

# WORKSHOP MANUAL

## **DAIHATSU** **CHARADE** Chassis

### FOREWORD

This workshop manual contains essential information regarding the construction, disassembly/reassembly procedures and servicing methods of the power train, suspension, brake system, steering system, body and electrical system of the DAIHATSU CHARADE.

We hope that this workshop manual is consulted to the fullest extent, in combination with the workshop manual of the Type CB Engine, Type CL Engine, and Trouble shooting for Engine control system of Type CB-80 Engine so that quality servicing may be assured at all times.

Furthermore, due to continuing improvements in the design, contents and specifications in this workshop manual may be partly revised without advance notice and without incurring any obligation to us.

**Published in April, 1987**

**DAIHATSU MOTOR CO., LTD.**

WR-00000



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# **DAIHATSU**

# **CHARADE**

## **Chassis**

## **SECTION 1**

## **GENERAL INFORMATION**

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WR-01001

## GENERAL INFORMATION

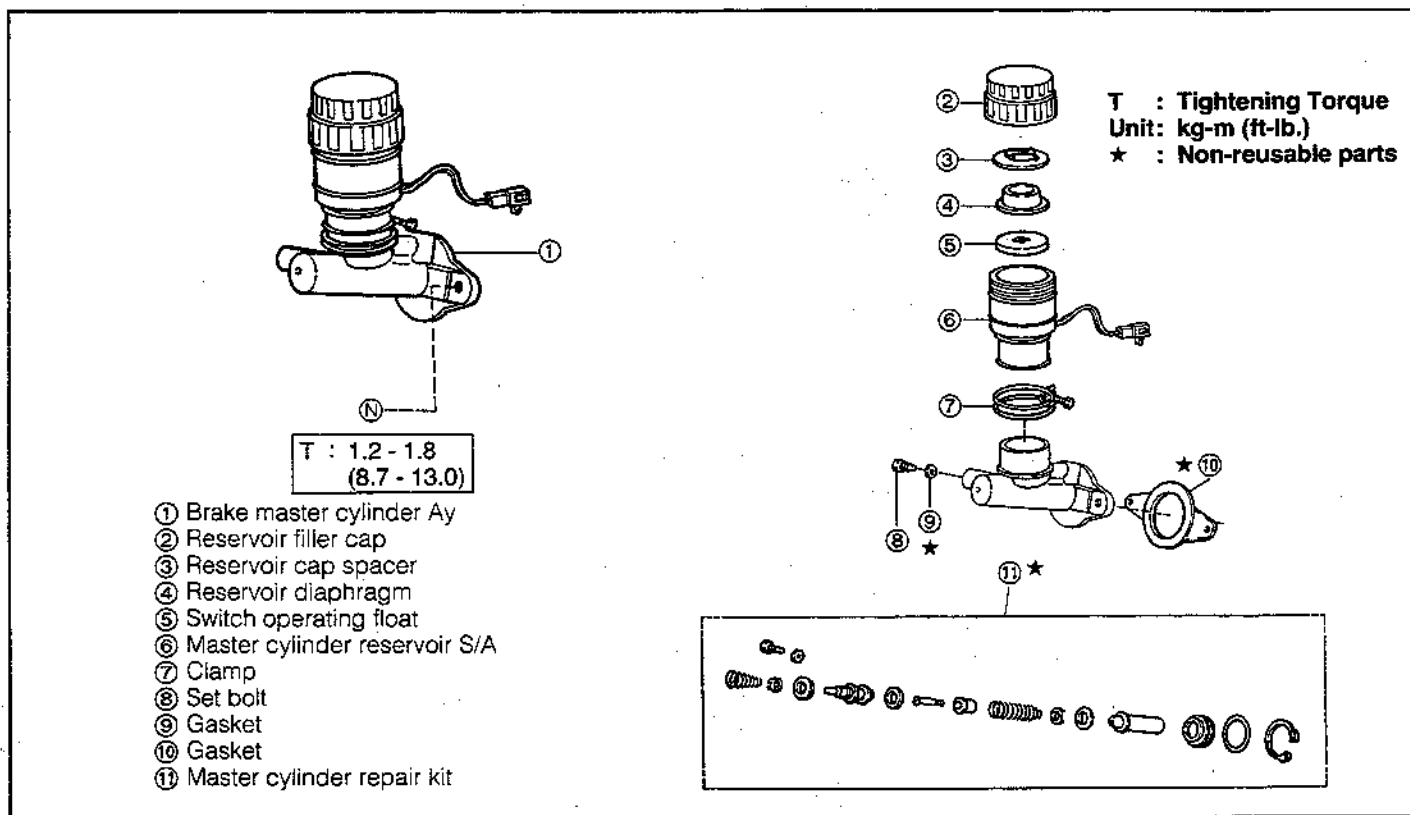
### HOW TO READ THIS BOOK

#### CONTENTS OF EXPLANATION

##### 1. Schematic Diagram of Components

- (1) The schematic diagram of components that appears at the beginning of each section describes the nomenclature and installed conditions of each component. Furthermore, the tightening torque is posted in the figure.
- (2) Those parts whose reuse is not permitted bear a "★" mark for an identification purpose. Be certain to replace these parts with new ones during the assembly.

##### (Example)



##### 2. Servicing Procedure

- (1) In principle, the servicing procedure is described in the following sequence given below: Removal → Inspection → Installation, and Disassembly → Inspection → Assembly.
- (2) The explanation covers detailed servicing methods, specifications and notes.
- (3) The main point of each item explains the servicing section and servicing procedure, using illustrations.

##### (Example)

What to do	How to do it	What to do and where
3. Brake tube installation	<ol style="list-style-type: none"><li>(1) Install the brake tube to the wheel cylinder temporarily by hands.</li><li>(2) Tighten the brake tube to the wheel cylinder, using the following SST.</li></ol> <p>SST: 09751-36011-000</p>	<p>09751-36011-000</p>

WR-01003

- (4) The inspection section in this manual describes only checking operation. Therefore, if you find any malfunction, replace any defective parts with new ones.

### 3. Trouble Shooting

- (1) As for the three-speed automatic transmission, the trouble shooting table is provided in this book so that you may readily locate causes of troubles.

### 4. Table of SSTs Used

- (1) The SSTs appearing in this book are listed in the appendix of the book.

### 5. Table of Service Specifications

- (1) The service specifications necessary for the service are summarized in the appendix of this book.

### 6. Table of Tightening Torque

- (1) As for those sections where their tightening torque must be controlled during the service, the tightening torque is specified in the appendix of this book.

### 7. Wiring Diagrams

- (1) The vehicle wiring diagrams are posted in the appendix of this book separately for Type CB and Type CL engines.

## DEFINITIONS OF TERMS

- Specified Value ..... A value which represents the allowable range during the inspection and adjustment.  
Limit ..... A maximum or a minimum limit which the value should not exceed or fall below.  
Note ..... An item which requires special attention or an item which is prohibited during the service.

WR-01004

## GENERAL INFORMATION

### ABBREVIATION CODES

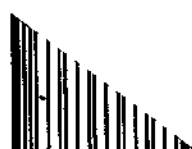
The abbreviation codes that appear in this workshop manual stand for the following, respectively.

Abbreviation code	Original word	Meaning
RH	Right Hand	Refers to right side.
R.H.D.	Right-Hand Drive	Right hand drive vehicle.
LH	Left Hand	Refers to left side.
L.H.D.	Left-Hand Drive	Left-hand drive vehicle.
STD	Standard	When referring to automotive parts, "standard" represents those parts which have been installed originally by the manufacturer and which have standard dimensions.
O/S	Over Size	In instances where fitting becomes too loose due to wear resulting from use for a long period of time or due to frequent removal/installation operations, if fitting part (e.g. piston) is replaced with a part having larger dimensions, the other mating part may be put into use again. "Over sized" parts denote those parts having larger dimensions compared standard parts.
U/S	Under Size	In the same manner as with the "oversized" parts, if fitting part (e.g. bush and bearing) is replaced with a part having smaller bore dimensions, the other mating part may be put into use again. "Under sized" parts denote those parts having smaller dimensions compared with standard parts.
PR	Ply Rating	Represents strength of tires. The larger the ply rating number, the stronger the tire strength.
SAE	Society of Automotive Engineers	For example, automotive oils are designated as SAE so and so number. These designation numbers have been set forth by the Society of Automotive Engineers in the United States of America (SAE). The larger the SAE number, the higher the oil viscosity. Conversely, the smaller the SAE number, the lower the oil viscosity.
API	American Petroleum Institute	The standards set forth by the American Petroleum Institute (abbreviated as API Classification) have been employed to evaluate and classify properties of various oils. Engine oils for gasoline engines are classified as SD, SE, SF and so on, whereas engine oils for diesel engines are classified as CC, CD and so on.
SST	Special Service Tool	Refers to a tool designed for a specific purpose.
T	Torque	Refers to tightening torque.
S/A	Sub-Assembly	Refers to a component comprising more than two single parts which are welded, staked, or studded to each other to form a single component.
Ay	Assembly	Refers to an assembled component comprising more than two single parts or sub-assembly parts.
W/	With	Denotes that the following part is attached.
L/	Less	Denotes that the following part is not attached.
M/T	Manual Transmission	Refers to manual transmission.
A/T	Automatic Transmission	Refers to automatic transmission.
ISO	International Organization for Standardization	The standards set forth by the international Organization for Standardization (abbreviated as ISO classification) have been employed to evaluate and classify properties of various component parts and oils etc.

The abbreviation codes that appear in the figure stand for the following, respectively.

Ⓑ	Bolt	Ⓔ	Screw
Ⓓ	Nut	Ⓖ	Washer

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## SERVICING OPERATIONS

### 1. Jacking up

- (1) When only the front section or rear section of the vehicle is jacked up, be sure to place chocks at the wheels so as to insure safe operations.
- (2) When the vehicle has been jacked up, be sure to support the vehicle at the specified sections using safety stands.

### 2. In the case of repairs on the electrical system or the removal/installation of the engine, first disconnect the negative $\ominus$ terminal of the battery. Then, proceed to the operations. (On clock-equipped vehicles, set the time of the clock after the negative $\ominus$ terminal of the battery is connected.)

### 3. Repairing fuel system of Type CB-80 engine

Type CB-80 engine employs a high fuel pressure. Therefore, the following notes should be observed.

- (1) When the union bolt is removed, take a measure to prevent the fuel from splashing with a cloth or the like. Slacken the union bolt gradually.
- (2) Tighten each connecting section to the specified torque.
- (3) Attach the specified clip to each connecting section.

### 4. For increased work efficiency and improved accuracy, be sure to utilize the SSTs (Special Service Tools) effectively.

### 5. Removal and disassembly

- (1) When disassembling complicated components, put stamped marks or mating marks on those sections where such marks do not affect their functions so that the assembling operation may be performed easily.
- (2) Each time a part is removed, check the part for the assembled condition, deformation, breakage, roughness and scratches.
- (3) Arrange the disassembled parts in the disassembling order. In addition, separate and arrange those parts to be replaced and those parts to be reused.
- (4) Thoroughly clean and wash those parts to be reused.
- (5) Inspection and measurement of part  
Perform thorough inspection and measurement on those parts to be reused, as required.

### 6. Installation and assembly

- (1) Assemble those satisfactory parts, following the proper procedure and specified standards (adjusting values and tightening torque, etc.).
- (2) Ensure that seal packings and grease are applied to those sections where such application is needed.
- (3) Be sure to use new packings, gaskets, cotter pins and so forth.
- (4) Ensure that the specified bolts and nuts only be used. Moreover, where specified, make sure to employ a torque wrench to tighten bolts and nuts to the specified torque.  
Make sure to use only genuine parts for every replacement.

### 7. Adjustment and operation check

Adjust the reassembled or replaced components to the servicing specifications, using gauges and testers, as required.

### 8. Handling of hose, etc.

- (1) Connect fuel hoses and water hoses, etc. securely so that they exhibit no leakage.
- (2) When disconnecting fuel hoses, make sure that no fuel is splashed around the hose. (Special care must be exercised as to the engine mount rubber, etc., for there is a possibility that the rubber is deteriorated by the petrol-based liquid.)

## GENERAL INFORMATION

### 9. Touch-up painting

If paint finish surfaces of the body and bolts should be scratched when bolts, etc. are removed during the body alignment, etc., touch up the scratch with a paint having the same color as that of the body.

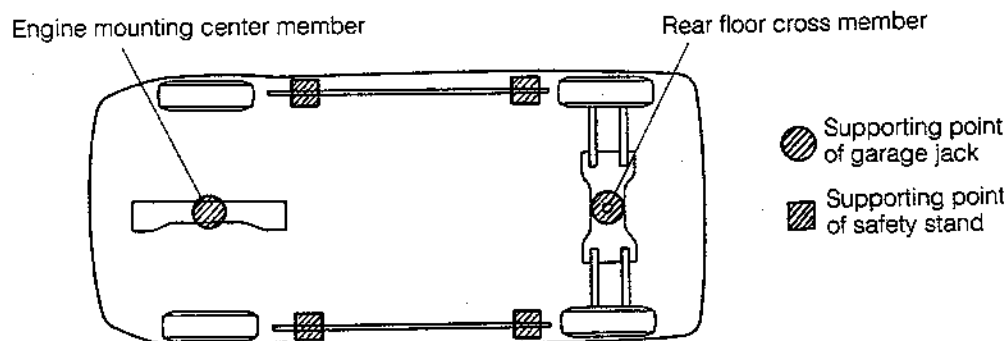
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## JACKING POINTS AND SUPPORTING POINTS OF SAFETY STANDS

### • Jacking point

Front side ..... Engine mounting center member (Place the jack below the member, exercising care of the exhaust pipe.)

Rear side ..... Center of rear floor cross member



### • Supporting points of safety stands

Four supporting points are located at the right and left sides. (The supporting points have been strengthened by spot-welding reinforcements. Never support the vehicle at points other than the specified points.)

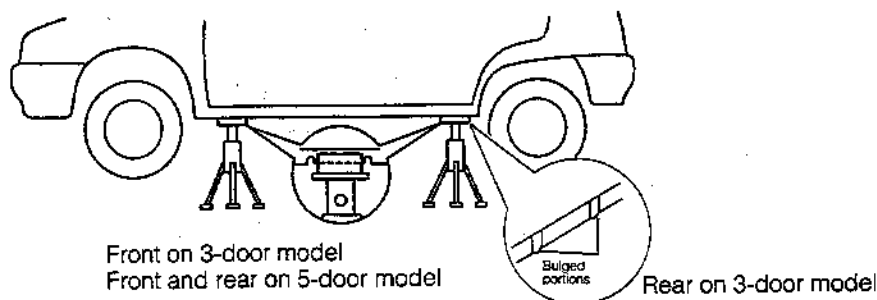


Fig. 1-1

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## SUPPORTING POINTS OF TWO-POST LIFT

Align the supporting pads of a two-post lift with the supporting points of safety stands, as indicated in the figure above.

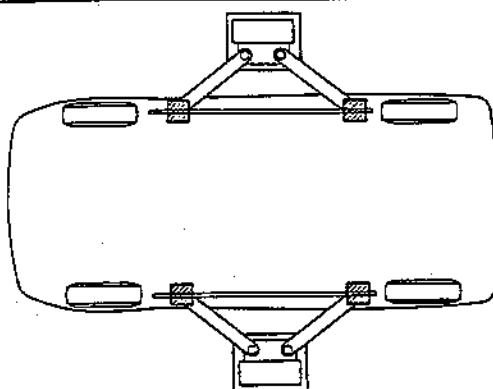


Fig. 1-2

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# **DAIHATSU** **CHARADE** Chassis

**2**

## **SECTION 2** **CLUTCH**

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WR-02001

## CLUTCH

### DESCRIPTION

### TROUBLE SHOOTING

Symptom	Possible causes	Remedies	Page
Gear shifting is hard or impossible.	<ul style="list-style-type: none"><li>Excessive clutch pedal free travel.</li><li>Excessive clutch disc runout, or damaged lining.</li><li>Input shaft or disc splined section contaminated or sticking.</li><li>Faulty clutch pressure plate.</li></ul>	<ul style="list-style-type: none"><li>Adjust clutch pedal free travel.</li><li>Check clutch disc.</li></ul>	2-3
		<ul style="list-style-type: none"><li>Repair, as required.</li></ul>	2-8
		<ul style="list-style-type: none"><li>Replace clutch cover.</li></ul>	2-8
Slipping clutch	<ul style="list-style-type: none"><li>Improper clutch pedal free travel.</li><li>Worn or oily clutch disc linings.</li><li>Faulty pressure plate.</li><li>Flattened diaphragm spring.</li></ul>	<ul style="list-style-type: none"><li>Adjust clutch pedal free travel.</li><li>Replace clutch disc.</li><li>Replace clutch cover.</li><li>Replace clutch cover.</li></ul>	2-3
			2-7
			2-7
Grabbing and chattering clutch	<ul style="list-style-type: none"><li>Worn or oily clutch disc linings.</li><li>Faulty pressure plate.</li><li>Flattened disc torsion spring.</li><li>Bent diaphragm spring.</li></ul>	<ul style="list-style-type: none"><li>Check clutch disc and replace, as required.</li></ul>	2-8
		<ul style="list-style-type: none"><li>Replace clutch cover.</li></ul>	2-7
		<ul style="list-style-type: none"><li>Replace clutch disc.</li><li>Replace clutch cover.</li></ul>	2-7
Clutch noises	<ul style="list-style-type: none"><li>Parts in housing loose.</li><li>Worn or contaminated release bearing.</li><li>Release fork and linkage seized.</li></ul>	<ul style="list-style-type: none"><li>Repair, as required.</li><li>Replace release bearing.</li></ul>	2-7
		<ul style="list-style-type: none"><li>Repair, as required.</li></ul>	
Dragging clutch (Poor clutch disengagement)	<ul style="list-style-type: none"><li>Clutch pedal free travel improperly adjusted.</li><li>Flattened diaphragm spring, or worn tip end of spring.</li></ul>	<ul style="list-style-type: none"><li>Adjust clutch pedal free travel.</li></ul>	2-3
		<ul style="list-style-type: none"><li>Replace clutch cover.</li></ul>	2-7

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### CLUTCH PEDAL ADJUSTMENT

- Check the clutch pedal for the installation height.  
Pedal installation height  
(Distance between pedal pad upper surface's center and dash panel)  
R.H.D. vehicle 189.5 - 194.5 mm (7.46 - 7.66 inch)  
L.H.D. vehicle 181.5 - 186.5 mm (7.15 - 7.34 inch)
- Adjust the pedal installation height, as required.
  - Slacken the lock nut. Turn the stopper bolt until the installation height conforms to the specification.
  - Tighten the lock nut.

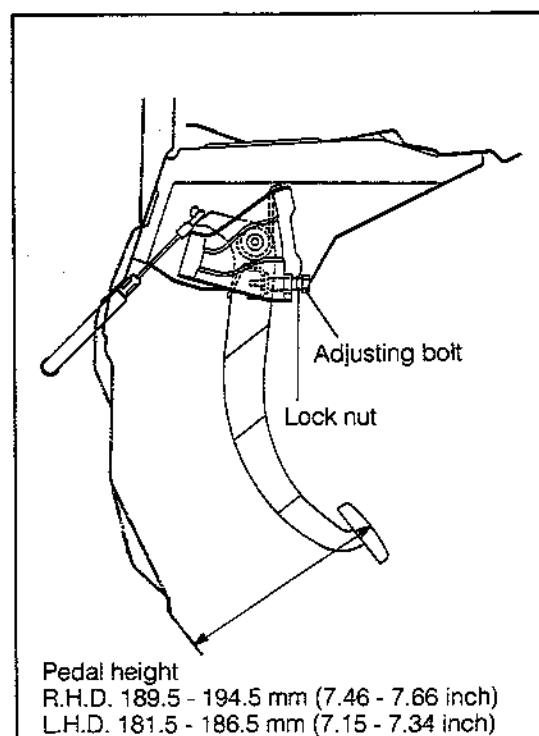


Fig. 2-1

WR-02003



## 3. Clutch cable adjustment

- (1) Pull the outer cable lightly with a force of 2 - 5 kg (4.4 - 11.0 lb). Check the clearance.
- (2) Ensure that the stopper (protruding portion) is fitted securely in the adjusting groove.
- (3) Adjusting position of clutch outer cable  
3 - 6 mm (0.12 - 0.24 inch)

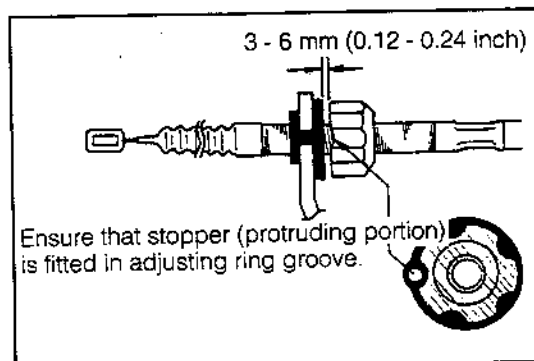


Fig. 2-2

WR-02004

## 4. Adjust the clutch pedal free travel.

- (1) Depress the clutch pedal gradually until you feel a resistance from the clutch. Measure the depressing distance up to this point.

**Pedal Free Travel: 15 - 30 mm (0.59 - 1.18 inch)**

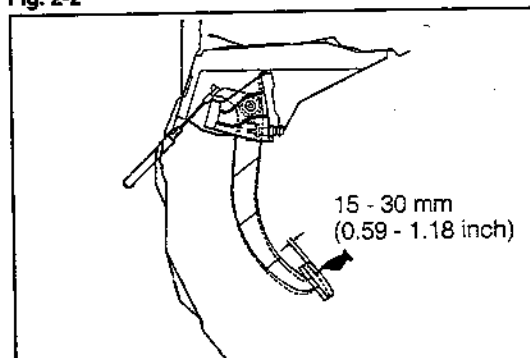


Fig. 2-3

WR-02005

5. Adjust the clearance between the clutch pedal and the floor with the pedal fully depressed. (Minimum clearance between the dash panel and the pedal arm)

**Vehicles mounted with Type CB-80 engine:**  
not less than 20 mm (0.79 inch)

**Vehicle other than those mounted with Type CB-80 engine:** not less than 25 mm (0.98 inch)

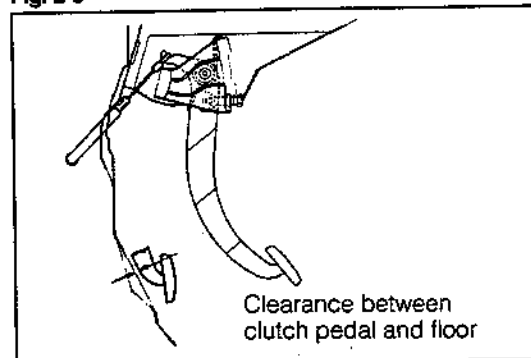


Fig. 2-4

WR-02006

## CLUTCH

### CLUTCH PEDAL AND CLUTCH RELEASE CABLE COMPONENTS

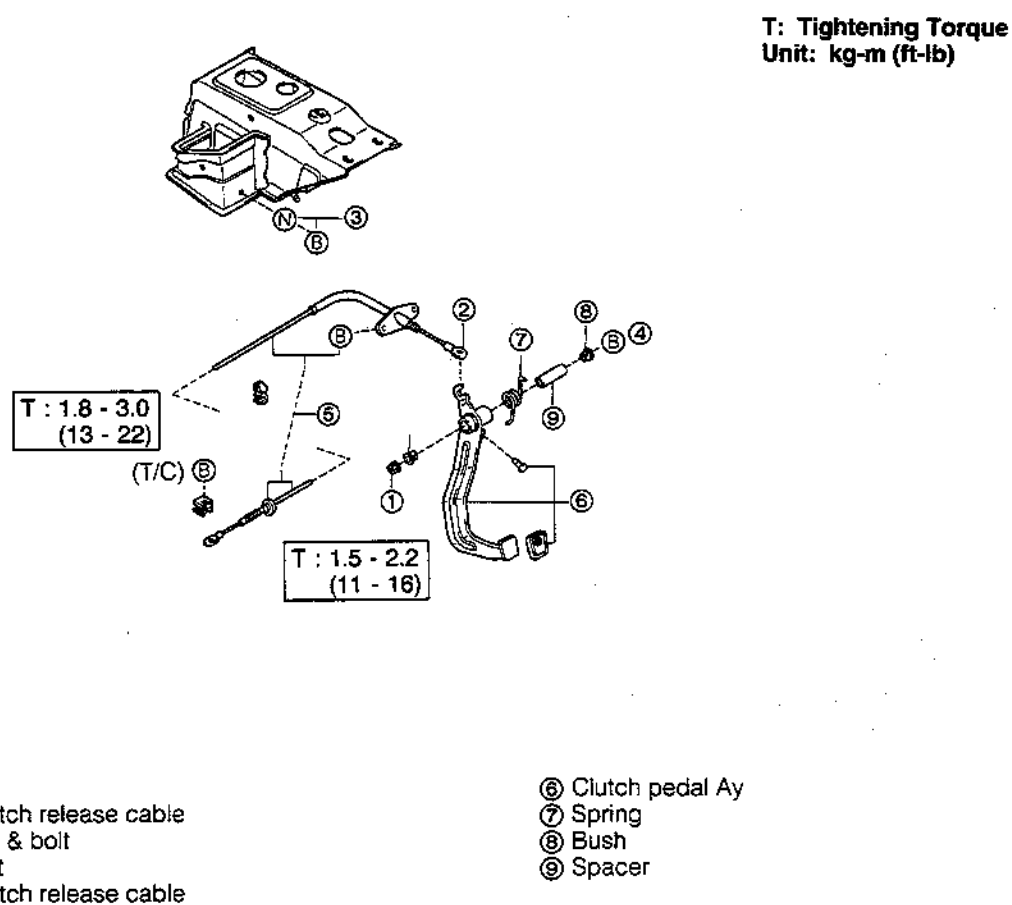


Fig. 2-5

WR-02007

### REMOVAL

1. Remove the brake pedal Ay. (Only for L.H.D. vehicles. See page 8-7)
2. Remove the nut located at the clutch pedal installation section. Separate the end section of the clutch release cable.
3. Remove the adjusting bolt.

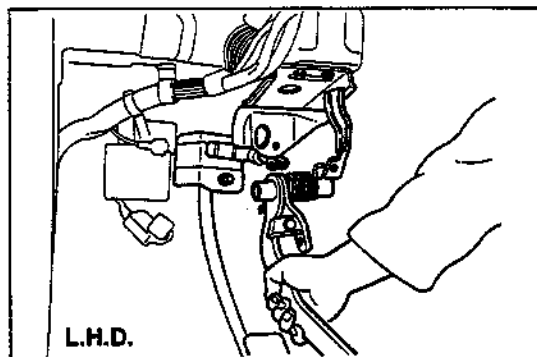


Fig. 2-6

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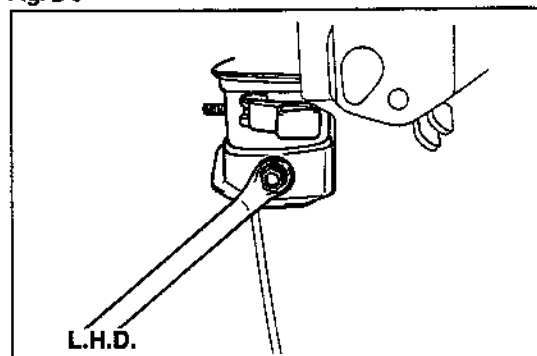


Fig. 2-7

WR-02009

4. Remove the bolt with washer.

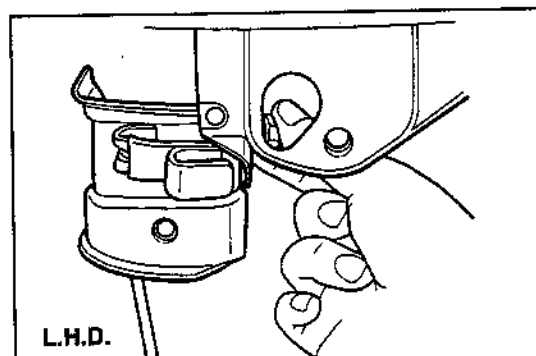


Fig. 2-8 WR-02010

5. Remove the cable bracket attaching bolt. Remove the clutch cable.

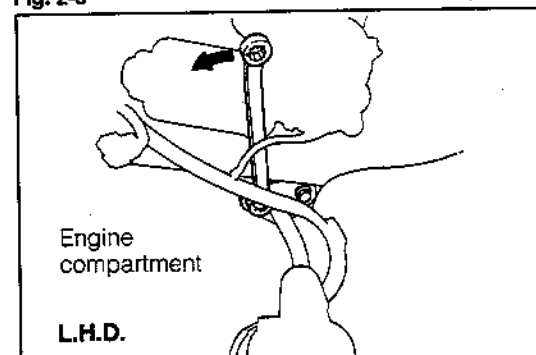


Fig. 2-9 WR-02011

6. Remove the clutch pedal assembly. Remove the spring, bush and spacer.

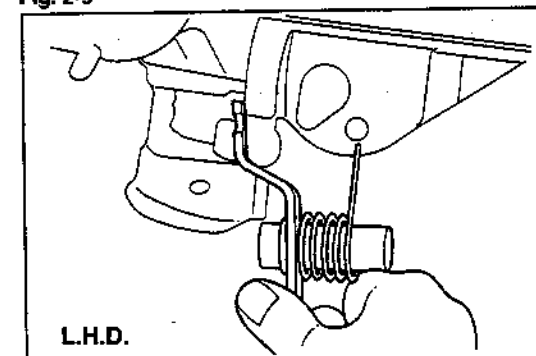


Fig. 2-10 WR-02012

## INSPECTION

Inspect the following parts.

1. Bush for wear or damage.
2. Pedal spacer for wear or damage.
3. Pedal for damage or deformation.
4. Pedal pad for wear or damage.
5. Spring for flattened condition.

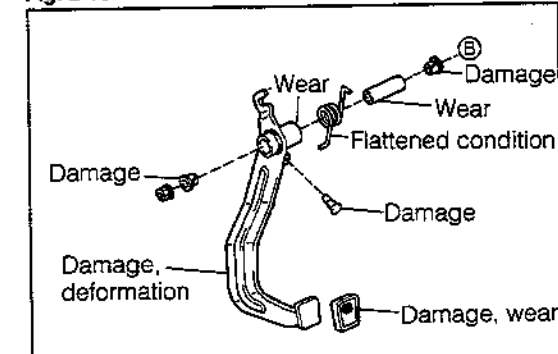


Fig. 2-11 WR-02013

6. Each section of clutch cable

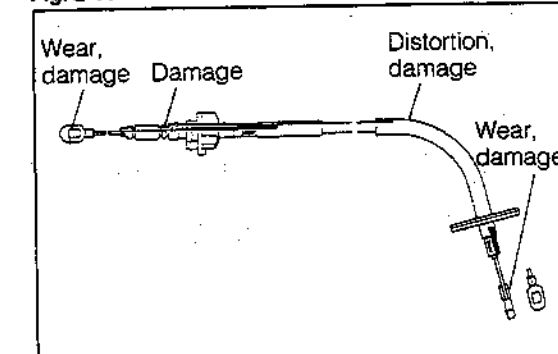


Fig. 2-12 WR-02014

# CLUTCH

## INSTALLATION

1. Apply MP grease to the following points.
  - (1) Inside of bush and spacer
  - (2) Connecting section of clutch pedal and release cable
2. Install the spring, bush and spacer to the clutch pedal assembly. Then, install the assembly to the pedal bracket.
3. Install the bolt with washer in position.
4. Install both ends of the clutch cable. Tighten the bracket with the bolts.  
**Tightening Torque: 0.4 - 0.7 kg-m (2.9 - 5.1 lb)**
5. Install the adjusting bolt.
6. Tighten the nut.  
**Tightening Torque: 1.5 - 2.2 kg-m (11 - 16 lb)**
7. Depress the clutch pedal two or three times. Proceed to adjust the clutch pedal, following the procedure at page 2-2.
8. Install the brake pedal Ay. (Only for L.H.D. vehicles. See page 8-8)

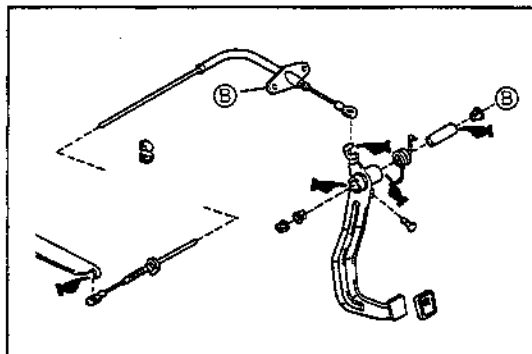


Fig. 2-13

WR-02015

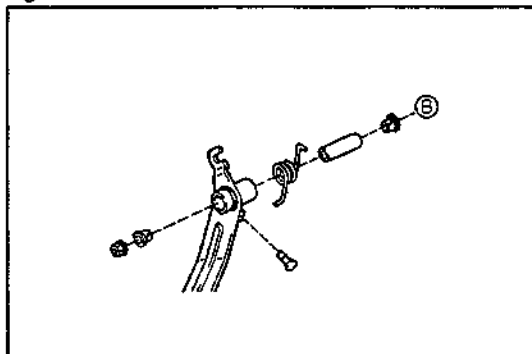


Fig. 2-14

WR-02016

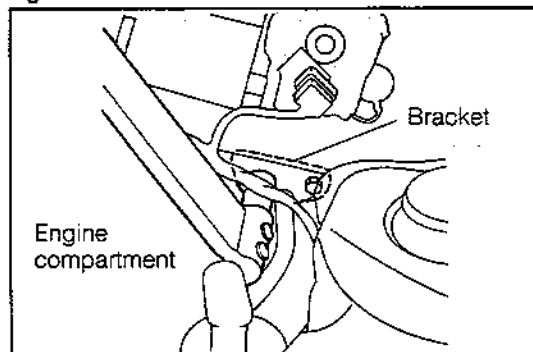


Fig. 2-15

WR-02017

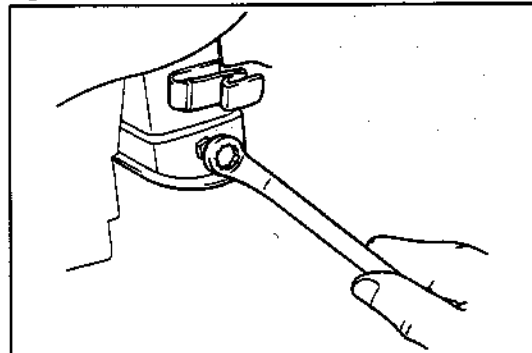


Fig. 2-16

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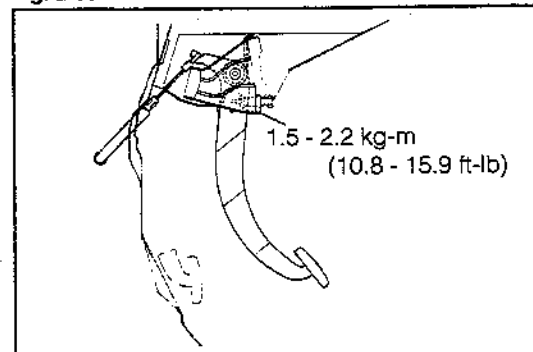
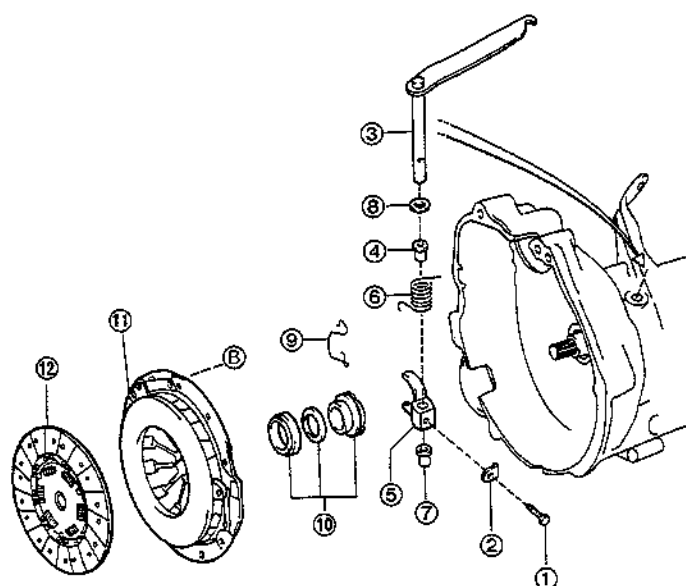


Fig. 2-17

WR-02019

## CLUTCH UNIT COMPONENTS



- ① W/Washer bolt
- ② Lock plate
- ③ Clutch release fork lever
- ④ Bush No.1
- ⑤ Clutch release lever yoke
- ⑥ Torsion spring

- ⑦ Bush No.1
- ⑧ Dust seal
- ⑨ Release bearing clip
- ⑩ Clutch release bearing hub
- ⑪ Clutch cover
- ⑫ Clutch disc

Fig. 2-18

WR-02020

### REMOVAL

1. Remove the transmission assembly from the vehicle. (See page 3-3.)

**SEE  
TRANSMISSION  
REMOVAL SECTION  
Page 3-3 to 3-7.**

2. Release the lock plate. Proceed to remove the lock plate along with the bolt.

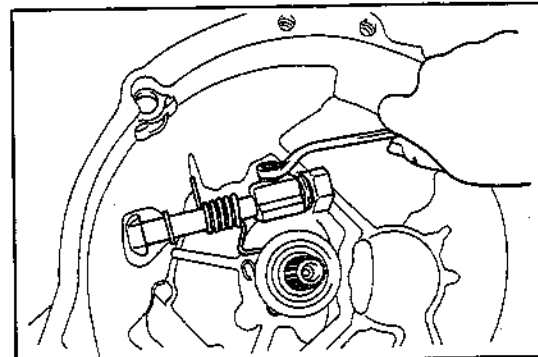


Fig. 2-19

WR-02021

## CLUTCH

3. Pull out the clutch release fork lever. Remove the bush, release lever yoke, spring, release bearing clip and release bearing hub.
4. Remove the clutch cover from the flywheel. Take out the clutch disc.

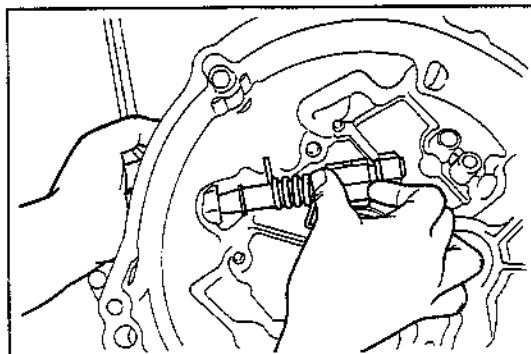


Fig. 2-20

WR-02023

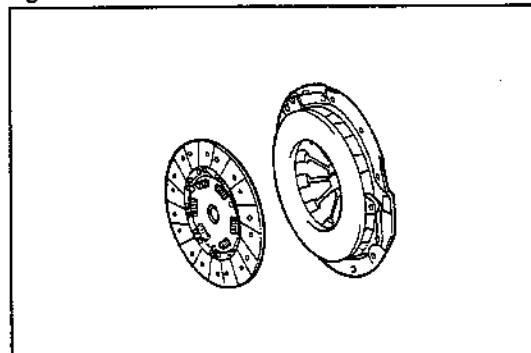


Fig. 2-21

WR-02024

## INSPECTION

1. Check the pressure plate and flywheel surface for scores, cracks and discoloration.
2. Check the diaphragm spring tips for wear, rust and breakage.
3. Check the clutch disc for wear and runout.  
Allowable Wear Limit (Rivet Depth):  
0.3 mm (0.012 inch)

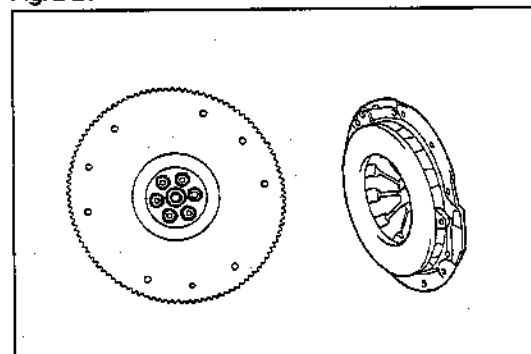


Fig. 2-22

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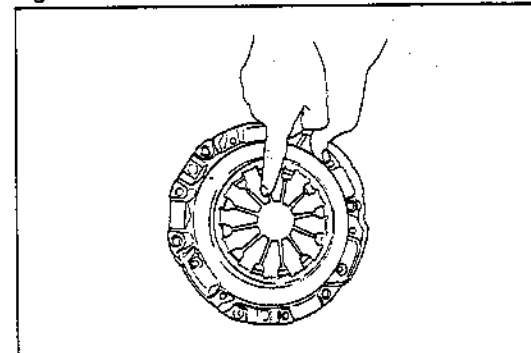


Fig. 2-23

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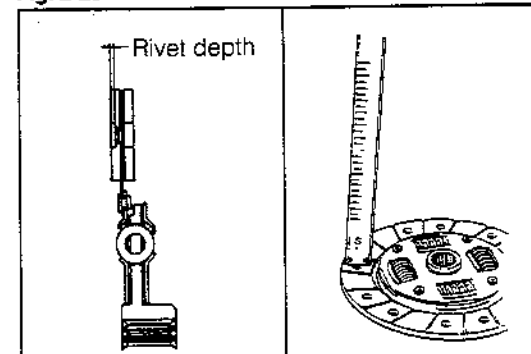


Fig. 2-24

WR-02027

Allowable Limit of Lateral Runout:  
1.34 mm (0.0528 inch)

**NOTE:**

Measure the lateral runout with the clutch disc assembled onto a new input shaft.

4. Check to see if the release bearing rotates smoothly. Rotate the release bearing by your hand, while applying a pressure to the bearing in a thrust direction. Check to see if the bearing rotates without any abnormal feeling or binding.

5. Check the release bearing hub, clip-contacting surface and hub-to-housing sliding section for damage and wear.

6. Check to see if the clip has the configuration as shown in the figure in its horizontal plane.

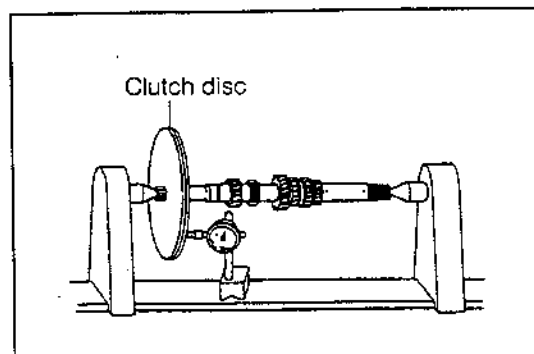


Fig. 2-25

WR-02028

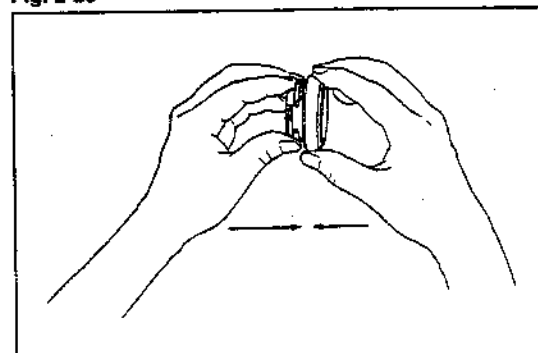


Fig. 2-26

WR-02029

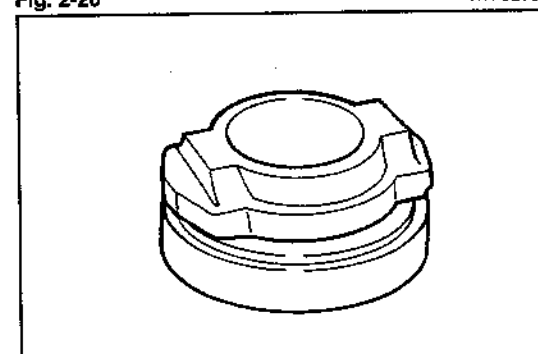


Fig. 2-27

WR-02030

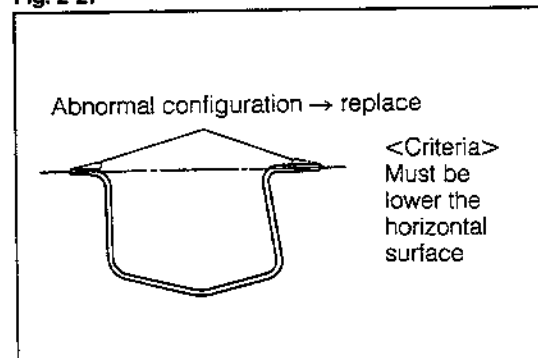


Fig. 2-28

WR-02031

# CLUTCH

## INSTALLATION

1. Install the clutch disc and clutch cover, using the following SST.

SST: 09301-87202-000

Bolt Tightening Torque: 1.5 - 2.2 kg-m (11 - 16 ft-lb)

### NOTE:

- (1) Assemble the clutch disc in the direction as shown in the figure.
  - (2) Tighten the bolts evenly, starting with those bolts provided near the locating pin.
  - (3) Apply long-life chassis grease to the clutch disc splined section.
2. Check the clutch cover diaphragm spring tips for variation in height. Adjust the diaphragm spring tips, as required.

### Check

Allowable Limit of Variation in Height:

0.7 mm (0.028 inch)

SST: 09302-87701-000

87702

### Adjustment

Align the diaphragm spring tips at such a height that makes the number of tips to be adjusted at a minimum number.

SST: 09333-00011-000

3. Assemble the clutch release bearing hub and release bearing clip to the clutch release lever yoke.
- (1) Bring the cut-out section of the release lever yoke in contact with the clip.
  - (2) Under the condition described in (1), assemble the lever yoke by turning it 180 degrees.

### NOTE:

Apply long-life chassis grease to the yoke-to-hub sliding section and bearing-to-housing case sliding section.

