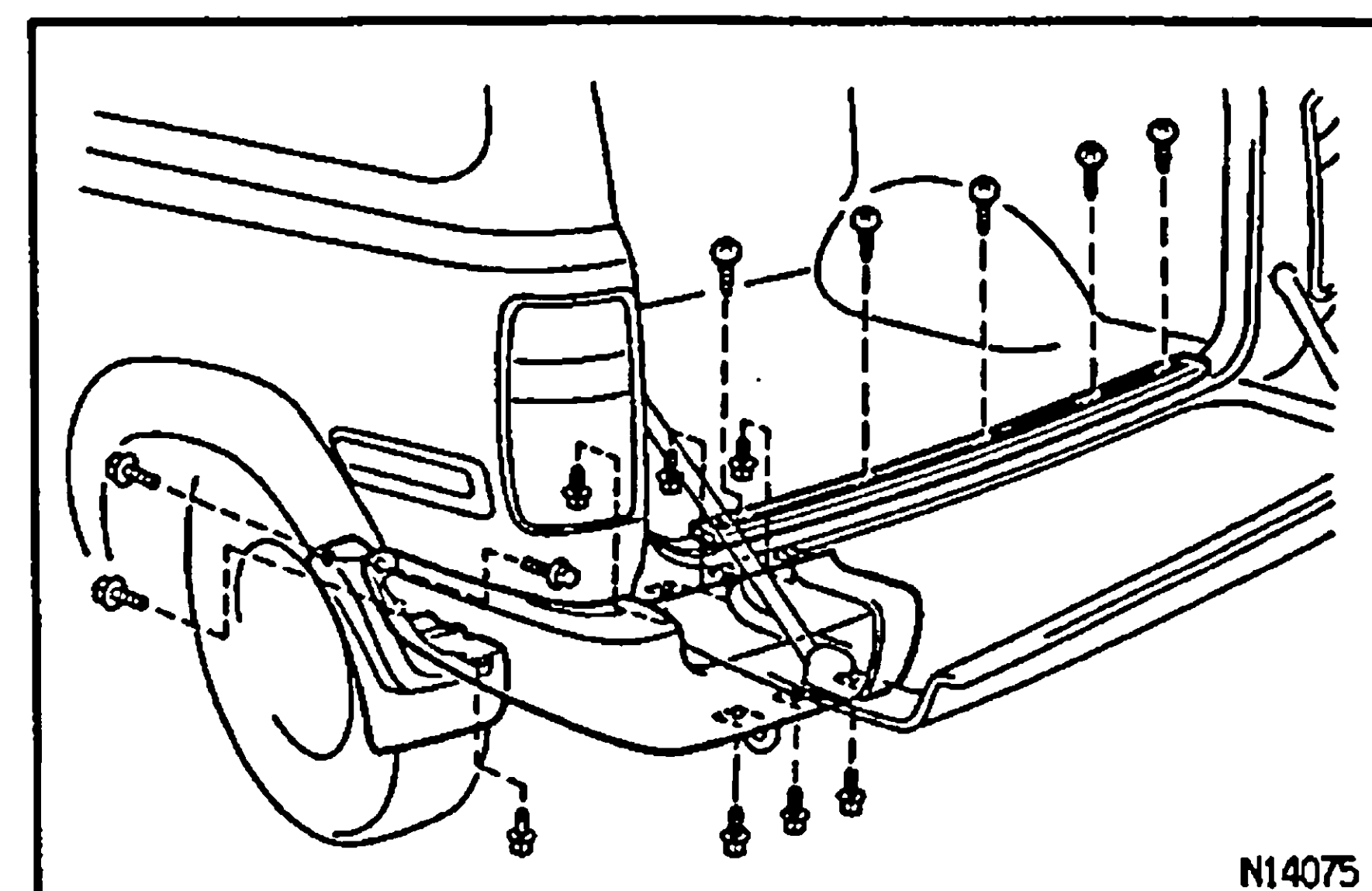
- (a) Remove the 2 bolts.
- (b) Remove the rear wheel opening extension.

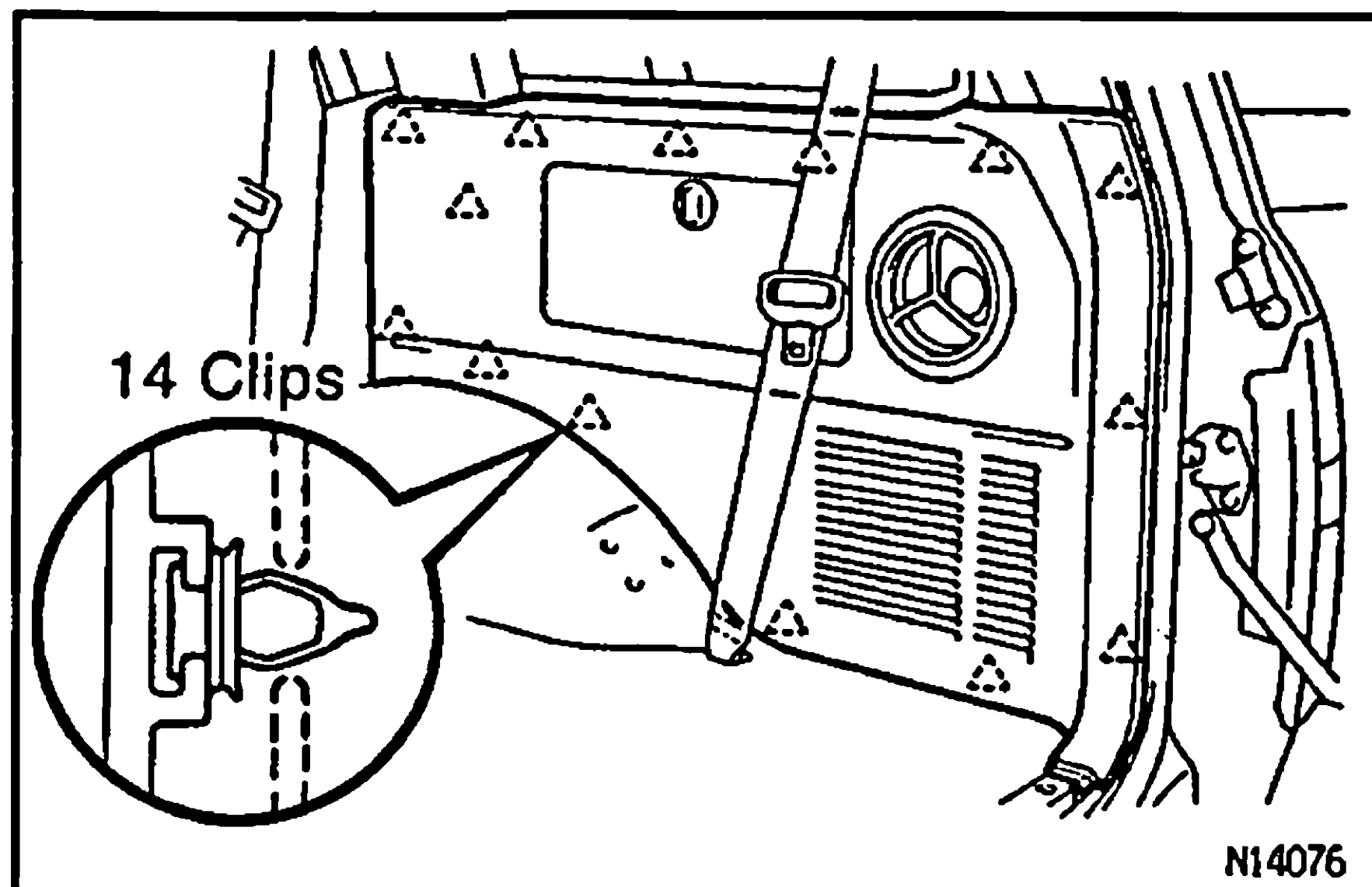


REAR QUARTER SIDE:

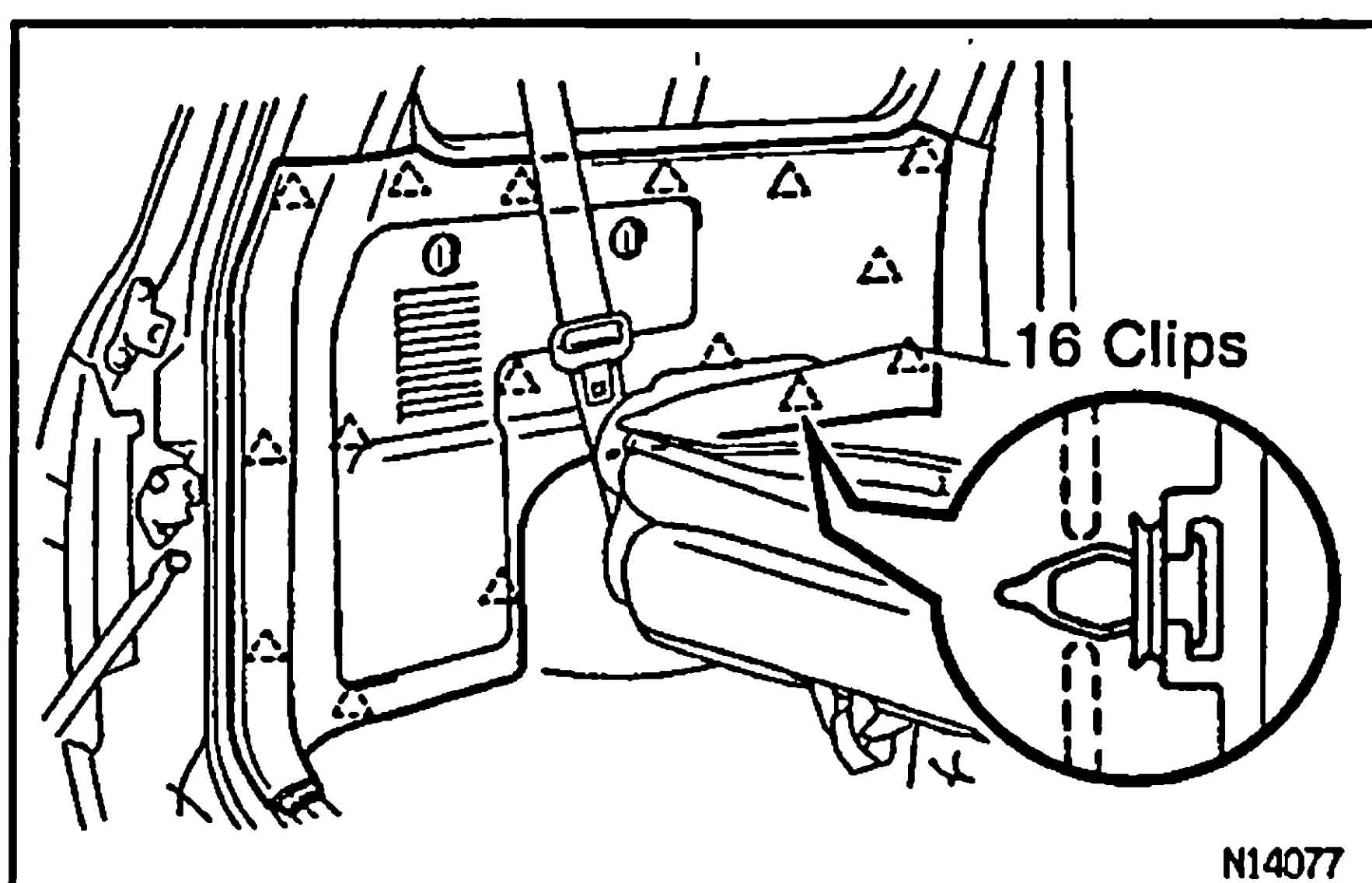
1. REMOVE THESE PARTS:

- (a) Rear mud guard
- (b) Rear bumper extension
- (c) Back door scuff plate

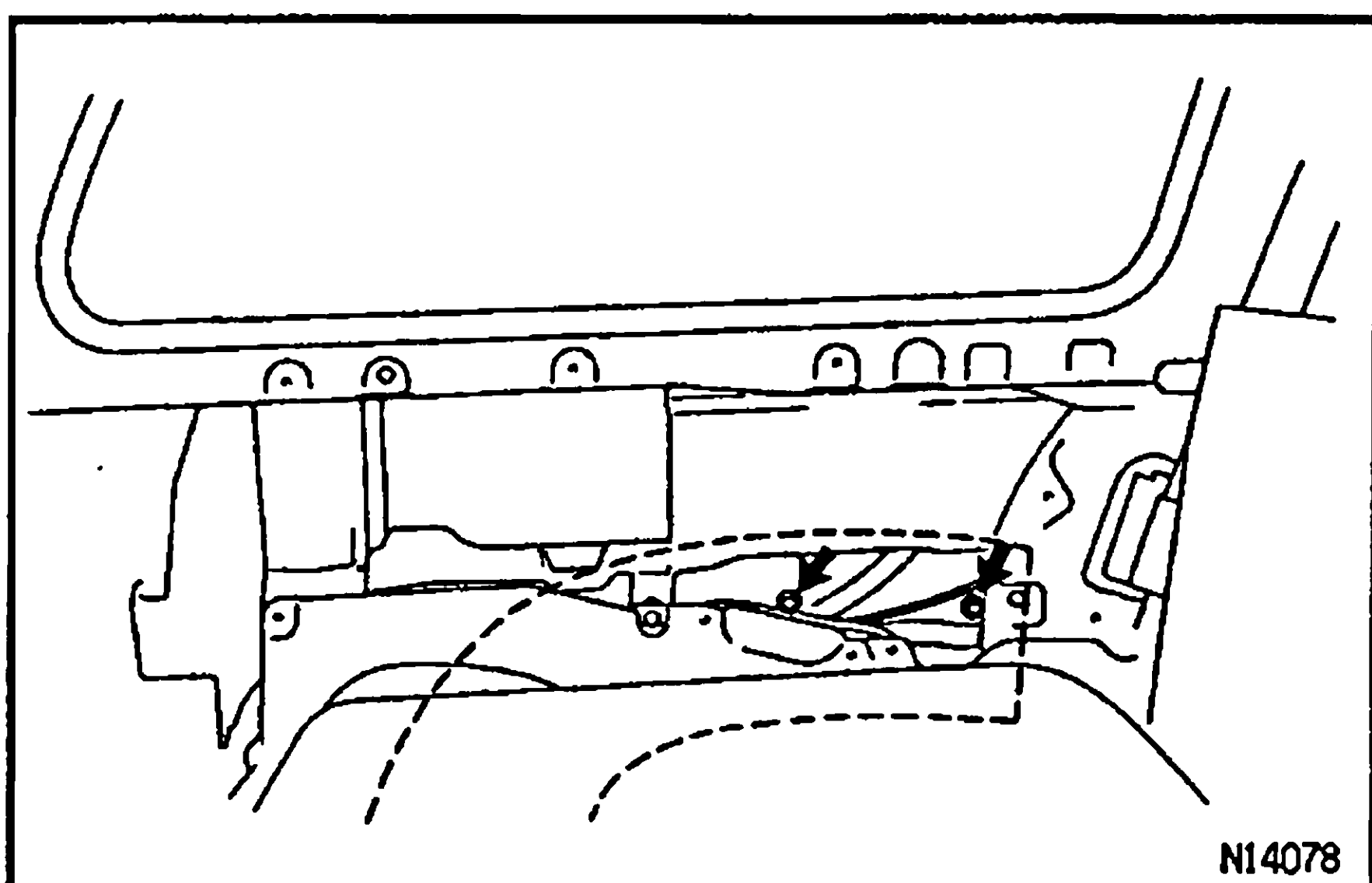




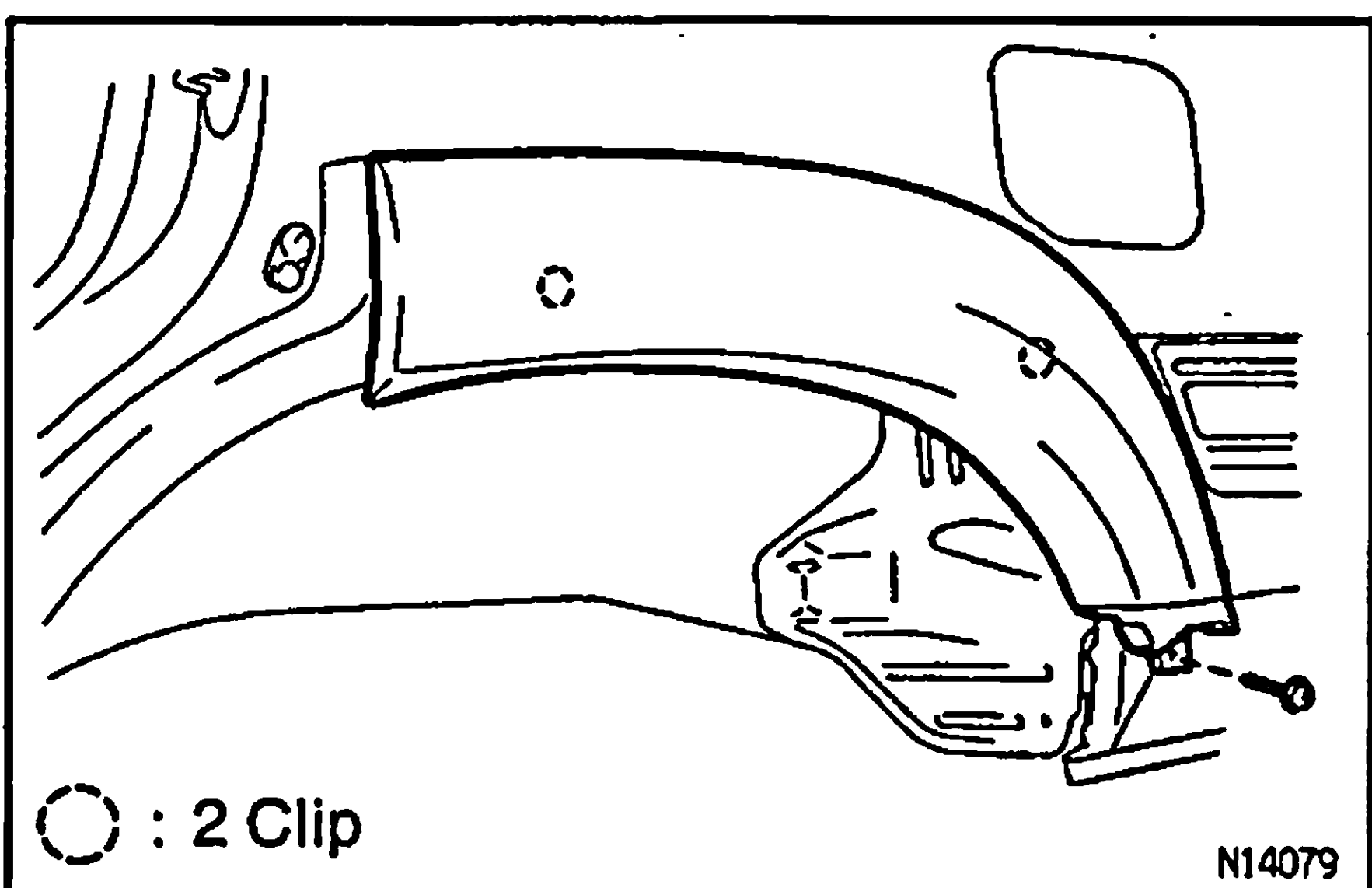
(d) Quarter trim (RH)



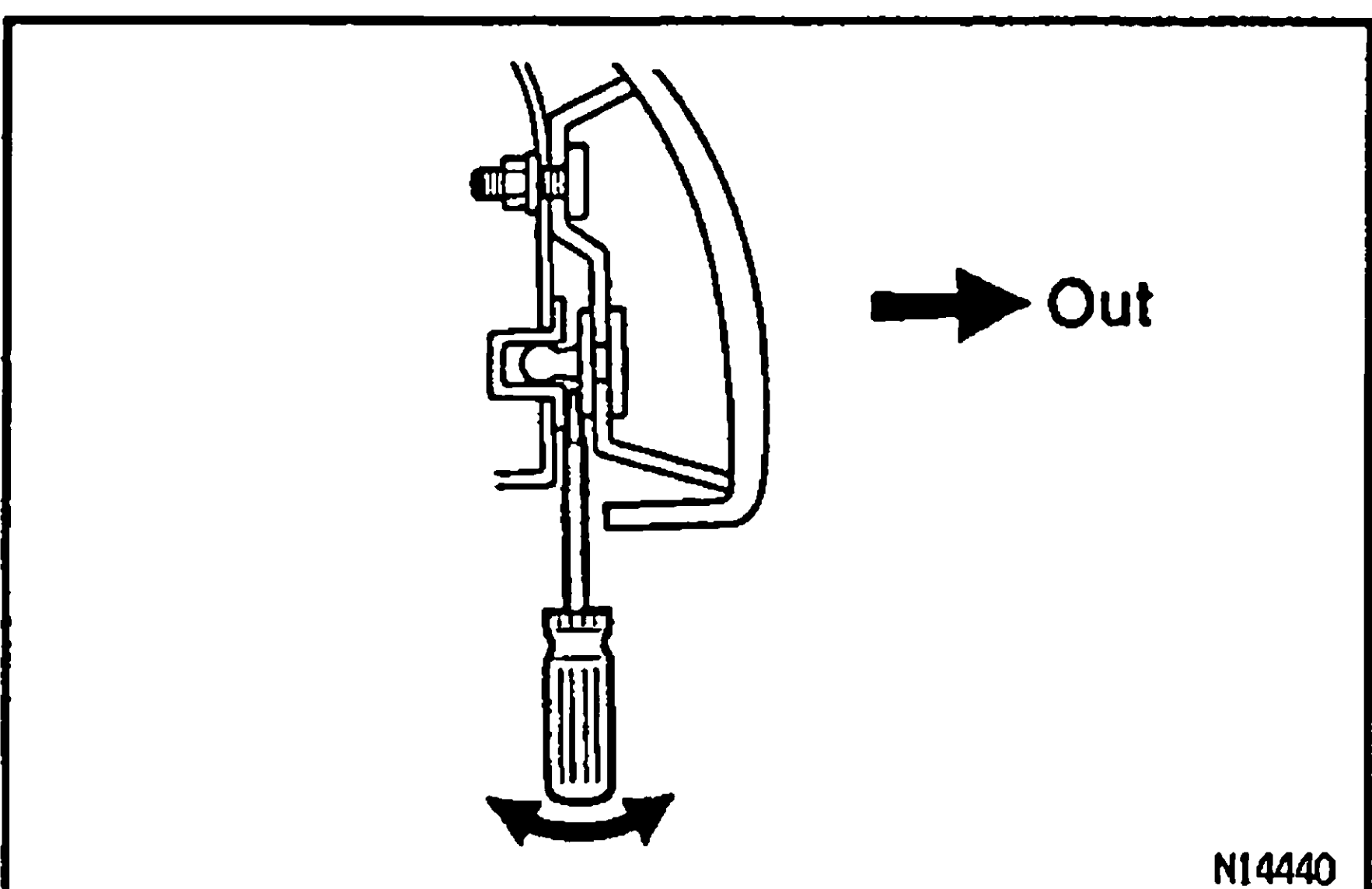
(e) Quarter trim (LH)

**2. REMOVE REAR WHEEL OPENING EXTENSION**

(a) Remove the 2 nuts.

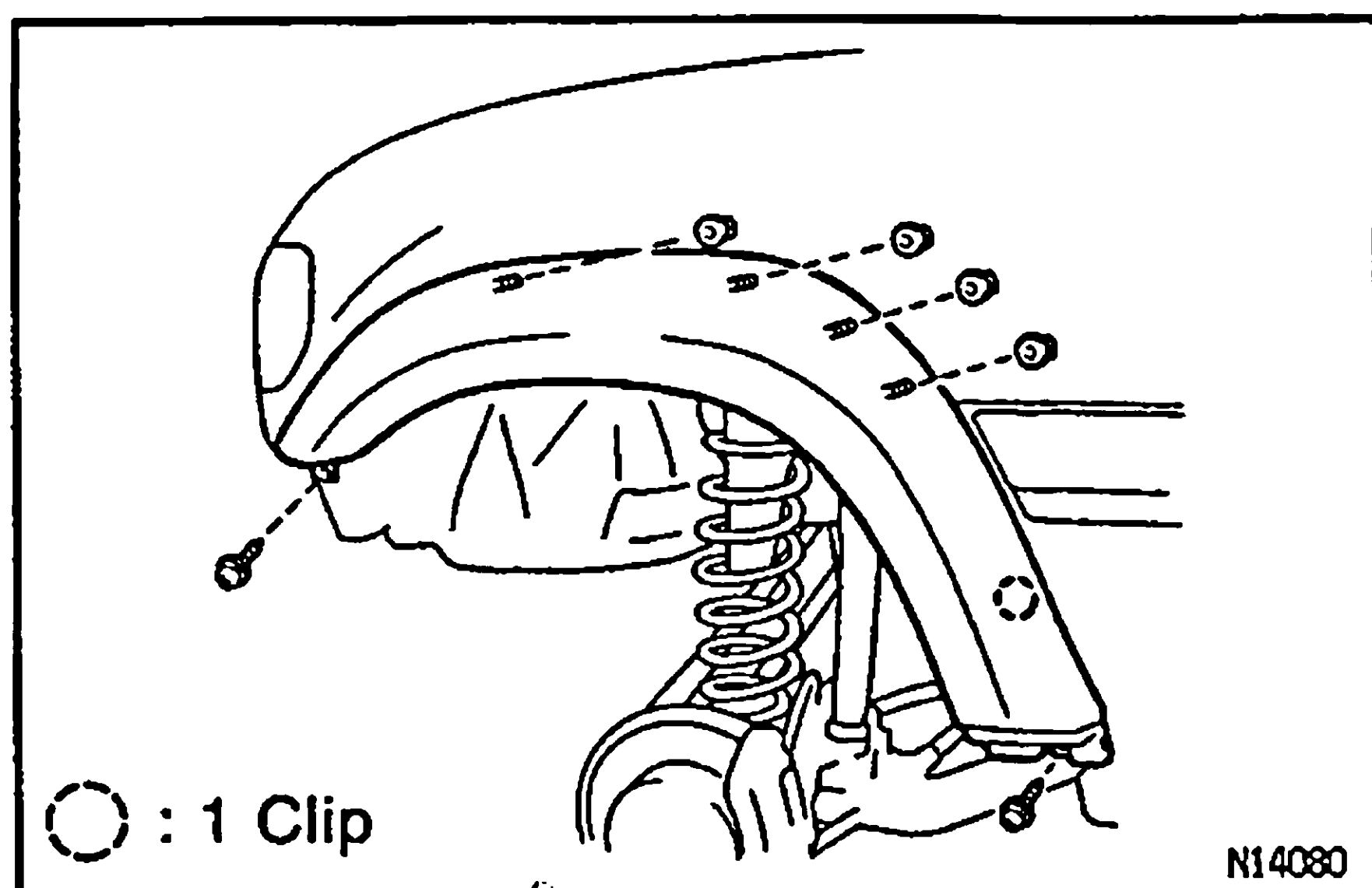


(b) Remove the screw.



(c) Insert the screwdriver pry out the rear wheel opening extension.

BO1RT-01



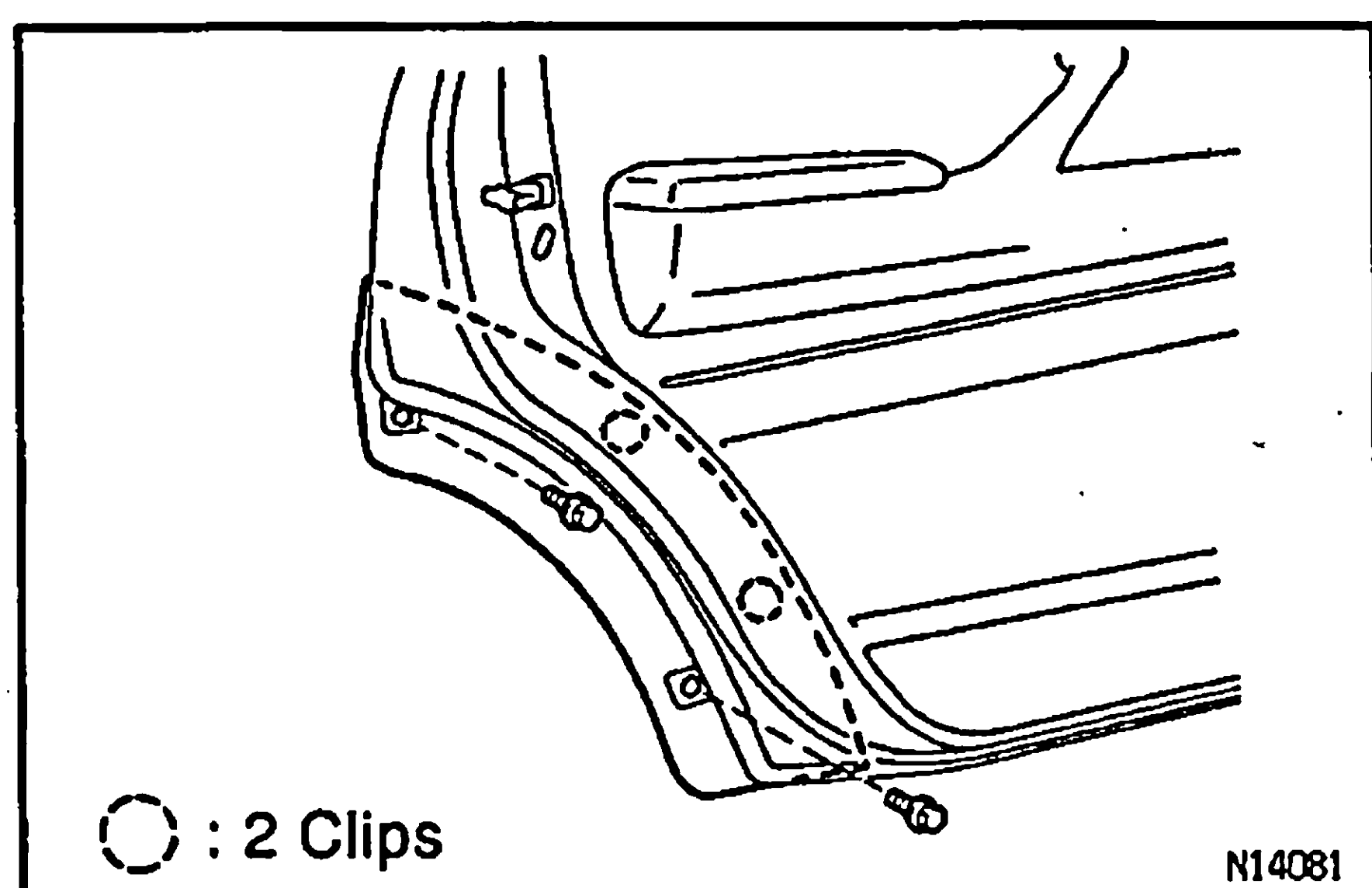
FRONT WHEEL OPENING EXTENSION INSTALLATION

1. INSTALL FRONT WHEEL OPENING EXTENSION

- Install the front wheel opening extension.
- Install the 4 nuts from the service hole of the engine room inside.
- Install the 2 screws.

2. INSTALL THESE PARTS:

- Front bumper extension
- Front mud guard
- Front wheel
- Cool air intake duct
- Air cleaner case assembly
- Charcoal canister



REAR WHEEL OPENING EXTENSION INSTALLATION

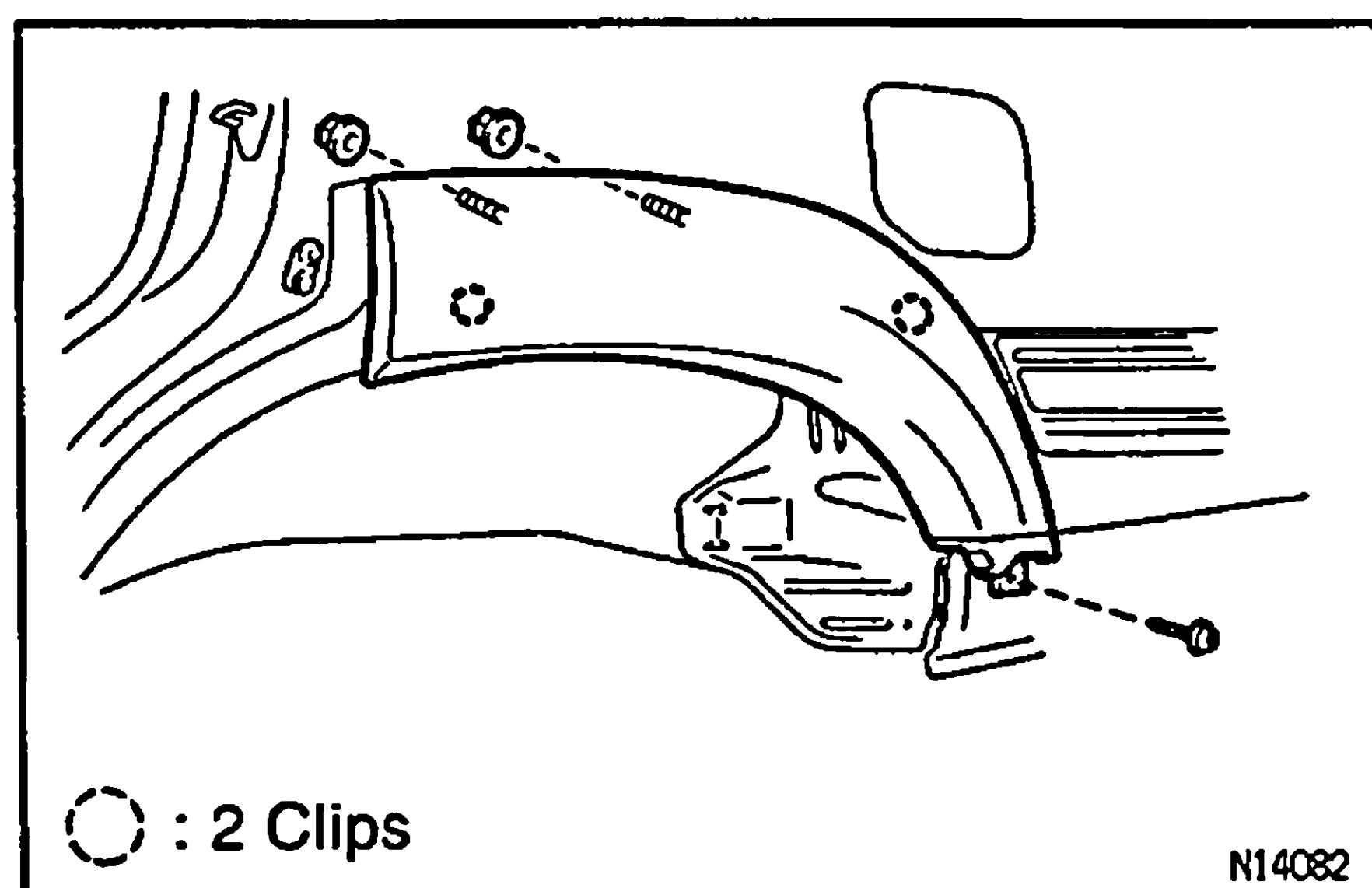
BO1RU-01

REAR DOOR SIDE:

INSTALL REAR WHEEL OPENING EXTENSION

Install the 2 bolts and rear wheel opening extension.

BO



REAR QUARTER SIDE:

1. INSTALL REAR WHEEL OPENING EXTENSION

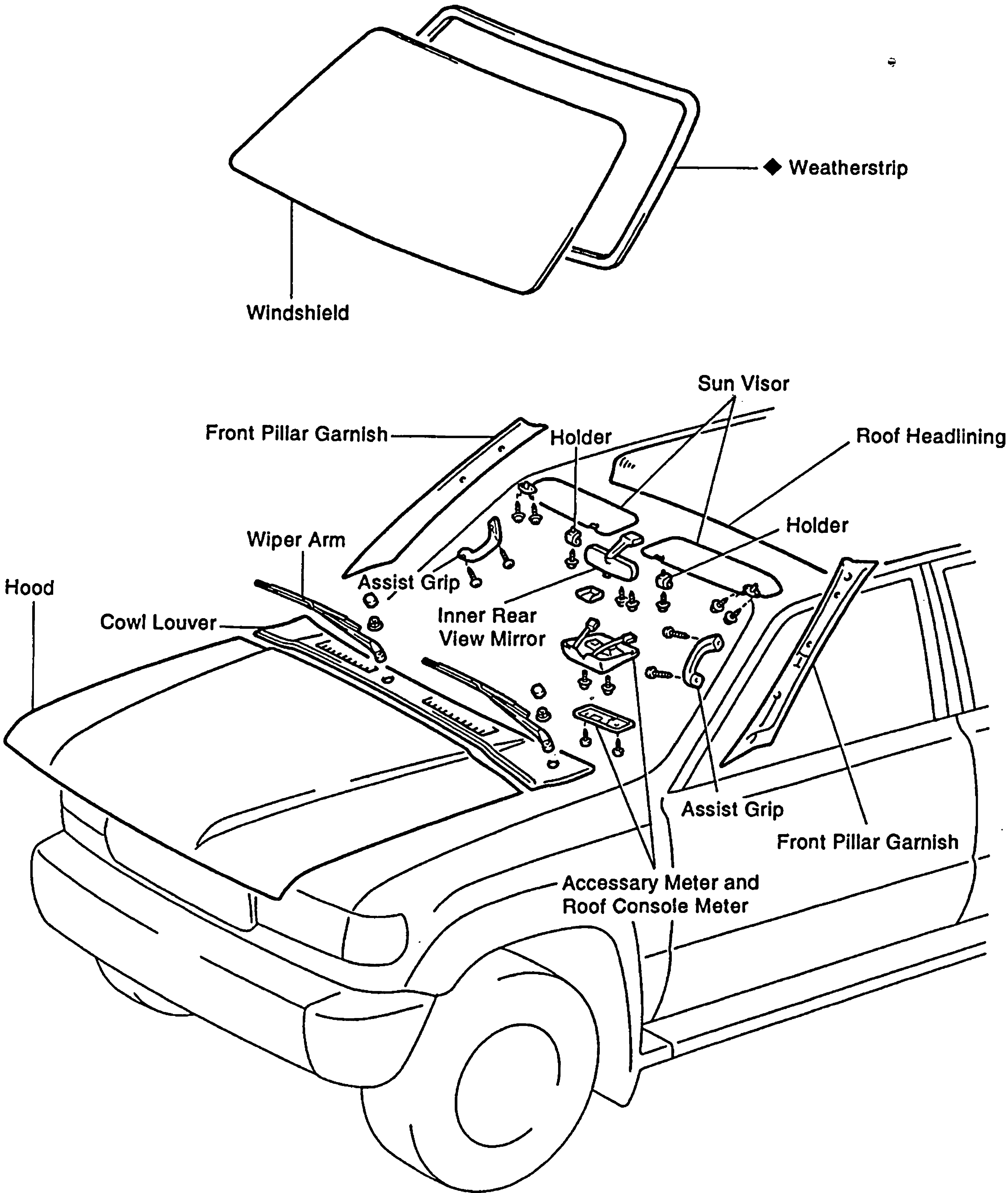
- Install the 2 nuts and rear wheel opening extension.
- Install the screw.

2. INSTALL THESE PARTS:

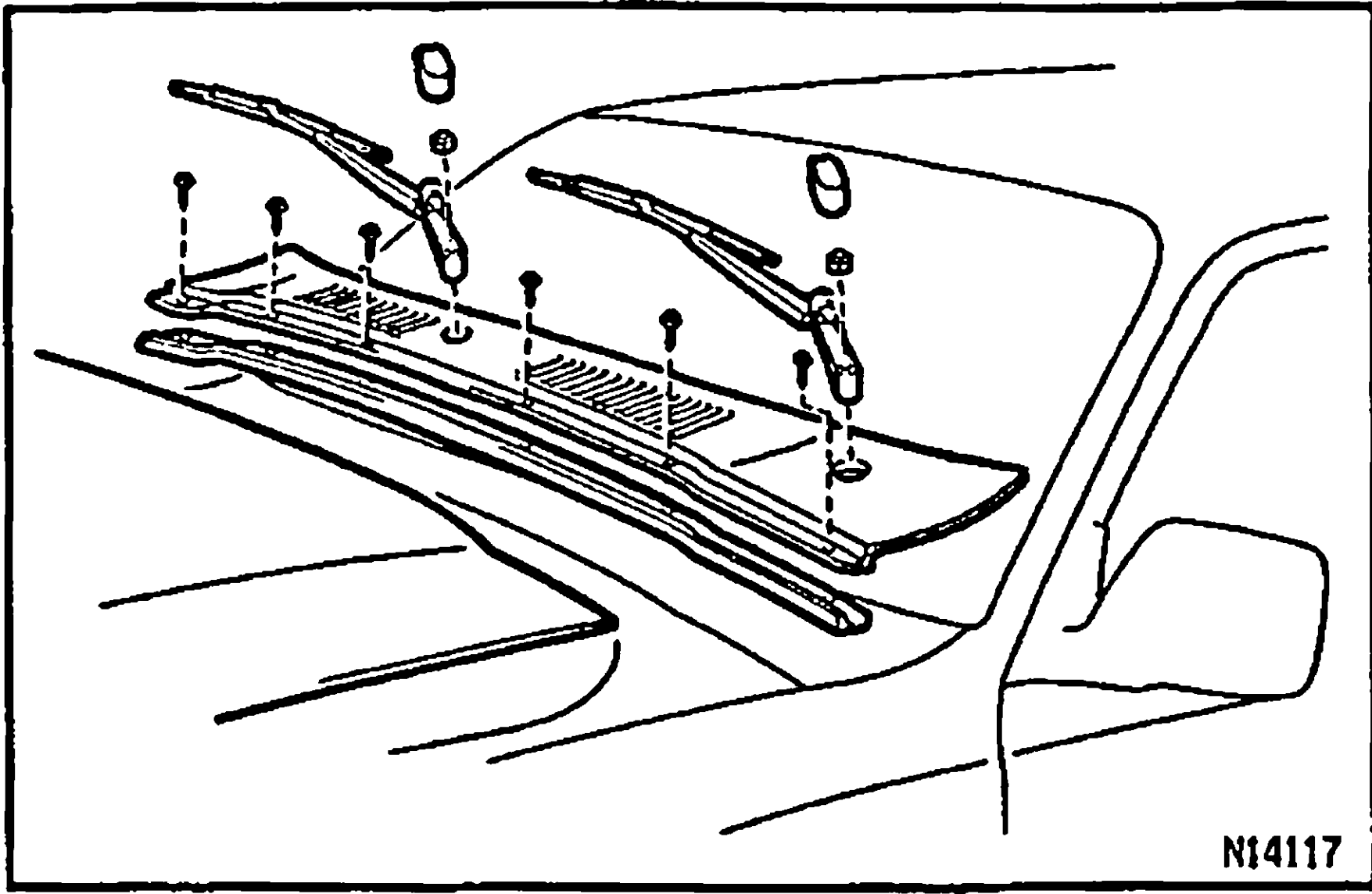
- Quarter trim (LH)
- Quarter trim (RH)
- Back door scuff plate
- Rear bumper extension
- Rear mud guard

WINDSHIELD
COMPONENTS

BO1RV-01



◆ Non-reusable part

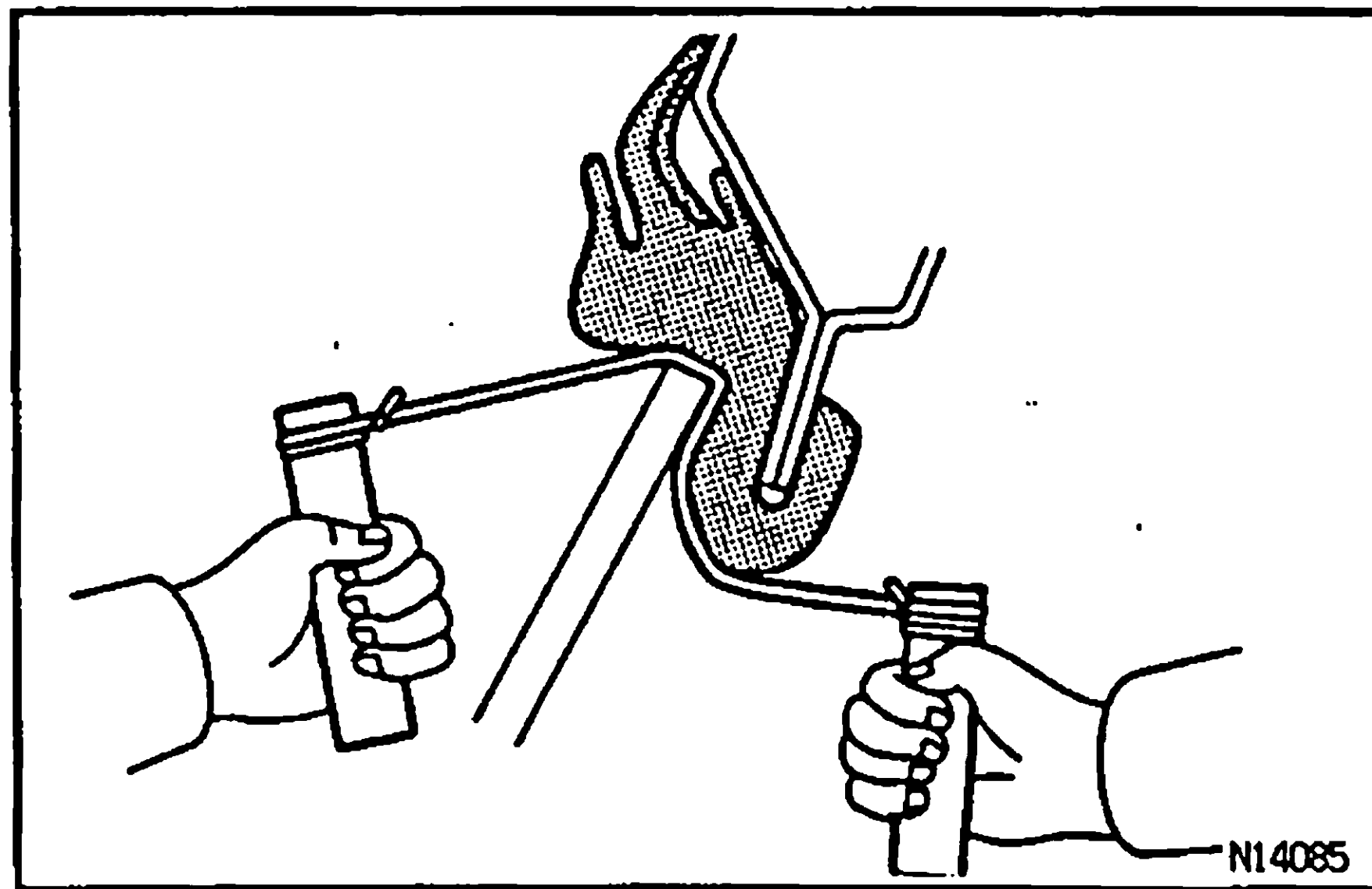
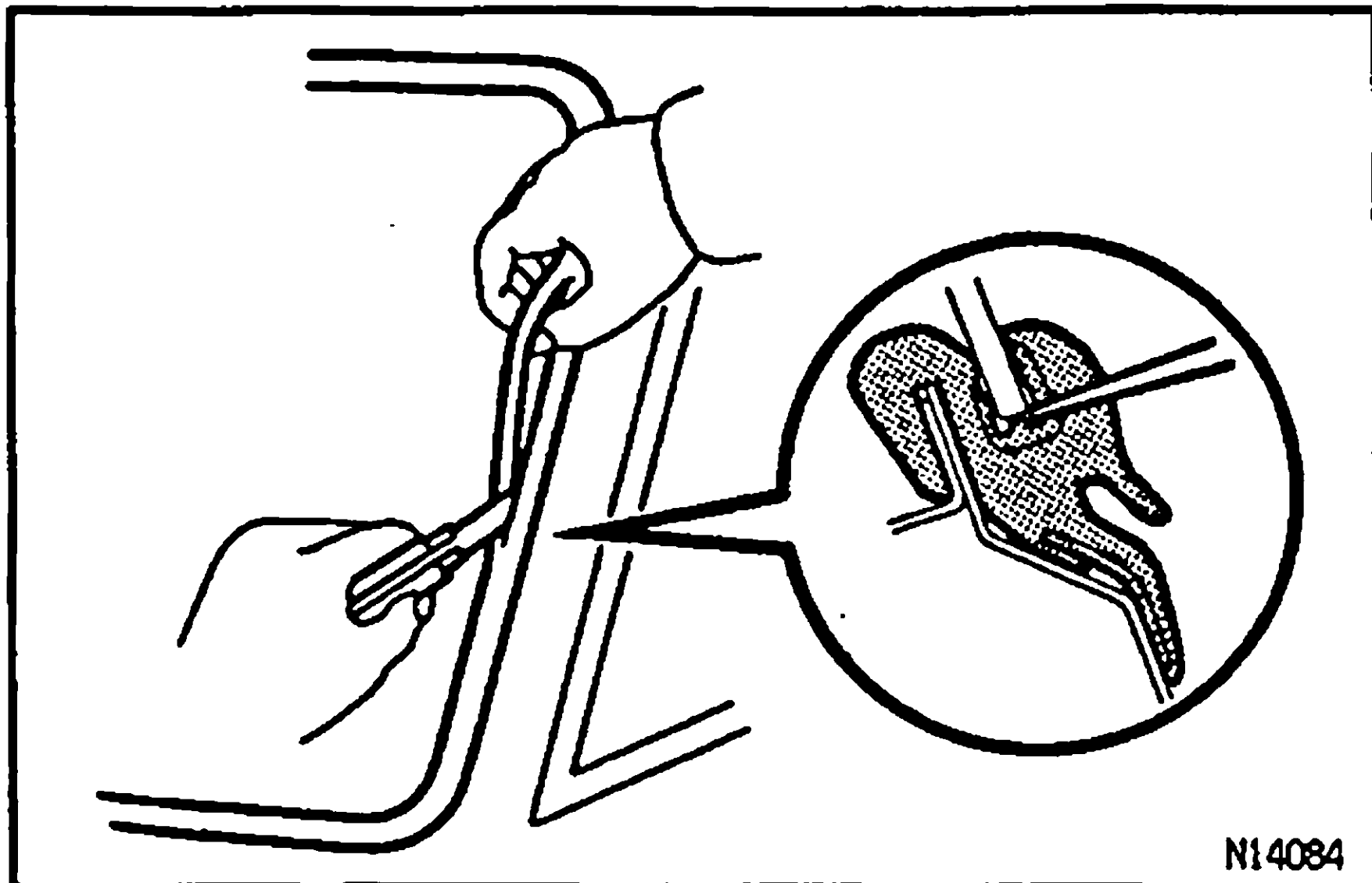
WINDSHIELD REMOVAL**1. REMOVE THESE PARTS:**

- (a) Hood
- (b) Wiper arms
- (c) Cowl louver
- (d) Inner rear view mirror
- (e) Accessory meter and roof console meter
- (f) Sun visors and holders
- (g) Assist grip
- (h) Front pillar garnish

2. LOOSEN ROOF HEADLINING**3. REMOVE WINDSHIELD GLASS**

- (a) From the outside of the vehicle, cut off the weather-strip.

NOTICE: Do not damage the body and the glass.

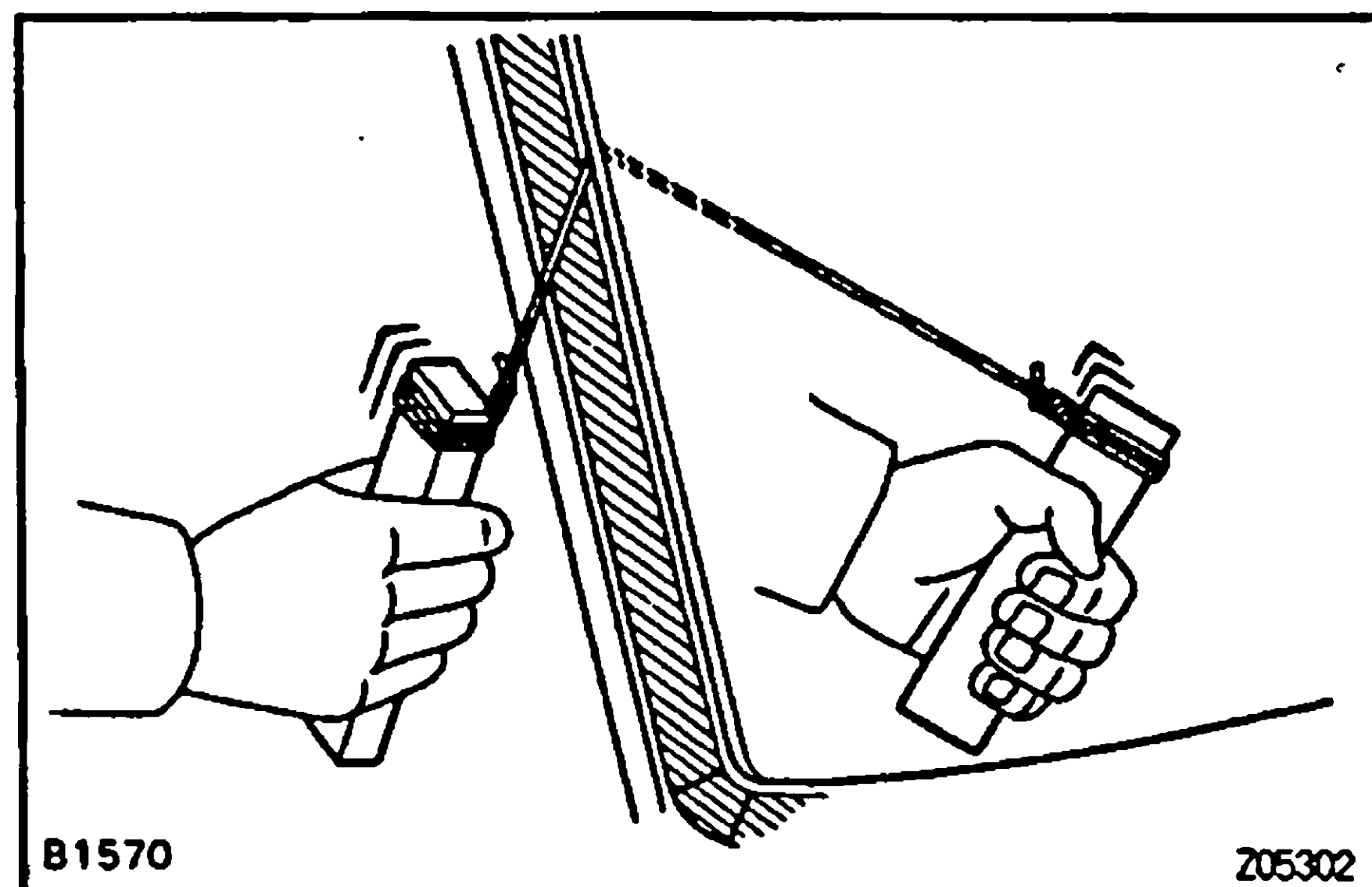


- (b) Push piano wire through between the body and glass from the interior.

- (c) Tie both wire ends to the wooden blocks or equivalent.

NOTICE: When separating, take care not to damage the paint or interior ornaments.

To prevent scratching the safety pad when removing the windshield, place a plastic sheet between the piano wire and safety pad.

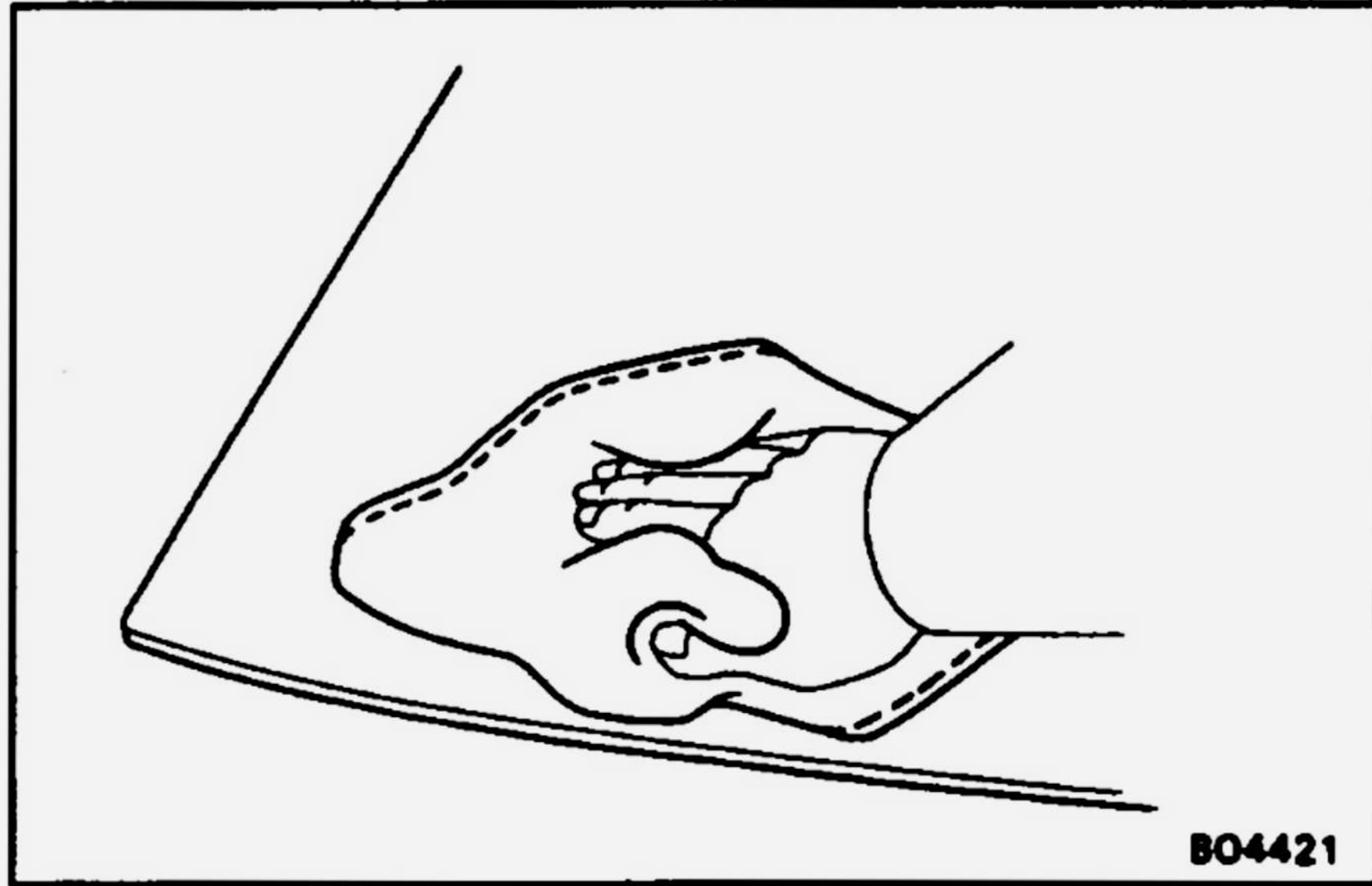


- (d) Cut the adhesive by pulling the piano wire around it.
- (e) Remove the glass.

WINDSHIELD INSTALLATION

1. CLEAN BODY AND GLASS

Using a cleaner, clean the weatherstrip contacting surface of the body and the glass.



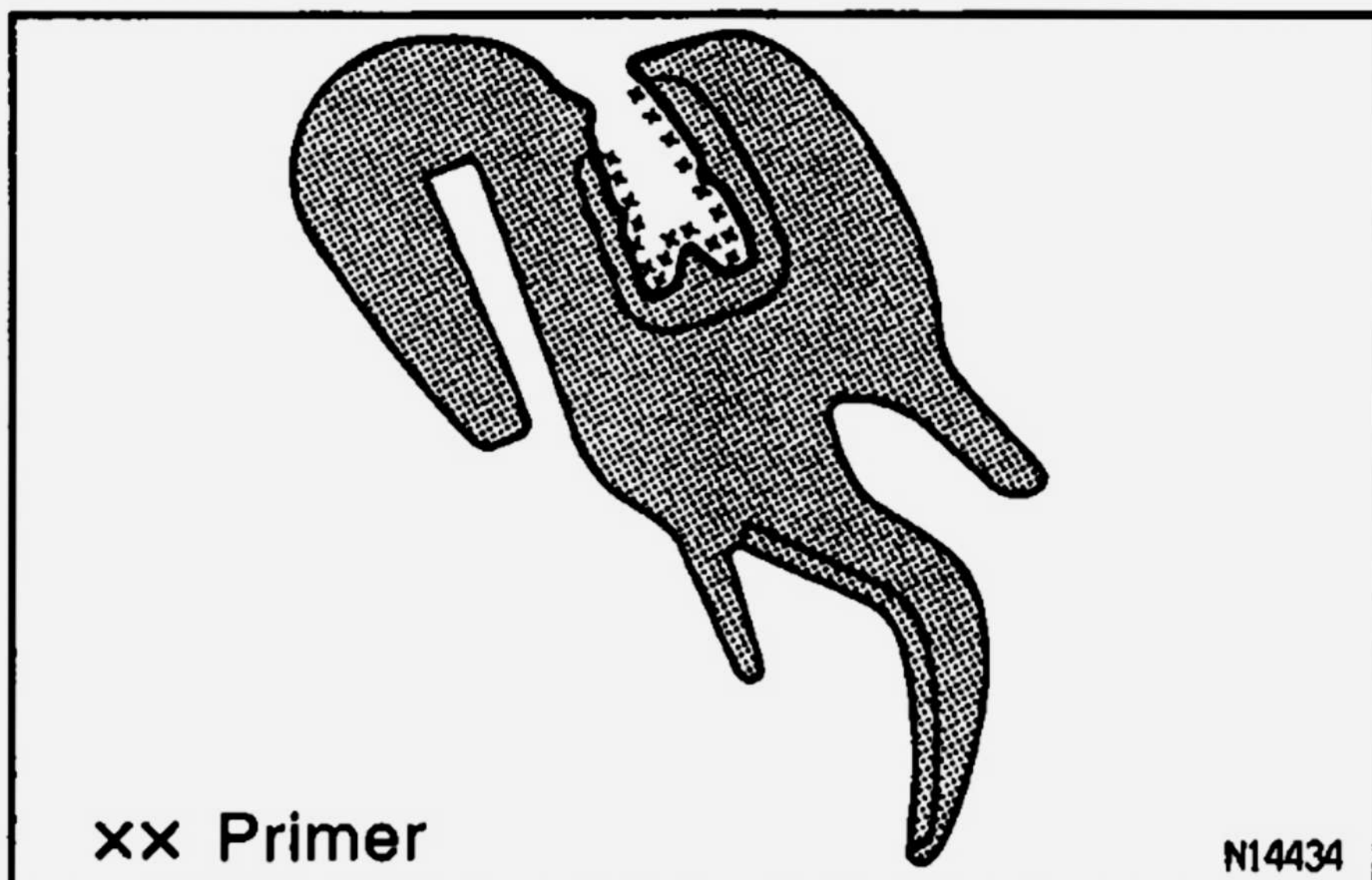
2. INSTALL WEATHERSTRIP

(a) w/ Airbag:

Apply primer to the weatherstrip on the contact surface with glass as shown in the illustration.

NOTICE: Let the primer coating dry for 3 minutes or more.

PRIMER: Sunstar—9002 T or equivalent



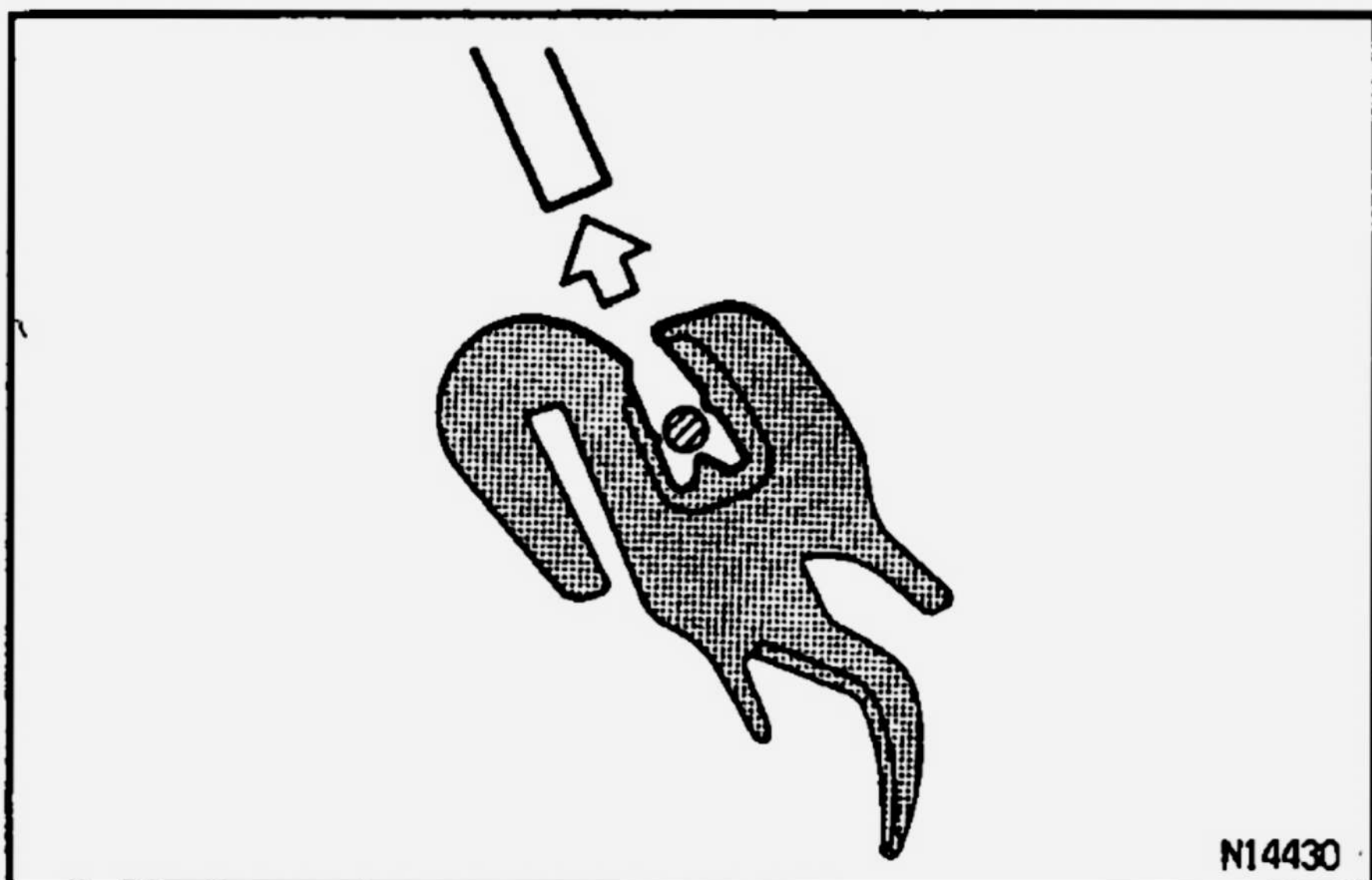
(b) Cut off the tip of the cartridge nozzle. Fill the cartridge with adhesive.

(c) Apply adhesive to the weatherstrip on the glass edge retaining surface as shown in the illustration.

ADHESIVE: Sikaflex—256 HV or equivalent

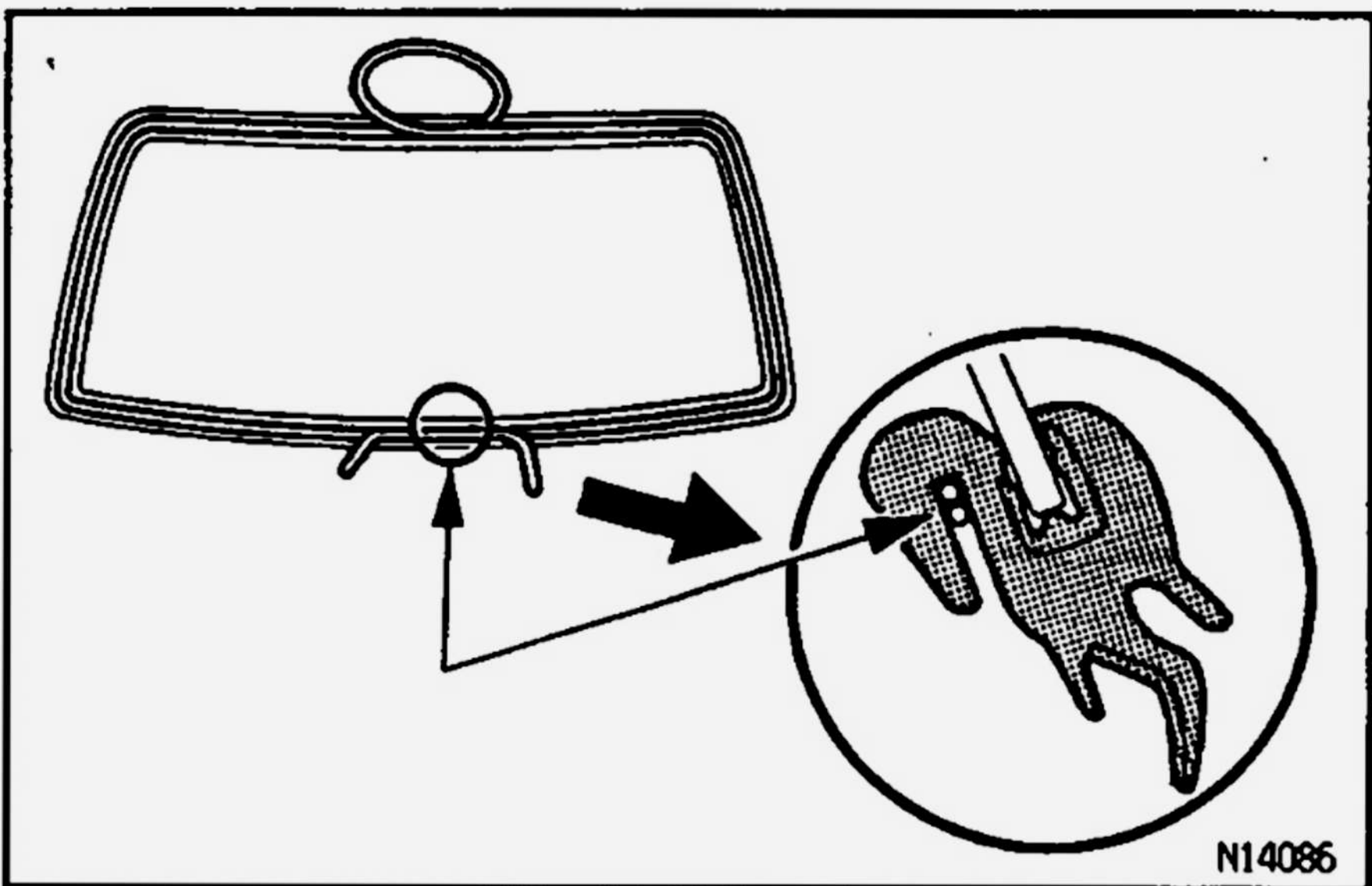
(d) Install the weatherstrip to the glass.

(e) Clean the weatherstrip.



3. INSTALL GLASS

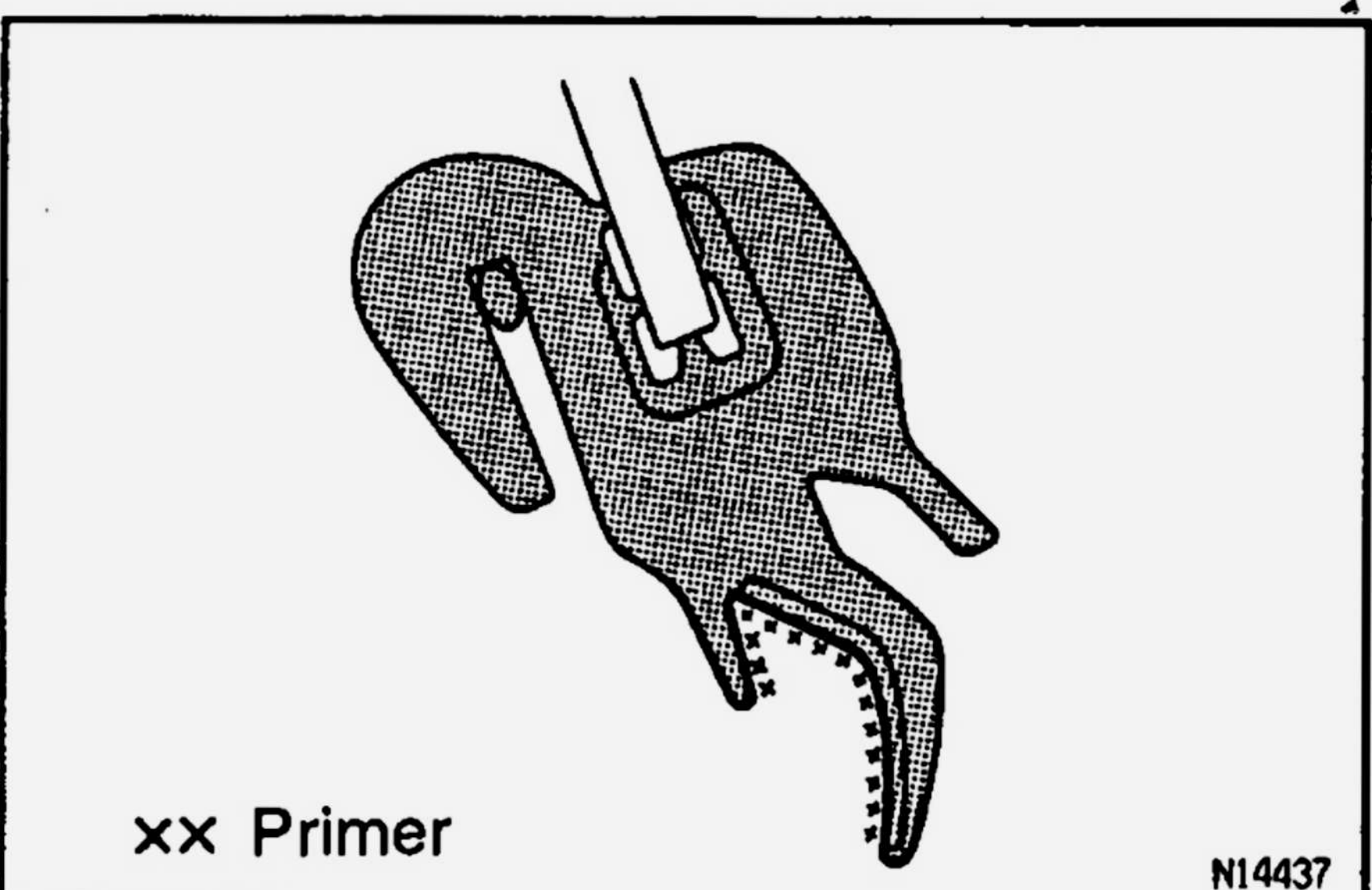
(a) Apply a working cord along the weatherstrip groove, as shown in the illustration.

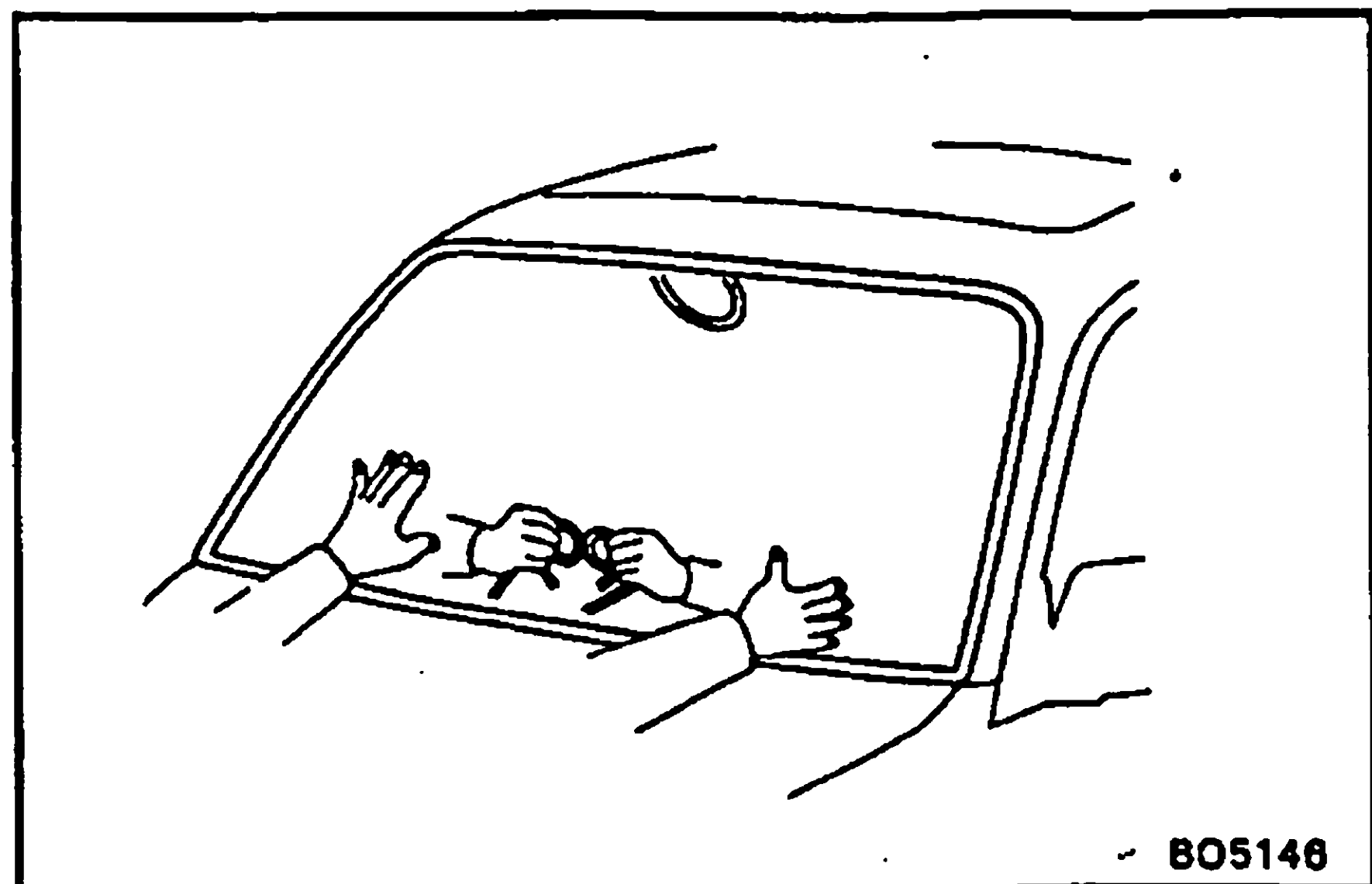


(b) w/ Airbag:

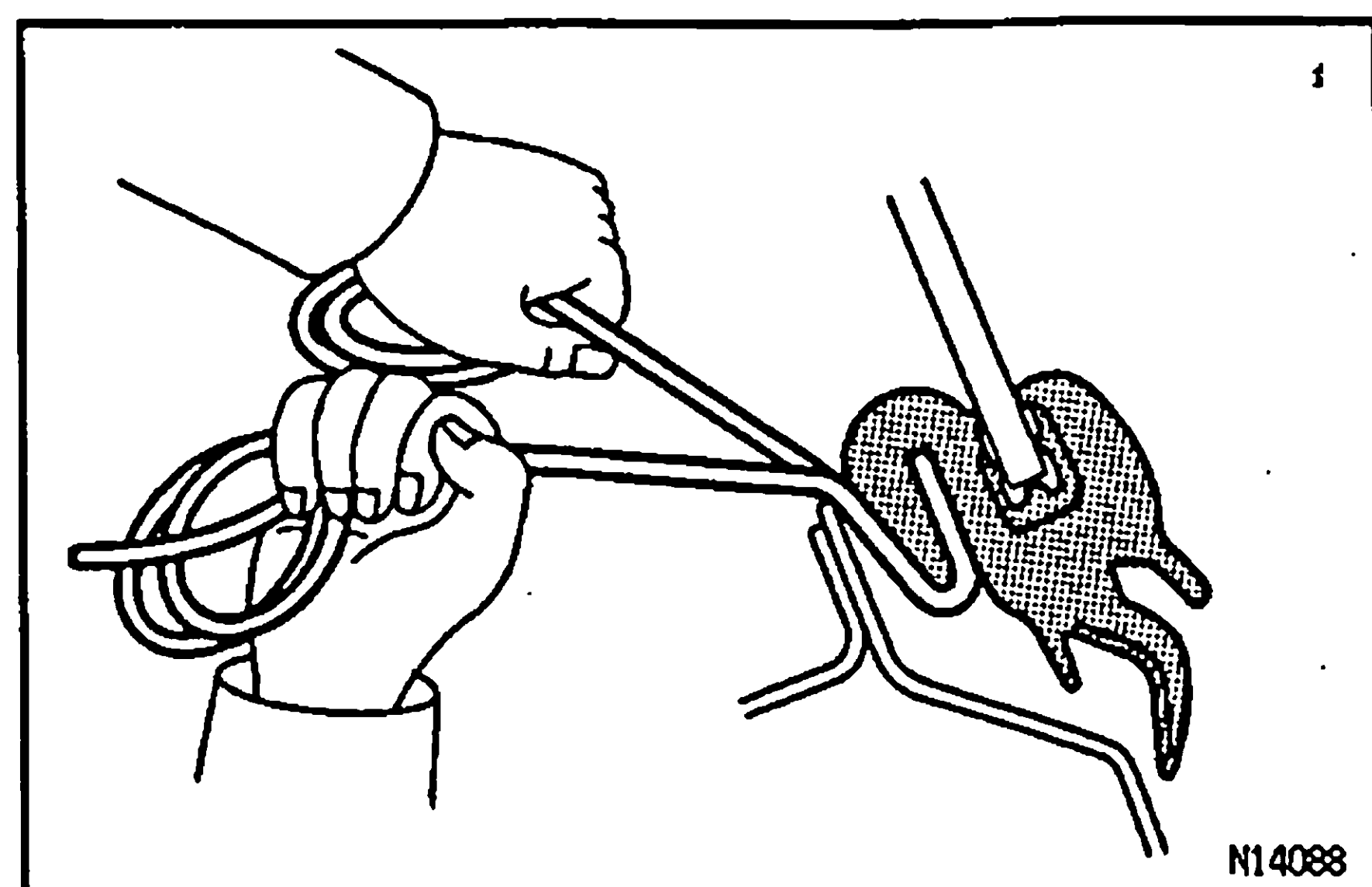
Apply primer to the weatherstrip on the surface with body as shown in the illustration.

PRIMER: Sunstar—9002 T or equivalent

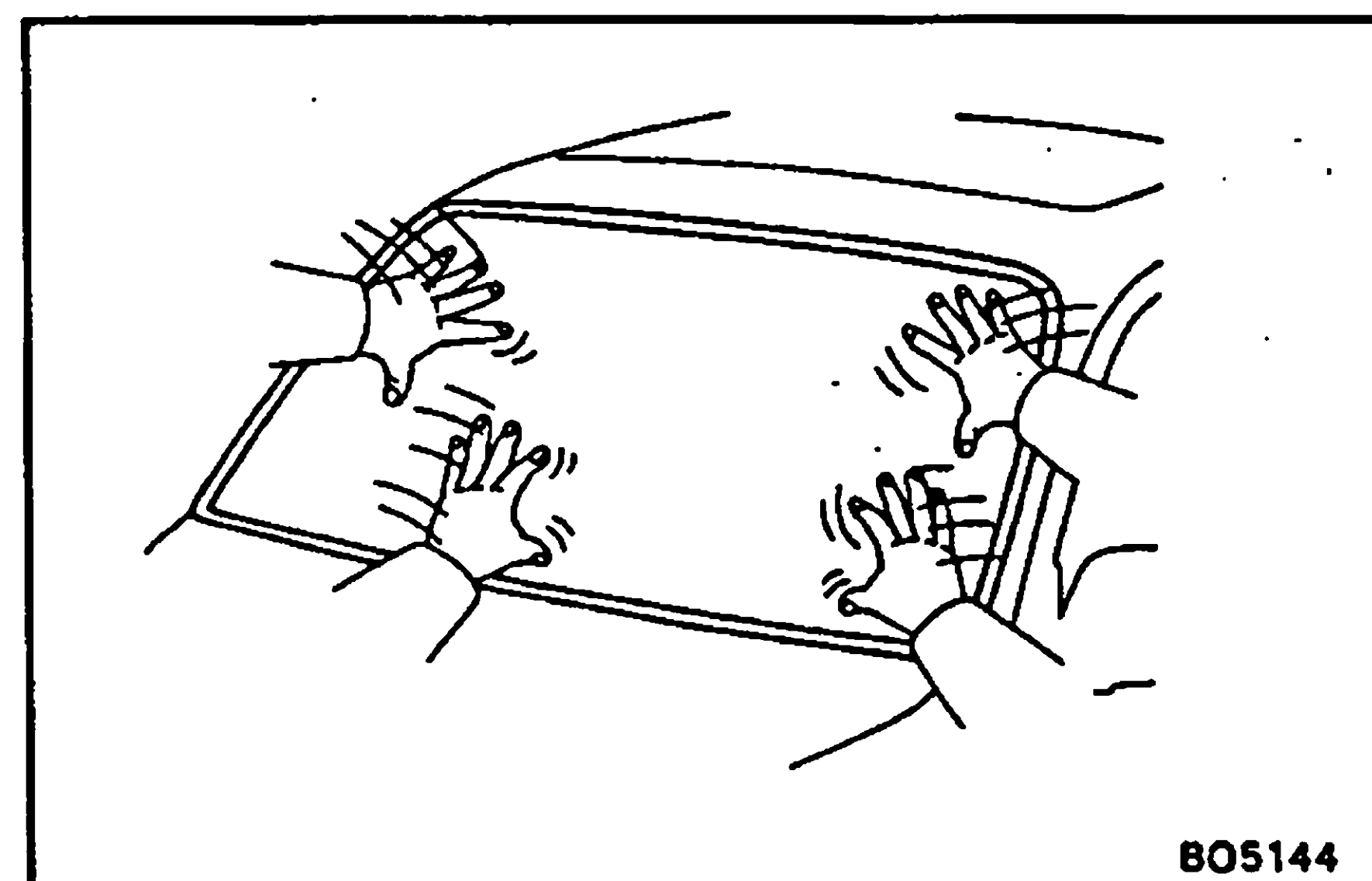




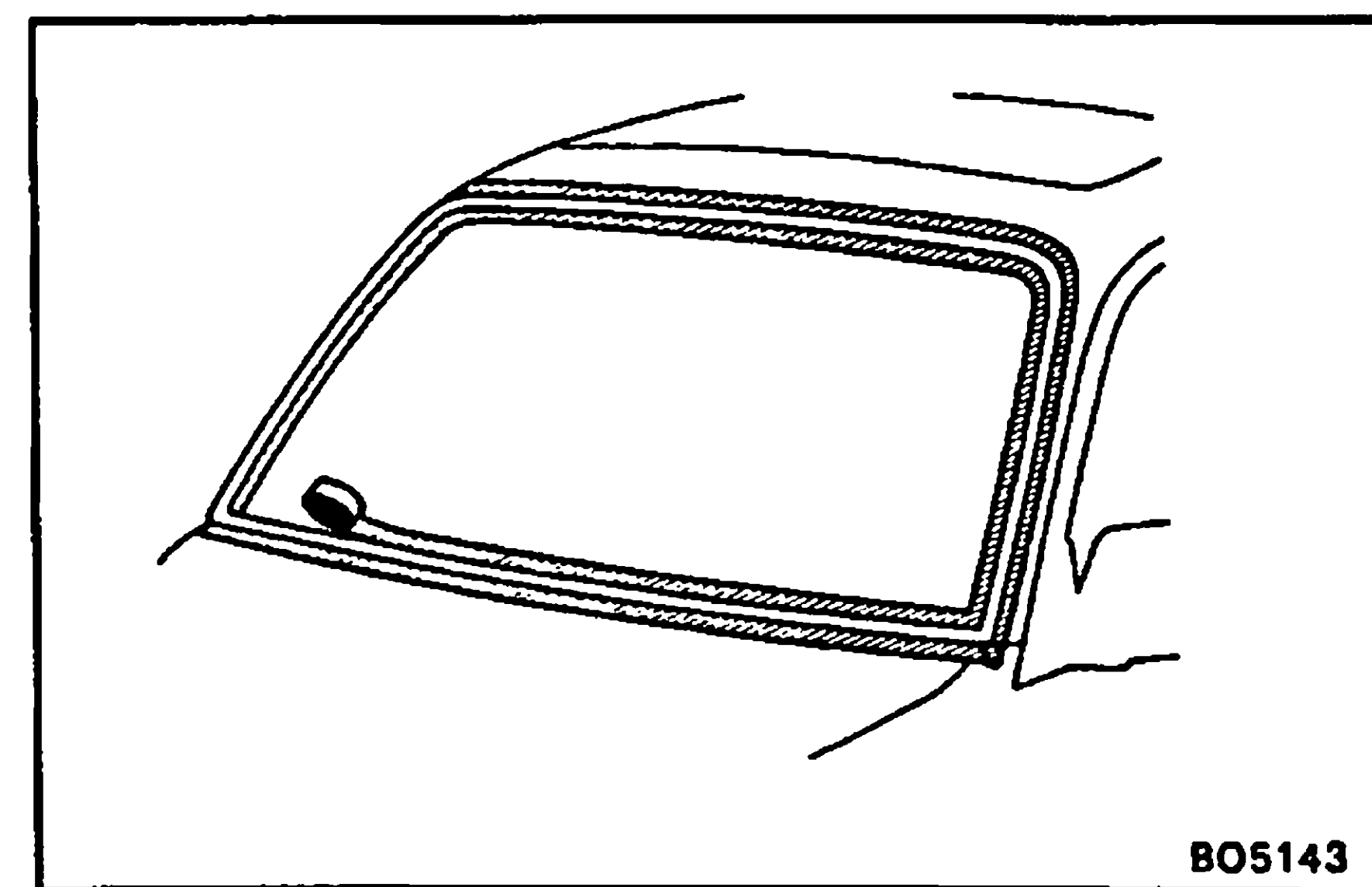
- (c) Begin installation in the middle of the lower part of the glass.
- (d) Hold the glass in position on the body.



- (e) From the inside, pull off one cord at an angle so it pulls the lip over the flange. From the outside, press the glass along the weatherstrip until the glass is installed.

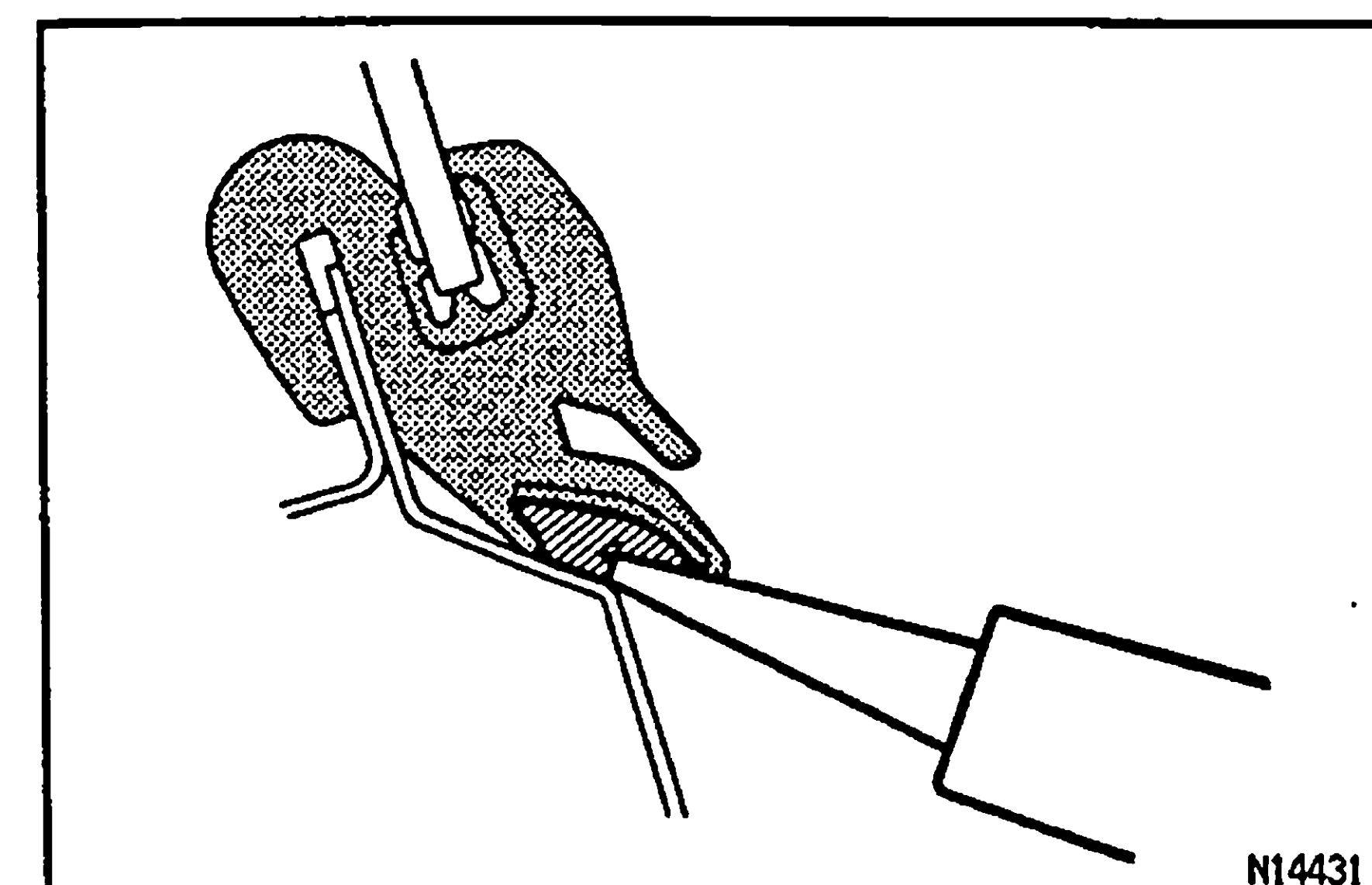


- (f) To make the glass fit snugly, tap from the outside with your open hand.



4. APPLY ADHESIVE

- (a) Put masking tape around the weatherstrip to protect the paint and the glass.



- (b) Cut off the tip of the cartridge nozzle. Fill the cartridge with adhesive.
 - (c) Lift the lip of the weatherstrip (with hand) and fill adhesive into the clearance.
- ADHESIVE: Sikaflex—256HV or equivalent**

5. CLEANING SEALER SURFACE

- (a) Apply auto glass sealer dry, remove the masking tape.
HINT: The auto glass sealer will harden in about 15 hours.
- (b) Clean off the sealer oozing out from the masking tape with a clean rag saturated in cleaner.

6. INSPECT FOR LEAKS AND REPAIR

- (a) Do a leak test.
- (b) Seal any leaks with auto glass sealer.
Part No. 08833–00030 or equivalent

7. INSTALL THESE PARTS:

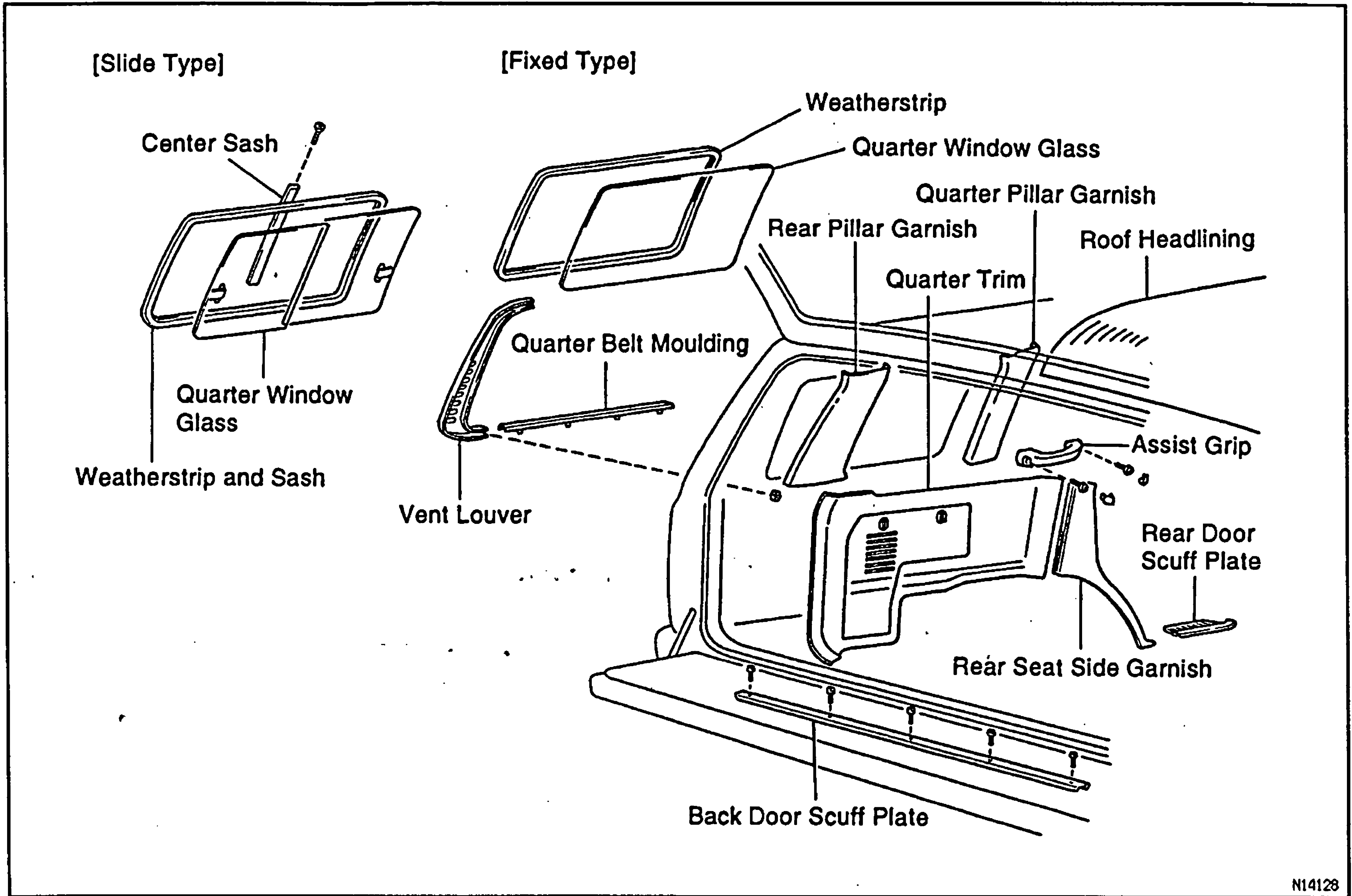
- (a) Roof headlining
- (b) Front pillar garnish
- (c) Assist grips
- (d) Sun visors and holders
- (e) Accessory meter and roof console meter
- (f) Inner rear view mirror
- (g) Cowl louver
- (h) Wiper arms
Torque: 20 N·m(205 kgf·cm, 15 ft·lbf)
- (i) Hood
Torque: 18 N·m(185 kgf·cm, 13 ft·lbf)

8. ADJUST HOOD

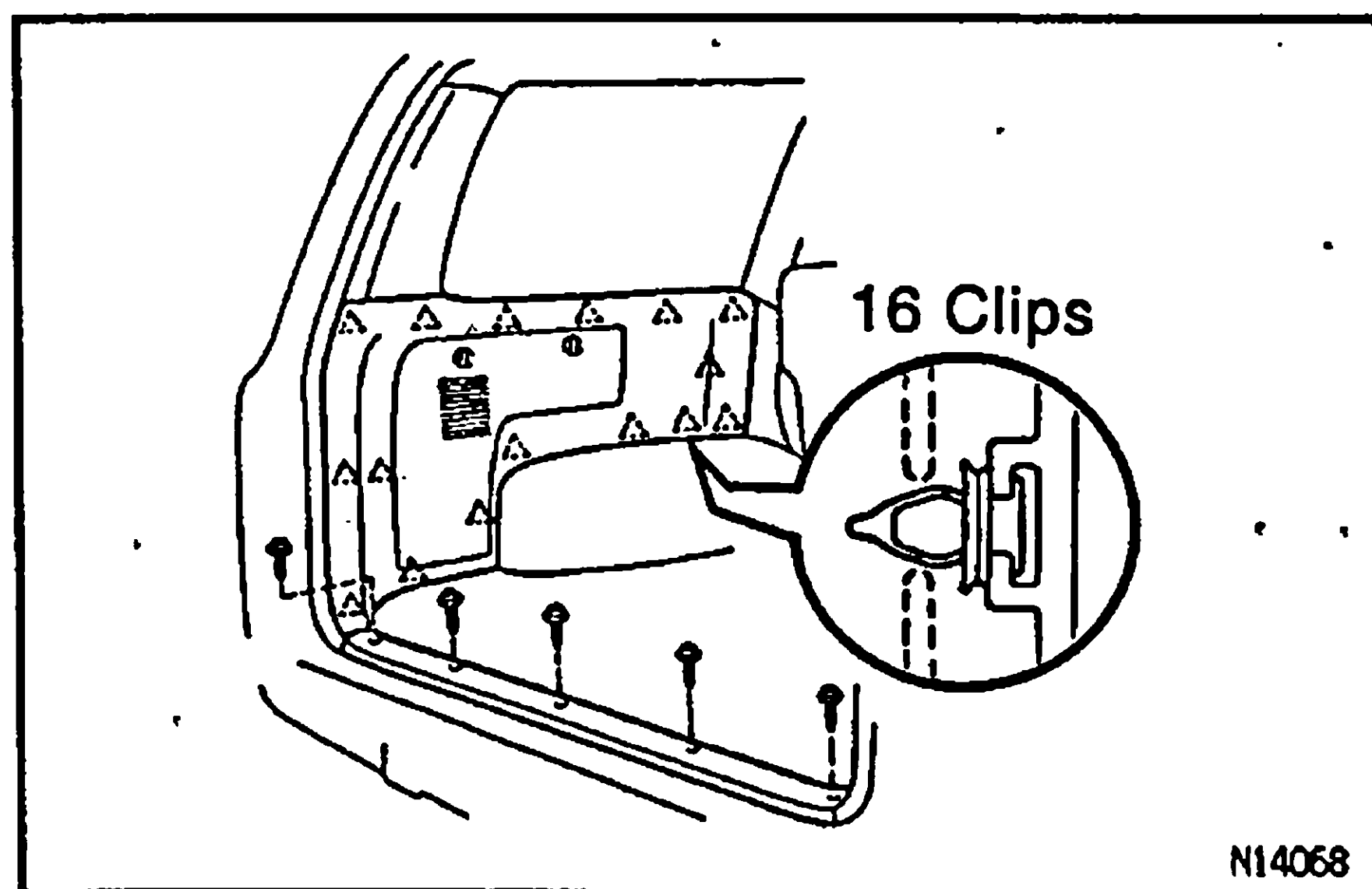
(See Pub. No. RM184E on page BO–5)

QUARTER WINDOW GLASS COMPONENTS

BO1RY-01



N14128



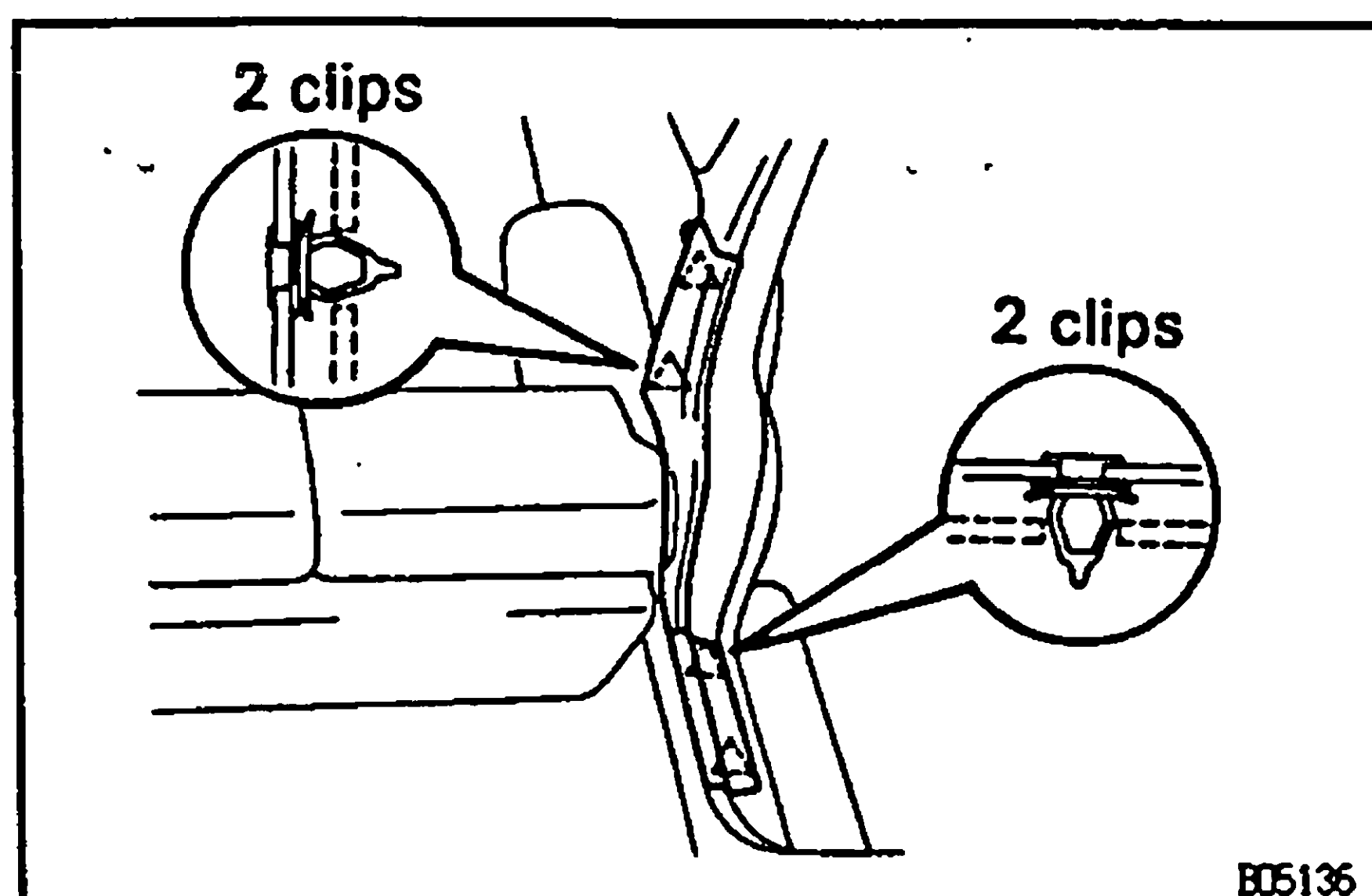
N14068

QUARTER WINDOW GLASS REMOVAL

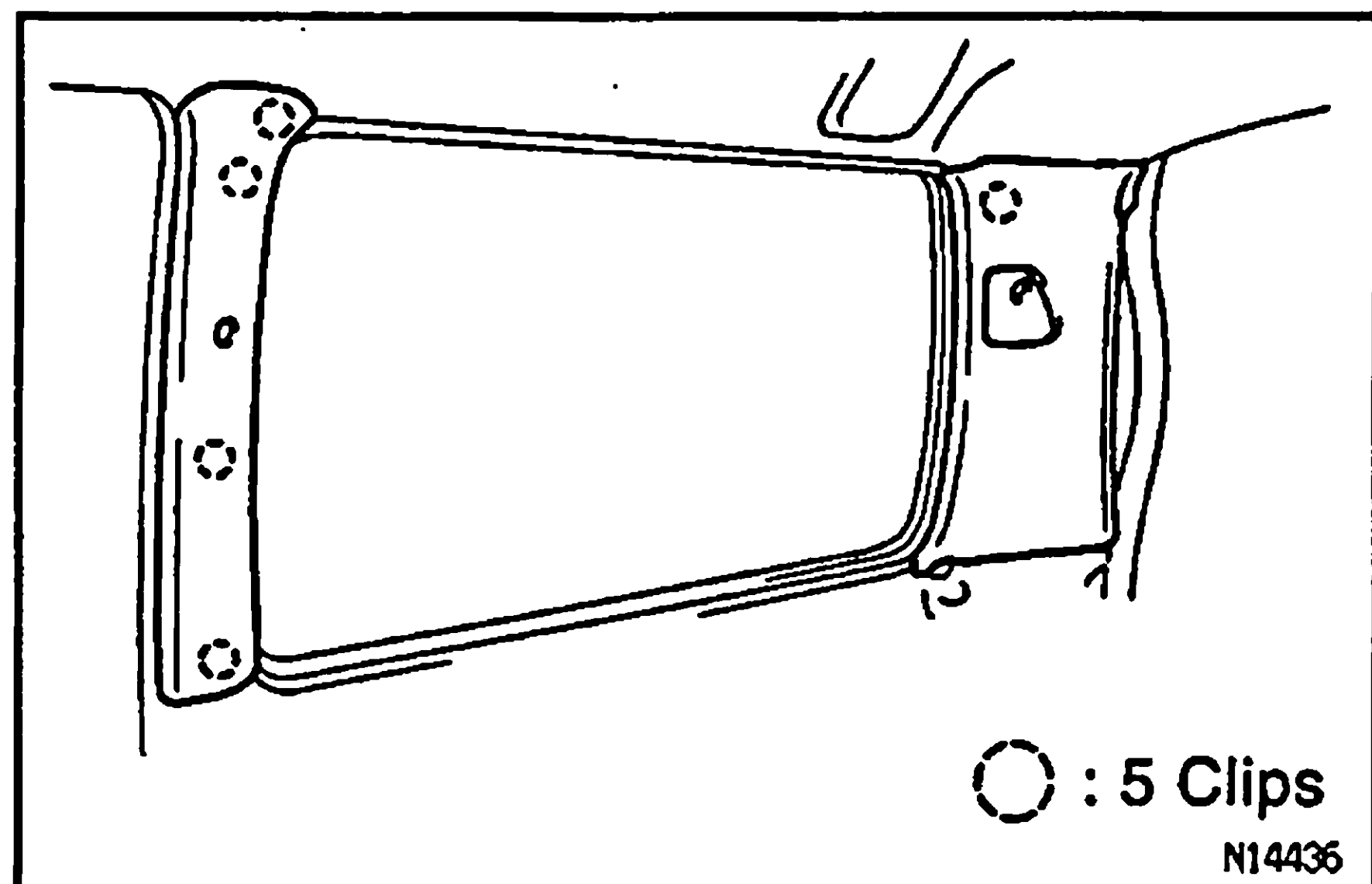
BO1RZ-02

1. REMOVE THESE PARTS:

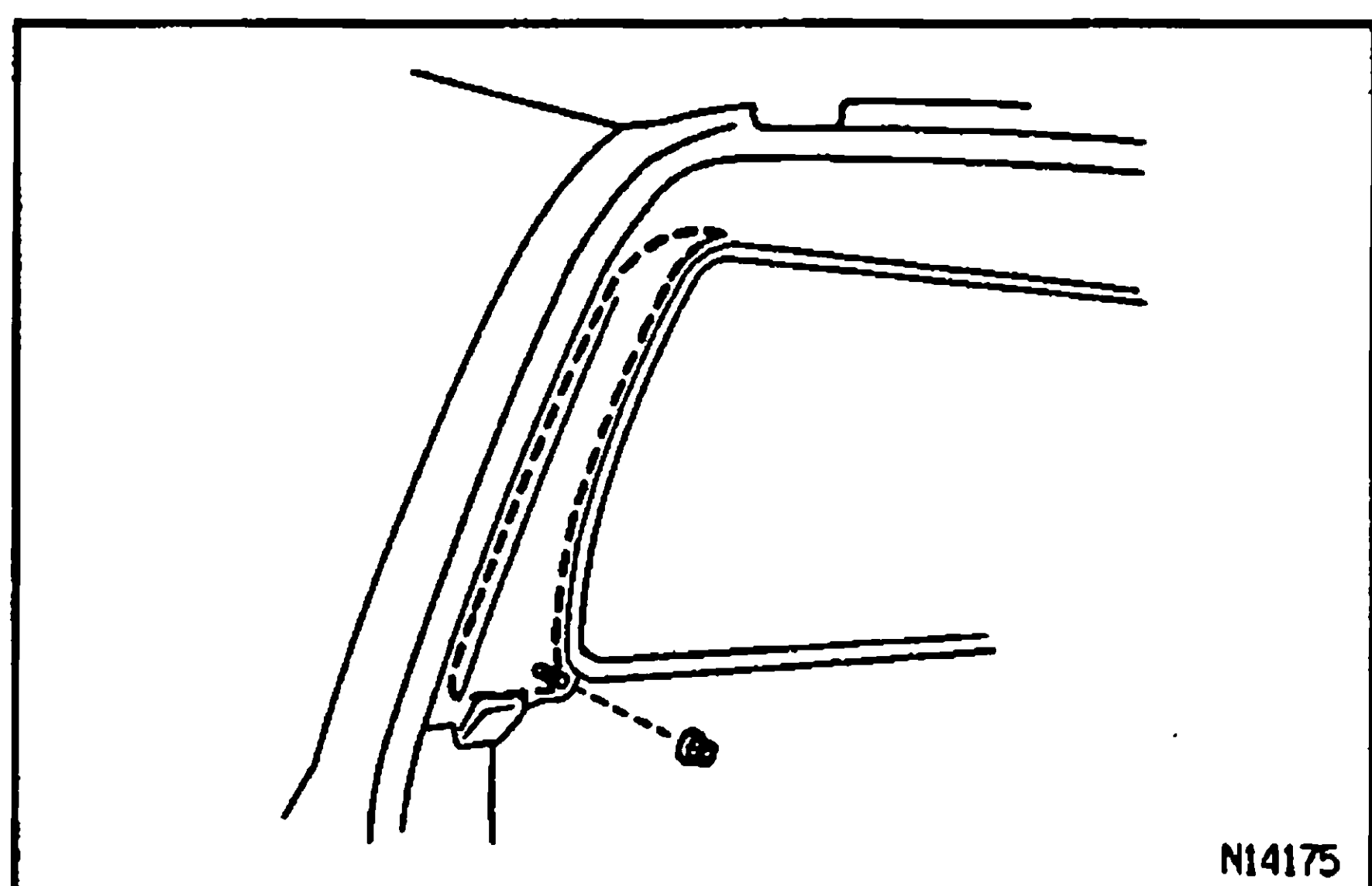
- w/No.2 Rear Seat
No.2 rear seat
- Back door scuff plate
- Quarter trim
- Rear seat side garnish
- Rear door scuff plate



BO5136

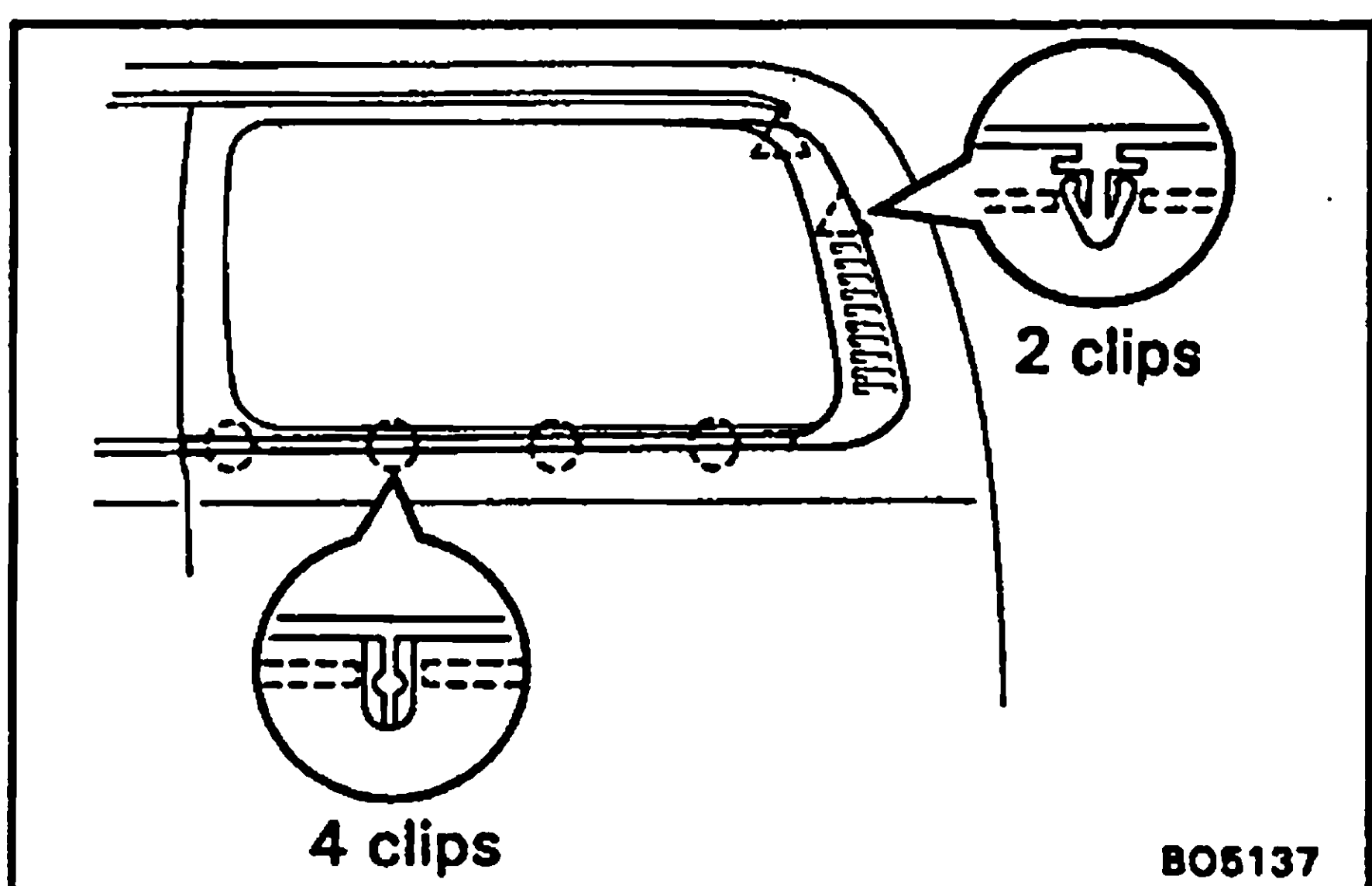


- (f) Quarter pillar garnish
 - (g) Rear pillar garnish
 - (h) Assist grips
- 2. LOOSEN ROOF HEADLINING**

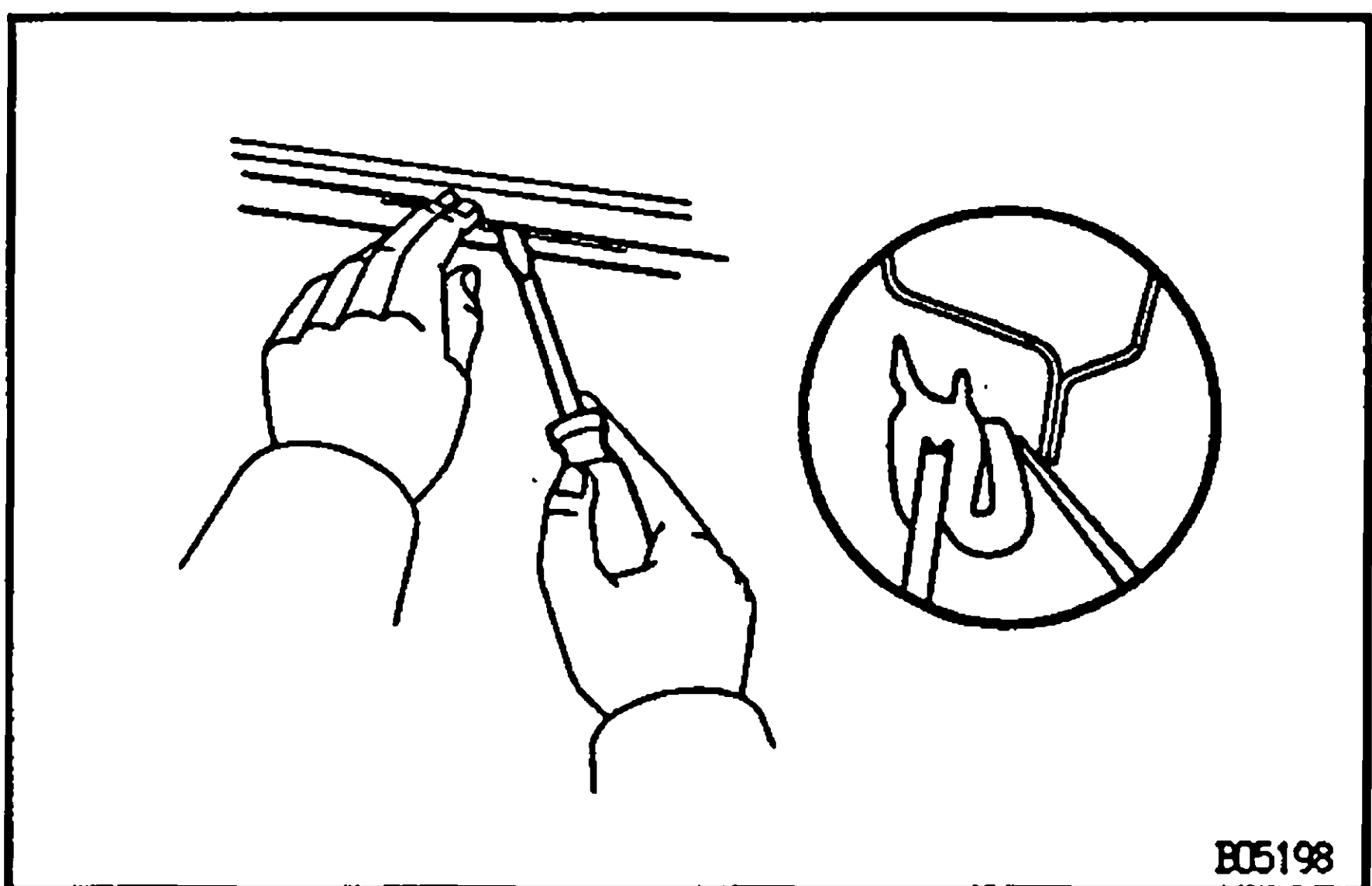


3. REMOVE VENT LOUVER AND QUARTER BELT MOULDING

- (a) Remove the nut from the vent louver:



- (b) Insert the screwdriver between the retainers and body to pry it loose.
HINT: Tape a screwdriver tip before use.
- (c) Pull out the vent louver.
- (d) Pull out the clips from the edge of the panel, and remove the moulding.