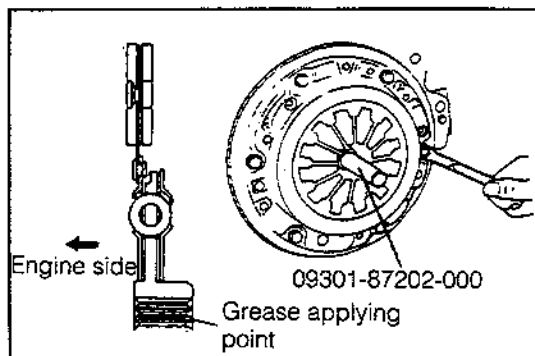


Fig. 2-29

WR-02032

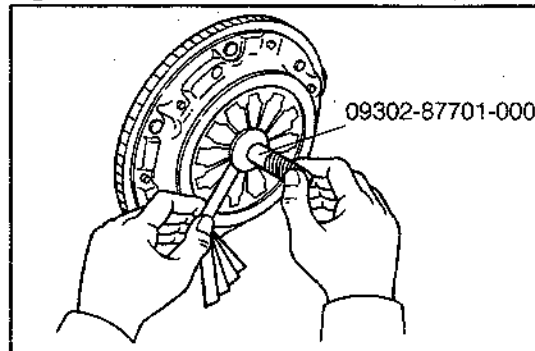


Fig. 2-30

WR-02032A

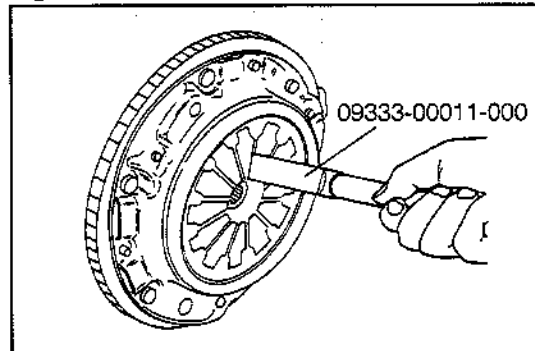


Fig. 2-31

WR-02033

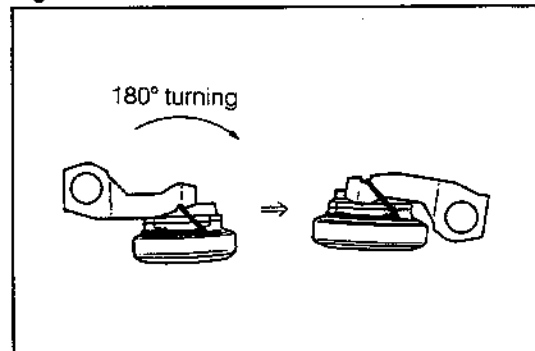


Fig. 2-32

WR-02034

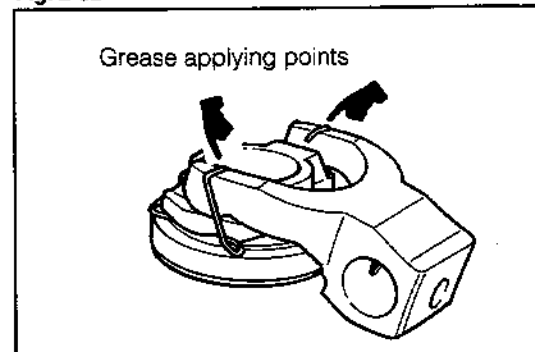


Fig. 2-33

WR-02035



4. Assemble the bush, dust seal, torsion spring and clutch release lever in position.

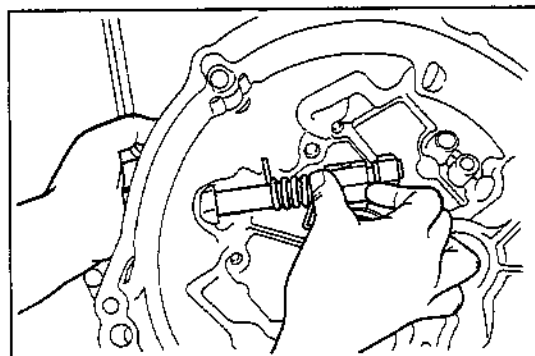


Fig. 2-34

WR-02036

5. Assemble the bolt with washer, with the lock plate interposed.

Tightening Torque: 3.0 - 4.0 kg-m (22 - 29 ft-lb)

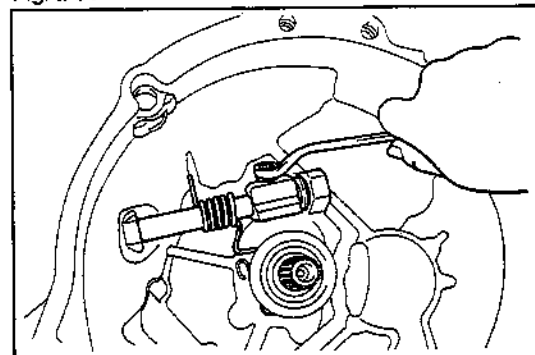


Fig. 2-35

WR-02037

6. Check the release hub and yoke for proper operation. Operate the clutch release lever about 50 times. Check the section A of the clip. If the clip exhibits excessive spread and there is a likelihood that the clip may be detached, replace it with a new clip.
7. Install the transmission assembly to the vehicle.  
(See page 3-7.)

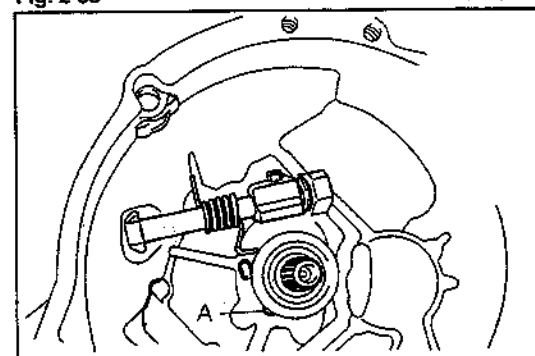
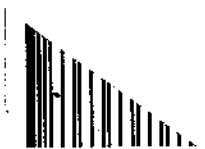


Fig. 2-36

WR-02038



# DAIHATSU

# CHARADE

## Chassis

3

## SECTION 3

## MANUAL TRANSMISSION

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WR-03001

SECTIONAL VIEW

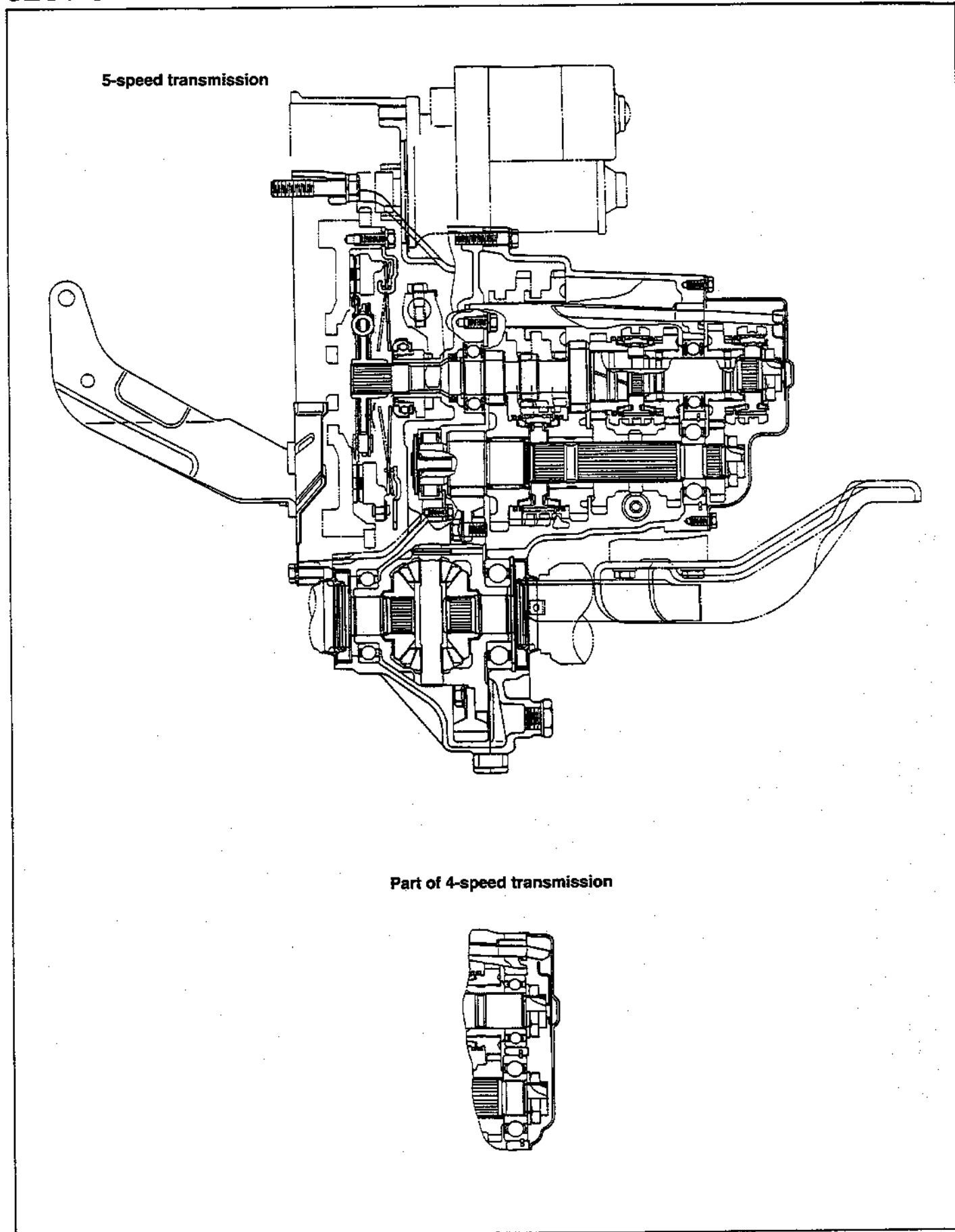


Fig. 3-1

WR-03002

Item \ Kind		4-speed	5-speed			
Engine type		CB-23	CB-23	CL-11	CB-61, CL-61	CB-80
Transmission type		Forward gears: Constant mesh, Reverse gear: Selective sliding				
Gear ratio (Tooth number)	1st gear	3.090 (34/11)	3.090 (34/11)	3.090 (34/11)	3.090 (34/11)	3.090 (34/11)
	2nd gear	1.842 (35/19)	1.842 (35/19)	1.842 (35/19)	1.842 (35/19)	1.750 (35/20)
	3rd gear	1.230 (32/26)	1.230 (32/26)	1.230 (32/26)	1.230 (32/26)	1.230 (32/26)
	4th gear	0.864 (32/37)	0.864 (32/37)	0.864 (32/37)	0.864 (32/37)	0.916 (33/36)
	5th gear	—	0.707 (29/41)	0.707 (29/41)	0.707 (29/41)	0.750 (30/40)
	Reverse gear	3.142 (44/30/14)	3.142 (44/30/14)	3.142 (44/30/14)	3.142 (44/30/14)	3.142 (44/30/14)
Final reduction gear ratio (Tooth number)		* <sup>1</sup> 4.500 (72/16)	* <sup>3</sup> 4.500 (72/16)	4.933 (74/15)	4.642 (65/14)	4.642 (65/14)
Number of speedometer gear teeth (driven/drive)		* <sup>2</sup> 16/4	* <sup>4</sup> 16/4	* <sup>5</sup> 18/4	21/5	21/5
Trans- mission oil	Kind	SAE 80, GL-3	SAE-80, GL-3	SAE-80, GL-3	SAE-80, GL-3	SAE-80, GL-3
	Capacity $\ell$ (Imp. qts U.S. qts)	1.9 - 2.0 (1.67 - 1.76, 2.0 - 2.1)	2.1 - 2.2 (1.85 - 1.94, 2.2 - 2.3)	2.1 - 2.2 (1.85 - 1.94, 2.2 - 2.3)	2.1 - 2.2 (1.85 - 1.94, 2.2 - 2.3)	2.1 - 2.2 (1.85 - 1.94, 2.2 - 2.3)

\*<sup>1</sup>4.933 (74/15), \*<sup>2</sup>18/4 for Swedish specifications

\*<sup>3</sup>4.933 (74/15), \*<sup>4</sup>18/4 for Swiss & Swedish specifications

\*<sup>5</sup> 17/4: When 155/80 R13 tires are used:

WR-03003

## MANUAL TRANSMISSION ASSEMBLY REMOVAL

1. Remove the engine hood assembly.
2. Remove the hold-down clamp and battery.
3. Remove the battery carrier stay.

4. Disconnect the following harnesses:
  - (1) Harness to starter ①
  - (2) Transmission earth
  - (3) Backup lamp harness ②

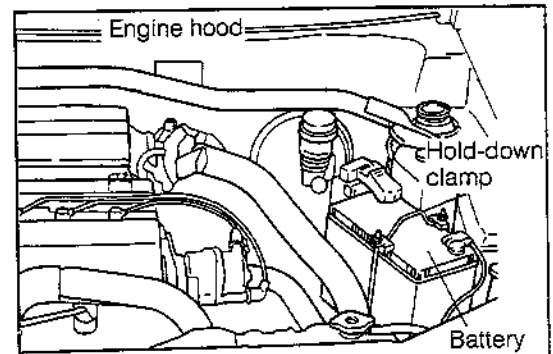


Fig. 3-2

WR-03004

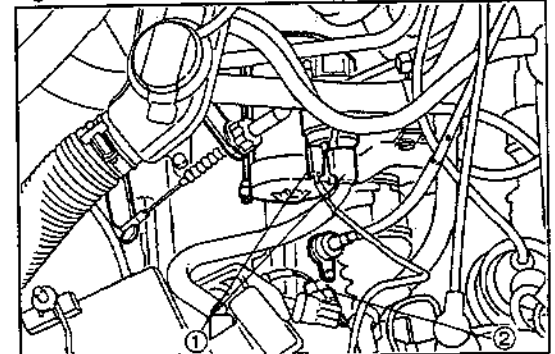


Fig. 3-3

WR-03005

## MANUAL TRANSMISSION

5. Remove the intercooler assembly.  
(Vehicles mounted with Type CB-80 engine only)

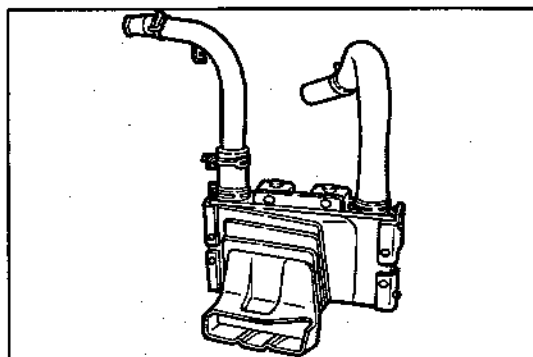


Fig. 3-4

WR-03006

6. Remove the starter assembly.

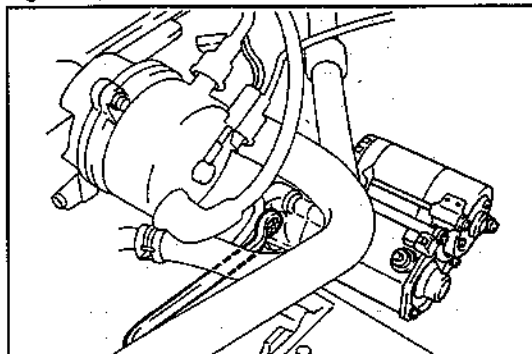


Fig. 3-5

WR-03007

7. Disconnect the speedometer cable.

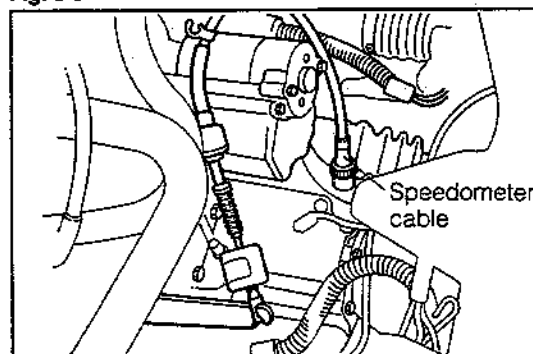


Fig. 3-6

WR-03008

8. Detach the three harness clamps.

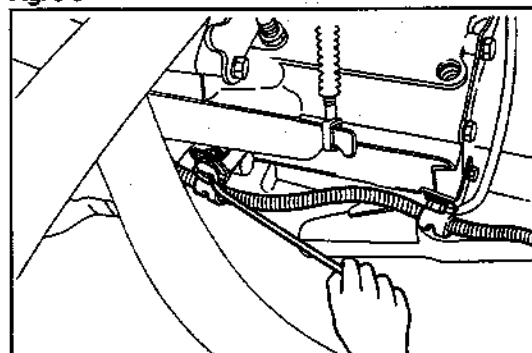


Fig. 3-7

WR-03009

9. Disconnect the clutch cable.

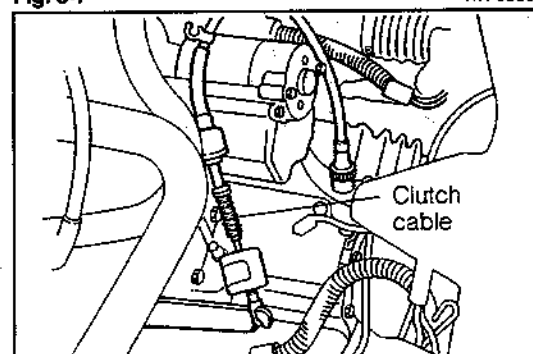


Fig. 3-8

WR-03010

10. Remove the two bolts that directly attach the transmission assembly to the engine.

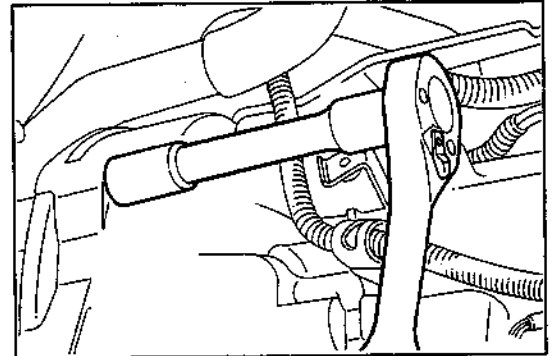


Fig. 3-9

WR-03011

11. Jack up the vehicle. Remove the front tires at the right and left sides of the vehicle.

**NOTE:**

Be sure to support the vehicle securely by means of safety stands.

12. Drain the transmission oil.

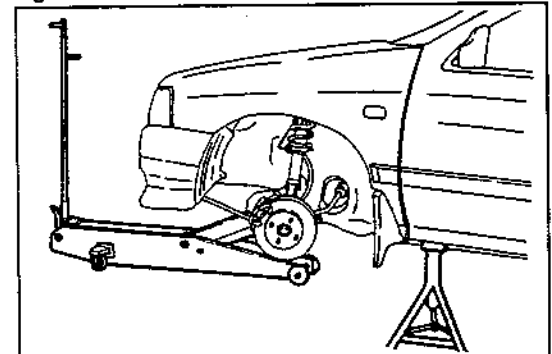


Fig. 3-10

WR-03012

13. Detach the engine undercover. (Type CL engine only)
14. Remove the lower suspension brace. (Types CB-61 and CB-80 engines only)

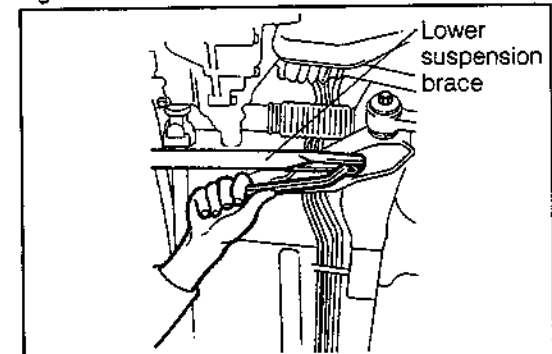


Fig. 3-11

WR-03013

15. Disconnect the front exhaust pipe at the bracket support No.1 and manifold sides.

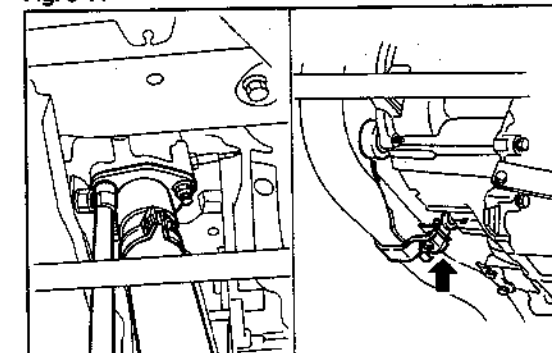


Fig. 3-12

WR-03014

16. Disconnect the following control linkage-related parts from the transmission housing.
  - (1) Shift & select shaft S/A
  - (2) Extension rod S/A

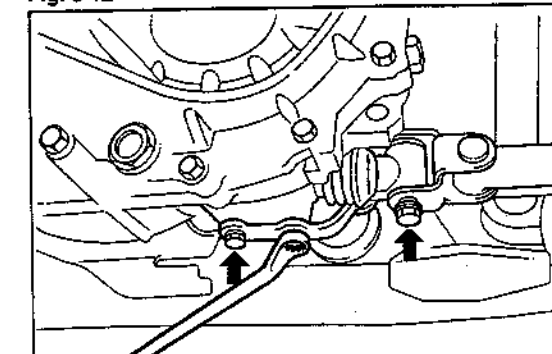


Fig. 3-13

WR-03015

## MANUAL TRANSMISSION

### 17. Remove the stabilizer bar.

- (1) Remove the stabilizer bar end nut and retainer.
- (2) Remove the stabilizer bar installing nuts.

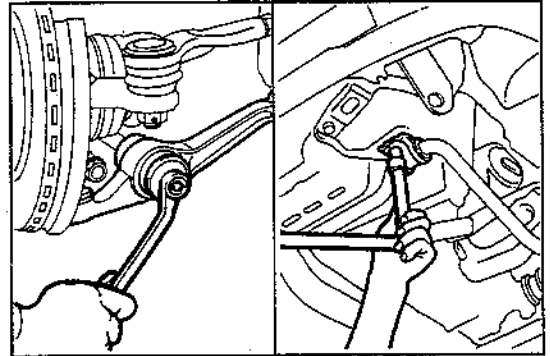


Fig. 3-14

WR-03016

### 18. Disconnect the lower arm at the bracket side.

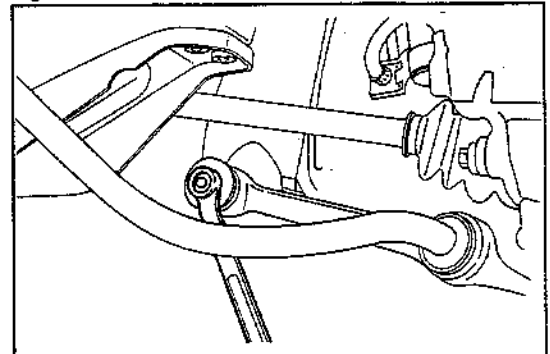


Fig. 3-15

WR-03017

### 19. Remove the drive shafts at the right and left sides, using the following SST.

SST: 09648-87201-000

#### NOTE:

1. No stopper is provided at the inboard side of the drive shaft. Hence, be sure to support the inboard joint section during the removal.
2. Be very careful not to damage the lip section of the oil seal during the removal.
3. As for the right side of vehicles mounted with Type CB-80 engine, insert a crowbar into between the protruding section of the bearing shaft and the drive shaft. Then take out the front drive shaft, being very careful not to deform the dust cover of the drive shaft.

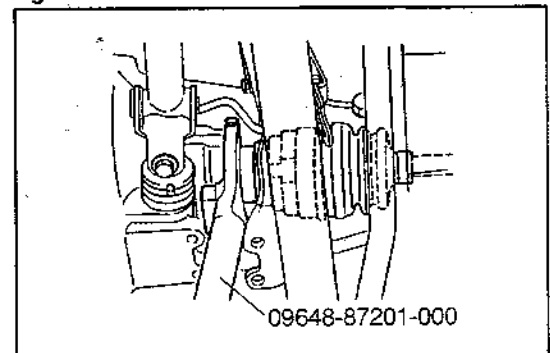


Fig. 3-16

WR-03018

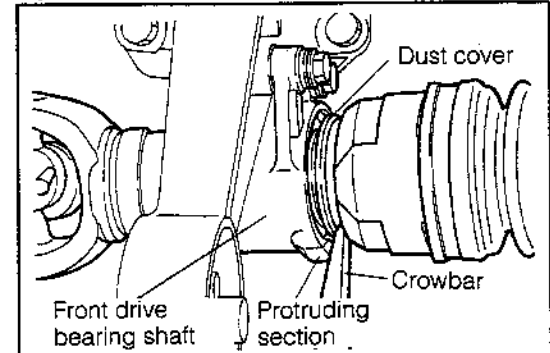


Fig. 3-17

WR-03019

### 20. Remove the front drive bearing shaft assembly.

(Vehicles mounted with Type CB-80 engine only)

- (1) Remove the two bolts and pull out the front driveshaft bearing shaft from the transmission assembly.

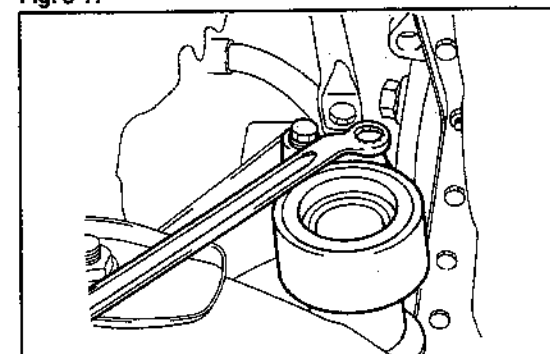


Fig. 3-18

WR-03020



21. Remove the transmission assembly attaching bolts.

**NOTE:**

Be sure to leave the one bolt located at the front central part.

22. Lightly support the lower part of the transmission, using a jack. Then, remove the engine mounting lower/left bracket attaching bolts. Turn the engine mounting lower/left insulator 90 degrees so that it may point upward.

23. Remove the one bolt located at the front central part of the transmission assembly. Slowly jack down the transmission assembly and take it out from below the vehicle.

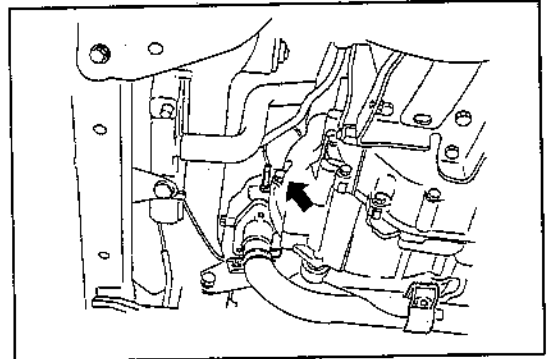


Fig. 3-19

WR-03021

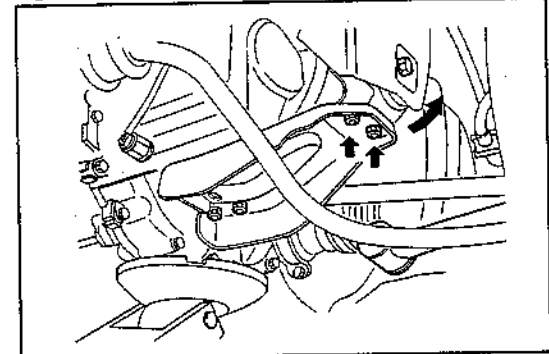


Fig. 3-20

WR-03022

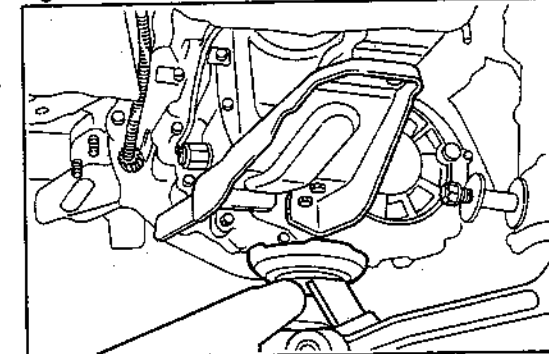


Fig. 3-21

WR-03023

## INSTALLATION

1. Install the transmission assembly to the engine assembly as follows:
- (1) Ensure that the clutch disc is centered in position, using the SST given below.  
SST: 09301-87702-000
  - (2) Install the transmission, making sure that the clutch disc may not be pried. Temporarily tighten the attaching bolts.

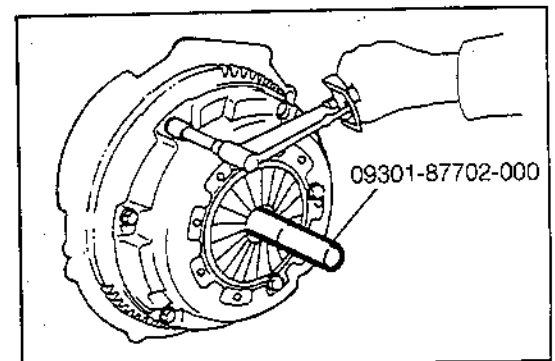


Fig. 3-22

WR-03024

## MANUAL TRANSMISSION

2. Tighten the transmission assembly attaching bolts securely.

**Tightening Torque:** 5.0 - 7.0 kg-m (36 - 51 ft-lb)

3. Install the engine mounting lower/left insulator and engine mounting lower/left bracket.

**Bracket Tightening Torque:**

3.0 - 4.5 kg-m (22 - 33 ft-lb)

**Insulator Tightening Torque:**

7.5 - 10.5 kg-m (54 - 76 ft-lb)

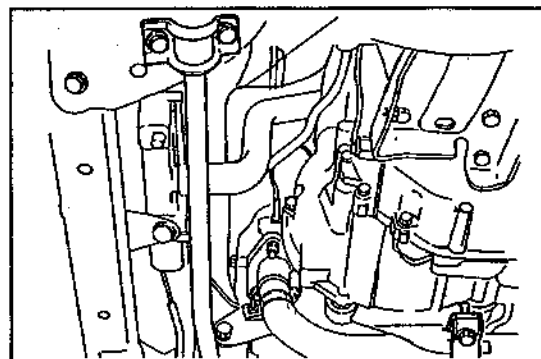


Fig. 3-23

WR-03025

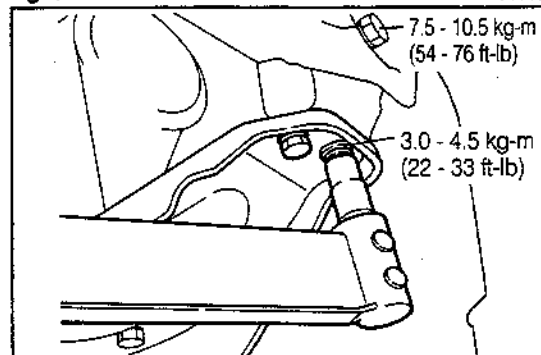


Fig. 3-24

WR-03026

4. Install the front drive bearing shaft assembly as follows:  
(Vehicles mounted with Type CB-80 engine only)

- (1) Slowly install the bearing shaft assembly to the differential case, making sure that no damage is made to the lip section of the oil seal.

- (2) Tighten the two attaching bolts.

**Tightening Torque:** 3.0 - 4.5 kg-m (22 - 33 ft-lb)

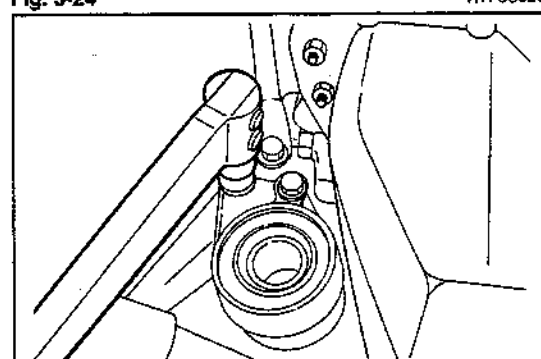


Fig. 3-25

WR-03027

5. Install the drive shafts at the right and left sides.

**NOTE:**

Slowly install the drive shaft to the differential case, making sure that no damage is made to the lip section of the oil seal.

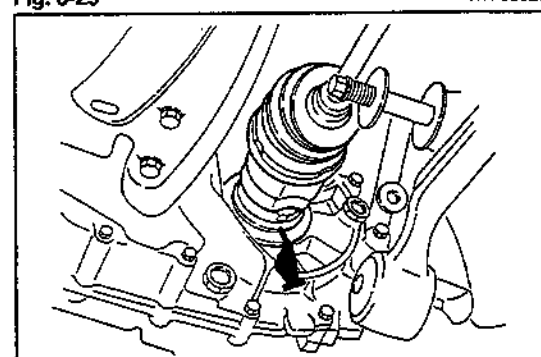


Fig. 3-26

WR-03028

6. Install the lower arm (at the bracket side). Temporarily tighten the attaching bolts.

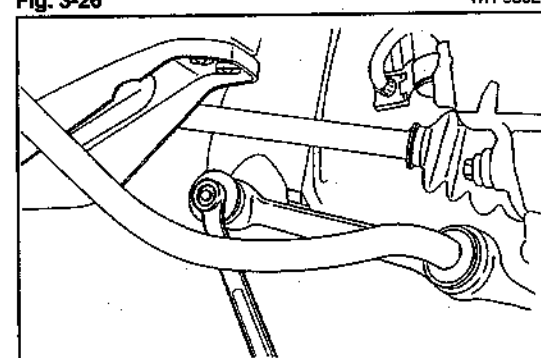


Fig. 3-27

WR-03029

7. Install the stabilizer bar.
  - (1) Temporarily tighten the stabilizer bar end nut.
  - (2) Tighten the cushion and stabilizer bar bracket.

Tightening Torque: 4.0 - 6.0 kg-m (29 - 43 ft-lb)

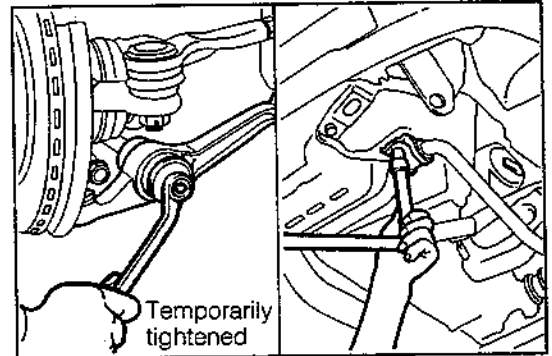


Fig. 3-28

WR-03030

8. Install the following control linkage-related parts:
  - (1) Shift & select shaft S/A
 

Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)
  - (2) Extension rod S/A
 

Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)

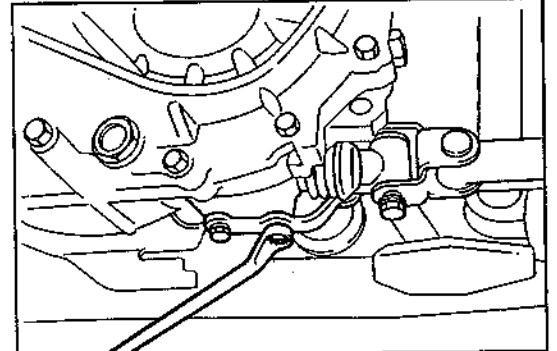


Fig. 3-29

WR-03031

9. Install the manifold side of the front exhaust pipe. Install the bracket support No.1.
  - (1) Manifold side
 

Tightening Torque: 3.0 - 5.0 kg-m (22 - 36 ft-lb)
  - (2) Bracket support No.1
 

Tightening Torque: 2.0 - 3.0 kg-m (14.5 - 22 ft-lb)

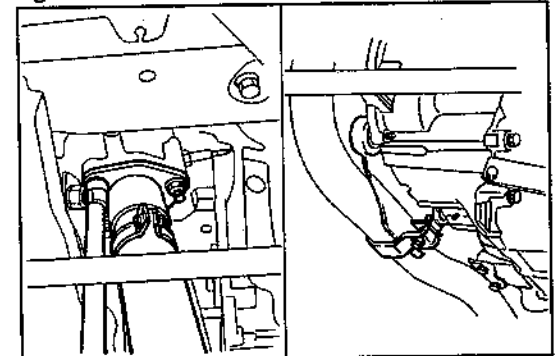


Fig. 3-30

WR-03032

10. Install the lower suspension brace.
 

(Vehicles mounted with Type CB-61 and CB-80 engines only)

Tightening Torque: 4.0 - 5.5 kg-m (29 - 40 ft-lb)

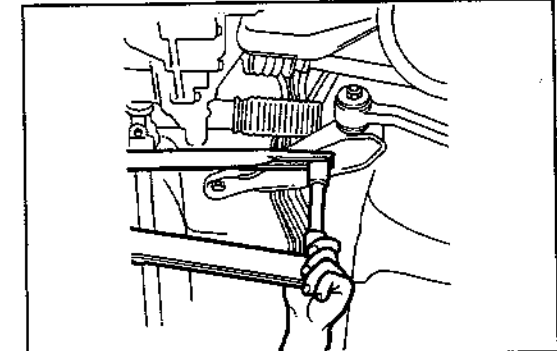


Fig. 3-31

WR-03033

12. Install the front wheels at the right and left wheels. Jack down the vehicle.
13. Rock the vehicle in a up-and-down direction a few times so as to settle the suspension.
 

With the vehicle in an unloaded, tighten the nuts.

  - (1) Stabilizer bar installing nuts
 

Tightening Torque: 7.5 - 11.0 kg-m (54 - 80 ft-lb)
  - (2) Lower arm (bracket side)
 

Tightening Torque: 7.0 - 10.0 kg-m (51 - 72 ft-lb)

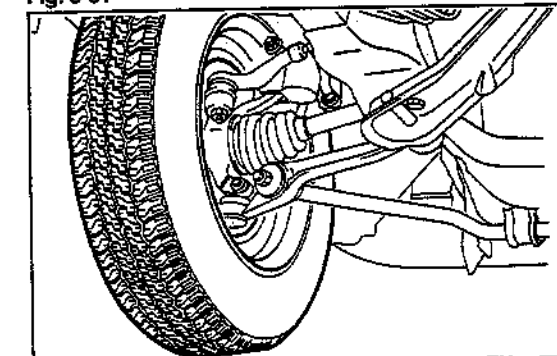


Fig. 3-32

WR-03034

## MANUAL TRANSMISSION

13. Fill the transmission oil.

Oil capacity:

4-speed transmission: 1.9 - 2.0 ℓ  
(1.7 - 1.8 Imp qts, 2.0 - 2.1 U.S. qts.)

5-speed transmission: 2.1 - 2.2 ℓ  
(1.8 - 1.9 Imp qts, 2.2 - 2.3 U.S. qts.)

14. Install the clutch cable.

(See page 2-3.)

15. Attach the three harness clamps.

16. Install the speedometer cable.

17. Install the starter assembly.

Tightening Torque: 5.0 - 7.0 kg-m (36 - 51 ft-lb)

18. Install the intercooler assembly.

(Vehicles mounted with Type CB-80 engine only)

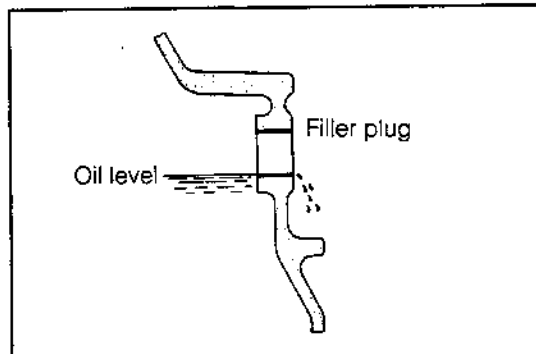


Fig. 3-33

WR-03035

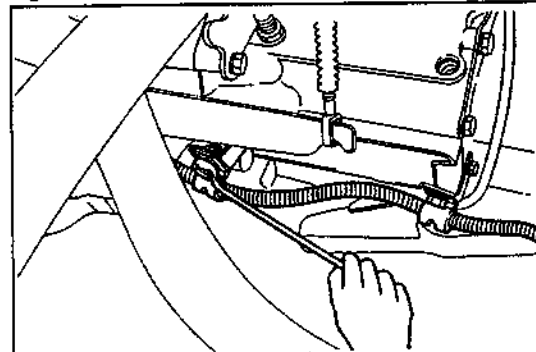


Fig. 3-34

WR-03036

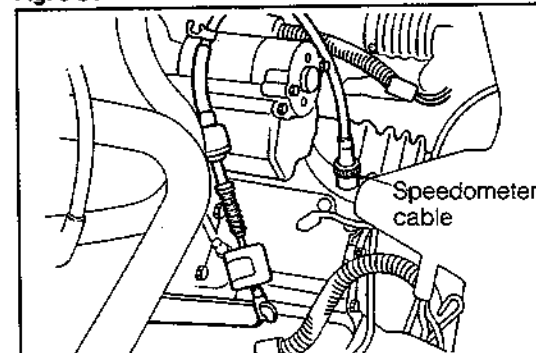


Fig. 3-35

WR-03037

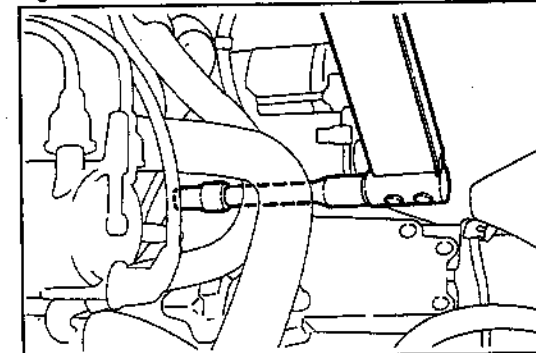


Fig. 3-36

WR-03038

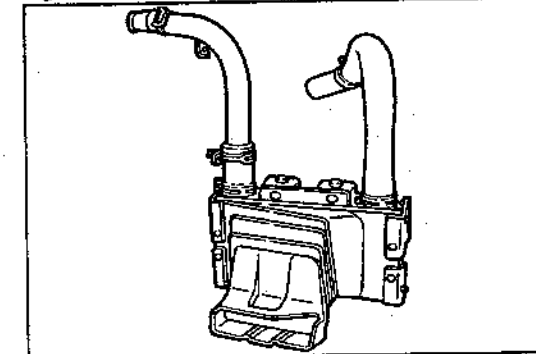


Fig. 3-37

WR-03039

19. Install the following harnesses:

- (1) Harness to starter ①
- (2) Transmission earth ②
- (3) Backup lamp harness ③

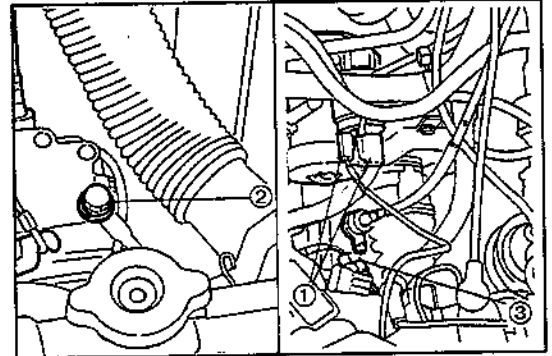


Fig. 3-38

WR-03040

20. Install the battery carrier stay, battery, hold-down clamp and engine hood assembly.

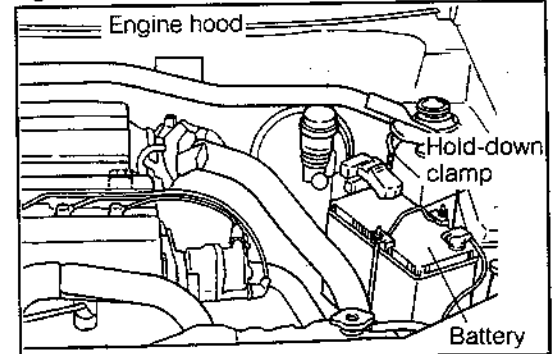
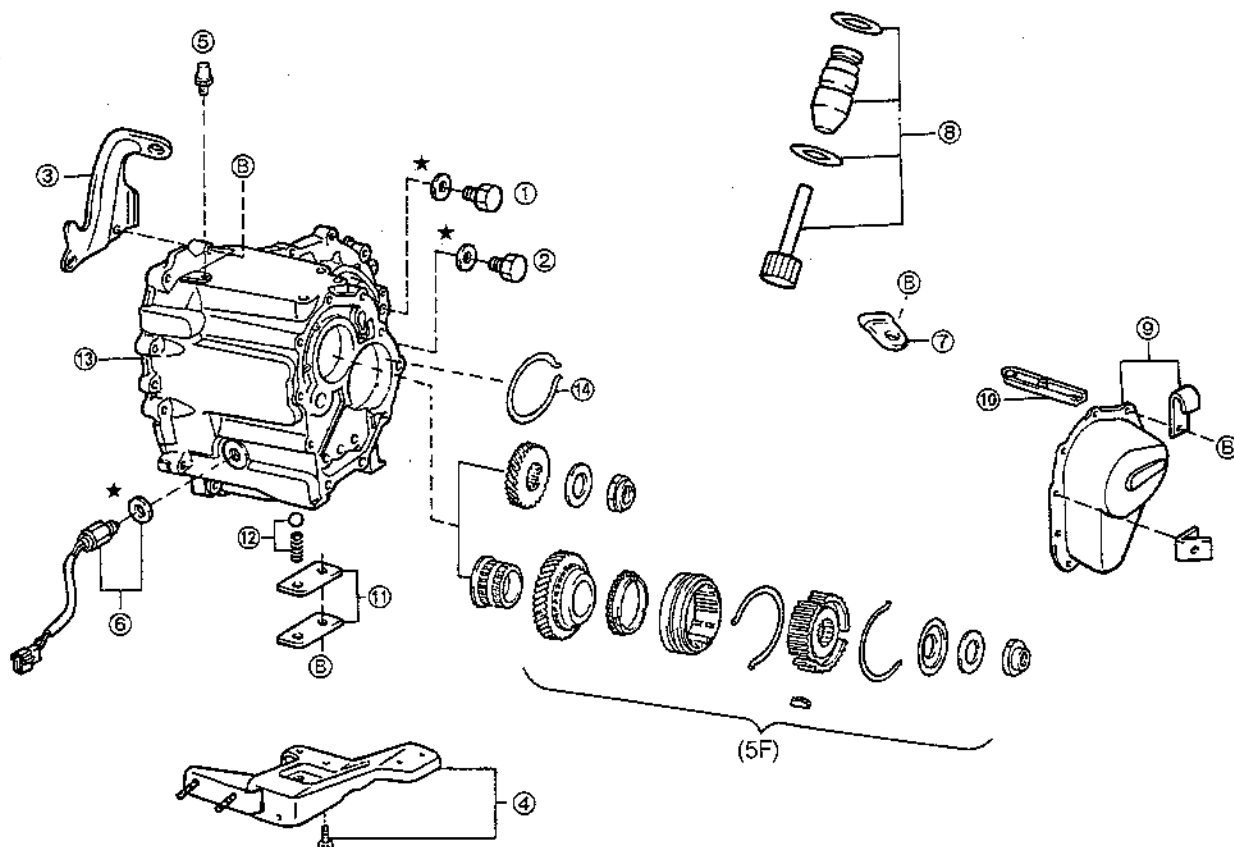


Fig. 3-39

WR-03041

# DISASSEMBLY, INSPECTION AND ASSEMBLY OF TRANSMISSION HOUSING, CASE S/A AND CASE COVER COMPONENTS (PART 1)



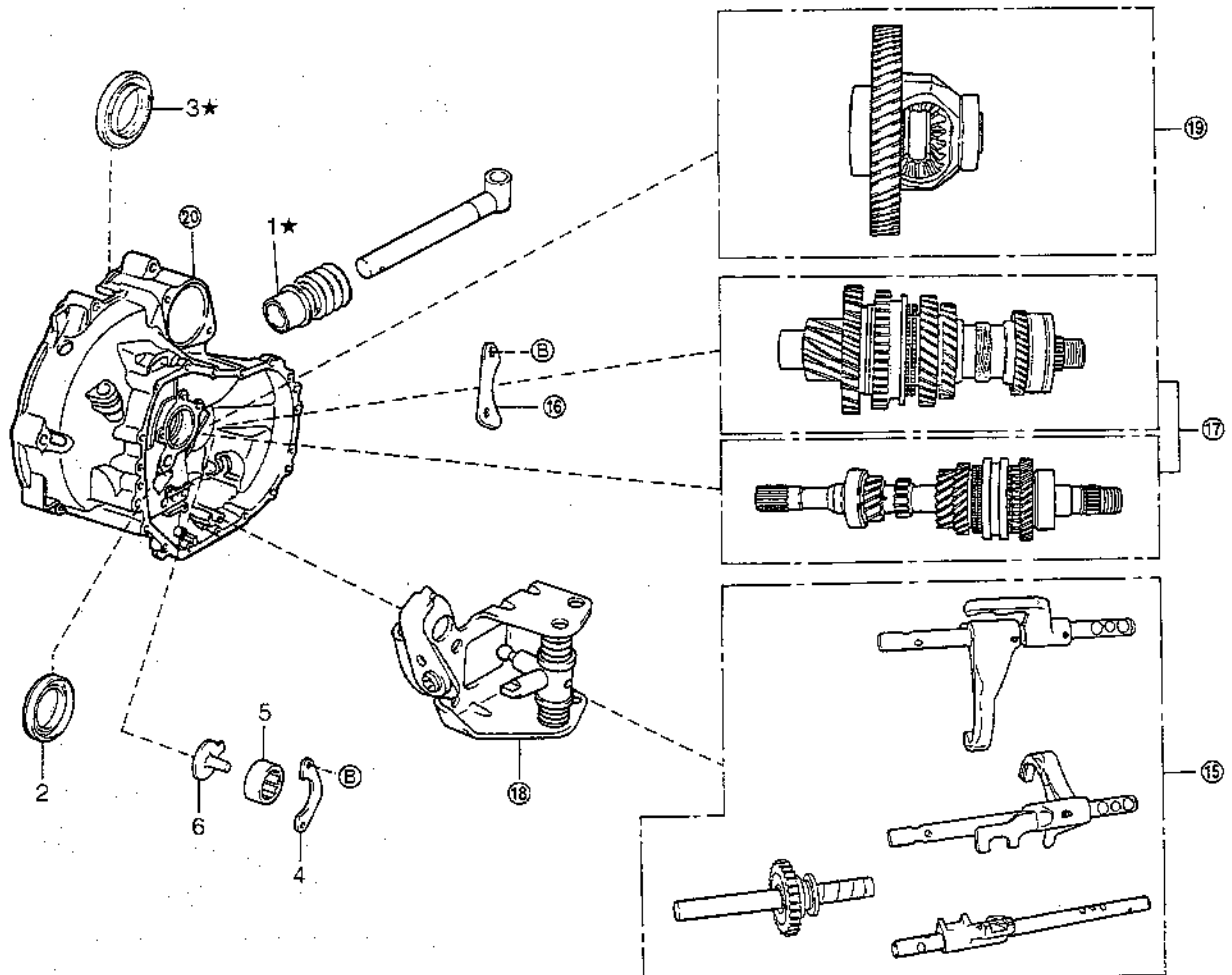
★ : Non-reusable parts.

- |  |                                |
|--|--------------------------------|
| ① W/head straight screw plug (filler side) | ⑧ Speedometer shaft sleeve S/A |
| ② W/head straight screw plug (drain side)  | ⑨ Transmission case cover S/A  |
| ③ Clutch cable bracket                     | ⑩ Case cover oil pipe          |
| ④ Engine mounting bracket                  | ⑪ Gasket & lock ball plate     |
| ⑤ Breather plug                            | ⑫ Ball & compression spring    |
| ⑥ Backup lamp switch Ay & gasket           | ⑬ Transmission case            |
| ⑦ Lock plate                               | ⑭ Hole snap ring               |

Fig. 3-40

WR-03041A

COMPONENTS (PART 2)



★ : Non-reusable parts.

- ⑮ Control related parts
- ⑯ Input shaft bearing lock plate
- ⑰ Input shaft Ay & output shaft Ay
- ⑱ Selector support Ay & shifting bell crank
- ⑲ Differential case Ay

- ⑳ Transaxle case
- 1, 2, 3. Oil seal
- 4. Output shaft bearing lock plate
- 5. Needle roller bearing
- 6. Output shaft cover

Fig. 3-41

WR-03041B

## MANUAL TRANSMISSION

### DISASSEMBLY

1. Remove the screw plugs (at the drain and filler sides).
2. Remove the clutch cable bracket and engine mounting bracket.
3. Remove backup lamp switch assembly and breather plug.
4. Remove the lock plate and speedometer shaft sleeve subassembly.
5. Remove the oil seal, using the SST given below.  
SST: 09921-00010-000
6. Remove the transmission case cover subassembly as follows:
  - (1) To drive out the case cover subassembly, tap the flange section lightly in the axial direction, using a plastic hammer.**NOTE:**  
Never tap the case cover at its side.

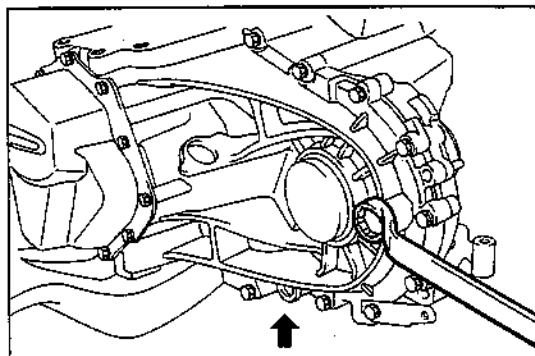


Fig. 3-42

WR-03042

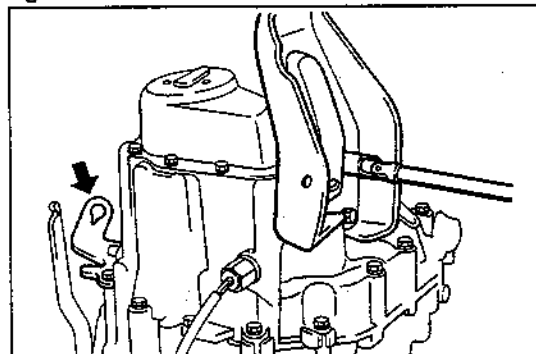


Fig. 3-43

WR-03043

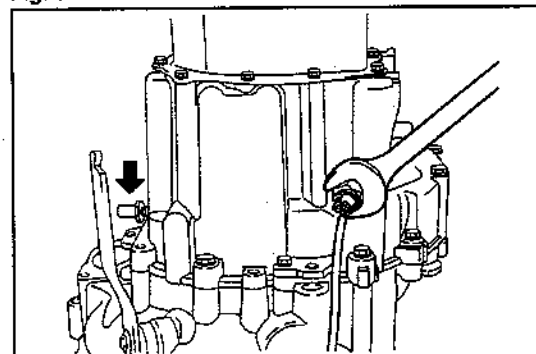


Fig. 3-44

WR-03044

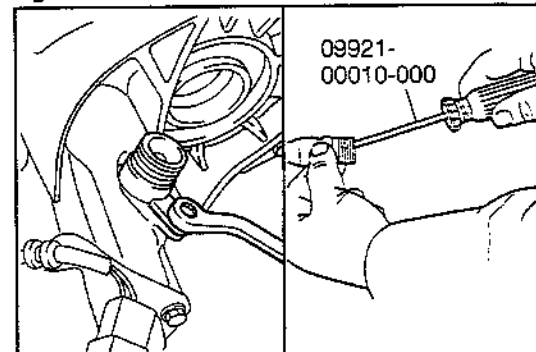


Fig. 3-45

WR-03045

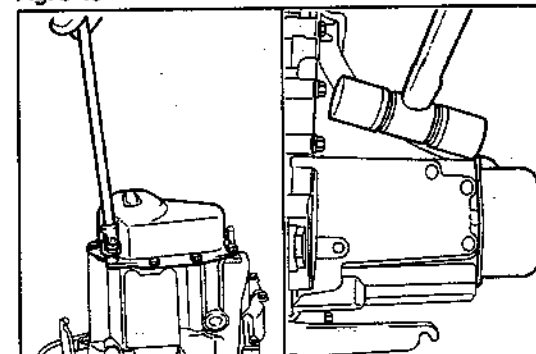


Fig. 3-46

WR-03046



7. Remove the case cover oil pipe.

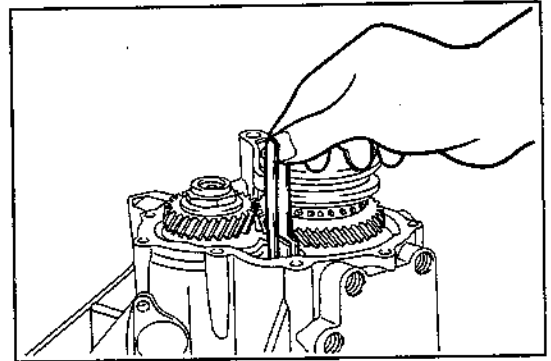


Fig. 3-47

WR-03047

8. Remove the lock ball plate and gasket. Take out the compression spring and ball.  
(In the case of the 5-speed transmission, proceed to this operation after the 5th gear has been disassembled.)

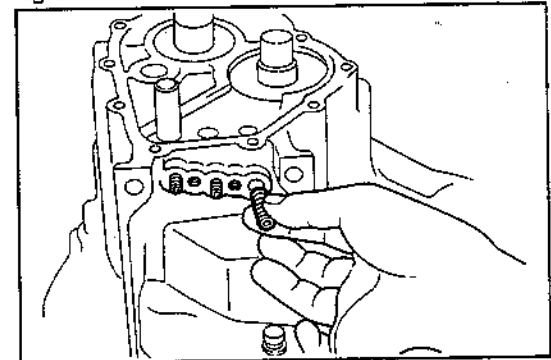


Fig. 3-48

WR-03048

9. Remove the transmission case as follows:

- (1) With the hole snap ring for output shaft bearing use held in an expanded state by means of the SST, drop the shaft.

SST: 09905-00012-000

- (2) To drive out the transmission case, tap the case rib with a plastic hammer.

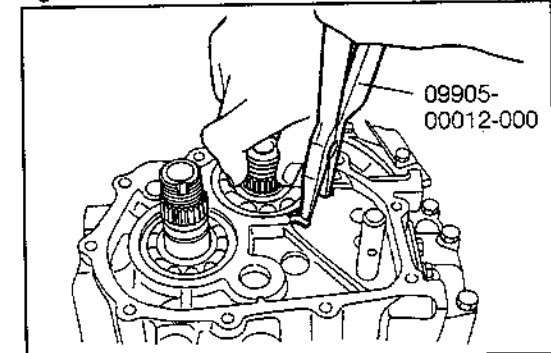


Fig. 3-49

WR-03049

10. Detach the hole snap ring.

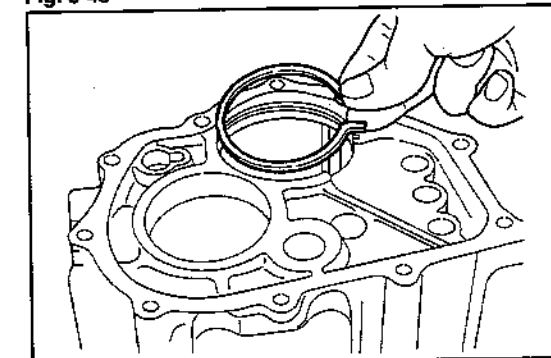


Fig. 3-50

WR-03050

11. Remove the control linkage-related parts.

(For the disassembly procedure for each part, see page 3-50.)

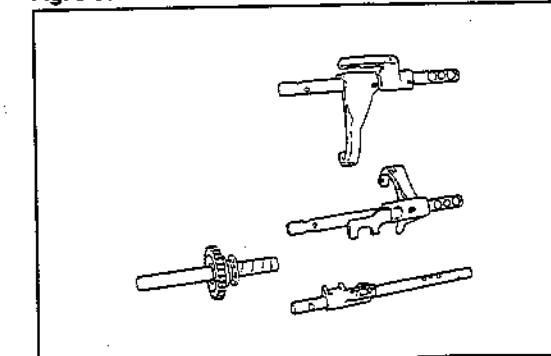


Fig. 3-51

WR-03051

## MANUAL TRANSMISSION

12. Remove the input shaft bearing lock plate.

13. Remove the input shaft assembly and output shaft assembly at the same time.

(1) Alternately pull out both shafts a little at a time.

14. Remove the selector support assembly, shifting bell crank and magnet.

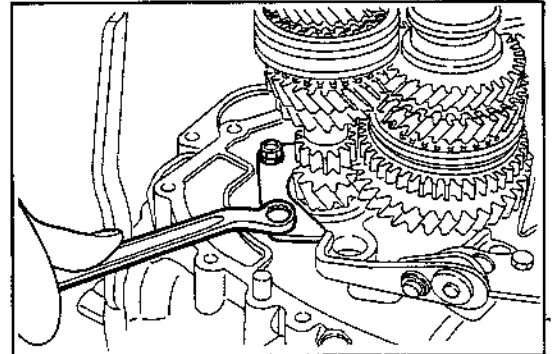


Fig. 3-52

WR-03052

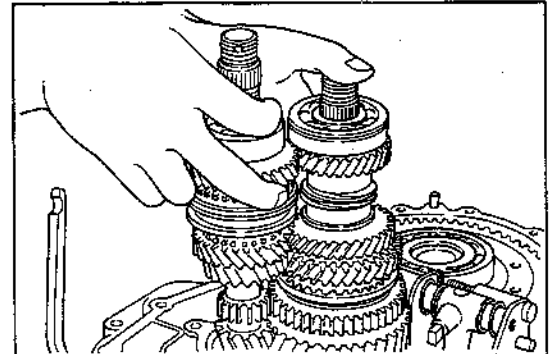


Fig. 3-53

WR-03053

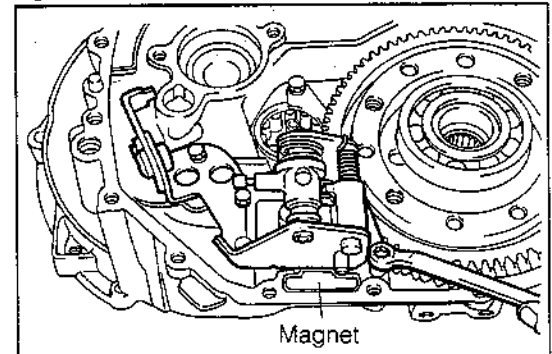


Fig. 3-54

WR-03054

15. Remove the differential case as follows:

(1) With a brass bar placed on the inner race of the side bearing, lightly tap the bar so that the differential case may be driven out from the transaxle case.

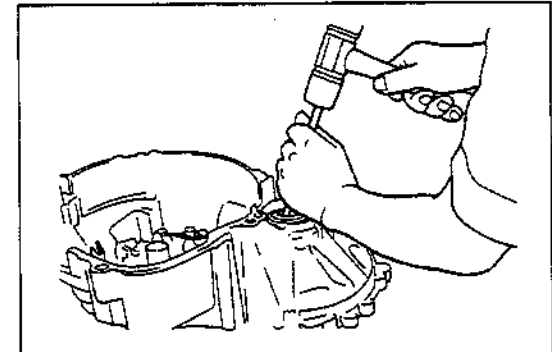


Fig. 3-55

WR-03055

## REPLACEMENT

Inspect the following parts. (See page 3-18.) Replace any parts that exhibit defects, following the procedure given below.

1. Oil seal for control shaft use

**Disassembly:** Remove the oil seal by pinching its flange section with pliers.

**Assembly:** Drive the oil seal into position, until it comes into contact with the axle case.

SST: 09515-87201-000

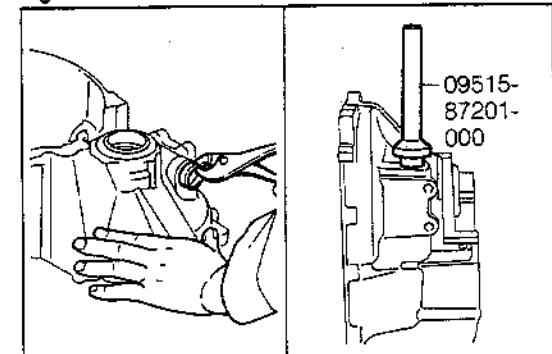


Fig. 3-56

WR-03056

## 2. Oil seal for input shaft use

**Disassembly:** Remove the oil seal with a common screwdriver.

**Assembly:** Drive the oil seal into position, until it becomes flush with the edge surface of the transaxle case.

SST: 09606-87201-000

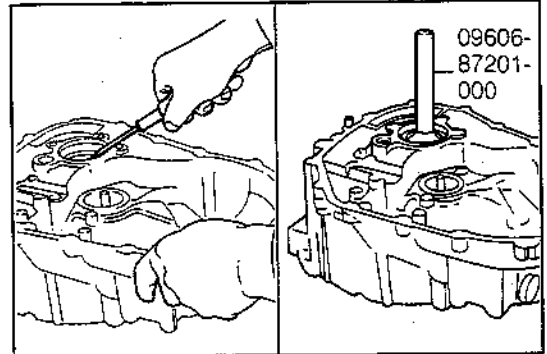


Fig. 3-57

WR-03057

## 3. Needle Roller Bearing

**Disassembly:** After the output shaft bearing lock plate has been removed, remove the roller bearing, using the SST given below.

SST: 09308-00010-000

### Assembly:

(1) Assemble the roller bearing, using the SST given below.

SST: 09309-87201-000

### NOTE:

Visually check to see if the output shaft cover exhibits severe distortion or clogging.

(2) Install the bearing lock plate.

Tightening Torque: 0.7 - 1.0 kg-m (5.1 - 7.2 ft-lb)

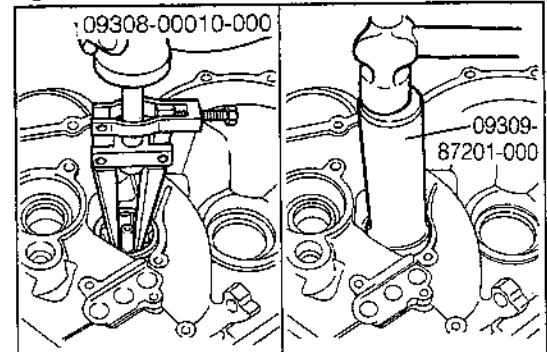


Fig. 3-58

WR-03058

## 4. Oil seal for differential use

**Disassembly:** Remove the oil seal with a common screwdriver.

**Assembly:** Drive the oil seal into position, until it comes into contact with the rib of the axle case.

SST: 09517-87701-000 (Case side)

09517-87702-000 (Housing side)

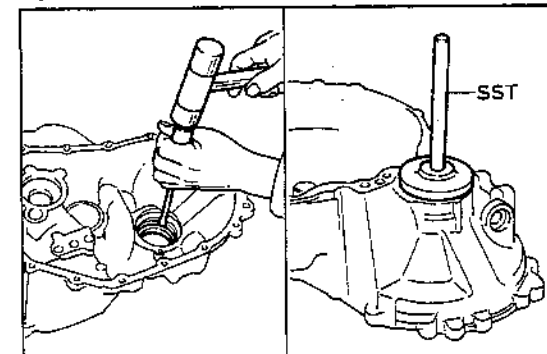


Fig. 3-59

WR-03059

## INSPECTION

### 1. Check each bearing for wear or damage.

Part	Inspection criteria
Bearing	When the inner race is rotated by your fingers, it should rotate smoothly without any binding.

### 2. Check each oil seal for wear or damage.

Part	Inspection criteria
Lip section of oil seal	Visually inspect to see if the lip section exhibits excessive damage or wear.

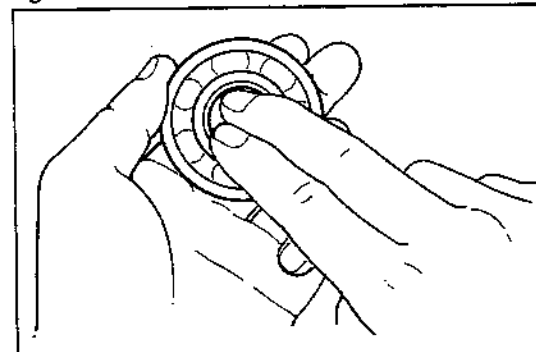


Fig. 3-60

WR-03060

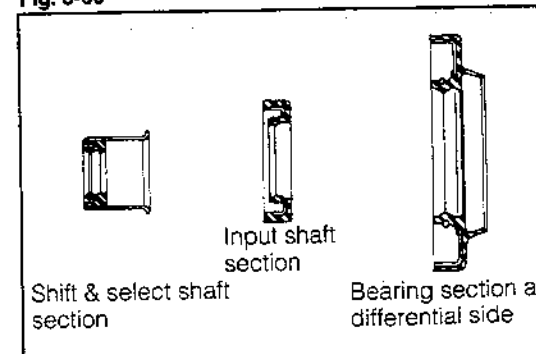


Fig. 3-61

WR-03061

## MANUAL TRANSMISSION

3. Check the speedometer shaft sleeve subassembly for wear or damage.

Part		Specified value mm (inch)	Limit mm (inch)
Driven gear shaft diameter	①	$8 \begin{smallmatrix} -0.013 \\ -0.028 \end{smallmatrix}$ (0.3150 $\begin{smallmatrix} +0.0005 \\ +0.0011 \end{smallmatrix}$ )	7.96 (0.313)
Shaft sleeve bore	②	$8 \begin{smallmatrix} +0.065 \\ +0.029 \end{smallmatrix}$ (0.3150 $\begin{smallmatrix} +0.0026 \\ +0.0011 \end{smallmatrix}$ )	8.10 (0.319)
Oil seal lip section	③	Visually inspect the section for excessive wear or damage.	
"O" ring	④		
Driven gear tooth surface	⑤		

## ASSEMBLY

1. Assemble the differential case.  
(For the assembly procedure for each part, see page 3-47.)

2. Assemble the magnet and selecting & shifting bell crank support assembly.  
(For the assembly procedure for each part, see page 3-57.)

Tightening Torque: 0.7 - 1.0 kg-m (5.1 - 7.2 ft-lb)

3. Assemble the input shaft assembly and output shaft assembly at the same time.

4. Assemble the input shaft bearing lock plate.  
Tightening Torque: 1.5 - 2.2 kg-m (11 - 16 ft-lb)

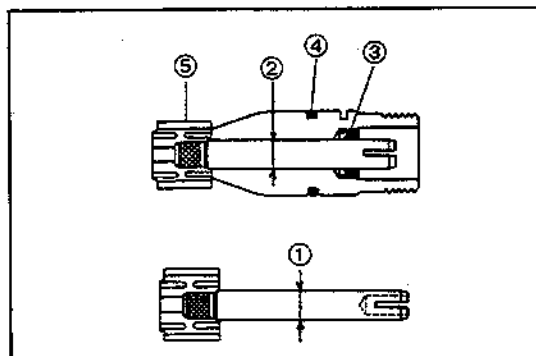


Fig. 3-62

WR-03165

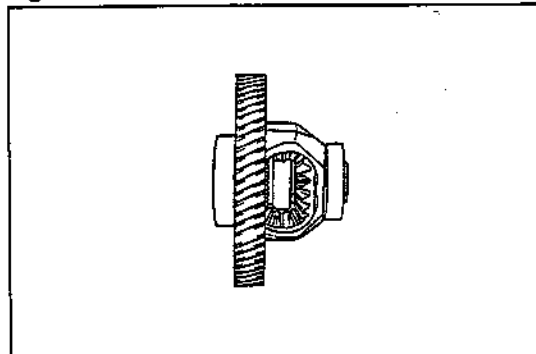


Fig. 3-63

WR-03062

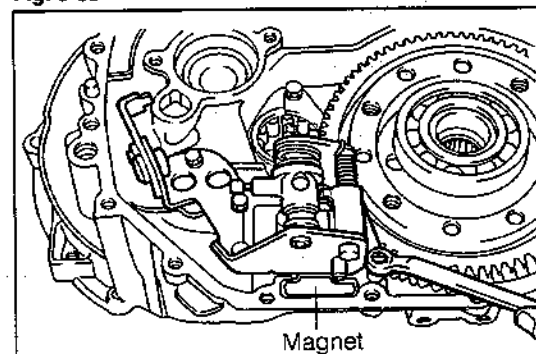


Fig. 3-64

WR-03063

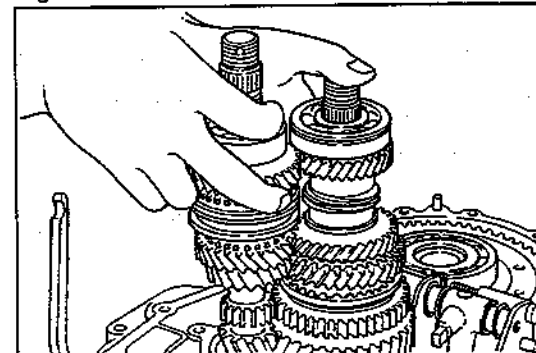


Fig. 3-65

WR-03064

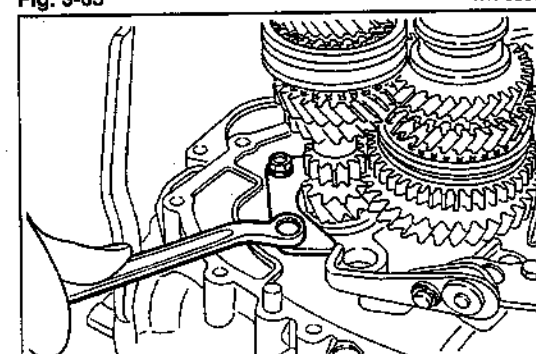


Fig. 3-66

WR-03065

5. Assemble the control linkage-related parts.  
(For the assembly procedure for each part, see page 3-57.)

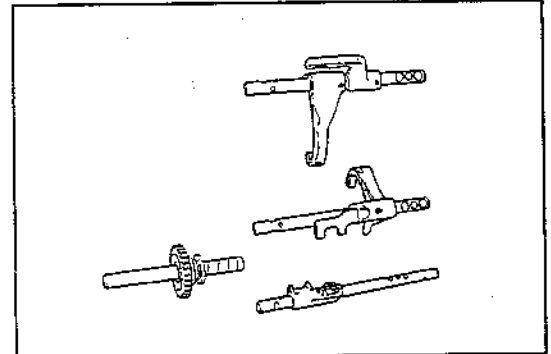


Fig. 3-67

WR-03066

6. Install the hole snap ring in the transmission case.

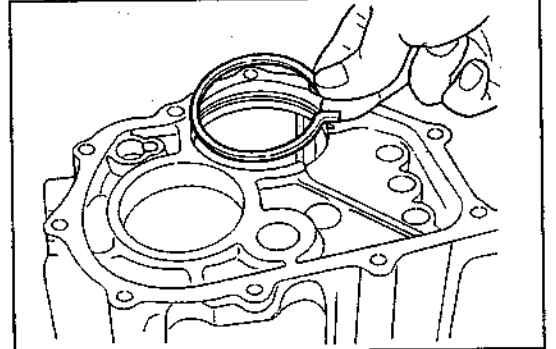


Fig. 3-68

WR-03067

7. Assemble the transmission case as follows:  
(1) Apply the Three Bond sealer 1216 to the mating surface of the housing. While the hole snap ring of the bearing is held in an expanded state, assemble the transmission case in the axle case.  
SST: 09905-00012-000

**NOTE:**

Make sure that the snap ring is fitted positively in the bearing, by raising the output shaft by your hand.

- (2) Tighten the housing attaching bolts.  
Tightening Torque: 1.5 - 2.2 kg-m (11 - 16 ft-lb)

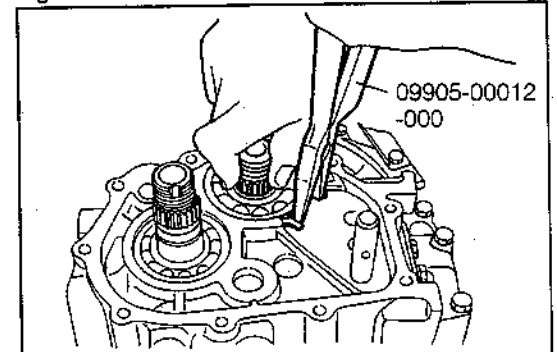


Fig. 3-69

WR-03068

8. Assemble the ball and compression spring.

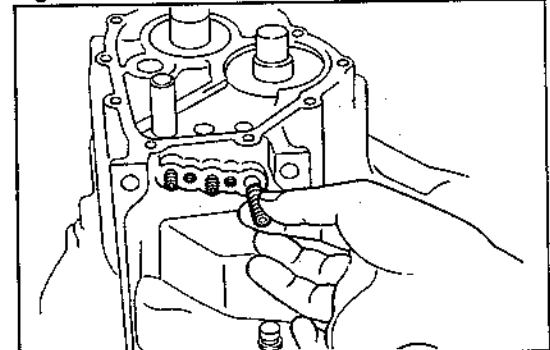


Fig. 3-70

WR-03069

9. Assemble the lock ball plate and gasket as follows:  
(1) Perform the assembling, using the bolts.

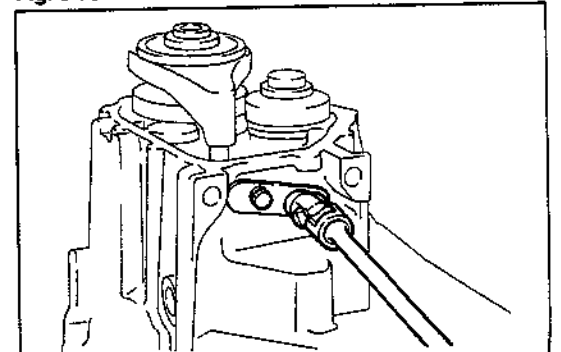


Fig. 3-71

WR-03070

## MANUAL TRANSMISSION

### 10. Install the case cover oil pipe as follows:

- (1) Insert the oil pipe, until its rib section comes into contact with the case.

#### NOTE:

The oil pipe for the 4-speed transmission differs from that for the 5-speed transmission in its overall length and tip-end shape.

#### Overall length:

Oil pipe for 4-speed transmission

126 mm (5.0 inch)

Oil pipe for 5-speed transmission

167 mm (6.6 inch)

### 11. Assemble the transmission case cover as follows:

- (1) Apply the liquid gasket sealer (Three Bond 1216) to the mating surfaces of the case, except for those hole areas. (See page 3-19.)

Tightening Torque: 0.7 - 1.0 kg-m (5.1 - 7.2 ft-lb)

### 12. Assemble the oil seal for speedometer shaft sleeve, using the SST given below.

SST: 09201-60011-000

### 13. Assemble the speedometer shaft sleeve subassembly and lock plate.

Tightening Torque: 0.7 - 1.0 kg-m (5.1 - 7.2 ft-lb)

### 14. Install the backup lamp switch and breather plug.

#### Tightening Torque

Backup Lamp Switch: 3.0 - 5.0 kg-m (22 - 36 ft-lb)

Breather Plug: 1.0 - 1.3 kg-m (7.2 - 9.4 ft-lb)

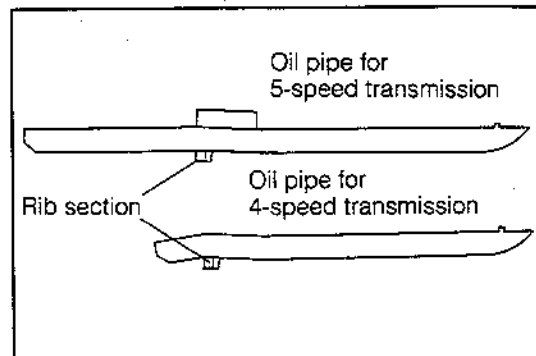


Fig. 3-72

WR-03071

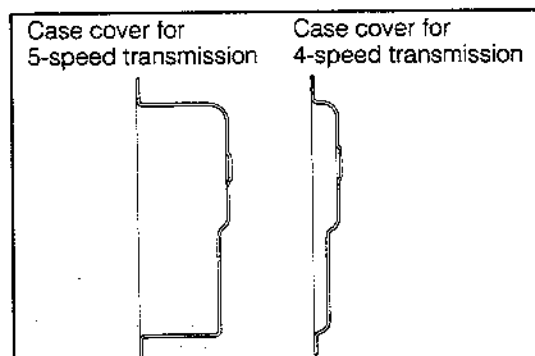


Fig. 3-73

WR-03072

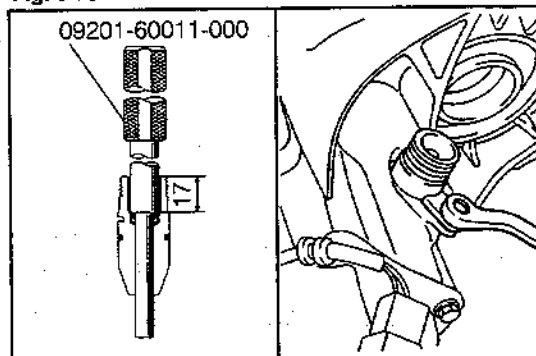
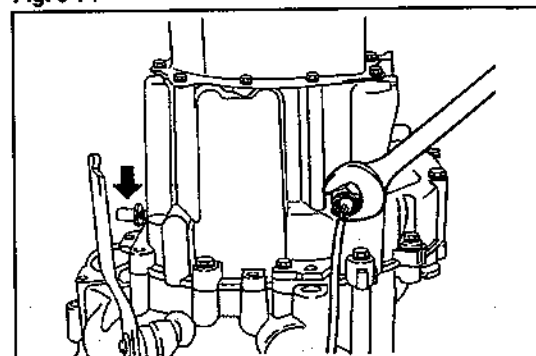


Fig. 3-74

WR-03073



WR-03074

15. Install the clutch cable bracket and engine mounting bracket.

**Tightening Torques**

Clutch Cable Bracket: 1.5 - 2.2 kg-m (11 - 16 ft-lb)

Engine Mounting Bracket: 3.0 - 4.5 kg-m (22 - 33 ft-lb)

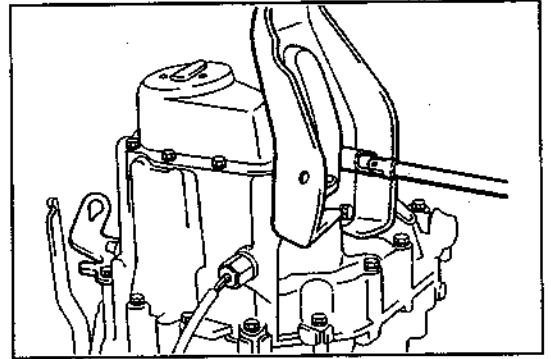


Fig. 3-76

WR-03075

16. Install the screw plugs (at the drain and filler sides).

Tightening Torque: 3.0 - 5.0 kg-m (22 - 36 ft-lb)

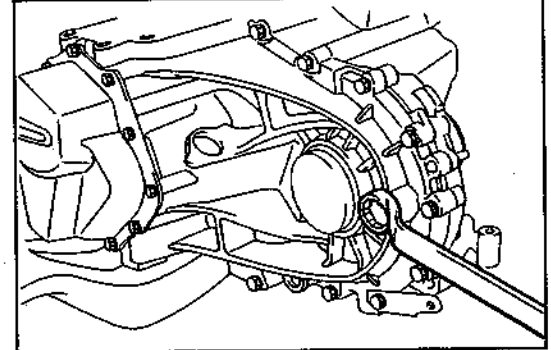


Fig. 3-77

WR-03076

# MANUAL TRANSMISSION

## APPLICATION POINTS OF GREASE & BOND AND APPLICATION PROCEDURE

### NOTE:

As for each gear clustered on the input and output shafts and the rotary and sliding sections of the oil seals, apply gear oil to the entire surface of each part.

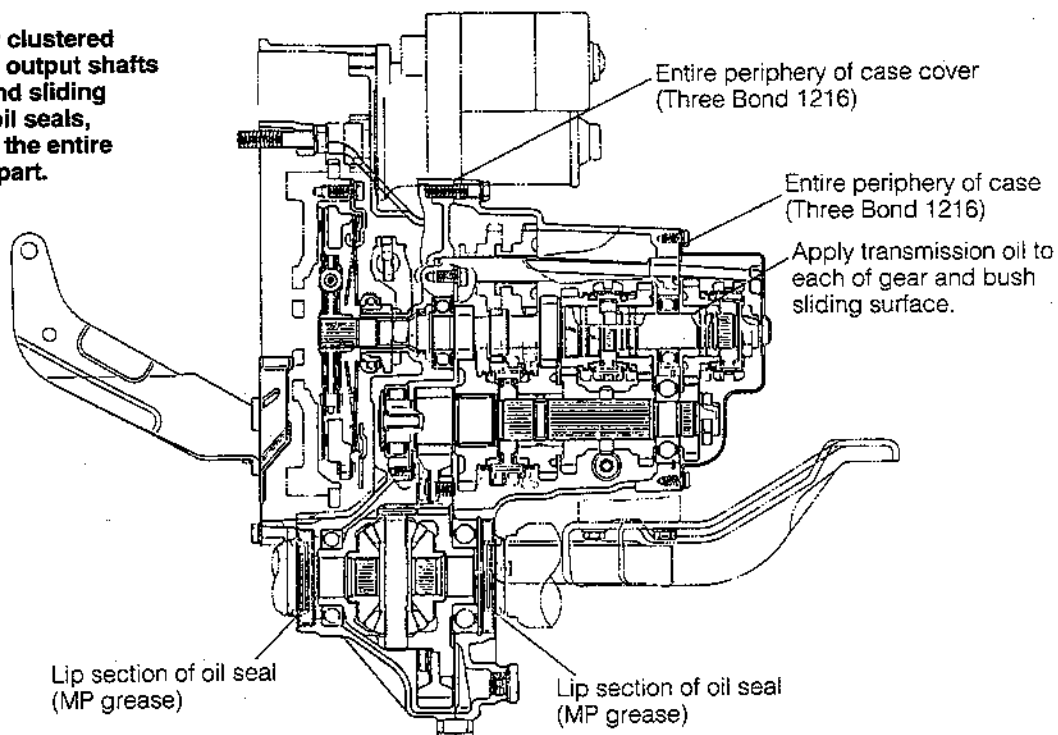
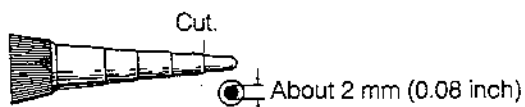


Fig. 3-78

WR-03077

### Application Procedure for Liquid Gasket Sealer (Three Bond 1216 ... Part No. 999-0480-8U90-00)

1. Cut the first stage of the nozzle of the Daihatsu genuine sealer (Three Bond 1216) that is furnished in accessories.



2. Remove any remaining trace of the liquid gasket that may be found on the housing or the case with thinner or a scraper. Care must be exercised not to scratch the surfaces during the cleaning.

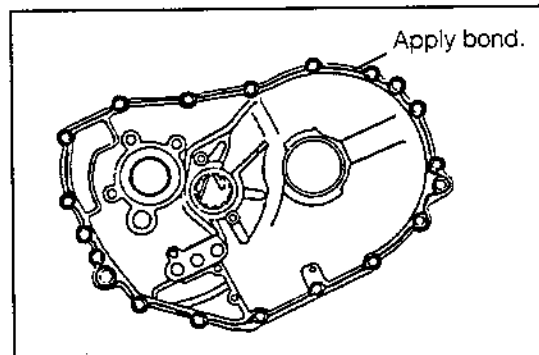


Fig. 3-79

WR-03078



3. Apply the liquid sealer to the entire periphery of the housing and case without any unapplied spot, as indicated in the illustration at the right.

**NOTE:**

1. Apply the liquid sealer to the inside of each hole, excluding those bolts holes.
2. Be sure to perform the assembling within five minutes after the application of the liquid sealer.
3. Make sure to dry the thinner completely.

**NOTE:**

**<Handling Instructions on Liquid gasket>**

1. The liquid gasket starts to cure when it reacts with the moisture in the atmosphere. Hence, upon completion of the work, be sure to expel any air trapped in the tube and tighten the tube cap securely.
2. As regards the storage place for this liquid gasket, avoid such places where high temperature or high humidity prevails or those exposed to direct sunrays. Make sure to store it in a dry, cold and dark place.  
(The allowable limit for use is approximately six months.)

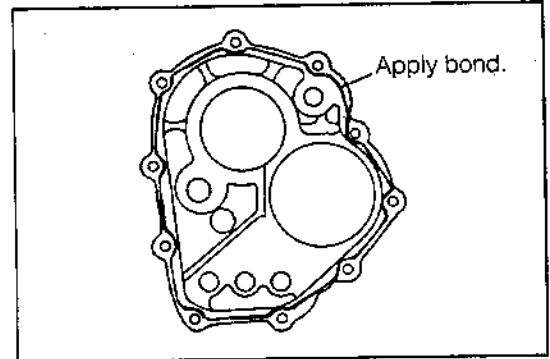
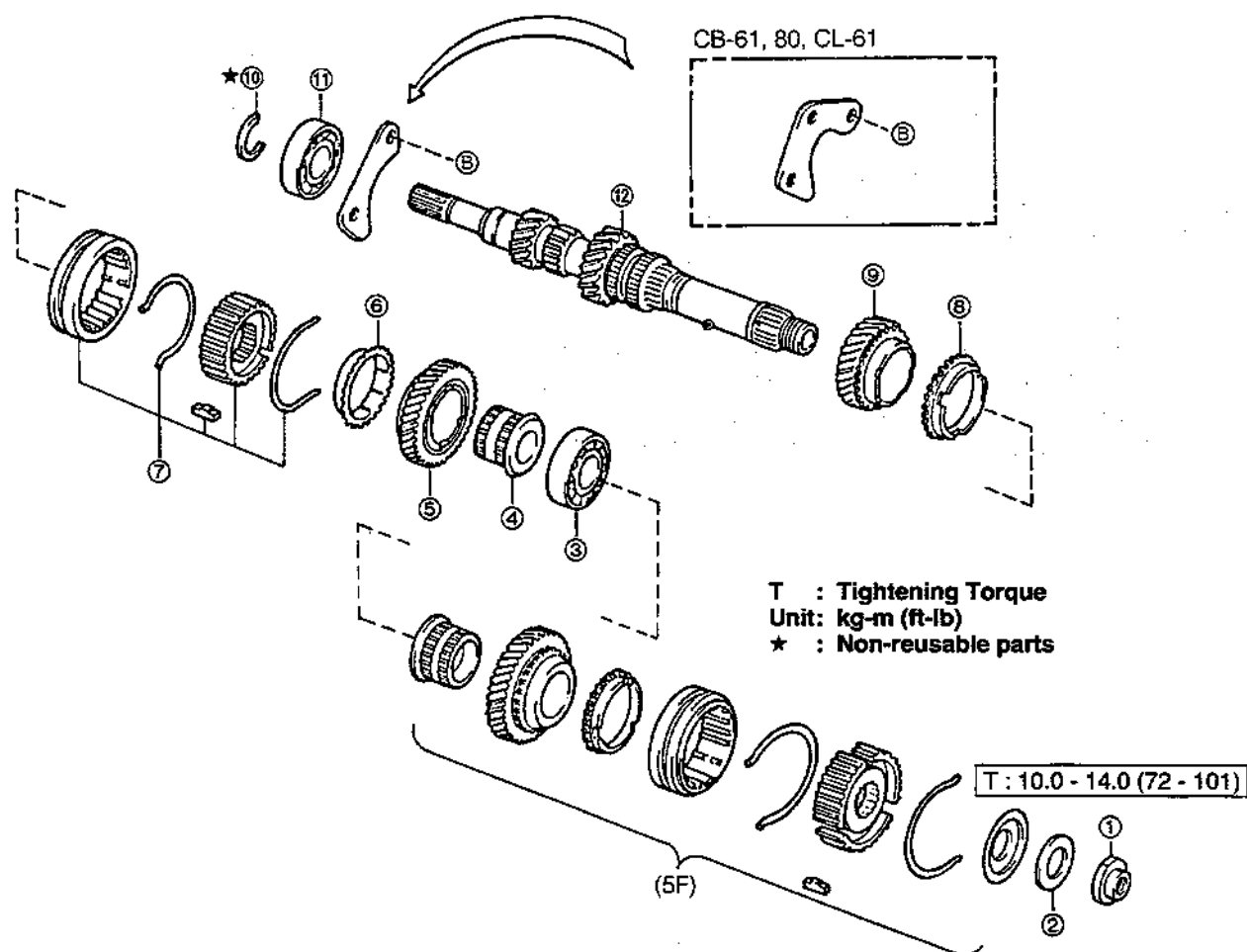


Fig. 3-80

WR-03079

# DISASSEMBLY, INSPECTION AND ASSEMBLY OF INPUT SHAFT COMPONENTS



- ① Lock nut
- ② Conical washer
- ③ Bearing
- ④ 4th gear bush
- ⑤ 4th gear
- ⑥ Synchronizer ring

- ⑦ Synchronizer hub Ay No.2
- ⑧ Synchronizer ring
- ⑨ 3rd gear
- ⑩ Shaft snap ring
- ⑪ Bearing
- ⑫ Input shaft

Fig. 3-81

WR-03079A

## Operation Prior to Disassembly

Pull out the input shaft and the output shaft at the same time from the transmission case. Proceed to the next disassembly operation. (See page 3-16.)

## DISASSEMBLY

1. Remove the lock nut. (4-speed transmission only)
  - (1) Clamp the 1st gear section of the input shaft in a vise, making sure that no scratch is made to the clamped section.
  - (2) Release the staked section of the lock nut, using a chisel.
  - (3) Remove the lock nut.

**NOTE:**

For the 5-speed transmission, see page 3-39.