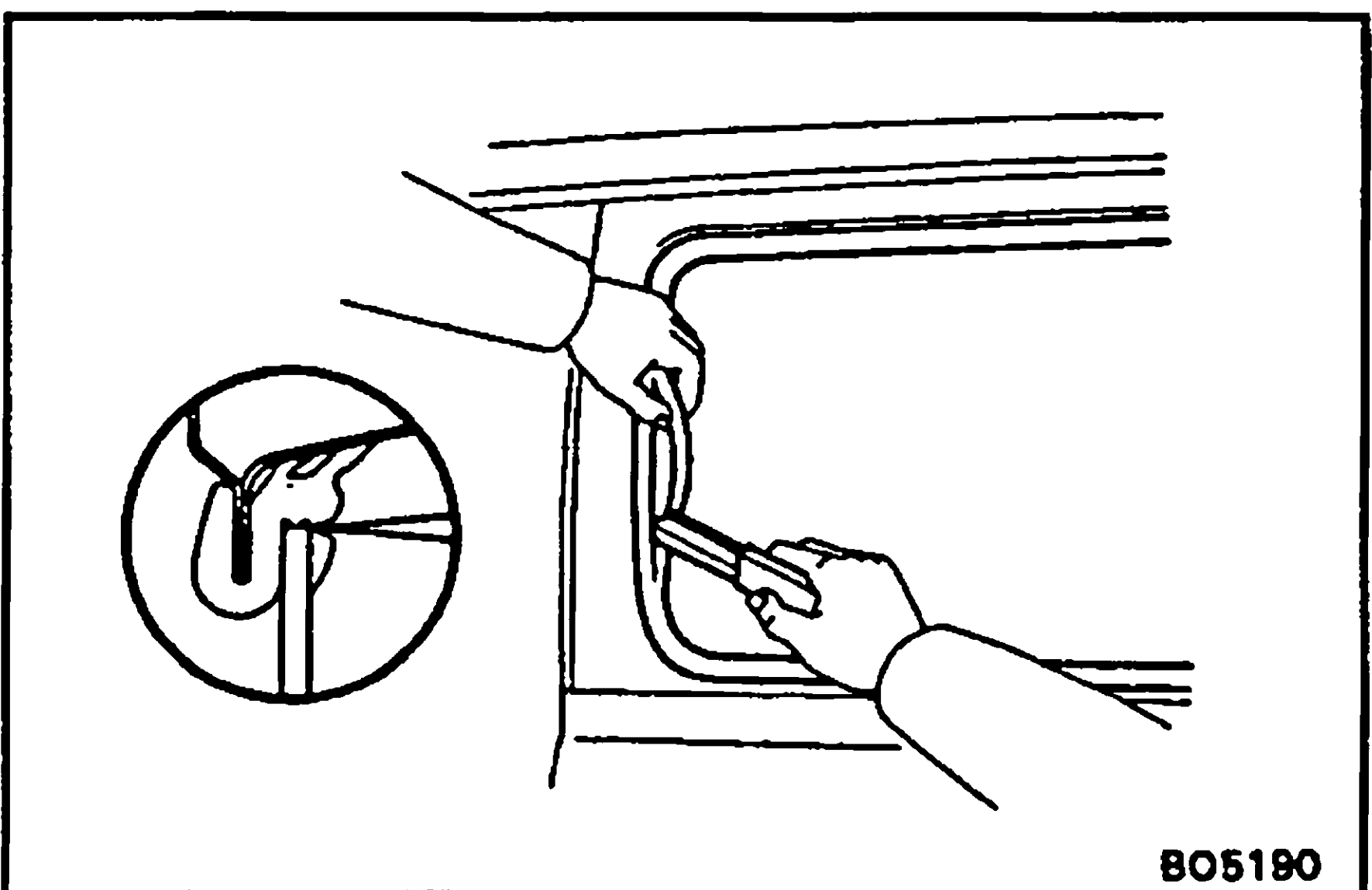
4. REMOVE QUARTER WINDOW GLASS

If reusing the weatherstrip:

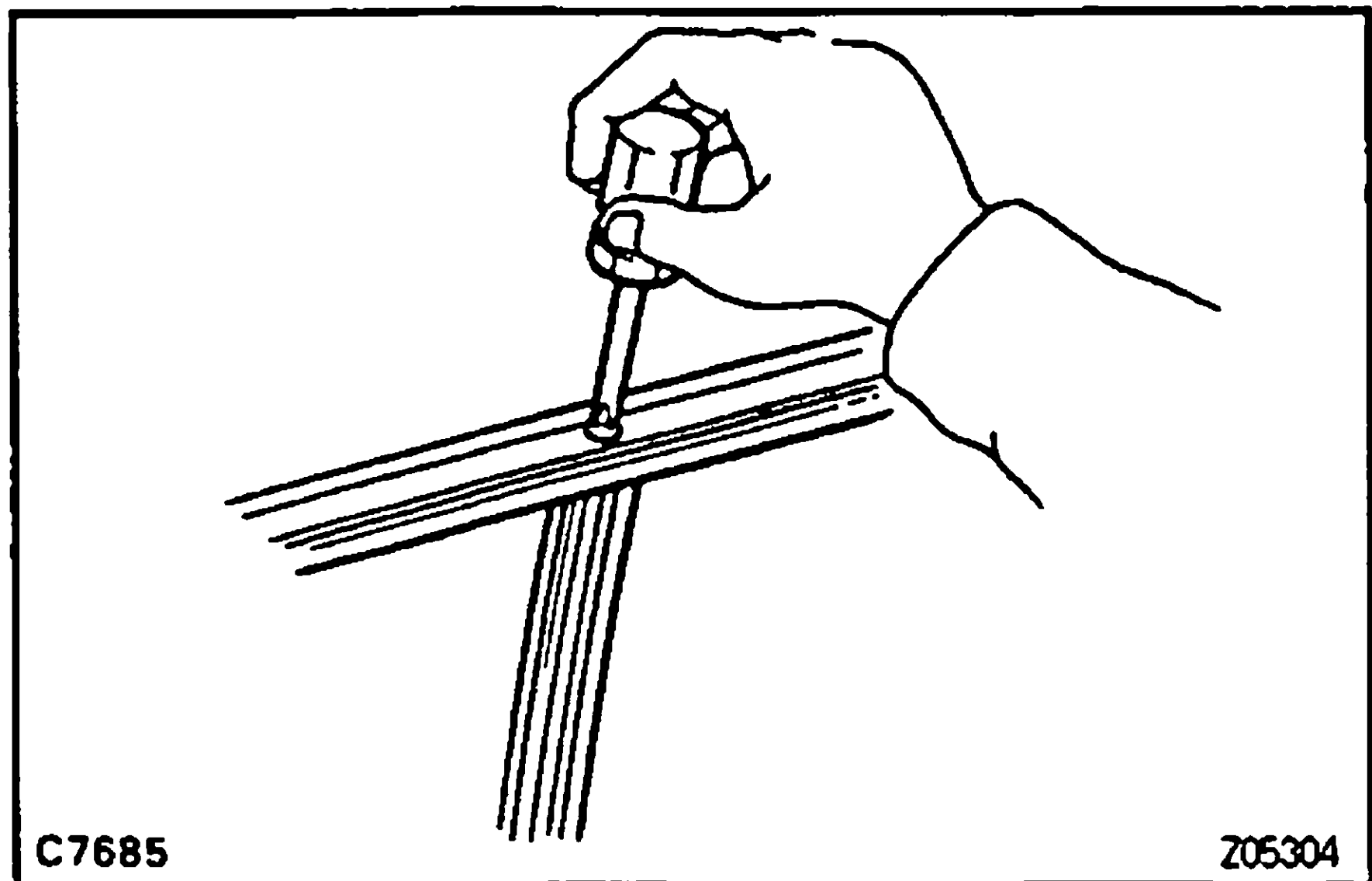
- (a) Using a screwdriver loosen the weatherstrip from the body.
NOTICE: Be careful not to damage the body.
- (b) Pry the lip of the weatherstrip outward from the interior part of the body flange.
- (c) Pull the glass outwards and remove it with the weatherstrip.

If using a new weatherstrip:

- (a) From outside of the vehicle, cut off the weatherstrip lip with a knife.
NOTICE: Do not damage the body and the glass.
- (b) Push the glass outwards and remove the glass.
- (c) Remove the remaining weatherstrip.



BO0UD-03

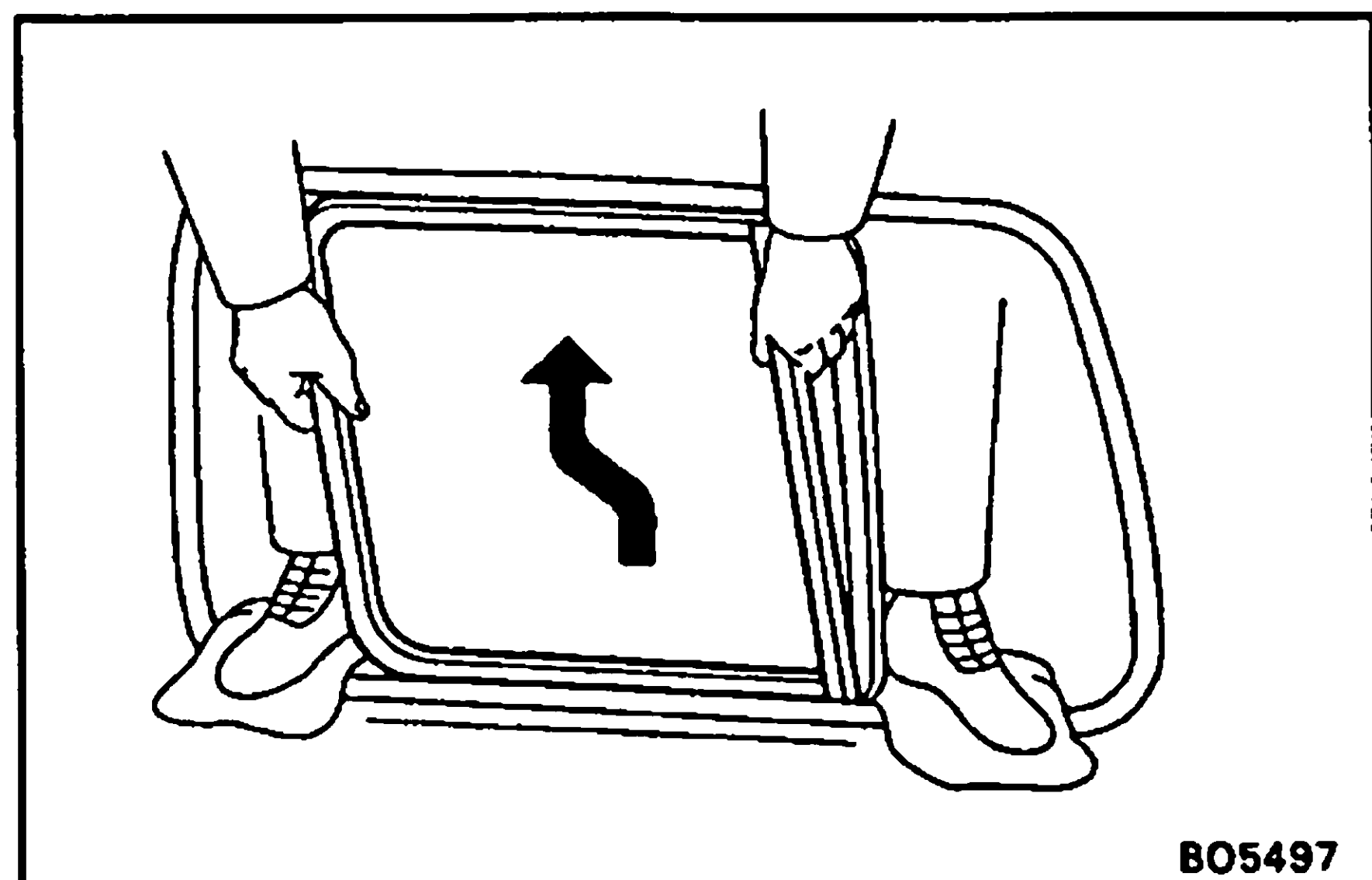


QUARTER WINDOW GLASS DISASSEMBLY

Slide Type:

1. REMOVE CENTER SASH

Remove the screw and the weatherstrip.

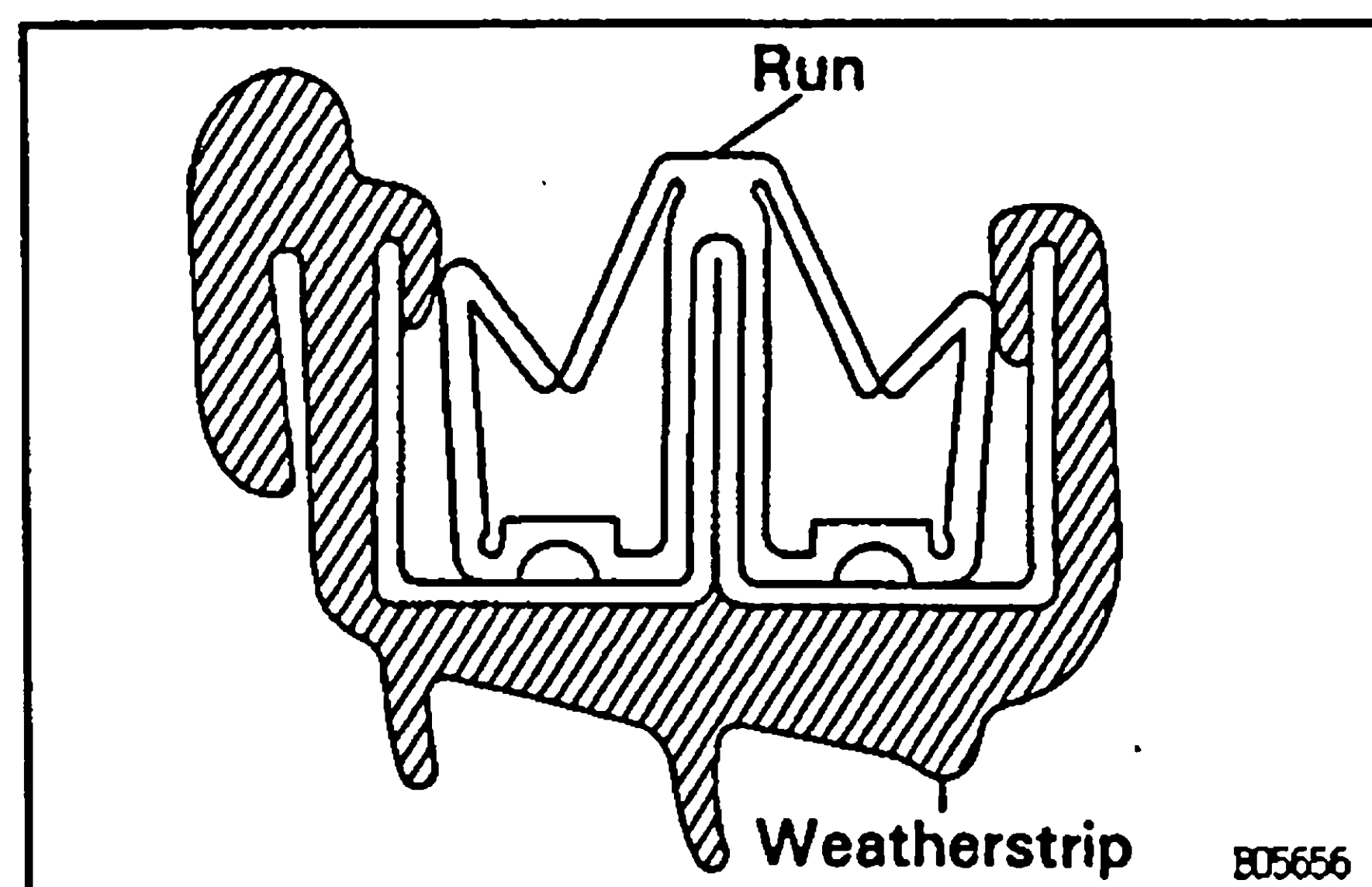


2. REMOVE QUARTER WINDOW GLASS

Pull up the sash and remove the 2 glasses.

3. REMOVE QUARTER WINDOW GLASS RUN FROM SASH

4. REMOVE QUARTER WINDOW WEATHERSTRIP FROM SASH



QUARTER WINDOW GLASS ASSEMBLY

BO0UE-03

Slide Type:

1. INSTALL QUARTER WINDOW WEATHERSTRIP ON SASH, AS SHOWN

NOTICE: If the weatherstrip has hardened, it may develop leaks.

Use a new one if possible.

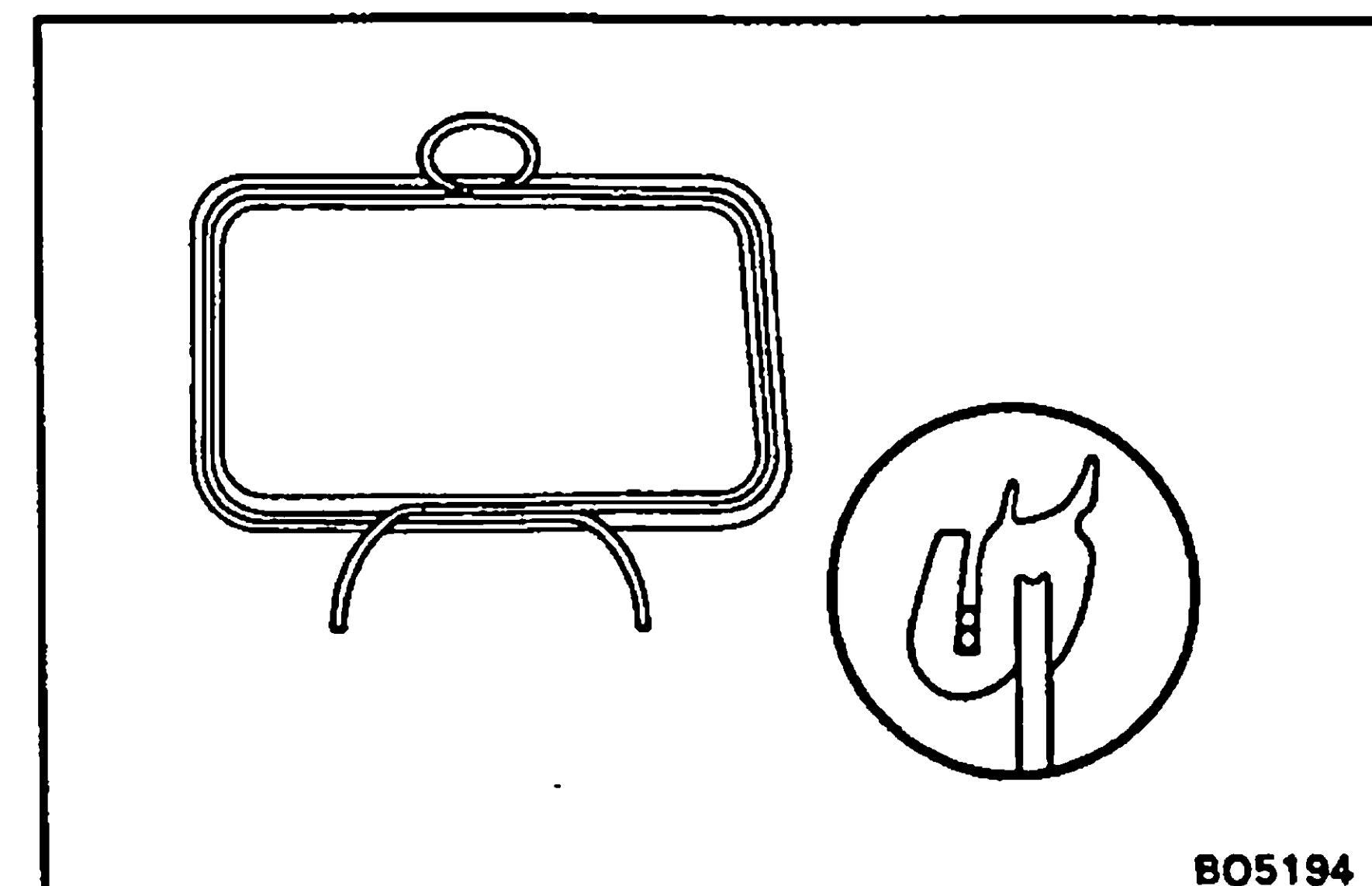
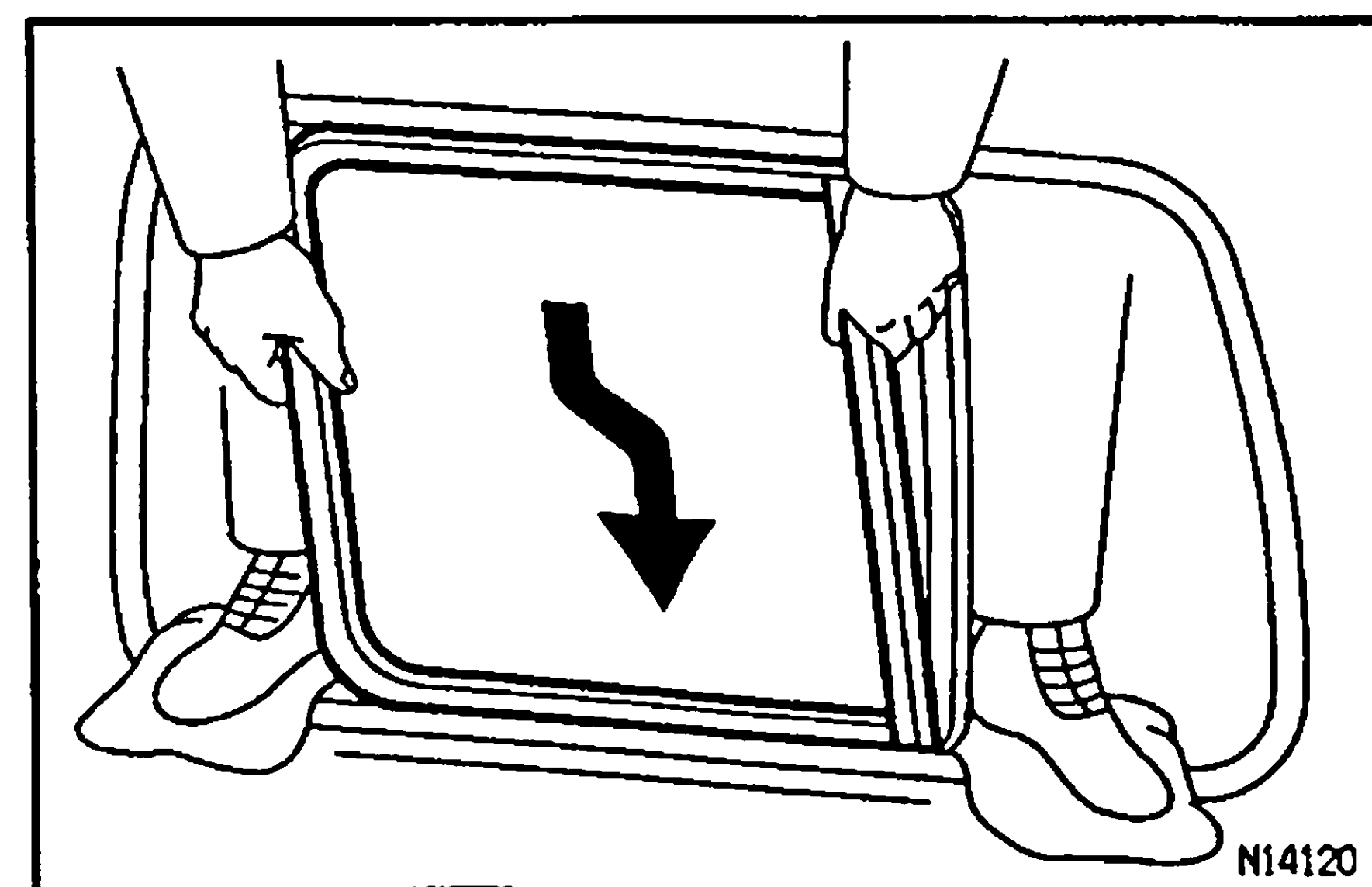
2. INSTALL QUARTER WINDOW GLASS RUN, AS SHOWN

3. INSTALL QUARTER WINDOW GLASS

Pull up on the sash and install 2 glasses.

4. INSTALL CENTER SASH

Install the weatherstrip with the screw.



QUARTER WINDOW GLASS INSTALLATION

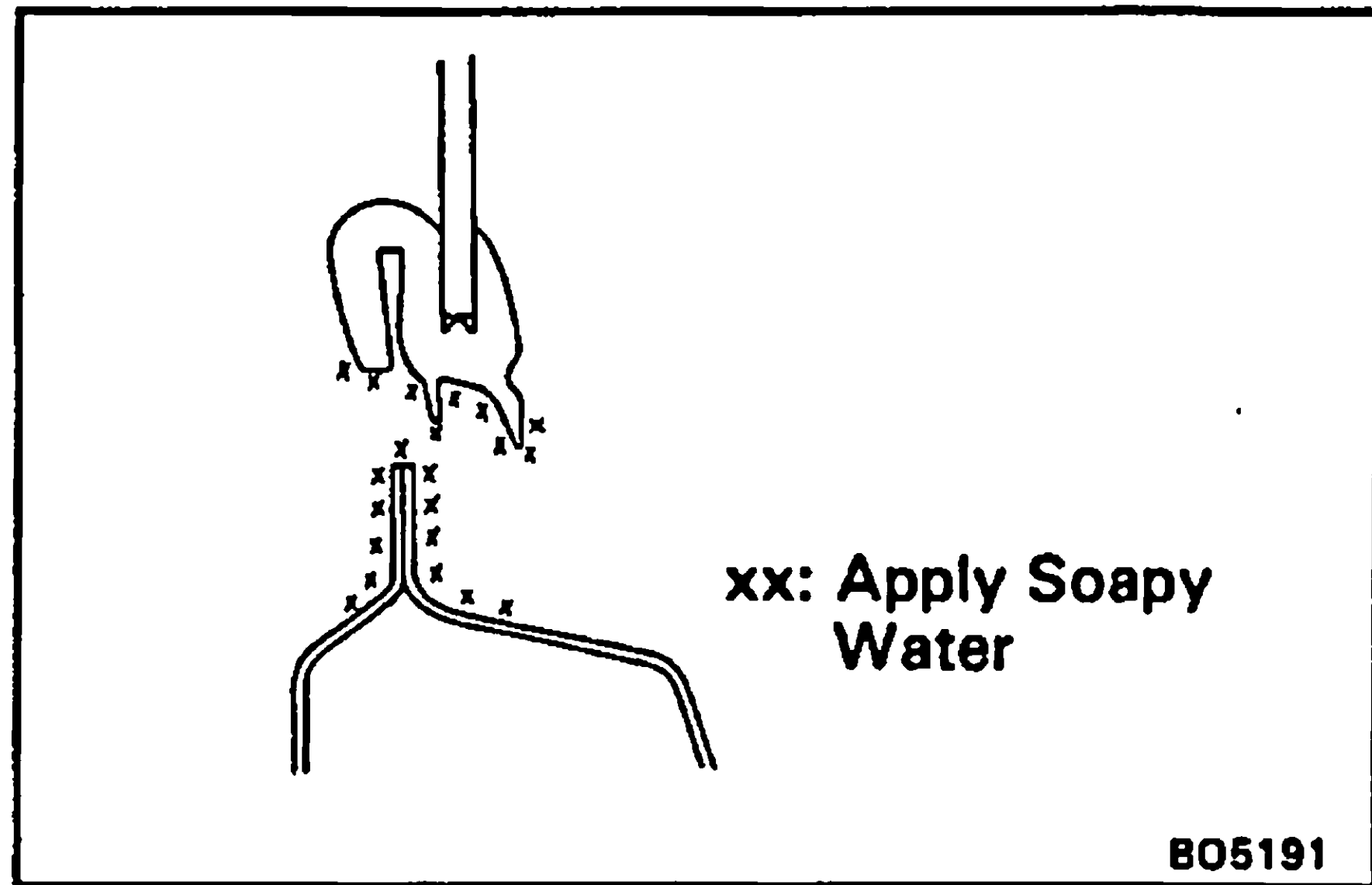
BO0UF-03

1. INSTALL WEATHERSTRIP ON GLASS

(a) Attach the weatherstrip to the glass.

NOTICE: If the weatherstrip has hardened, it may develop leaks. Use a new one if possible.

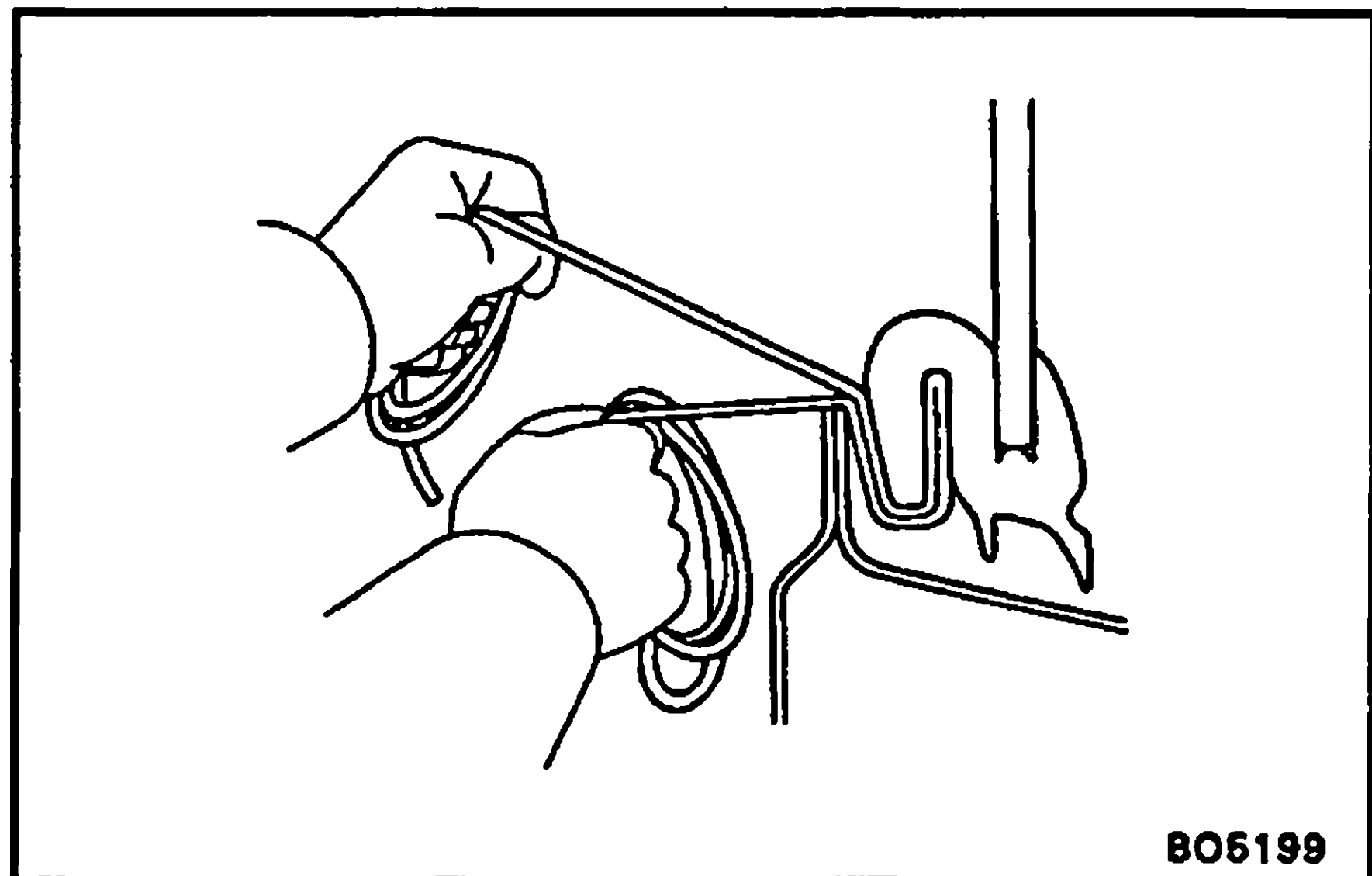
(b) Insert a cord into the groove of the weatherstrip all the way around with the ends overlapping.



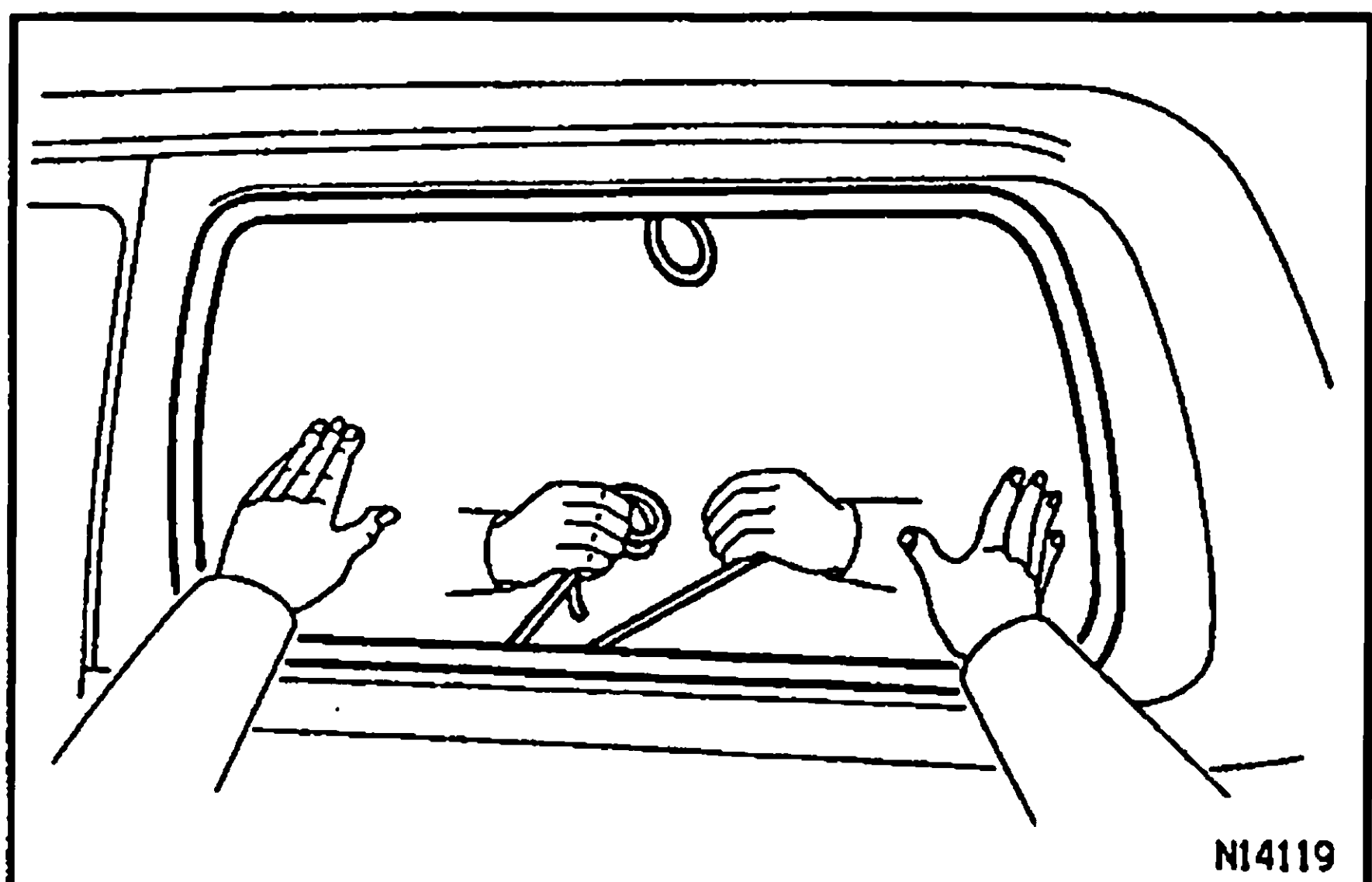
2. INSTALL QUARTER WINDOW GLASS

- (a) Apply soapy water to contact surface of the weatherstrip lip and to the body flange.

HINT: Begin installation in the middle of the lower part of the quarter window glass.



- (b) Hold the glass in position on the body.



- (c) From the inside, pull on one cord at an angle so it pulls the lip over the flange. From the outside, press the glass along the weatherstrip until the glass is installed.

3. FIX IN GLASS

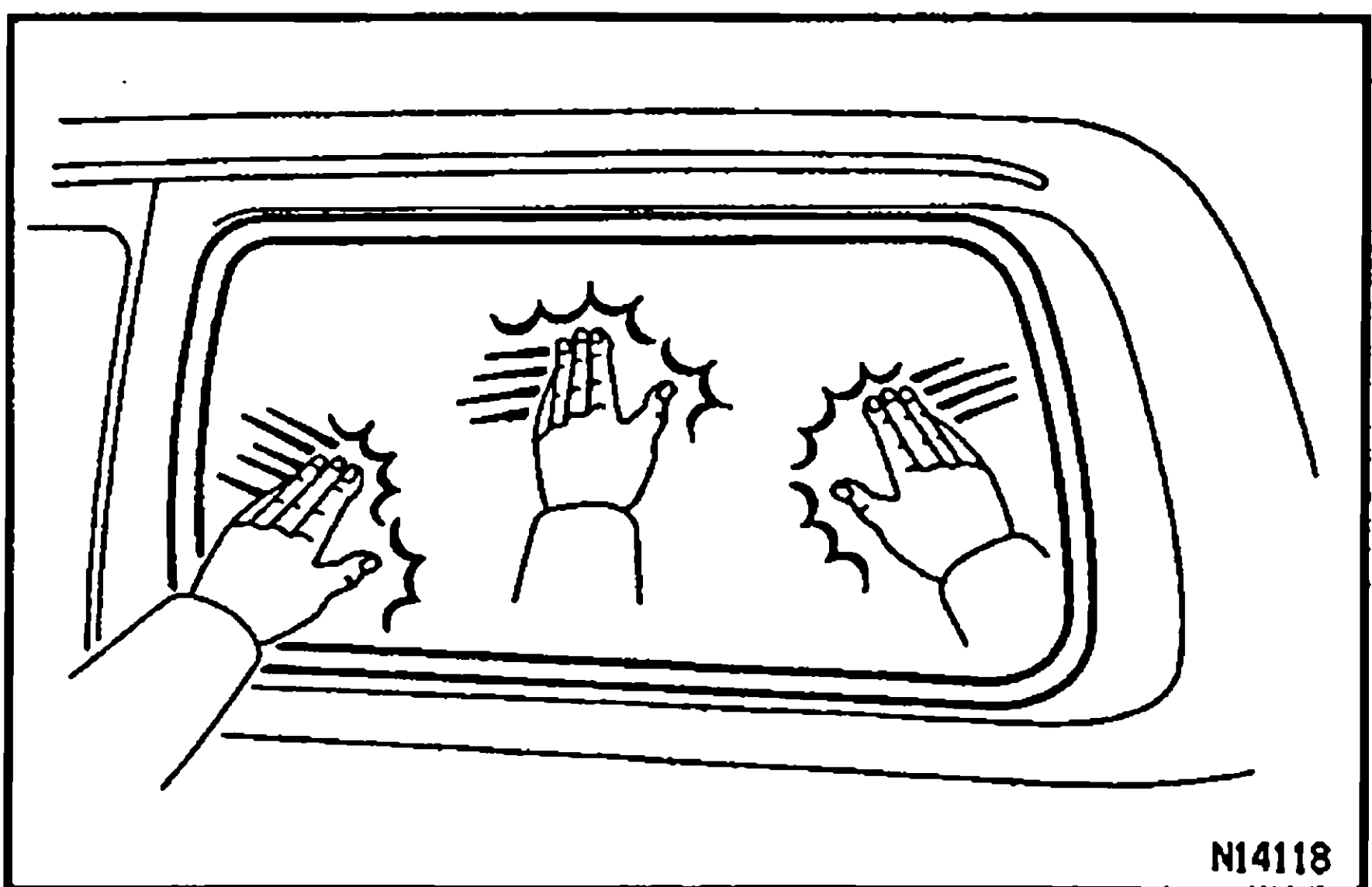
To make the glass fix snugly, tap from the outside with your open hand.

4. INSPECT FOR LEAKS AND REPAIR

- (a) Do a leak test.
(b) Seal any leak with auto glass sealer.

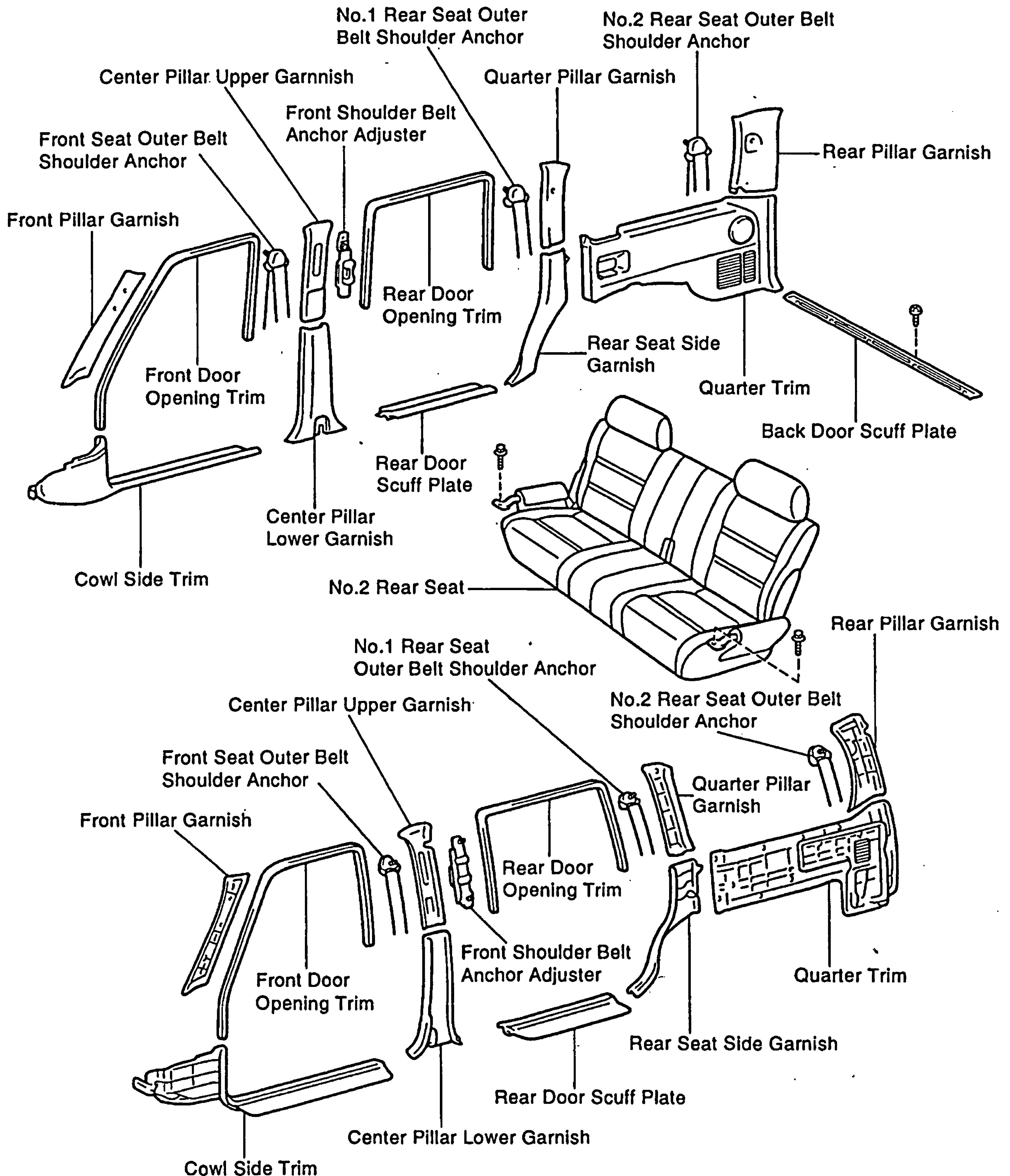
5. INSTALL THESE PARTS:

- (a) Roof headlining
(b) Assist grips
(c) Rear pillar garnish
(d) Quarter pillar garnish
(e) Rear door scuff plate
(f) Rear seat side garnish
(g) Quarter trim
(h) Back door scuff plate
(i) w/ No.2 Rear Seat
No.2 rear seat



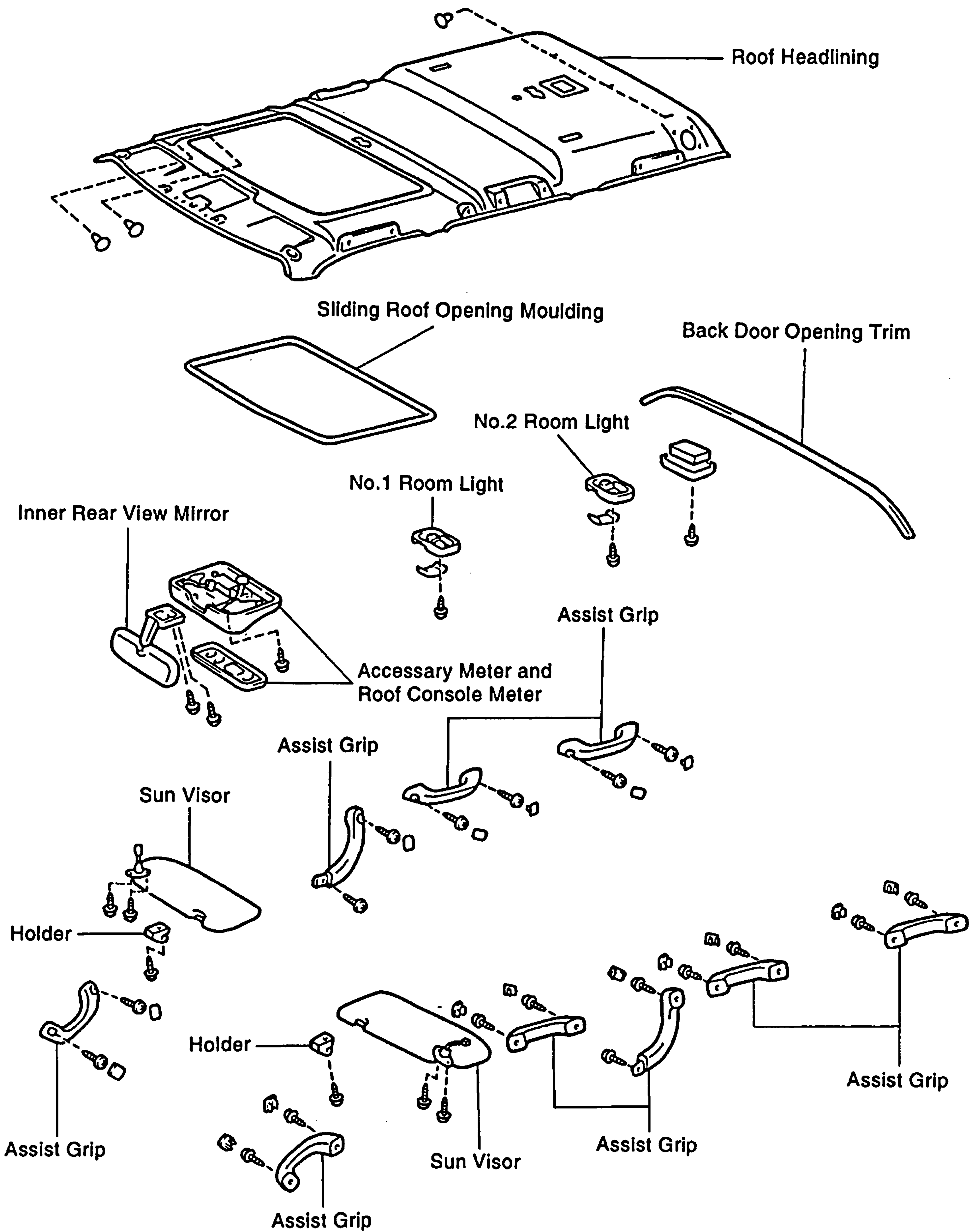
SLIDING ROOF COMPONENTS

BO180-02

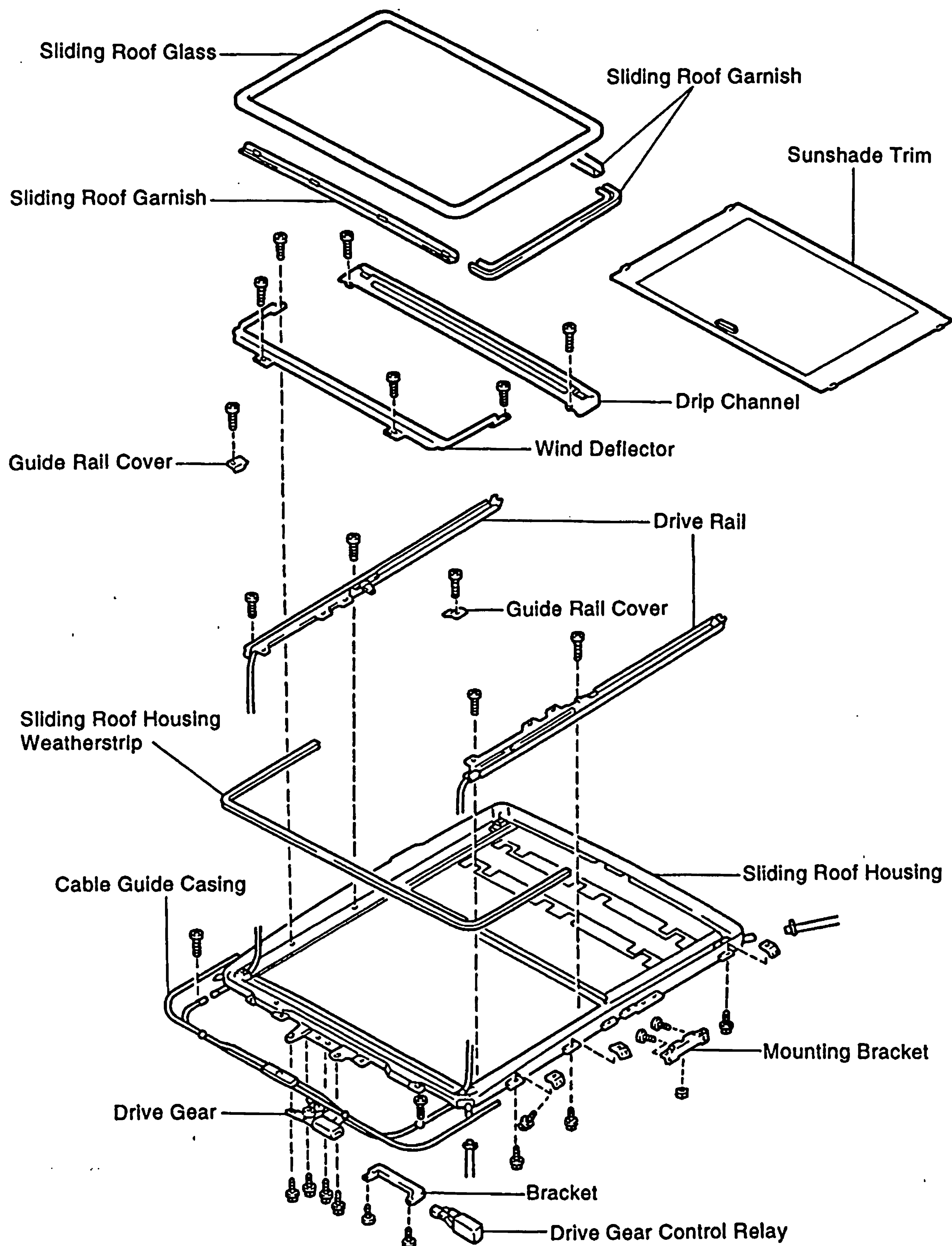


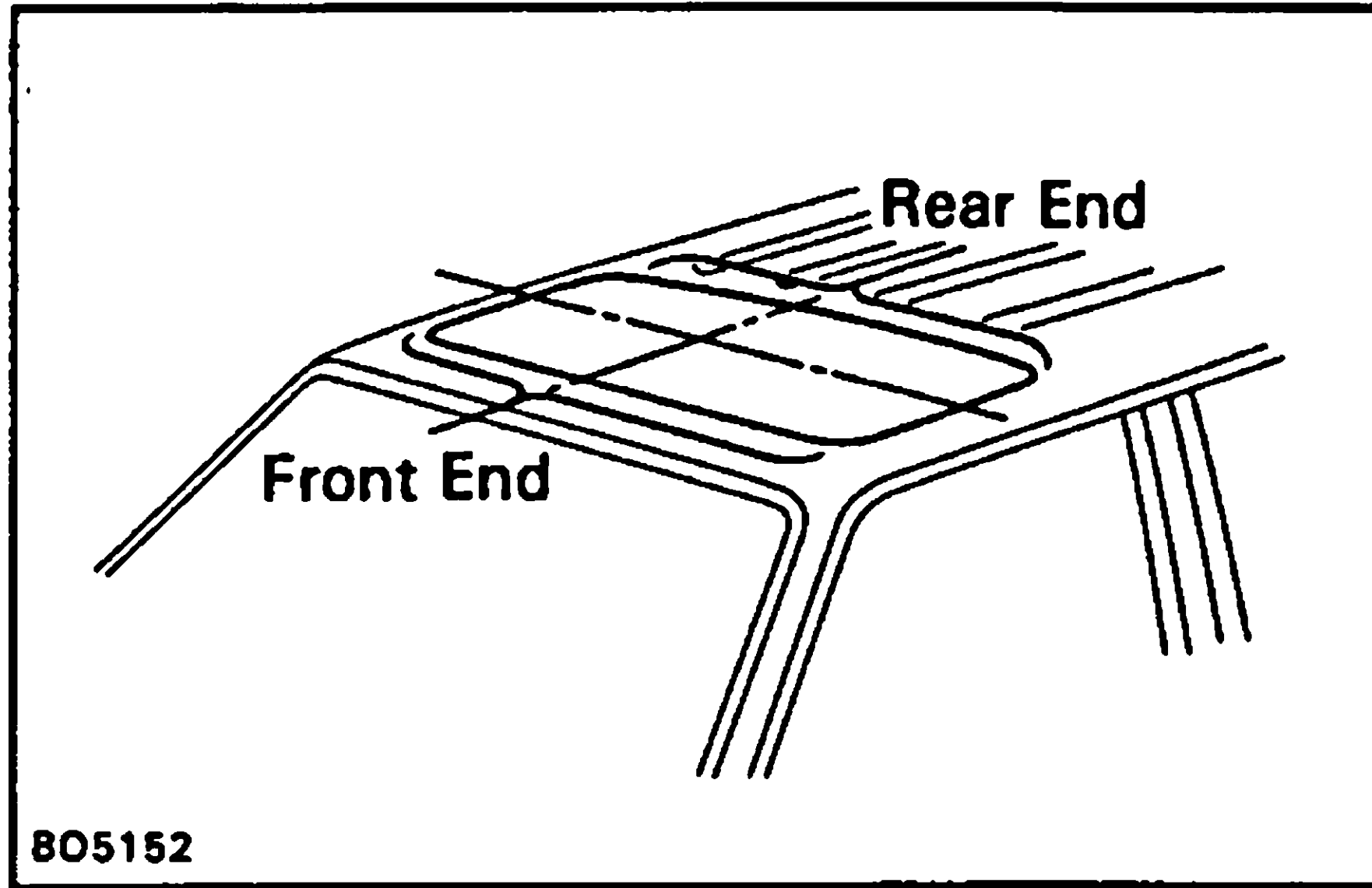
BO

COMPONENTS (Cont'd)



COMPONENTS (Cont'd)





ON — VEHICLE INSPECTION

INSPECT SLIDING ROOF GLASS ALIGNMENT

- (a) Start the engine and check the operation time of the sliding roof.