2. Remove the conical spring washer. Then, remove the bearing, using the SST given below.

SST: 09602-87301-000

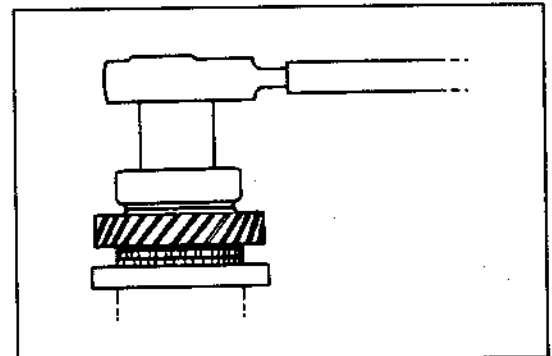


Fig. 3-82

WR-03080

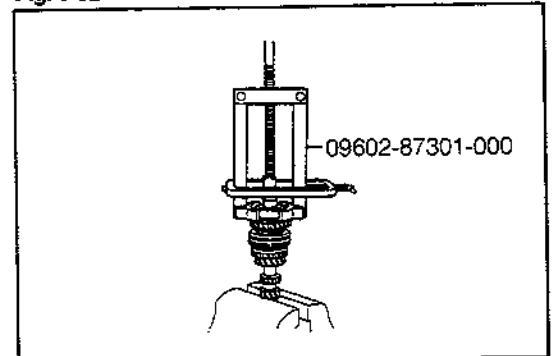


Fig. 3-83

WR-03081

3. Remove the 4th gear and 4th gear bush.

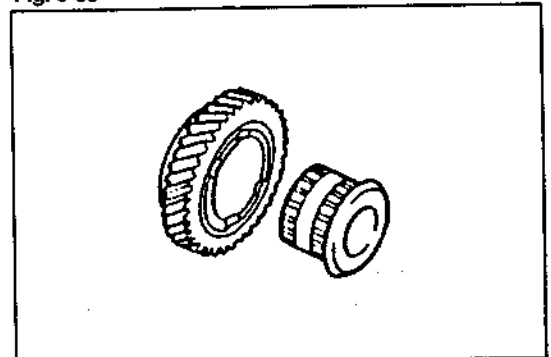


Fig. 3-84

WR-03082

4. Remove the synchronizer ring. Then, remove the synchronizer hub assembly No.2.

- (1) Detach the two synchromesh shifting springs and three synchromesh shifting keys.

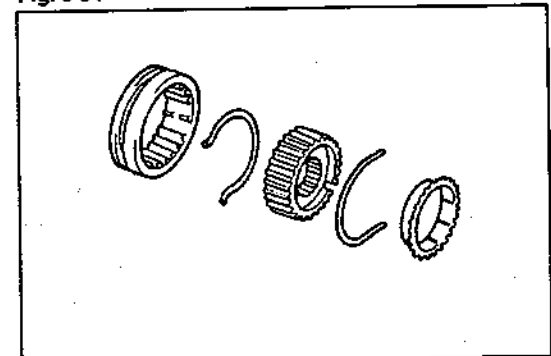


Fig. 3-85

WR-03083

## MANUAL TRANSMISSION

5. Remove the synchronizer ring and 3rd gear.

6. Detach the shaft snap ring, using two common screwdrivers.

**NOTE:**

1. Special care must be exercised as to the snap ring which may jump out during the disassembly.
2. Particular attention should be paid to avoid scratching the shaft.

7. Remove the bearing, using the SST given below.

SST: 09602-87301-000

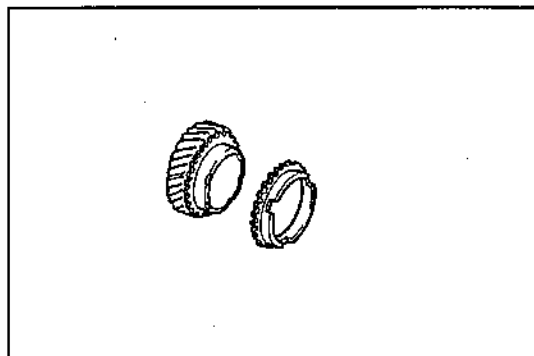


Fig. 3-86

WR-03084

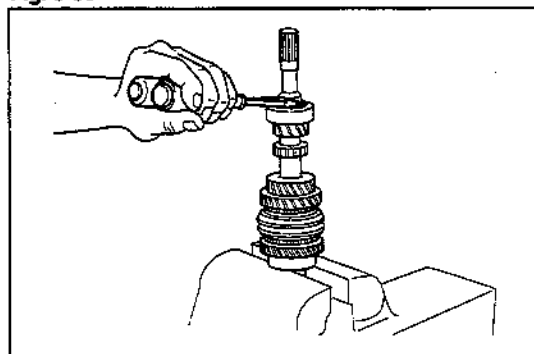


Fig. 3-87

WR-03085

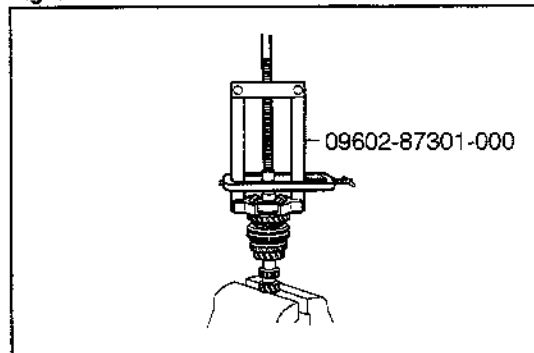


Fig. 3-88

WR-03086

## INSPECTION

1. Check the 4th gear bush for wear or damage.

Part	Specified value mm (inch)	Limit mm (inch)
Bore ①	$25 \begin{smallmatrix} +0.042 \\ -0.027 \end{smallmatrix}$ (0.9843 $\begin{smallmatrix} +0.0017 \\ -0.0011 \end{smallmatrix}$ )	25.02 (0.985)
Outer diameter ②	$37 \begin{smallmatrix} -0.040 \\ -0.080 \end{smallmatrix}$ (1.4567 $\begin{smallmatrix} -0.0016 \\ -0.0031 \end{smallmatrix}$ )	36.89 (1.452)
Overall length ③	$29 \pm 0.03$ (1.1417 $\pm 0.0012$ )	28.97 (1.141)
Thickness of flange section ④	$3 \pm 0.06$ (0.1181 $\pm 0.0024$ )	2.94 (0.116)

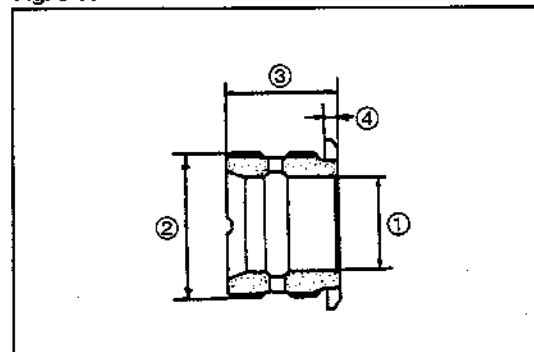


Fig. 3-89

WR-03087

## 2. Check each gear for wear or damage.

Part	Specified value mm (inch)		Limit mm (inch)	
	Bore ①	Width ⑥	Bore ①	Width ⑥
3rd gear (input)	$37 \begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$ (1.4567 $\begin{smallmatrix} +0.0010 \\ 0 \end{smallmatrix}$ )	$27.5 \begin{smallmatrix} -0.20 \\ 0.27 \end{smallmatrix}$ (1.0827 $\begin{smallmatrix} -0.0079 \\ 0.0106 \end{smallmatrix}$ )	37.05 (1.459)	27.2 (1.071)
4th gear (input)	$37 \begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$ (1.4567 $\begin{smallmatrix} +0.0010 \\ 0 \end{smallmatrix}$ )	$26 \begin{smallmatrix} -0.13 \\ 0.20 \end{smallmatrix}$ (1.0236 $\begin{smallmatrix} -0.0051 \\ 0.0079 \end{smallmatrix}$ )	37.05 (1.459)	25.7 (1.012)
Splined section	Visually inspect the section for excessive damage or wear.			
Gear section ③				
Tapered section ②				
Both edge surfaces of gear ④				
Fitting section with hub sleeve ⑤	Inspect the section for excessive play, nick or rounded edge.			

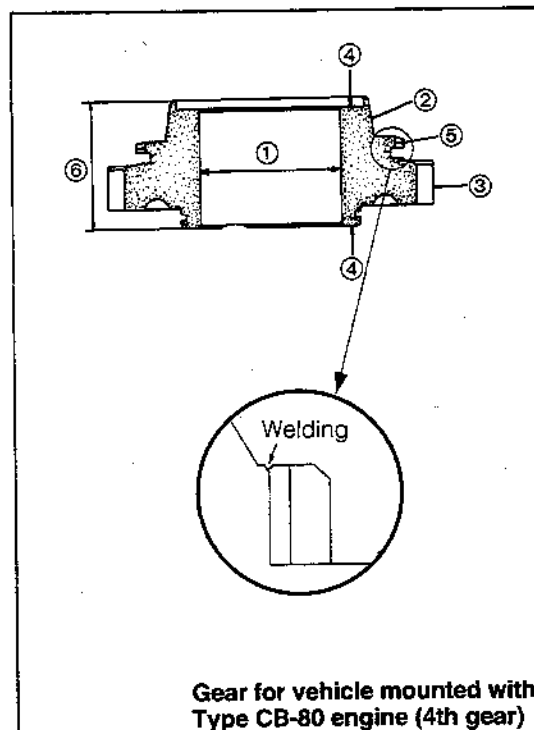


Fig. 3-90

WR-03088

## 3. Check the clutch hub and sleeve for the 3rd & 4th gear use for wear or damage.

### Clutch Hub

Part	Limit
Splined section ①	Visually inspect the section for excessive damage or wear.
Synchromesh shifting key fitting groove ②	
With the hub fitted into the sleeve, check for excessive looseness in up-&-down direction and slant of the hub and sleeve.	

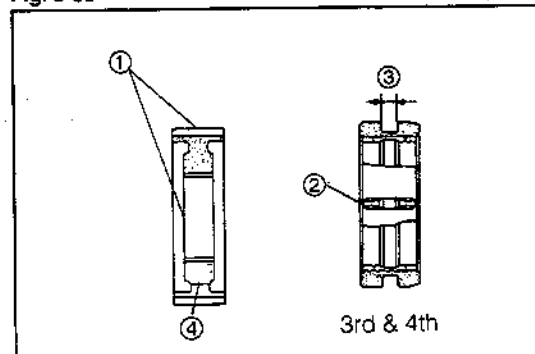


Fig. 3-91

WR-03089

### Sleeve

Part	Specified value mm (inch)	Limit mm (inch)
Shift fork groove width ③	$7.0 \begin{smallmatrix} +0.12 \\ +0.05 \end{smallmatrix}$ (0.276 $\begin{smallmatrix} +0.004 \\ +0.002 \end{smallmatrix}$ )	7.3 (0.287)
Fitting section with gear ④	Visually inspect the section for excessive damage, wear, nick or rounded edge.	

## 4. Check the input shaft for wear or damage.

Part	Specified value mm (inch)	Limit mm (inch)
Outer diameter of bush bore-contact-section ①	$25 \begin{smallmatrix} +0.017 \\ +0.002 \end{smallmatrix}$ (0.9843 $\begin{smallmatrix} +0.0007 \\ +0.0001 \end{smallmatrix}$ )	24.99 (0.984)
Tooth surfaces of gear and spline	Visually inspect the surface for excessive damage, wear, nick or rounded edge.	

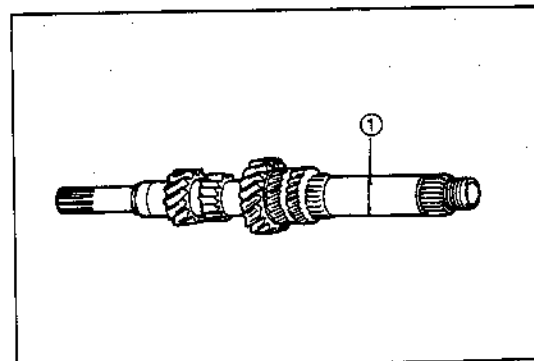


Fig. 3-92

WR-03090

## MANUAL TRANSMISSION

5. Check the synchromesh shifting key and key spring for wear or damage.

Part	Specified value mm (inch)	Limit mm (inch)
Key for 3rd & 4th gear (dimension H)	$5.0 \pm 0.2$ (0.197 $\pm 0.008$ )	4.3 (0.169)
Spring ①	Visually inspect the spring for damage or distortion.	

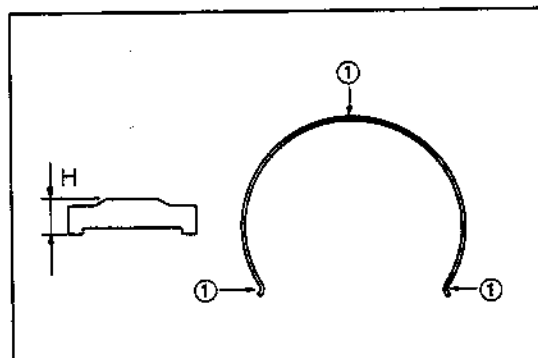


Fig. 3-93

WR-03091

6. Check the synchronizer ring for wear or damage.

Part		Specified value mm (inch)	Limit mm (inch)
Gap when synchronizer ring is pressed to gear	3rd and 4th gears	0.85 - 1.45 (0.034 - 0.06)	0.5 (0.020)
Damage at inner tapered section	Visually inspect the section for excessive damage.		
Damage at spline			

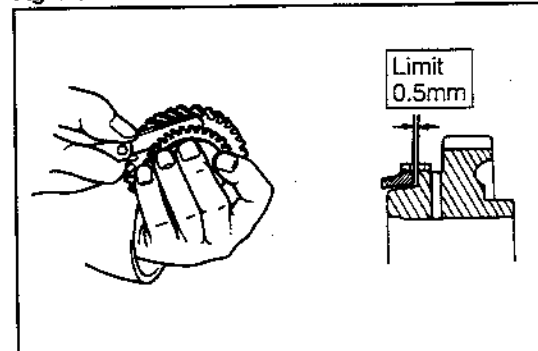


Fig. 3-94

WR-03092

7. Check the bearing for wear or damage.

Part	Inspection criteria
Bearing	When the inner race is rotated by your fingers, it should rotate smoothly without any binding.

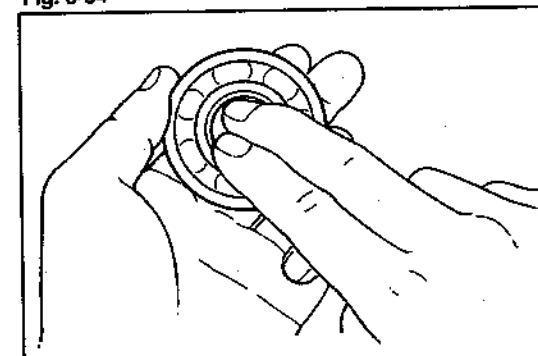


Fig. 3-95

WR-03093

## ASSEMBLY

1. Apply gear oil to the entire surface of the rotary or sliding section of each gear of the input shaft.

### NOTE:

The overall length of the input shaft differs depending upon the transmission type. Hence, special care must be exercised as to its overall length.

Transmission type	Overall length mm (inch)	Presence of splines at section A
4-Speed	269 (10.59)	No
5-Speed	311 (12.24)	Yes

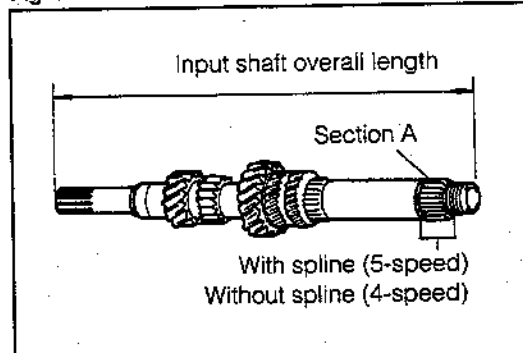


Fig. 3-96

WR-03094

2. Assemble the bearing, using the SST given below.  
SST: 09309-87201-000

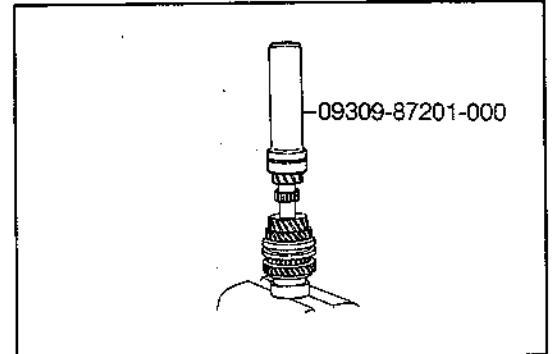


Fig. 3-97

WR-03095

3. Drive a new snap ring into position, using a common screwdriver.  
For easier installation, hold the snap ring with the SST given below.

SST: 09309-87201-000

**NOTE:**

Be very careful not to scratch the shaft.

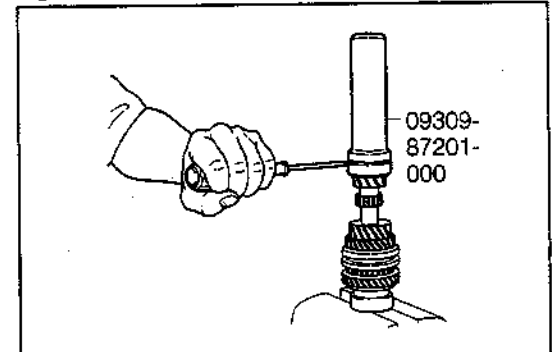


Fig. 3-98

WR-03096

4. Assemble the 3rd gear.

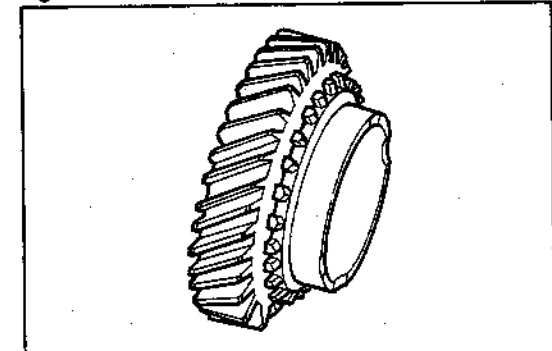


Fig. 3-99

WR-03097

5. Assemble the synchronizer ring and synchronizer hub assembly No.2.

- (1) Assemble the clutch and sleeve. Ensure that both parts can slide smoothly.
- (2) Assemble the shifting keys and springs.

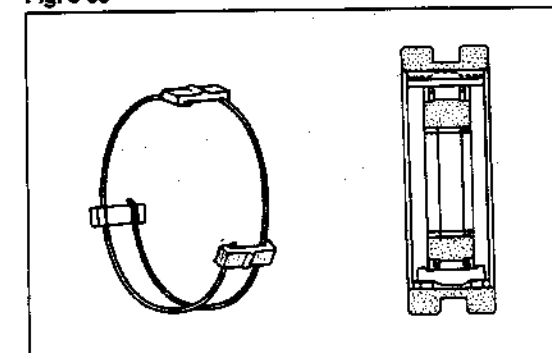


Fig. 3-100

WR-03098

6. Assemble the synchronizer ring and 4th gear.
7. Assemble the 4th gear bush.

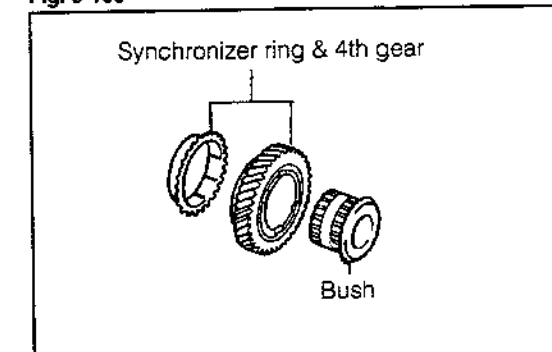


Fig. 3-101

WR-03099

## MANUAL TRANSMISSION

8. Assemble the bearing, using the SST given below.

SST: 09309-87201-000

**NOTE:**

On the 5-speed transmission, measure the end play of each gear after the bearing has been assembled.

(See page 3-43.)

9. Assemble the conical spring washer and lock nut.

(4-speed transmission)

- (1) Install the conical spring in such a way that its expanded side may face toward the shaft side.
- (2) Clamp the reduction gear section in a vise, making sure that no scratch may be made to the section.
- (3) Tighten the lock nut.

Tightening Torque: 10.0 - 14.0 kg-m (72 - 101 ft-lb)

10. Upon completion of the assembly, measure the end play of each part of the input shaft.

Part		Specified value mm(inch)	Limit mm (inch)
2nd gear	①	0.1 - 0.23 (0.0039 - 0.0091)	0.4 (0.016)
4th gear	②		

**NOTE:**

If the end play does not comply with the specification, check the gear, bush and clutch hub sliding section. Replace any parts which exhibit defects.

11. Stake the lock nut, using a chisel.

**NOTE:**

Be sure to stake the central part of the lock nut so as to avoid dislocation or cracks.

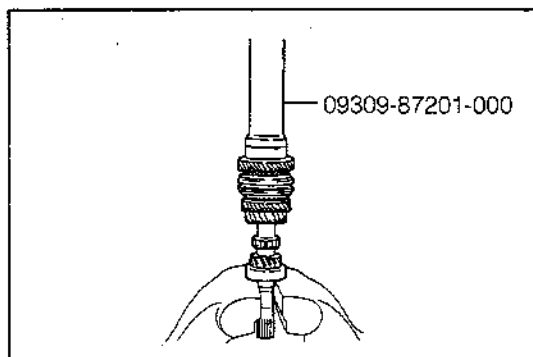


Fig. 3-102

WR-03100

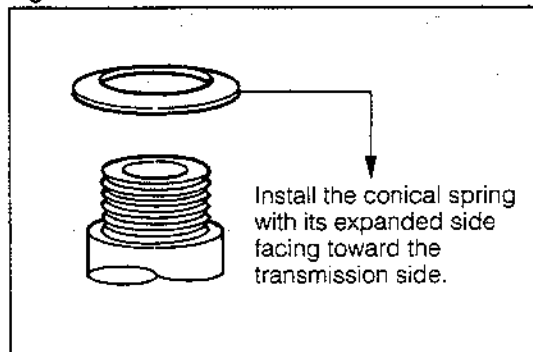


Fig. 3-103

WR-03101

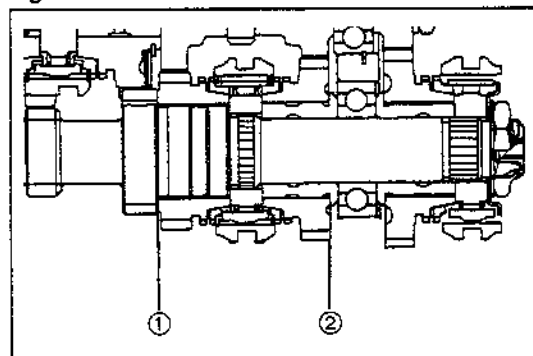


Fig. 3-104

WR-03102

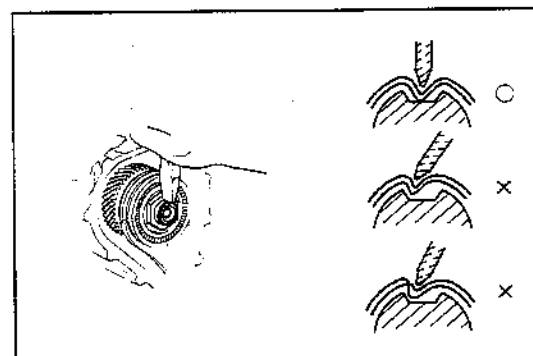
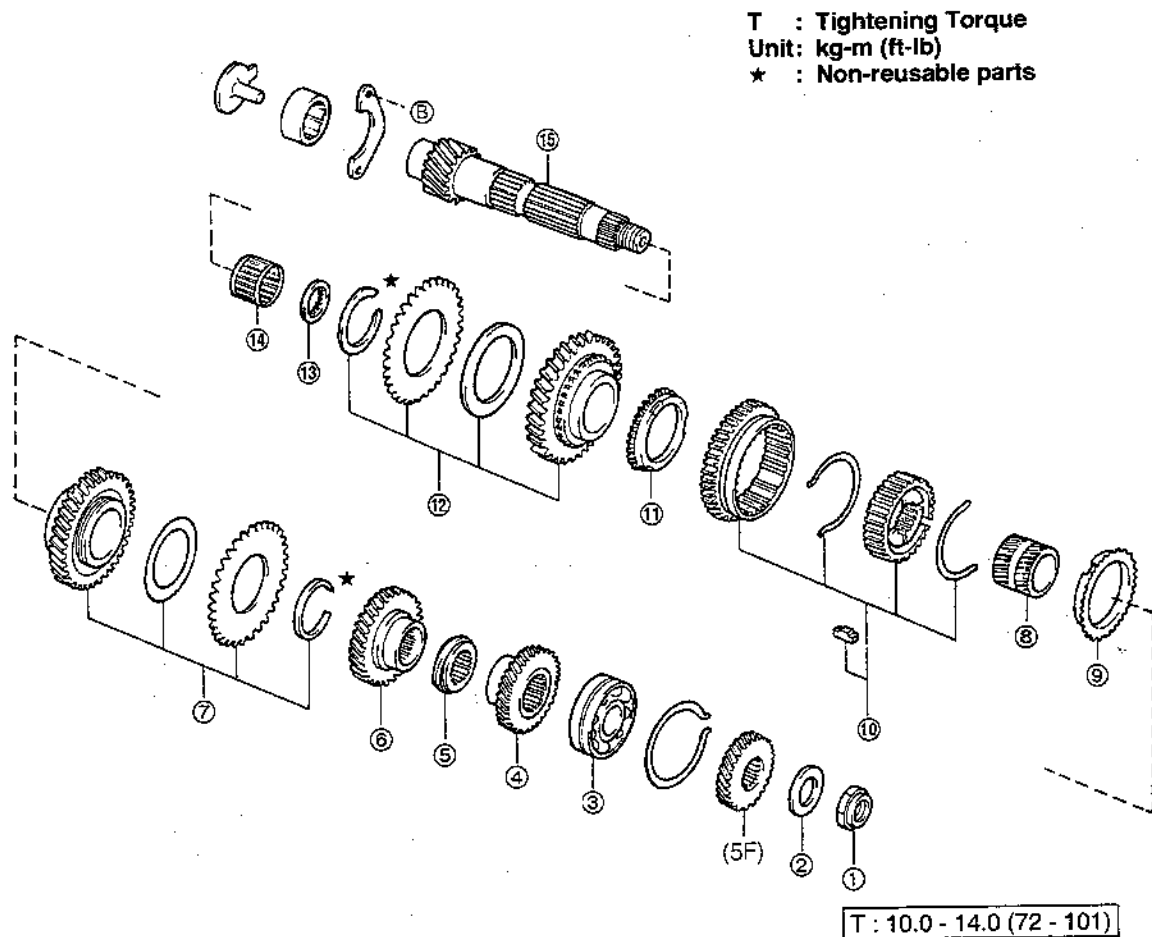


Fig. 3-105

WR-03103



## DISASSEMBLY, INSPECTION AND ASSEMBLY OF OUTPUT SHAFT COMPONENTS



- ① Lock nut
- ② Conical spring washer
- ③ Bearing
- ④ Output 4th gear
- ⑤ Speedometer drive gear
- ⑥ Output 3rd gear
- ⑦ 2nd gear Ay
- ⑧ Bush

- ⑨ Synchronizer ring No.3
- ⑩ Synchronizer hub Ay
- ⑪ Synchronizer ring No.3
- ⑫ 1st gear Ay
- ⑬ Washer
- ⑭ Needle roller bearing
- ⑮ Output shaft

Fig. 3-106

WR-03103A

## MANUAL TRANSMISSION

### Operation Prior to Disassembly

Pull out the output shaft and the input shaft at the same time from the transmission case. Proceed to the next disassembly operation. (See page 3-53.)

### DISASSEMBLY

1. Remove the lock nut. (4-speed transmission only)
  - (1) Clamp the reduction gear section of the output shaft in a vise, making sure that no scratch is made to the clamped section.
  - (2) Release the staked section of the lock nut, using a chisel.
  - (3) Remove the lock nut.

#### NOTE:

For the 5-speed transmission, see page 3-39.

2. Remove the conical spring washer. Then, remove the bearing, using the SST given below.

SST: 09602-87301-000

3. Remove the output 4th gear, speedometer drive gear and output 3rd gear.

4. Remove the 2nd gear assembly.
  - (1) Detach the shaft snap ring, using the SST given below.

SST: 09905-00012-000

- (2) Remove the 2nd subgear.
- (3) Remove the conical spring washer.

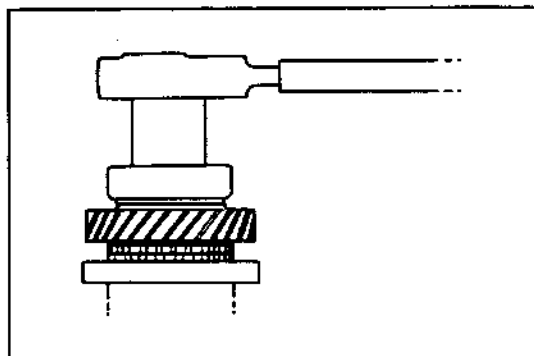


Fig. 3-107

WR-03104

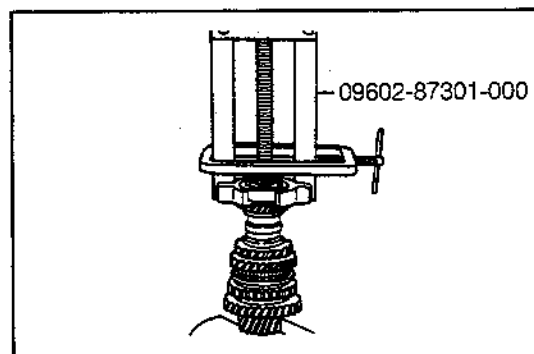


Fig. 3-108

WR-03105

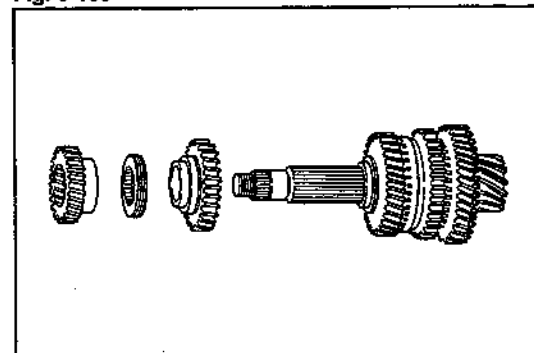


Fig. 3-109

WR-03106

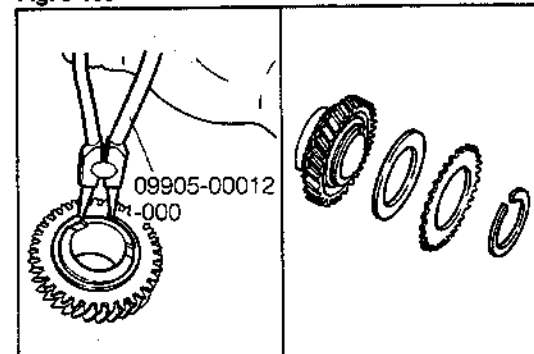


Fig. 3-110

WR-03107

5. Remove the 2nd gear bush and synchronizer ring No.3.

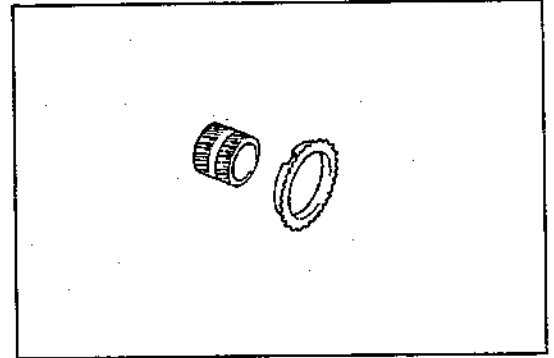


Fig. 3-111

WR-03108

6. Remove the synchronizer hub assembly No.2.

(1) Remove the two synchromesh shifting key springs and three synchromesh shifting keys.

7. Remove the synchronizer ring No.3.

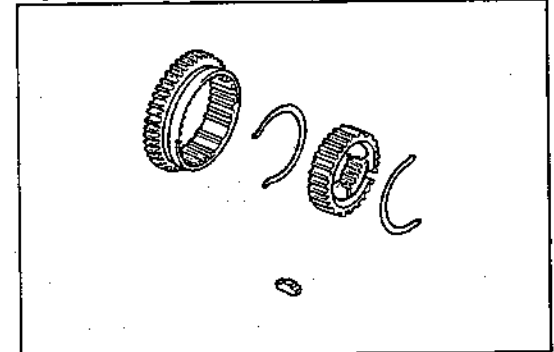


Fig. 3-112

WR-03109

8. Remove the 1st gear assembly.

(1) Detach the shaft snap ring, using the SST given below.

SST: 09905-00012-000

(2) Remove the 1st subgear.

(3) Remove the conical spring washer.

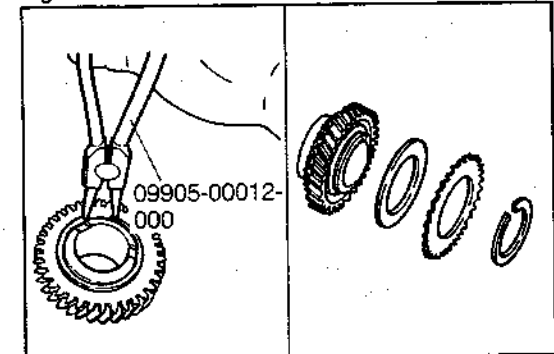


Fig. 3-113

WR-03110

9. Remove the spacer and needle roller bearing.

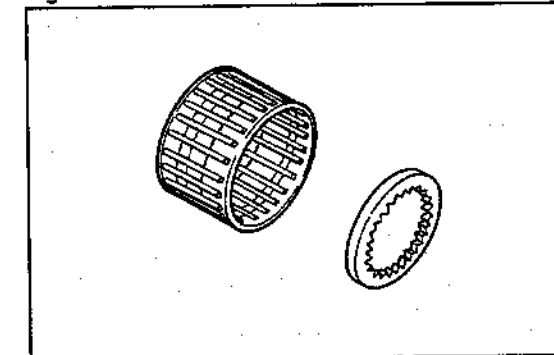


Fig. 3-114

WR-03111

# MANUAL TRANSMISSION

## INSPECTION

1. Check the 2nd gear bush for wear or damage.

Part	Specified value mm (inch)	Limit mm (inch)
Bore ①	$29 \begin{smallmatrix} +0.115 \\ -0.130 \end{smallmatrix}$ (1.1417 $\begin{smallmatrix} -0.0045 \\ -0.0051 \end{smallmatrix}$ )	28.84 (1.135)
Outer diameter ②	$37 \begin{smallmatrix} +0.040 \\ -0.080 \end{smallmatrix}$ (1.4567 $\begin{smallmatrix} -0.0016 \\ -0.0031 \end{smallmatrix}$ )	36.89 (1.4524)
Overall length ③	$32.5 \pm 0.03$ (1.2795 $\pm 0.0012$ )	32.47 (1.2783)

2. Check each gear for wear or damage.

Part	Specified value mm (inch)		Limit mm (inch)	
	Bore ①	Width ⑥	① Bore	⑥ Width
1st gear (output)	$37 \begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$ (1.4567 $\begin{smallmatrix} +0.0010 \\ 0 \end{smallmatrix}$ )	$32.5 \begin{smallmatrix} -0.20 \\ -0.27 \end{smallmatrix}$ (1.2795 $\begin{smallmatrix} -0.0079 \\ -0.0106 \end{smallmatrix}$ )	37.05 (1.459)	32.2 (1.268)
2nd gear (output)	$37 \begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$ (1.4567 $\begin{smallmatrix} +0.0010 \\ 0 \end{smallmatrix}$ )	$32.5 \begin{smallmatrix} -0.13 \\ -0.20 \end{smallmatrix}$ (1.2795 $\begin{smallmatrix} -0.0051 \\ -0.0079 \end{smallmatrix}$ )	37.05 (1.459)	32.2 (1.268)
Splined section Tapered section ②	Visually inspect the section for excessive damage or wear.			
Gear section ③				
Both edge surfaces of gear ④				
Fitting section with hub sleeve ⑤	Inspect the section for excessive play, nick or rounded edge.			

\* $30.5 \begin{smallmatrix} -0.20 \\ -0.27 \end{smallmatrix}$  for GTTi model  
(1.200  $\begin{smallmatrix} -0.0079 \\ -0.0106 \end{smallmatrix}$ )

3. Check the clutch hub for the 1st & 2nd gears and reverse gear for wear or damage.

### Clutch Hub

Part	Limit
Splined section ①	Visually inspect the section for excessive damage or wear.
Synchromesh shifting key fitting groove ②	
With the hub fitted into the sleeve, check for excessive looseness in up-&-down direction and slant of the hub and sleeve.	

### Reverse Gear

Part	Specified value mm (inch)	Limit mm (inch)
Shift fork groove width ③	$7.0 \begin{smallmatrix} +0.12 \\ +0.05 \end{smallmatrix}$ (0.276 $\begin{smallmatrix} +0.004 \\ +0.002 \end{smallmatrix}$ )	7.3 (0.287)
Fitting section with gear ④	Visually inspect the section for excessive damage, wear, nick or rounded edge.	
Reverse gear tooth surface ⑤		

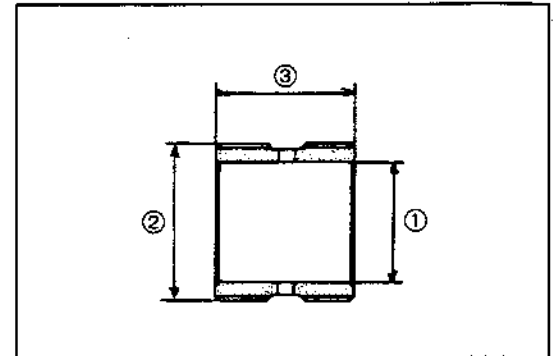


Fig. 3-115

WR-03112

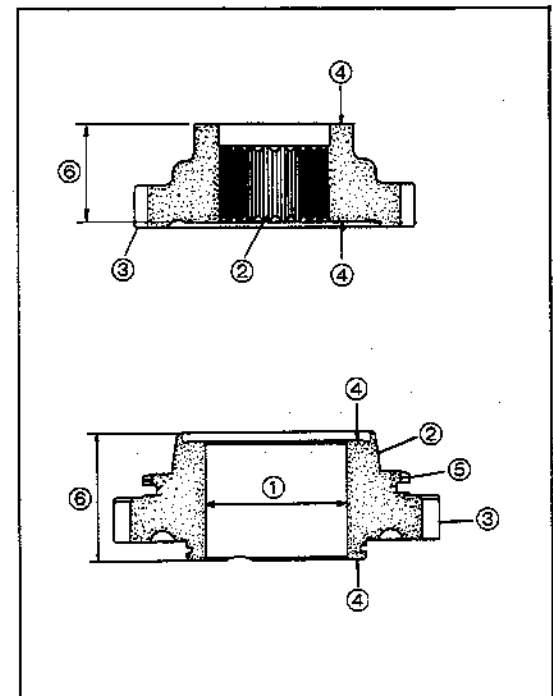


Fig. 3-116

WR-03113

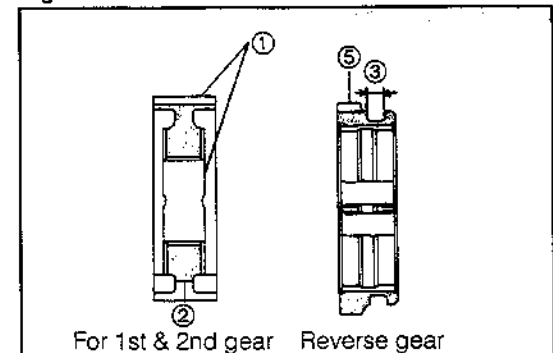


Fig. 3-117

WR-03114

4. Check the output shaft for wear or damage.

Part		Specified value mm (inch)	Limit mm (inch)
Outer diameter of the needle roller bearing-contact-section	①	$30 \pm 0.021$ (1.1811 $\pm 0.0008$ )	29.96 (1.1795)
	②	$32 \pm 0.009$ (1.2598 $\pm 0.0004$ )	31.96 (1.2583)
Tooth surfaces of gear and spline		Visually inspect the surface for excessive damage, wear, nick or rounded edge.	

5. Check the synchromesh shifting key and key spring for wear or damage.

Part		Specified value mm (inch)	Limit mm (inch)
Shifting key for 1st & 2nd gears (dimension H)		$5.1 \pm 0.1$ (0.2008 $\pm 0.0039$ )	4.7 (0.185)
Spring	①	Visually inspect the spring for damage or distortion.	

6. Check the 1st and 2nd subgears and conical spring washer for damage or wear. (Except for vehicles mounted with Type CB-80 engine)

Part		Specified value mm (inch)	Limit mm (inch)
Bore of subgear	①	$47 \pm 0.2$ (1.8504 $\pm 0.0079$ )	47.5 (1.870)
Subgear-to-conical spring washer sliding surface	②	Visually inspect the surface for damage or distortion.	

7. Check the synchronizer ring for wear or damage.

Part		Specified value mm (inch)	Limit mm (inch)
Gap when synchronizer ring is pressed to gear	1st and 2nd gears	0.85 - 1.45 (0.0335 - 0.0571)	0.5 (0.020)
Damage at inner tapered section	Visually inspect the section for excessive damage.		
Damage at spline			

8. Check the bearing for wear or damage.

Part	Inspection criteria
Bearing	When the inner race is rotated by your fingers, it should rotate smoothly without any binding.

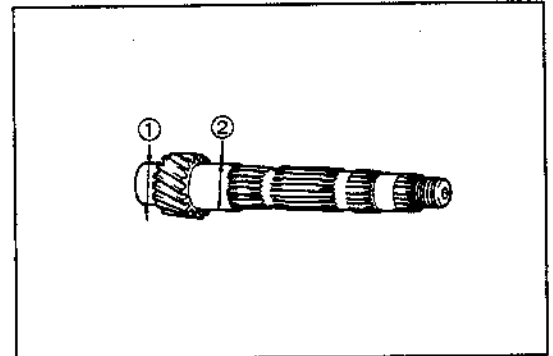


Fig. 3-118

WR-03115

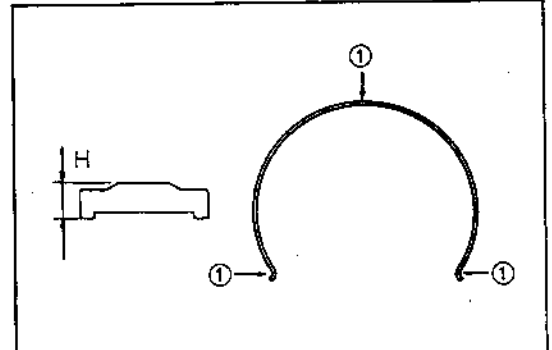


Fig. 3-119

WR-03116

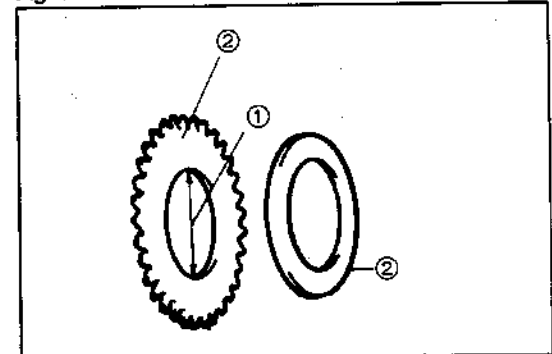


Fig. 3-120

WR-03117

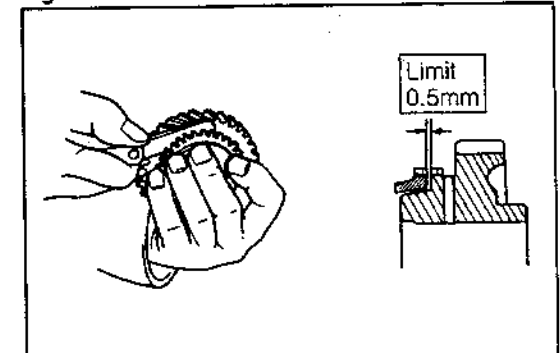


Fig. 3-121

WR-03118

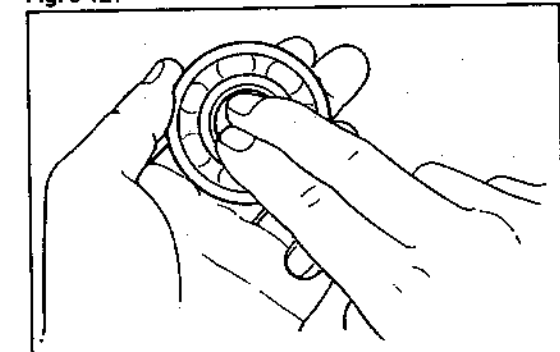


Fig. 3-122

WR-03119

# MANUAL TRANSMISSION

## ASSEMBLY

### NOTE:

Apply gear oil to the entire surface of the rotary or sliding section of each gear of the output shaft.

1. Assemble the needle roller bearing and spacer.
2. Assemble the 1st gear assembly.
  - (1) Install the conical spring in such a way that its expanded side may face toward the subgear side.
  - (2) Assemble the 1st subgear.
  - (3) Assemble a new snap ring, using the SST given blow.  
SST: 09905-00012-000
3. Assemble the synchronizer ring No.3.
4. Assemble the synchronizer hub assembly.
  - (1) Assemble the hub clutch and reverse gear. Ensure that both parts can slide smoothly.
  - (2) Assemble the shifting keys and springs.
5. Assemble the synchronizer ring No.3 and 2nd gear bush.
6. Assemble the 2nd gear assembly.
  - (1) Install the conical spring in such a way that its expanded side may face toward the subgear side.
  - (2) Assemble the 2nd subgear.
  - (3) Assemble a new snap ring, using the SST given below.  
SST: 09905-00012-000

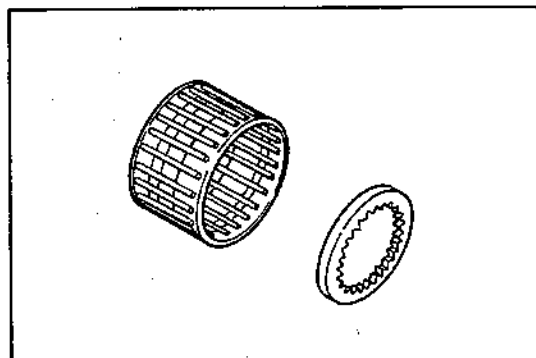


Fig. 3-123

WR-03120

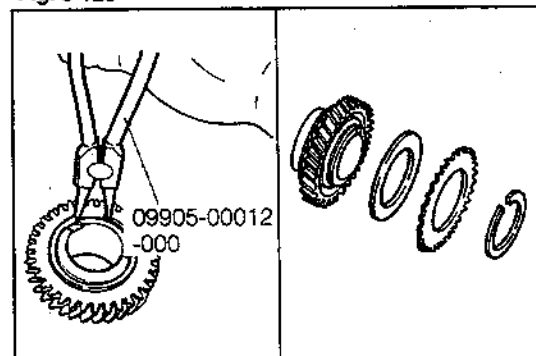


Fig. 3-124

WR-03121

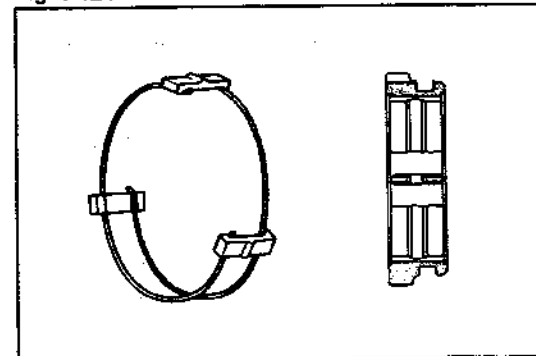


Fig. 3-125

WR-03122

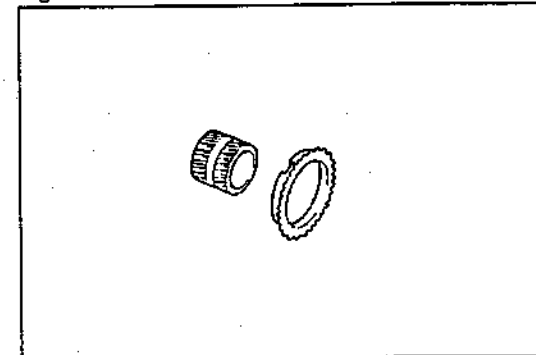


Fig. 3-126

WR-03123

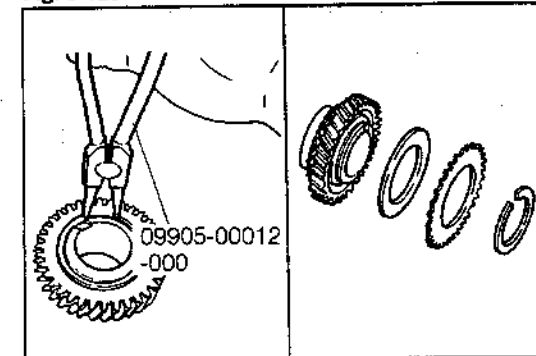


Fig. 3-127

WR-03124

7. Assemble the output 3rd gear, speedometer drive gear and output 4th gear.

**NOTE:**

The number of the speedometer drive gear teeth differs depending upon the gear reduction ratio. Hence, care must be exercised as to the number of gear teeth during the assembly. (See page 3-3.)