Operation time:

Approx. 5 sec.

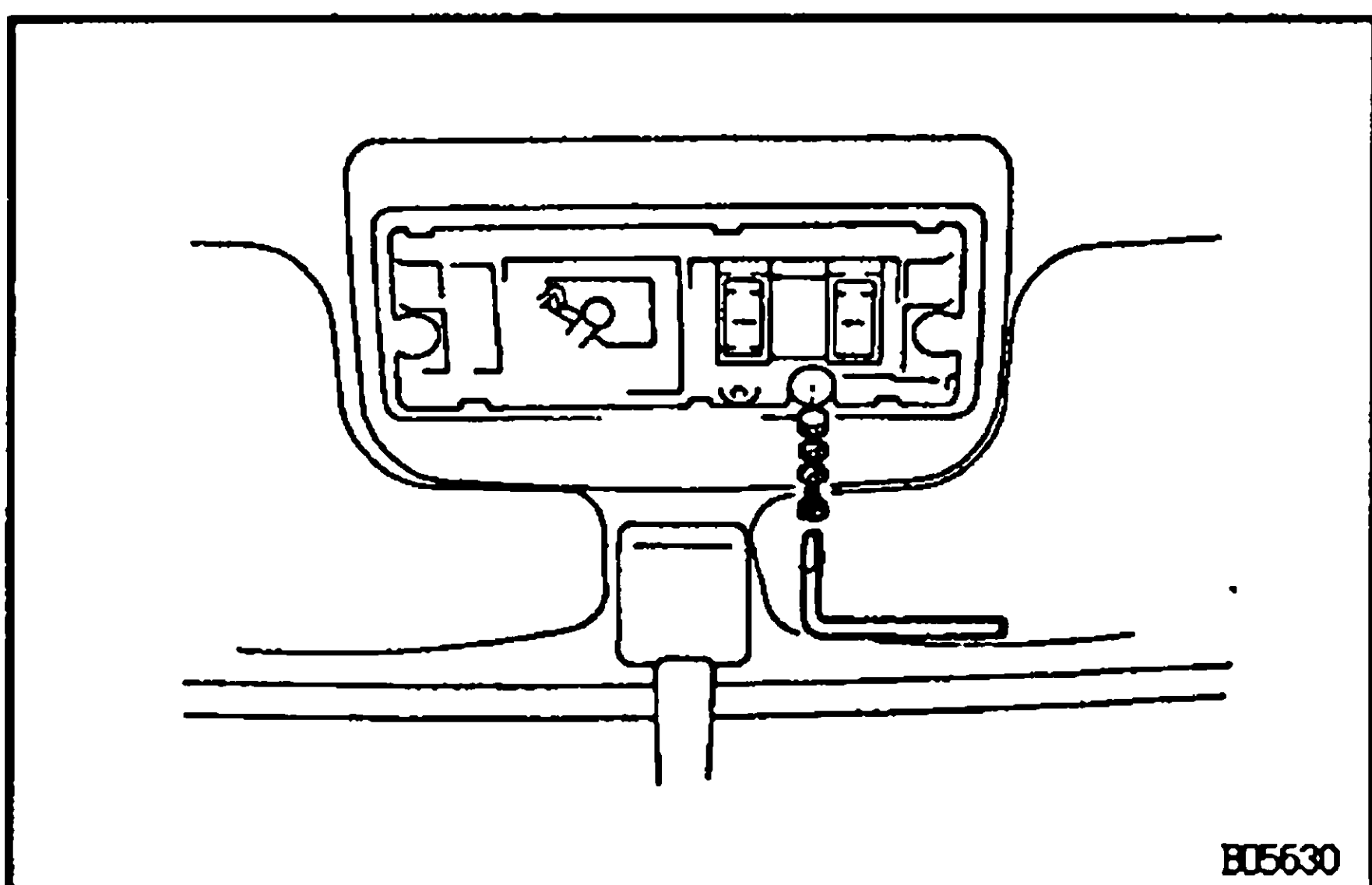
- (b) Check for abnormal noise or binding during operation.
 (c) With the sliding roof fully closed, check for water leakage.
 (d) Check for a difference in level between the sliding roof weatherstrip and roof panel.

Front end:

0.9 — 3.9 mm (0.035 — 0.154 in.)

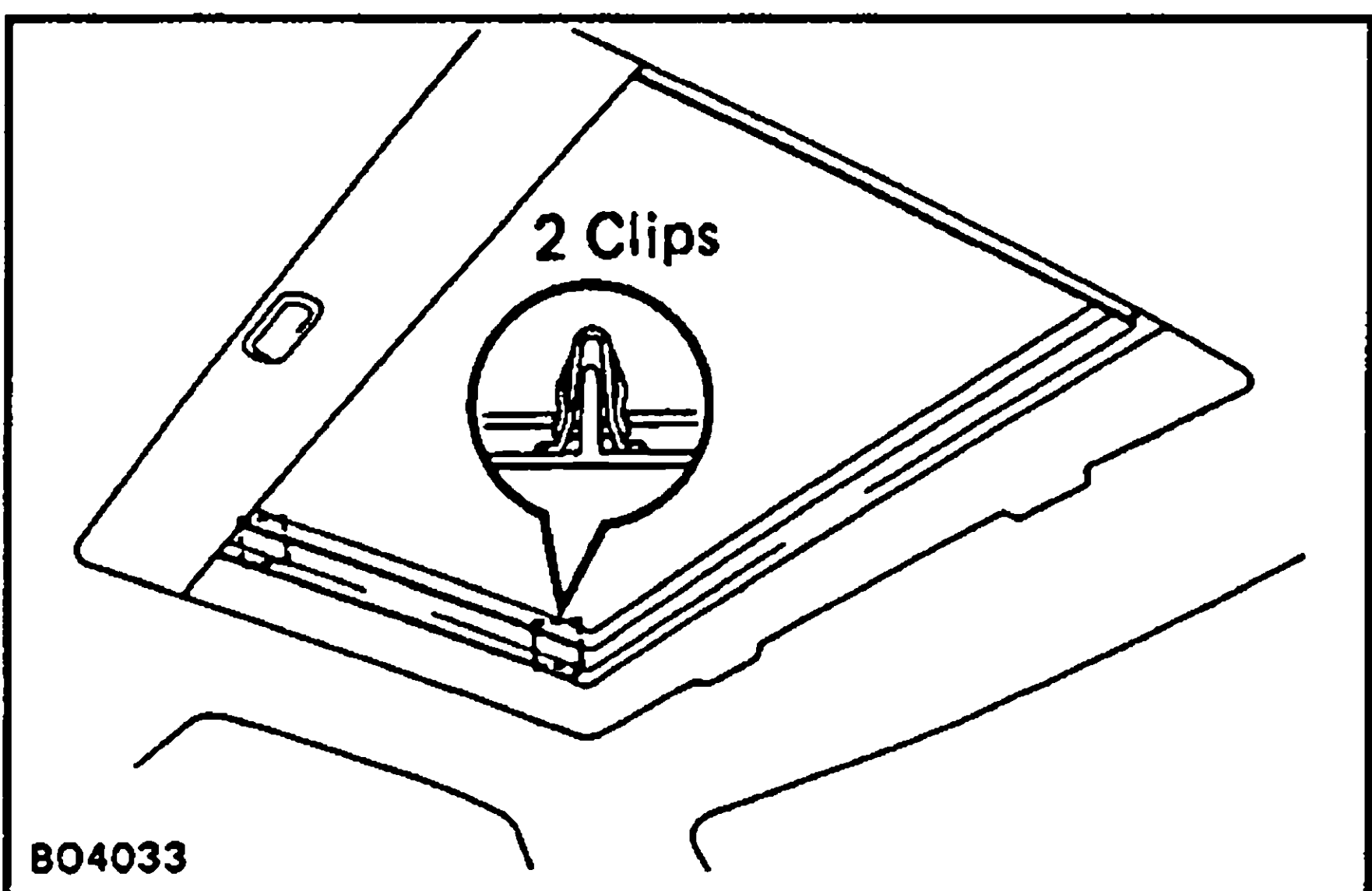
Rear end:

0.9 — 3.9 mm (0.035 — 0.154 in.)



If the sliding roof does not operate:

- (e) Remove the control switch cover.
 (f) Remove the large screw inside.
NOTICE: Be careful not to lose the spring washer or shim.
 (g) Manually operate the moon roof by inserting a special crank-shaped screwdriver into the hole and turning the drive shaft.



SLIDING ROOF ADJUSTMENT

B00UJ-03

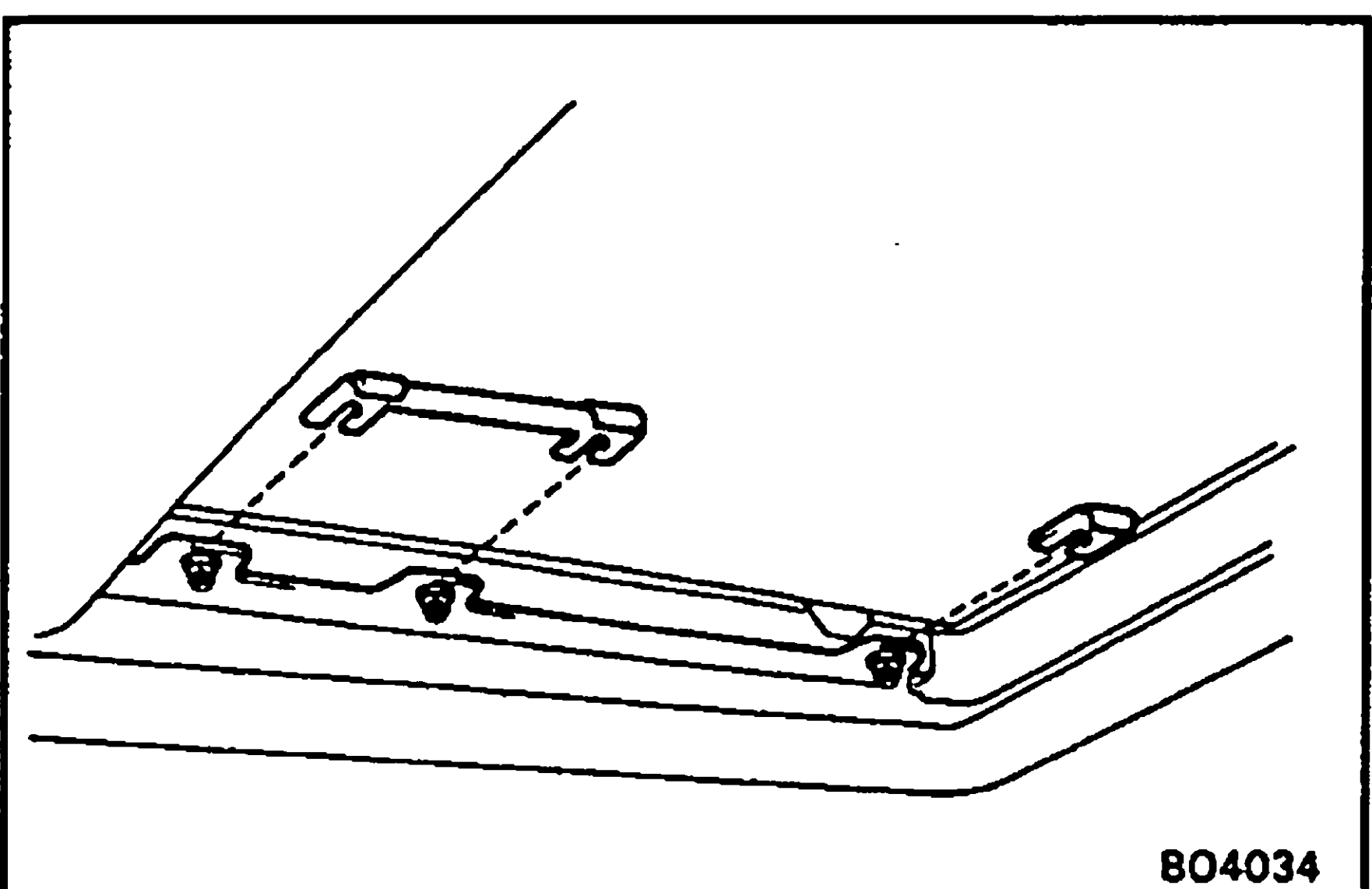
1. REMOVE SLIDING ROOF GARNISHES

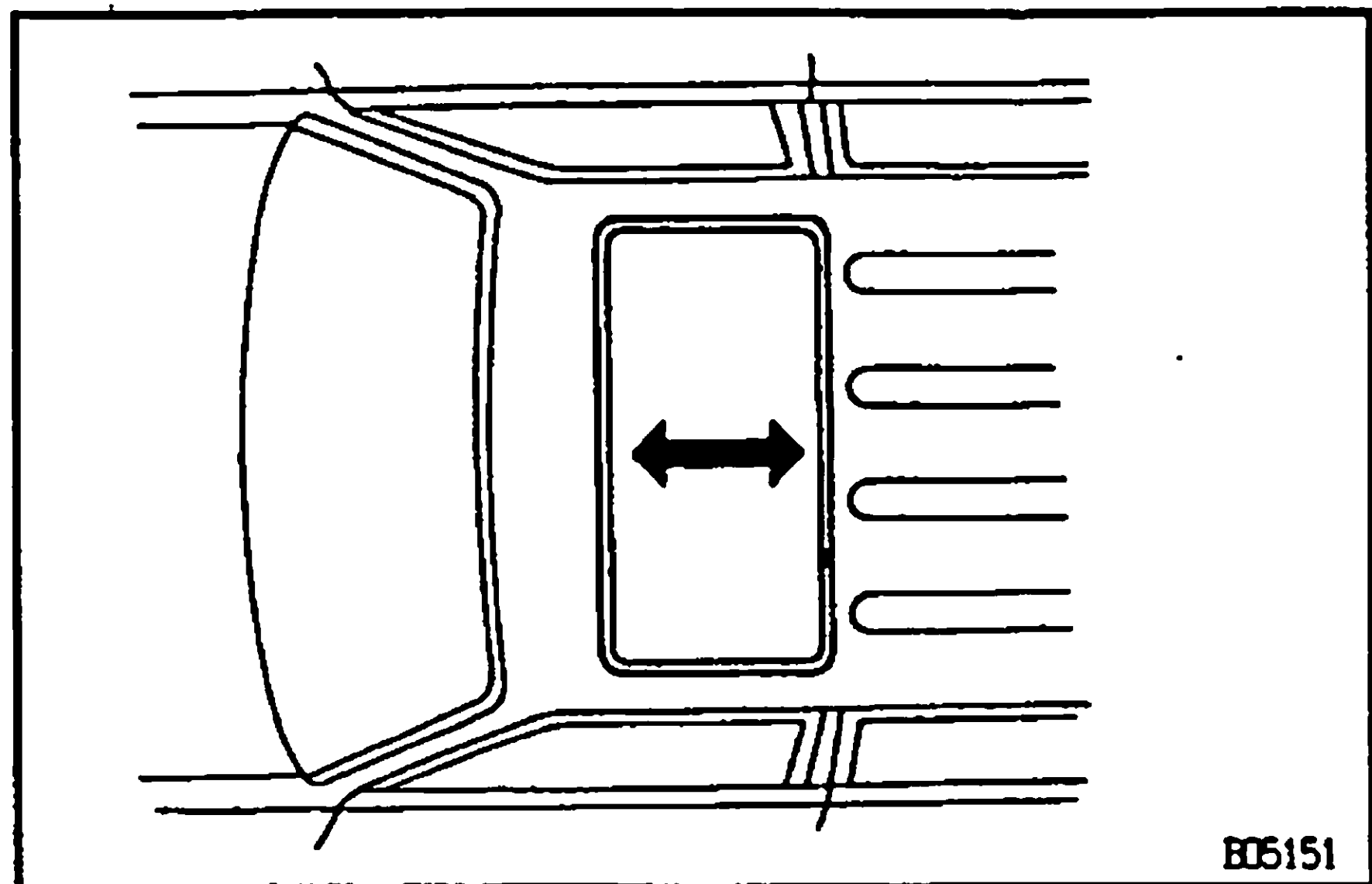
Before making adjustments, remove the left and right sliding roof garnishes.

HINT: After adjustment, reinstall the sliding roof garnishes.

2. TO ADJUST LEVEL DIFFERENCE

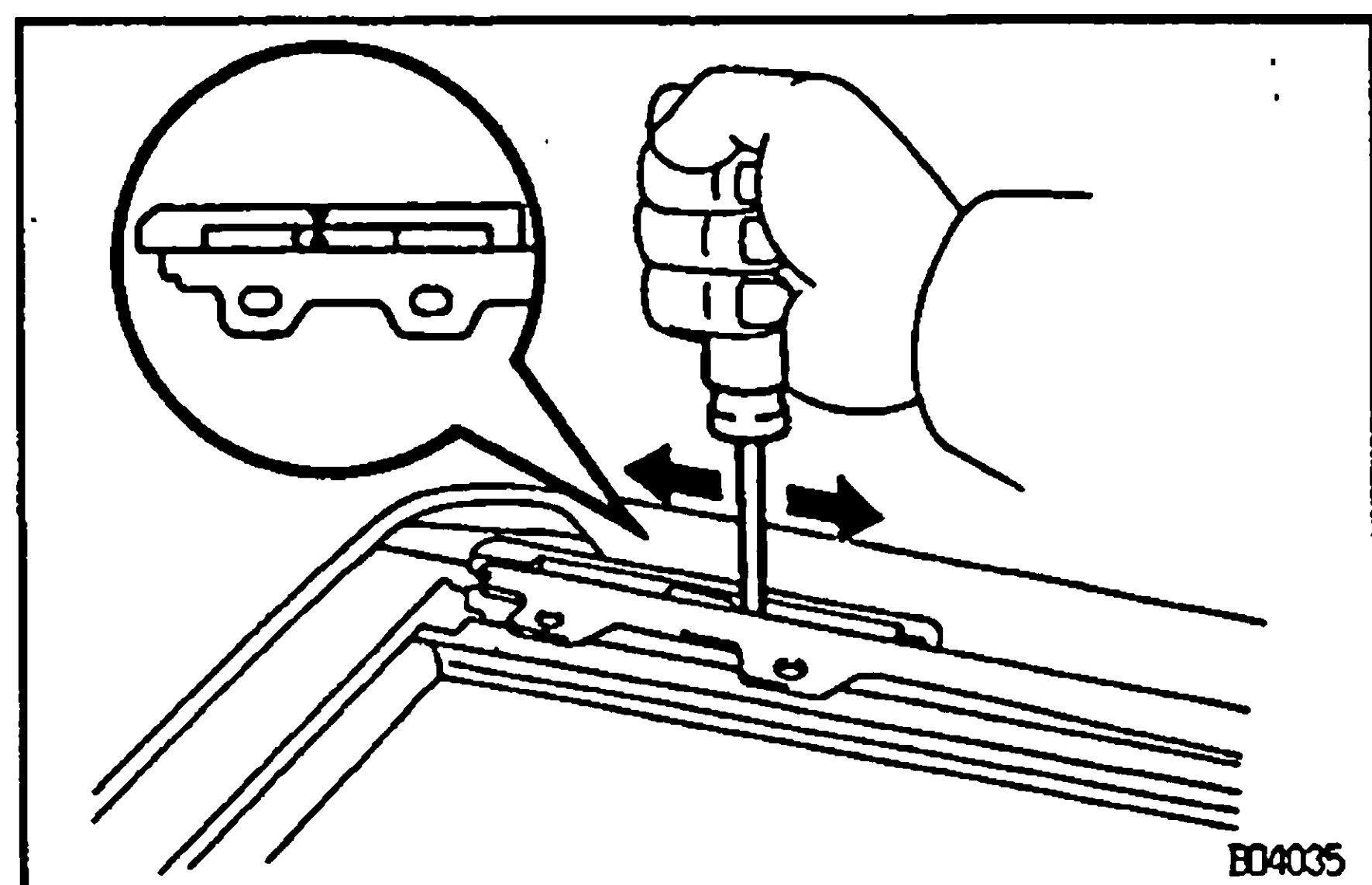
Adjust by increasing or decreasing the number of shims between the bracket and sliding roof.





3. TO ADJUST FORWARD OR REARWARD

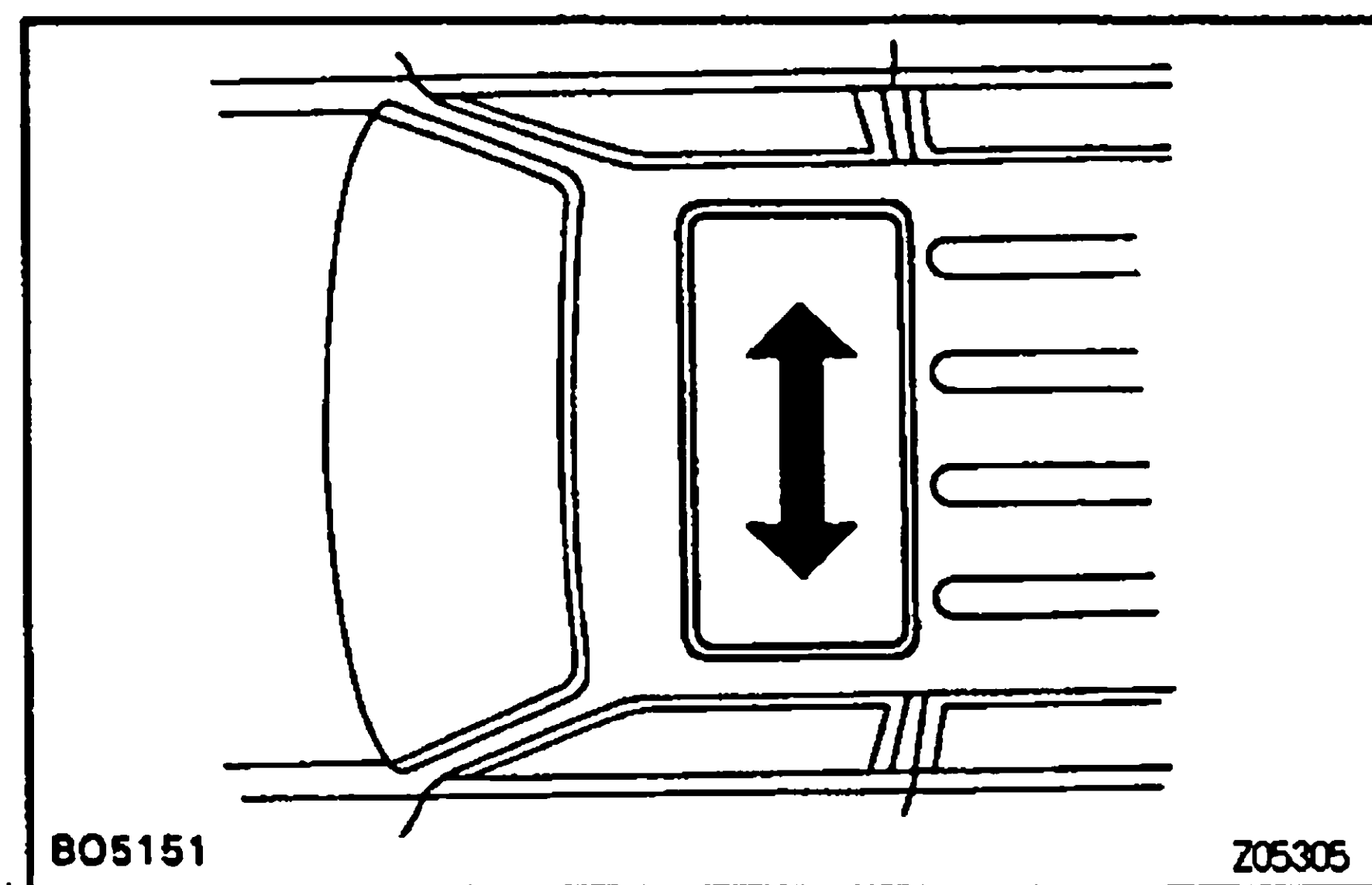
- (a) Adjust by loosening the sliding roof installation nuts, and move the sliding roof bracket forwards and backwards.



- (b) When the front or rear alignment is not correct, remove the glass and adjust the drive rail.

- (c) Using a screwdriver, slide the link forwards or backwards to align the 2 marks, as shown.

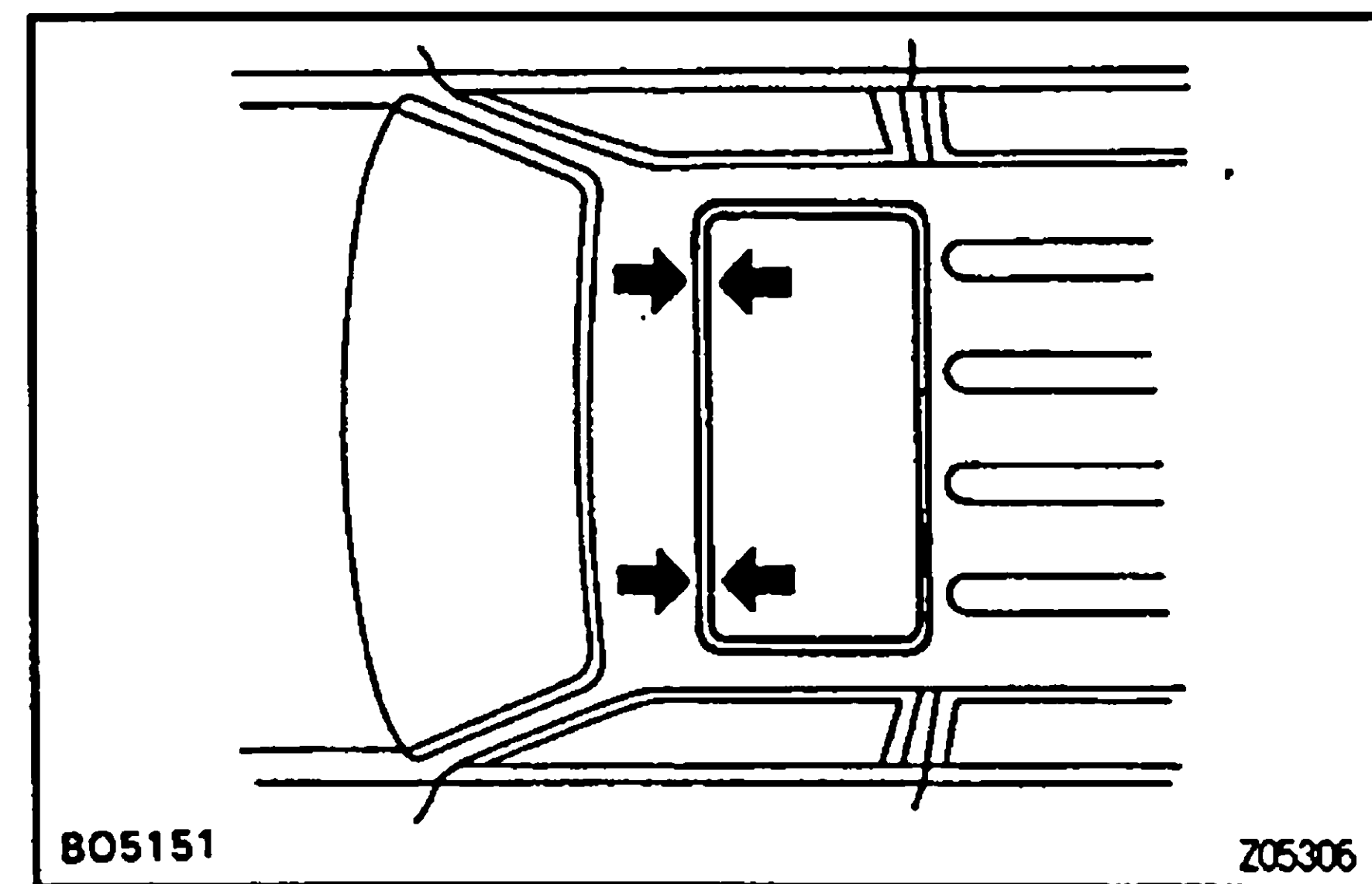
- (d) Slide the bracket to the forefront with your hand.



4. TO ADJUST RIGHT OR LEFT

Adjust by loosening the sliding roof rear shoe installation nuts, and move the sliding roof to the right and left.

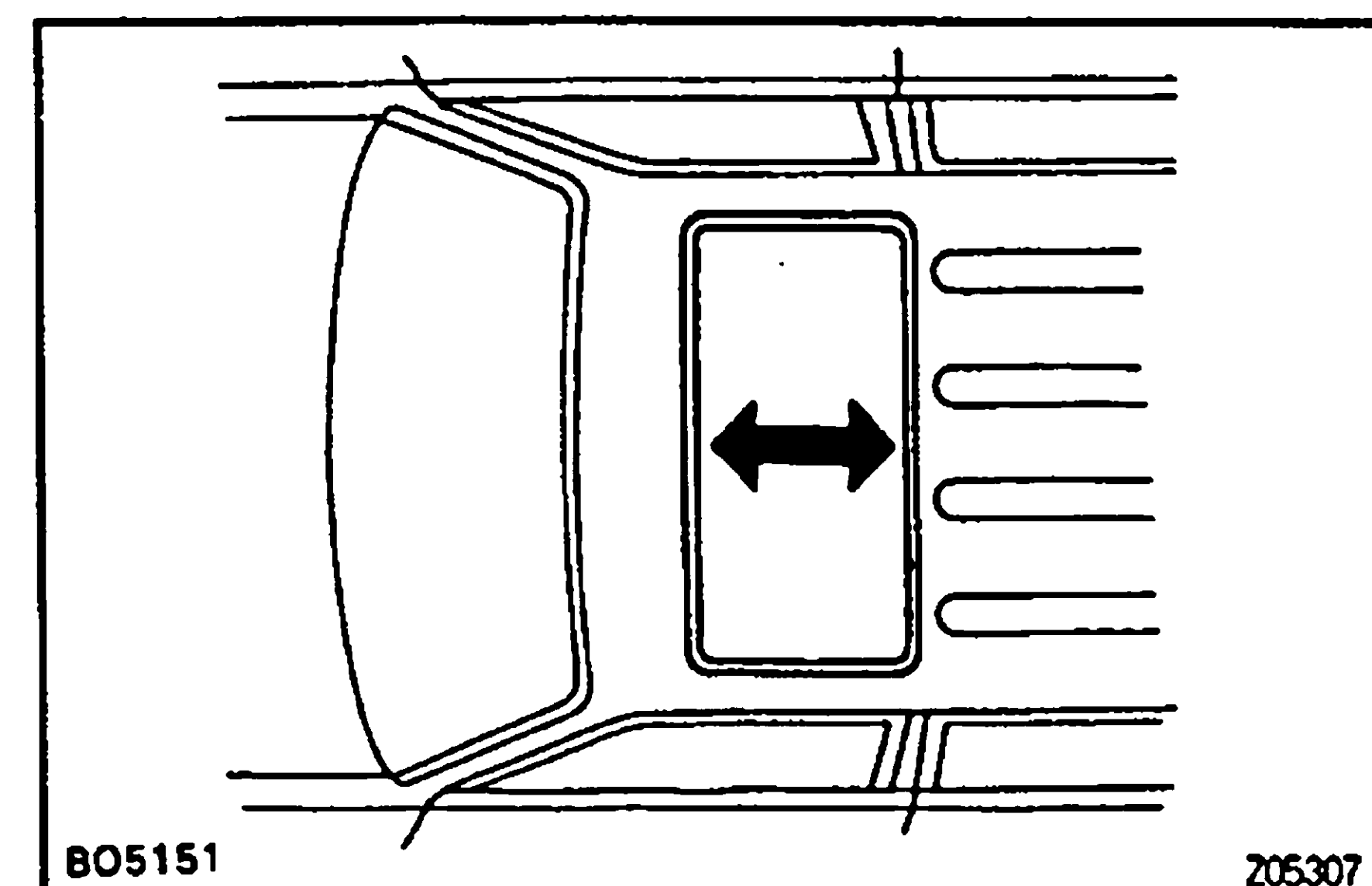
BO

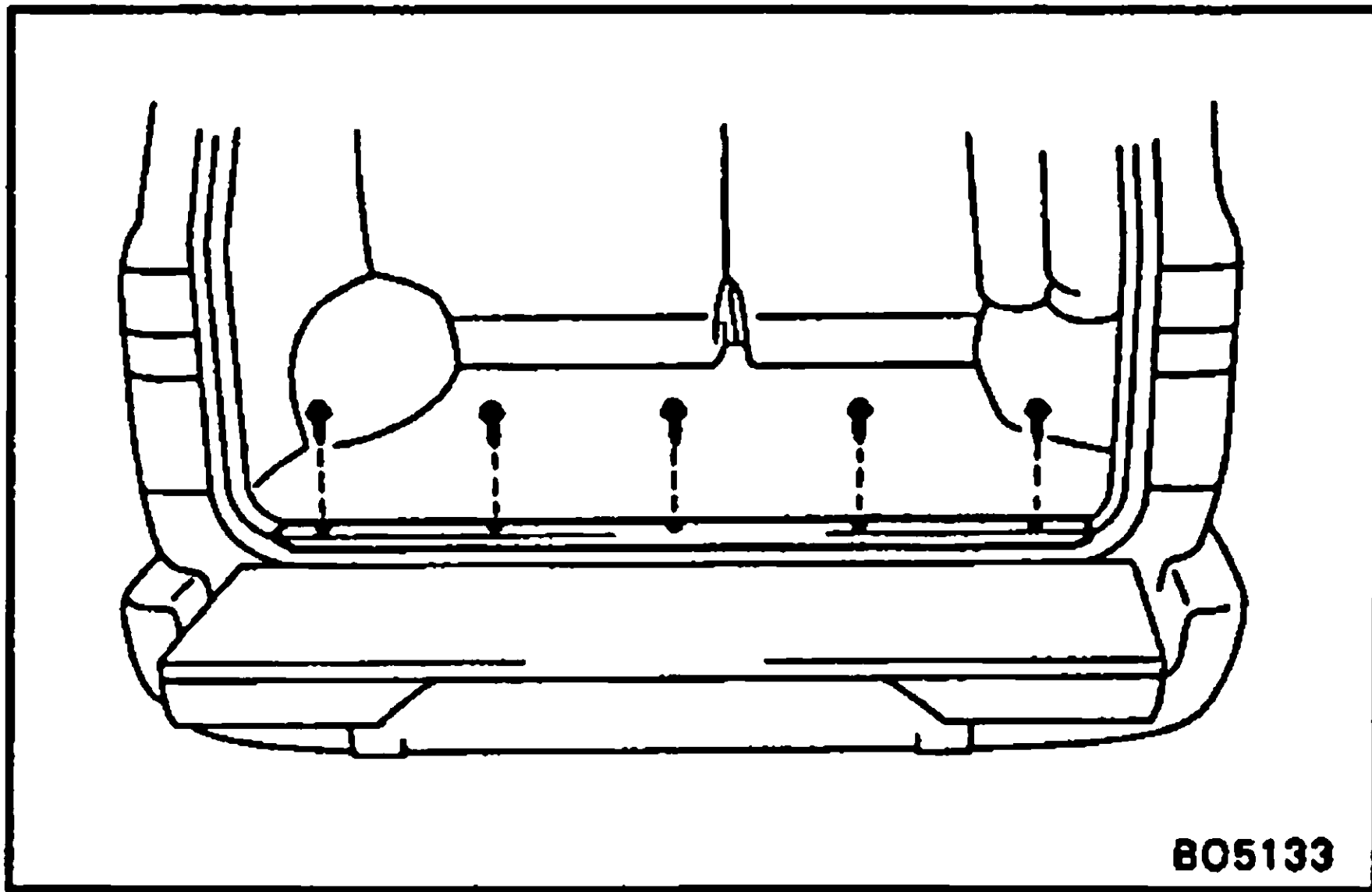


5. TO ADJUST CLEARANCE

(Difference in left and right clearance)

Adjust by loosening the sliding roof installation nuts and readjust the sliding roof to the proper position.





SLIDING ROOF REMOVAL

Installation is in the reverse order of removal.

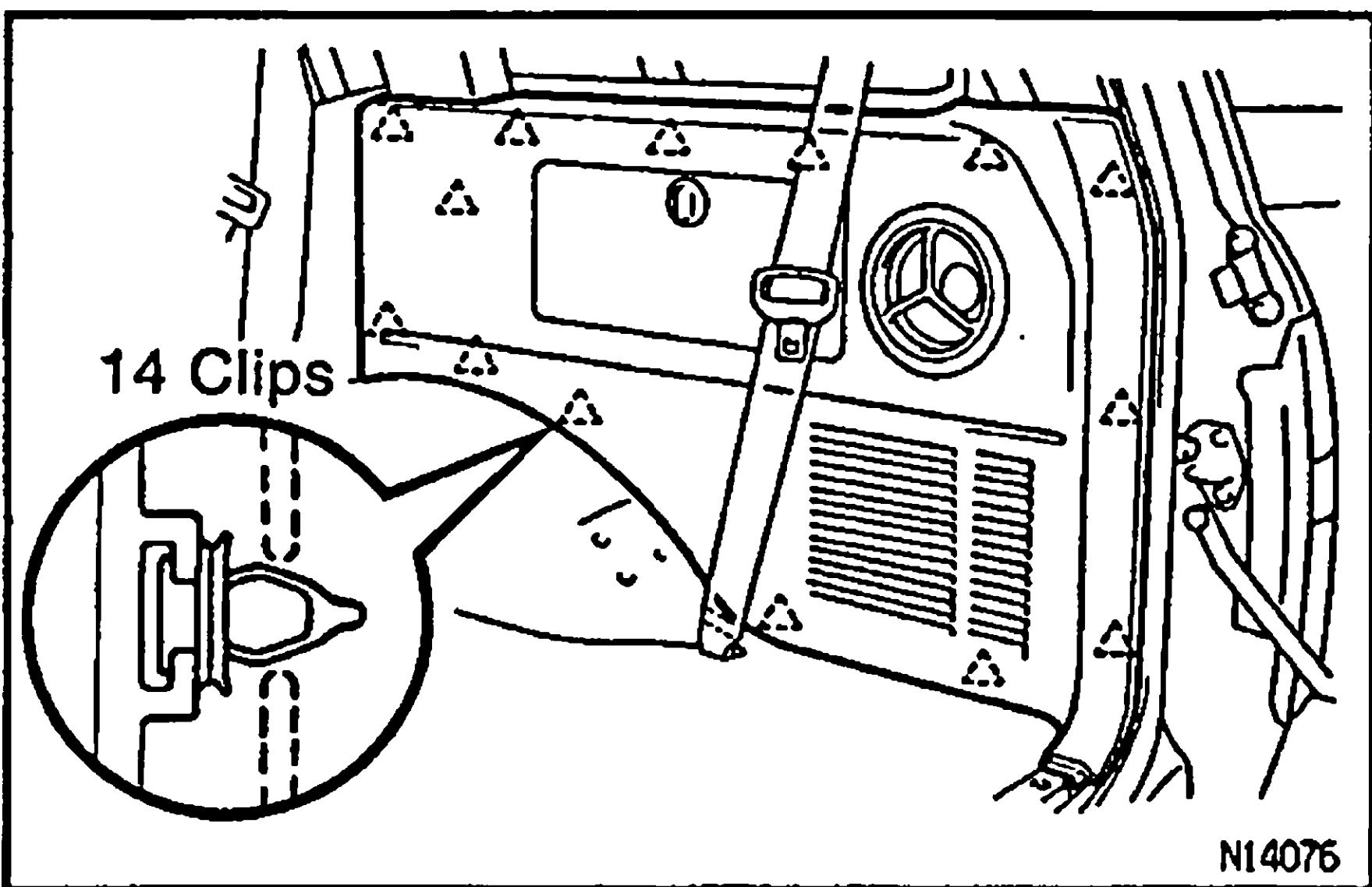
1. CHECK OPERATION TO THE SLIDING ROOF
2. REMOVE THESE PARTS:

(a) Back door scuff plate

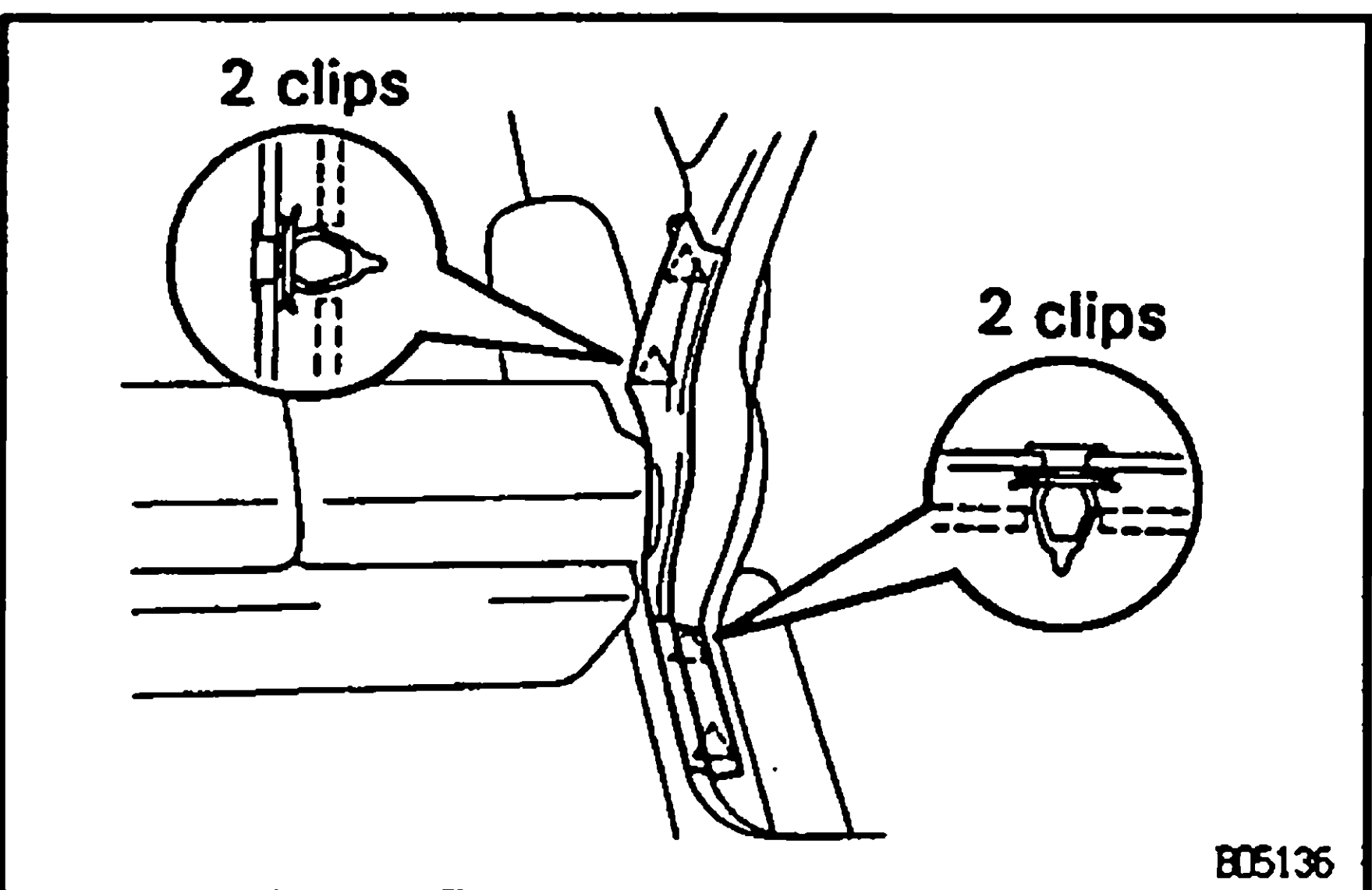
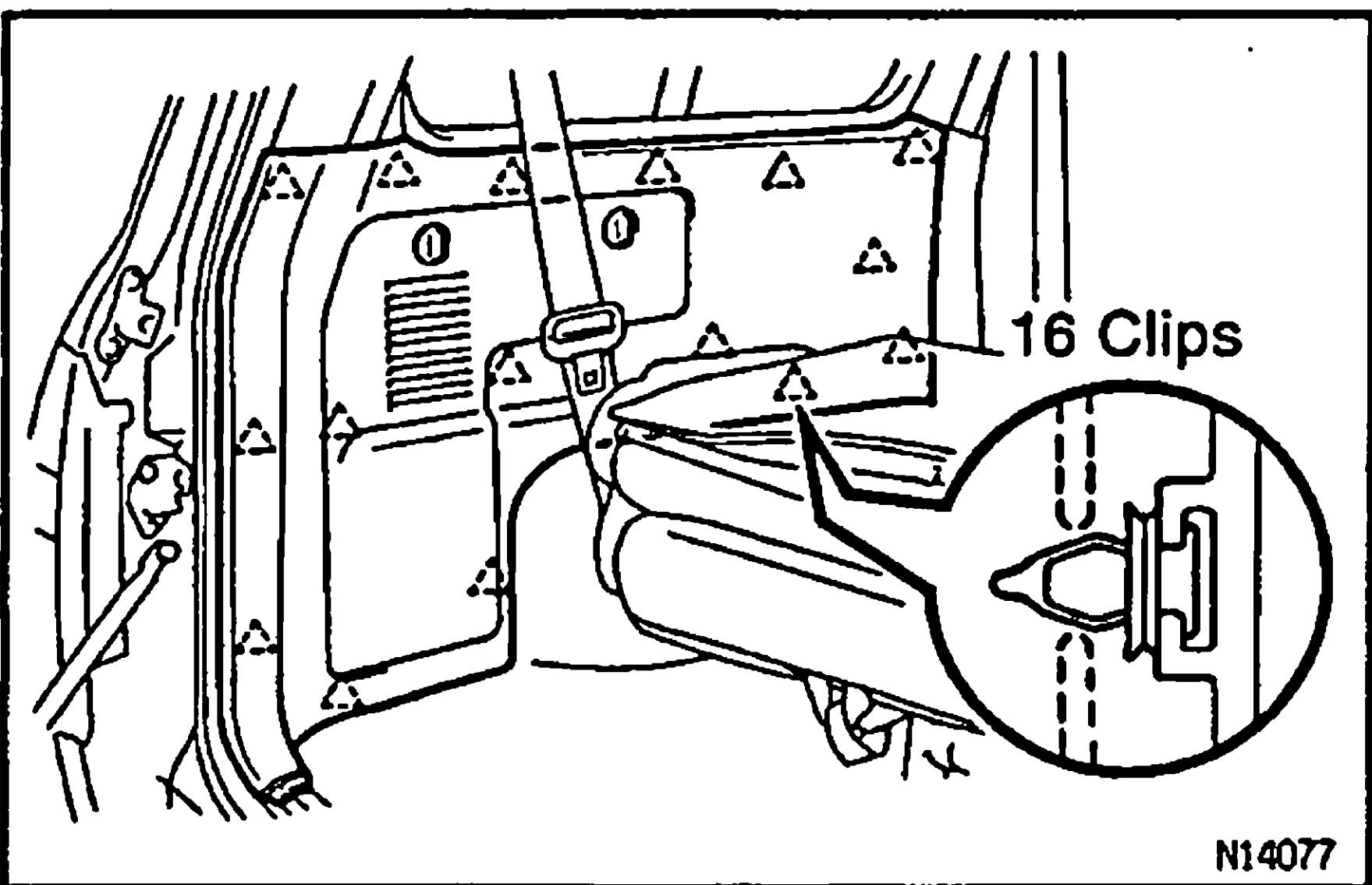
(b) w/No.2 Rear Seat

No.2 rear seat

(c) Quarter trim (RH)



(d) Quarter trim (LH)



(e) Rear seat side garnish

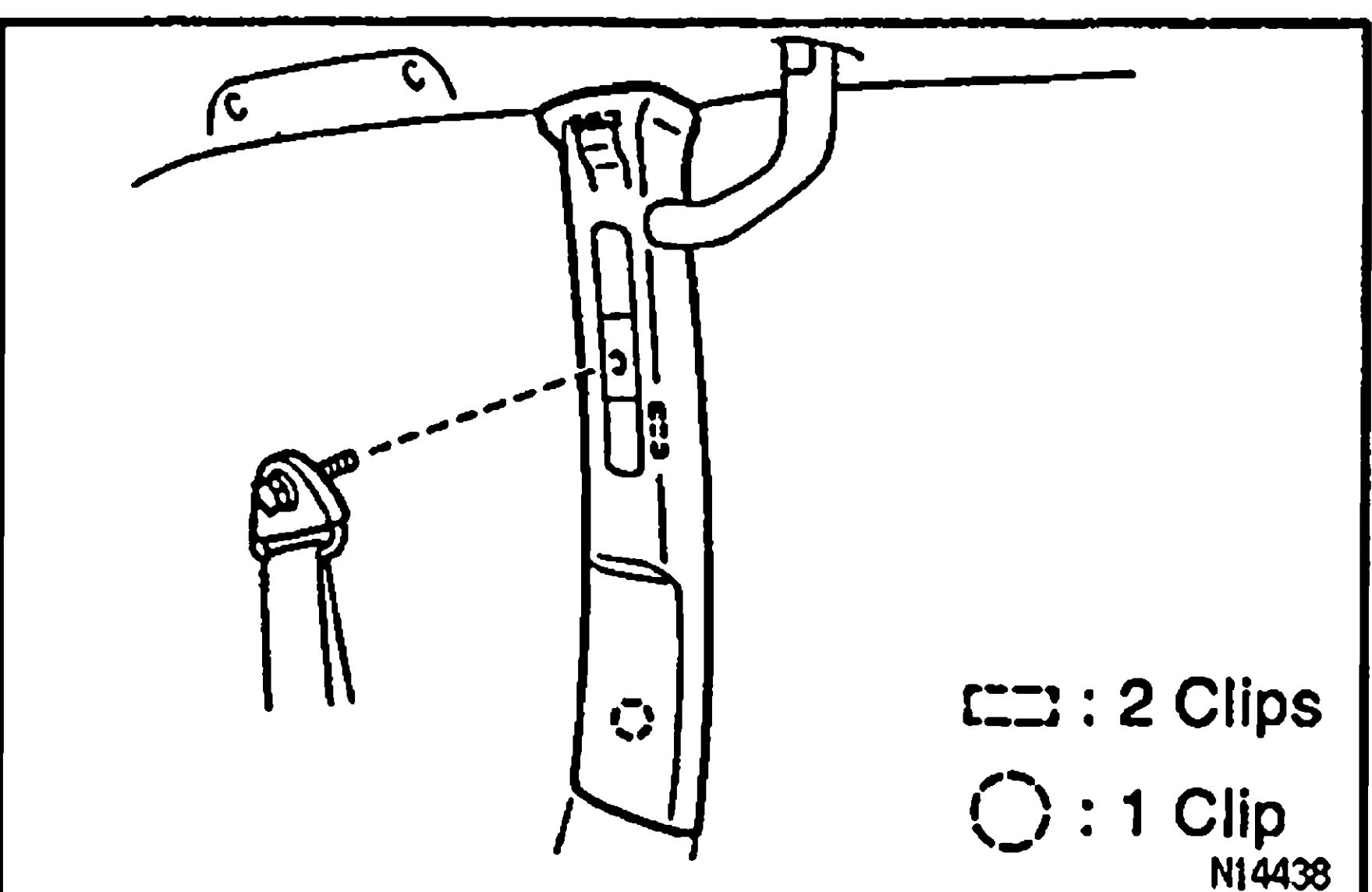
(f) Rear door scuff plate

(g) Cowl side trim

(h) Front door opening trim

(i) Rear door opening trim

(j) Center pillar lower garnish



(k) Front seat outer belt shoulder anchor

(l) Center pillar upper garnish

(m) Front shoulder belt anchor adjuster

(n) No.1 rear seat outer belt shoulder anchor

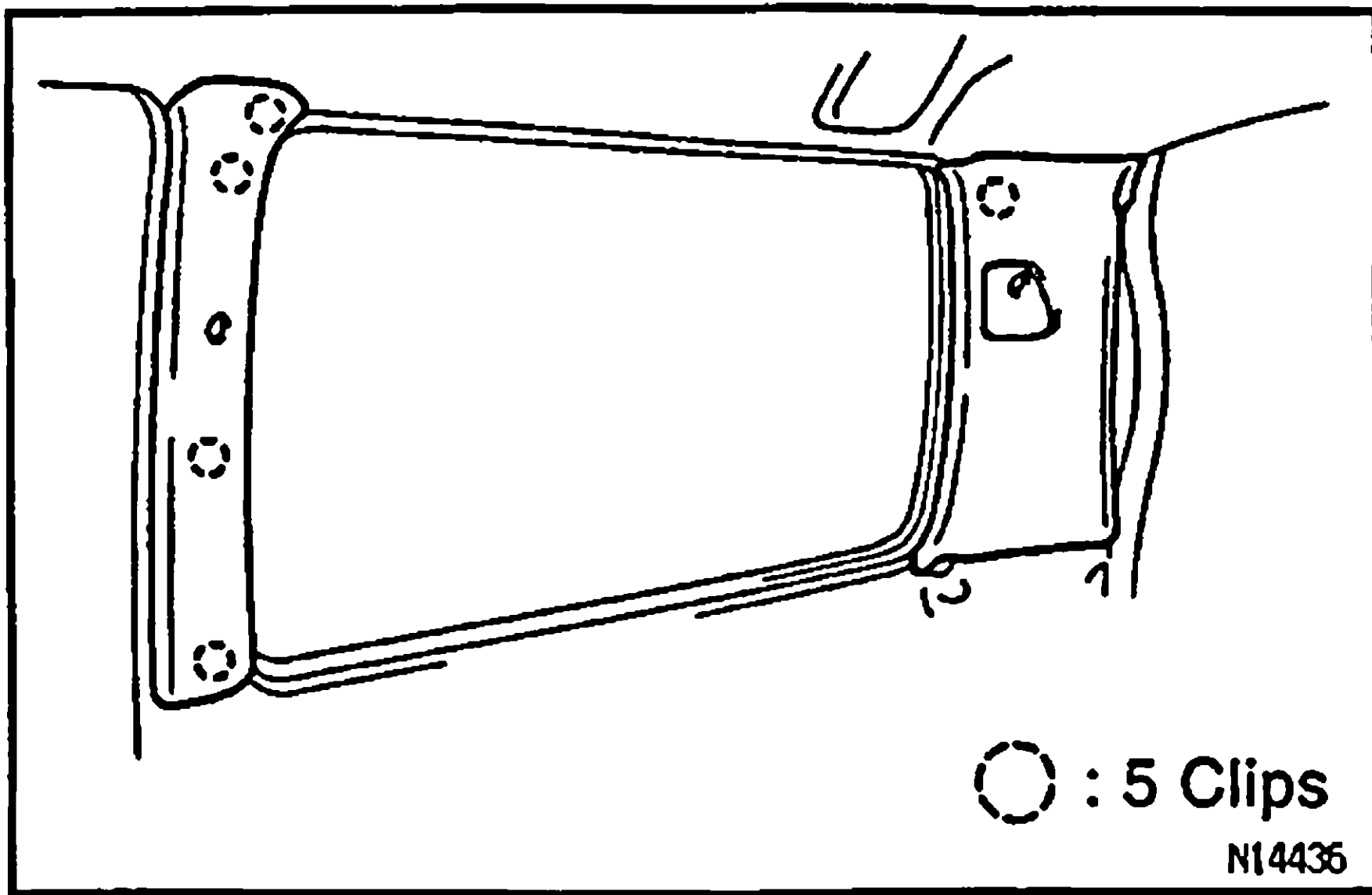
(o) w/ No.2 Rear Seat

No.2 rear seat outer belt shoulder anchor

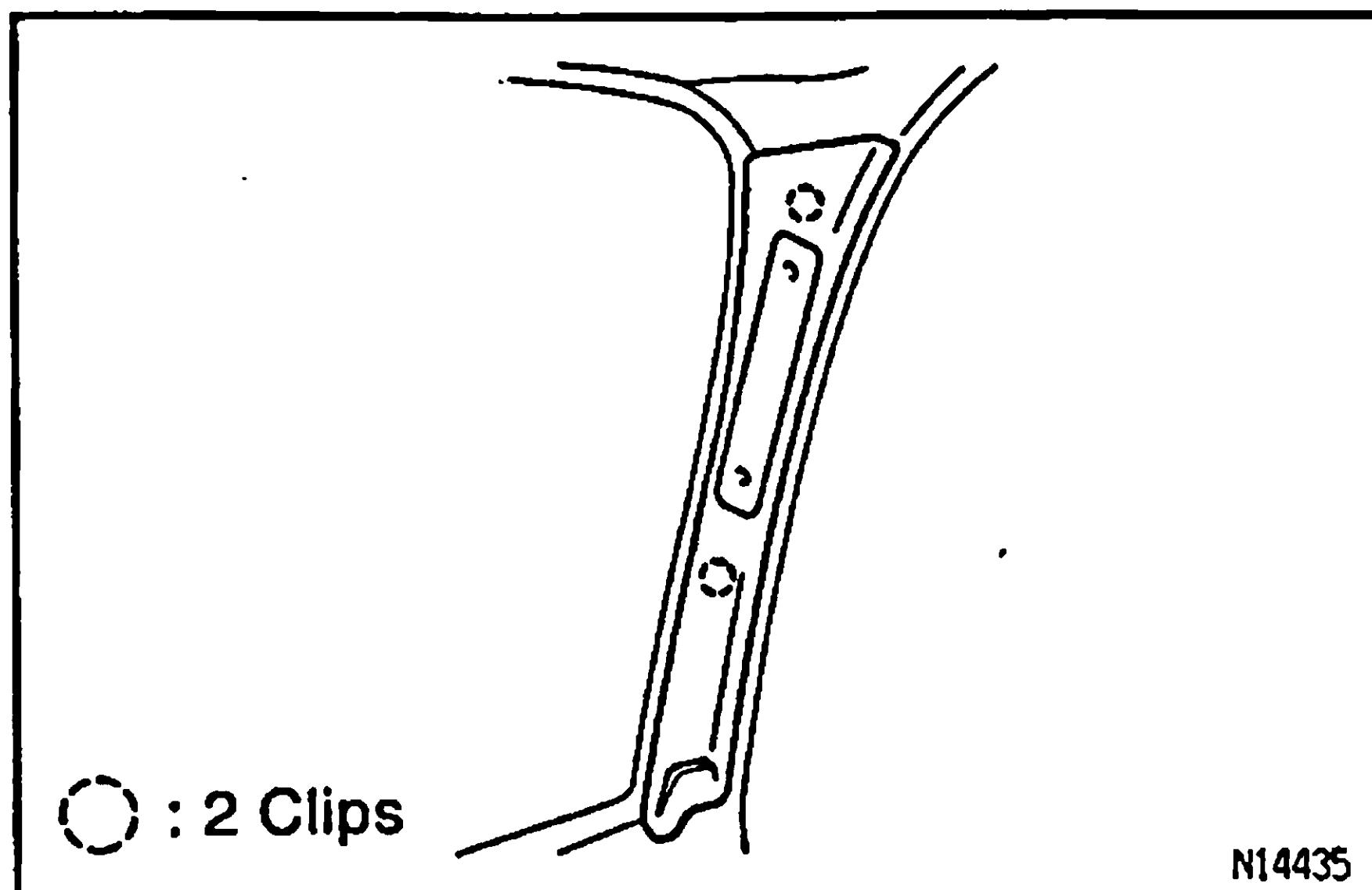
□ : 2 Clips

○ : 1 Clip

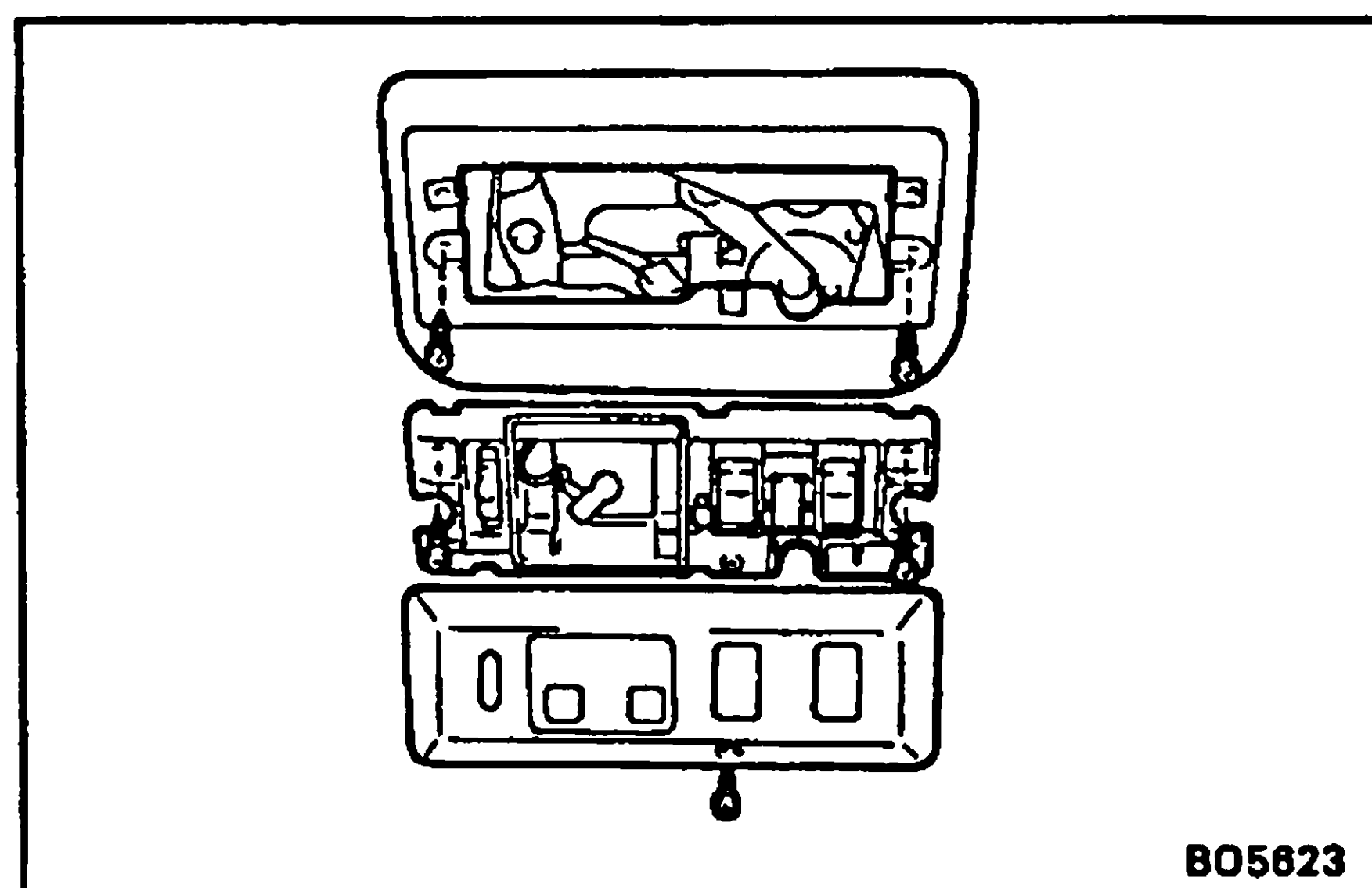
N14438



- (p) Quarter pillar garnish
- (q) Rear pillar garnish
- (r) Assist grips

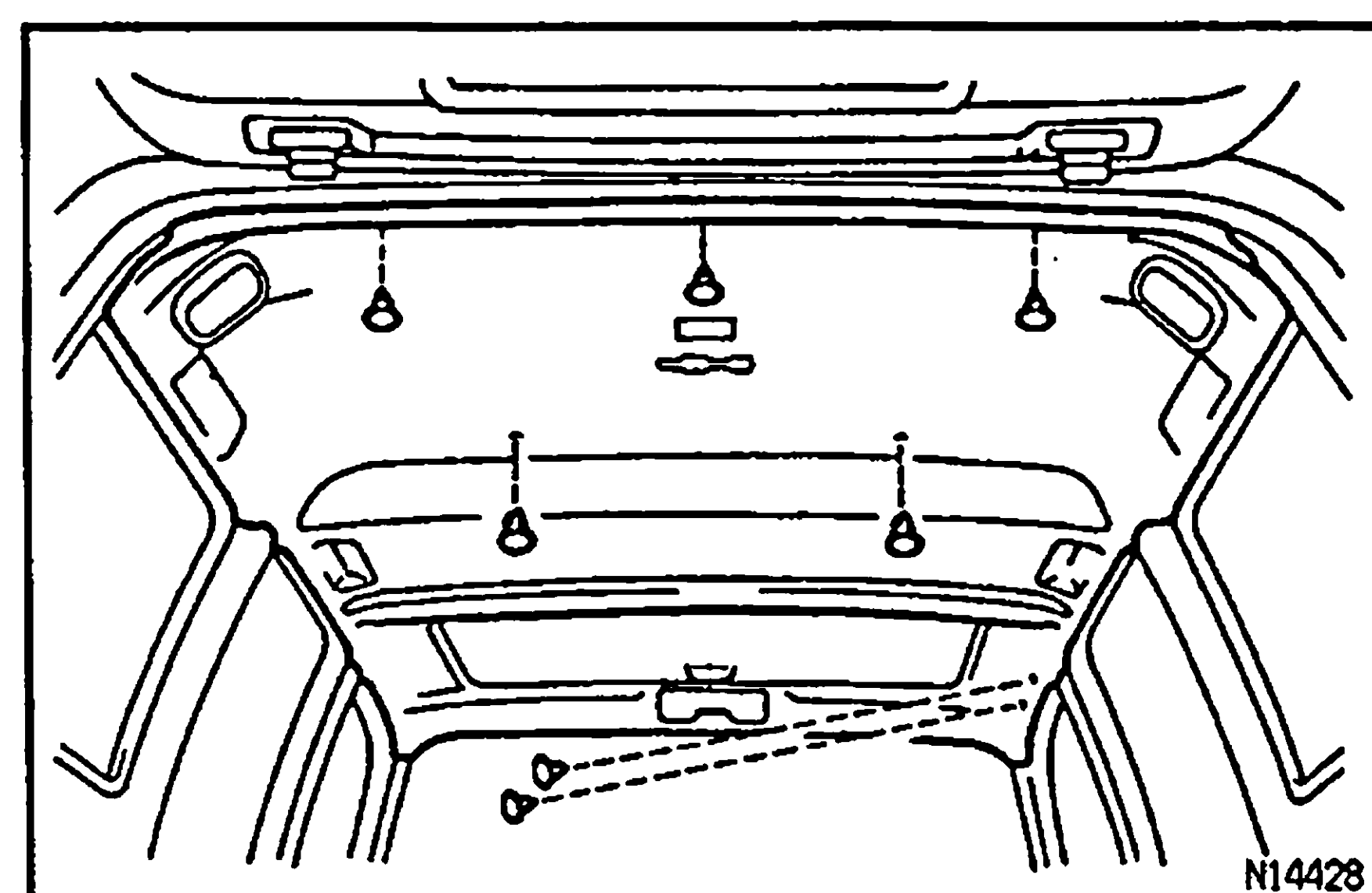


- (s) Front pillar garnish
- (t) Sun visors and holders
- (u) Inner rear view mirror
- (v) No.1 room light
- (w) No.2 room light
- (x) Back door opening trim
- (y) Sliding roof opening moulding