Apply gear oil to the entire surface of the rotary or sliding section of each gear.

8. Assemble the bearing, using the SST given below.

SST: 09309-87201-000

9. Assemble the conical spring washer and lock nut.  
(4-speed transmission)

- (1) Install the conical spring in such a way that its expanded side may face toward the gear side.
- (2) Clamp the reduction gear section in a vise, making sure that no scratch may be made to the section.
- (3) Tighten the lock nut.

Tightening Torque: 10.0 - 14.0 kg-m (72 - 101 ft-lb)

10. Upon completion of the assembly, measure the end play of each part of the output shaft.

Part		Specified value mm(inch)	Limit mm (inch)
1st gear	①	0.1 - 0.37 (0.0039 - 0.0146)	0.5 (0.020)
3rd gear	②		

**NOTE:**

If the end play does not comply with the specification, check the gear, bush and clutch hub sliding section. Replace any parts which exhibit defects.

11. Stake the lock nut, using a chisel.

**NOTE:**

Be sure to stake the central part of the lock nut so as to avoid dislocation or cracks.

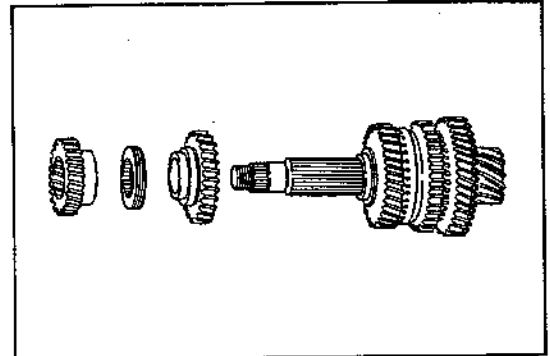


Fig. 3-128

WR-03125

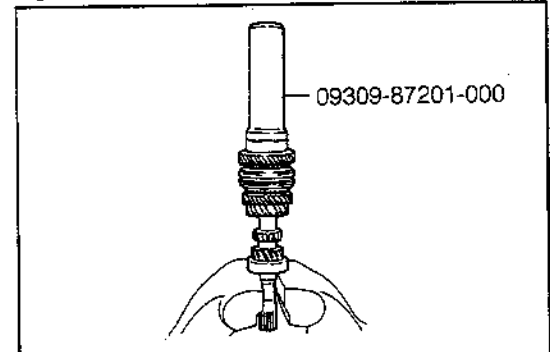


Fig. 3-129

WR-03126

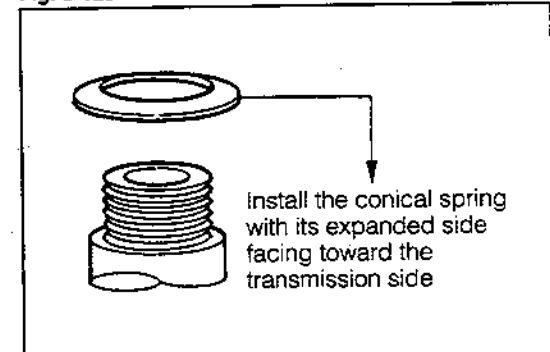


Fig. 3-130

WR-03127

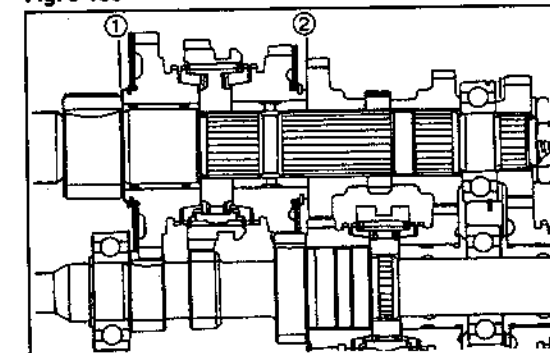


Fig. 3-131

WR-03128

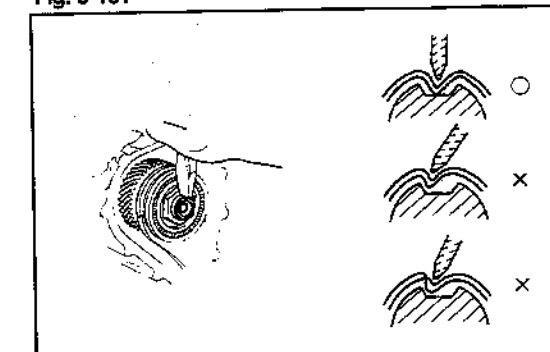
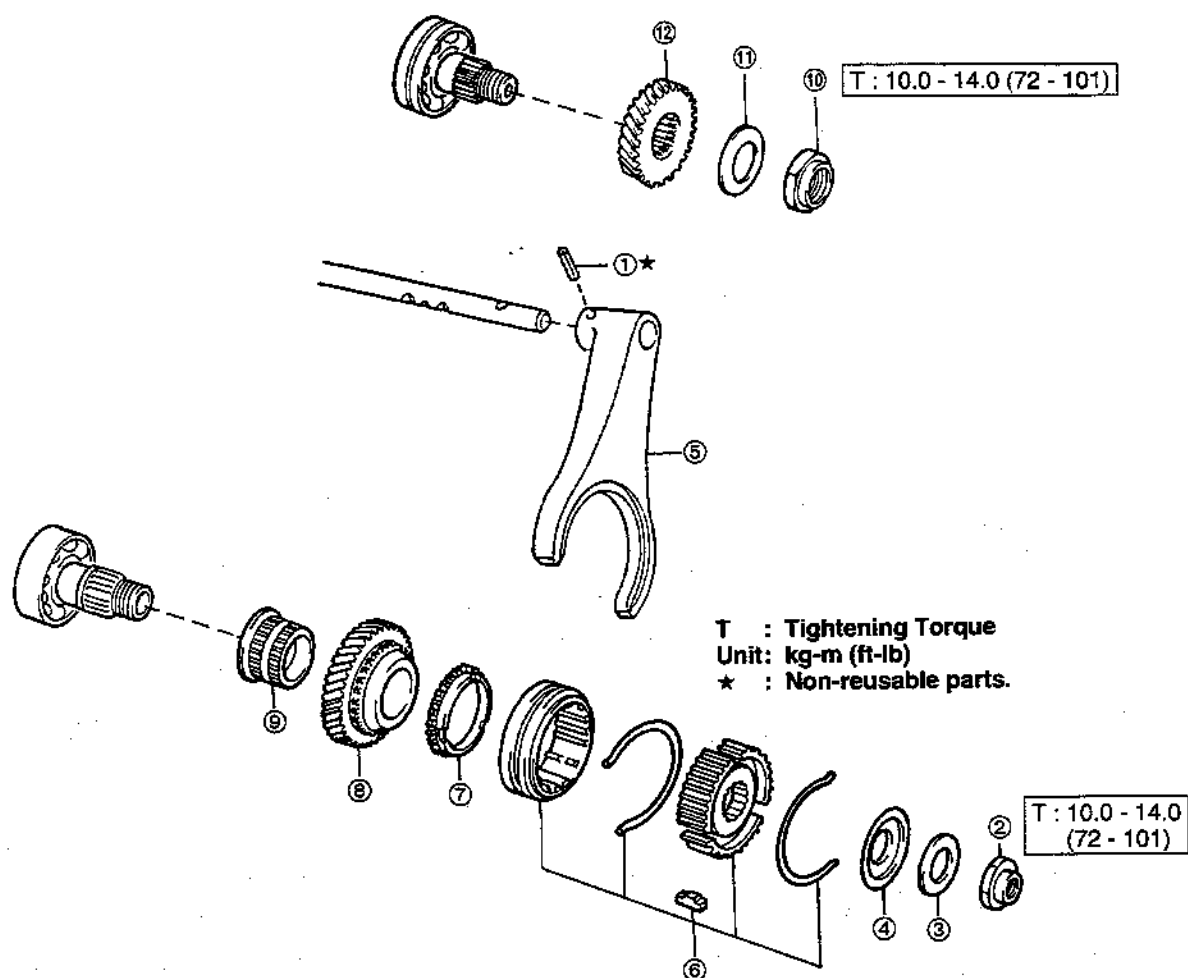


Fig. 3-132

WR-03129

## DISASSEMBLY, INSPECTION AND ASSEMBLY OF 5TH GEAR COMPONENTS



- ① Slotted spring pin
- ② Lock nut
- ③ Conical spring washer
- ④ Transmission hub sleeve stopper
- ⑤ 5th shift fork
- ⑥ Transmission clutch No.3 hub Ay

- ⑦ Synchronizer ring
- ⑧ 5th gear
- ⑨ 5th gear bush
- ⑩ Lock nut
- ⑪ Conical spring washer
- ⑫ Output 5th gear

Fig. 3-133

WR-03129A



## DISASSEMBLY

1. Remove the slotted spring pin.

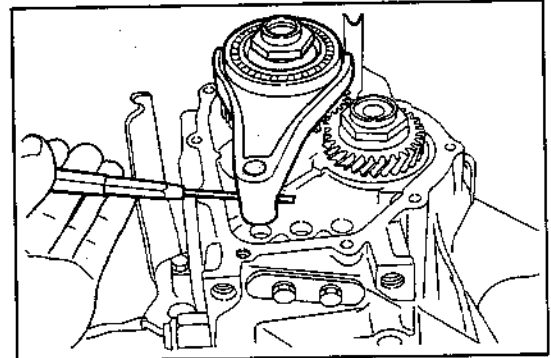


Fig. 3-134

2. Remove the lock nut.

- (1) Lock the input shaft, using the recommended tool for this application. (See page 3-66)
- (2) Release the staked lock nut, using a chisel.

### NOTE:

Be very careful not to damage the threaded portion of the input shaft.

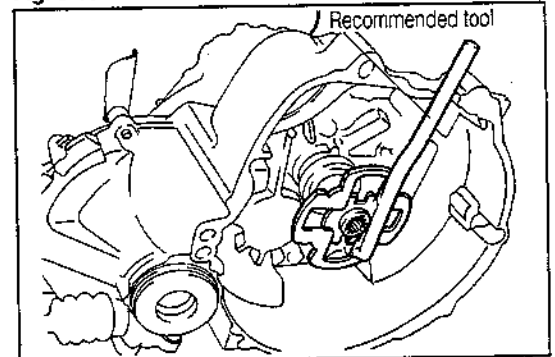


Fig. 3-135

- (3) Remove the lock nut at the input shaft, using a socket whose width across flats is 32 mm.
- (4) Set the sleeve for 5th gear to the 5th gear position.
- (5) Remove the lock nut at the output shaft side.

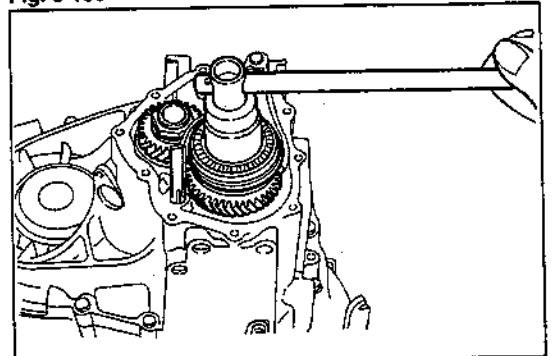


Fig. 3-136

3. Remove the conical spring washer at the input shaft side and transmission hub sleeve stopper.

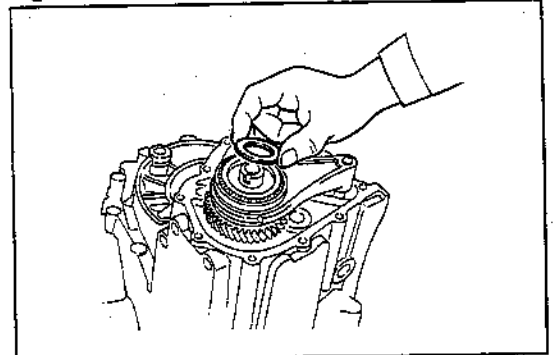


Fig. 3-137

4. Remove the 5th shift fork and transmission clutch hub assembly No.3.

- (1) Remove the 5th shift fork and transmission clutch hub assembly No.3 at the same time.

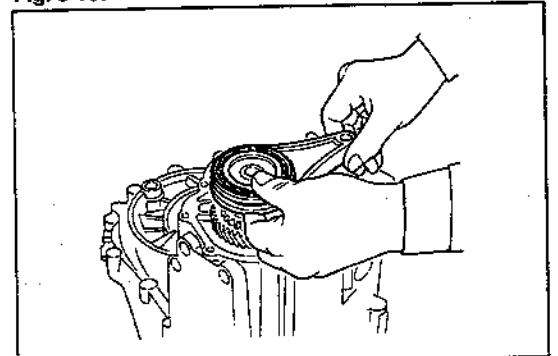


Fig. 3-138

## MANUAL TRANSMISSION

5. Remove the synchronizer ring and 5th gear.
6. Remove the 5th gear bush.
7. Remove the conical spring washer at the output shaft side. Remove the output 5th gear.

## INSPECTION

1. Check the bush wear or damage.

Part		Specified value mm (inch)	Limit mm (inch)
Bush bore ①		$25 \begin{smallmatrix} +0.042 \\ -0.027 \end{smallmatrix}$ (0.9843 $\begin{smallmatrix} +0.0017 \\ -0.0011 \end{smallmatrix}$ )	25.02 (0.985)
Bush outer diameter ②		$37 \begin{smallmatrix} -0.040 \\ -0.080 \end{smallmatrix}$ (1.4567 $\begin{smallmatrix} -0.0016 \\ -0.0031 \end{smallmatrix}$ )	36.89 (1.452)
Overall length ③		$29 \pm 0.03$ (1.1417 $\pm 0.0012$ )	28.97 (1.141)
Thickness of flange section ④		$3 \pm 0.06$ (0.1181 $\pm 0.0024$ )	2.94 (0.116)

2. Check the 5th gear for wear or damage.

Part	Specified value mm (inch)		Limit mm (inch)	
	Bore ①	Width ⑥	Bore ①	Width ⑥
5th gear (input)	$37 \begin{smallmatrix} +0.025 \\ -0 \end{smallmatrix}$ (1.4567 $\begin{smallmatrix} +0.001 \\ 0 \end{smallmatrix}$ )	$26 \begin{smallmatrix} -0.13 \\ -0.20 \end{smallmatrix}$ (1.0236 $\begin{smallmatrix} -0.005 \\ -0.008 \end{smallmatrix}$ )	37.05 (1.459)	25.7 (1.012)
Splined section Tapered section ②	Visually inspect the section for excessive damage or wear.			
Gear section ③				
Both edge surfaces of gear ④				
Fitting section with hub sleeve ⑤	Inspect the section for excessive play, nick or rounded edge.			

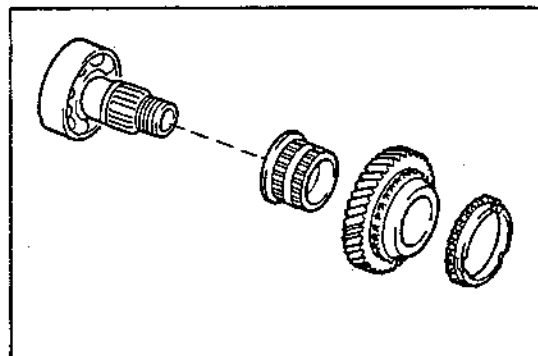


Fig. 3-139

WR-03135

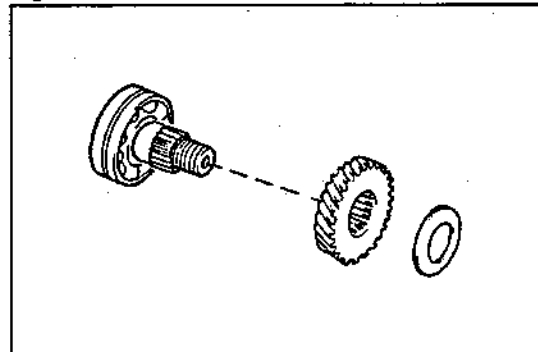


Fig. 3-140

WR-03136

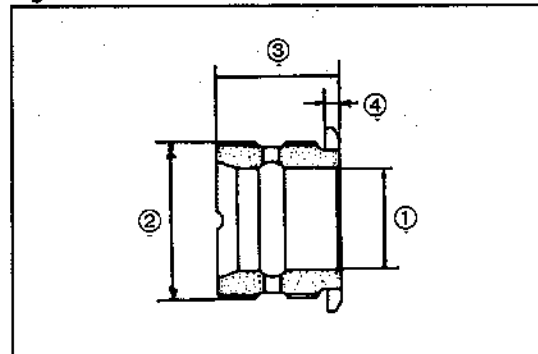


Fig. 3-141

WR-03137

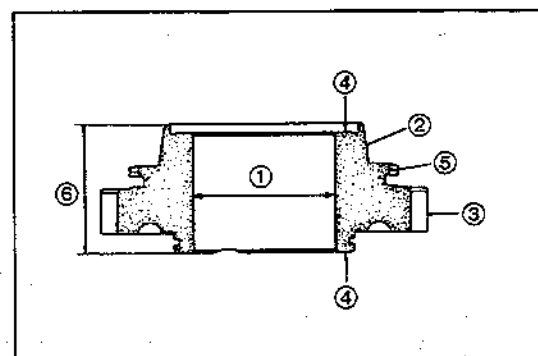


Fig. 3-142

WR-03138

3. Check the clutch hub and sleeve for the 5th gear for wear or damage.

## Clutch Hub

Part	Limit
Splined section ①	Visually inspect the section for excessive damage or wear.
Synchromesh shifting key fitting groove ②	
With the hub fitted into the sleeve, check for excessive looseness in up-&-down direction and slant of the hub and sleeve.	

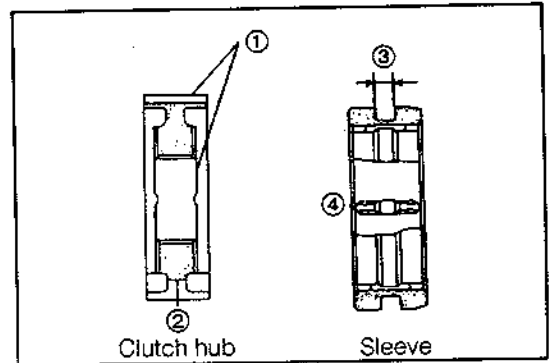


Fig. 3-143

WR-03139

## Sleeve

Part	Specified value mm (inch)	Limit mm (inch)
Shift fork groove width ③	$70^{+0.12}_{+0.05}$ (0.276 $\pm$ 0.004)	7.3 (0.287)
Fitting section with gear ④	Visually inspect the section for excessive damage, wear, nick or rounded edge.	

WR-03139

4. Check the synchromesh shifting key and key spring for wear or damage.

Part	Specified value mm (inch)	Limit mm (inch)
Key for 5th gear (Dimension H)	$5.0 \pm 0.2$ (0.1969 $\pm$ 0.0079)	4.3 (0.169)
Spring ①	Visually inspect the spring for damage or distortion.	

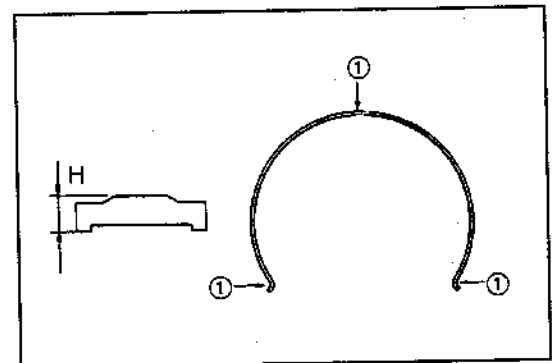


Fig. 3-144

WR-03140

5. Check the synchronizer ring for wear or damage.

Part	Specified value mm (inch)	Limit mm (inch)
Gap when synchronizer ring is pressed to gear	0.85 - 1.45 (0.033 - 0.057)	0.5 (0.020)
Damage at inner tapered section	Visually inspect the section for excessive damage.	
Damage at spline		

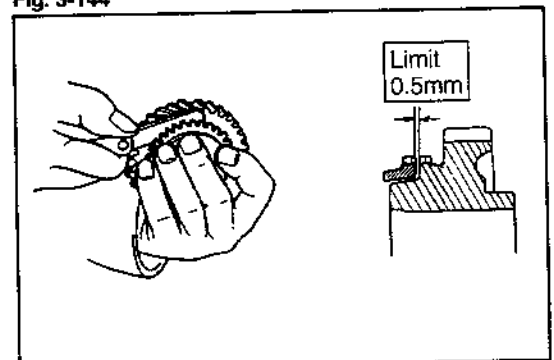


Fig. 3-145

WR-03141

6. Check the shift fork for the 5th gear for damage or wear.

Part	Specified value mm (inch)	Limit mm (inch)
Thickness at tip-section of fork	7.0 (0.28)	6.3 (0.25)

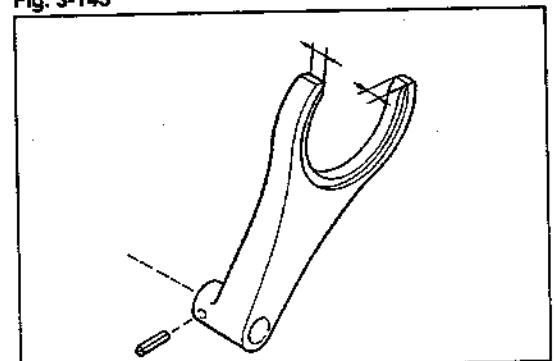


Fig. 3-146

WR-03142

# MANUAL TRANSMISSION

## ASSEMBLY

### NOTE:

Apply gear oil to the entire surface of the rotary or sliding section of each gear of the output shaft.

1. Assemble the output 5th gear and the conical spring washer for the output shaft.

### NOTE:

Tighten a new lock nut temporarily.

2. Assemble the 5th gear bush.
3. Assemble the 5th gear and synchronizer ring.

4. Assemble the transmission clutch hub assembly.
  - (1) Assemble the clutch and sleeve. Ensure that both parts can slide smoothly.
  - (2) Assemble the shifting keys and springs.

### NOTE:

1. The hub assembly for the 3rd and 4th gear use differs from the hub assembly for the 5th gear use only in the inner diameter of the clutch hub. Other parts are shared in common.
  2. The sleeve and clutch do not have any installing direction to be observed during their assembly.
5. Assemble the transmission clutch hub assembly and the 5th gear shift fork at the same time.

6. Assemble the transmission hub sleeve stopper.
7. Assemble the conical spring washer.
  - (1) Install the conical spring in such a way that its expanded side may face toward the transmission side.

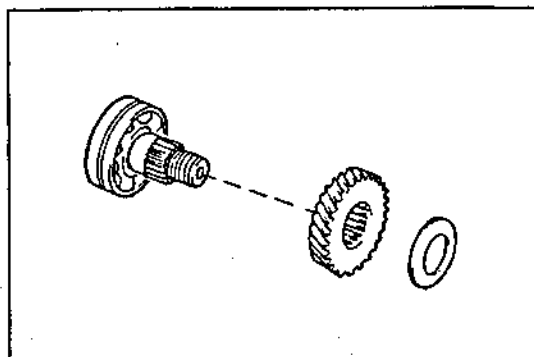


Fig. 3-147

WR-03144

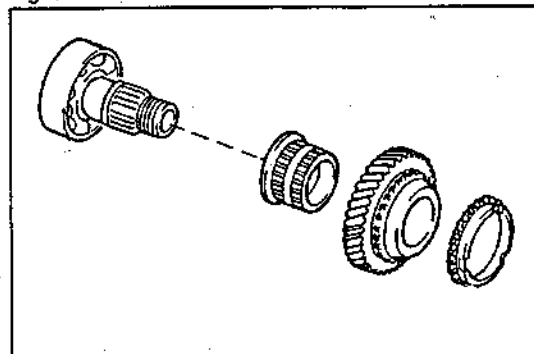


Fig. 3-148

WR-03145

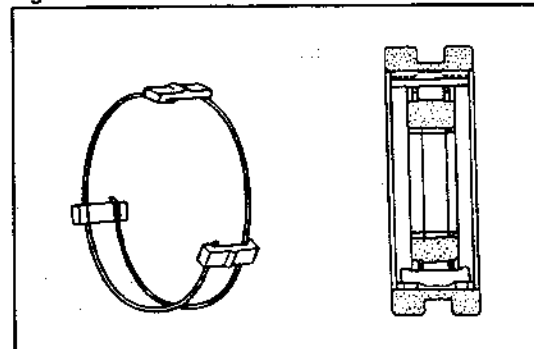


Fig. 3-149

WR-03146

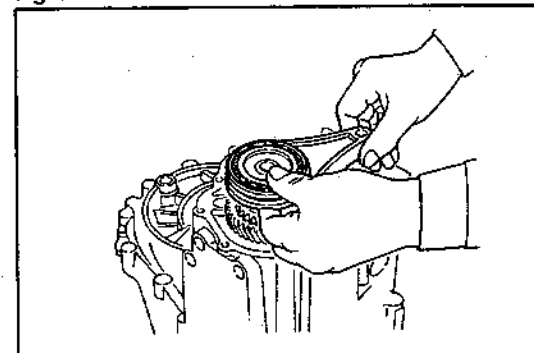


Fig. 3-150

WR-03147

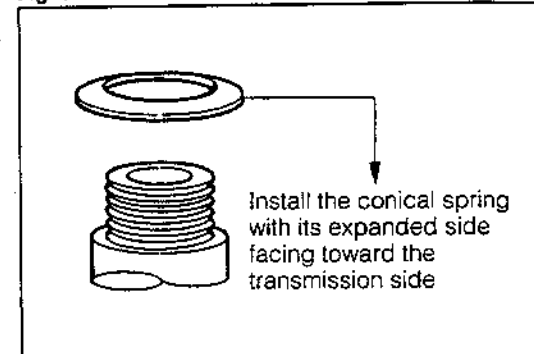


Fig. 3-151

WR-03149

8. Install a new lock nut.

- (1) Lock the input shaft, using the recommended tool for this application. (See page 3-66.)
- (2) Tighten the lock nut at the input shaft to the specified torque, using a socket whose width across flats is 32 mm.

Tightening Torque: 10.0 - 14.0 kg-m (72 - 101 ft-lb)

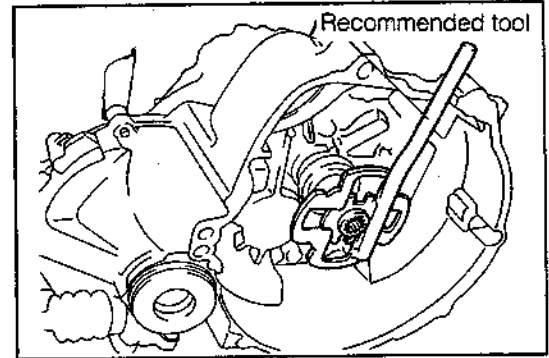


Fig. 3-152

WR-03150

- (3) Set the transmission to the 5th gear position.

- (4) Tighten the lock nut at the output shaft to the specified torque.

Tightening Torque: 10.0 - 14.0 kg-m (72 - 101 ft-lb)

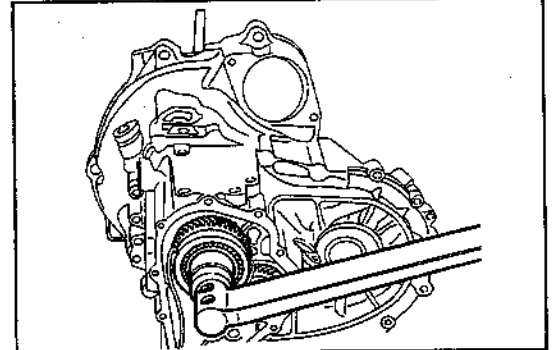


Fig. 3-153

WR-03151

- (5) Before the lock nut is staked, measure the end play of the 5th gear.

Specified Value: 0.1 - 0.23 mm (0.004 - 0.009 inch)

Limit: 0.4 mm (0.016 inch)

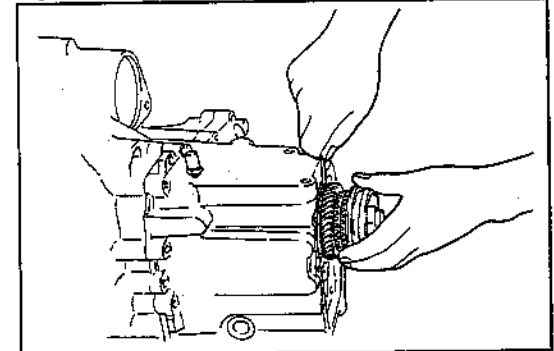


Fig. 3-154

WR-03152

- (6) Stake the lock nut, using a chisel.

**NOTE:**

Be sure to stake the central part of the lock nut so as to avoid dislocation or cracks.

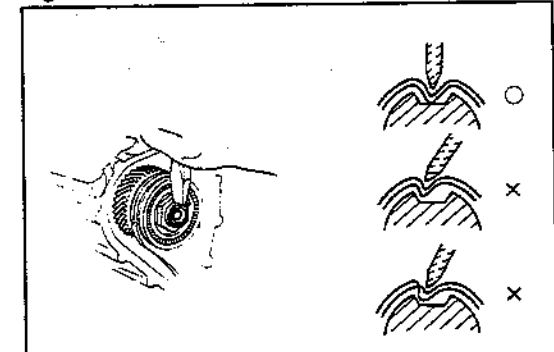


Fig. 3-155

WR-03153

9. Drive the slotted spring pin into position, until it becomes flush with the edge surface of the shift fork.

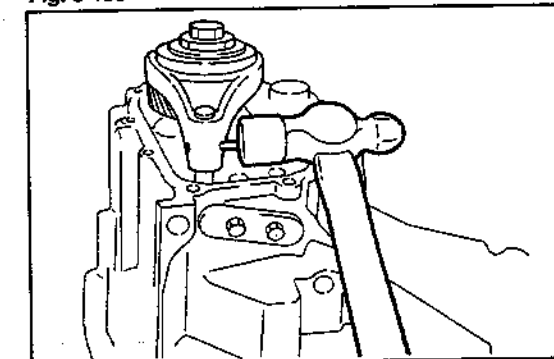
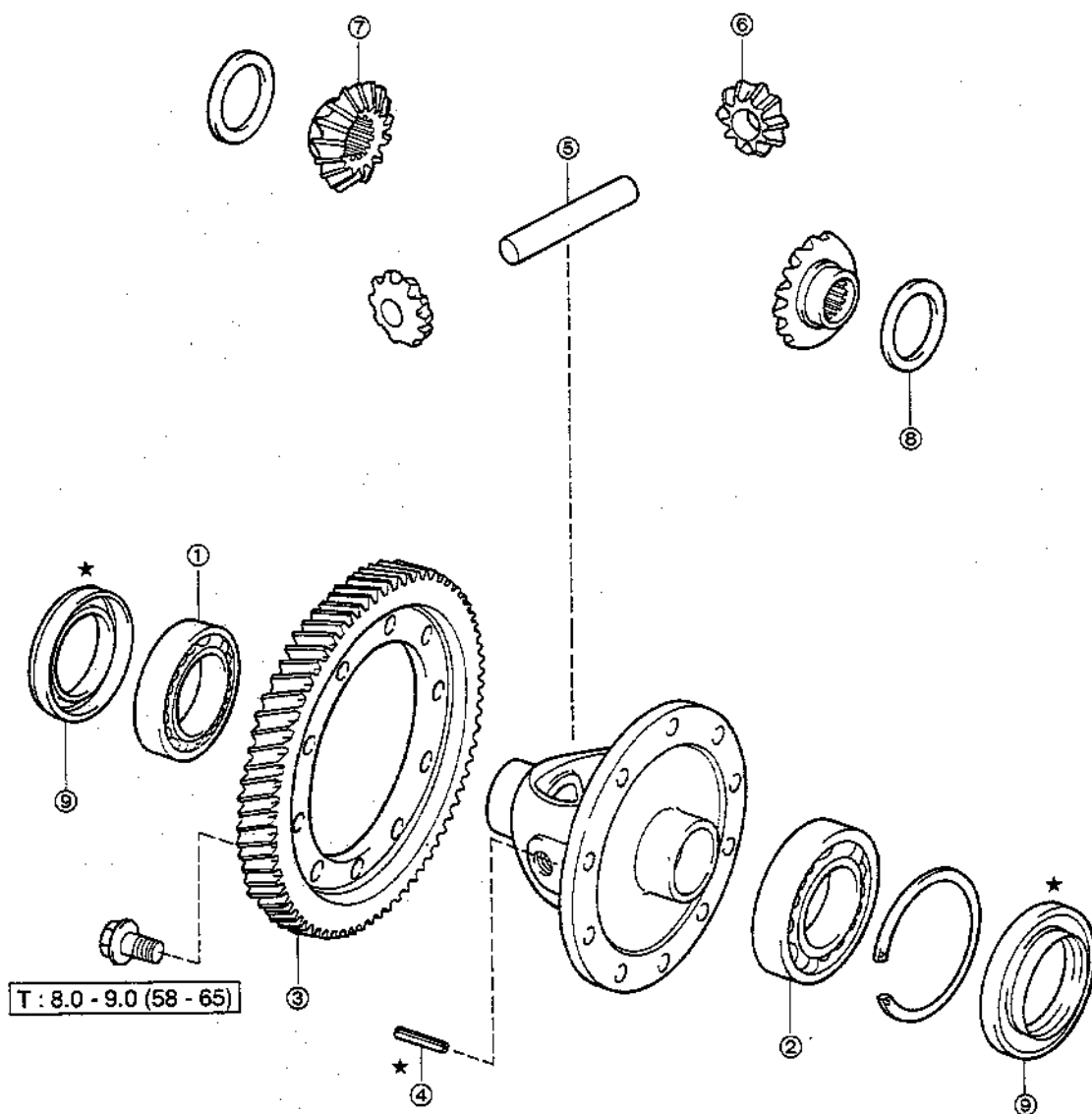


Fig. 3-156

WR-03154

## DISASSEMBLY, INSPECTION AND ASSEMBLY OF DIFFERENTIAL CASE COMPONENTS



T : Tightening Torque  
Unit: kg-m (ft-lb)  
★ : Non-reusable parts

- ① Radial ball bearing
- ② Radial ball bearing
- ③ Differential gear
- ④ Slotted spring pin
- ⑤ Differential pinion shaft
- ⑥ Differential pinion
- ⑦ Differential side gear
- ⑧ Differential washer
- ⑨ Oil seal

Fig. 3-157

WR-03154A

## DISASSEMBLY

1. Remove the radial ball bearing.

- (1) Remove the bearing at the engine side, using the SST given below.

SST: 09602-87301-000

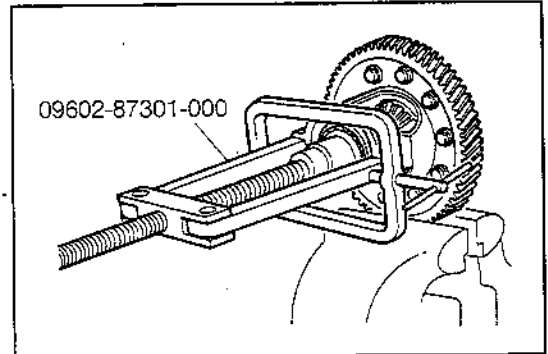


Fig. 3-158

WR-03155

- (2) Remove the bearing at the transmission side, using the SST given below.

SST: 09306-87302-000

### NOTE:

Grinding off the interfering section of the SST will make the operation easier.

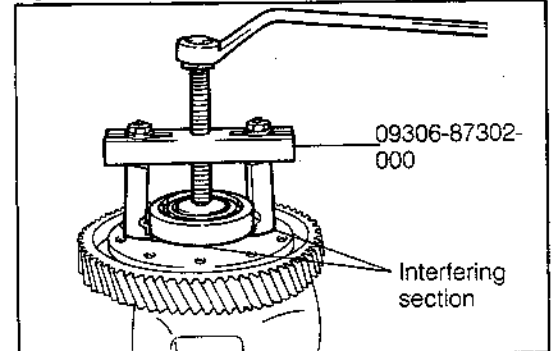


Fig. 3-159

WR-03156

2. Remove the differential ring gear.

- (1) Clamp the differential case in a vise. Remove the attaching bolts.

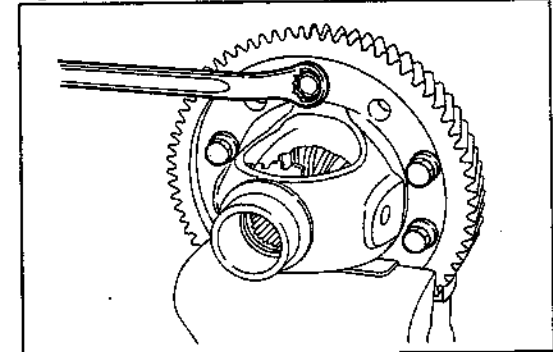


Fig. 3-160

WR-03157

- (2) Remove the differential ring gear.

If any difficulty in removing the ring gear is encountered, evenly tap the peripheral section of the ring gear, using a plastic hammer.

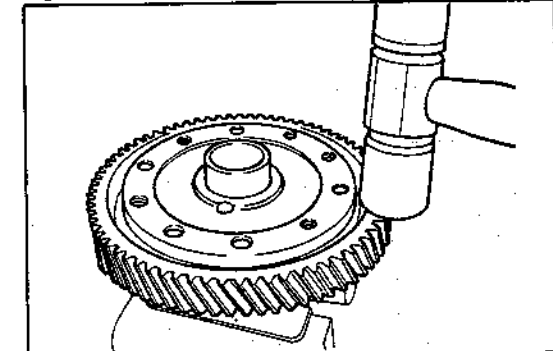


Fig. 3-161

WR-03158

3. Drive out the slotted spring pin, using a punch pin.

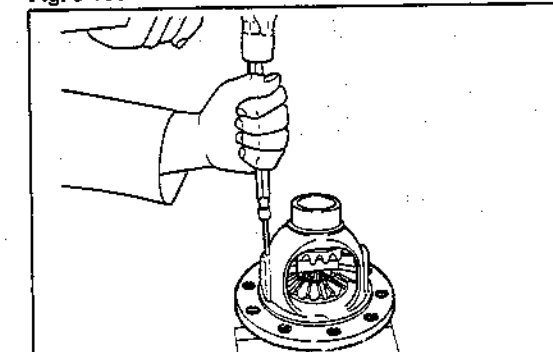


Fig. 3-162

WR-03159

# MANUAL TRANSMISSION

4. Pull out the differential pinion shaft.

5. Remove the differential pinion, differential side gear and differential pinion washer.

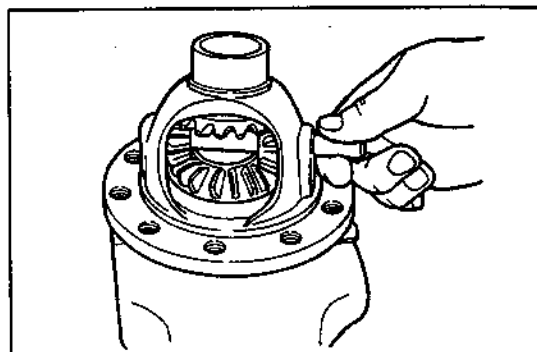


Fig. 3-163

WR-03160

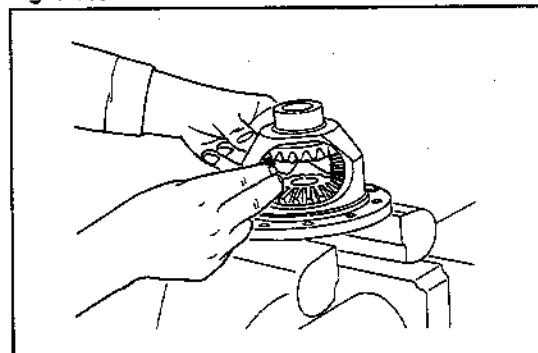


Fig. 3-164

WR-03161

## INSPECTION

1. Check the differential ring gear for wear or damage.

Part	Inspection criteria
Gear tooth surface	Visually inspect the surface for wear, damage, nick or rounded edge.

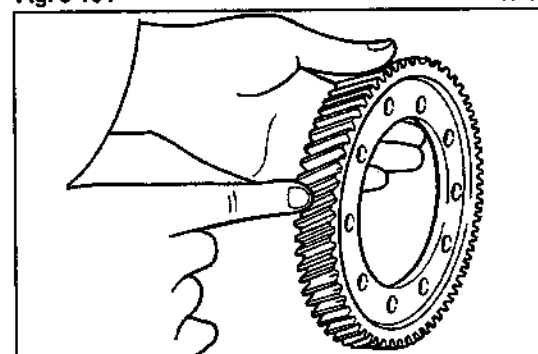


Fig. 3-165

WR-03162

2. Check the side gear, pinion and pinion shaft for wear or damage.

Part		Specified value mm (inch)	Limit mm (inch)
Outer diameter of side gear boss section ①	Except vehicles mounted with Type CB-80 engine	32.0 $\pm 0.025$ (1.2598 $\pm 0.0010$ )	31.97 (1.259)
	Vehicles mounted with Type CB-80 engine	35.0 $\pm 0.005$ (1.3780 $\pm 0.0002$ )	34.97 (1.377)
Pinion shaft fitting hole of pinion ②	Except vehicles mounted with Type CB-80 engine	15.0 $\pm 0.008$ (0.5906 $\pm 0.0003$ )	15.03 (0.592)
	Vehicles mounted with Type CB-80 engine	16.0 $\pm 0.008$ (0.6299 $\pm 0.0003$ )	16.03 (0.631)
Outer diameter of pinion shaft ③	Except vehicles mounted with Type CB-80 engine	15.0 $\pm 0.032$ (0.5906 $\pm 0.0013$ )	14.97 (0.589)
	Vehicles mounted with Type CB-80 engine	16.0 $\pm 0.032$ (0.6299 $\pm 0.0013$ )	15.97 (0.629)

Check the gear tooth surface and the splined section of the side gear for wear or damage.

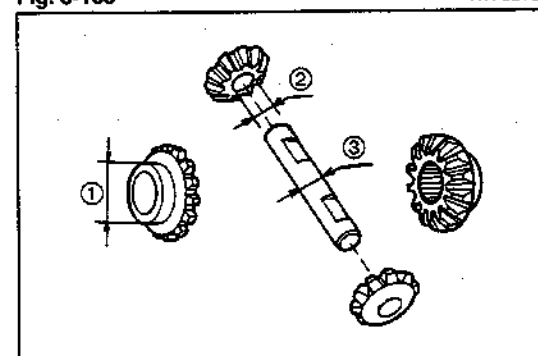


Fig. 3-166

WR-03163



3. Check the differential case and thrust washer for wear or damage.

Part		Specified value mm (inch)	Limit mm (inch)
Thickness of thrust washer	Except vehicles mounted with Type CB-80 engine	0.8 ± 0.05 (0.0315 ± 0.0020)	0.7 (0.028)
	Vehicles mounted with Type CB-80 engine	1.1 ± 0.05 (0.043 ± 0.0020)	1.0 (0.039)
Side gear boss fitting hose (Except vehicles mounted with Type CB-80 engine) ①		32 <sup>+0.034</sup> / <sub>-0.009</sub> (1.2598 <sup>+0.0013</sup> / <sub>-0.0035</sub> )	32.08 (1.263)
Drive shaft fitting hose (Vehicles mounted with Type CB-80 engine) ①		28 <sup>+0.034</sup> / <sub>-0.009</sub> (1.1024 <sup>+0.0013</sup> / <sub>-0.0035</sub> )	28.08 (1.106)
Pinion gear-contact-section ②		Visually inspect the section for ex- cessive wear or damage.	
Side gear thrust washer-contact-section ③			

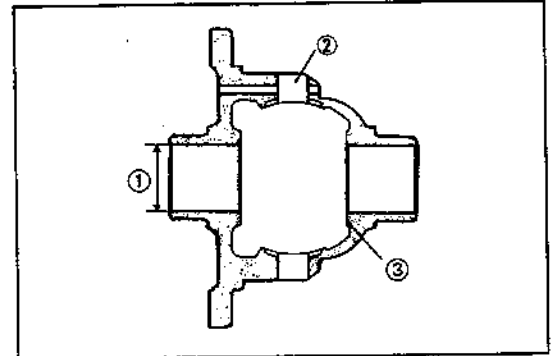


Fig. 3-167

WR-03164

## ASSEMBLY

1. Assemble the differential pinion washers and differential side gears.

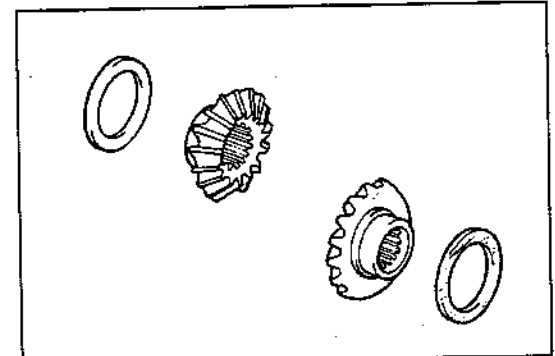


Fig. 3-168

WR-03166

2. Assemble the differential pinions.
  - (1) Make the two pinions mesh with the side gears, working from the case side. Rotate the side gear so that the pinion's hole may align with the pinion shaft hole provided in the case.