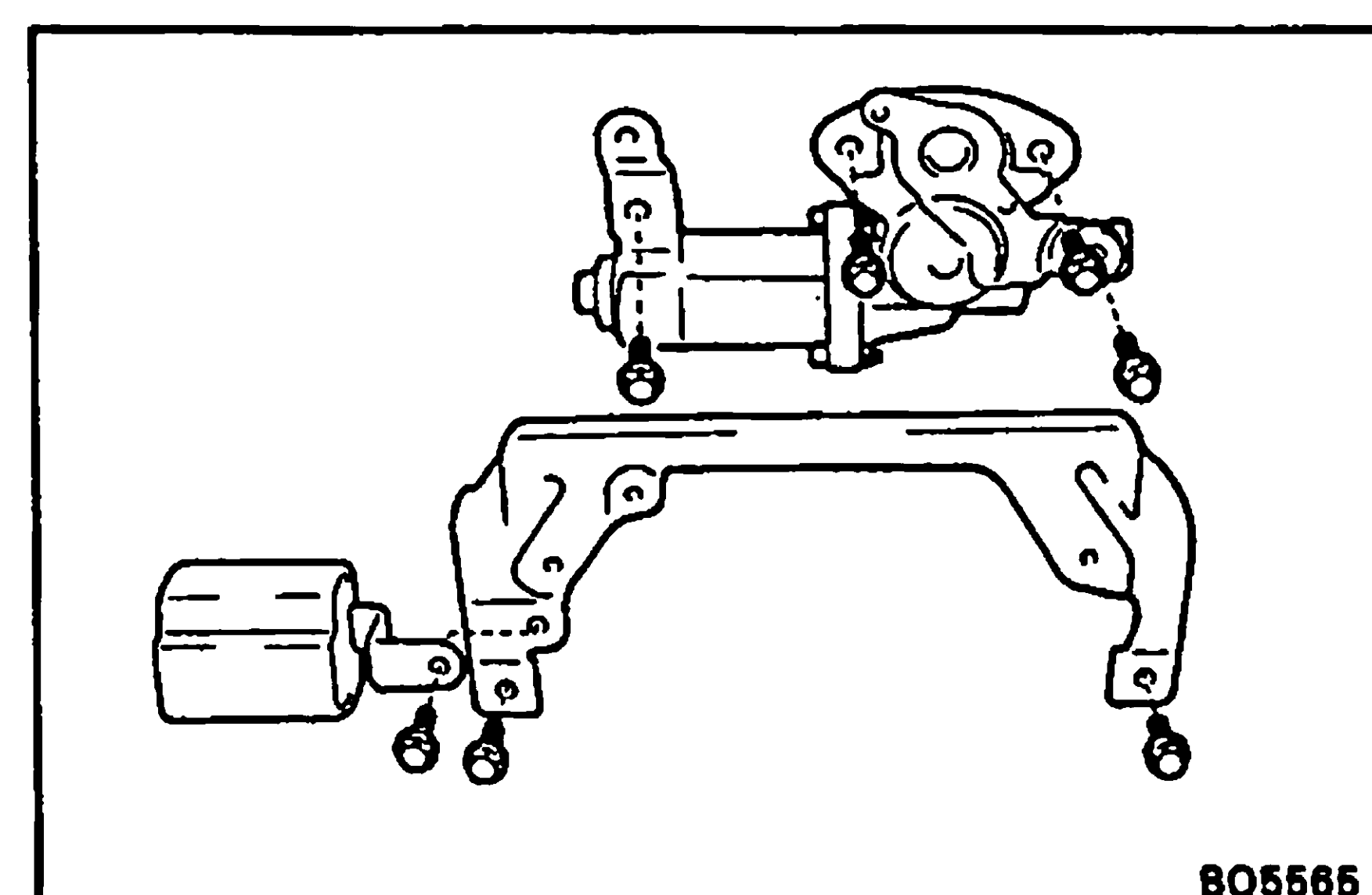
3. REMOVE CONTROL SWITCH

- (a) Remove the screw.
- (b) Using the screwdriver, remove the switch cover.
HINT: Tape a screwdriver tip before use.
- (c) Remove the 2 screws and the switch body, then disconnect the connector.
- (d) Remove the 2 screws and the bracket.



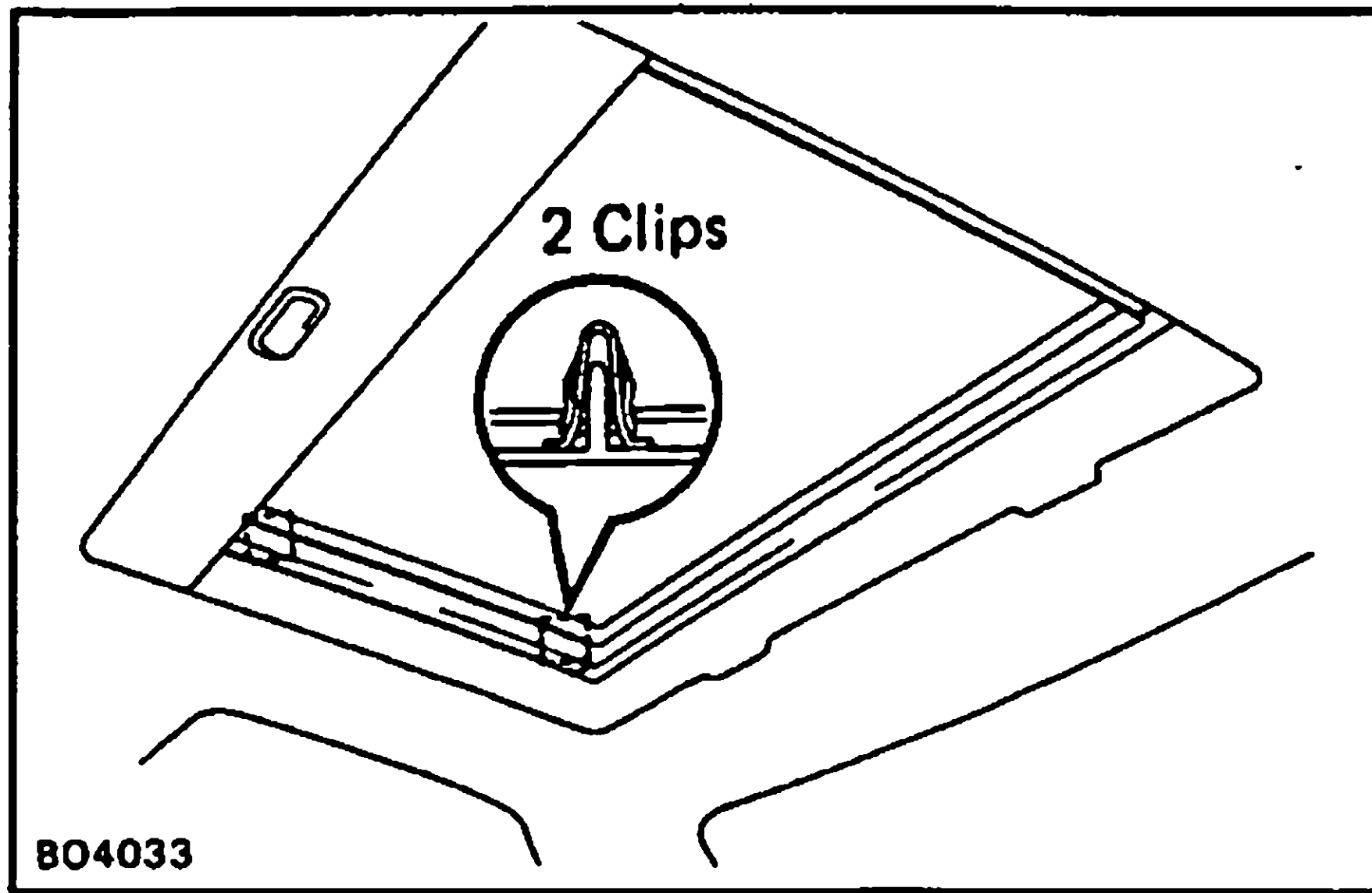
4. REMOVE ROOF HEADLINING

- (a) Using the clip remover, remove the 7 clips.
- (b) Remove the roof headlining.



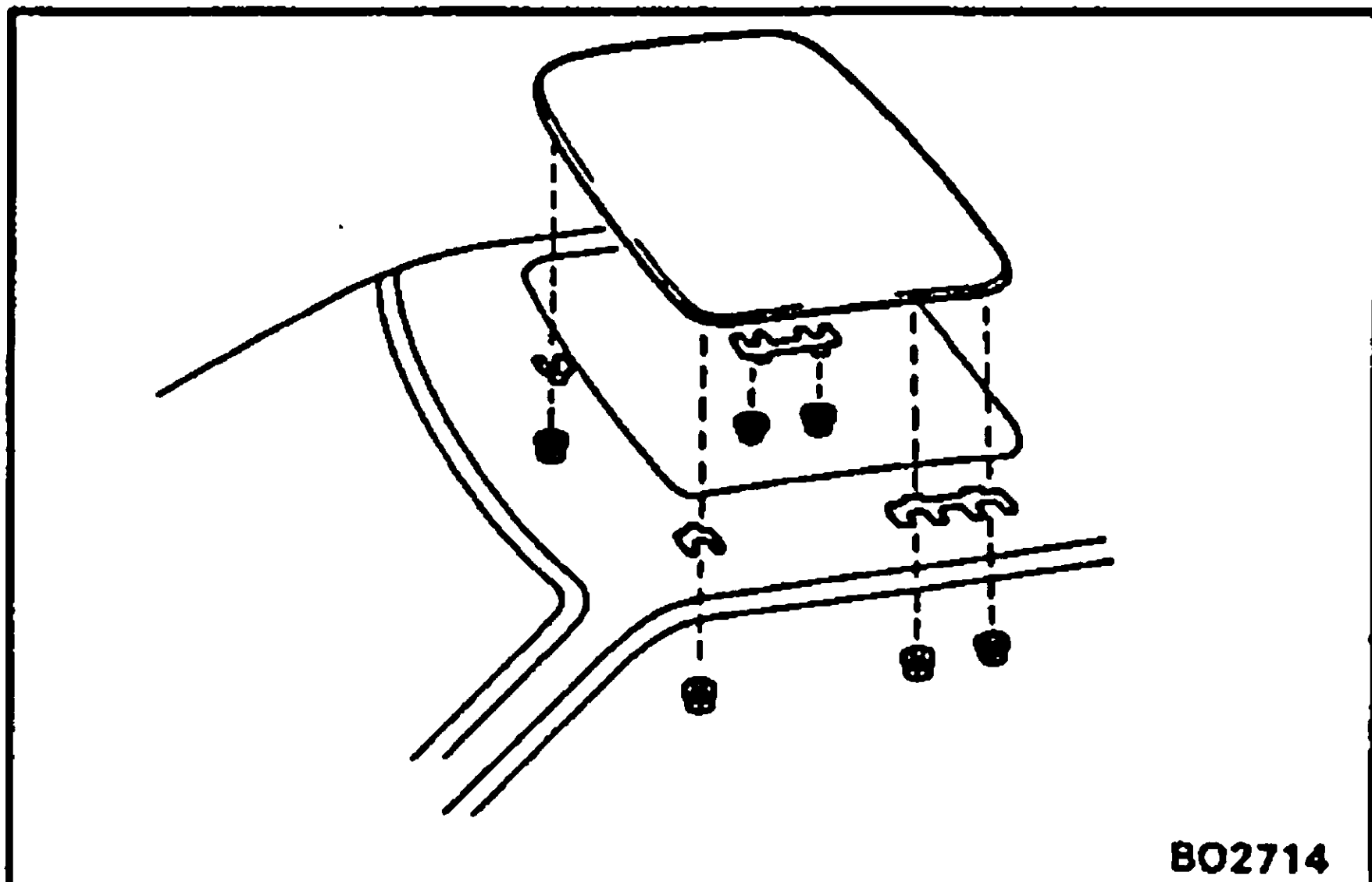
5. REMOVE DRIVE GEAR ASSEMBLY

- (a) Remove the bolt and the drive gear control relay, then disconnect the connector.
- (b) Remove the 2 bolts and the bracket.
- (c) Remove the 4 bolts and the drive gear assembly, then disconnect the connector.

**6. REMOVE SLIDING ROOF GARNISHES**

Using the screwdriver, pry loose the 2 clips and remove the inner side garnish.

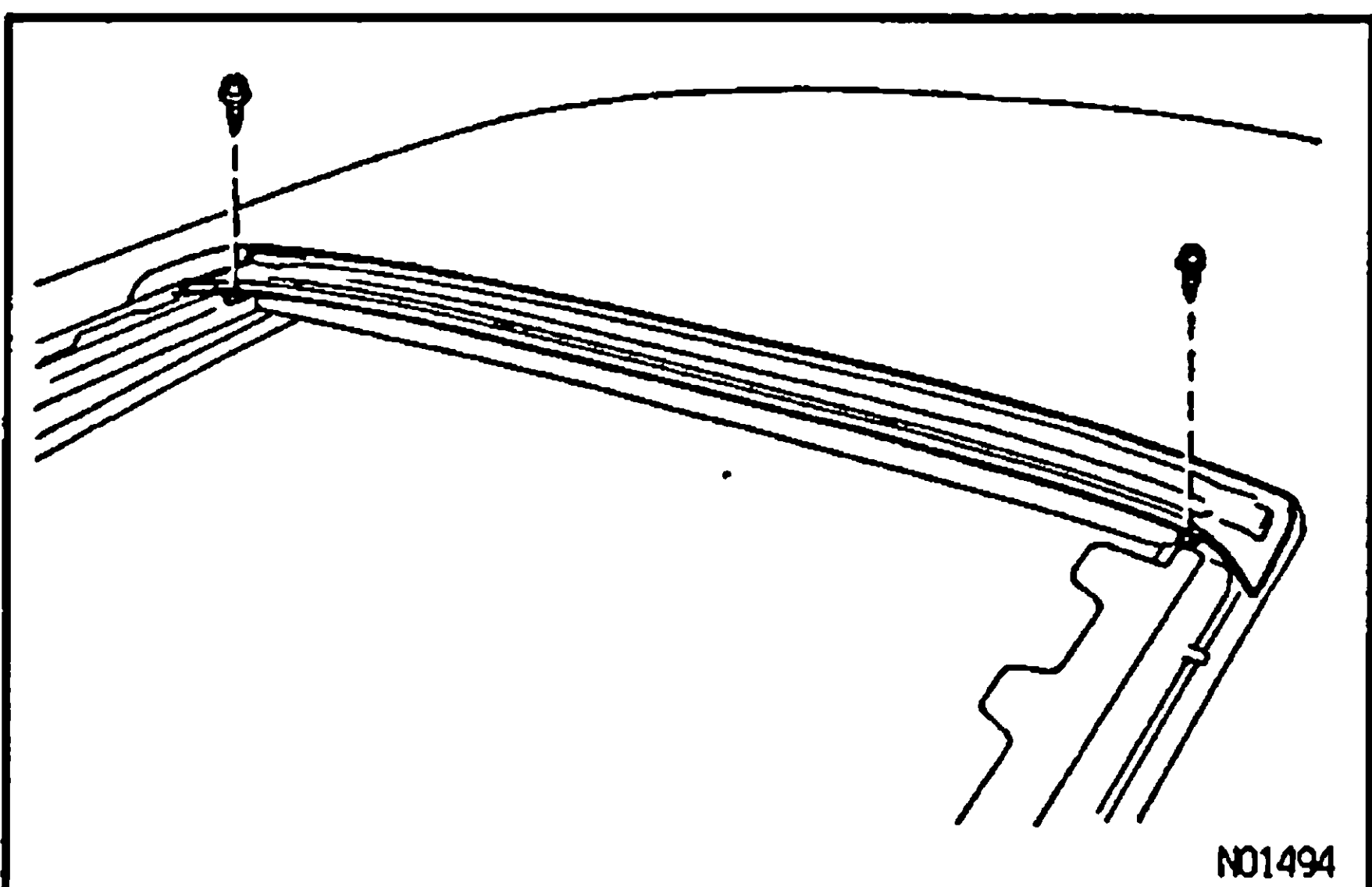
HINT: Tape a screwdriver tip before use.

**7. REMOVE SLIDING ROOF GLASS**

(a) Remove the 6 nuts and shims.

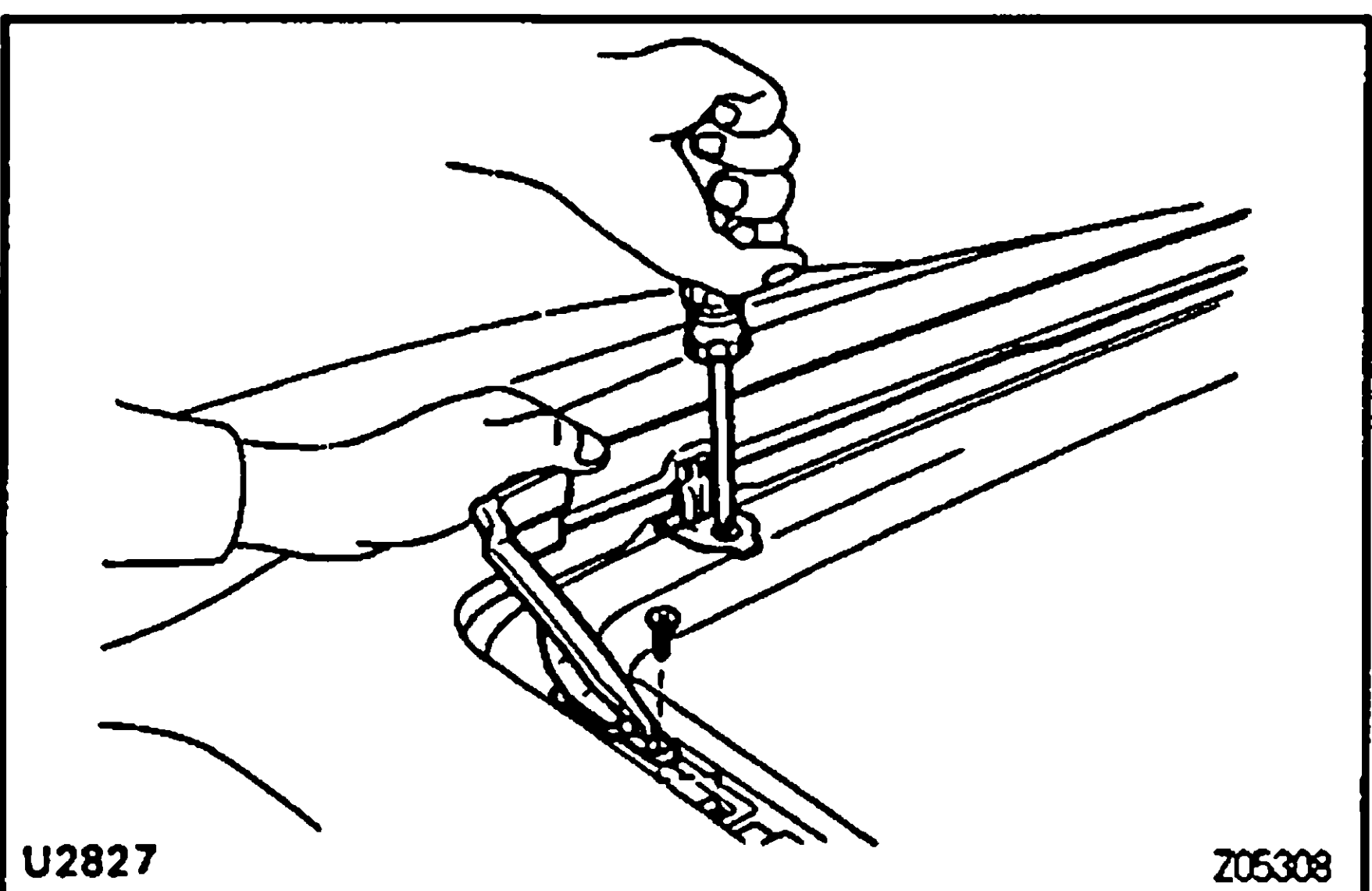
HINT: Make sure of the number of shims.

(b) Pull the glass upward to remove it.

**8. REMOVE DRIP CHANNEL**

(a) Remove the 2 screws.

(b) Pull the channel forwards to remove it.

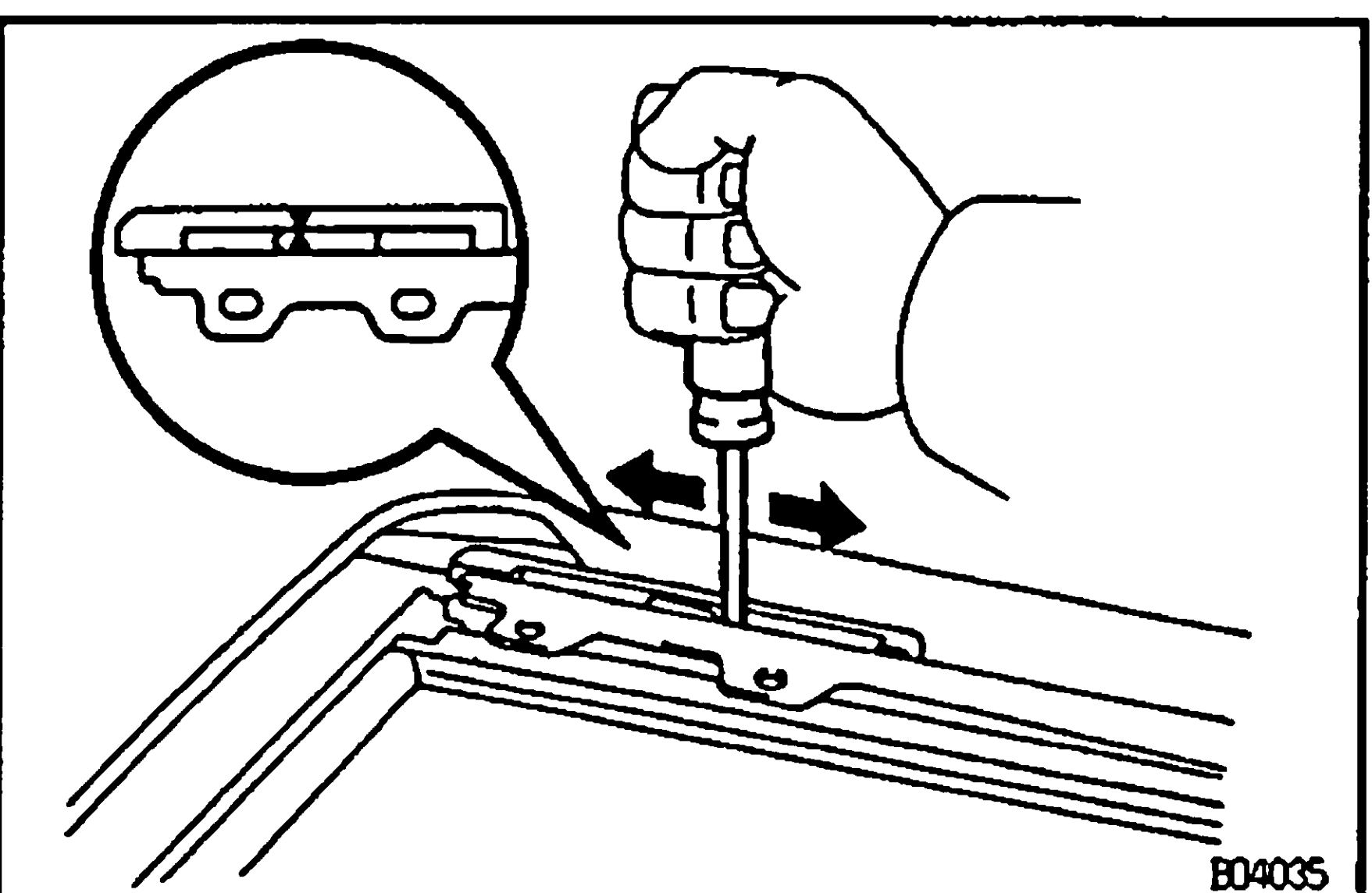
**9. REMOVE WIND DEFLECTOR**

Remove the 4 screws and the wind deflector.

10. REMOVE SLIDING ROOF HOUSING

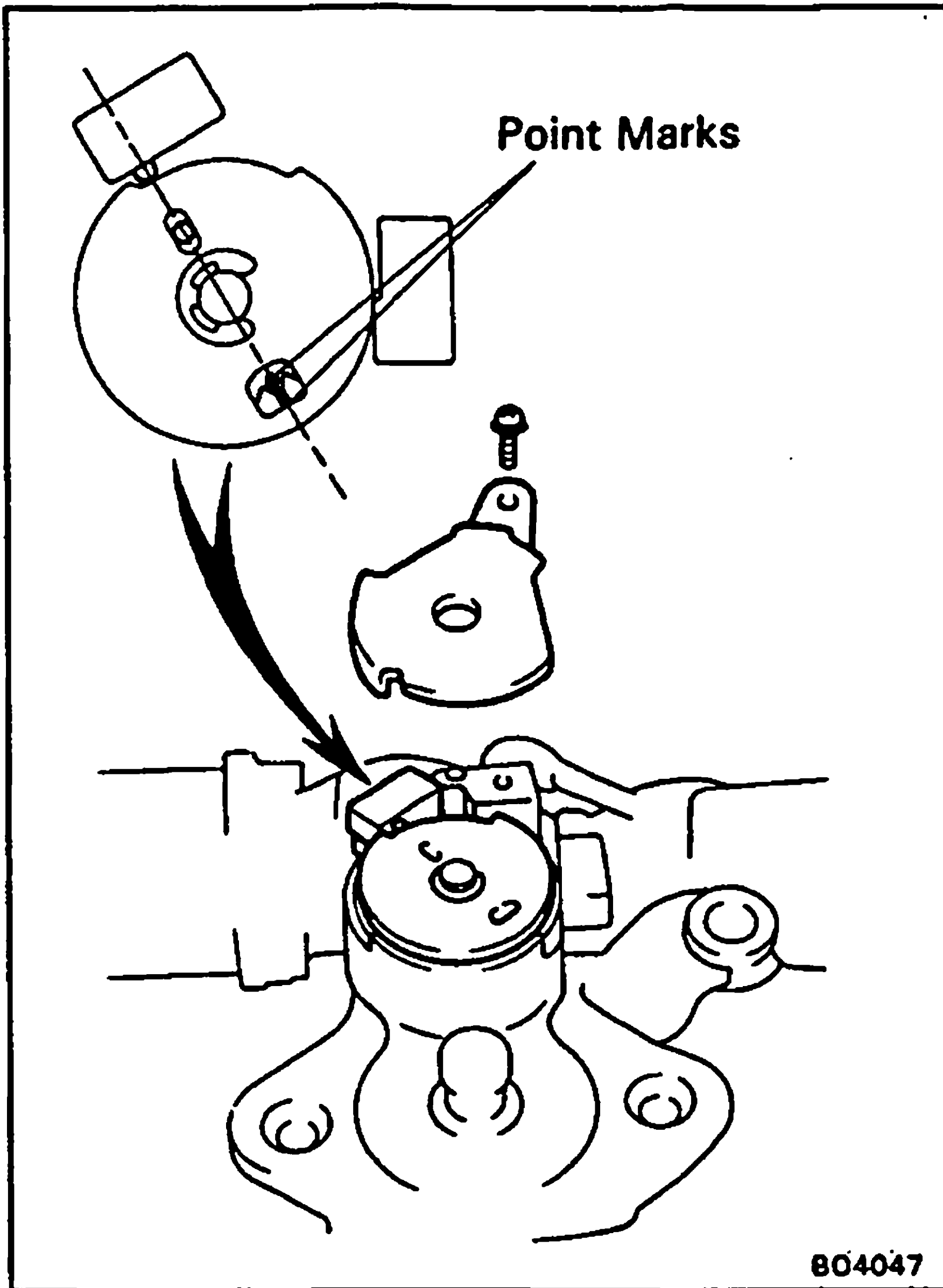
(a) Disconnect the drain hose.

(b) Remove the 3 nuts, 12 screw and the housing.

**11. ADJUST DRIVE RAIL**

HINT: Adjust the drive rail to a closed and tilted down position.

Using a screwdriver, slide the link forward or backward to align the 2 marks, as shown.

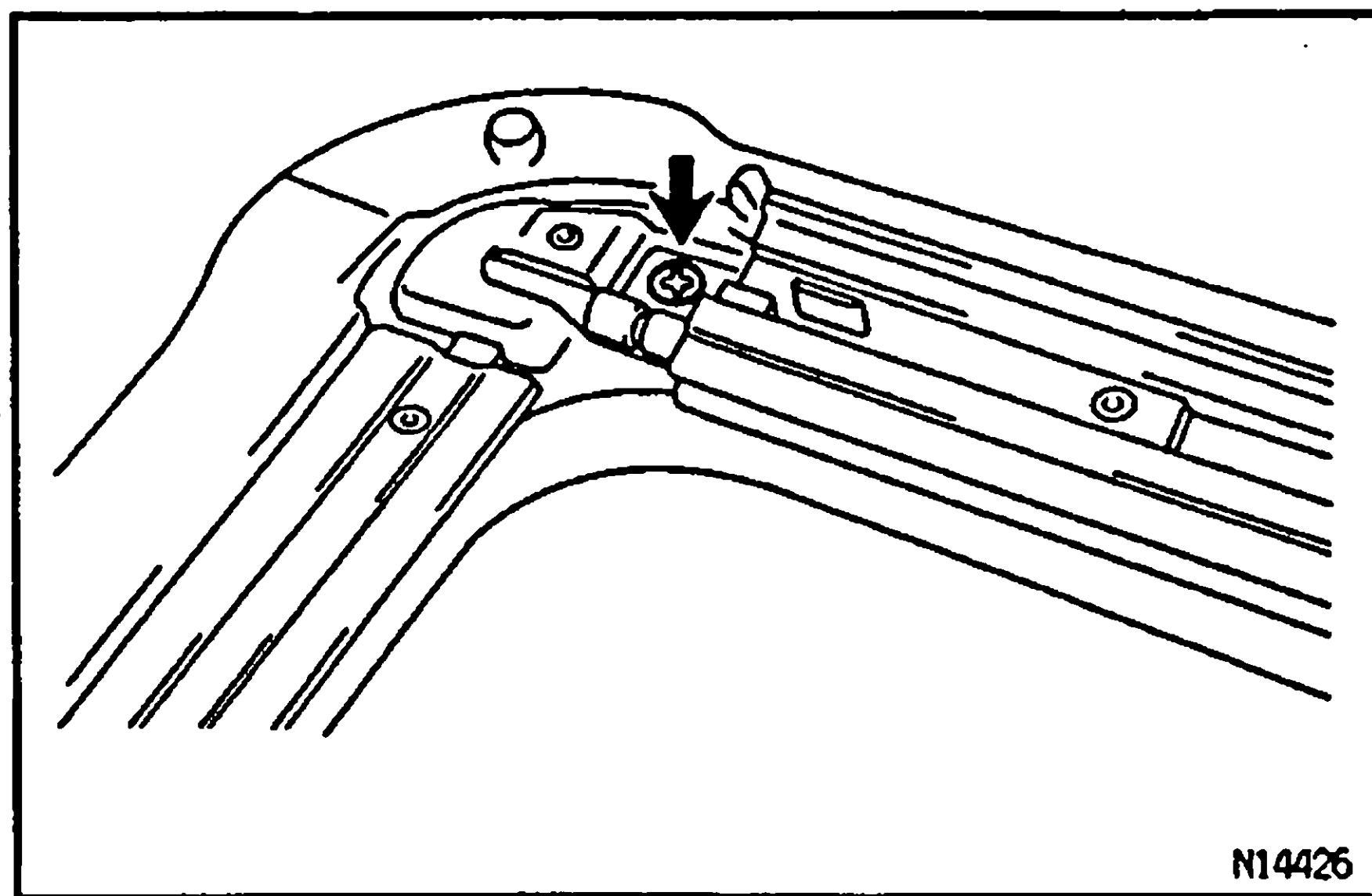


12. ADJUST AND INSTALL DRIVE GEAR ASSEMBLY

- (a) Remove the screw and cam plate cover.
- (b) Remove the large screw, washers and shims.
- (c) Turn the drive shaft by screwdriver to align the housing and gear point mark, as shown.
- (d) Install the cam plate cover with the screw.
- (e) Install the drive gear assembly with 4 bolts.
- (f) Connect the connector.

13. INSTALL DRIVE GEAR CONTROL RELAY AND BRACKET

- (a) Install the bracket with 2 bolts.
- (b) Install the drive gear control relay with the bolt, then connect the connector.



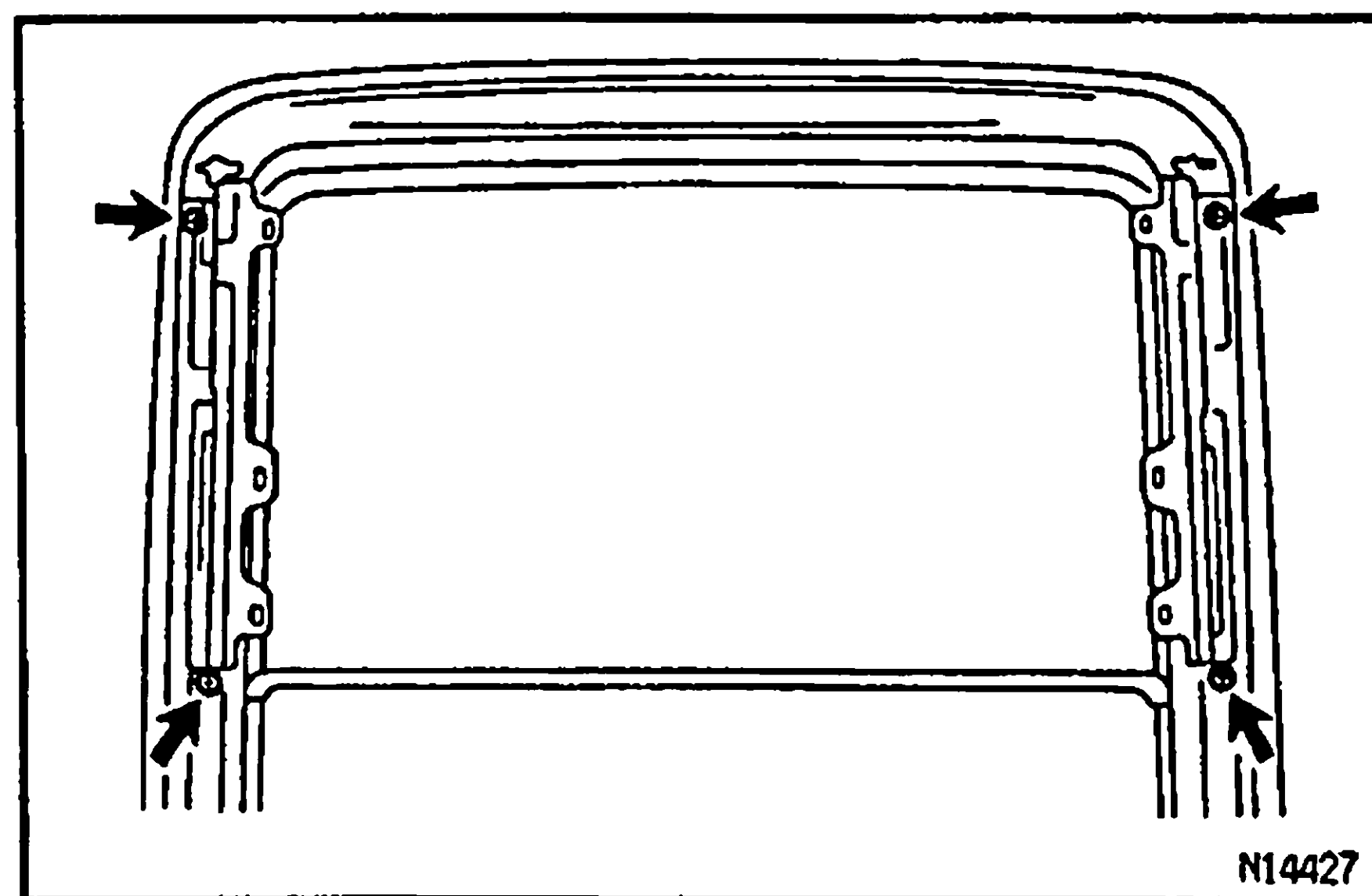
SLIDING ROOF DISASSEMBLY

8013V-03

Assembly is in the reverse order of disassembly.

1. DISCONNECT SLIDING ROOF GUIDE RAIL AND CABLE GUIDE CASING

- (a) Remove the screw and guide rail cover.
- (b) Remove the screw.
- (c) Pull out the cable guide casing.

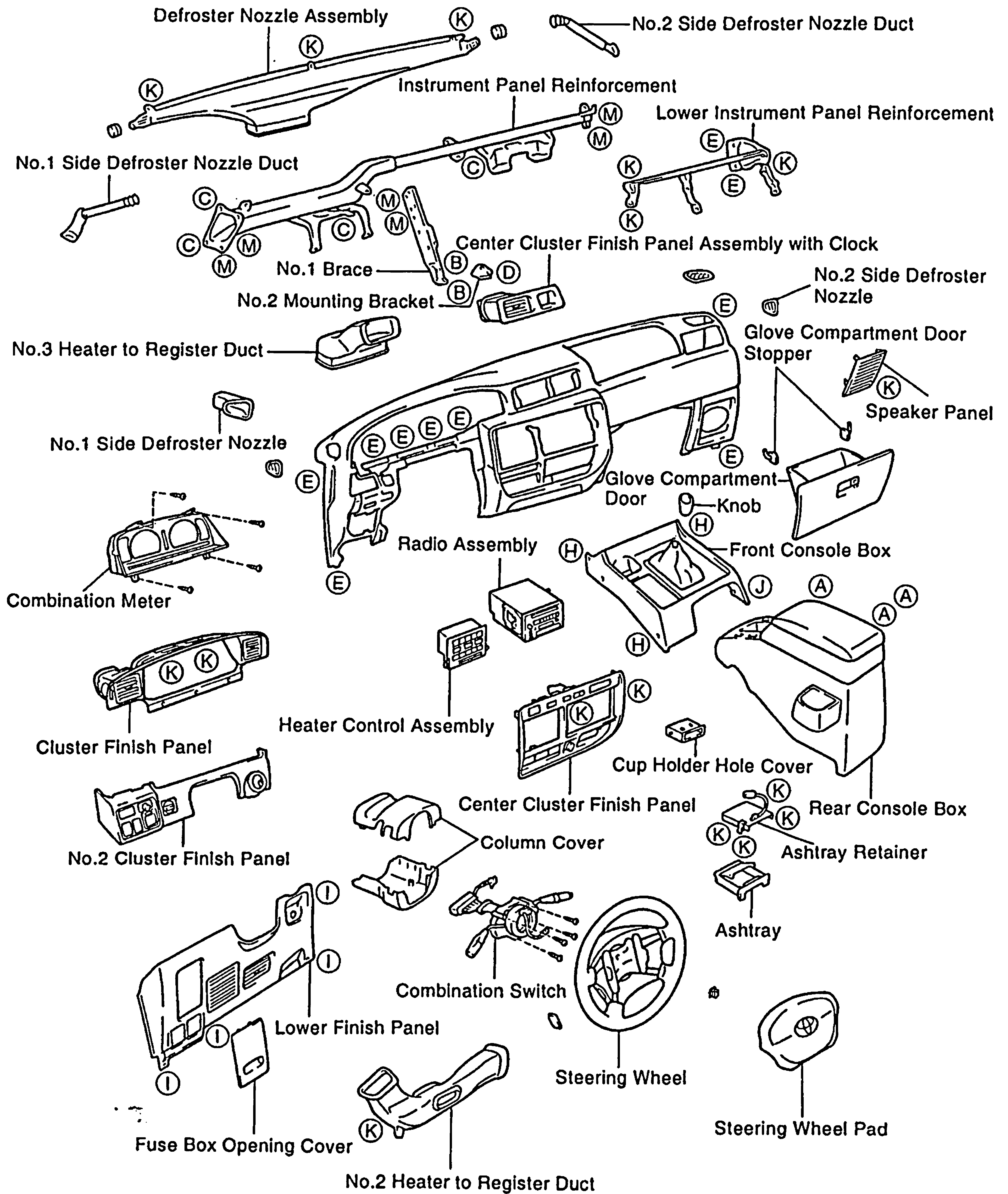


2. REMOVE SLIDING GUIDE RAIL

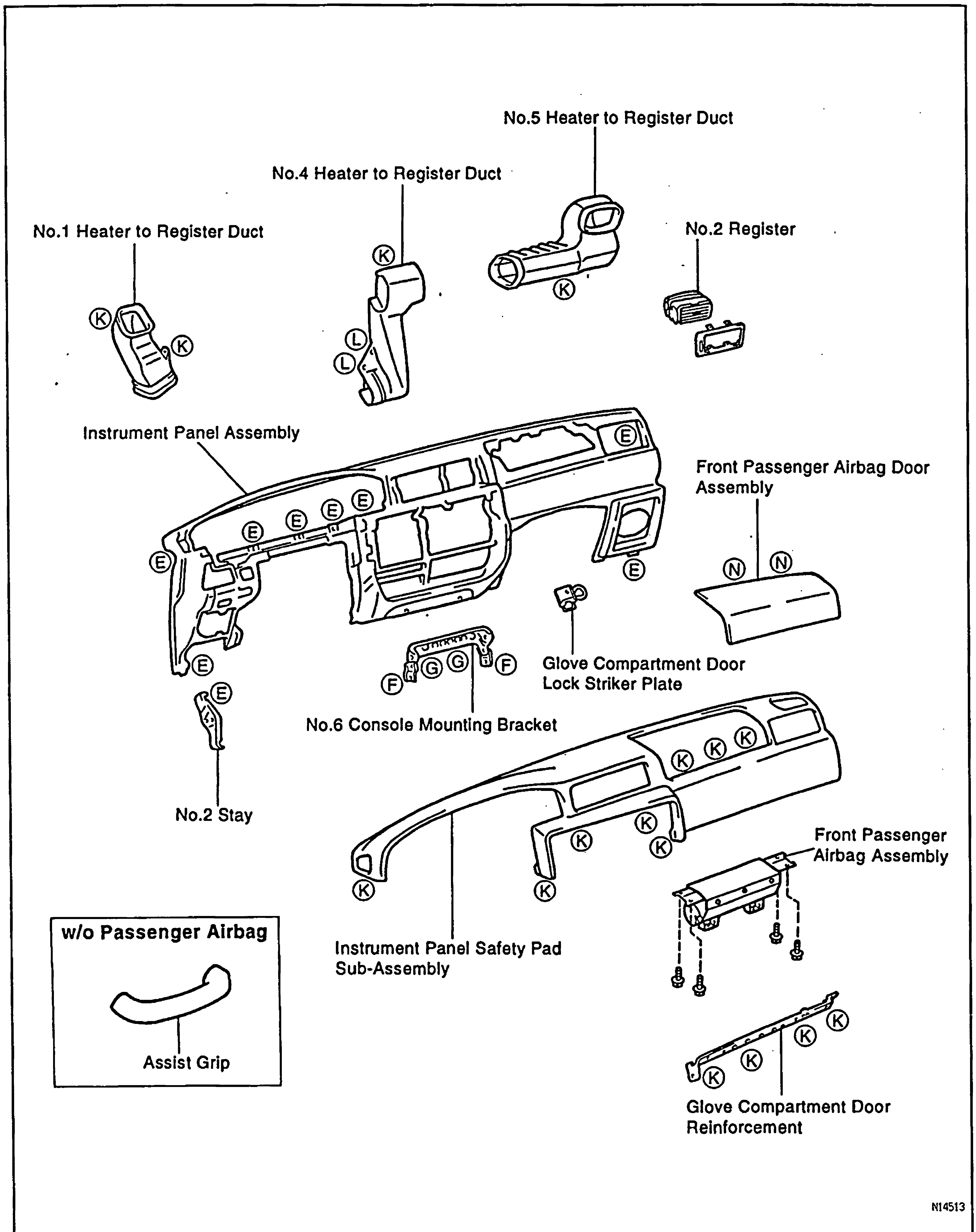
- (a) Make the drive cable to the front edge.
- (b) Remove the 4 screws and both side drive rails.
- (c) Remove the sunshade trim.

INSTRUMENT PANEL COMPONENTS

B0182-02



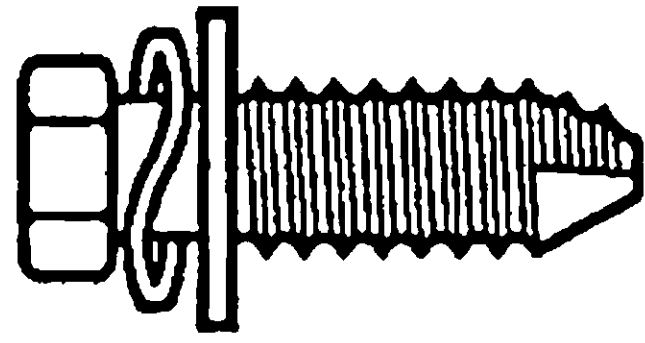
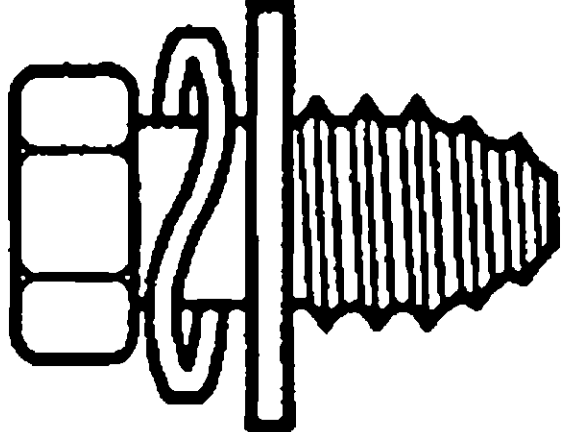
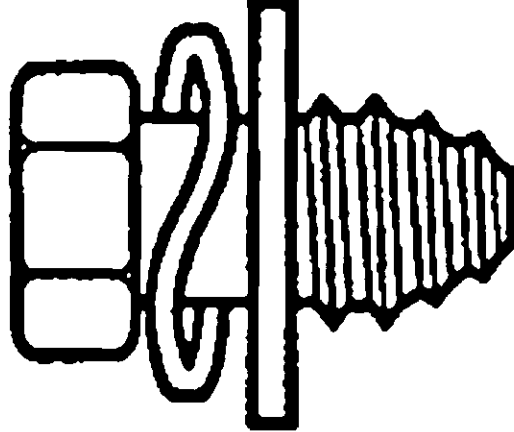
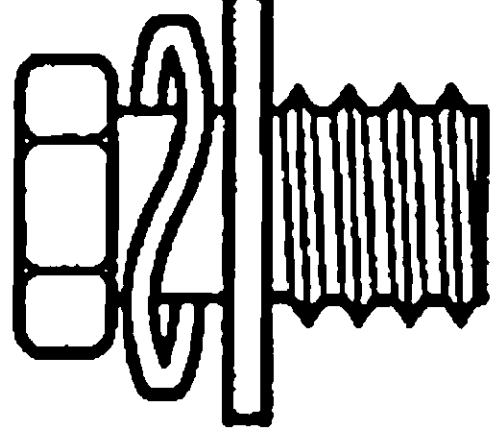
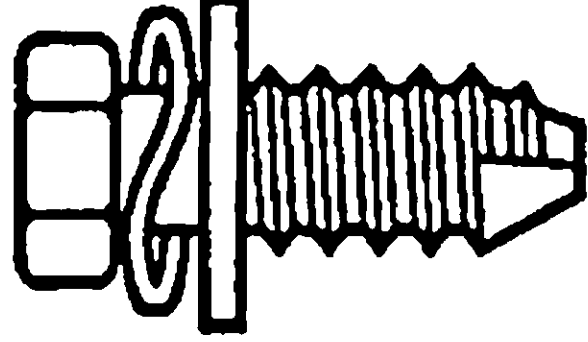
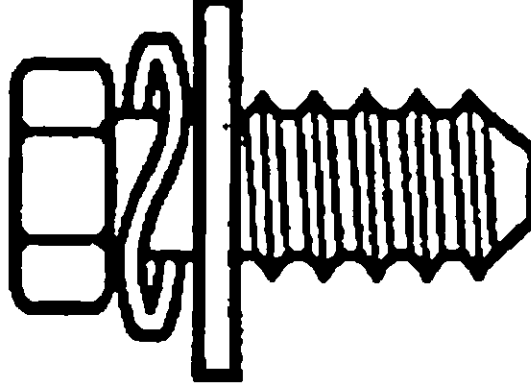
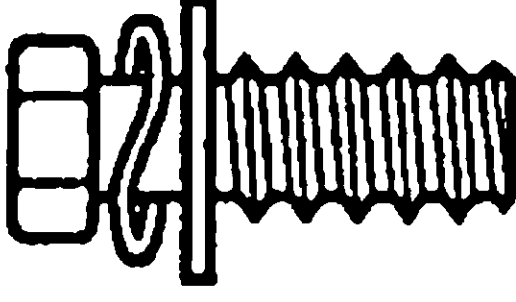
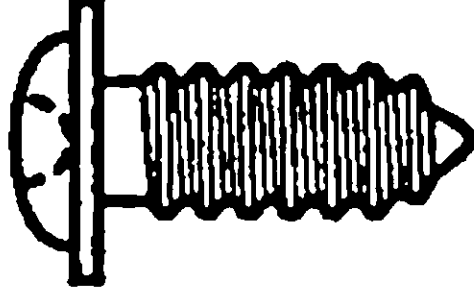
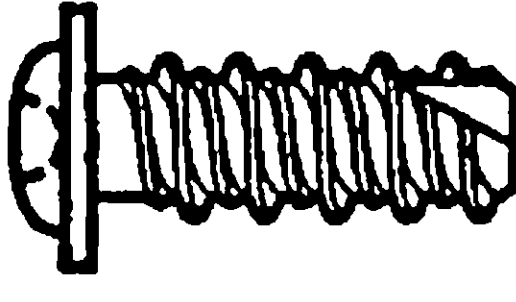
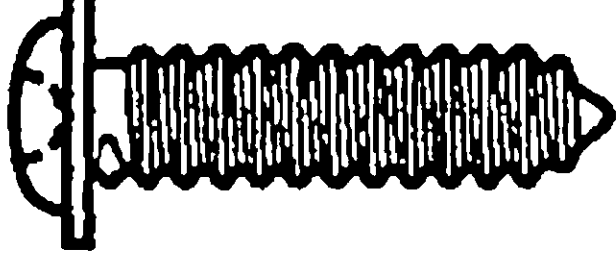
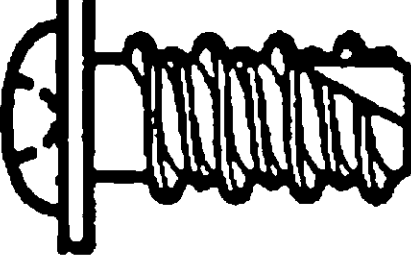
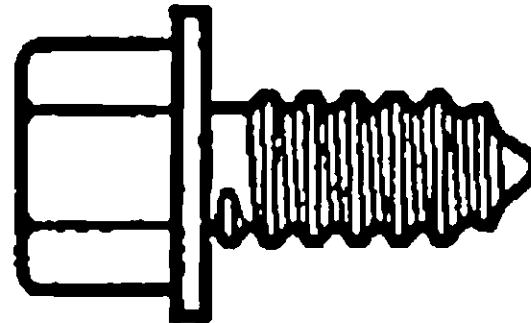
COMPONENTS (Cont'd)



BO

HINT: Screw sizes in the illustration on the previous page are indicated using the code below for removal and installation of instrument panel.

mm (in.)