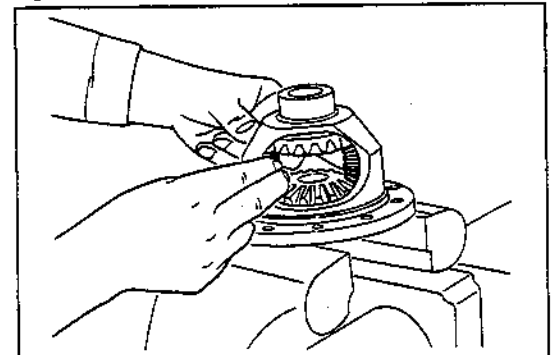


Fig. 3-169

WR-03167

3. Assemble the differential pinion shaft.

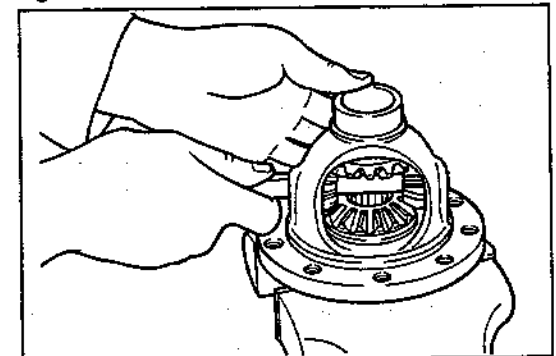


Fig. 3-170

WR-03168

## MANUAL TRANSMISSION

### Measurement of Side Gear Backlash

- (1) Fix the side gear at one side.
  - (2) Measure the backlash of each side gear at the right and left sides at several points, using a dial gauge.
- Specified Backlash: 0.02 - 0.20 mm (0.001 - 0.008 inch)

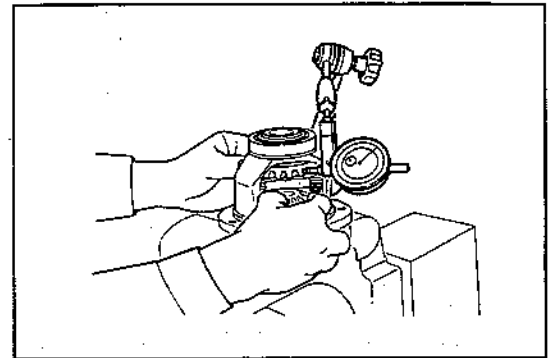


Fig. 3-171

WR-03169

4. Drive a new slotted spring pin into position.
  - (1) Align the pin hole of the pinion shaft with the corresponding pin hole in the case.
  - (2) Working from the backside of the case (ring gear side), drive a new slotted spring pin into position, until it becomes flush with the case edge surface.

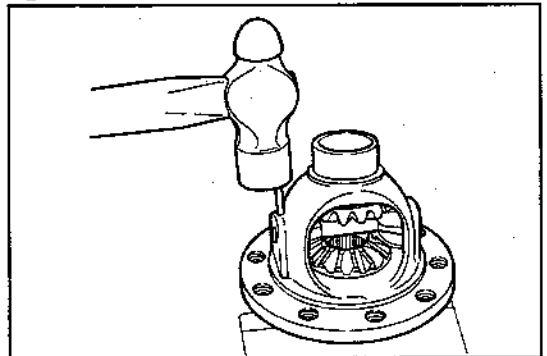


Fig. 3-172

WR-03170

5. Assemble the differential ring gear.
  - (1) Install the ring gear in such a way that the side having large chamfer at its inner diameter comes at the case side.

#### NOTE:

1. The number of gear teeth varies depending upon each reduction ratio. Hence, it is necessary to identify the ring gear by checking the identification groove.
2. Care must be exercised to ensure that no foreign matter gets into the mating surface.

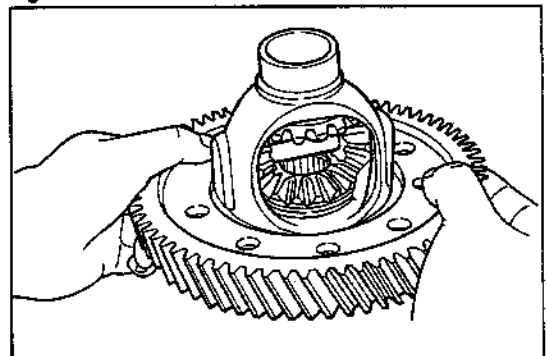


Fig. 3-173

WR-03171

### Identification of Ring Gear

Number of gear teeth	Identification groove	Final reduction gear ratio
72	One	4.500
74	None	4.933
65	Two	4.642
* 65	Three	4.642

\* For Type CB-80 engine

- (2) Tighten the ring gear attaching bolts.

Tightening Torque: 8.0 - 9.0 kg-m (58 - 65 ft-lb)

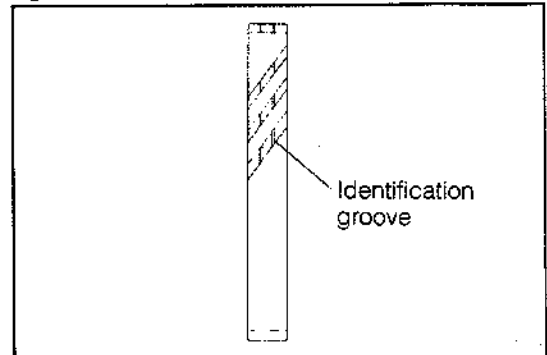


Fig. 174

WR-03172

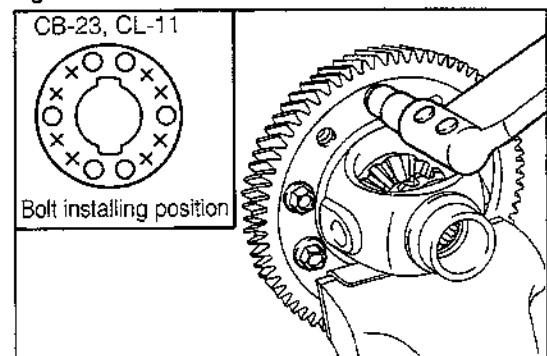


Fig. 3-175

WR-03173

6. Assemble the radial ball bearings, using the SST given below.

SST: 09618-87301-000

**NOTE:**

Install the radial ball bearings with the bearing having a smaller outer diameter assembled at the ring gear side.

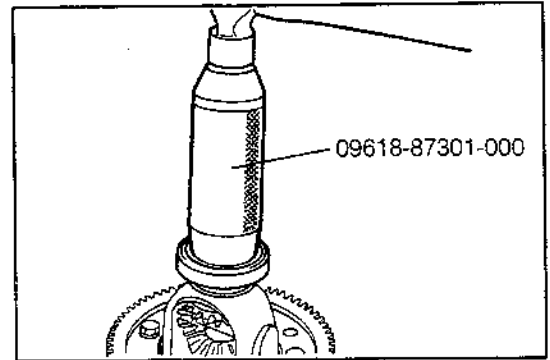
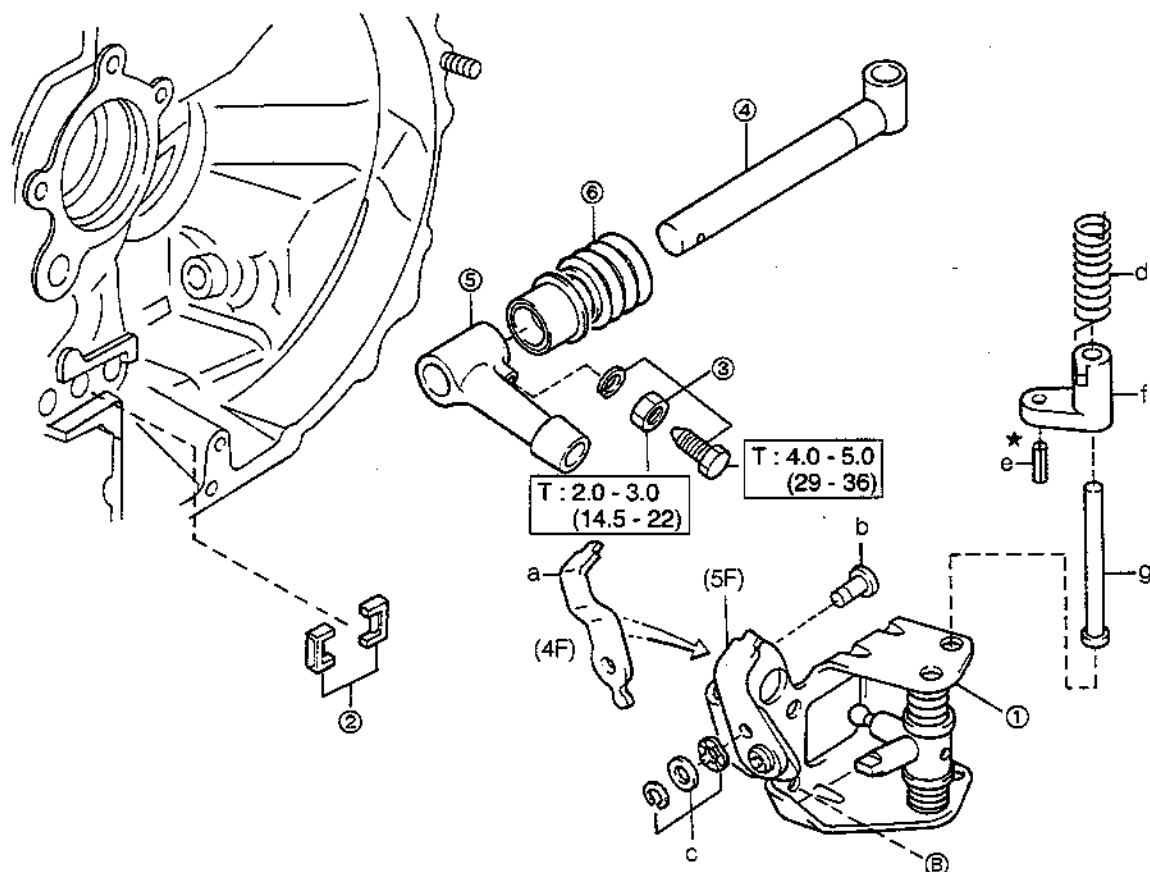


Fig. 3-176

WR-03174

## DISASSEMBLY, INSPECTION AND ASSEMBLY OF CONTROL LINKAGE-RELATED PARTS COMPONENTS (PART 1)



**T : Tightening Torque**  
**Unit: kg-m (ft-lb)**  
**★ : Non-reusable parts**

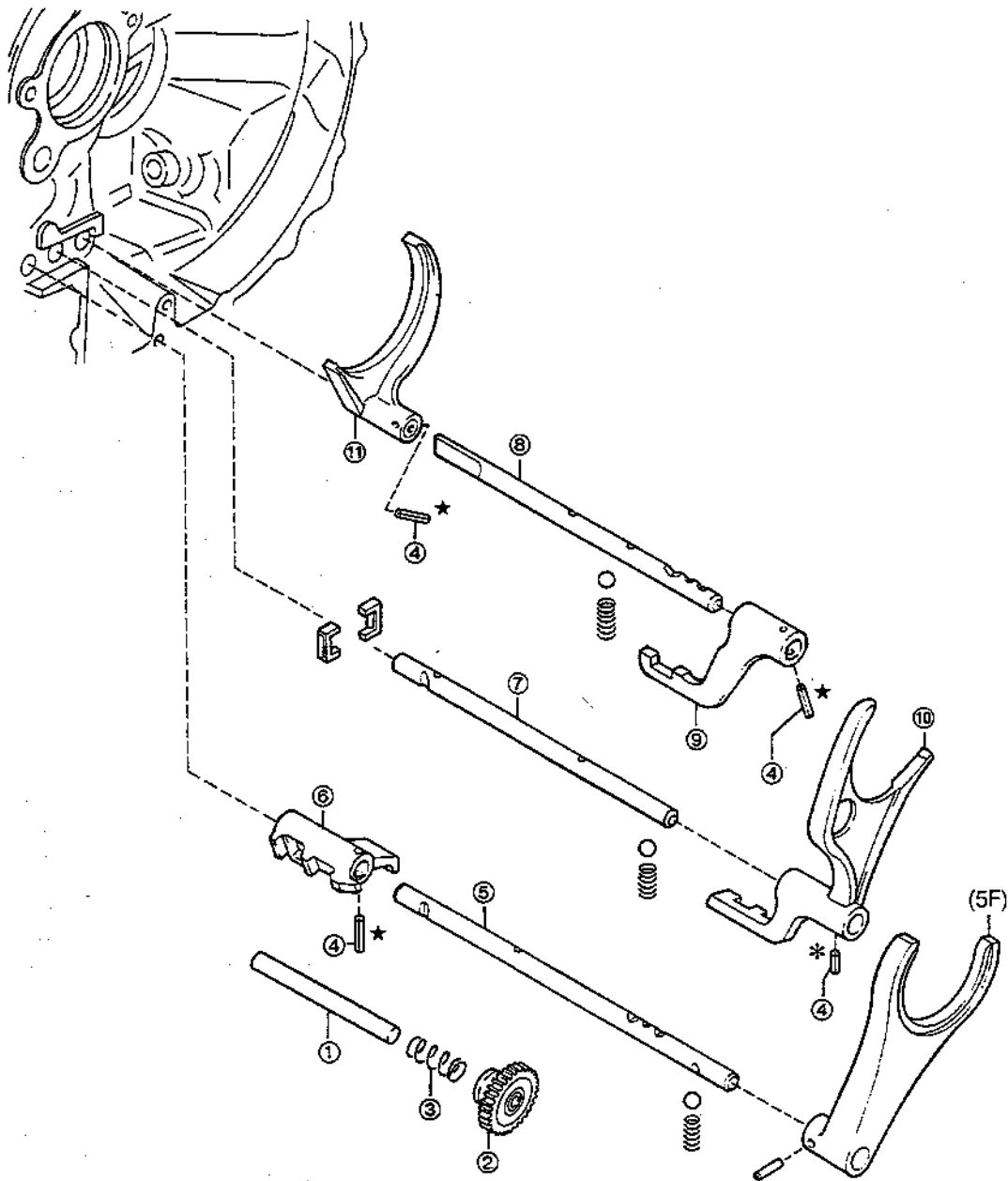
- ① Select support Ay & shifting bell crank
  - a. Reverse shift arm (4 M/T)
  - b. Shift arm pin & washer
  - c. E ring & washer
  - d. Compression spring
  - e. Slotted spring pin
  - f. Reverse restrict cam
  - g. Reverse restrict shaft

- ② Shift inter lock plate
- ③ Wave washer, bolt and nut set
- ④ Shift & select shaft
- ⑤ Shift inner lever
- ⑥ Control shaft boot

Fig. 3-177

WR-03174A

## COMPONENTS (PART 2)



★ : Non-reusable parts

- ① Reverse idler shaft
- ② Reverse idler gear
- ③ Compression spring
- ④ Slotted spring pin × 4
- ⑤ 5th & reverse shift fork shaft
- ⑥ Reverse shift arm head

- ⑦ 3rd & 4th shift fork shaft
- ⑧ 1st & 2nd shift fork shaft
- ⑨ 1st & 2nd shift head
- ⑩ 3rd & 4th shift fork
- ⑪ 1st & 2nd shift fork

Fig. 3-178

WR-03174B

## MANUAL TRANSMISSION

### DISASSEMBLY

1. Pull out the reverse idler gear shaft. Remove the reverse idler gear together with the compression spring.

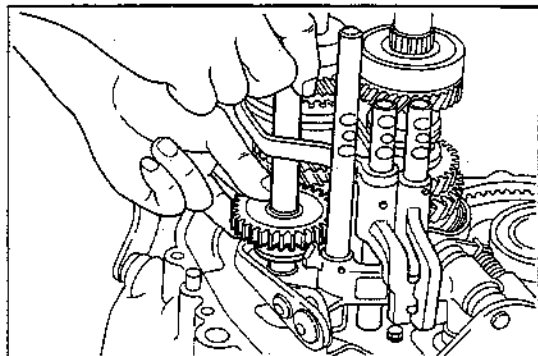


Fig. 3-179

WR-03175

2. Pull out the slotted spring pin.  
(1) Working from the arrow-headed direction in the figure, drive out the slotted spring pin by means of a punch pin. (Four points)

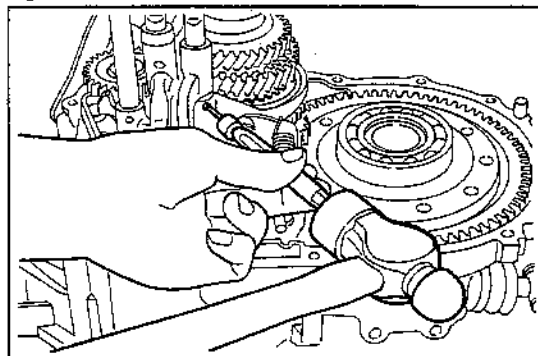


Fig. 3-180

WR-03176

3. Pull out the 5th & reverse shift fork shaft. Remove the reverse shift arm head.

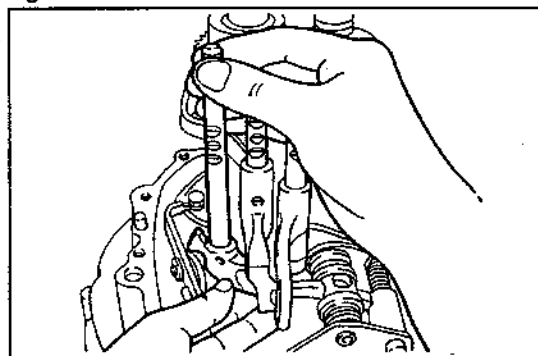


Fig. 3-181

WR-03177

4. Remove the 3rd & 4th shift fork shaft and the 3rd & 4th shift fork.

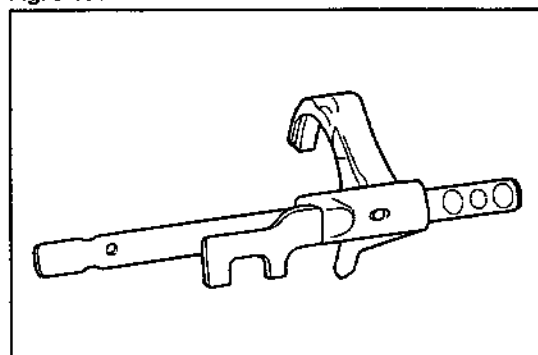


Fig. 3-182

WR-03178

5. Pull out the 1st & 2nd shift fork shaft. Remove the 1st & 2nd shift fork and the 1st & 2nd shift head.

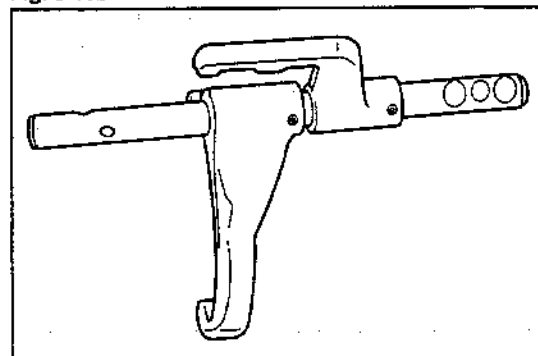


Fig. 3-183

WR-03179

6. Remove the input shaft and output shaft at the same time.

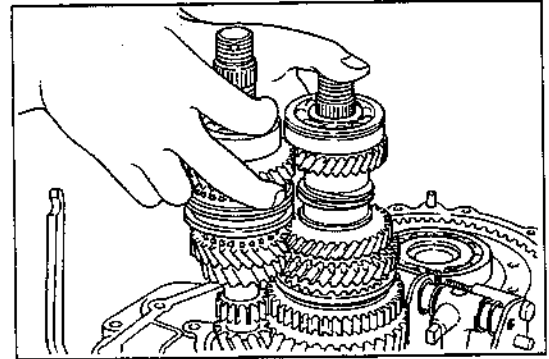


Fig. 3-184

WR-03180

7. Remove the selecting & shifting bell crank support assembly and magnet.

## NOTE:

1. Be sure not to release the staked section of the bell crank.
2. On both the 4-speed and 5-speed transmissions, replacement parts are supplied only as those with the bell crank support assembly. (In the case of the replacement parts for the 5-speed transmission, the reverse restricting cam is excluded.) Furthermore, it should be noted that the reverse restricting cam can not be disassembled.

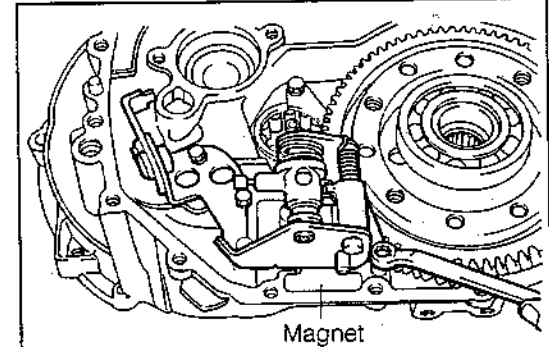


Fig. 3-185

WR-03181

8. Remove the shift interlock plate.

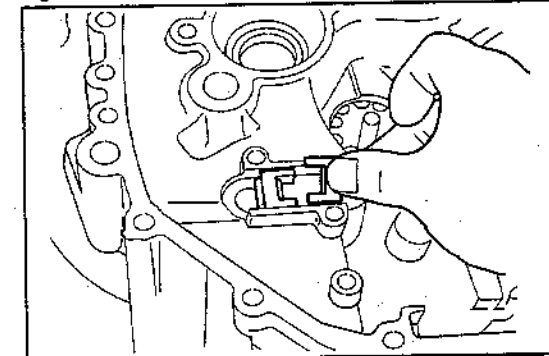


Fig. 3-186

WR-03182

9. Remove the wave washer, nut and set bolt.  
(1) After the nut has been slackened, proceed to slacken the set bolt.

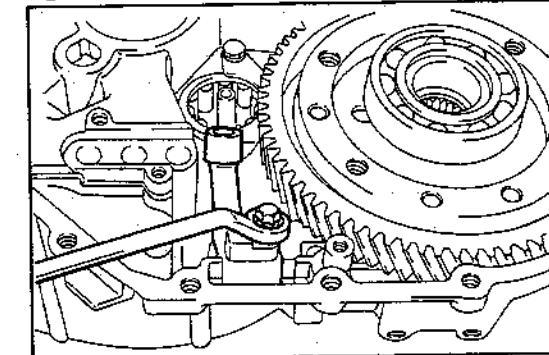


Fig. 3-187

WR-03183

10. After the differential case assembly has been removed (see page 3-16), remove the shift & select shaft.

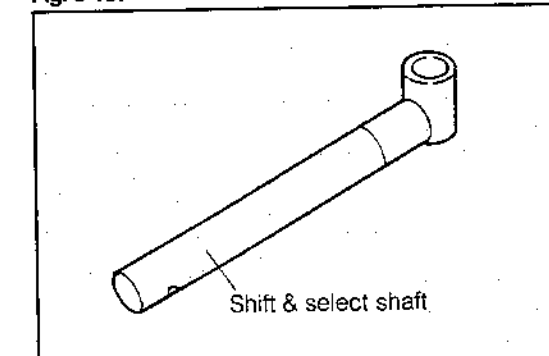


Fig. 3-188

WR-03184

# MANUAL TRANSMISSION

11. Remove the shift inner lever and control shaft boot.

## INSPECTION

1. Check the shift fork shafts, balls and springs for damage or wear.

Part	Inspection criteria
Ball lock section and interlock section of fork shaft ①	Visually inspect the section for excessive damage or wear.

2. Check the 1st shift fork, the 2nd shift fork and the reverse shift head for damage or wear.

Part	Specified value mm (inch)	Limit mm (inch)
Thickness at tip-section of fork ①	7.0 (0.276)	6.3 (0.248)
Groove width of shift inner lever-contact-section ②	$12.1 \begin{smallmatrix} +0.1 \\ -0 \end{smallmatrix}$ ( $0.476 \begin{smallmatrix} +0.004 \\ -0 \end{smallmatrix}$ )	12.7 (0.500)
Groove width of reverse shift arm pin-contact-section ③	$150 \begin{smallmatrix} +0.043 \\ -0 \end{smallmatrix}$ ( $0.5906 \begin{smallmatrix} +0.0017 \\ -0 \end{smallmatrix}$ )	15.1 (0.595)

3. Check the interlock plate for damage or wear.

Part	Specified value mm (inch)	Limit mm (inch)
*Length of lock plate	$16.3 \pm 0.15$ ( $0.642 \pm 0.006$ )	16.0 (0.630)
Roller section	Check the section for excessive damage or wear.	

\*Two lock plates must be replaced at the same time.

4. Check the control shaft and inner lever for damage or wear.

Part	Inspection criteria
Control shaft ①	Visually inspect the following items given below. <ul style="list-style-type: none"> <li>• Shaft for bend</li> <li>• Recessed section of inner lever and shaft inserting section for wear or damage.</li> <li>• Dust boot for cracks or wear</li> <li>• Tip-end of lock bolt for wear</li> </ul>
Inner lever recessed section and shaft inserting section ②	
Sliding section of dust boot and breakage ③	
Tip-end of lock bolt ④	

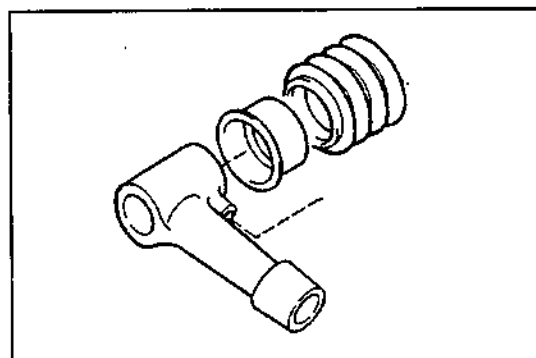


Fig. 3-189

WR-03185

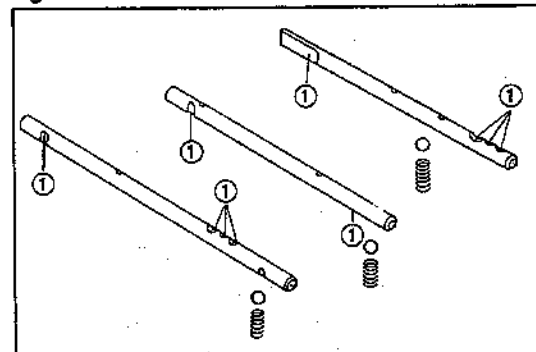


Fig. 3-190

WR-03186

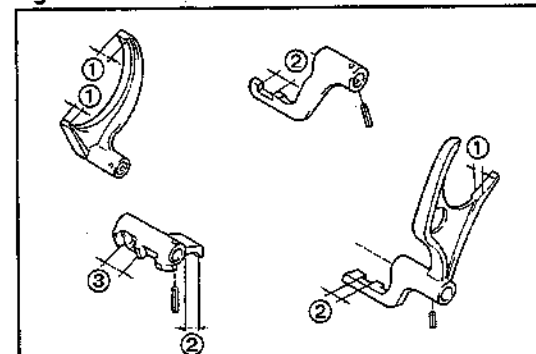


Fig. 3-191

WR-03187

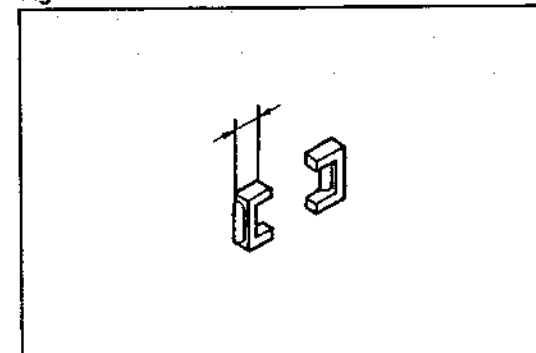


Fig. 3-192

WR-03188

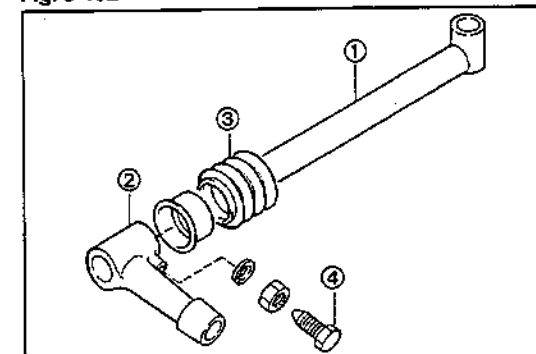


Fig. 3-193

WR-03189



5. Check the selecting & shifting bell crank and the reverse shift arm for damage or wear.

Part	Specified value mm (inch)	Limit mm (inch)
Reverse shift arm pin diameter ①	$15.0 \begin{smallmatrix} +0.050 \\ -0.053 \end{smallmatrix}$ (0.5906 $\begin{smallmatrix} +0.0020 \\ -0.0037 \end{smallmatrix}$ )	14.85 (0.585)
Tip-end width of reverse shift arm ②	$8.0 \begin{smallmatrix} +0.080 \\ -0.116 \end{smallmatrix}$ (0.3150 $\begin{smallmatrix} +0.0031 \\ -0.0046 \end{smallmatrix}$ )	7.8 (0.307)
Operation of selecting & shifting bell crank	Check to see if the bell crank can move in up-and-down direction with detent falling.	

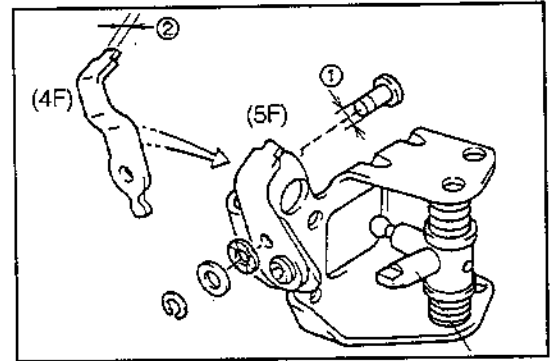


Fig. 3-194

WR-03190

6. Check the reverse restricting cam and shaft for damage or wear. (5-speed transmission only)

Part	Inspection criteria
Operation of restricting cam	<ul style="list-style-type: none"> <li>Ensure that the mis-operation preventing mechanism functions at the support assembly.</li> <li>① The cam should be raised at the same time when the section (A) is lifted.</li> <li>② When turned to the left, ensure that the cam drops and the section (A) is locked.</li> </ul>
Each part of reverse restricting cam and shaft ①	Visually inspect each part for damage or wear.

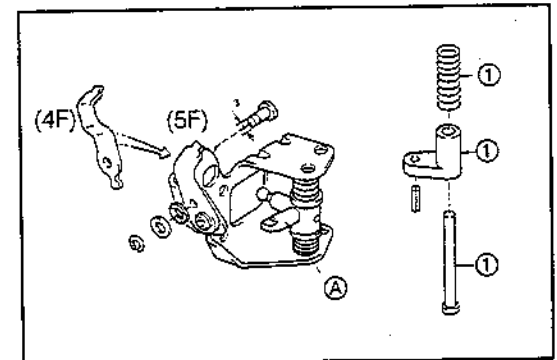


Fig. 3-195

WR-03191

7. Check the reverse idler gear and shaft for wear or damage.

Part	Specified value mm (inch)	Limit mm (inch)
Bush inner diameter ①	$17 \begin{smallmatrix} +0.027 \\ +0 \end{smallmatrix}$ (0.6693 $\begin{smallmatrix} +0.0011 \\ +0 \end{smallmatrix}$ )	17.05 (0.671)
Shaft outer diameter ②	$17 \begin{smallmatrix} +0.032 \\ -0.059 \end{smallmatrix}$ (0.6693 $\begin{smallmatrix} +0.0013 \\ -0.0023 \end{smallmatrix}$ )	16.9 (0.665)
Groove width ③	$8 \begin{smallmatrix} +0.058 \\ +0 \end{smallmatrix}$ (0.3150 $\begin{smallmatrix} +0.0023 \\ +0 \end{smallmatrix}$ )	8.2 (0.323)
Wear or damage of spring ④	Visually inspect the spring for flattened condition and the washer for wear or damage.	

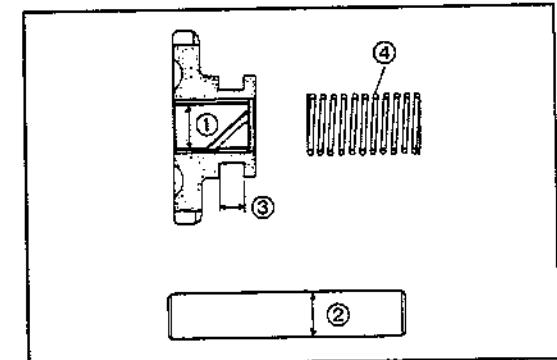


Fig. 3-196

WR-03192

## ASSEMBLY

1. Assemble the boot and shift inner lever on the control shaft.

**NOTE:**

Be very careful not to scratch the boot.

2. Assemble the shift & select shaft in the case.

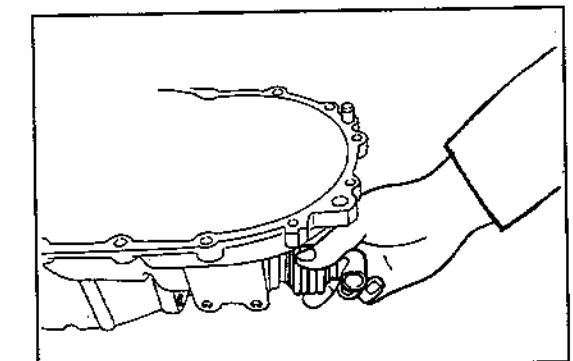


Fig. 3-197

WR-03193

## MANUAL TRANSMISSION

3. After the differential case assembly has been installed, assemble the wave washer, nut and setting bolt.

(1) Align the hole of the shift inner lever with the cut-out section of the shift & select shaft. Proceed to tighten the set bolt to the specified torque.

**Tightening Torque:** 4.0 - 5.0 kg-m (29 - 36 ft-lb)

(2) Tighten the nut to the specified torque.

**Tightening Torque:** 2.0 - 3.0 kg-m (16 - 22 ft-lb)

4. Assemble the shift interlock plate.

(1) Assemble the plate in the Neutral position.

5. Install the magnet into position.

6. Assemble the input shaft and output shaft at the same time.

7. Install the input shaft bearing lock plate. Tighten the nuts.

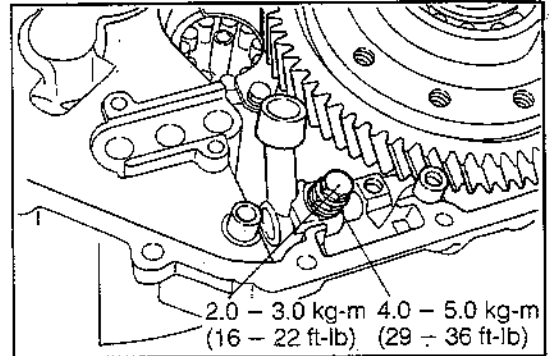


Fig. 3-198

WR-03194

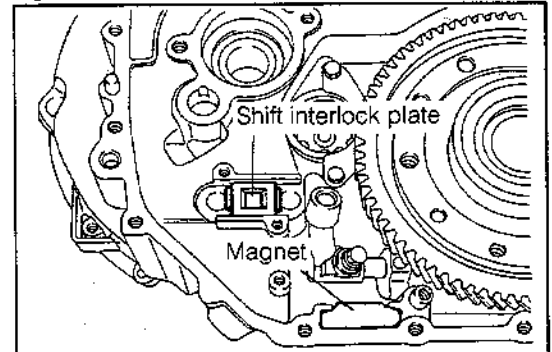


Fig. 3-199

WR-03195

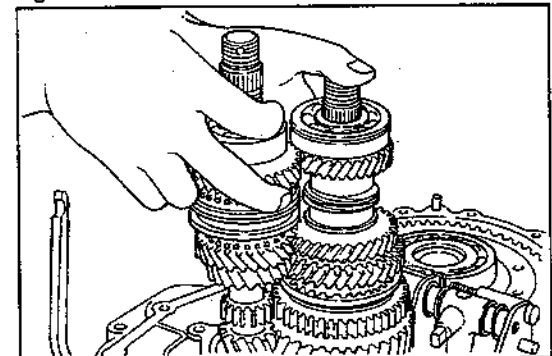


Fig. 3-200

WR-03195A

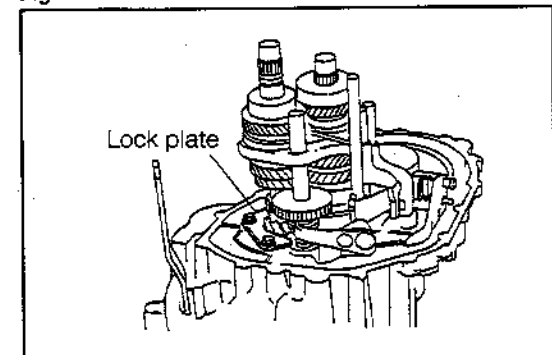


Fig. 3-201

WR-03195B

8. Assemble the selecting & shifting bell crank support assembly.
  - (1) Working from the inside of the case, install the shift arm pin. Assemble the washer.
  - (2) Drive the slotted spring pin into position, until it becomes flush with the edge surface (A) of the restricting cam.
  - (3) Assemble the restricting cam.
    - ① Assemble the restricting cam in such a way that the slotted spring pin may be inserted into the hole (B)

**NOTE:**

Be sure not to forget to attach the spring in place.

9. Assemble the 1st & 2nd shift fork and the 3rd & 4th shift fork.

**NOTE:**

Prior to the assembling, apply gear oil to the sliding section of each shift fork.

- (1) Assemble the 1st & 2nd shift fork onto the synchronizer hub for the 1st & 2nd gear use provided at the output shaft side.
- (2) Assemble the 3rd & 4th shift fork onto the synchronizer hub for the 3rd & 4th gear use provided at the input shaft side.

10. Assemble the 1st & 2nd shift head, the 1st & 2nd shift fork shaft and the 3rd & 4th shift fork shaft.

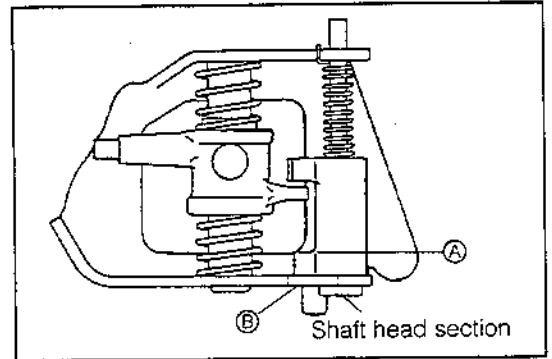


Fig. 3-202

WR-03196

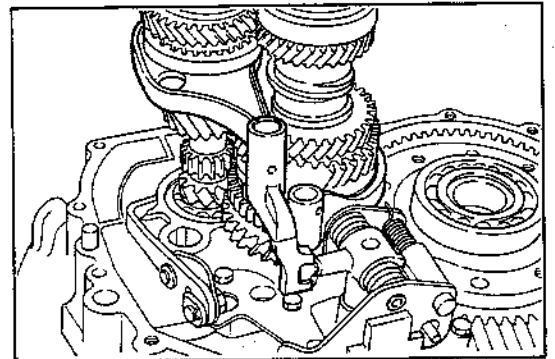


Fig. 3-203

WR-03197

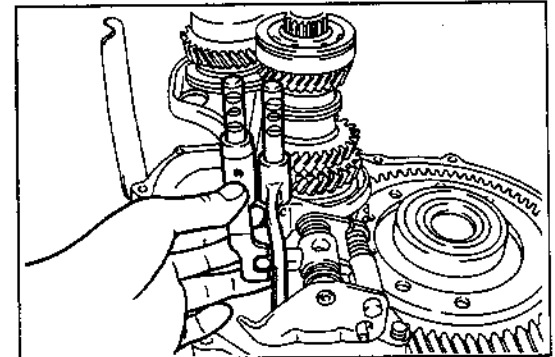


Fig. 3-204

WR-03198

11. Assemble the reverse shift arm head.

- (1) Assemble the arm head in the direction as indicated in the right figure.

**NOTE:**

It should be noted that the arm head for the 4-speed transmission differs from that for the 5-speed transmission in its shape.

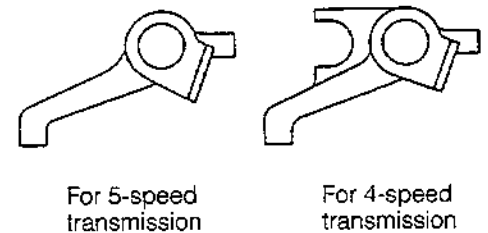


Fig. 3-205

WR-03199

## MANUAL TRANSMISSION

12. Assemble the 5th & reverse shift fork shaft.

**NOTE:**

It should be noted that the fork shaft for the 4-speed transmission differs from that for the 5-speed transmission in its length.

**Shaft Length**

For 4-speed transmission: 175 mm (6.89 inch)

For 5-speed transmission: 223 mm (8.79 inch)

13. Working from the direction as indicated in the figure, drive the slotted spring pin into position, until it becomes flush with the edge surface of the shift fork.

14. Assemble the compression spring, reverse idler gear and reverse idler gear shaft.

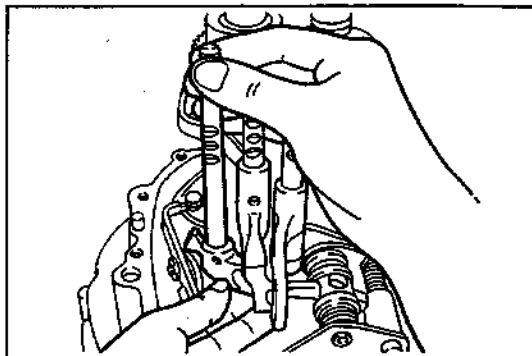


Fig. 3-206

WR-03200

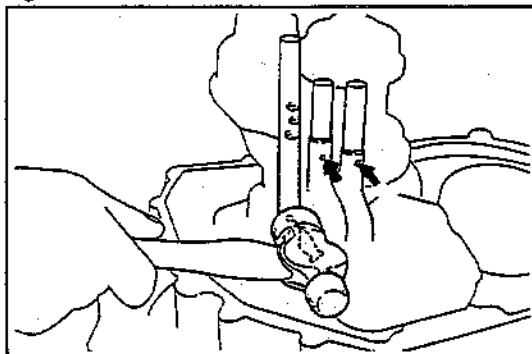


Fig. 3-207

WR-03201

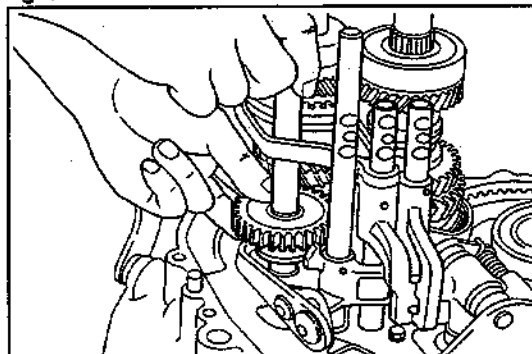
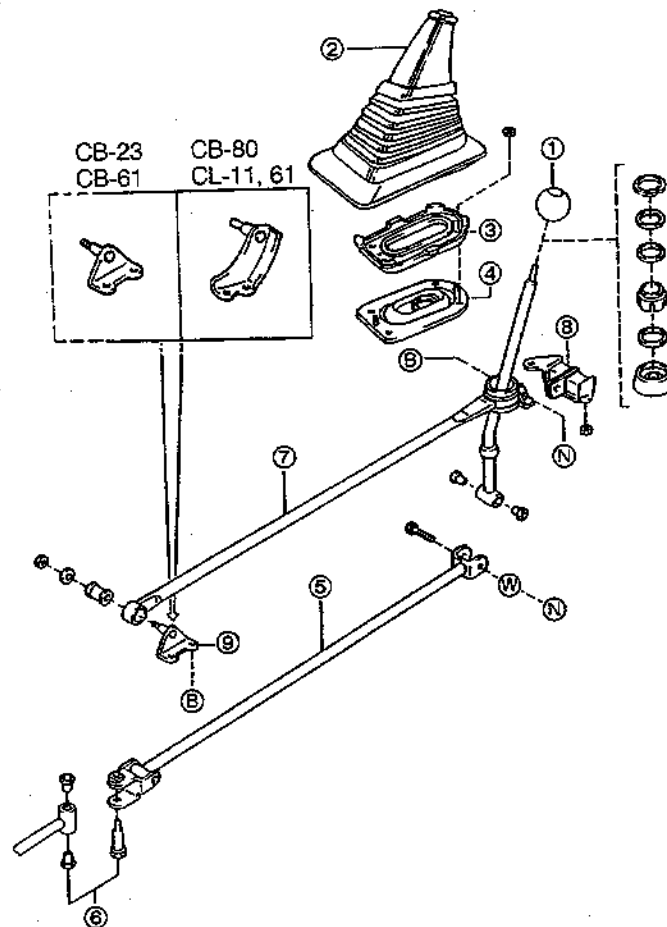


Fig. 3-208

WR-03202

# SHIFT LEVER & SHIFTING SELECTING ROD COMPONENTS



- ① Shift lever knob
- ② Shift & select lever boot
- ③ Dust seal retainer
- ④ Dust boot
- ⑤ Shift & select shaft S/A (transmission side)
- ⑥ Bush
- ⑦ Extension rod S/A
- ⑧ Floor shift support No.2
- ⑨ Floor shift support No.1

Fig. 3-209

WR-03203

## MANUAL TRANSMISSION

### REMOVAL

1. Detach the shift lever knob and the shift & select lever boot.
2. Detach the dust seal retainer and dust boot.
3. Disconnect the shift & select shaft subassembly at the transmission side.
4. Remove the bush.
5. Remove the extension rod subassembly and floor shift support No.2.