Code	Shape	Size	Code	Shape	Size	Code	Shape	Size
Ⓐ		$\phi = 8$ (0.31) L = 30 (1.18)	Ⓑ		$\phi = 8$ (0.31) L = 18 (0.71)	Ⓒ		$\phi = 8$ (0.31) L = 16 (0.63)
Ⓓ		$\phi = 8$ (0.31) L = 16 (0.63)	Ⓔ		$\phi = 6$ (0.24) L = 20 (0.79)	Ⓕ		$\phi = 6$ (0.24) L = 18 (0.71)
Ⓖ		$\phi = 5$ (0.20) L = 18 (0.71)	Ⓗ		$\phi = 5$ (0.20) L = 16 (0.63)	Ⓘ		$\phi = 5$ (0.20) L = 18 (0.71)
Ⓙ		$\phi = 5$ (0.20) L = 25 (0.98)	Ⓚ		$\phi = 5$ (0.20) L = 14 (0.55)	Ⓛ		$\phi = 5$ (0.20) L = 14 (0.55)
Ⓜ		$\phi = 8$ (0.31)	Ⓝ		$\phi = 6$ (0.24)			

BO

INSTRUMENT PANEL REMOVAL

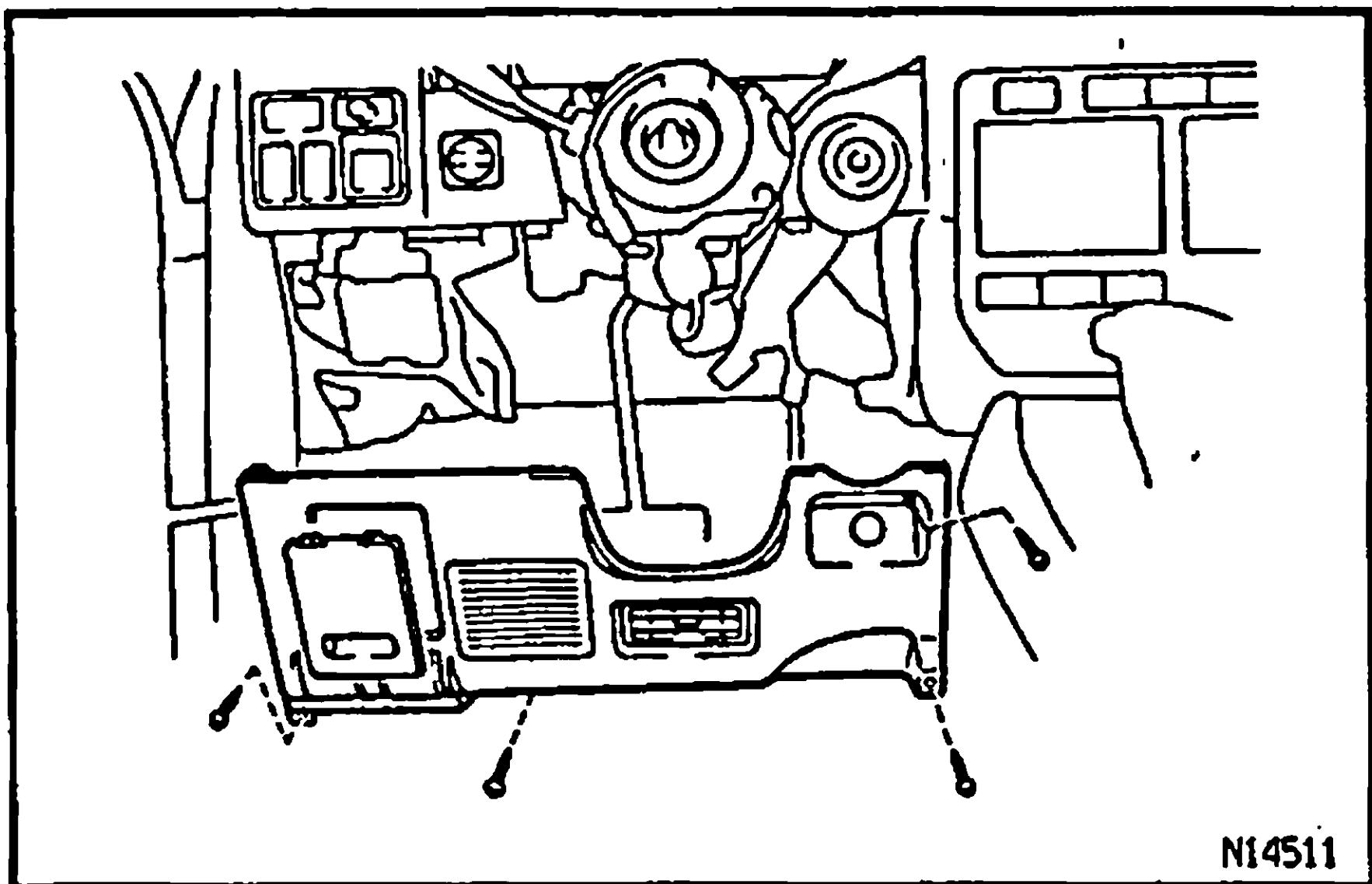
Installation is in the reverse order of removal.

1. REMOVE STEERING WHEEL

(See page SR-8)

2. REMOVE THESE PARTS:

- (a) Column cover
 - (b) Hood lock release lever
 - (c) Fuel lid release lever
 - (d) Fuse box opening cover
 - (e) Lower finish panel
 - (f) No.2 heater to register duct
- ## 3. LOOSEN DLC 3 AND FUSE BLOCK

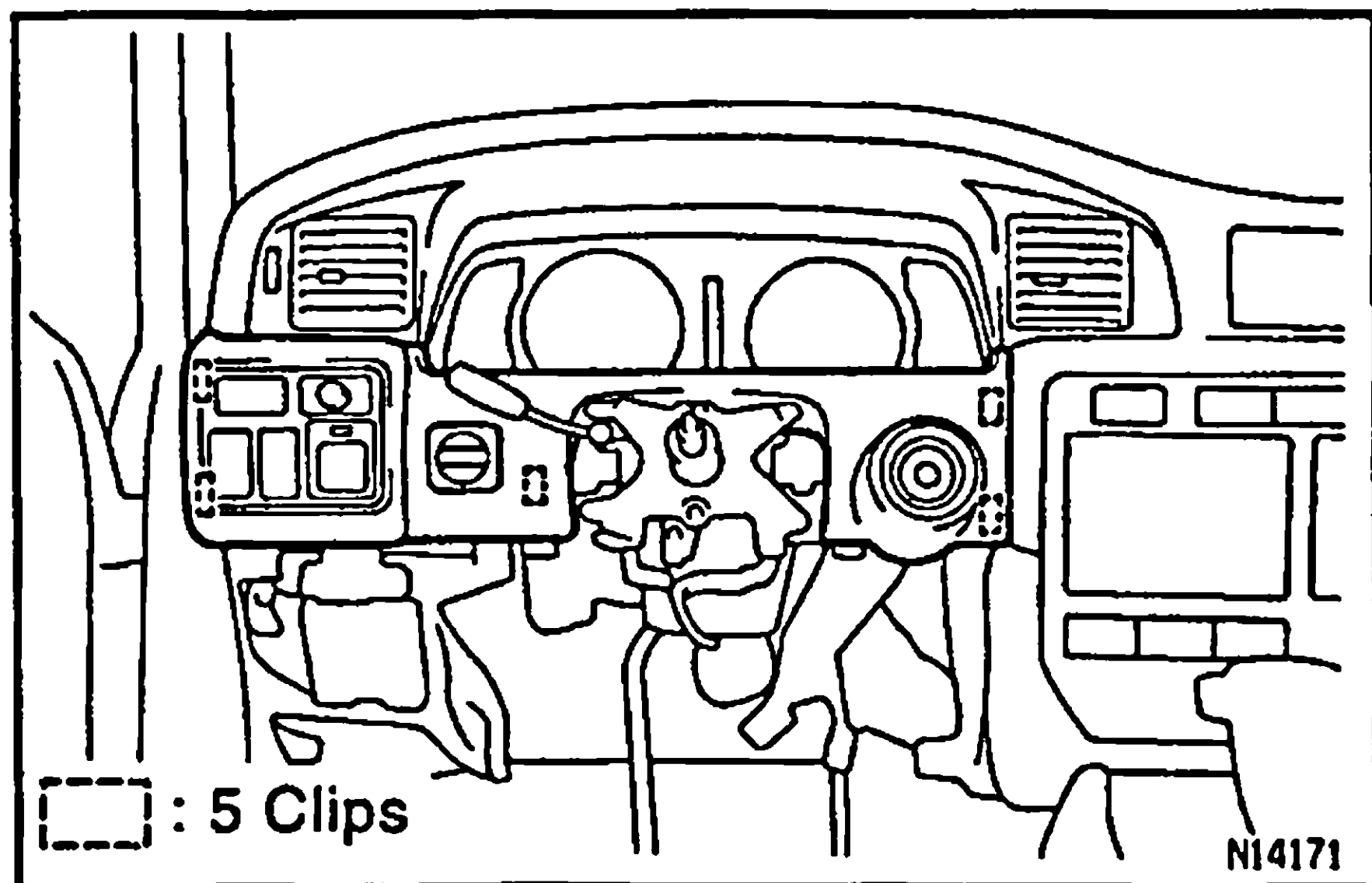


4. REMOVE THESE PARTS:

No.2 center cluster finish panel

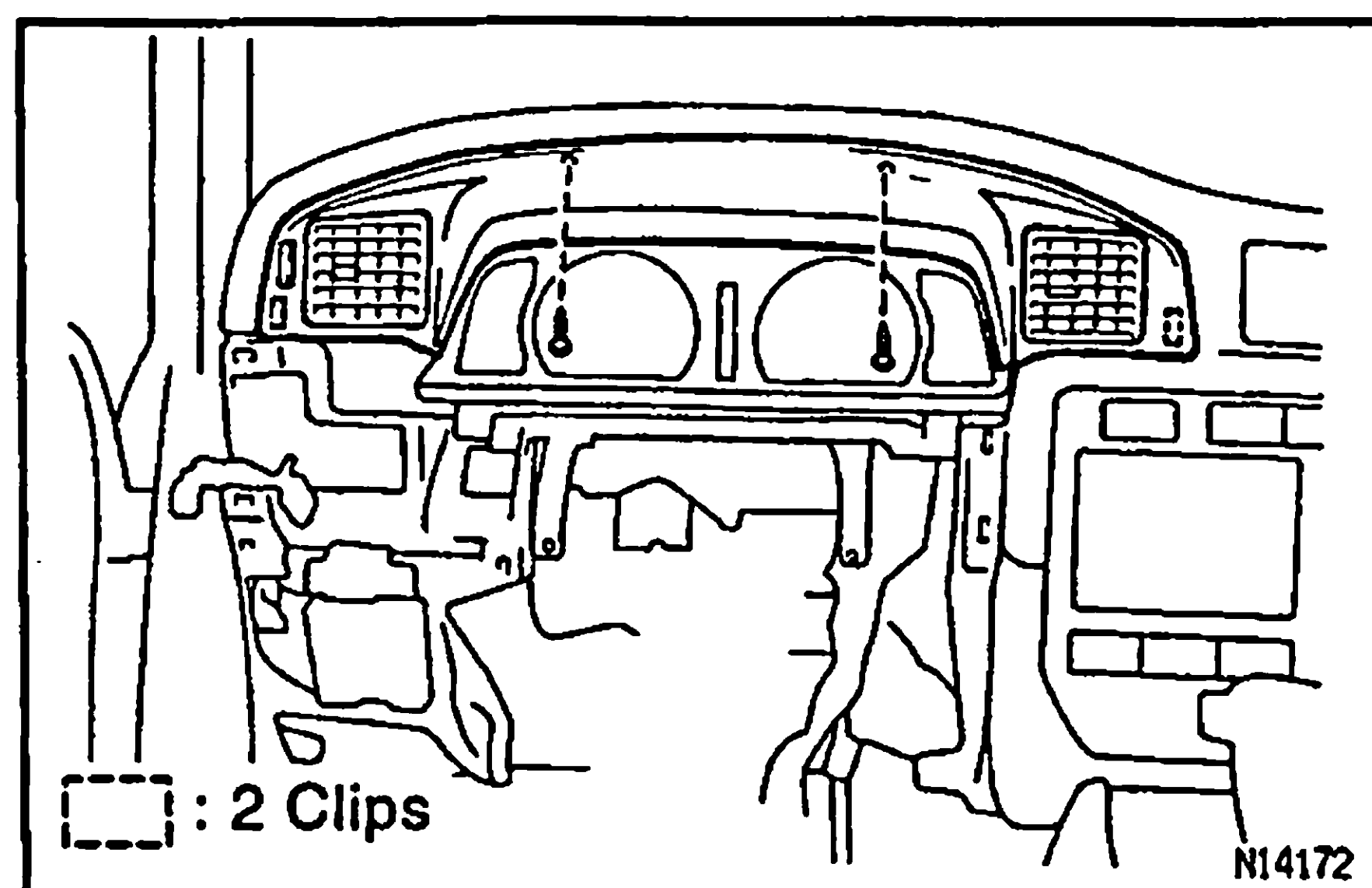
5. REMOVE STEERING COLUMN

(See page SR-8)

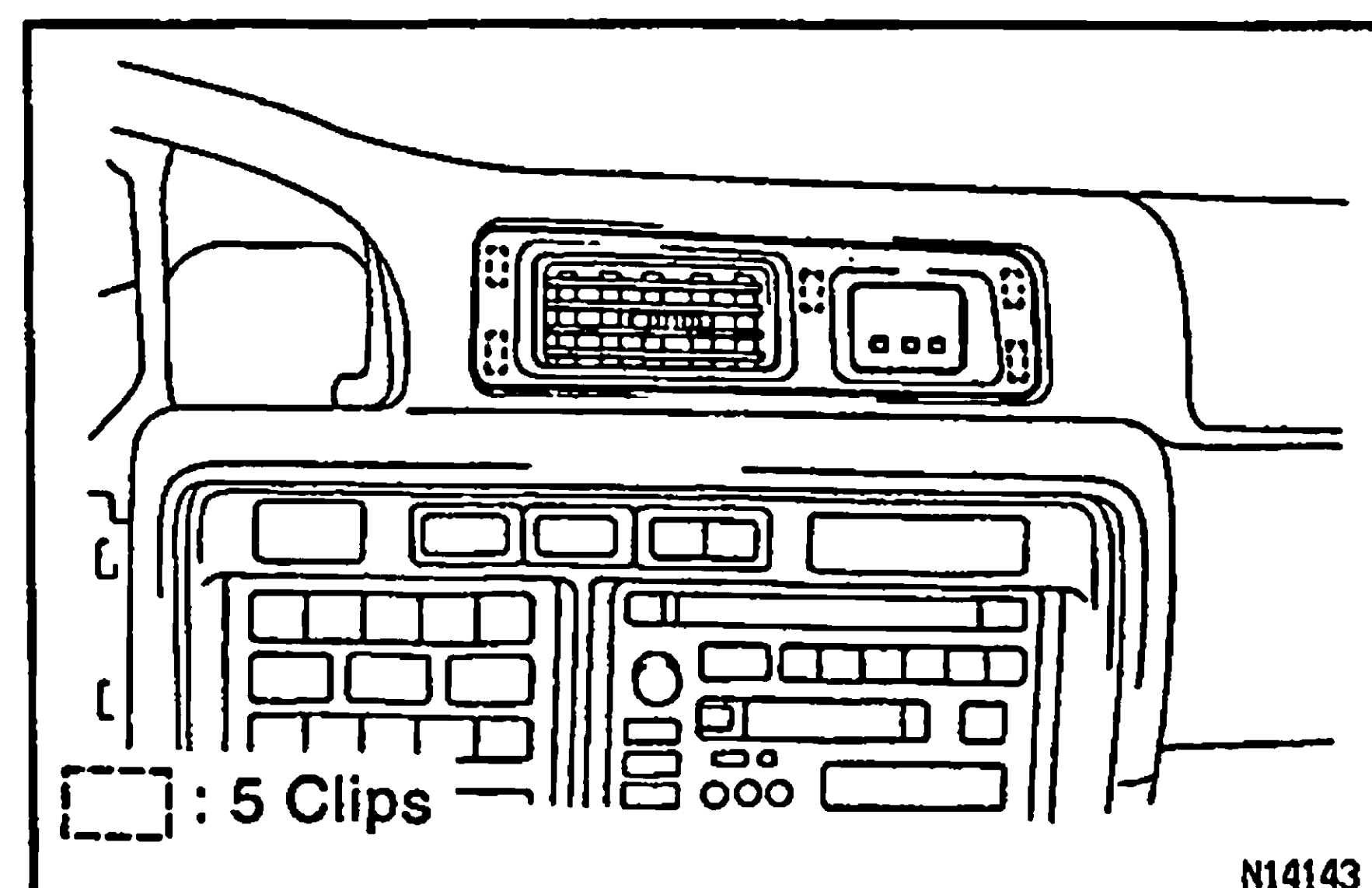


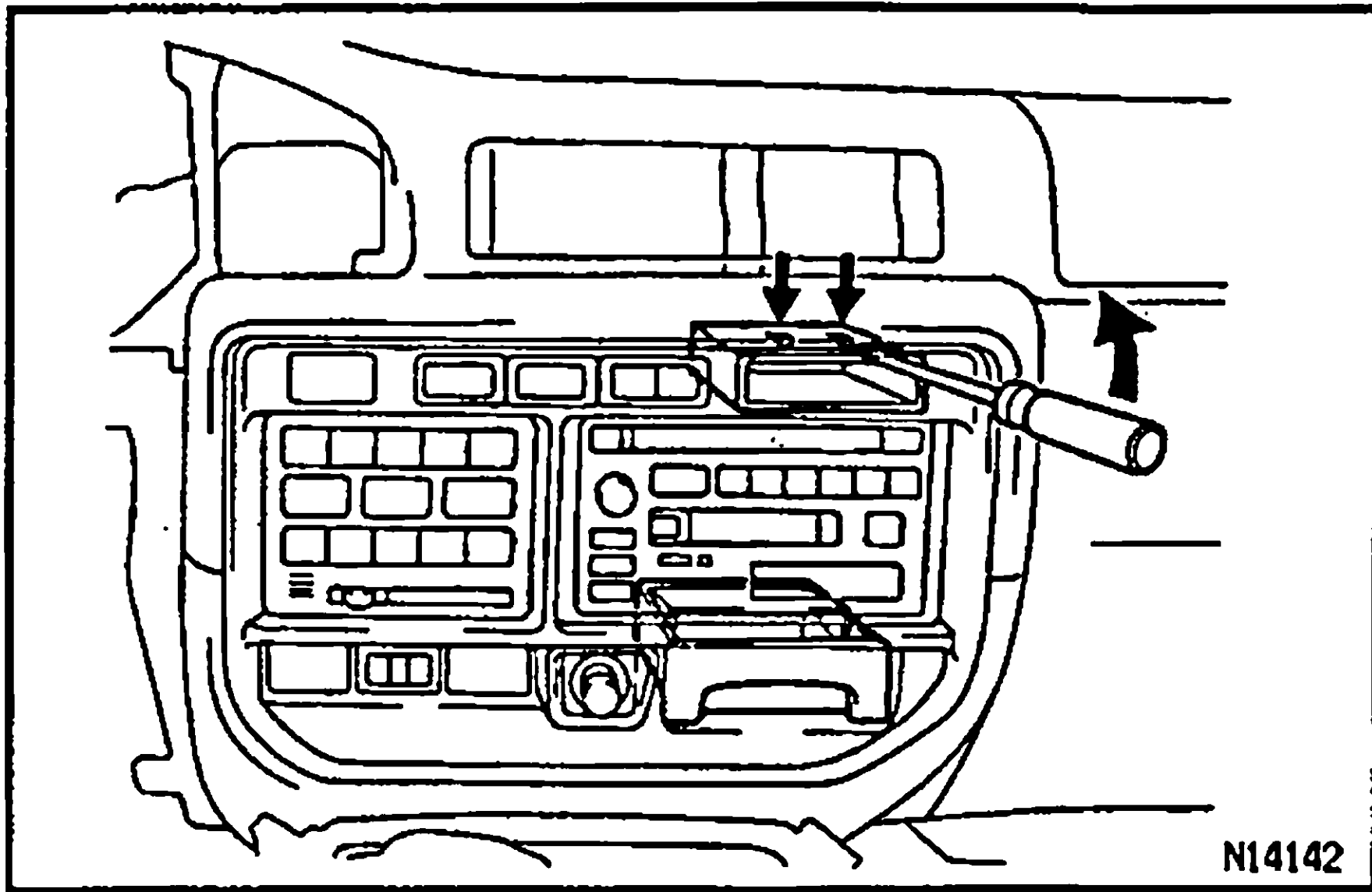
6. REMOVE THESE PARTS:

- (a) Cluster finish panel
- (b) Combination meter



- (c) Center cluster finish panel assembly with clock

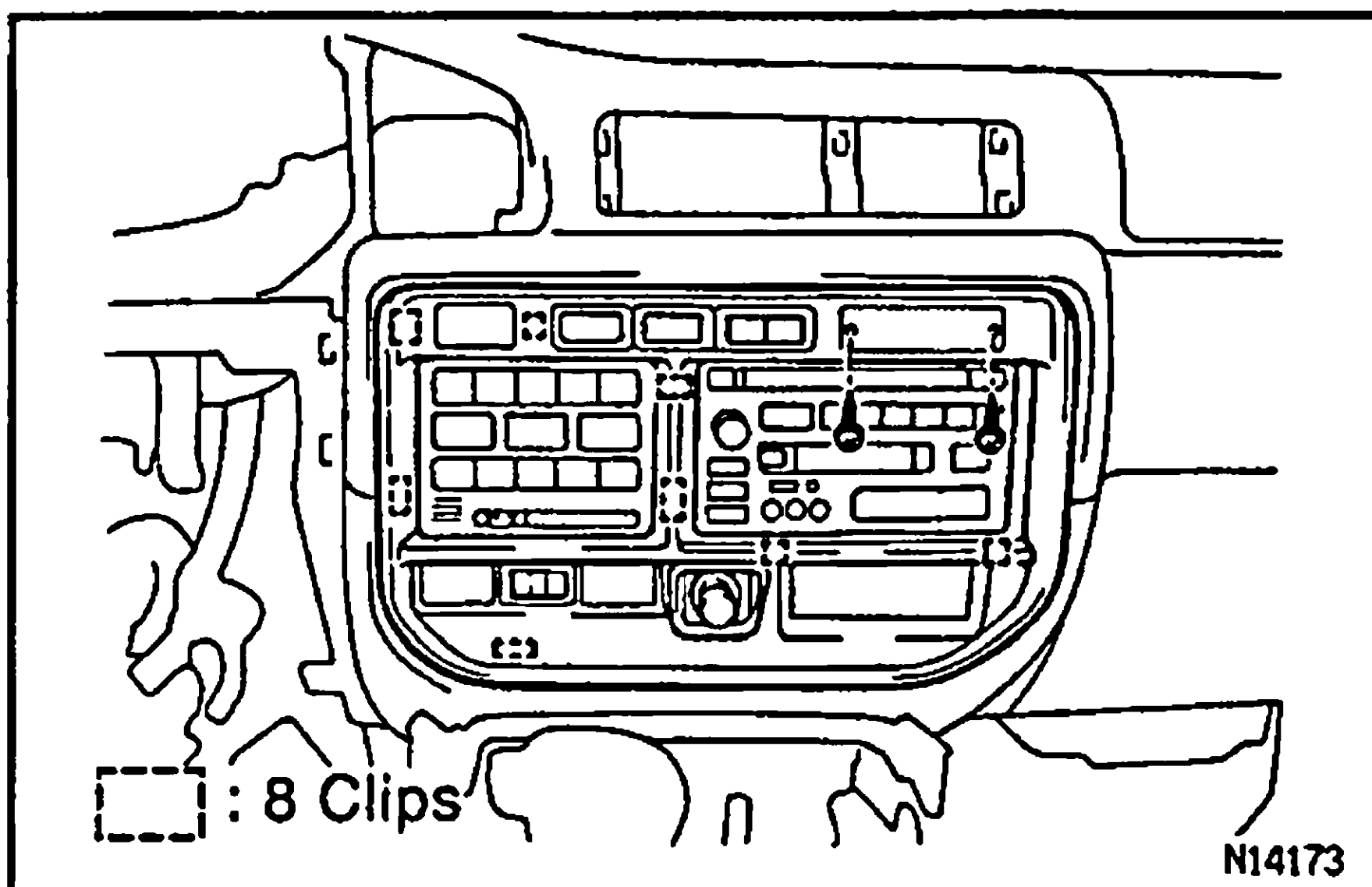




7. REMOVE CENTER CLUSTER FINISH PANEL WITH HEATER CONTROL ASSEMBLY

HINT: Tape a screwdriver tip before use.

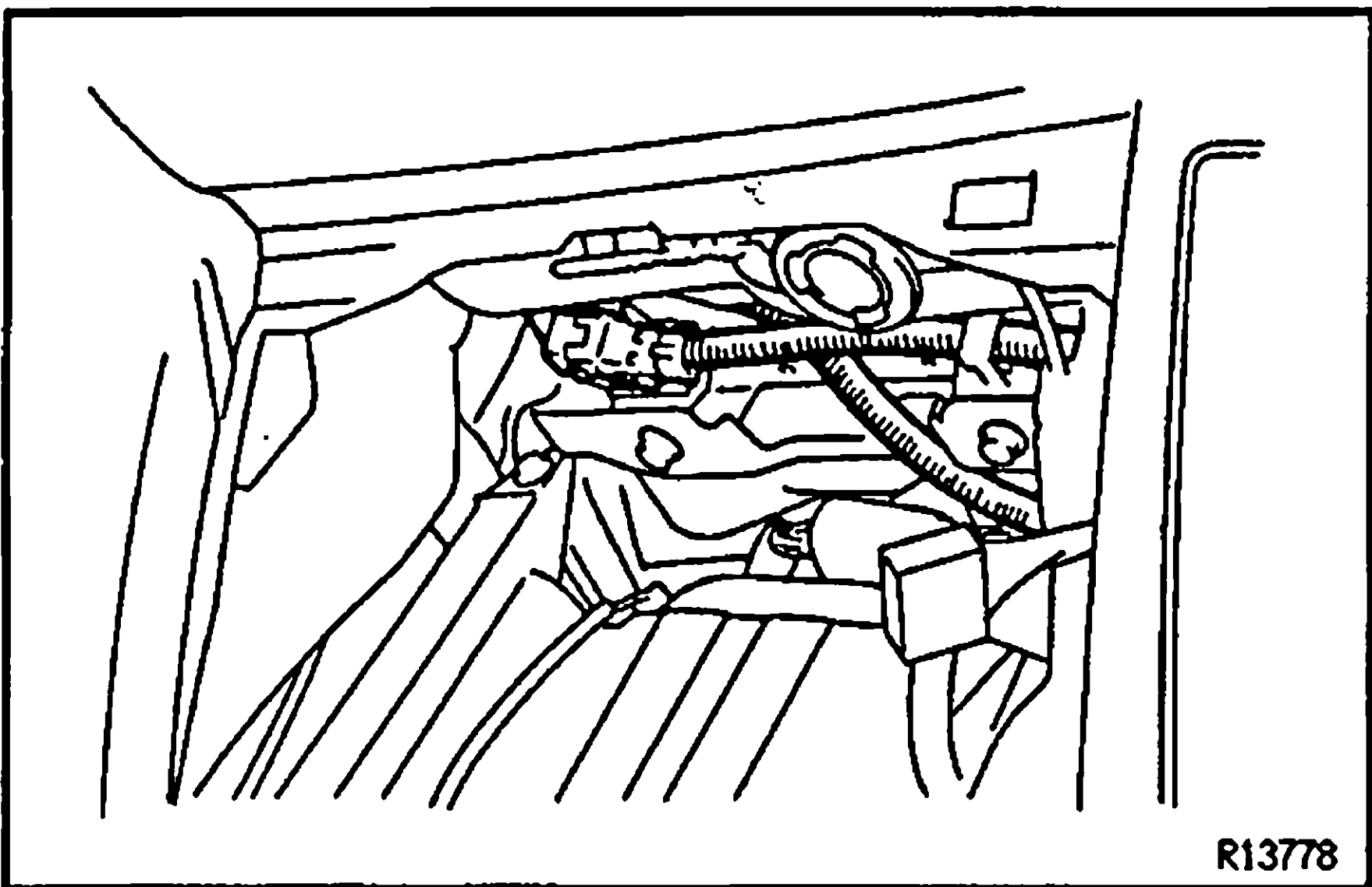
- (a) Using the screwdriver, take off the 2 claws, then remove the cup holder hole cover.
- (b) Take off the ashtray.
- (c) Remove the center cluster finish panel with heater control assembly, then disconnect the connectors.



- (d) Remove the 2 screws and heater control assembly from the center cluster finish panel.

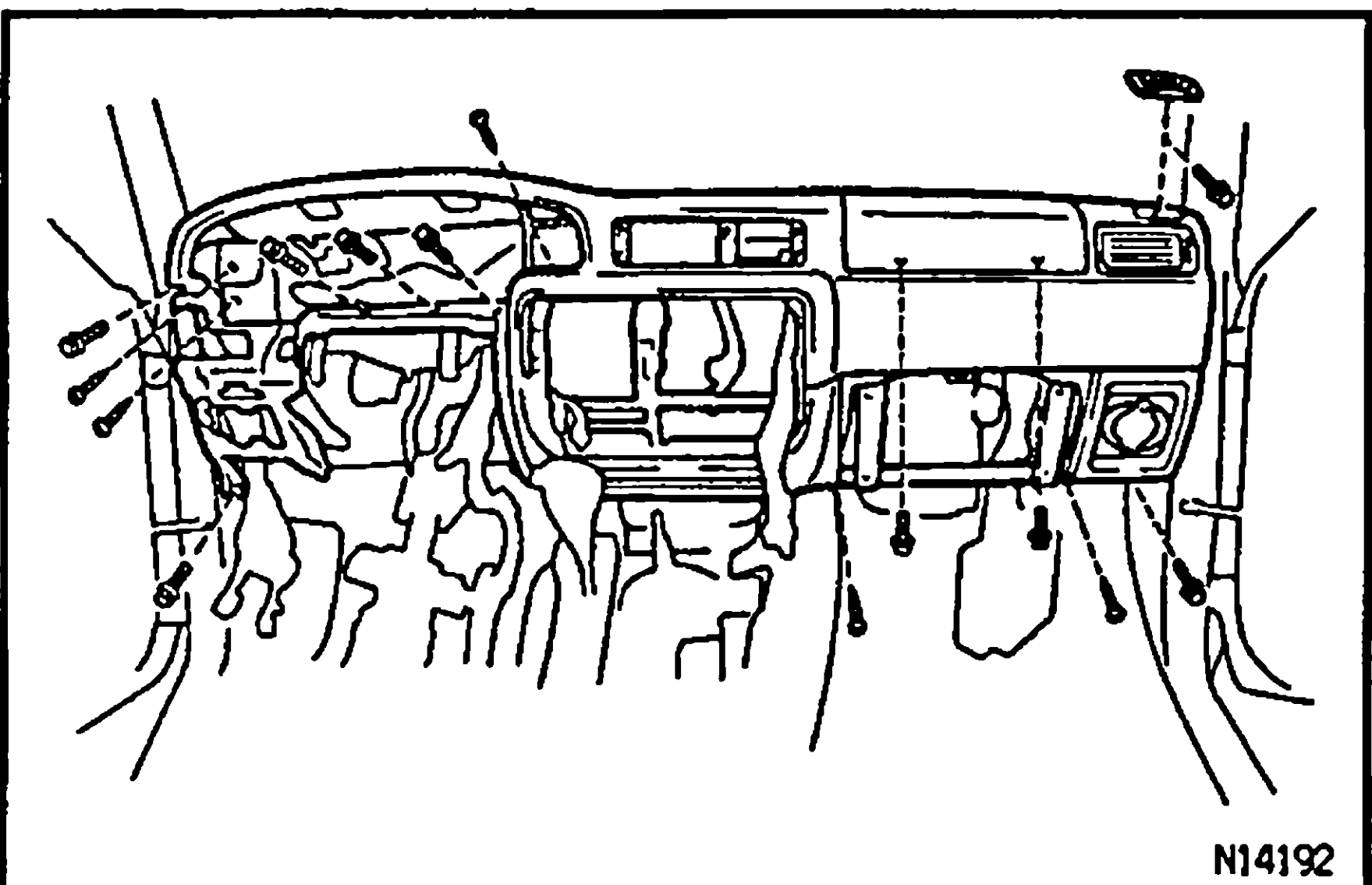
8. REMOVE THESE PARTS:

- (a) Radio
- (b) Glove compartment door
- (c) Speaker panel
- (d) Speaker
- (e) Front console box
- (f) Rear console box



9. DISCONNECT AIRBAG CONNECTOR

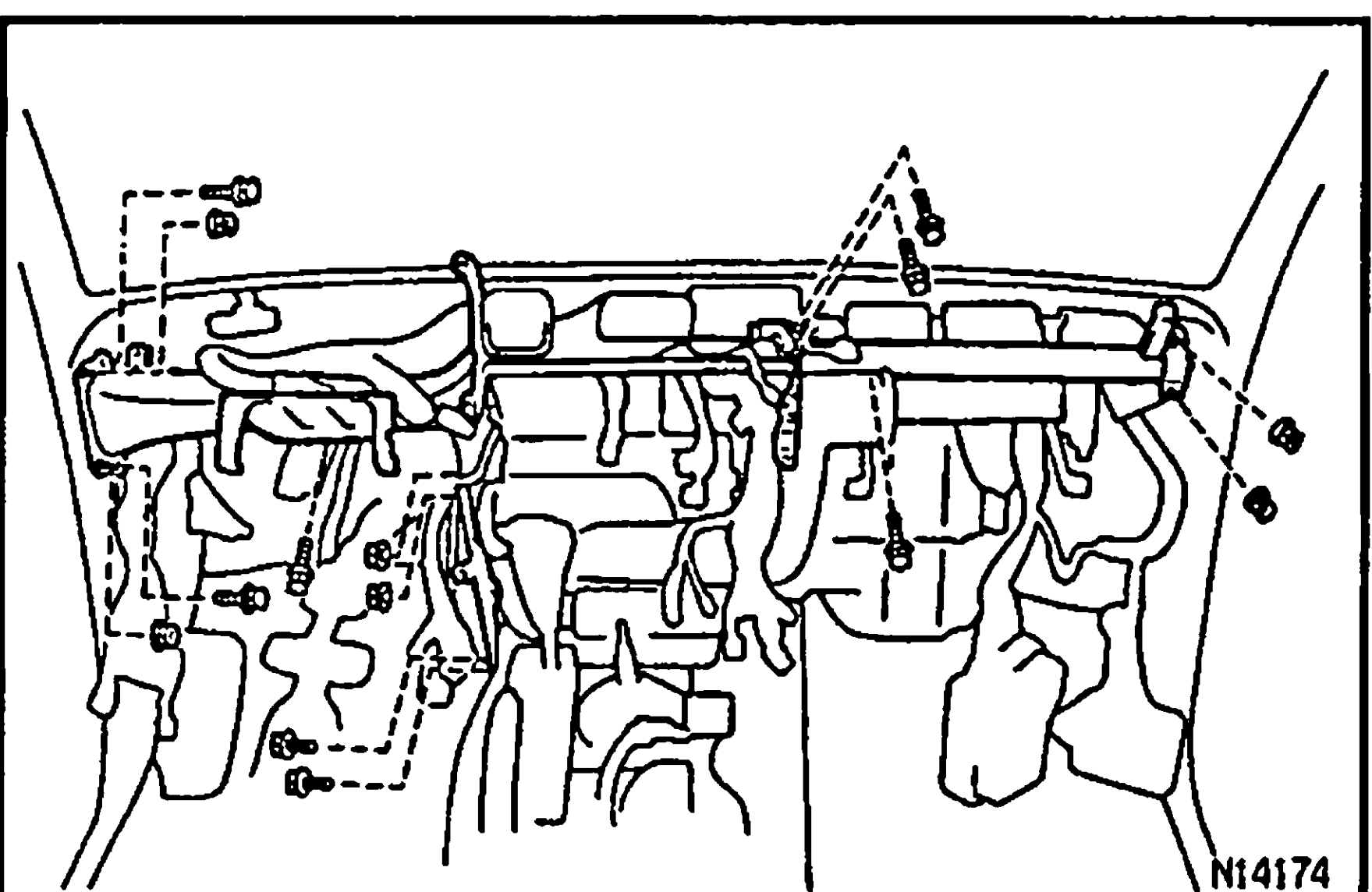
- (a) Remove the airbag connector from the airbag bracket.
NOTICE: When handling the airbag connector, take care not to damage the airbag wire harness.
- (b) Disconnect the airbag connector.



10. REMOVE INSTRUMENT PANEL

- (a) Remove the 5 screws and 9 bolts.
- (b) Remove the instrument panel.

Torque: Passenger airbag assembly bolts
20 N·m (210 kgf·cm, 15 ft·lbf)



11. REMOVE INSTRUMENT PANEL REINFORCEMENT

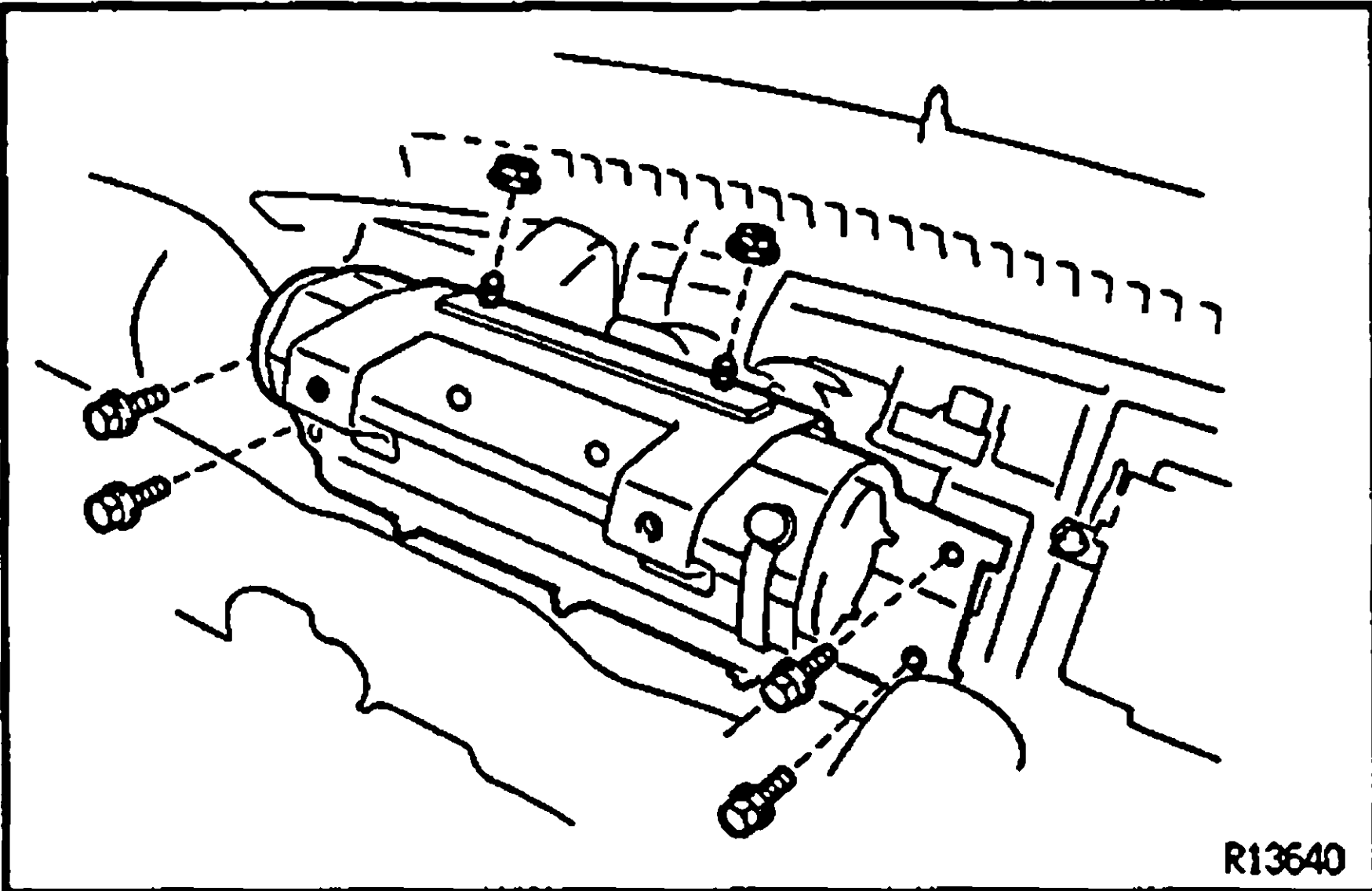
- (a) Remove the 2 bolts and lower instrument panel reinforcement.
- (b) Remove the 2 bolts and 2 nuts, No.1 brace.
- (c) Remove the 4 bolts, 4 nuts and instrument panel reinforcement.

INSTRUMENT PANEL DISASSEMBLY

Assembly is in the reverse order of disassembly.

1. REMOVE THESE PARTS:

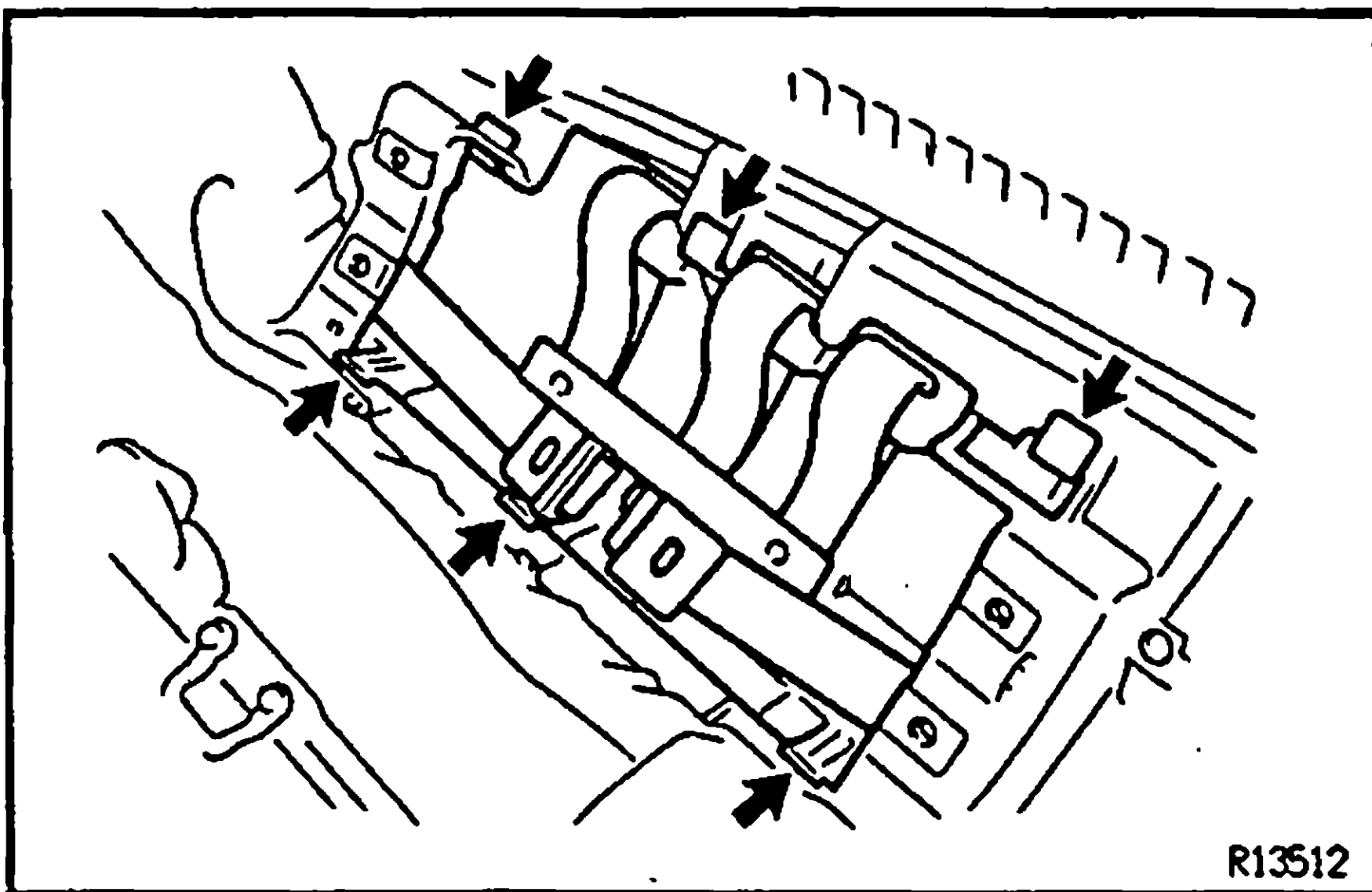
- (a) Glove compartment door reinforcement
- (b) No.4 heater to register duct
- (c) No.5 heater to register duct
- (d) No.2 register
- (e) Glove compartment door lock striker plate



2. w/ Passenger Airbag

REMOVE FRONT PASSENGER AIRBAG ASSEMBLY (See page RS-22)

- (a) Remove the 4 bolts and 2 nuts, and remove front passenger airbag assembly.



- (b) Pry up the 6 clips shown in the illustration and remove the 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.

BO

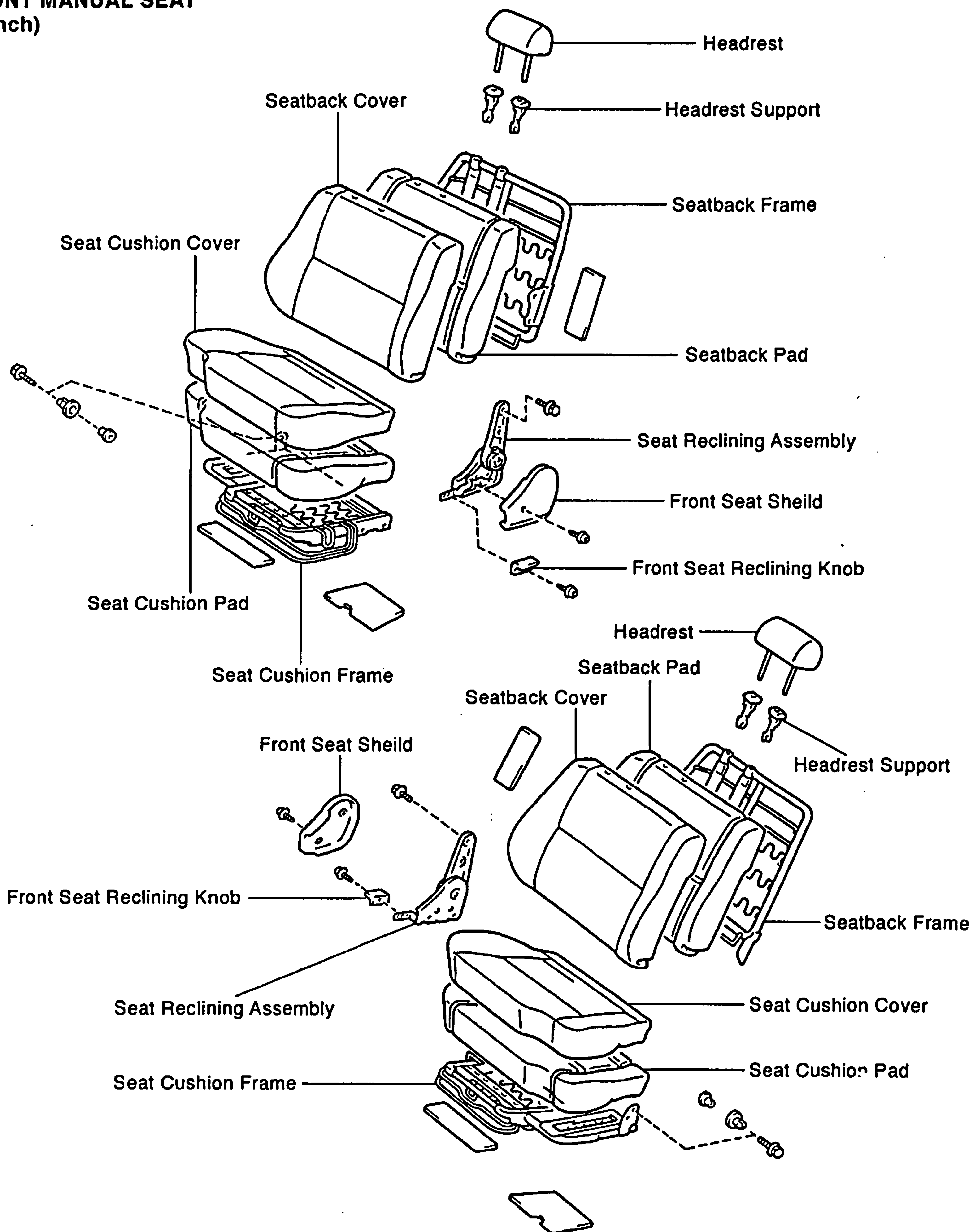
3. REMOVE THESE PARTS:

- (a) No.6 console mounting bracket
- (b) No.1 heater to register duct
- (c) No.2 stay

SEAT COMPONENTS

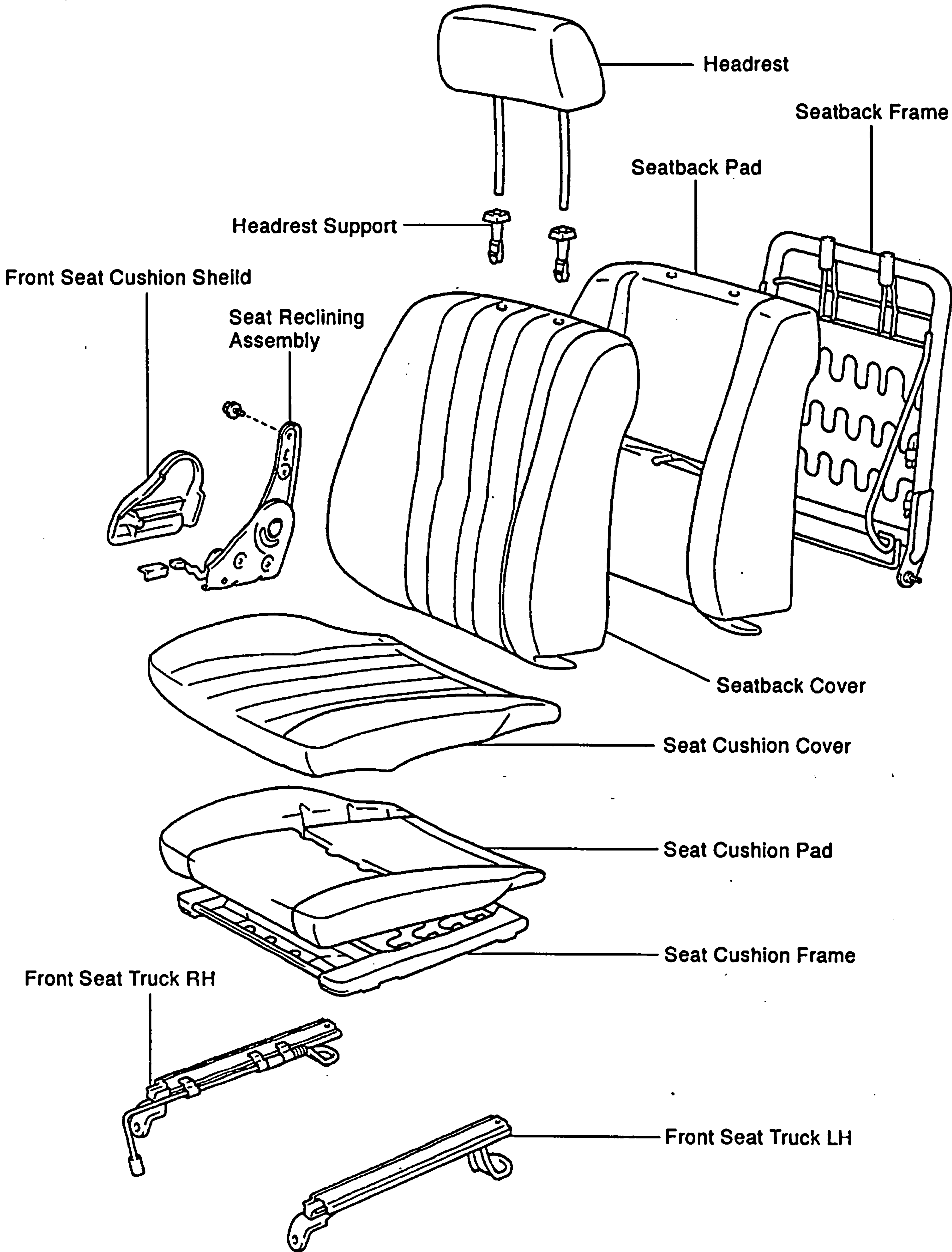
8017D-01

FRONT MANUAL SEAT (Bench)

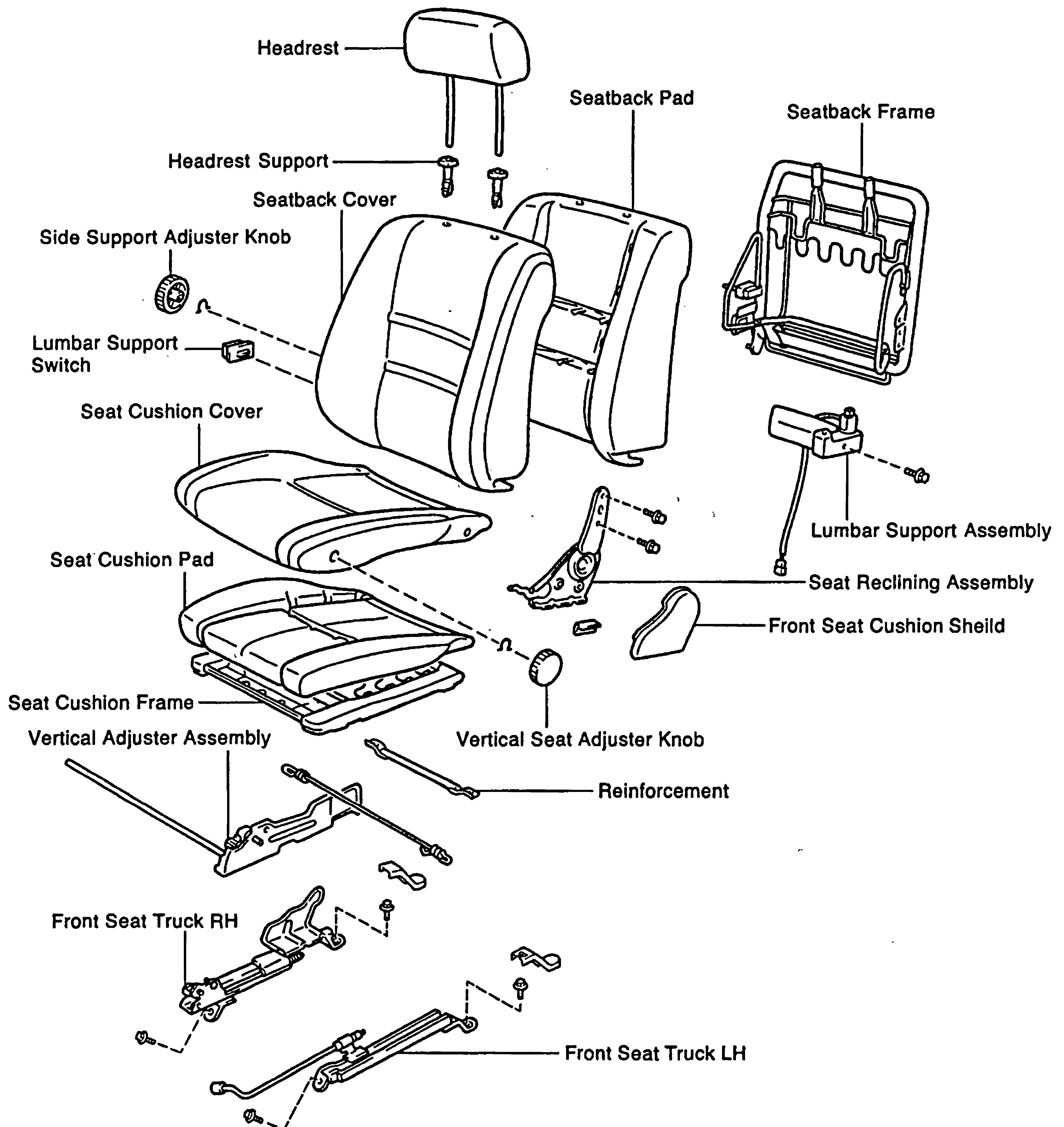


COMPONENTS (Cont'd)

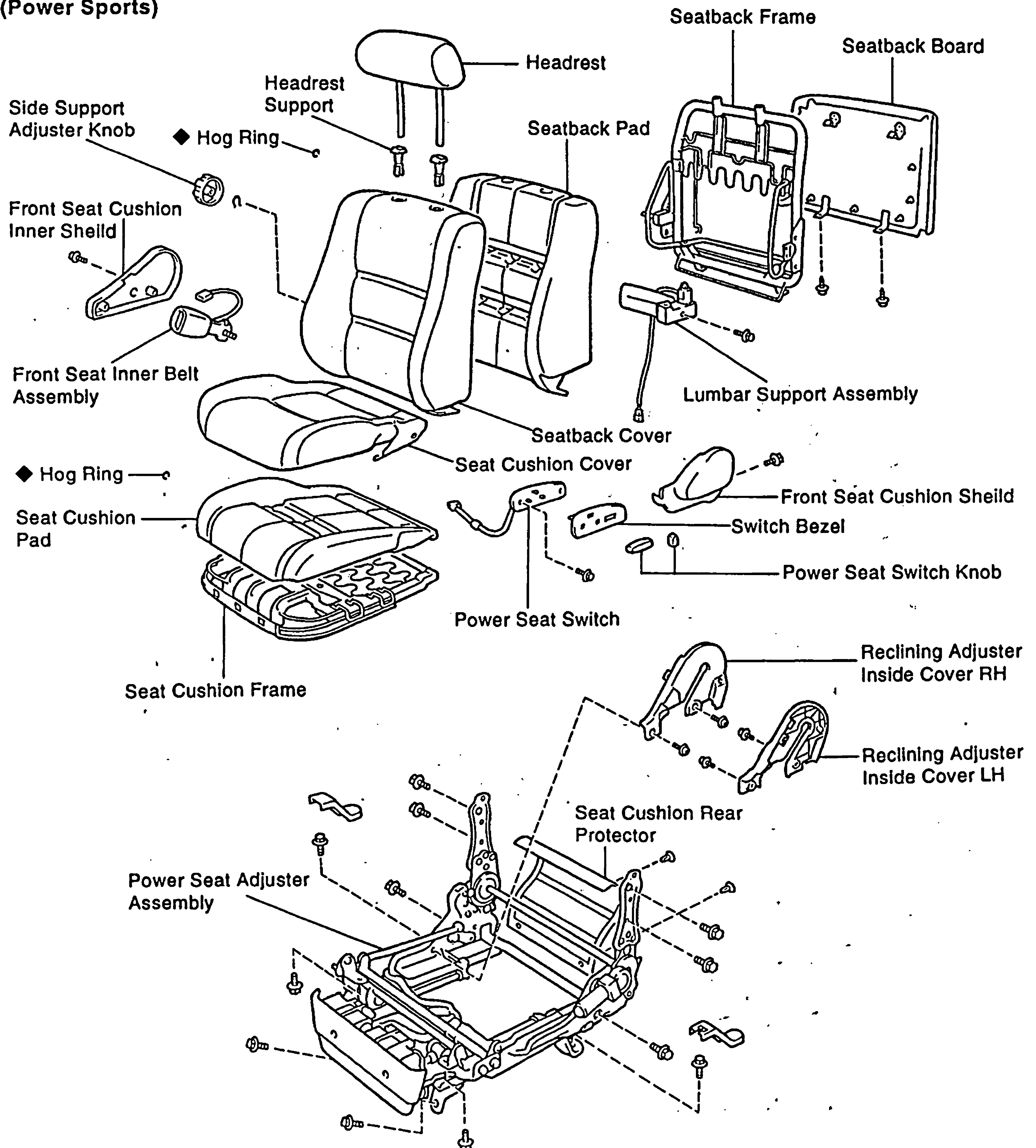
FRONT MANUAL SEAT
(Separate)



COMPONENTS (Cont'd)

FRONT MANUAL SEAT
(Sports)

COMPONENTS (Cont'd)

FRONT POWER SEAT
(Power Sports)

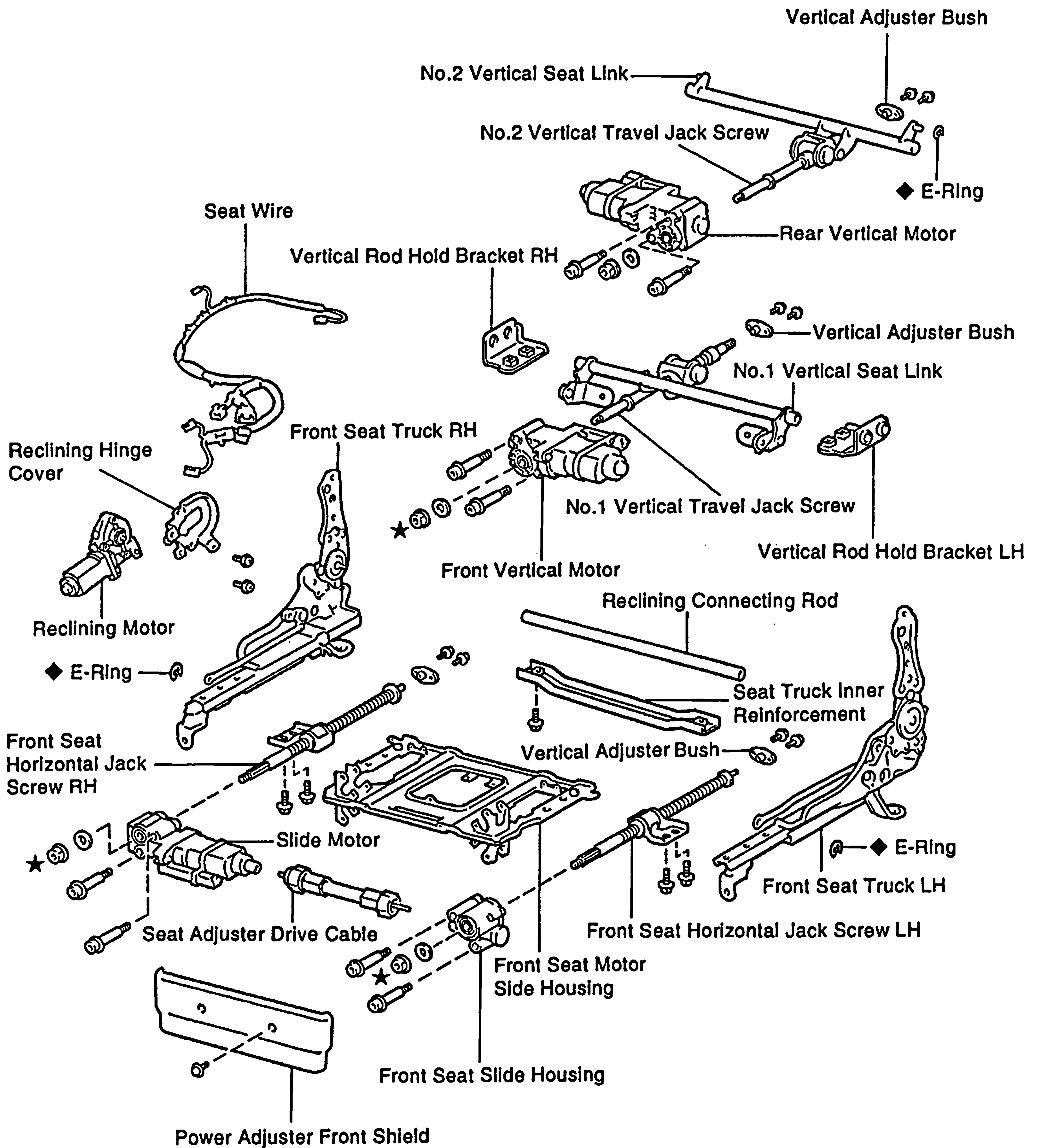
N14124

◆ Non-reusable part

Z15554

COMPONENTS (Cont'd)

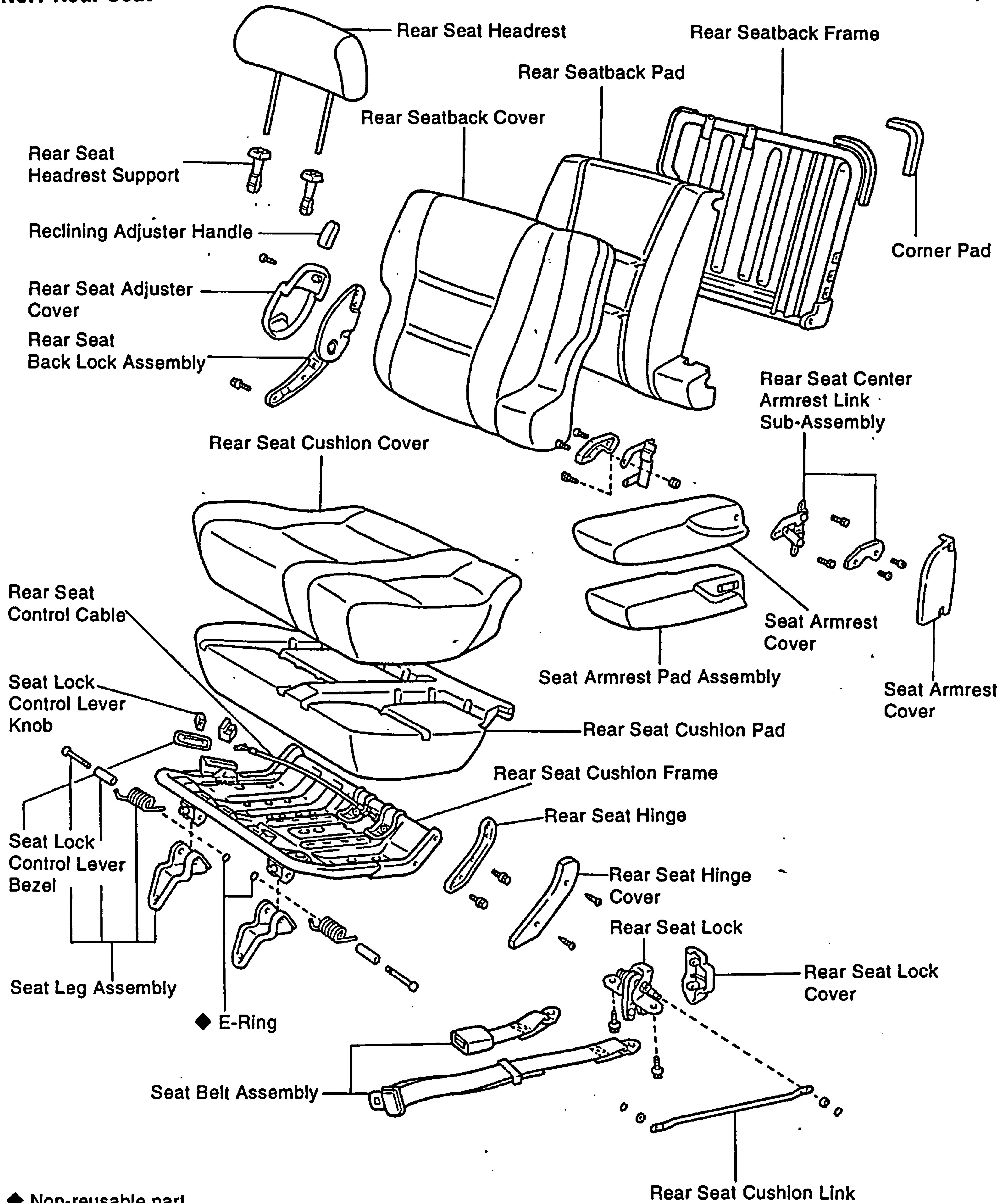
Power Seat Adjuster



★ Precoated part
◆ Non-reusable part

COMPONENTS (Cont'd)

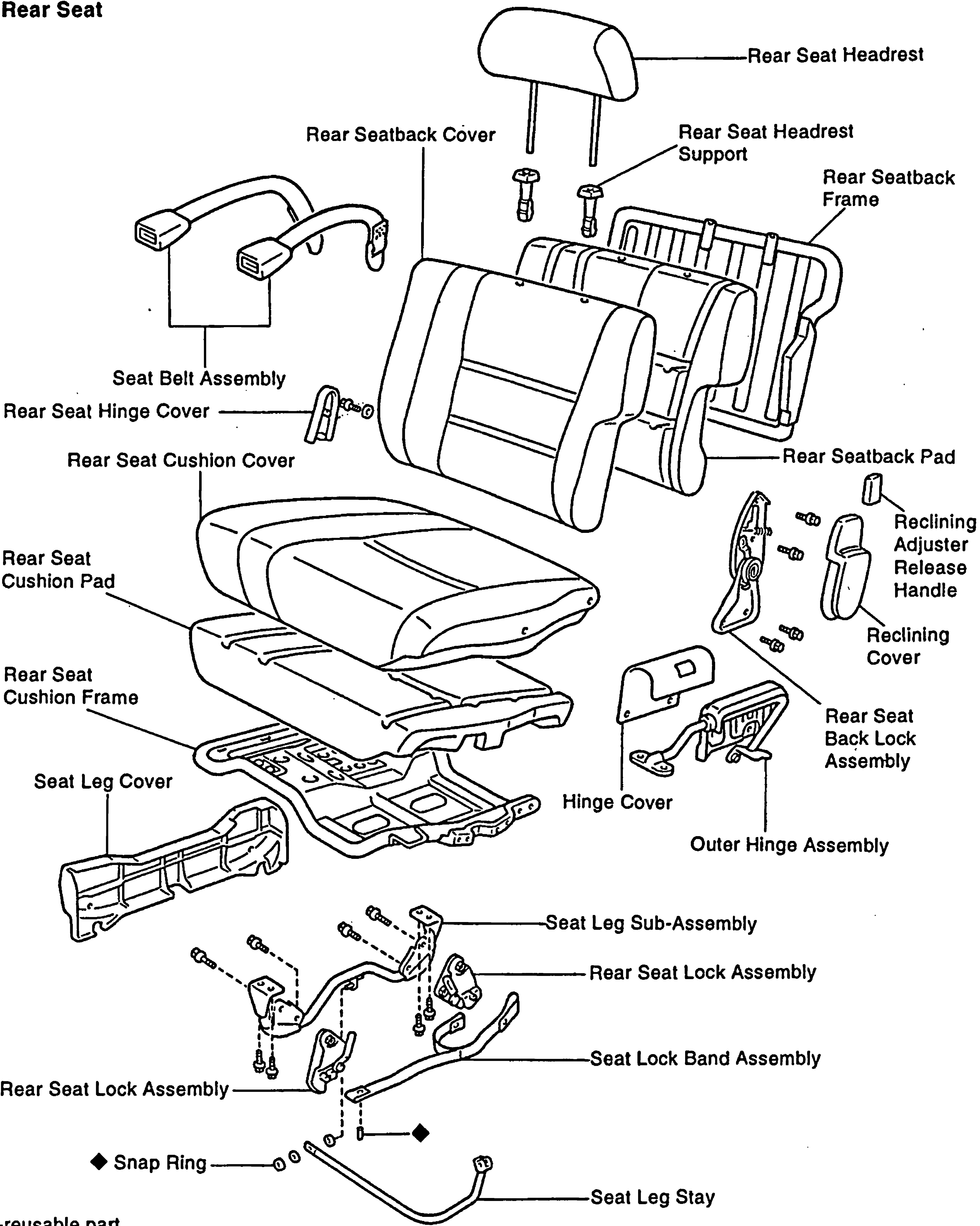
No.1 Rear Seat



BO

COMPONENTS (Cont'd)

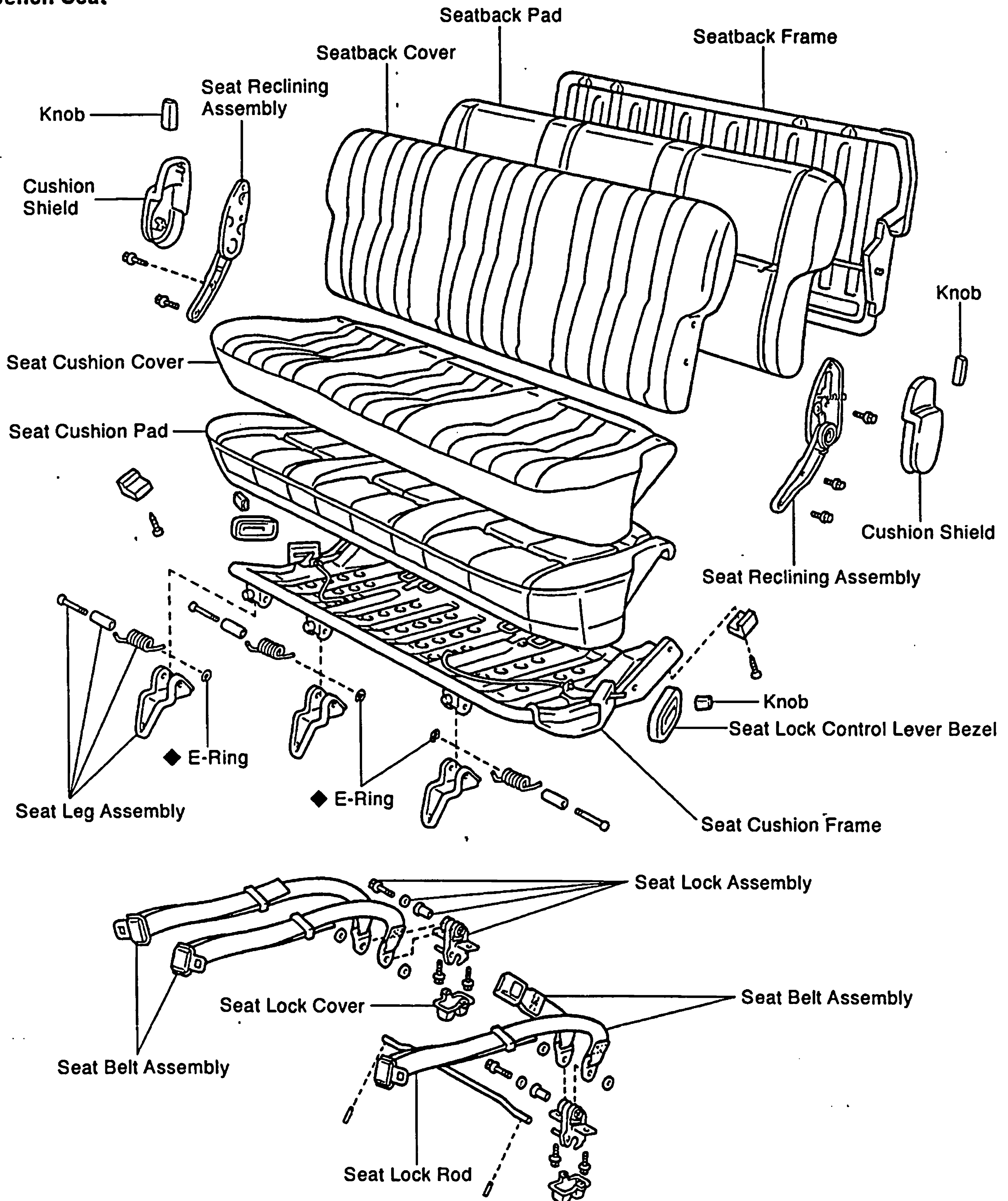
No.2 Rear Seat



◆ Non-reusable part

COMPONENTS (Cont'd)

Bench Seat



◆ Non-reusable part

POWER SEAT ADJUSTER REMOVAL

Installation is in the reverse order of removal.

1. REMOVE FRONT SEAT HEADREST**2. REMOVE SIDE SUPPORT ADJUSTER KNOB**

Using a screwdriver, remove the snap ring and side support adjuster knob.

3. REMOVE SEATBACK BOARD

(a) Remove the 2 screws.

(b) Slide the board downward to remove it.

4. REMOVE FRONT SEATBACK ASSEMBLY

(a) Using a hog ring pliers, remove the hog ring backward of seatback.

(b) Remove the 4 bolts and front seatback assembly.

Torque: 30 N·m (300 kgf·cm, 22 ft·lbf)

5. REMOVE FRONT SEAT CUSHION INNER SHIELD**6. REMOVE FRONT SEAT INNER BELT****7. REMOVE FRONT SEAT CUSHION SHIELD****8. REMOVE FRONT SEAT CUSHION**

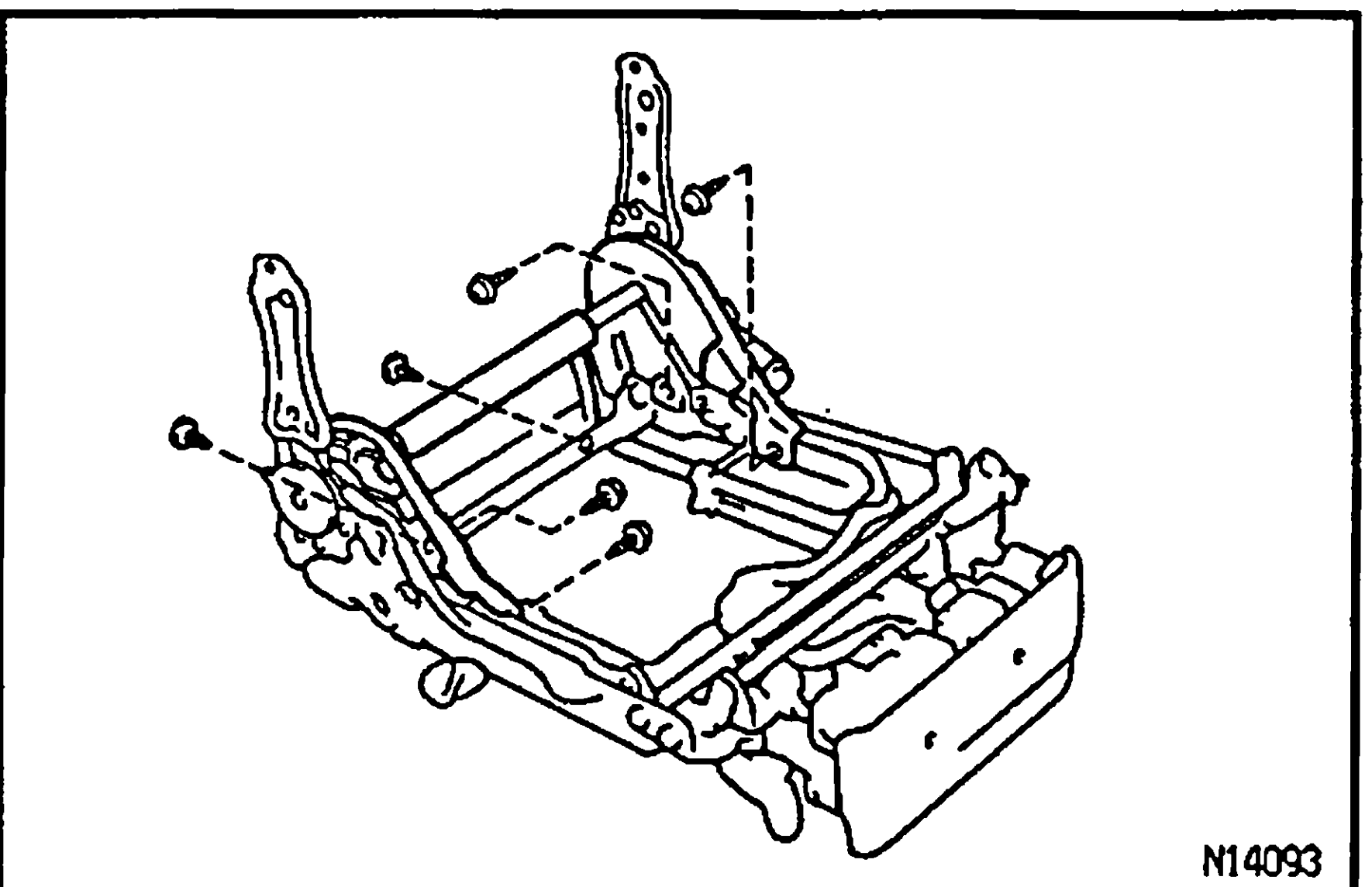
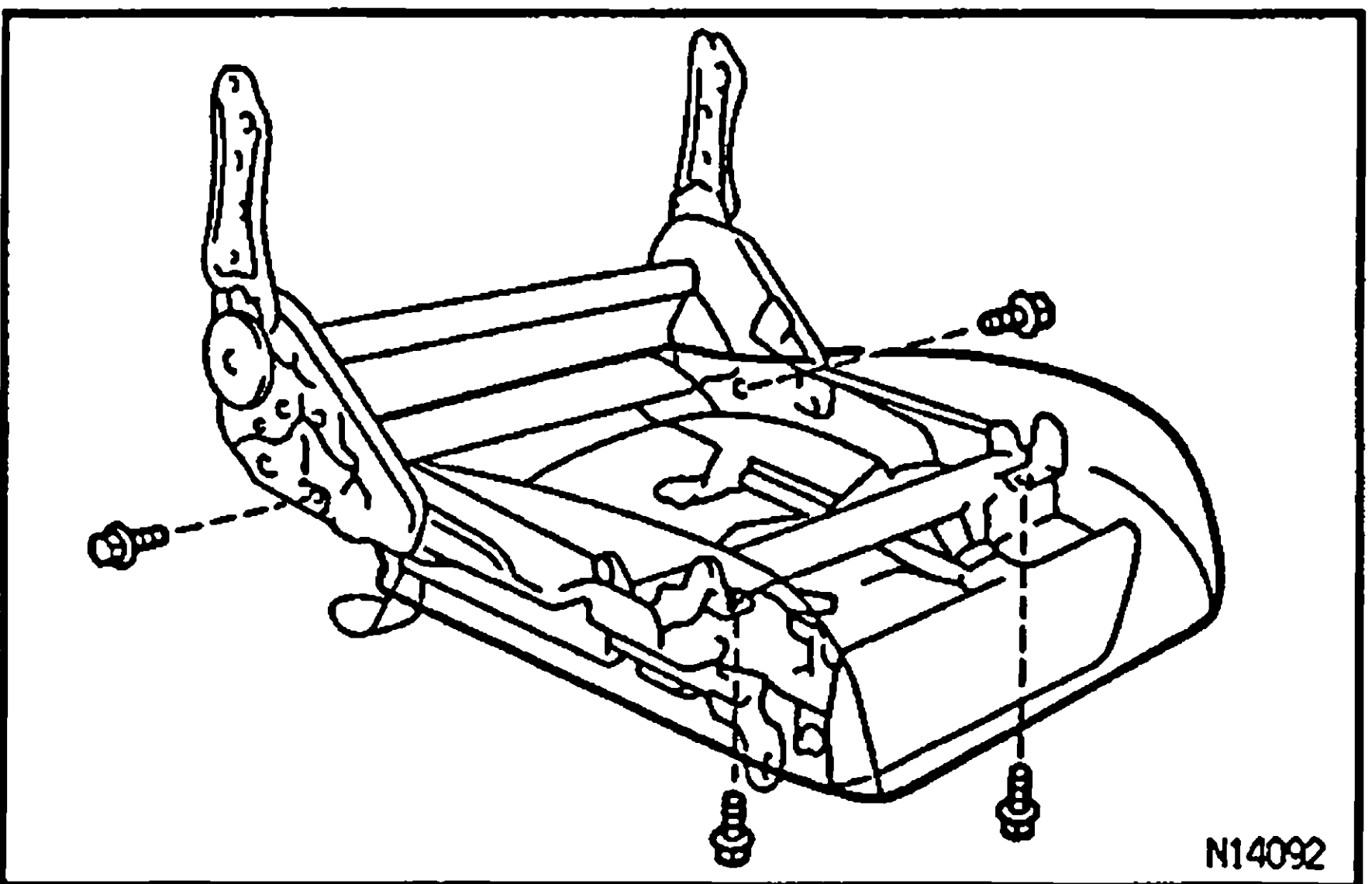
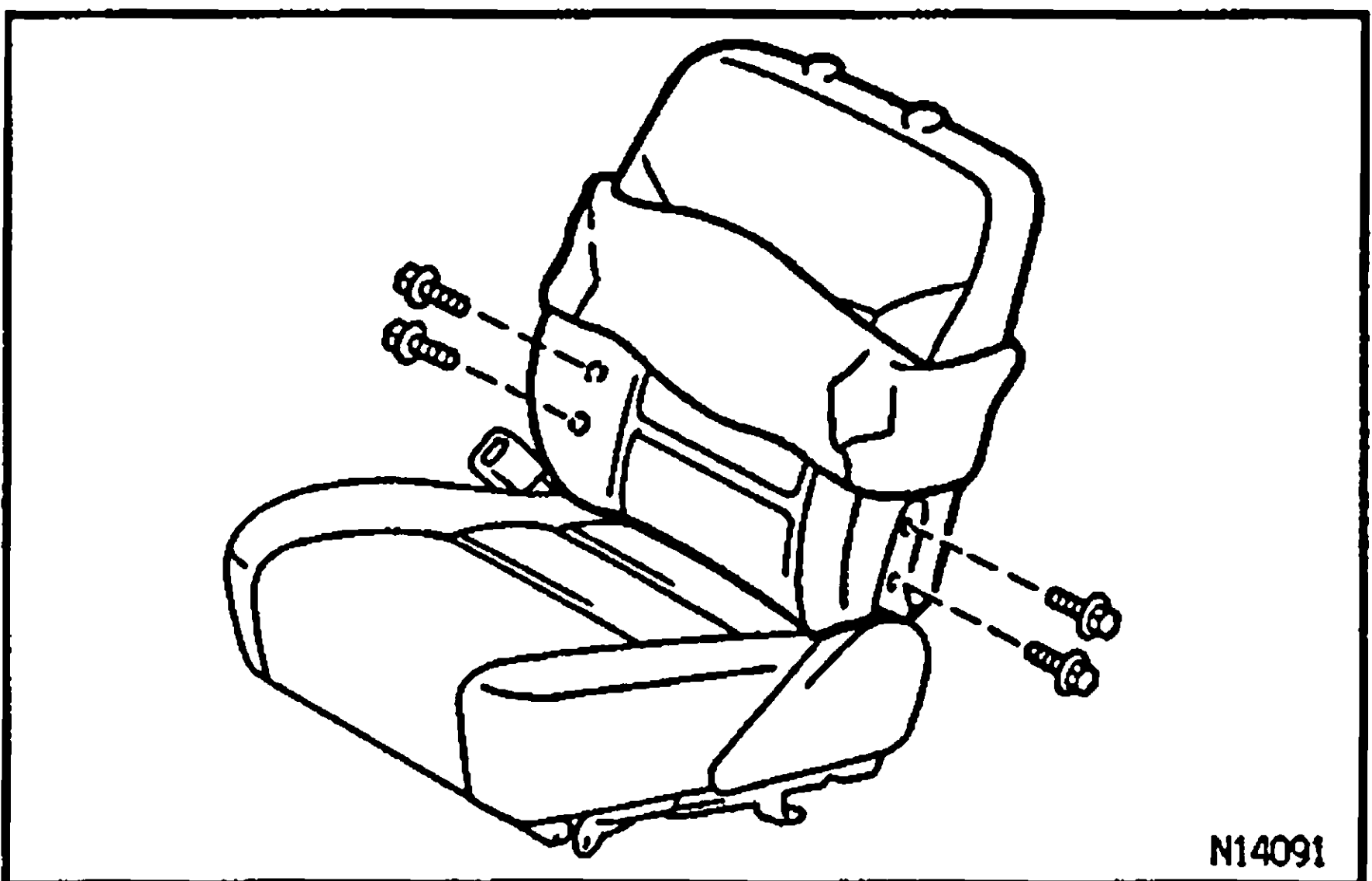
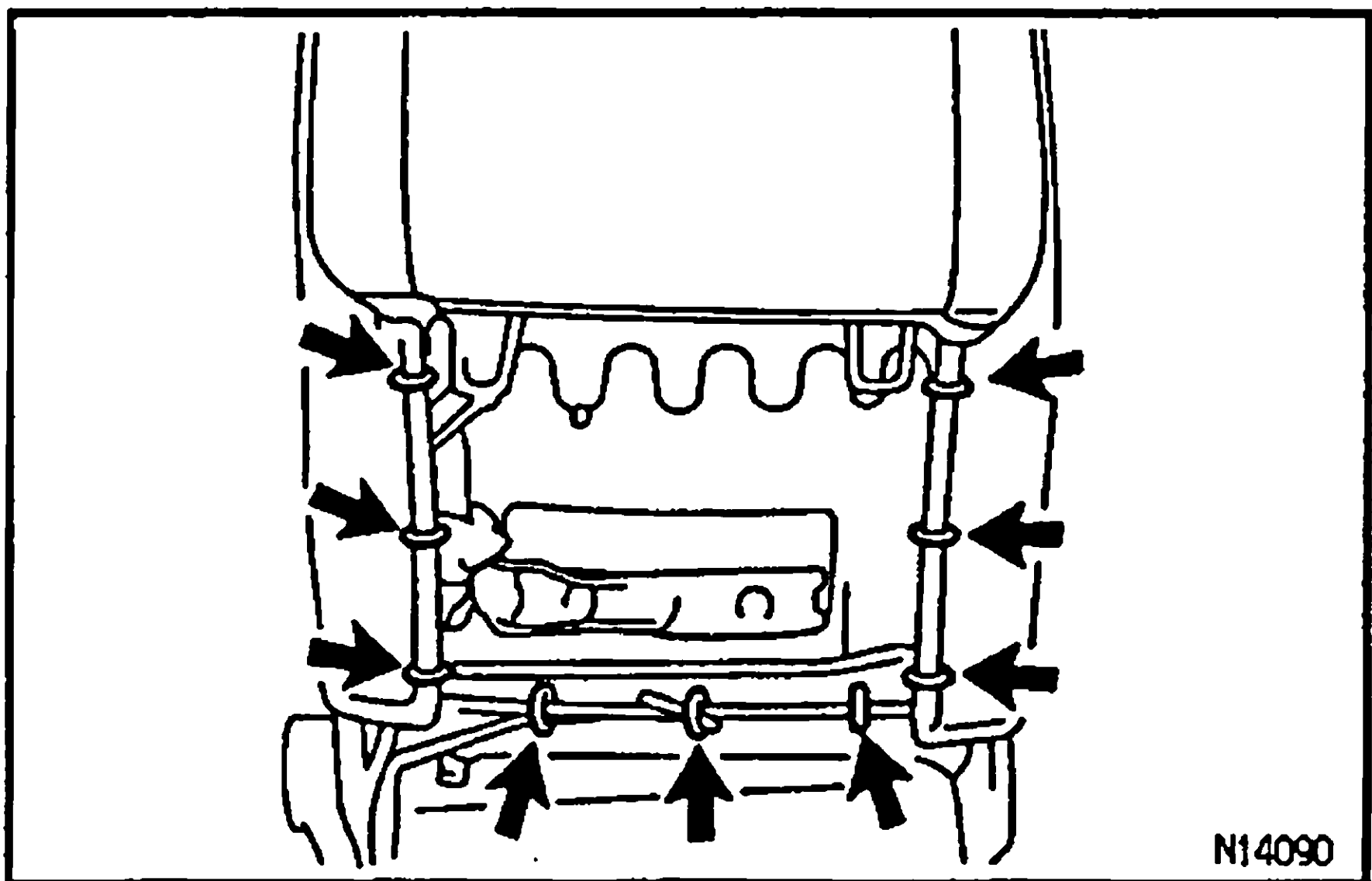
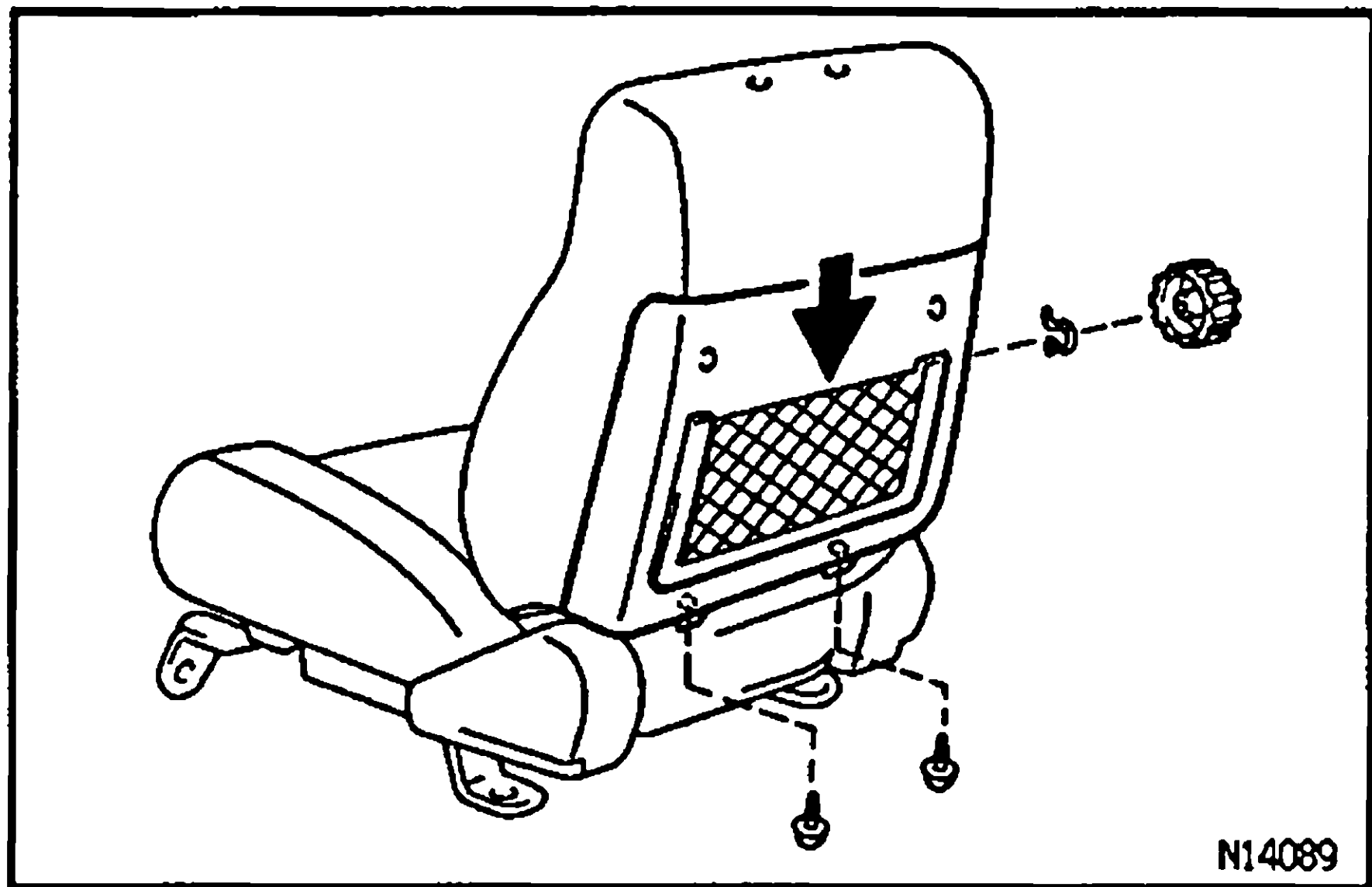
(a) Remove the 4 bolts.

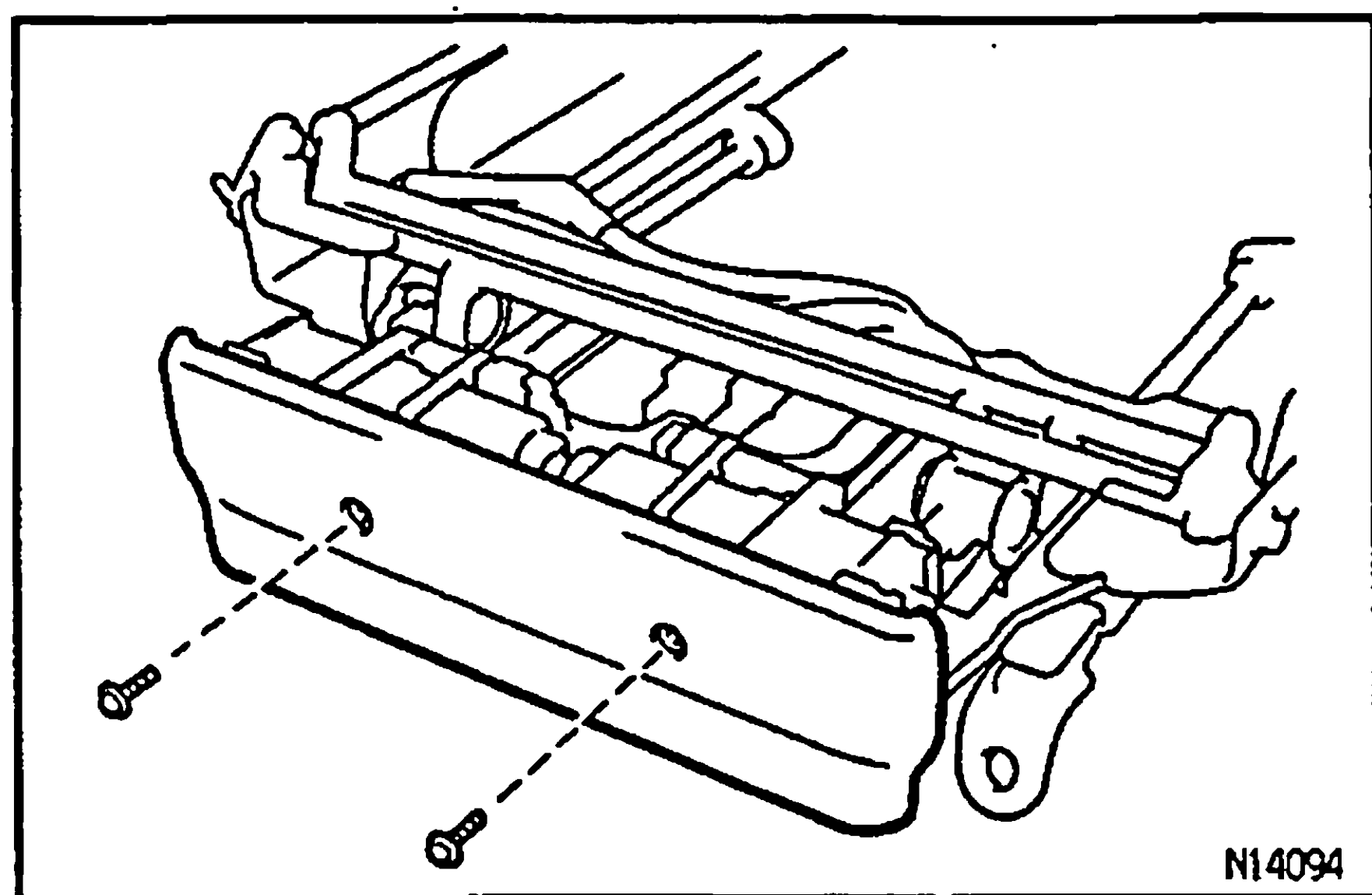
Torque: 30 N·m (300 kgf·cm, 22 ft·lbf)

(b) Disconnect the connector, then remove the front seat cushion.

9. REMOVE SEAT CUSHION REAR PROTECTOR**10. REMOVE RECLINING ADJUSTER INSIDE COVER**

(a) Remove the 4 screws and reclining adjuster inside cover LH and RH.



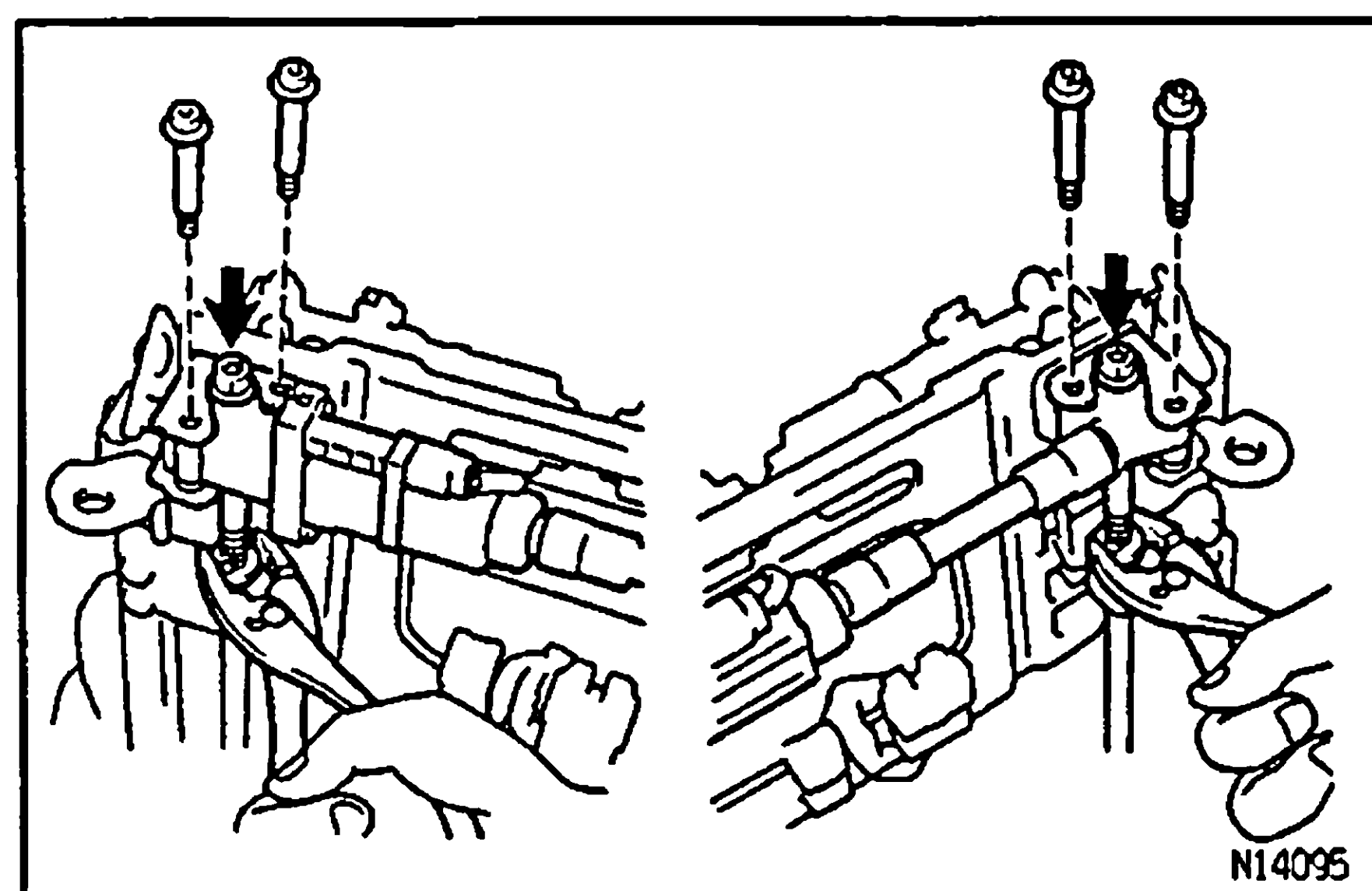


POWER SEAT ADJUSTER DISASSEMBLY^{BO157-01}

Assembly is in the reverse order of disassembly.

1. REMOVE POWER ADJUST FRONT SHIELD

Remove the 2 screws and front shield.



2. REMOVE SLIDE MOTOR

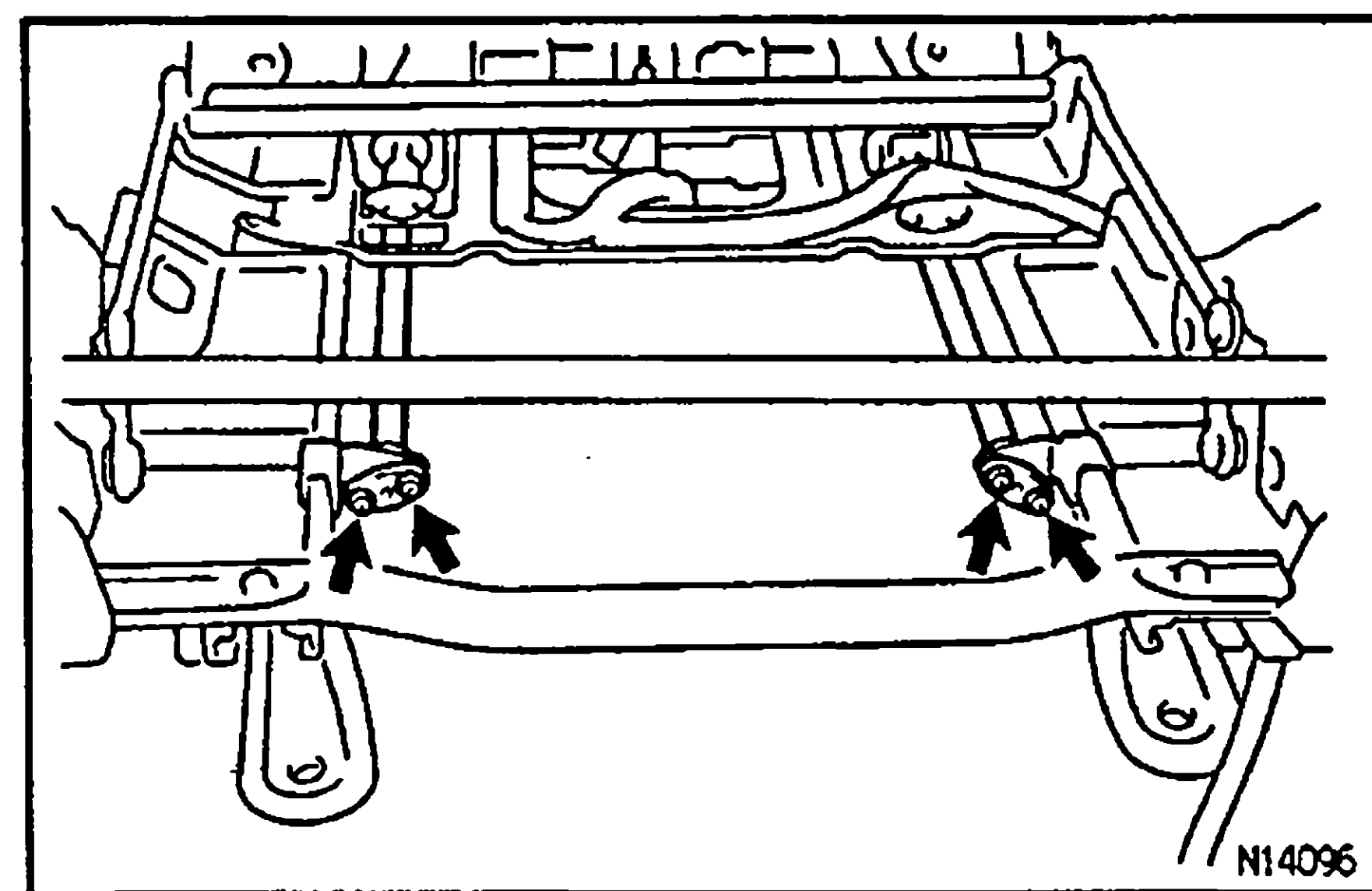
- (a) Using the 5.0 mm (0.20 in.) hexagon wrench, remove the 4 housing bracket screws.

Torque: 10 N·m (100 kgf·cm, 7.0 ft·lbf)

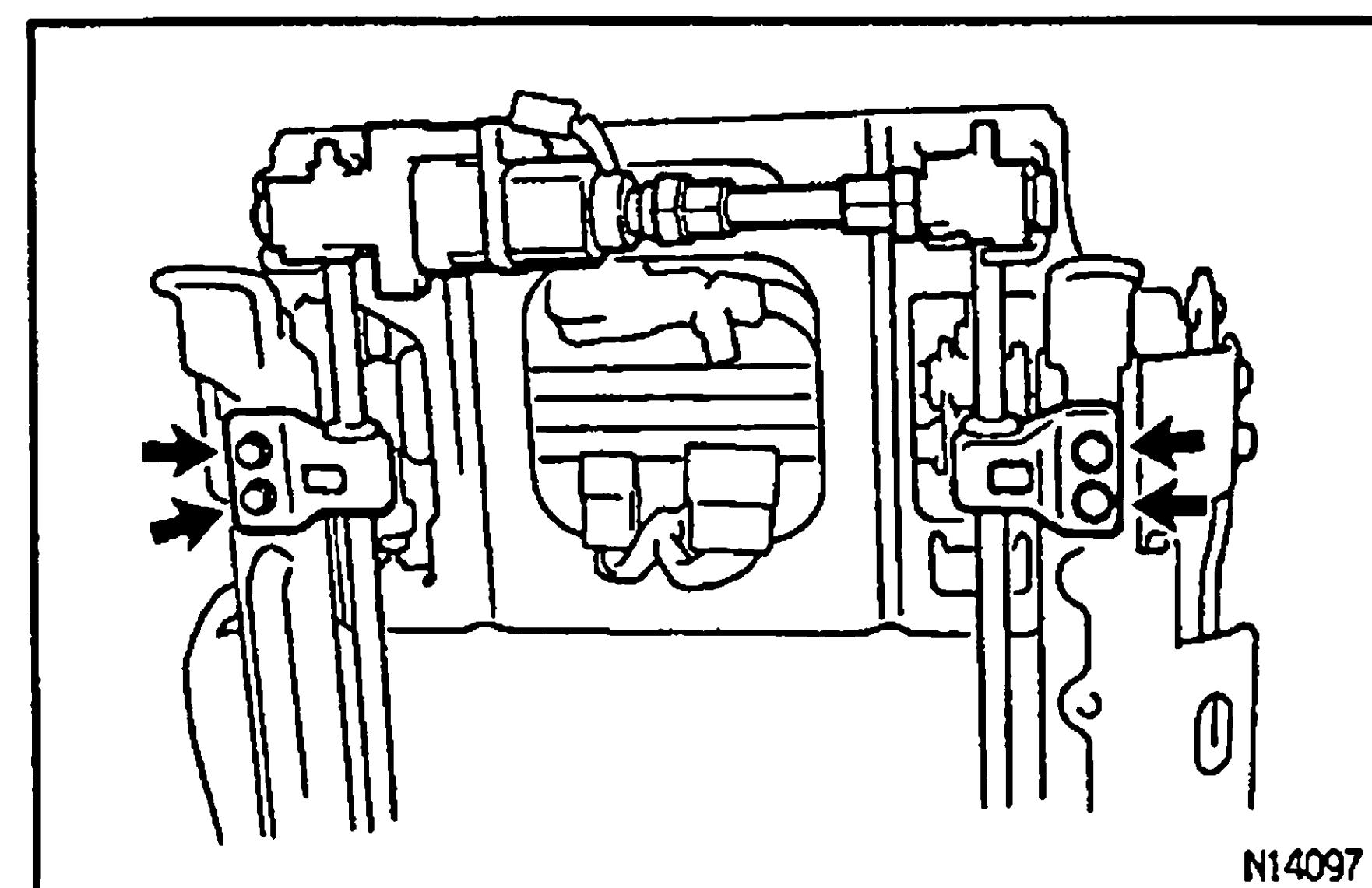
- (b) Hold the front seat horizontal jack screw with a plier, and remove the 2 nuts and 2 washers.

ASSEMBLY HINT: Apply adhesive to nut.

Part No. 08833 — 00070, THREE BOND 1324 or equivalent.

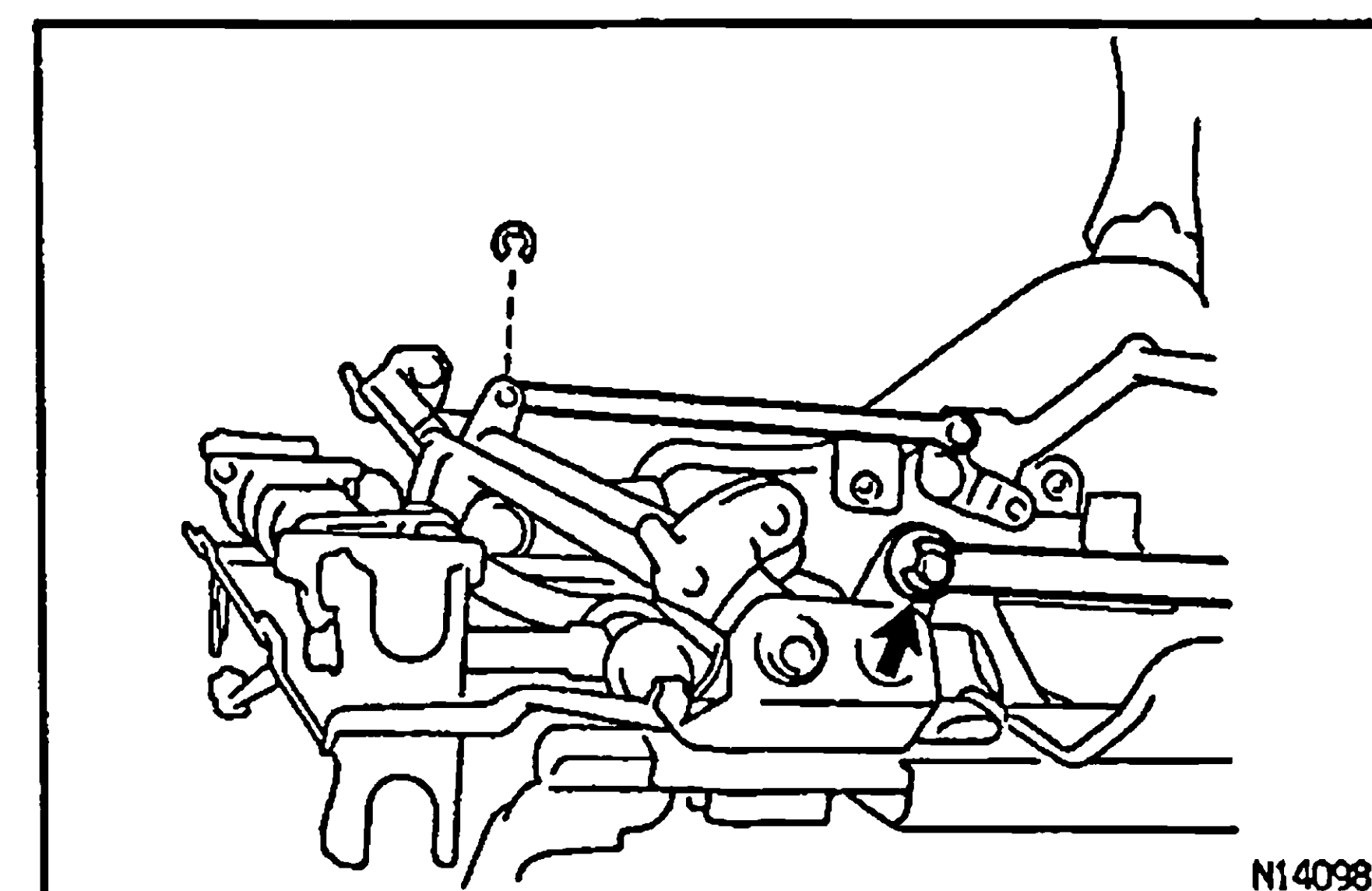


- (c) Remove the 4 screws and 2 vertical adjuster bushes.



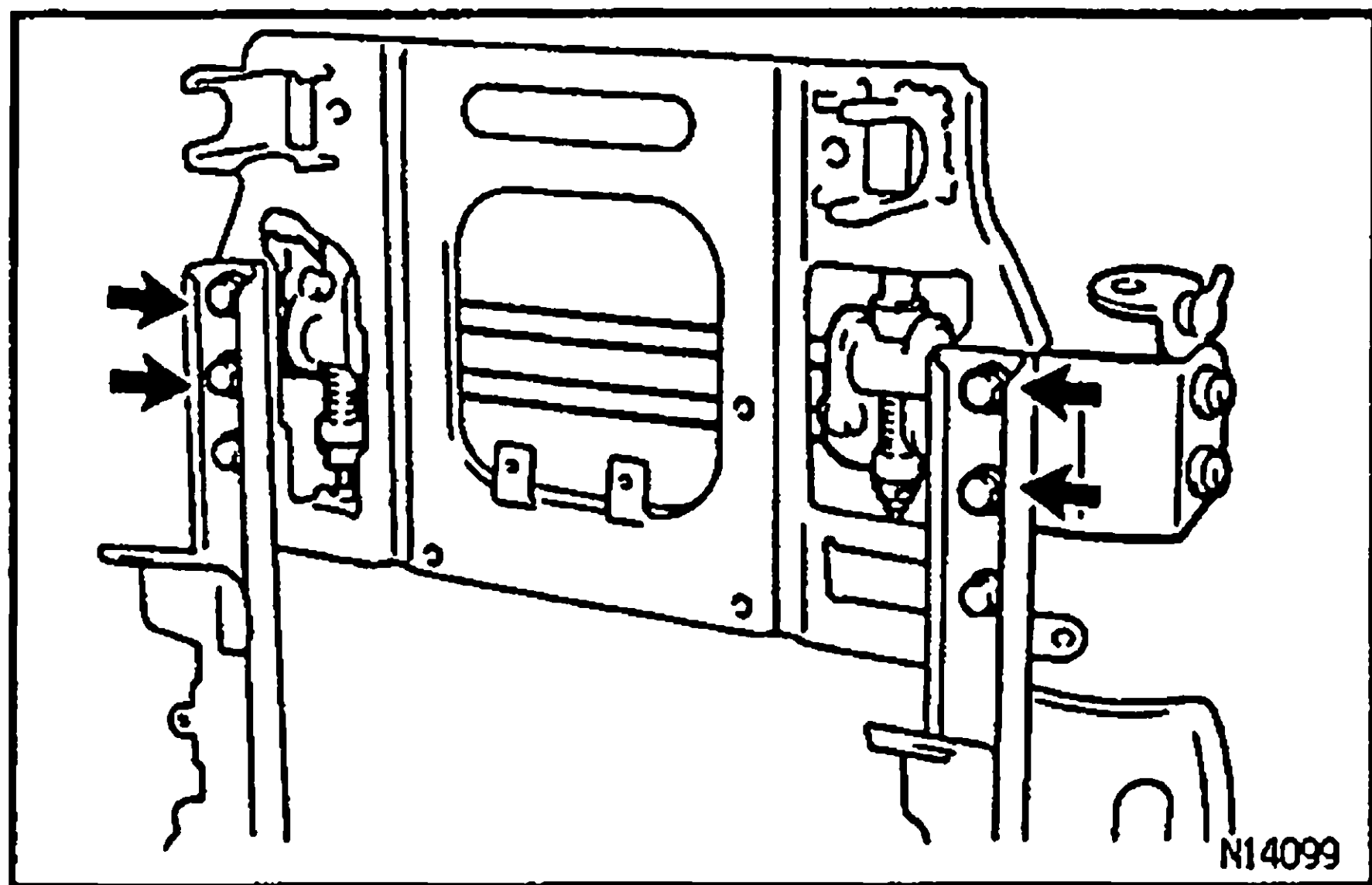
- (d) Remove the 4 bolts, slide motor, front seat slide housing and front seat horizontal jack screw.