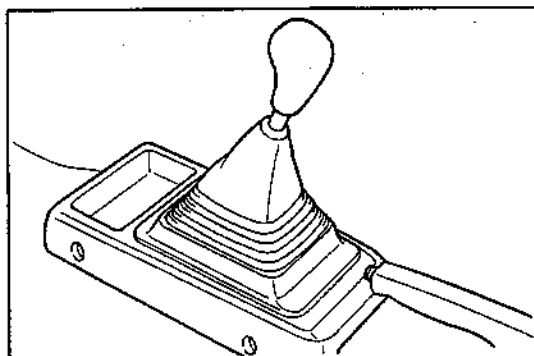


Fig. 3-210

WR-03204

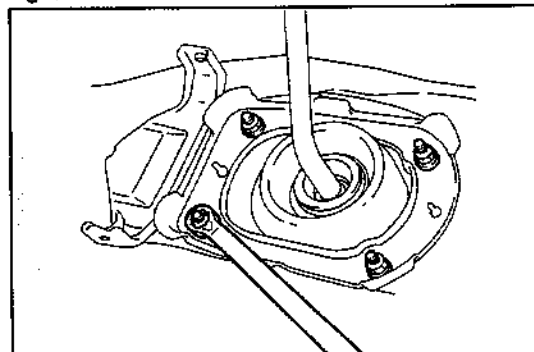


Fig. 3-211

WR-03205

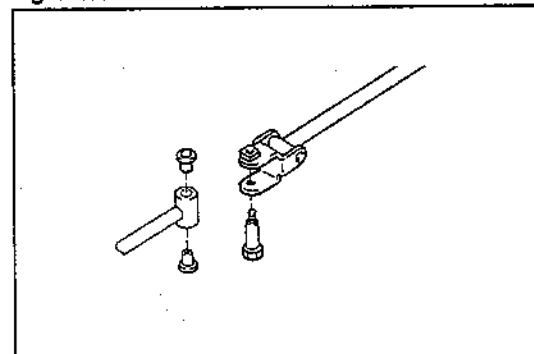


Fig. 3-212

WR-03206

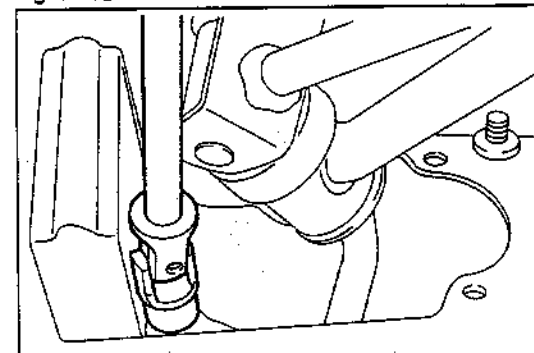


Fig. 3-213

WR-03207

## INSPECTION

Check to see if each joint section under an assembled condition rotates smoothly without any binding.

(See the figure below.)

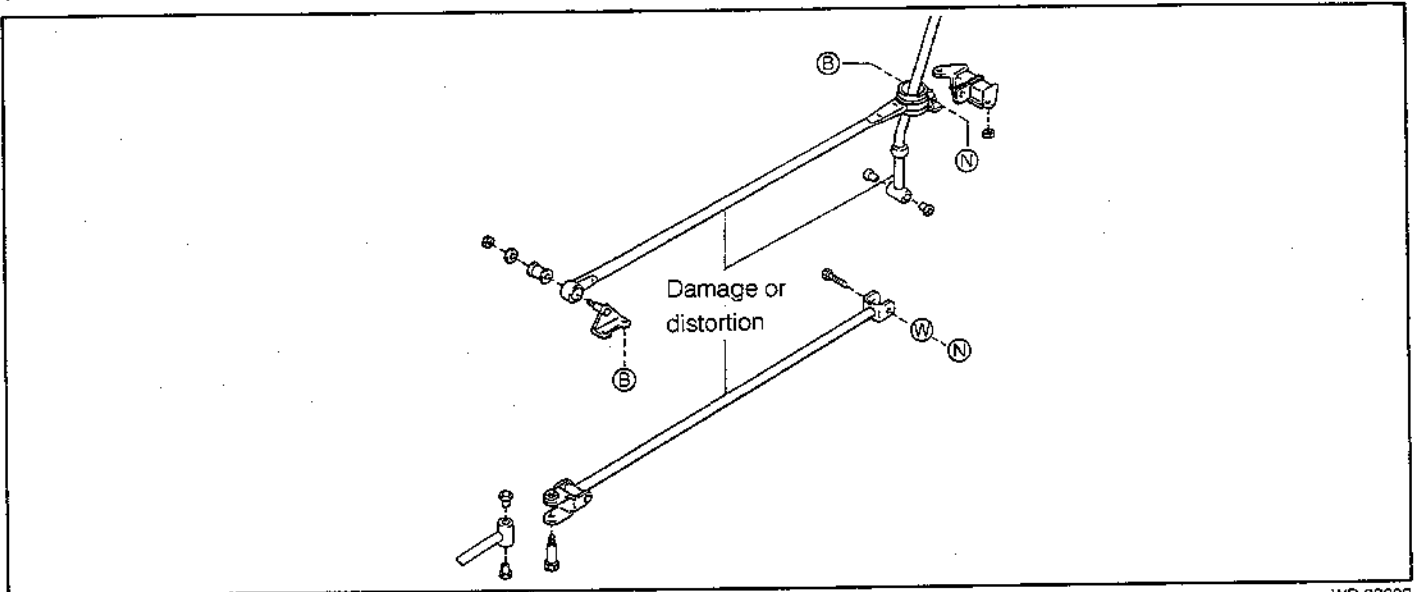


Fig. 3-214

WR-03205

## DISASSEMBLY

1. Working from the case side, pull out the hole snap ring by means of the SST.

SST: 09905-87001-000

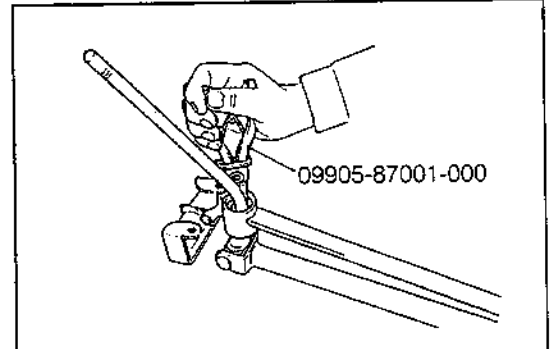


Fig. 3-215

WR-03209

2. Disassemble the plate washer, bush and shift lever seat.

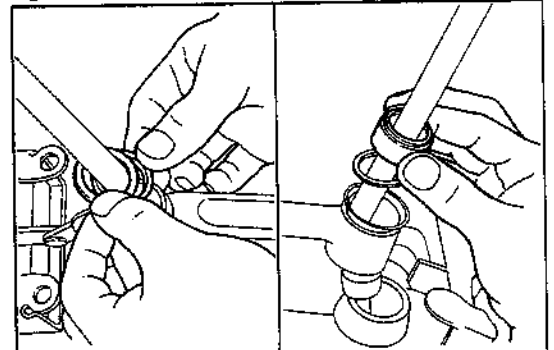


Fig. 3-216

WR-03210

3. Remove the extension rod subassembly from the shift lever subassembly.

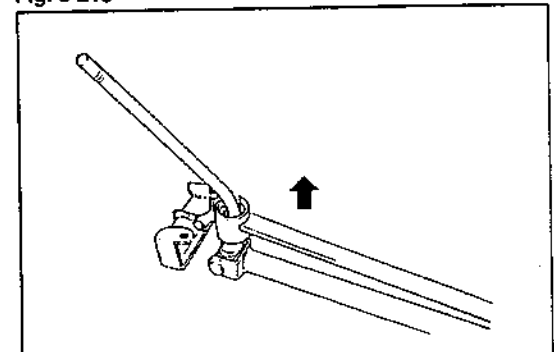


Fig. 3-217

WR-03211

## MANUAL TRANSMISSION

4. Disassemble the plate washer and shift lever retainer dust boot.

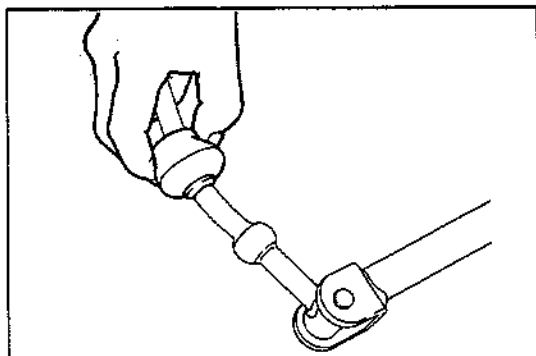


Fig. 3-218

WR-03212

5. Disassemble the bush, nut, plate washer and floor shift support No.1.

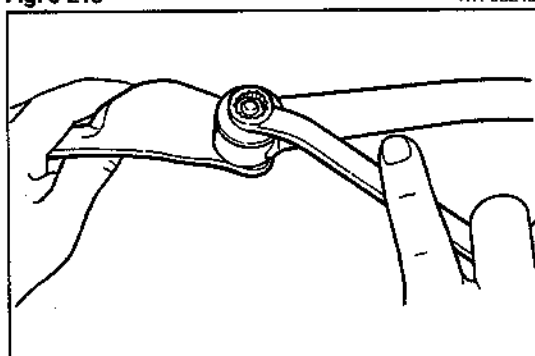


Fig. 3-219

WR-03214

6. Grind off the staked section of the extension rod sub-assembly, using a grinder.
7. Grind off the staked section of the shift & select sub-assembly, using a grinder.

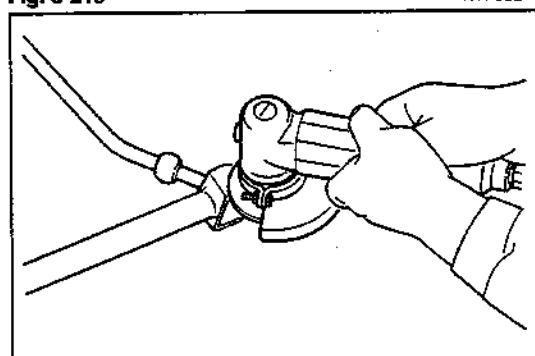


Fig. 3-220

WR-03215



## INSPECTION

Inspect the following parts. Replace any parts which exhibit defects.

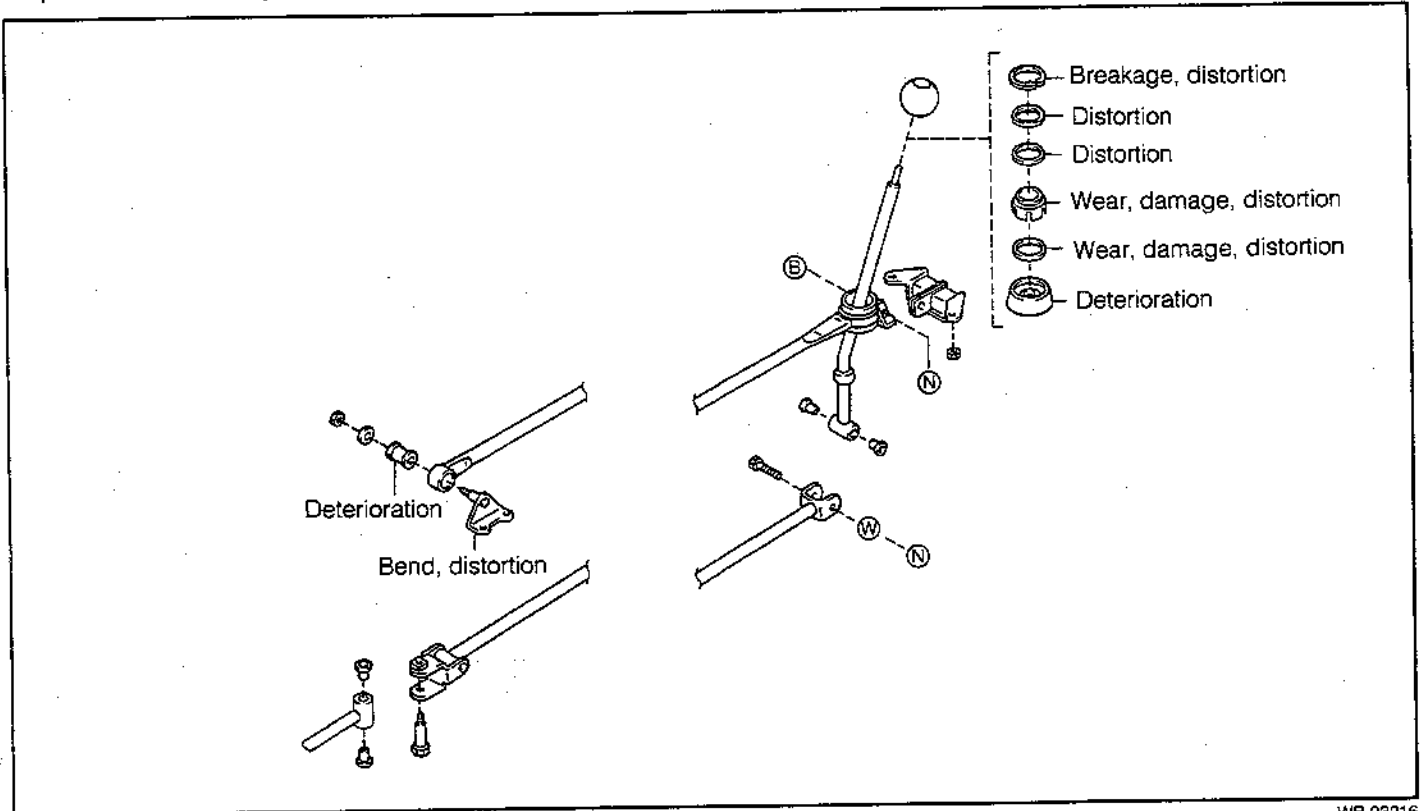


Fig. 3-221

WR-03216

## Grease Application Points

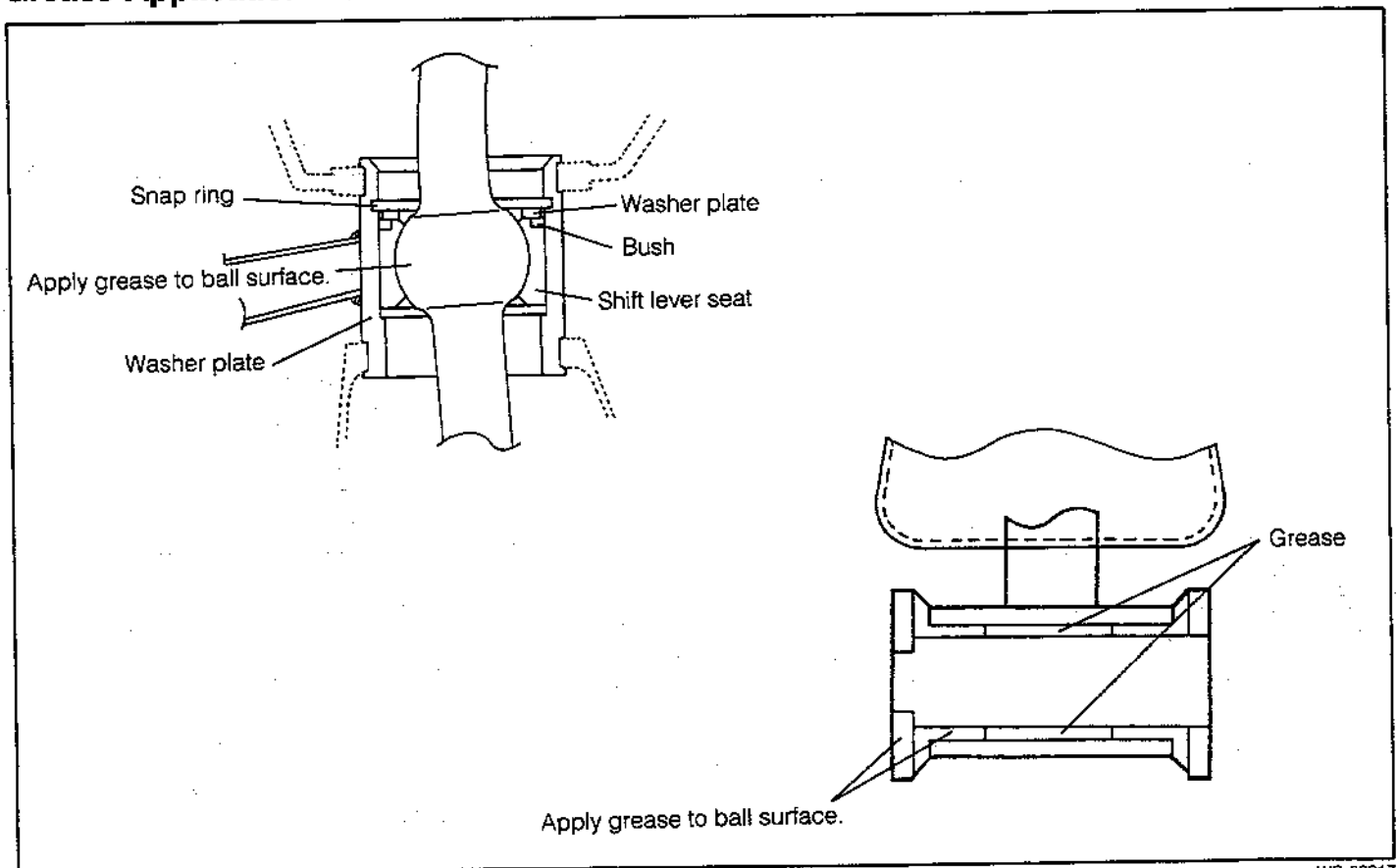


Fig. 3-222

WR-03217

## MANUAL TRANSMISSION

### ASSEMBLY

1. Assemble the extension rod.

**NOTE:**

On replacement parts, the connecting method with the support employs a bolt. Hence, care must be exercised to ensure that the assembling is carried out in the correct direction.

2. Insert the bush into position.

**NOTE:**

If any difficulty is encountered in inserting the bush, apply soap water to the case side for easier installation.

3. Assemble the floor shift support No.1. Install the nut and washer.

4. Assemble the bush in the shift lever subassembly.

1. Assemble the shift & select shaft.

**NOTE:**

On replacement parts, the connecting method with the shift lever employs a bolt. Hence, care must be exercised to ensure that the assembling is carried out in the correct direction.

Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)

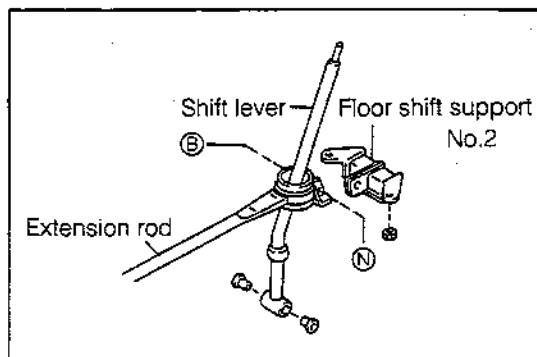


Fig. 3-223

WR-03218

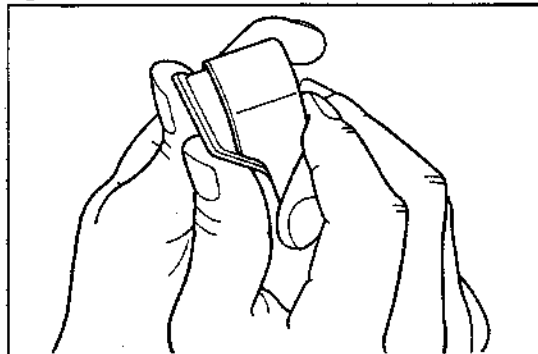


Fig. 3-224

WR-03219

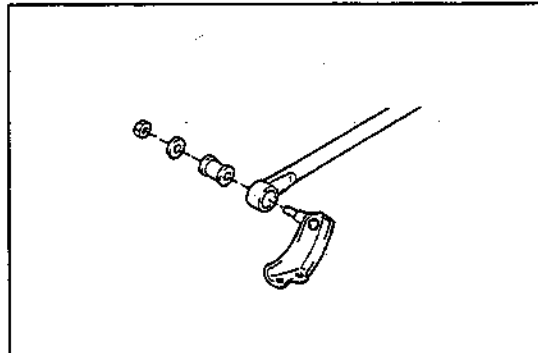


Fig. 3-225

WR-03220

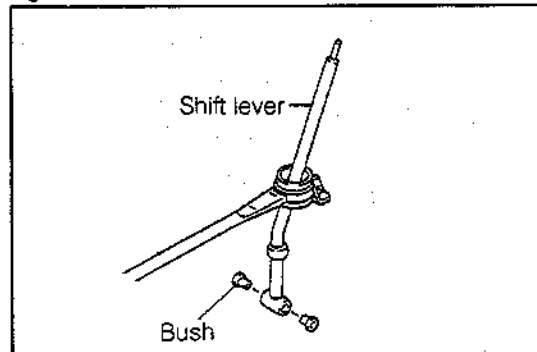


Fig. 3-226

WR-03221

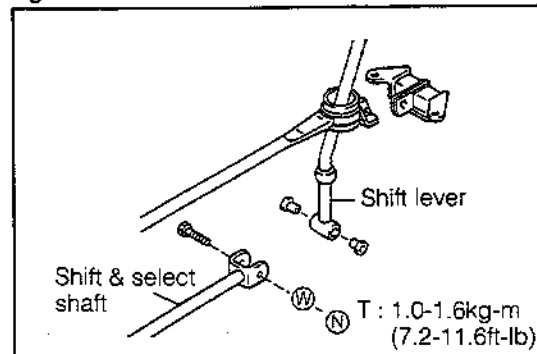


Fig. 3-227

WR-03222

6. Assemble the shift lever retainer dust boot and plate washer onto the extension rod.

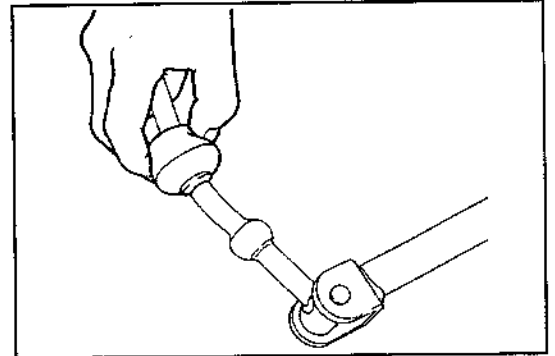


Fig. 3-228

WR-03223

7. After the shift lever subassembly has been installed, assemble the shift lever seat, bush and plate washer.

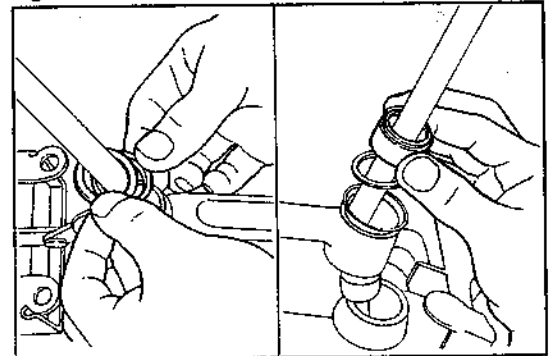


Fig. 3-229

WR-03224

8. Assemble the hole snap ring, using the SST given below.  
SST: 09905-87001-000

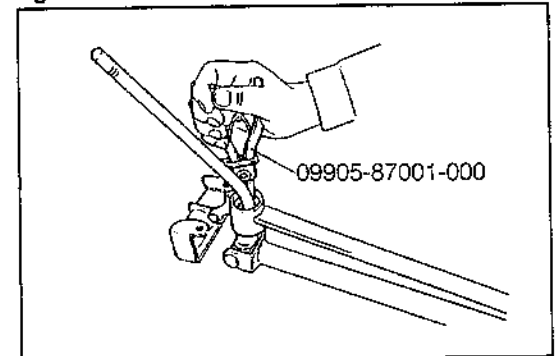


Fig. 3-230

WR-03225

## INSTALLATION

1. Install the floor shift support No.2, shift lever and extension rod as a set on the vehicle.

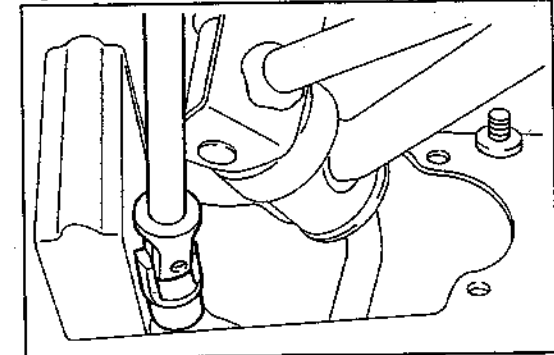


Fig. 3-231

WR-03226

2. Install the extension rod subassembly, onto the transmission.  
Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)

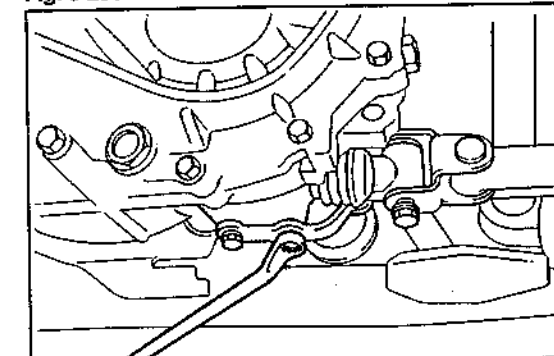


Fig. 3-232

WR-03227

## MANUAL TRANSMISSION

3. Assemble the bush in the shift & select shaft. Install the transmission side of the shift & select shaft subassembly.

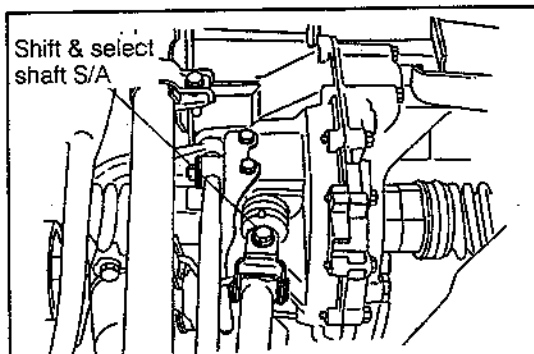


Fig. 3-233

WR-03228

4. Install the dust boot and dust seal retainer.

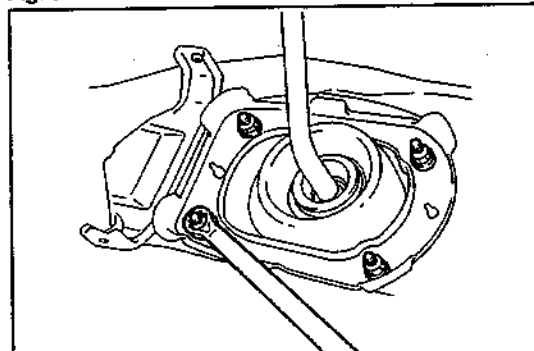


Fig. 3-234

WR-03229

5. Install the shift & select lever boot and the shift lever knob.

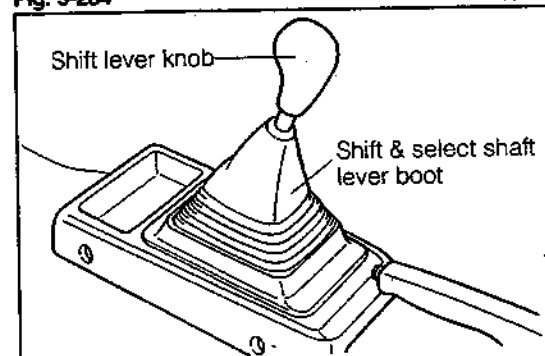


Fig. 3-235

WR-03230

### Input Shaft Locking Tool

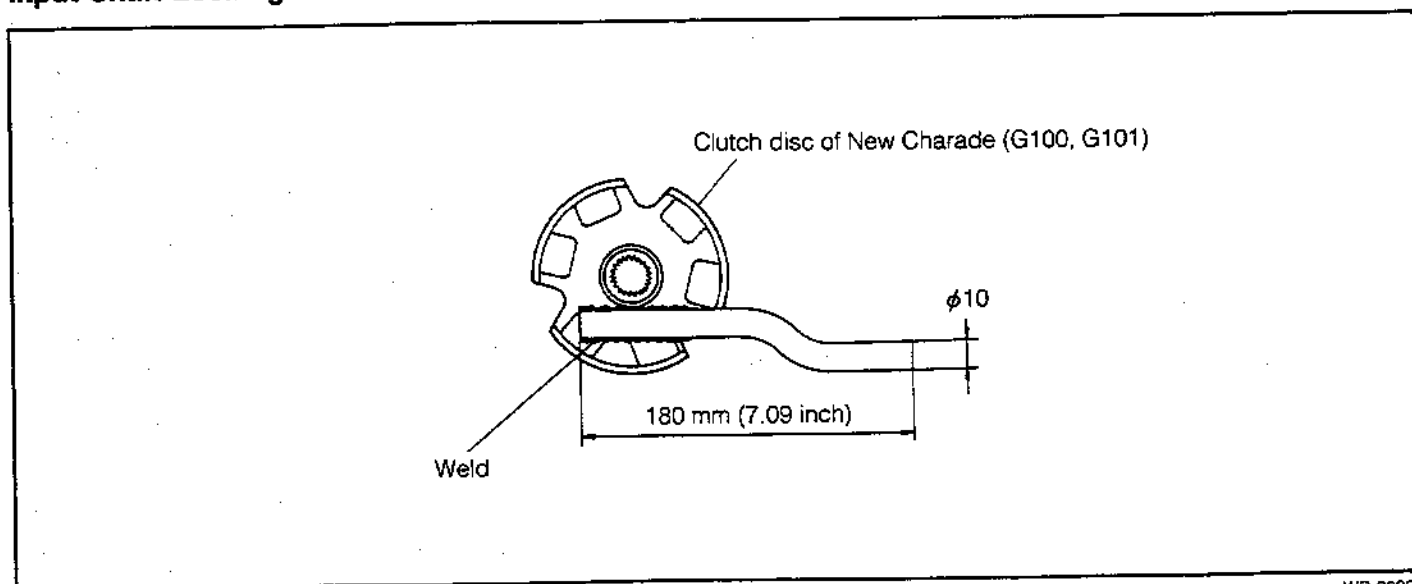


Fig. 3-236

WR-03231

Make the input shaft locking tool with clutch disc of new Charade (G100, G101) as shown in the above illustration.

# **DAIHATSU**

# **CHARADE**

## Chassis

**4**

## **SECTION 4**

## **AUTOMATIC TRANSMISSION**

<b>GENERAL INFORMATION ..... 4- 2</b> SECTIONAL VIEW ..... 4- 2 SPECIFICATIONS ..... 4- 3 BASIC CHECKS ..... 4- 5 ADJUSTMENTS ..... 4- 6 TESTS ..... 4- 7 UNIT INSPECTION ..... 4-15 TROUBLE SHOOTING ..... 4-19 FLUID CHANGE ..... 4-23 <b>TRANSMISSION REMOVAL AND</b> <b>INSTALLATION ..... 4-24</b> <b>DISASSEMBLY OF TRANSMISSION ..... 4-26</b> <b>INSPECTION AND REPAIRS OF</b> <b>EACH PART ..... 4-35</b> OIL PUMP ..... 4-35 FORWARD CLUTCH ..... 4-37 DIRECT CLUTCH ..... 4-40 VALVE BODY ..... 4-43	<b>ASSEMBLY OF TRANSMISSION ..... 4-50</b> <b>APPENDIX ..... 4-70</b> SHIFT LEVER CONSTRUCTION ..... 4-70 CONTROL CABLE CONSTRUCTION ..... 4-71 ASSEMBLING POSITION AND DIRECTION OF THRUST BEARING ..... 4-72 LIST OF SPRINGS ..... 4-73 LIST OF "O" RINGS ..... 4-73 LIST OF BOLTS USED ..... 4-74
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WR-04001

## AUTOMATIC TRANSMISSION

### GENERAL INFORMATION

#### SECTIONAL VIEW

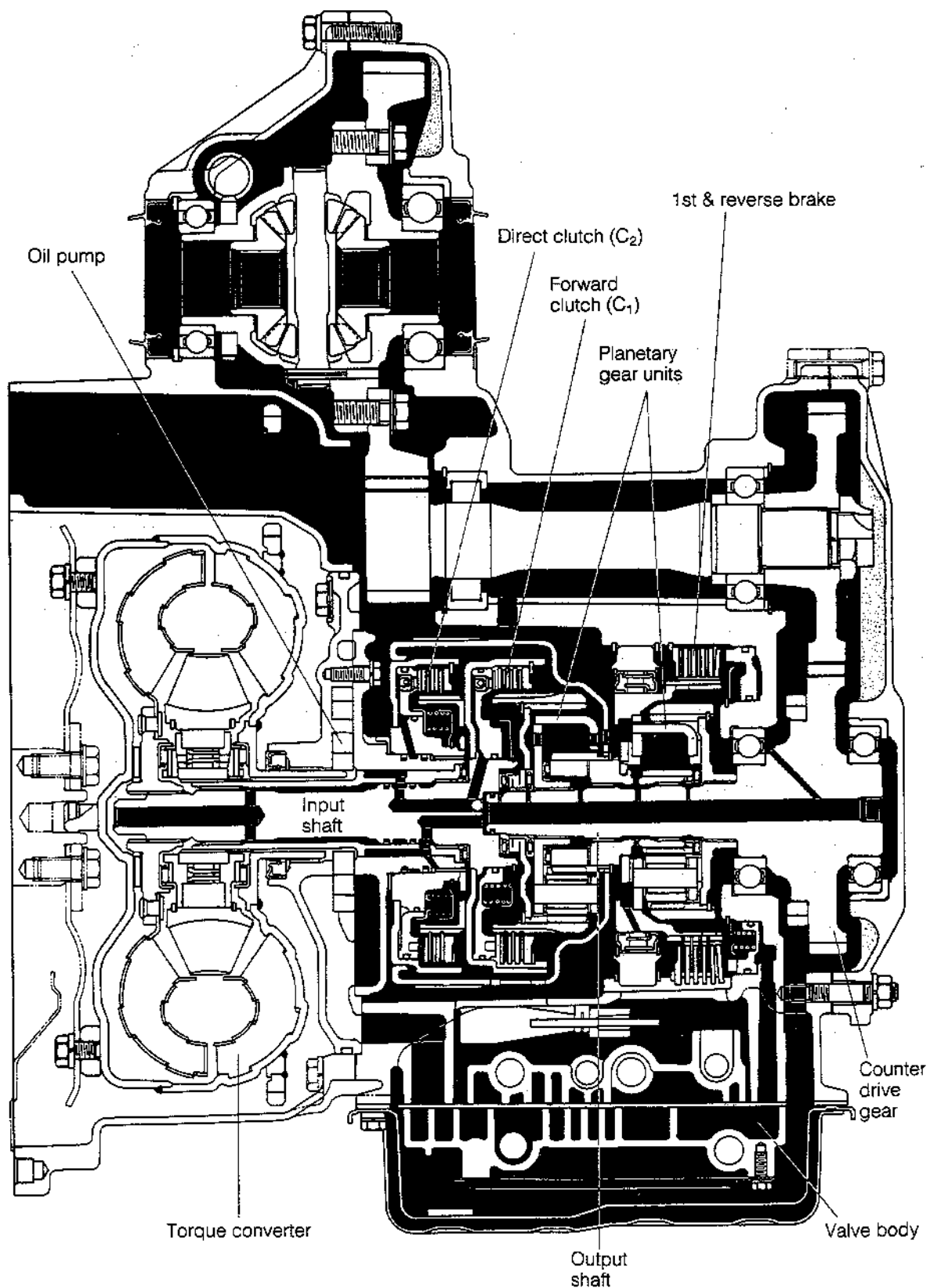


Fig. 4-1

WR-04002

**SPECIFICATIONS**

Item		Engine type	CB-23
Torque converter	Type	Three-element, one-stage, two-phase type	
	Stall torque ratio	2.26	
	One-way clutch type	Sprag type	
Transmission type	Type	Spiral gear type planetary gear (two-row)	
	Control element	Wet type multiple clutch	2 sets
		Band type brake	1 set
		Wet type multiple brake	1 set
		One-way clutch	1 piece
	Gear ratio	1st gear: 2.810; 2nd gear: 1.549; 3rd gear: 1.000 reverse gear: 2.296	
	Reduction gear ratio	Reduction gear ratio: 0.980; final gear ratio: 3.872	
	Speedometer	Number of drive gear teeth: 27, Number of driven gear teeth: 24	
	Oil pump	Internal gear type	
	Fluid to be used	Automatic fluid Dexron-II	
	Fluid capacity liter (Imp. qts, US qts)	Approx. 5 (4.4, 5.3)	
	Cooling method	Water-cooled (radiator built-in type)	
Control system	Gear shift control method	Electronic hydraulic pressure control method	
	Automatic gear shift	Three forward speeds, full automatic shift	
	Manual control pattern	P—R—N—D—2—L	

WR-04003

## AUTOMATIC TRANSMISSION

### OPERATING INSTRUCTIONS ON VEHICLE EQUIPPED WITH 3-SPEED AUTOMATIC TRANSMISSION

1. When the transmission is downshifted from the **[D]** or **[2]** range to the **[L]** range during running, as a precautionary measure perform the downshift at a vehicle speed below 50 km/h. The transmission has such function that, even if the transmission is downshifted to the **[L]** range, no downshift to the first gear will take place at a vehicle speed above 56 km/h.
2. When the automatic transmission-equipped vehicle is towed, set the change lever to the **[N]** position and tow the vehicle at a speed below 30 km/h. Towing distance is to be limited to 80 km.  
If troubles seem to exist inside the transmission, move the vehicle with front wheels raised by a wrecker. If the engine is not running, no oil circulates in the transmission. Hence, there is a possibility that the gear, clutch and so forth may get seized.
3. If the electronic control system, such as the computer, should be encountered with abnormality, resulting in malfunctioning gear shift, and yet you must perform emergency running, you may operate the vehicle, following the procedure given below.
  - 1) Disconnect the 2-pole connector (elliptical and white) leading to the solenoid of the transmission.  
Secure the disconnected harness leading to the solenoid so that it may not be caught by the drive shaft.
  - 2) When the shift lever is selected to the **[L]**, **[2]** and **[D]** ranges progressively in this order, upshift occurs as follows: the 1st gear in the **[L]** range, the 2nd gear in the **[2]** range and the 3rd gear in the **[D]** range.

WR-04004

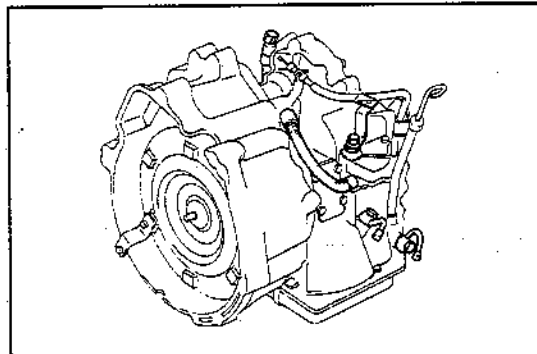
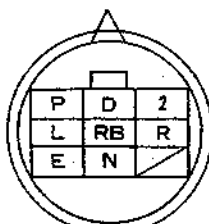
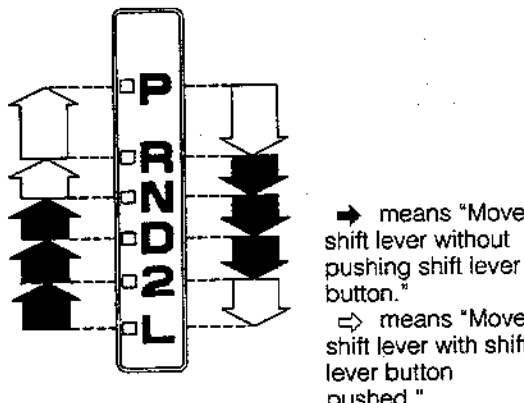
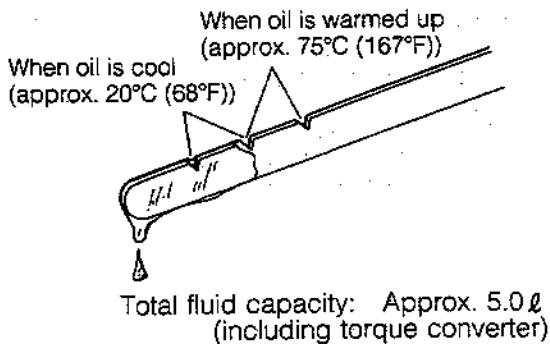


Fig. 4-2

WR-04005

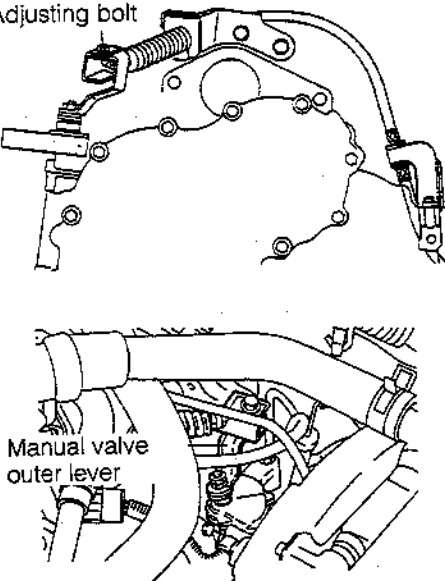
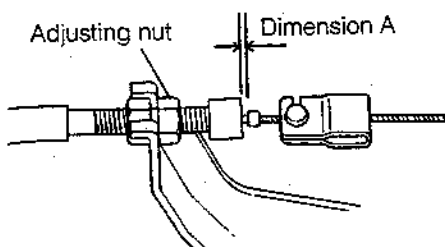
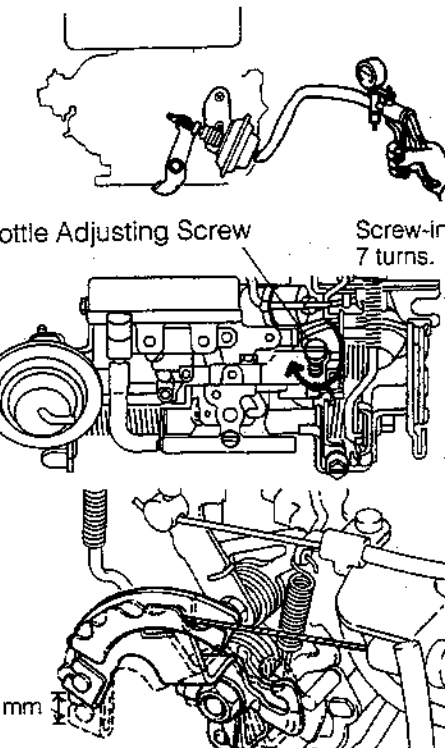
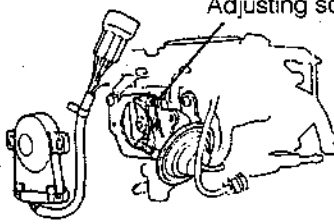


## BASIC CHECKS

Item	Procedure																
Preparation of check	<ol style="list-style-type: none"><li>1. Park the vehicle on a flat road.</li><li>2. Ensure the safety at the forward and rear areas of the vehicle. Perform the following checks.</li></ol>																
Neutral Start Switch Check  	<ol style="list-style-type: none"><li>1. Apply the parking brake.</li><li>2. Ensure that the engine can start when the shift lever is set to the <b>N</b> or <b>P</b> range. Also ensure that the engine will not start when other ranges are selected.</li><li>3. Check each continuity specified in the connection table, using a circuit tester. Connection Table</li></ol> <table border="1"><thead><tr><th>Terminal Range</th><th>E (WB: white/black)</th><th>N (BY: black/yellow)</th><th>P (BR: black/red)</th></tr></thead><tbody><tr><td>N</td><td>○</td><td>○</td><td></td></tr><tr><td>P</td><td>○</td><td></td><td>○</td></tr><tr><td>Others</td><td>○</td><td>○</td><td>○</td></tr></tbody></table>	Terminal Range	E (WB: white/black)	N (BY: black/yellow)	P (BR: black/red)	N	○	○		P	○		○	Others	○	○	○
Terminal Range	E (WB: white/black)	N (BY: black/yellow)	P (BR: black/red)														
N	○	○															
P	○		○														
Others	○	○	○														
Shift Lever Position Check  	<ol style="list-style-type: none"><li>1. Start the engine. Release the parking brake. Ensure that the vehicle moves forward when the shift lever is shifted from the <b>N</b> range to the <b>D</b>, <b>2</b> or <b>L</b> ranges. Also, ensure that the vehicle moves backward when the shift lever is shifted to the <b>R</b> range.</li><li>2. Stop the engine, and apply the parking brake.</li><li>3. Set the shift lever from the <b>N</b> range to each of the <b>D</b>, <b>2</b> and <b>L</b> ranges. Make sure that the shift lever can be operated smoothly and shifted to each range with a good detent feeling. Also ensure that the position indicator functions properly. Moreover set the engine key switch to the [ON] position. Ensure that the position indicator in the combination meter functions properly.</li><li>4. Set the engine key switch to the [ON] position. Switch the shift lever from the <b>P</b> or <b>N</b> range to the <b>R</b> range. Ensure that the backup lamp goes on.</li></ol>																
Engine Idling Speed Check  Specified Value: 800 - 850 rpm	<ol style="list-style-type: none"><li>1. Apply the parking brake.</li><li>2. Attach an engine tachometer.</li><li>3. With the <b>N</b> range selected, warm up the engine.</li><li>4. Ensure that the engine idling speed complies with the specification.</li></ol>																
Automatic Transmission Fluid Level Check  	<ol style="list-style-type: none"><li>1. Apply the parking brake.</li><li>2. With the brake pedal depressed and the engine running at the idling speed, select the shift lever all through the ranges from the <b>P</b> to <b>L</b>. Finally, return the shift lever to the <b>P</b> range.</li><li>3. Take out the level gauge and wipe off the fluid with a cloth. Insert the level gauge and take it out again. Check to see if the fluid level is between the upper and lower limits. <b>NOTE:</b><ol style="list-style-type: none"><li>1. Perform the check when the fluid temperature is 70 - 80°C (158 - 176°F), which is the normal operating temperature.</li><li>2. If the fluid level is low, check for fluid leakage.</li><li>3. Care must be exercised as to a too-low fluid level, for it will cause various troubles.</li></ol></li></ol>																
Solenoid Valve Connector Check Computer Connector Check	<ol style="list-style-type: none"><li>1. Check to see if any connector is disconnected.</li></ol>																
Speedometer Check	<ol style="list-style-type: none"><li>1. Check to see if the speedometer pointer is moving.</li><li>2. Check to see if the vehicle speed indicator is normal.</li><li>3. Check to see if the vehicle speed sensor is producing an output. (See page 4-15.)</li></ol>																

# AUTOMATIC TRANSMISSION

## ADJUSTMENTS

Item	Procedure
<p>Shift Lever Adjustment</p> <p>Adjusting bolt</p>  <p>Manual valve outer lever</p>	<ol style="list-style-type: none"> <li>1. Check the joint section between the control rod and the manual valve outer lever for wear. Check other joint sections for wear and deformation.</li> <li>2. Turn the manual valve outer lever to the left as far as it goes (P range). Then, back off two stages (N range).</li> <li>3. Slacken the swivel bracket attaching bolt (adjusting bolt) located at the end section of the control cable.</li> <li>4. Set the shift lever to the N range. With the shift lever lightly pushed to the R range side, tighten the attaching bolt in Step 3. (While drawing the control cable to the transmission side, securely tighten the control cable.)</li> <li>5. After completion of the adjustment, check the shift lever operation. Ensure that the shift lever is operated with a good detent feeling and that the position indicator functions properly for each range. Also, make sure that the vehicle moves forward in the D, 2 and L ranges, whereas the vehicle backs up in the R range.</li> </ol>
<p>Throttle Cable Adjustment</p> <p>Adjusting nut</p> <p>Dimension A</p> 	<p>Adjust the adjusting nut in such a way that the dimension A complies with the specified value when the throttle is fully closed.</p> <p><b>Specified Value:</b> 0 - 0.5 mm (0 - 0.02 inch)</p> <p><b>Tightening Torque:</b> 0.85 - 1.55 kg-m (6.15 - 11.2 ft-lb)</p>
<p>Throttle Sensor Adjustment</p>  <p>Throttle Adjusting Screw</p> <p>Screw-in 7 turns.</p> <p>10 mm</p>	<ol style="list-style-type: none"> <li>1. Using a MityVac (a hand vacuum pump), keep the dashpot in a contracted state.</li> <li>2. Slacken the throttle adjusting screw so that it may be once cleared from the throttle shaft arm.</li> <li>3. Screw-in the throttle adjusting screw until it comes in contact with the throttle shaft arm. Further screw-in the throttle adjusting screw 7 turns. (At this point, the periphery of the throttle lever travels 10 mm (0.39 inch).)</li> <li>4. Adjust the throttle sensor so that the switch "S<sub>4</sub>" - to - "earth" continuity of the throttle sensor may be changed from [OFF] to [ON] at this opening degree of the throttle valve. Perform this adjustment by turning the adjusting screw located at the back of the throttle sensor, using the SST. (See page 4-14.)</li> <li>5. Remove the MityVac. Back off the throttle adjusting screw so that the idling speed may be adjusted to 800 - 850 rpm.</li> </ol>
	<p>Adjusting screw</p> 

## TESTS

Prior to the following tests, be sure to perform basic checks and adjustments.