- (e) Loosen the seat adjuster nut, then remove the slide motor.

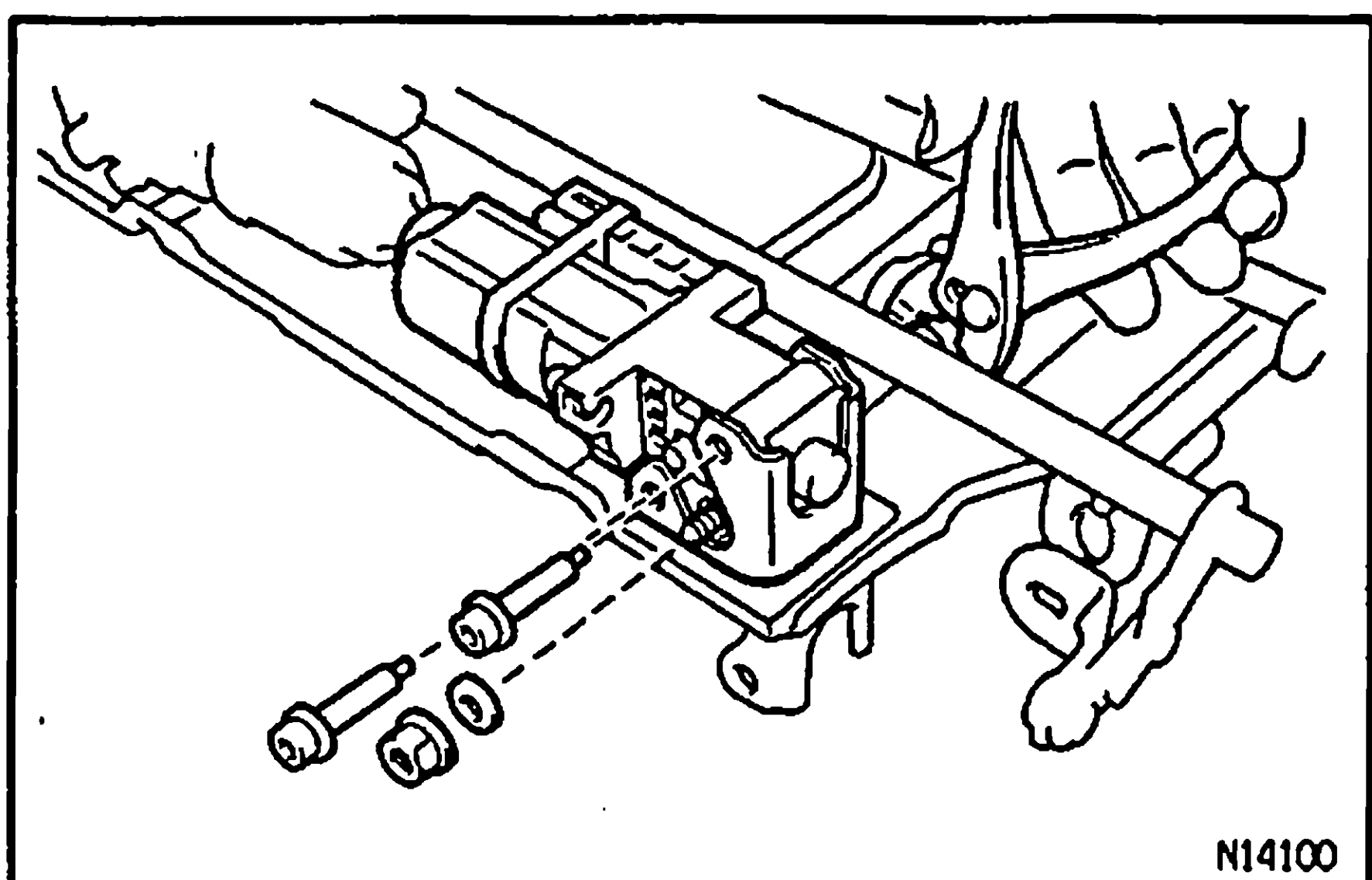


3. REMOVE REAR VERTICAL MOTOR

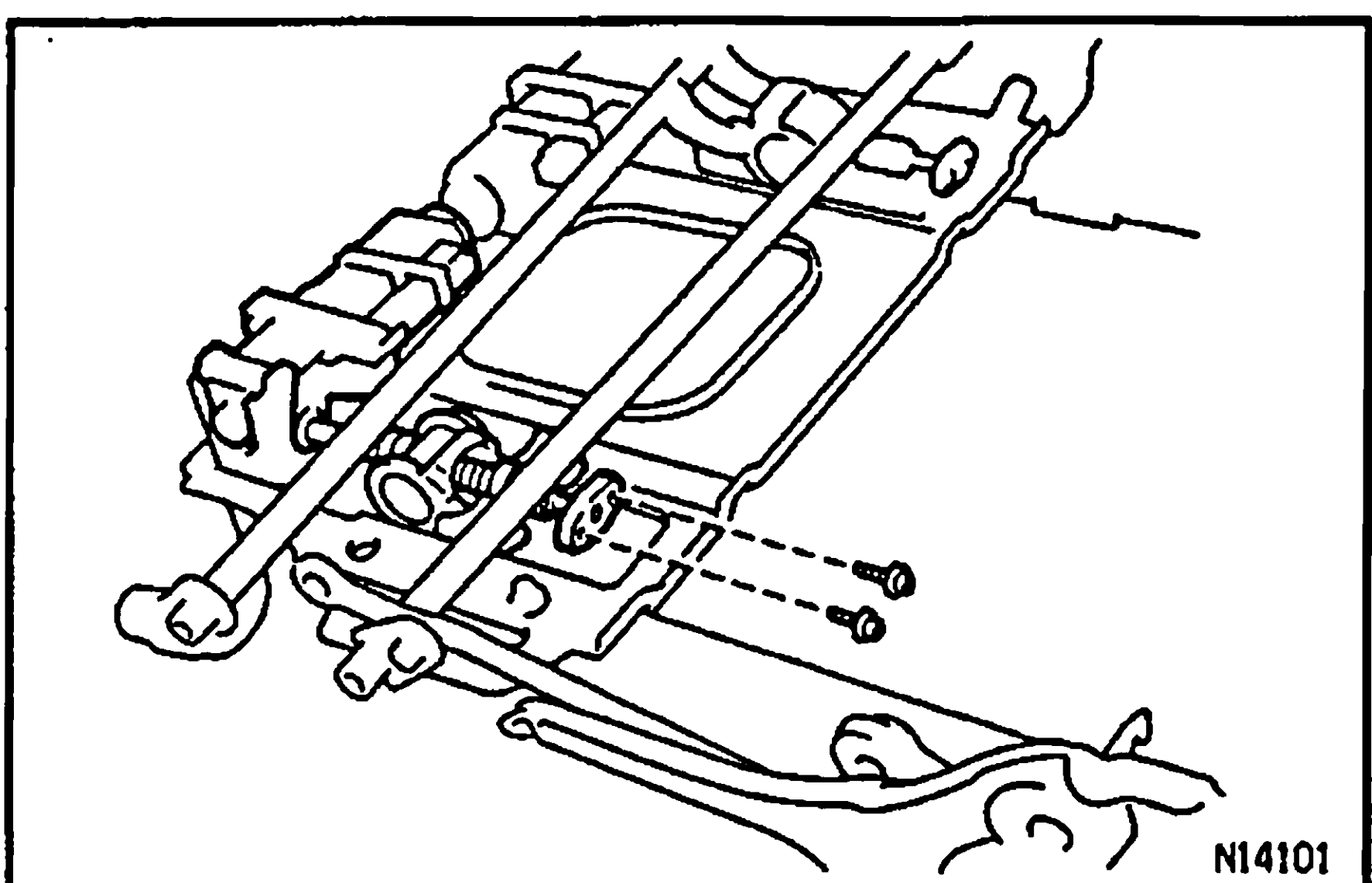
- (a) Remove the 2 E-rings, and disconnect the No.1 vertical seat link.



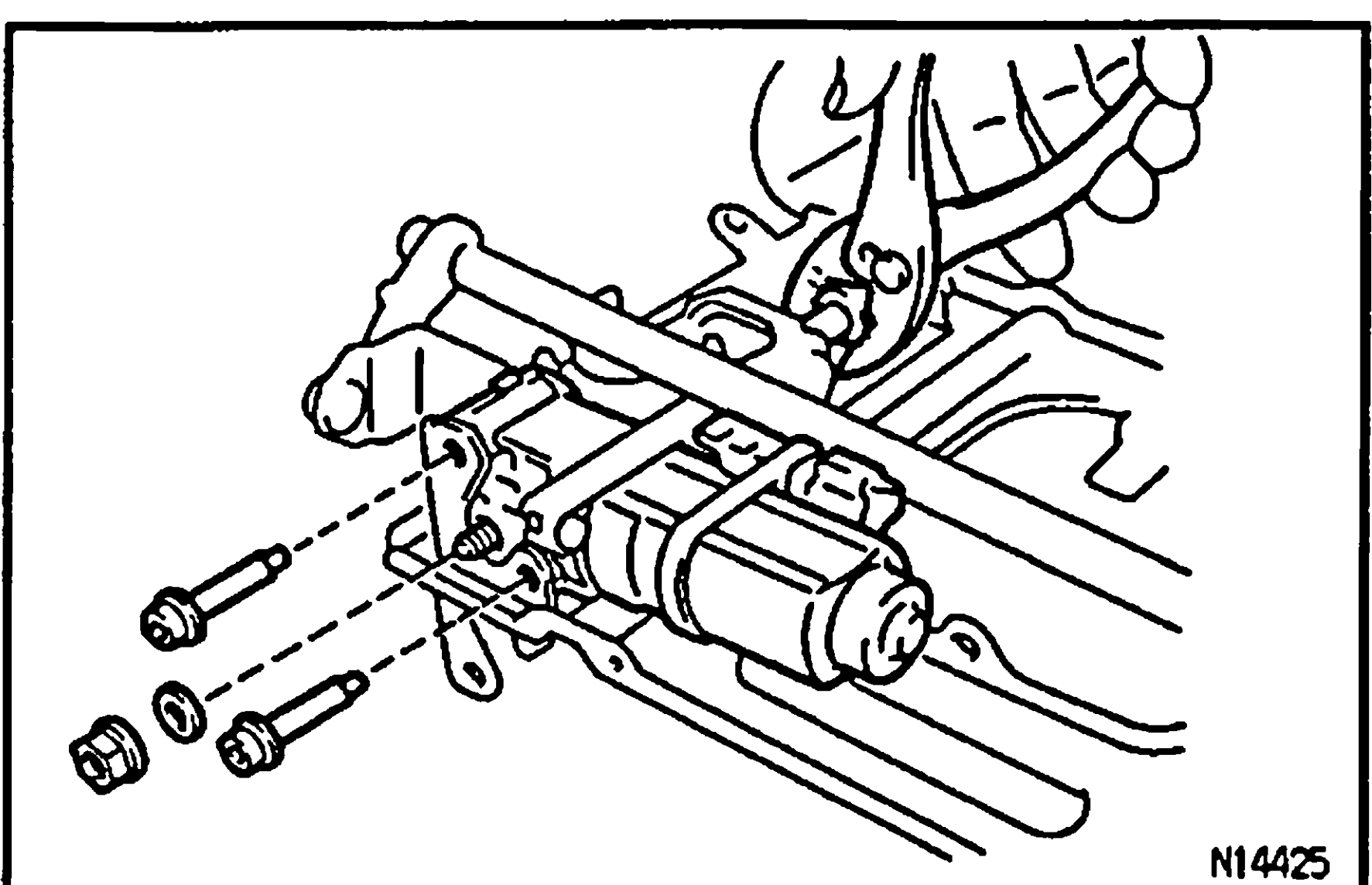
- (b) Remove the 4 bolts, vertical rod hold bracket RH and vertical rod hold bracket LH.
Torque: 20 N·m (210 kgf·cm, 15 ft·lbf)



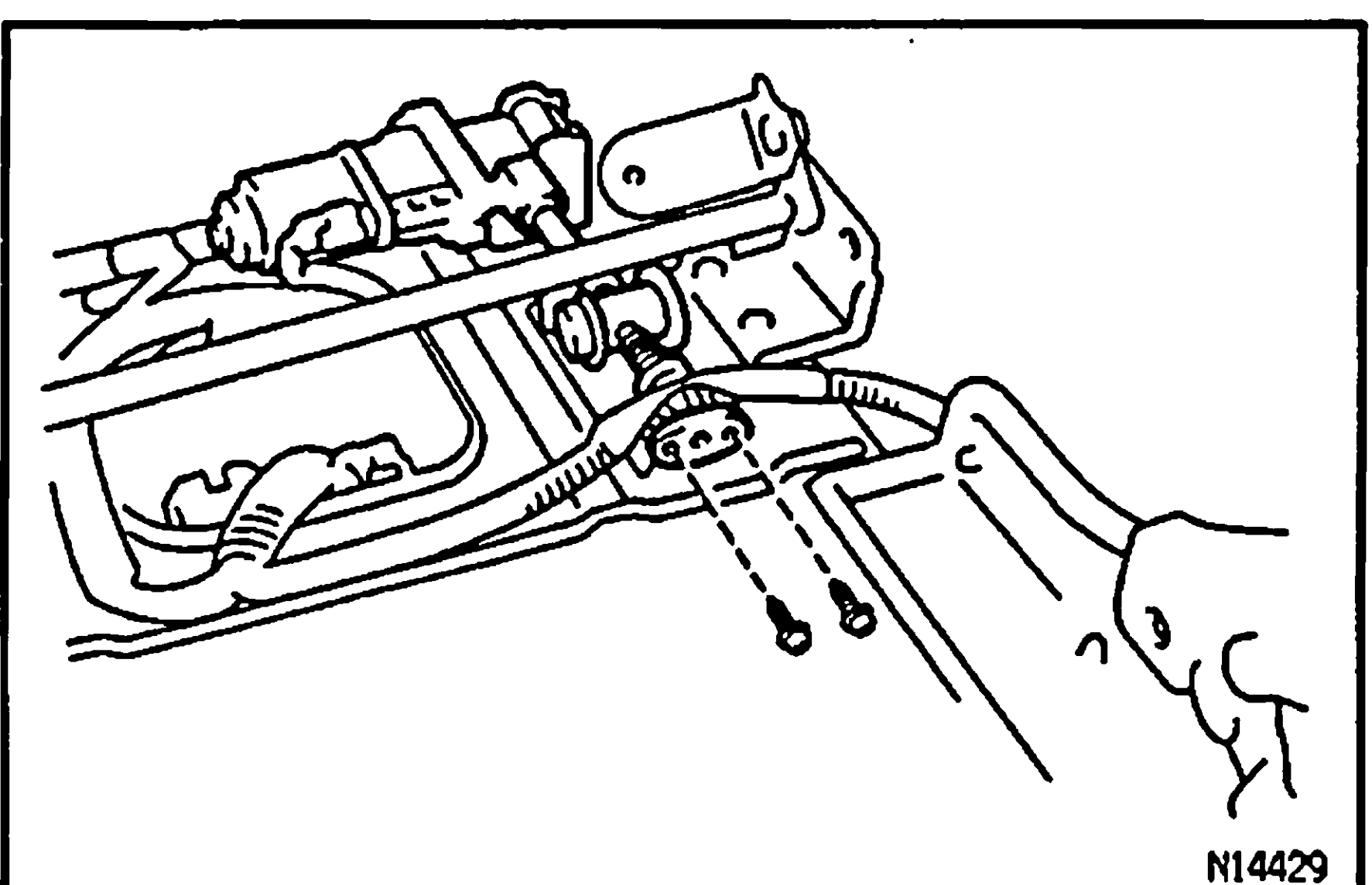
- (c) Using the 5.0 mm (0.20 in.) hexagon wrench, remove the 2 housing support bracket screws.
Torque: 10 N·m (100 kgf·cm, 7.0 ft·lbf)
- (d) Hold the No.2 vertical travel jack screw with a plier, remove the nut and washer.
ASSEMBLY HINT: Apply adhesive to nut.
Part No. 08833-00070, THREE BOND 1324 or equivalent.



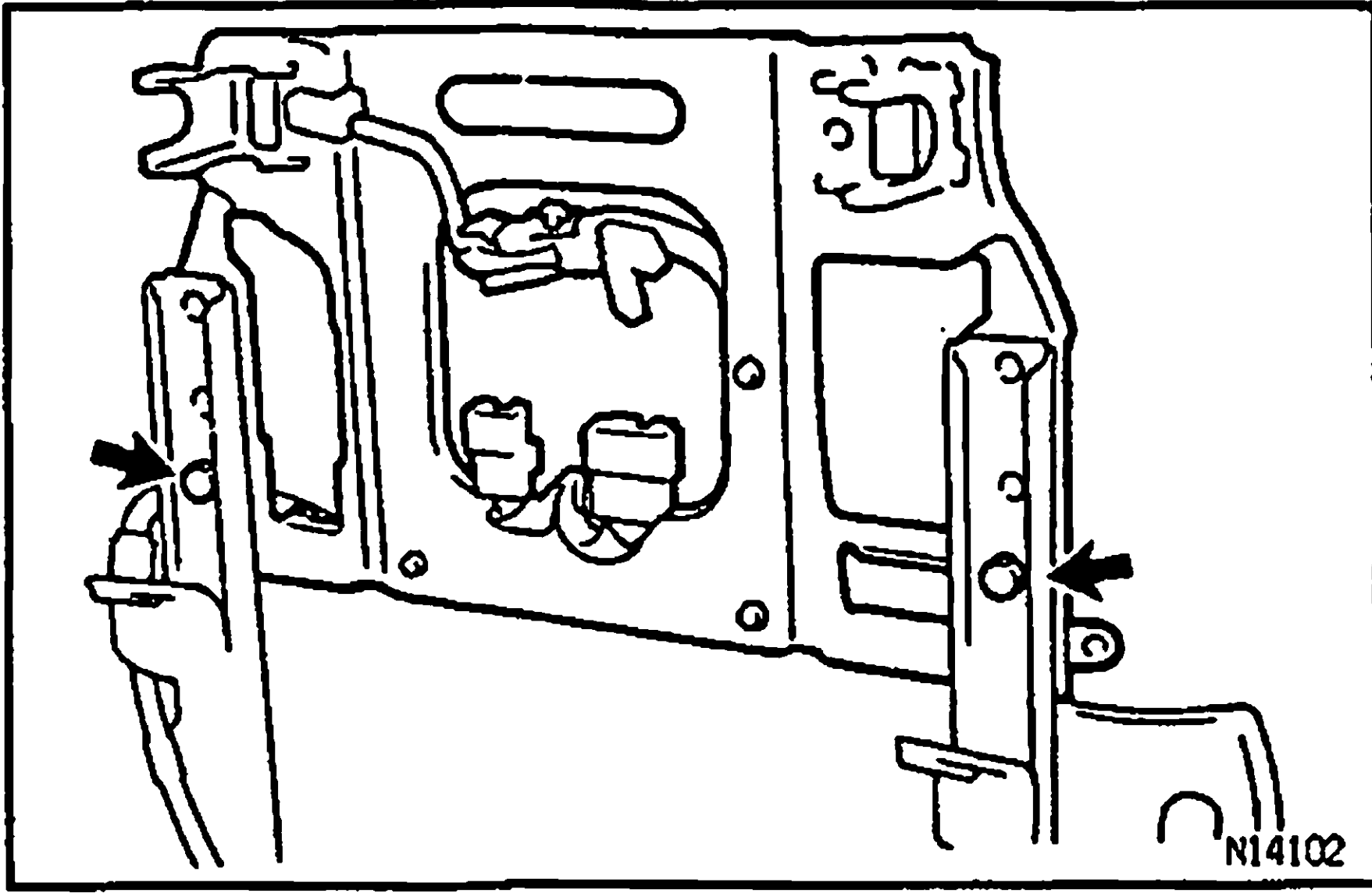
- (e) Remove the 2 screws, vertical adjuster bush, rear vertical motor and No.2 vertical seat link.



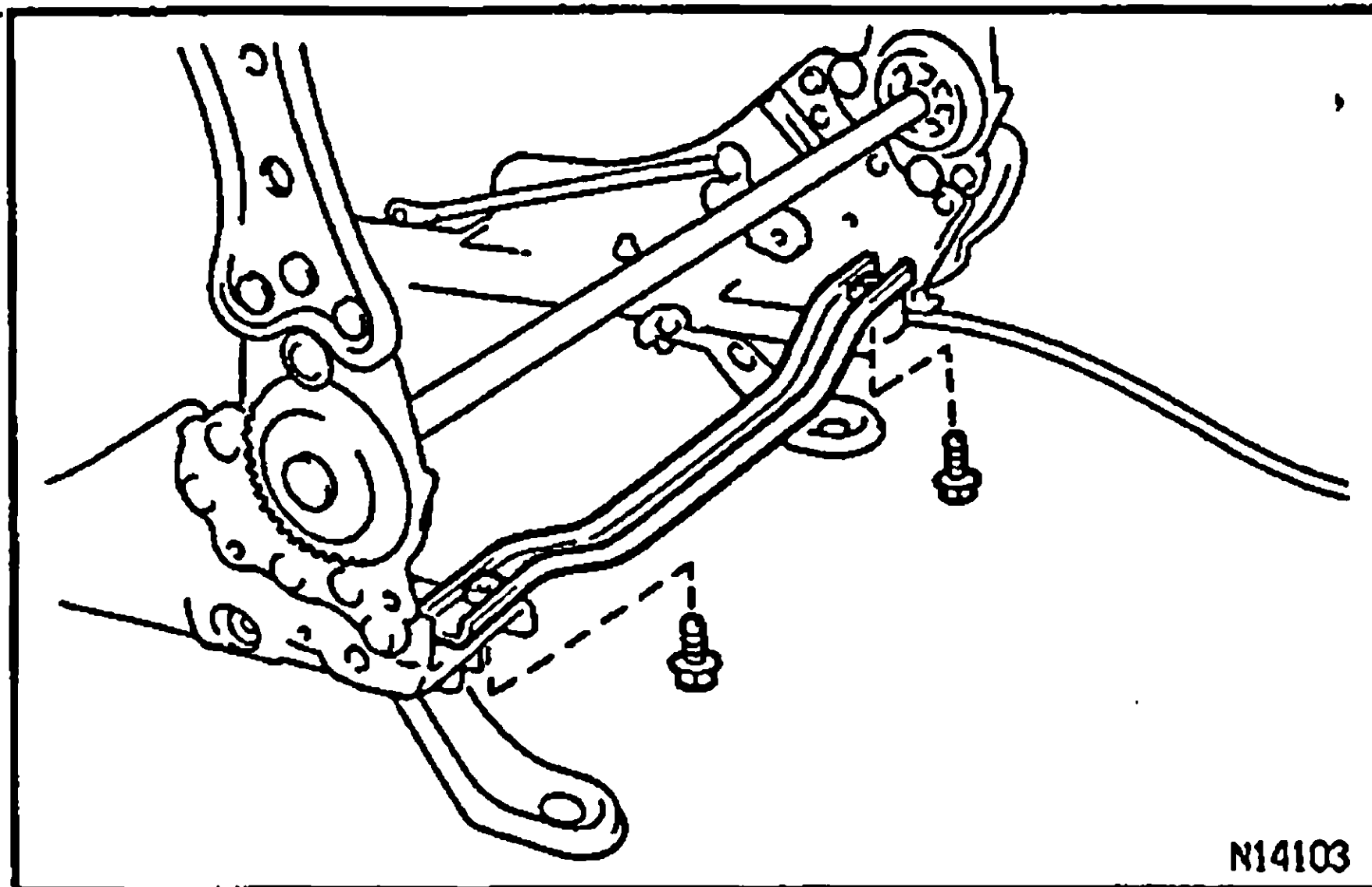
- 4. REMOVE FRONT VERTICAL MOTOR**
- (a) Using the 5.0 mm (0.20 in.) hexagon wrench, and remove the 2 housing support bracket screws.
- (b) Hold the No.1 vertical travel jack screw with a plier, remove the nut and washer.
ASSEMBLY HINT: Apply adhesive to nut.
Part No. 08833-00070, THREE BOND 1324 or equivalent.



- (c) Remove the 2 screws, vertical adjuster bush, front vertical motor and No.1 vertical seat link.

**5. REMOVE FRONT SEAT TRACK**

- (a) Remove the 2 bolts and front seat motor side housing.
Torque: 20 N·m (210 kgf·cm, 15 ft·lbf)



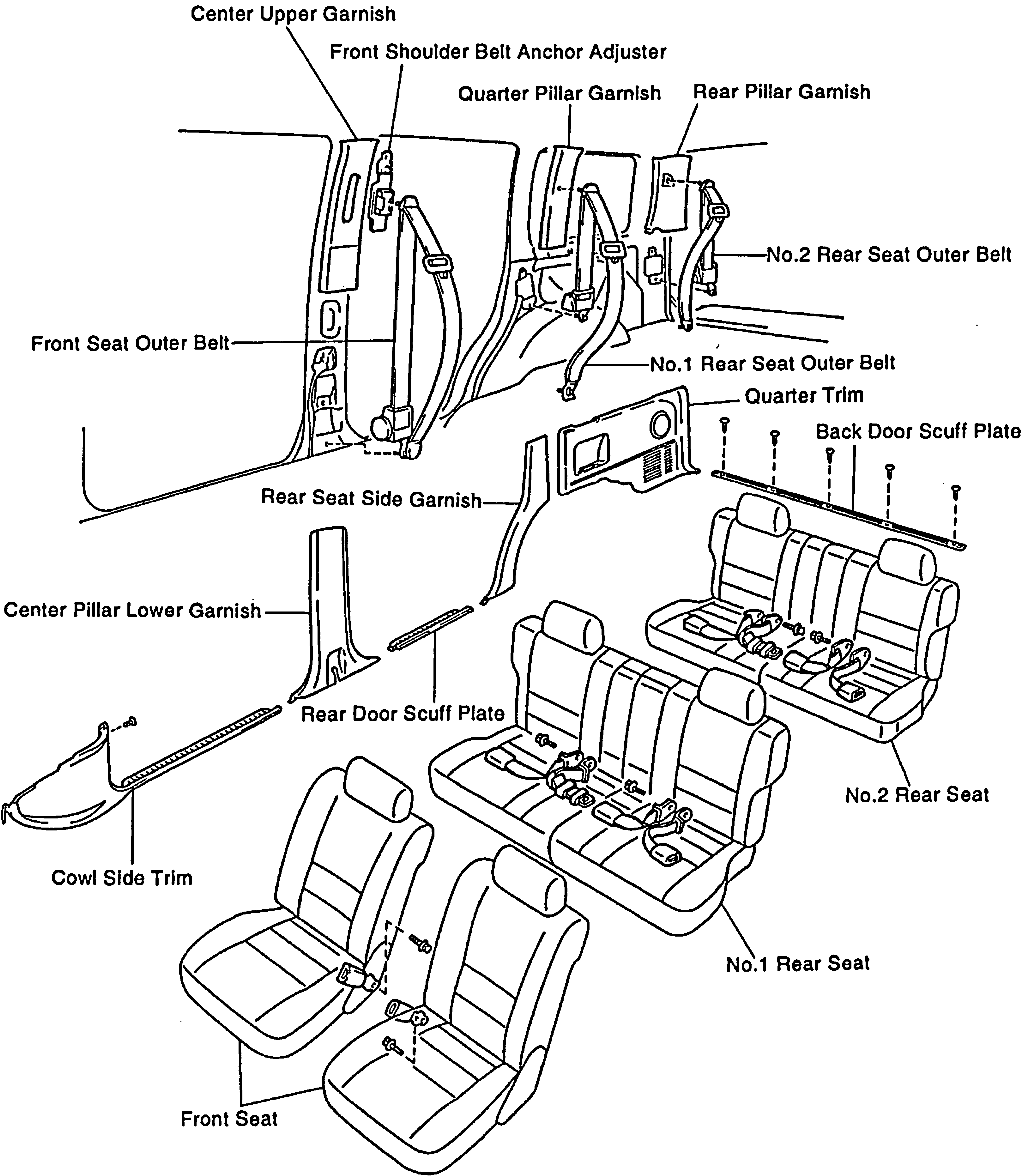
- (b) Remove the 2 bolts, seat track inner reinforcement, then separate the seat track RH and LH.
Torque: 20 N·m (210 kgf·cm, 15 ft·lbf)

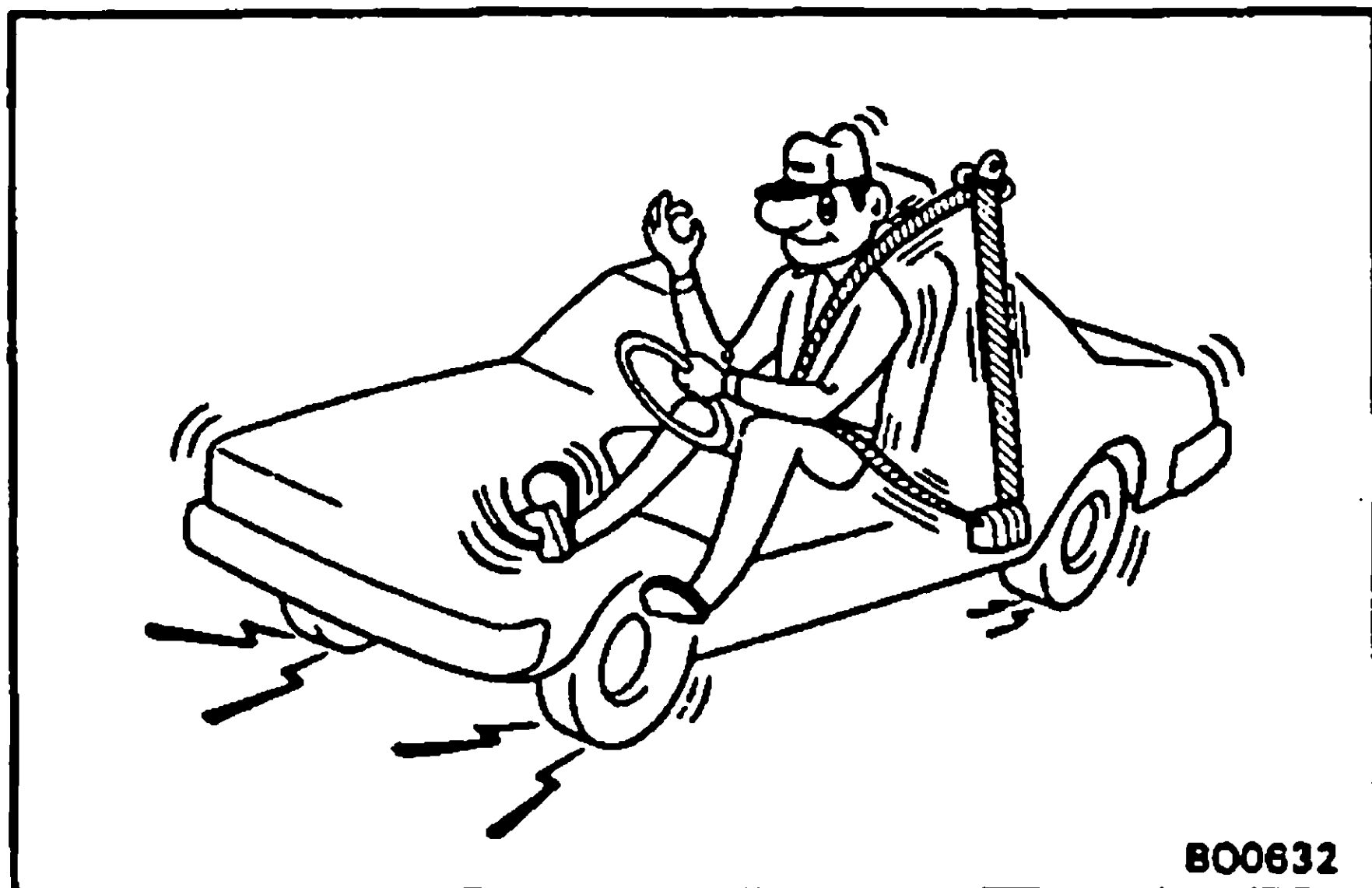
- (c) Remove the reclining connecting rod.

6. REMOVE SEAT WIRE**7. REMOVE RECLINING MOTOR****8. REMOVE RECLINING HINGE COVER**

SEAT BELT
COMPONENTS

BO188-01





SEAT BELT INSPECTION

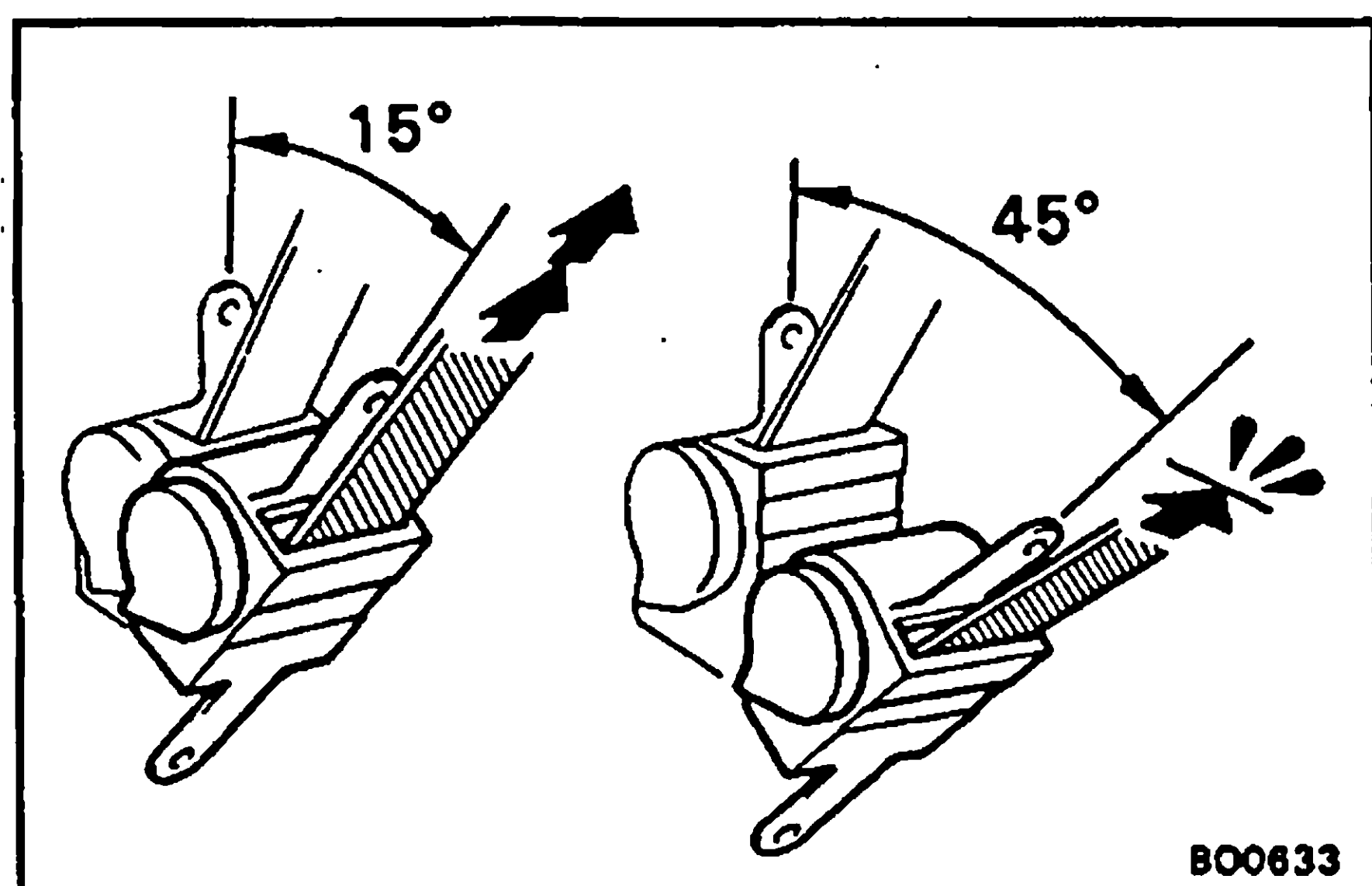
Emergency Locking Retractor (ELR) and Automatic Locking Retractor (ALR) type

1. RUNNING TEST (IN SAFE AREA)

for all seats:

- (a) Fasten the front seat belts.
- (b) Drive the car at 10 mph (16 km/h) and make a very hard stop.
- (c) Check that the belt is locked and cannot be extended at this time.

HINT: Conduct this test in a safe area. If the belt does not lock, remove the belt mechanism assembly and conduct the following static check. Also, whenever installing a new belt assembly, verify the proper operation before installation.



2. STATIC TEST

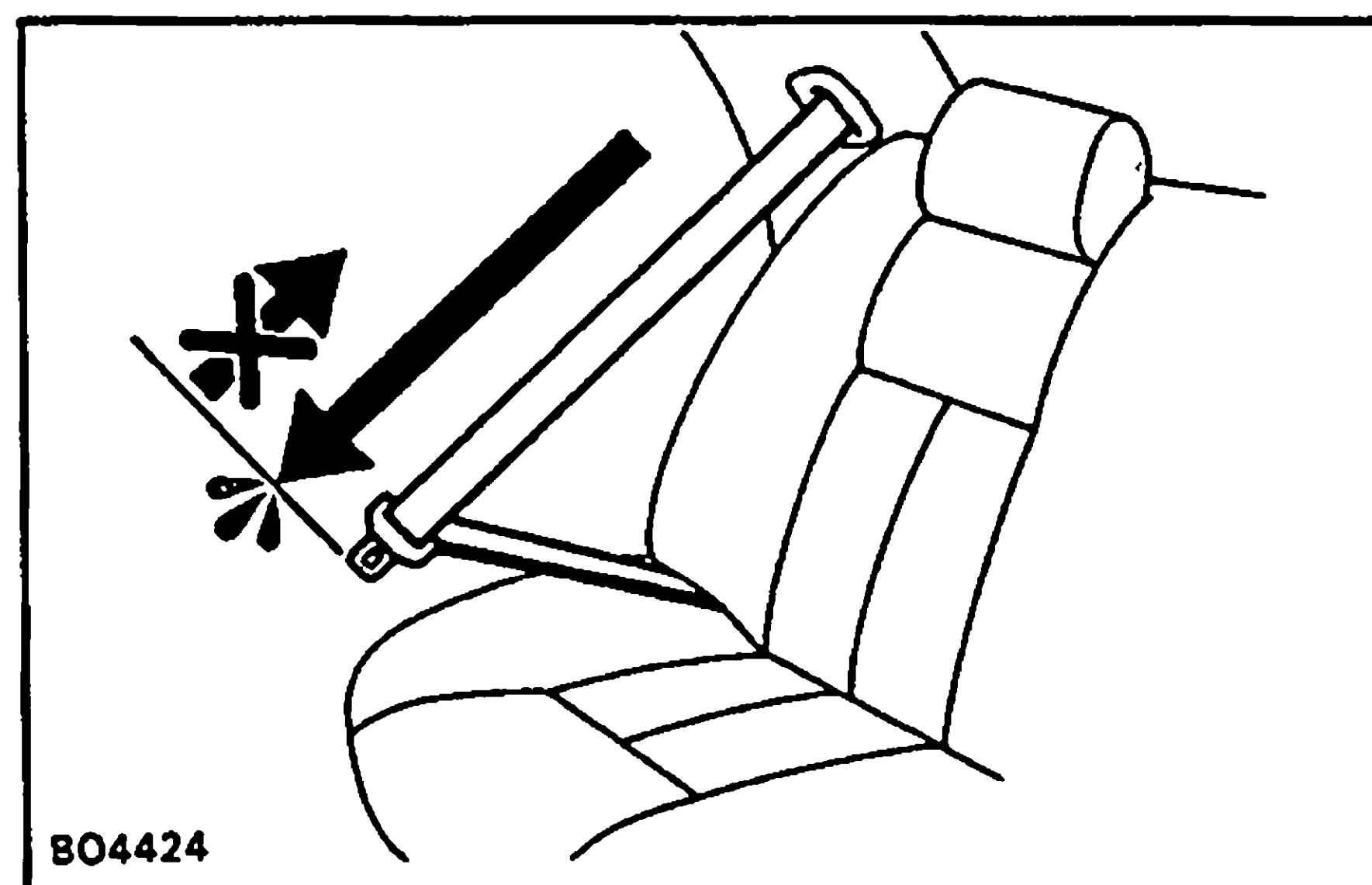
for all seats:

- (a) Verify that the belt locks when pulled out quickly.
- (b) Remove the locking retractor assembly.
- (c) Tilt the retractor slowly.
- (d) Verify that the belt can be pulled out at a tilt of 15 degrees or less, and cannot be pulled out at over 45 degrees of tilt.

If a problem is found, replace the assembly.

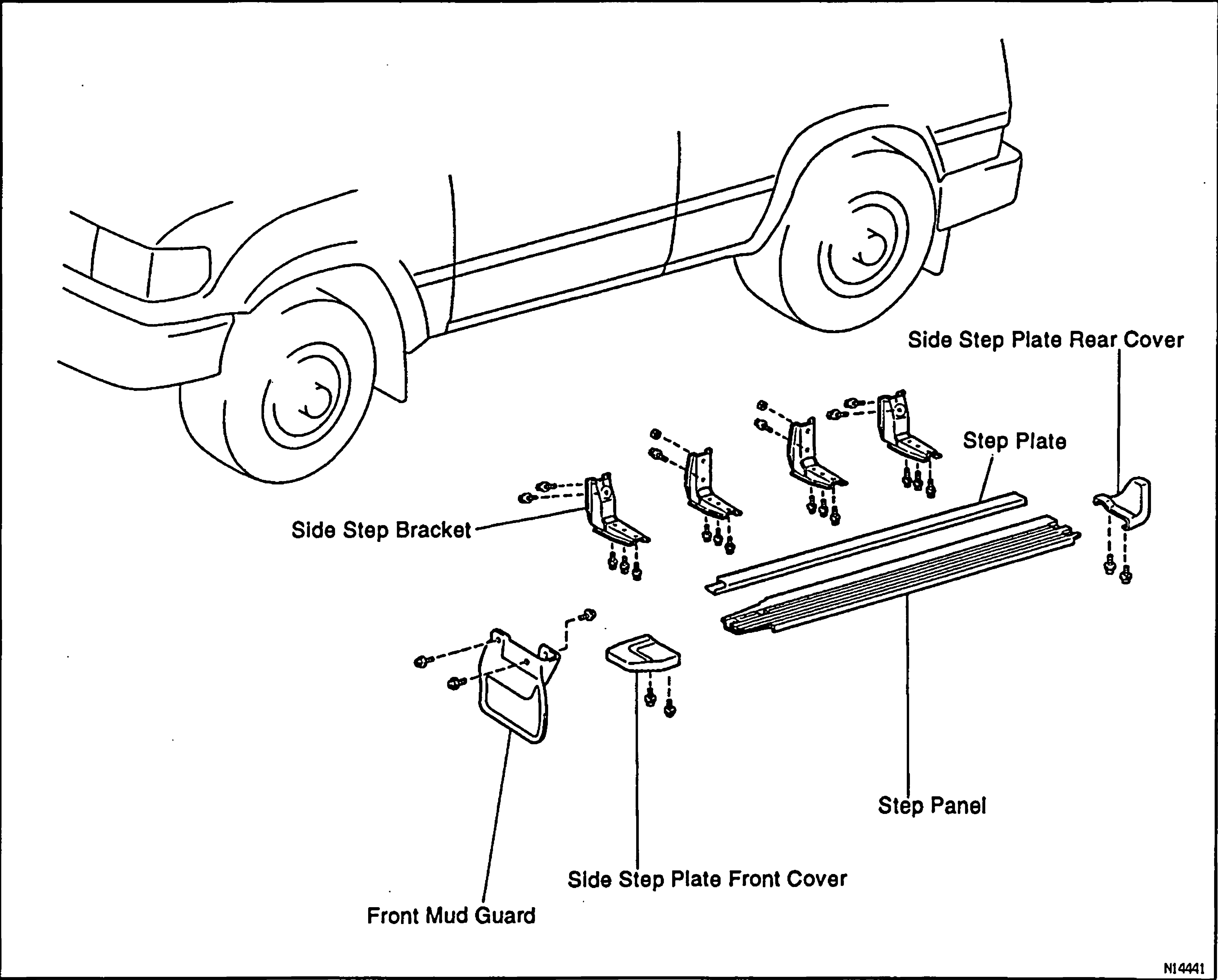
except for driver's seat (G.C.C.):

- (e) Pull out the whole belt, release it slightly and then pull it out again.
 - (f) Verify that the belt cannot be extended further.
- If a problem is found, replace the assembly.



SIDE STEP
COMPONENTS

90048-07



N14441

BO

SERVICE SPECIFICATIONS

TORQUE SPECIFICATIONS

90147-03

Part tightened	N·m	kgf·cm	ft·lbf
FRONT BUMPER	—	—	—
Front bumper arm x Front bumper bracket	39	400	29
Front bumper arm x Body	39	400	29
Front bumper extension x Front bumper	5.4	55	48 in·lbf
REAR BUMPER	—	—	—
Rear bumper extension x Rear bumper reinforcement	13	130	9.0
Rear bumper extension reinforcement x Body	5.4	55	48 in·lbf
WIPER AND WASHER	—	—	—
Front wiper arm x Wiper link	20	210	15
Wiper link x Body	5.4	55	48 in·lbf
Wiper motor x Body	5.4	55	48 in·lbf
Rear wiper arm x Wiper motor	5.4	55	48 in·lbf
Wiper motor x Body	5.4	55	48 in·lbf
WHEEL OPENING EXTENSION	—	—	—
Front wheel opening extension x Body	5.4	55	48 in·lbf
Rear wheel opening extension x Body	5.4	55	48 in·lbf
INSTRUMENT PANEL	—	—	—
Front passenger airbag assembly x Instrument panel reinforcement	20	210	15
SEAT	—	—	—
Front Manual Seat	—	—	—
Seat truck x Body	39	400	29
Seat reclining assembly x Seatback frame	52	530	38
Lumber support x Seatback frame	18	185	13
Front Power Seat	—	—	—
Seat truck x Body	39	400	29
Power seat adjuster x Seatback frame	37	375	27
Power seat adjuster x Seat cushion frame	18	185	13
Lumper support x Seatback frame	18	185	13
No.1 Rear Seat	—	—	—
Seat cushion hinge x Body	39	400	29
Seat cushion hinge x Seat cushion frame	39	400	29
Seat lock x Seat cushion frame	41	420	30
No.2 Rear Seat	—	—	—
Reclining adjuster x Seatback frame	52	530	38
Seat leg x Body	18	185	13
Power Seat Adjuster	—	—	—
No.2 vertical seat link x Rear vertical motor	10	100	7.0
No.1 vertical seat link x Front vertical motor	10	100	7.0
Seat truck x Seat truck inner reinforcement	20	210	14
Front seat horizontal seat screw x Front seat motor slide housing	20	210	14
Side motor x Front seat horizontal jack screw	10	100	7.0

SEAT BELT	—	—	—
Adjustable anchor x Body	43	440	32
ELR x Body	5.0	50	43 in.-lbf
Outer belt anchor x Body	43	440	32
Inner belt x Seat	43	440	32
SIDE STEP	—	—	—
Side step bracket x Body	13	130	9.0
Side step bracket x Side panel	5.4	55	4.8 in.-lbf

AIR CONDITIONING SYSTEM

REFRIGERANT LINES AC- 2

AIR CONDITIONER CONTROL

ASSEMBLY AC- 4

SERVICE SPECIFICATIONS..... AC- 5

REFER TO FOLLOWING REPAIR MANUALS:

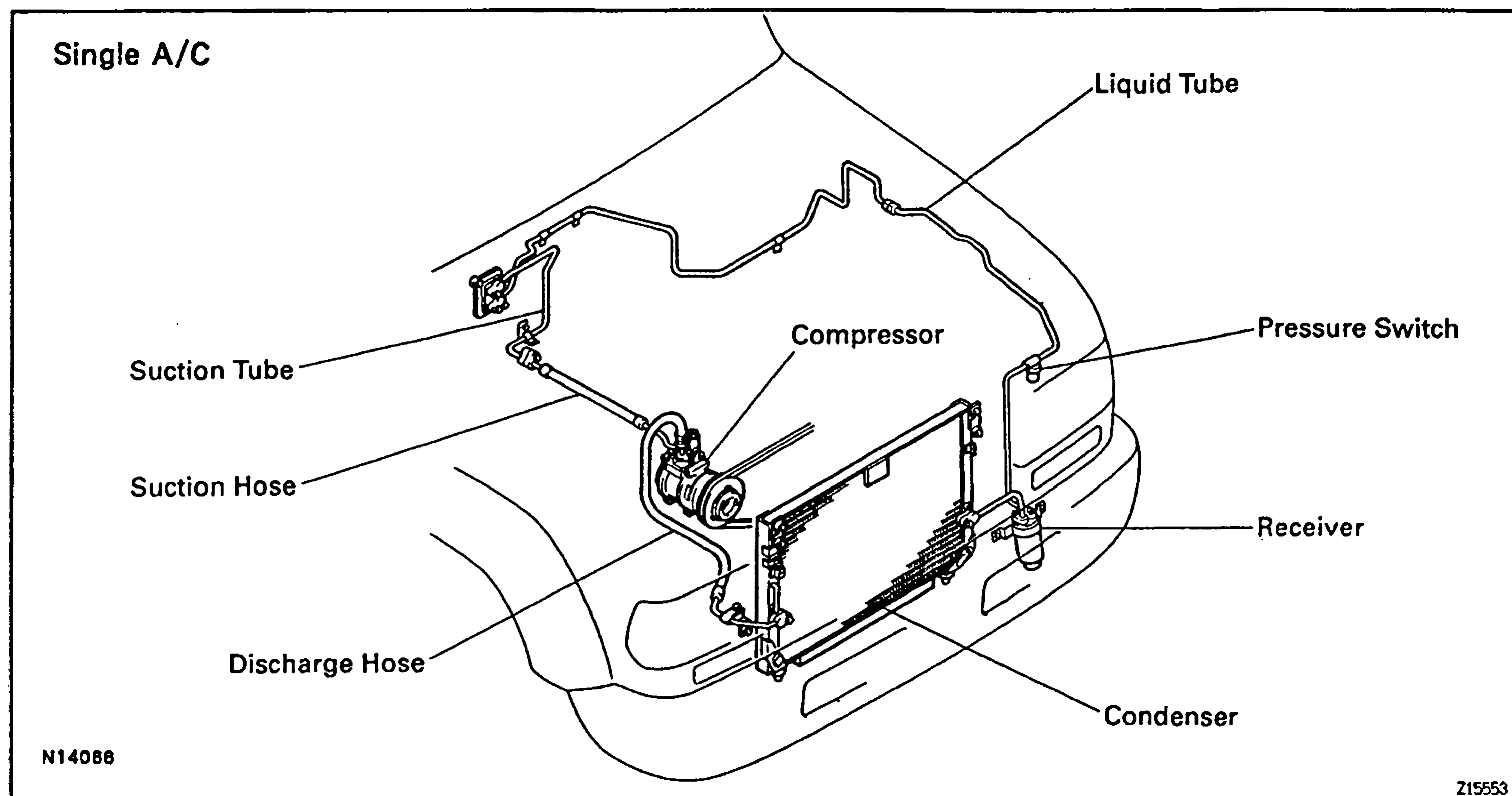
Manual Name	Pub. No.
• Land Cruiser (Station Wagon) Chassis and Body Repair Manual	RM184E
• Land Cruiser (Hardtop, Canvas Top and Station Wagon) Chassis and Body Repair Manual Supplement (Aug., 1992)	RM315E

NOTE: The above pages contain only the points which differ from the above listed manuals.

REFRIGERANT LINES

TIGHTENING TORQUE OF REFRIGERATION LINES

AC00L-0V



AC

ON — VEHICLE INSPECTION

AC00M-00

1. **INSPECTION HOSE AND TUBE CONNECTIONS FOR LOOSENESS**
2. **INSPECT HOSES AND TUBES FOR LEAKAGE**
Using a gas leak tester, check for leakage of refrigerant.

REFRIGERANT LINES REPLACEMENT**1. DISCHARGE REFRIGERANT IN REFRIGERATION SYSTEM****2. REPLACE FAULTY TUBE OR HOSE**

HINT: Cap the open fittings immediately to keep moisture or dirt out of the system.

3. TORQUE CONNECTIONS TO SPECIFIED TORQUE

NOTICE: Connections should not be torqued tighter than the specified torque.

Compressor x Discharge hose

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Compressor x Suction hose

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Condenser x Discharge hose

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Condenser x Liquid tube

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Receiver x Liquid tube

Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)

Pressure switch x Liquid tube

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

A/C unit x Liquid tube

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Expansion valve x Evaporator

Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)

A/C unit x Suction tube

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Liquid line (union nut)

Torque: 14 N·m (140 kgf·cm, 10 ft·lbf)

Suction line (bolt)

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

4. EVACUATE AIR IN REFRIGERATION SYSTEM AND CHARGE WITH REFRIGERANT

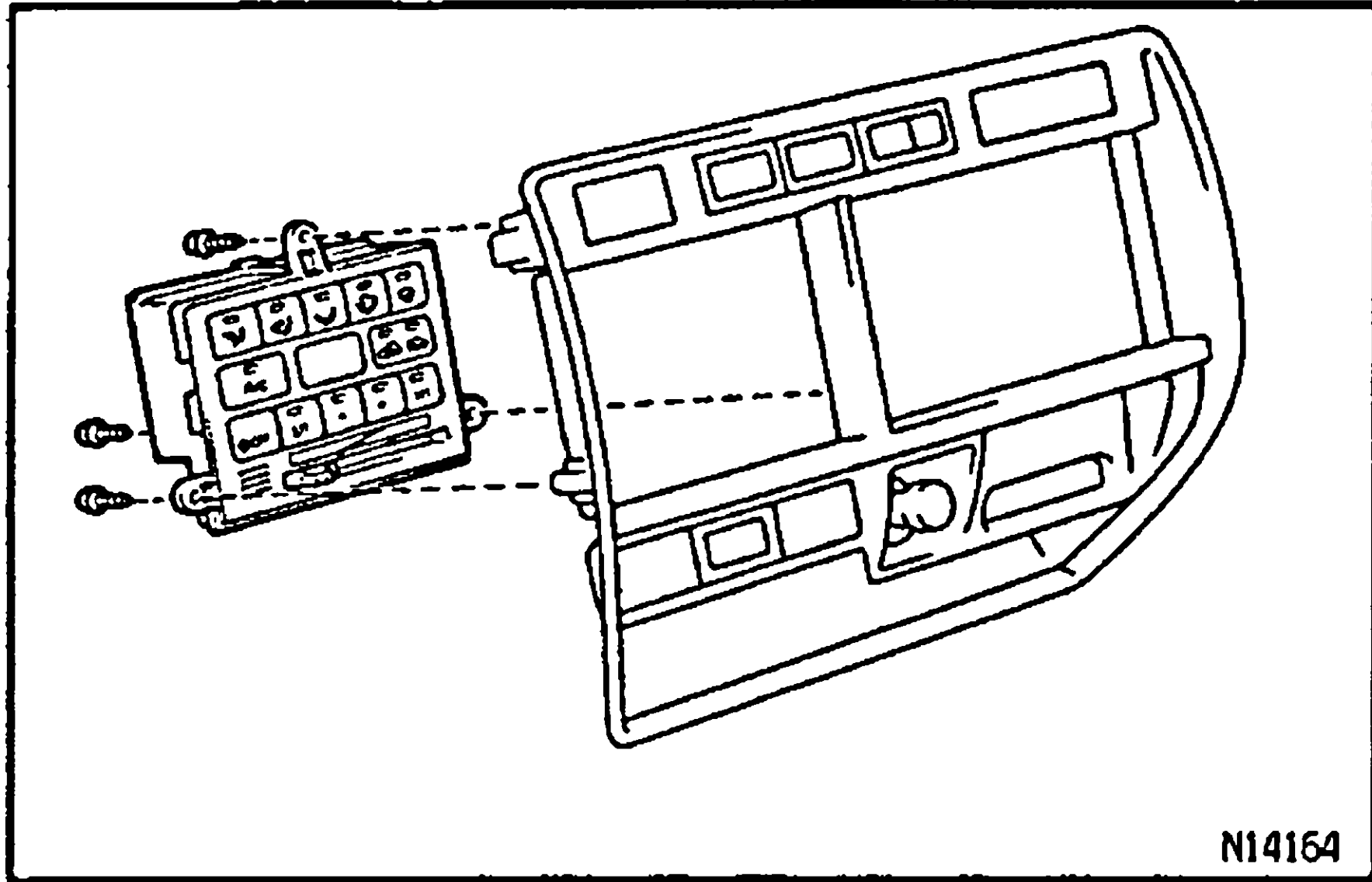
Specified amount:

850 ± 50 g (29.98 ± 1.76 oz.)

5. INSPECT FOR LEAKAGE OF REFRIGERANT

Using a gas leak tester, check for leakage of refrigerant.

6. INSPECT AIR CONDITIONER OPERATION



AIR CONDITIONER CONTROL ASSEMBLY

A/C CONTROL ASSEMBLY REMOVAL

AC1RD-01

Installation is in the reverse order of removal.

1. REMOVE INSTRUMENT CLUSTER FINISH CENTER PANEL WITH A/C CONTROL ASSEMBLY
2. REMOVE A/C CONTROL ASSEMBLY

Remove the 3 screws and A/C control assembly from center panel.

SERVICE SPECIFICATIONS
TORQUE SPECIFICATIONS

ACQJX-07

Part tightened	N·m	kgf·cm	ft·lbf
Compressor x Suction hose	10	100	7
Compressor x Discharge hose	10	100	7 ~
Receiver x Liquid tube	5.4	55	48 in·lbf
Condenser x Discharge hose	10	100	7
Cooling unit x Liquid tube	10	100	7
Cooling unit x Suction tube	10	100	7
Pressure switch x Liquid tube	10	100	7
Expansion valve x Evaporator	5.4	55	48 in·lbf
Liquid line (union nut)	14	140	10
Suction line (bolt)	10	100	7