### 1. STALL TEST

This test checks the total performance of the transaxle and engine, by measuring the maximum engine revolution speed at each range.

#### NOTE:

1. Perform this test when the fluid temperature is 70 - 80°C (158 - 176°F), which is the normal operating temperature.
2. Never perform this test continuously for more than six seconds.

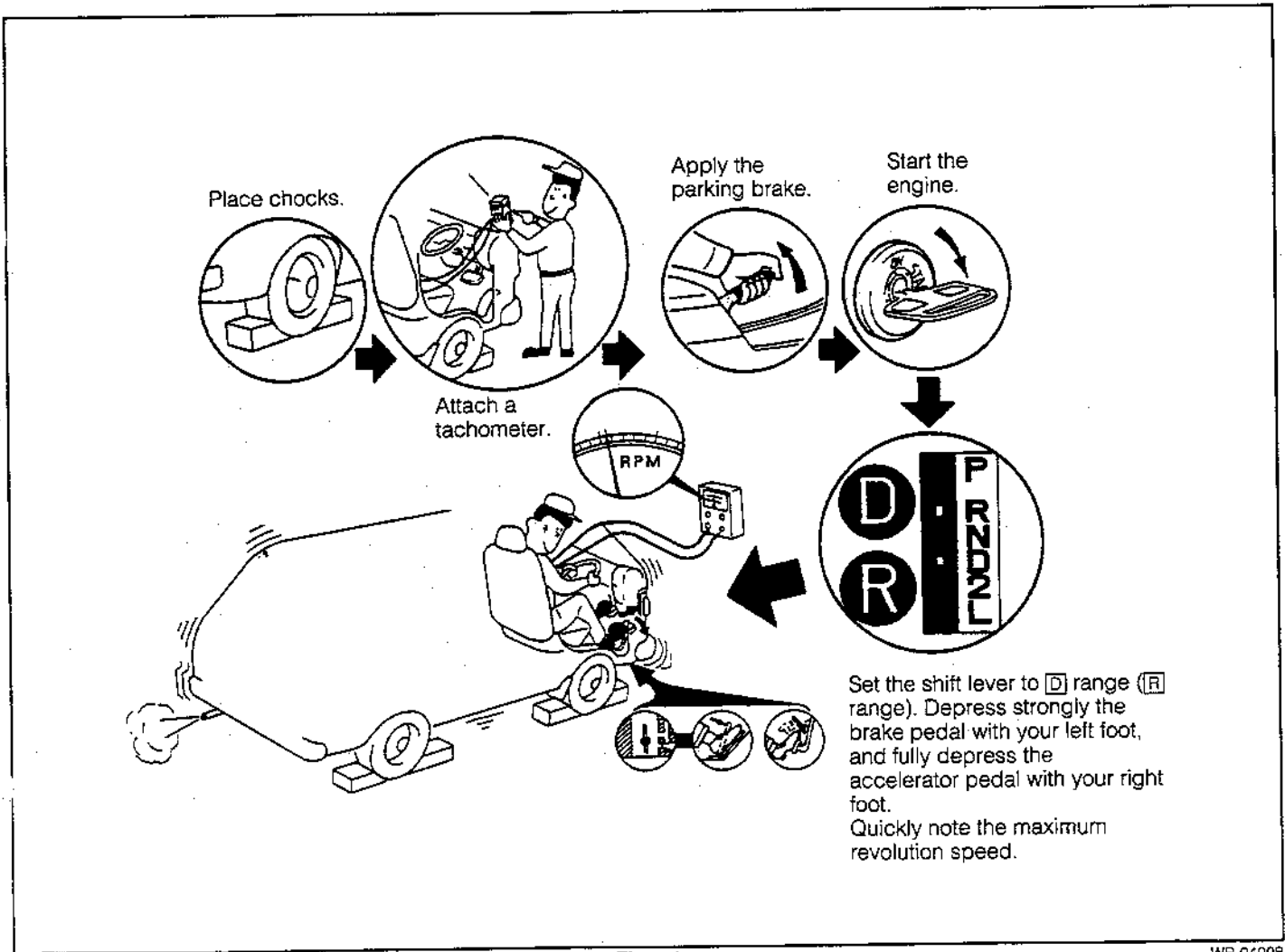


Fig. 4-3

WR-04008

### Specified stall revolution speed:

2100 - 2300 rpm

Reference: If the measured value does not conform to the specification, the following are possible causes.

Case where stall revolution speeds for both ranges are the same, but lower than the specified value	<ol style="list-style-type: none"> <li>1. Lack of engine output</li> <li>2. Torque converter malfunctioning</li> </ol>
Case where stall revolution speed for <b>D</b> range is greater than the specified value	<ol style="list-style-type: none"> <li>1. Forward clutch slipping</li> <li>2. One-way clutch of torque converter malfunctioning</li> <li>3. Line pressure too low</li> </ol>
Case where stall revolution speed for <b>R</b> range is greater than the specified value	<ol style="list-style-type: none"> <li>1. Direct clutch slipping</li> <li>2. 1st &amp; reverse brake slipping</li> <li>3. Line pressure too low</li> </ol>

WR-04009

## AUTOMATIC TRANSMISSION

### 2. TIME LAG TEST

When the shift lever is shifted while the engine is idling, a certain time elapses before a shock is felt. This time is called the time lag. This time lag test evaluates the conditions of the clutch, brake and line pressure.

#### NOTE:

1. Perform this test when the fluid temperature is 70 - 80°C (158 - 176°F), which is the normal operating temperature.
2. If the time lag is to be measured consecutively, be sure to put an one-minute interval between the tests.

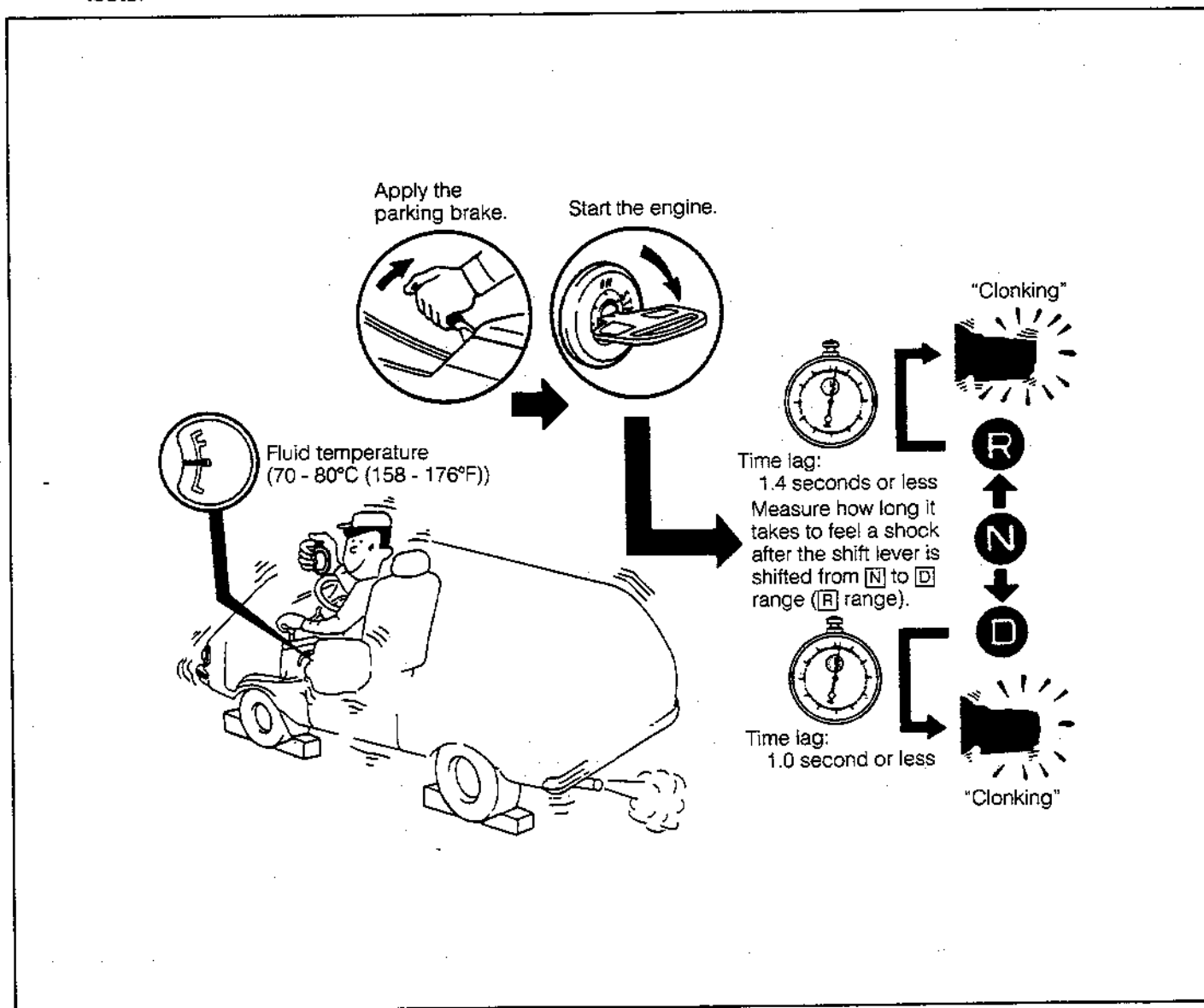


Fig. 4-4

WR-04010

#### Specified time lag

N → D Range: 1.0 Second or Less

N → R Range: 1.4 Seconds or Less

Reference: If the measured value does not conform to the specification, the following are possible causes.

Case where time lag for [N] to [D] shift is greater than the specified value	1. Forward clutch worn 2. Line pressure too low
Case where time lag for [N] to [R] shift is greater than the specified value	1. Direct clutch worn 2. First & reverse brake worn 3. Line pressure too low

WR-04011

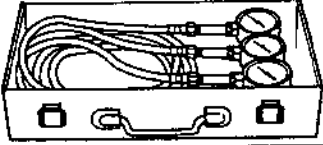

## 3. HYDRAULIC PRESSURE TEST

This test checks operating condition of each section by measuring the fluid line pressure.

### NOTE:

1. Perform this test when the fluid temperature is 70 - 80°C (158 - 176°F), which is the normal operating temperature.
2. Be sure to replace the test plug with a new one.

### Articles to be prepared

Instruments		09992-00092-000 Oil pressure gauge for automatic transmission Tool handled by Banzai, Ltd. Type: OPG-100
		Oil pressure gauge adaptor (For A35 and A55) Tool handled by Banzai, Ltd. Type: OPG-41

### Test plug position

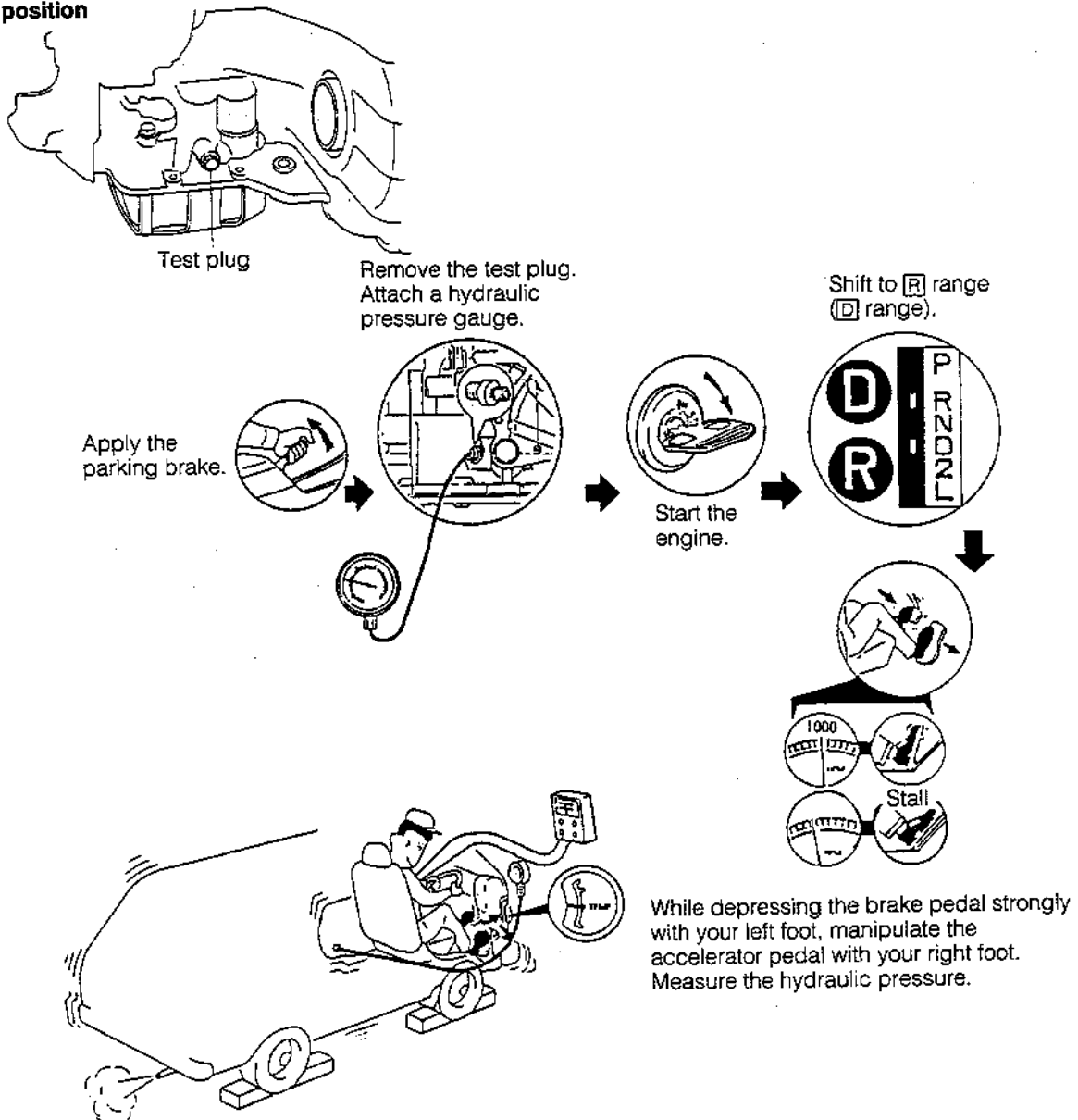


Fig. 4-5

WR-04012

## AUTOMATIC TRANSMISSION

### Specified hydraulic pressure

Engine running condition	Hydraulic pressure kg/cm <sup>2</sup> (psi)	
	D range	R range
Idling revolution	2 - 4 (28 - 57)	5 - 8 (71 - 114)
Stall revolution	4 - 6 (57 - 85)	8 - 12 (114 - 171)

Reference: If the measured value does not conform to the specification, the following are possible causes.

Case where hydraulic pressure for each range is greater than the specified value	1. Regulator valve malfunctioning 2. Throttle valve malfunctioning 3. Throttle cable improperly adjusted
Case where hydraulic pressure for each range is lower than the specified value	1. Oil pump faulty 2. Regulator valve malfunctioning 3. Throttle valve malfunctioning 4. Throttle cable improperly adjusted
Case where hydraulic pressure for D range is lower than the specified value	1. Forward clutch malfunctioning 2. Oil leakage at D range circuit
Case where hydraulic pressure for R range is lower than the specified value	1. Direct clutch malfunctioning 2. First & reverse brake malfunctioning 3. Oil leakage at R range circuit

WR-04013

## 4. SYSTEM CHECKS ON TEST VEHICLE

### (1) Running test

Check the gear shift at each shift point in accordance with the shift point characteristics diagram. Determine whether or not the gear shift occurs by your body feeling.

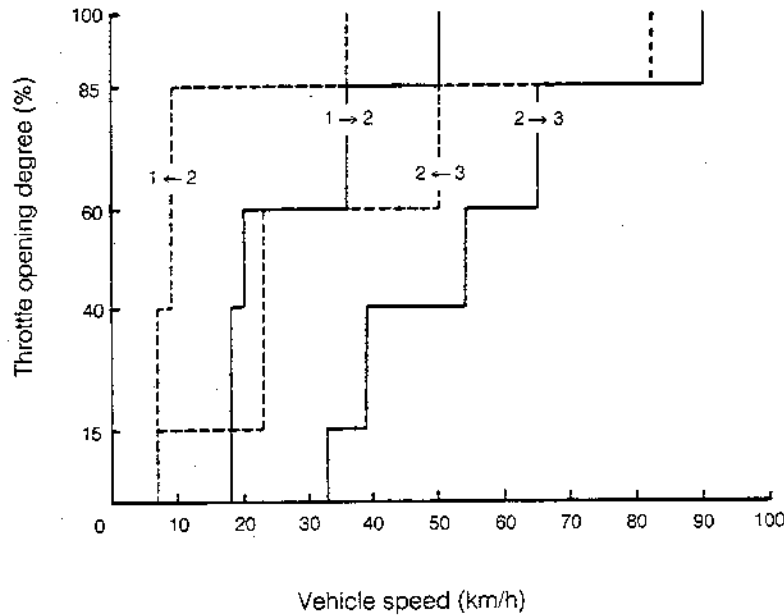


Fig. 4-6

WR-04014

### **D** range test

1. From the standstill state, start the vehicle by fully depressing the accelerator pedal (in **D** range). Ensure that the upshift from 1st gear to 2nd gear occurs at a vehicle speed of approx. 50 km/h.
2. From the standstill state, start the vehicle by depressing the accelerator pedal about halfway. Ensure that the upshift from the 2nd gear to the 3rd gear occurs at a vehicle speed of approx. 54 km/h.

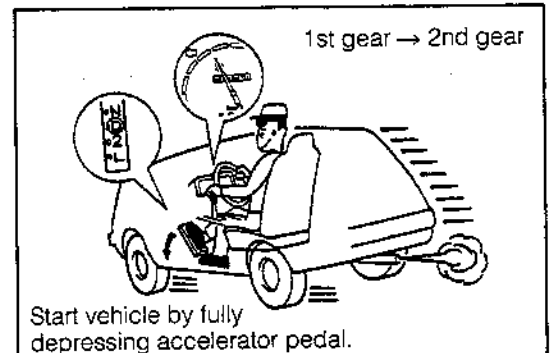


Fig. 4-7

WR-04015

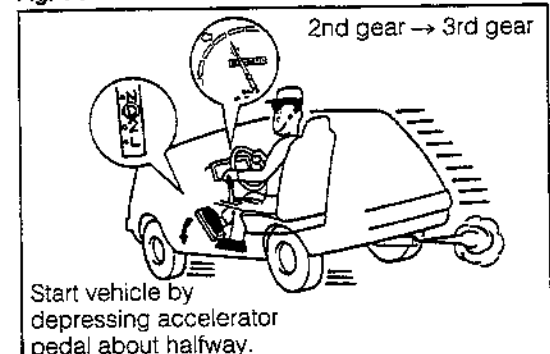


Fig. 4-8

WR-04016

## AUTOMATIC TRANSMISSION

3. While running in the 3rd gear of the **D** range at a vehicle speed of 80 km/h or less, depress the accelerator pedal fully. Ensure that the downshift from the 3rd gear to the 2nd gear occurs.

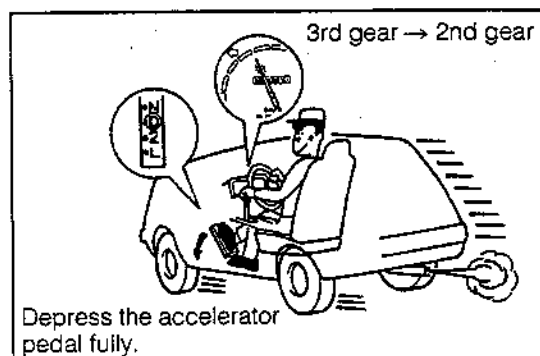


Fig. 4-9

WR-04017

4. While running in the 2nd gear of the **D** range at a vehicle speed of 36 km/h or less, depress the accelerator pedal fully. Ensure that the downshift from the 2nd gear to the 1st gear occurs.

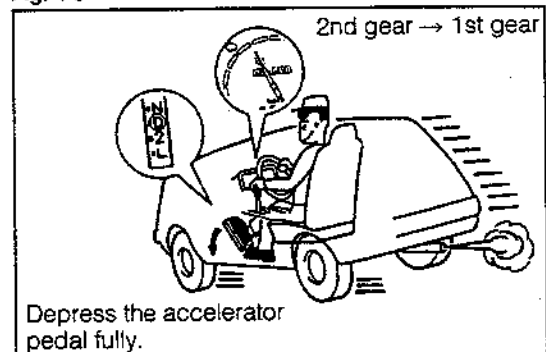


Fig. 4-10

WR-04018

Trouble symptom	Possible causes
No upshift from 1st gear to 2nd gear takes place.	<ol style="list-style-type: none"> <li>1. 1 – 2 shift valve malfunctioning</li> <li>2. Solenoid valve No. 2 malfunctioning</li> <li>3. Shift control system malfunctioning</li> </ol>
No upshift from 2nd gear to 3rd gear takes place.	<ol style="list-style-type: none"> <li>1. 2 – 3 shift valve malfunctioning</li> <li>2. Solenoid valve No. 1 malfunctioning</li> <li>3. Shift control system malfunctioning</li> </ol>
Incorrect shift points	<ol style="list-style-type: none"> <li>1. 1 – 2 and 2 – 3 shift valves malfunctioning</li> <li>2. Shift control system malfunctioning</li> </ol>
Excessive shocks	<ol style="list-style-type: none"> <li>1. Idling speed too high</li> <li>2. Line pressure too high</li> <li>3. Accumulator malfunctioning</li> </ol>

WR-04019



## (2) Engine brake test

While running in the 3rd gear of the **[D]** range, shift to the **[2]** or **[L]** range. Check the engine brake operation in each range.

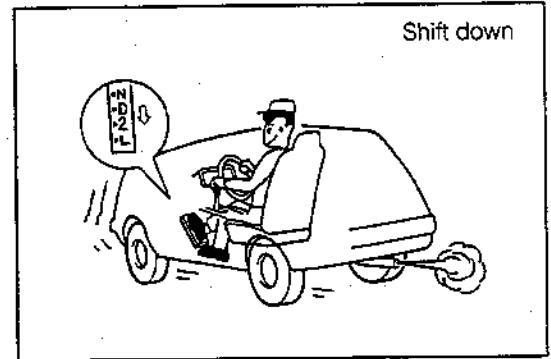


Fig. 4-11

WR-04020

Reference: If the engine brake does not work effectively, the following are possible causes.

Case where engine brake will not work in <b>[2]</b> range	2nd brake malfunctioning
Case where engine brake will not work in <b>[L]</b> range	First & reverse brake malfunctioning

## (3) Manual running test

Remove the harness of the solenoid valves No. 1 and No. 2 at its connector section (white, 2-pole). Run the vehicle by manually shifting the shift lever to each range. Check to see if the gear shifts occur in accordance with each range.

### NOTE:

Secure the disconnected harness, using vinyl tape or the like, so that it may not be caught by the rotating sections.

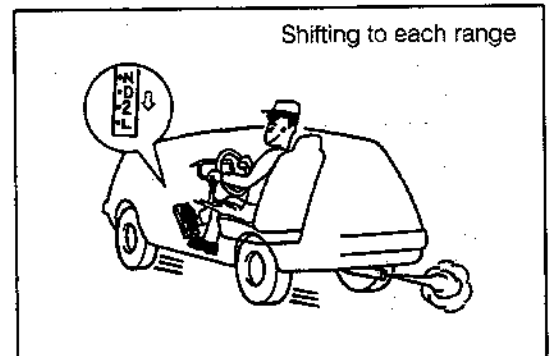


Fig. 4-12

WR-04021

## Specifications

Shift lever position	D	2	L
Gear position	3rd	2nd	1st

## (4) **[P]** range test

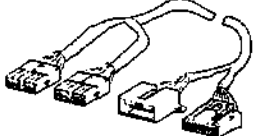
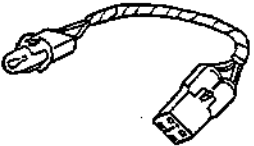
- Place the vehicle on a grade (about 5 degrees or more) with the vehicle in an uphill state. Set the lever to the **[P]** range and release the parking brake lever.  
Ensure that the vehicle will not move by the operation of the parking lock mechanism.
- Repeat this test in the same procedure for the vehicle facing downhill.
- Check to see if the vehicle moves when the shift lever is changed from the **[P]** range to other ranges.

WR-04022

# AUTOMATIC TRANSMISSION

## 5. ELECTRICAL SYSTEM CHECK

### Articles to be prepared

	Shape	Number and nomenclature of parts	Use
SST		09842-87702-000 Transmission control computer check subharness	For checking computer input/output voltages
		09843-87702-000 ATX computer check lamp	Diagnosis display
Instrument	Digital tester		

WR-04023

### How to use SST

Connect the transmission control computer check subharness between the computer and the connector of the harness at the vehicle side. This subharness is used for checking input/output voltages of each terminal.

When measuring the connector terminal voltage, use a circuit tester with adequate internal resistance of more than 40 kΩ. If a circuit tester with small internal resistance is used, no correct voltage is indicated. After completion of the connection, confirm the following items and perform the check.

1. Continuity exists between the body earth and each of the earth terminals ⑨ and ⑪.
2. Regardless of the key switch position, the battery voltage is applied across ⑫ and ⑨ (earth).
3. When the key switch is set to the [LOCK] and [ACC] position, no voltage is applied across ⑫ and ⑨ (earth); when set to the [ON] position, the battery voltage is applied.

### Computer terminals

⑫	⑪	⑩	⑨	⑧	⑦	⑥	⑤	④	③	②	①
IG	L1	L2	E01	S3	T1	SPD1	P	D	2	L	BR
ST	FP	+B	E1	S4	S1	Ne	S2	SPD2	TV	N	R
⑭	⑬	⑫	⑪	⑩	⑨	⑧	⑦	⑥	⑤	④	③

WR-04024

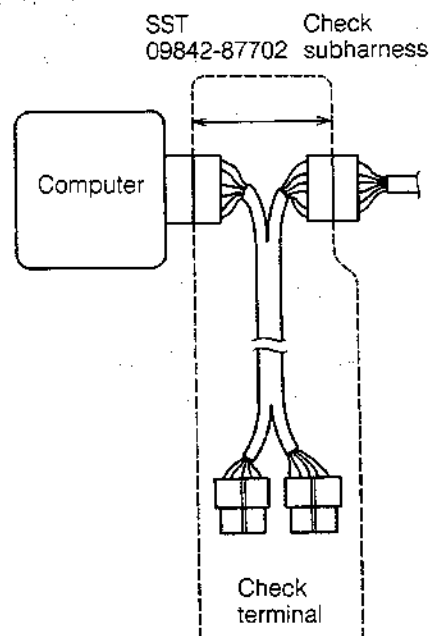
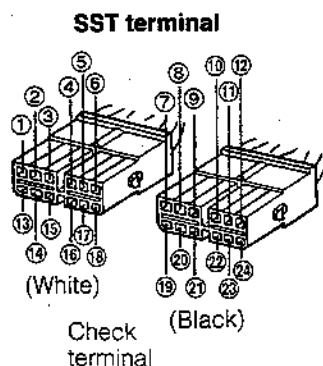


Fig. 4-13

## Diagnosis display

This system is provided with a diagnosis function. Therefore, if the vehicle is encountered with any abnormality, first check to see if any abnormality code indication is present. If any abnormality code is displayed, check the corresponding item according to the table below. (For display method, see page 3-50 of the Technical Information No. 9331-GE.)

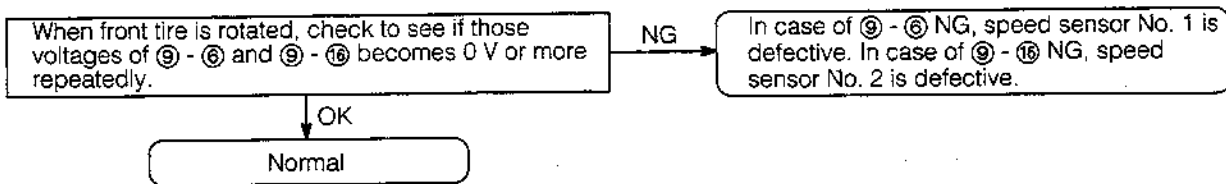
Code No.	Lamp flashing number	Diagnosis item	Page to be referred to
1	1	Normal	—
2	2	Abnormality in pulse signal of vehicle speed sensor No. 1	P 4-15
3	3	Open wire or short in solenoid valve No. 1	P 4-17
4	4	Open wire or short in solenoid valve No. 2	P 4-17
5	5	Abnormality in signal input of throttle sensor	P 4-17
6	6	Abnormality in shift position signal	P 4-16
7	7	Abnormality in pulse signal of vehicle speed sensor No. 2	P 4-15

WR-04025

## UNIT INSPECTION

### 1. VEHICLE SPEED SENSOR CHECK (Refer to page 3-47 of the Technical Information No. 9331-GE)

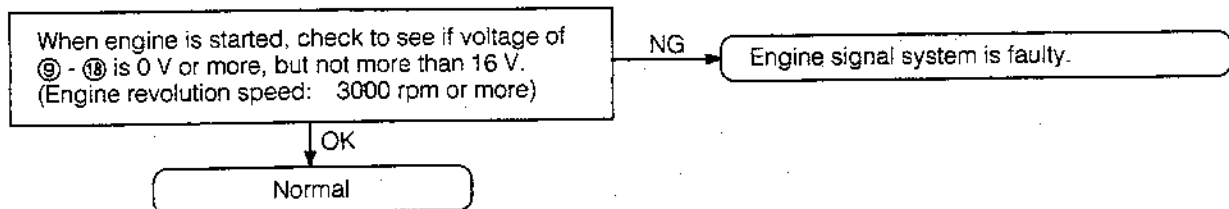
Perform this check with the key switch set to the [ON] position, but without starting the engine.



WR-04026

### 2. IG PULSE CHECK

Perform this check after starting the engine.

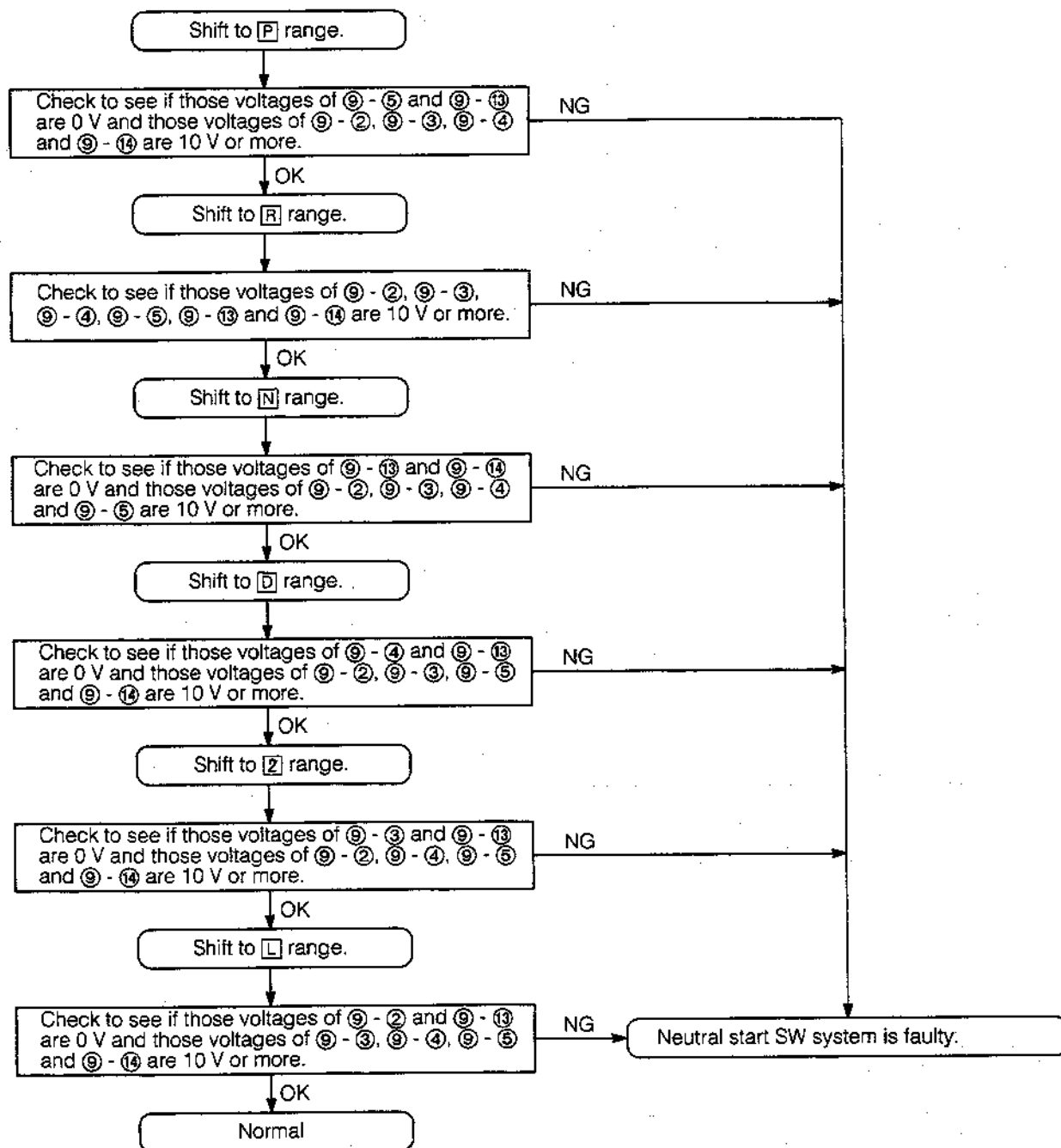


WR-04027

## AUTOMATIC TRANSMISSION

### 3. NEUTRAL START SW CHECK (Refer to page 3-47 of the Technical Information No. 9331-GE)

Perform this check with the key switch set to the [ON] position, but without starting the engine.



Voltage between 9 (E01) and each terminal

Shift position \ Terminal No.	5 <sub>P</sub>	13 <sub>R</sub>	14 <sub>N</sub>	4 <sub>D</sub>	3 <sub>2</sub>	2 <sub>L</sub>
P	L	L	H	H	H	H
R	H	H	H	H	H	H
N	H	L	L	H	H	H
D	H	L	H	L	H	H
2	H	L	H	H	L	H
L	H	L	H	H	H	L

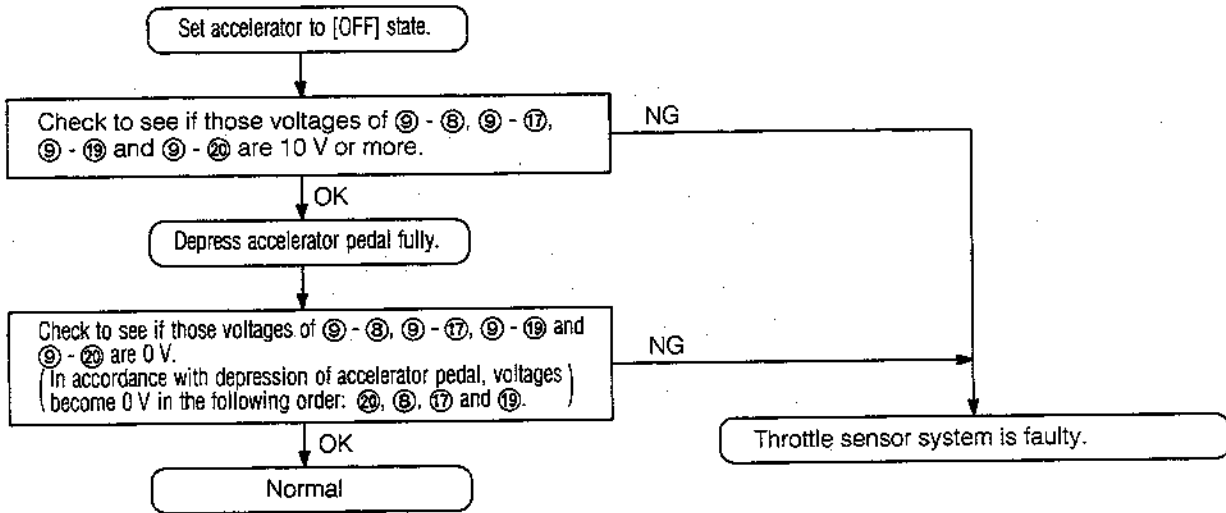
L: 0V H: 10V or more

WR-04028

WR-04029

## 4. THROTTLE SENSOR CHECK (Refer to page 3-46 of the Technical Information No. 9331-GE)

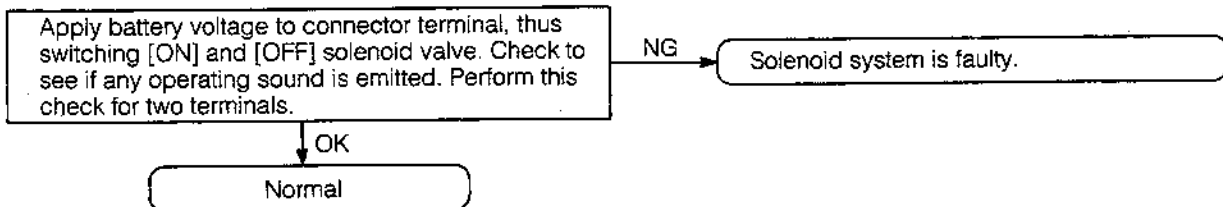
Perform this check with the key switch set to the [ON] position, but without starting the engine.



WR-04030

## 5. SOLENOID VALVE CHECK (2 POINTS) (Refer to page 3-48 of the Technical Information No. 9331-GE)

With the connector of the solenoid harness disconnected, apply the battery voltage to the connector at the transaxle side. Check to see if any operating sound occurs.



WR-04031

## AUTOMATIC TRANSMISSION

### 6. TRANSMISSION CONTROL COMPUTER

The computer itself can not be checked.

- (1) Be very careful not to apply impacts (e.g. dropping) to the transmission control computer.
- (2) The connector should be connected, while paying attention to the locking direction. Furthermore, the connector should be disconnected with the lock button being depressed, making sure that the connector is not twisted.
- (3) Be certain to turn OFF the engine switch before the connector is connected or disconnected.
- (4) When the computer is mounted onto the body, be sure to tighten the two attaching bolts evenly and alternately in order that the bracket may not be distorted.
- (5) Never open the sealing of the computer proper. Also, be sure not to modify the computer.
- (6) Prior to the removal/installation of the battery terminals, make sure to turn OFF the engine switch.
- (7) Under no circumstances should the battery be connected reversely.
- (8) Care must be exercised to ensure that no water or dust gets to the computer proper. If the computer proper should be soaked by water or the like, do not reuse the computer proper.

#### NOTE:

The computer is installed on the upper side of the glove compartment box.

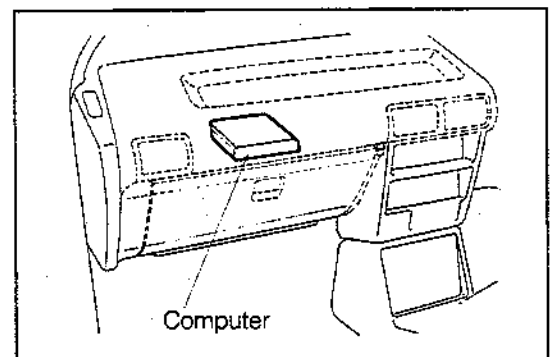


Fig. 4-14

WR-04032

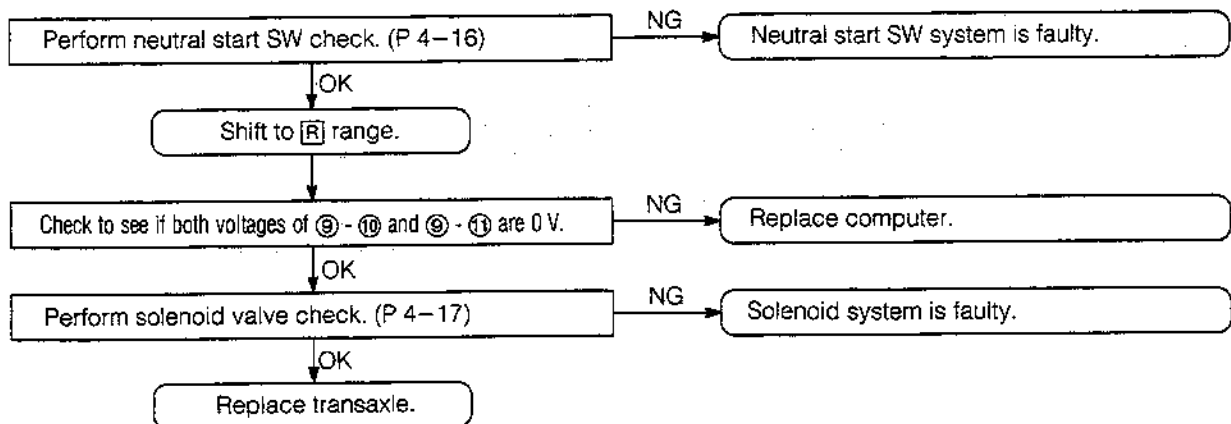
## TROUBLE SHOOTING

When checks and repairs have been made on abnormal codes, set the key switch to the [OFF] position. Remove the fuse (tail) or battery negative  $\ominus$  terminal, thus canceling the memory.

Vehicle will not move forward at all.	→	Replace transaxle Ay. (P 4-24)
Vehicle will not move backward at all.	→	Perform check A. (P 4-19)
No shift will occur at all.	→	Perform check B. (P 4-20)
Shifts occur, but they are not normal.	→	Perform check C. (P 4-20)
No diagnosis output is present.	→	Perform check D. (P 4-21)
Engine will not start even when key switch is set to [ST] position.	→	Perform check E. (P 4-21)
Engine stops when key switch is returned to ON position.	→	Perform check F. (4-22)

WR-04033

### 1. CHECK A

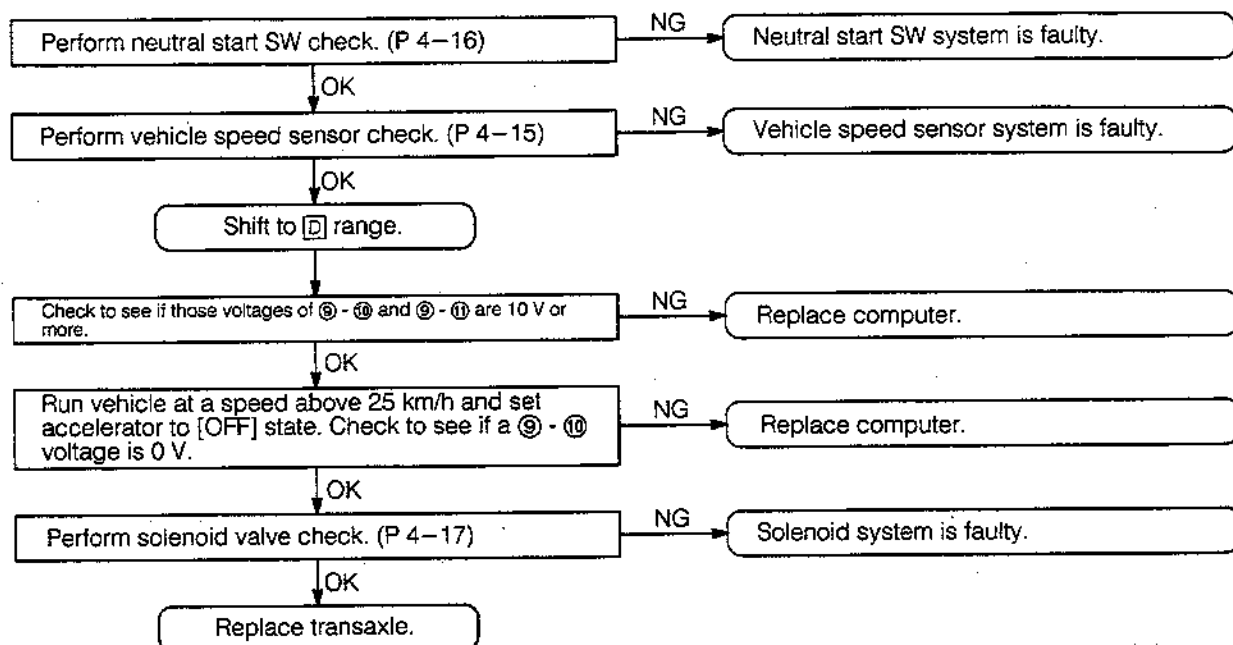


#### NOTE:

Here, "So-and-so system is faulty" means not only that sensors are faulty but also that there are disconnected connector, open wire, short and so forth at the vehicle side, as viewed from the computer side.

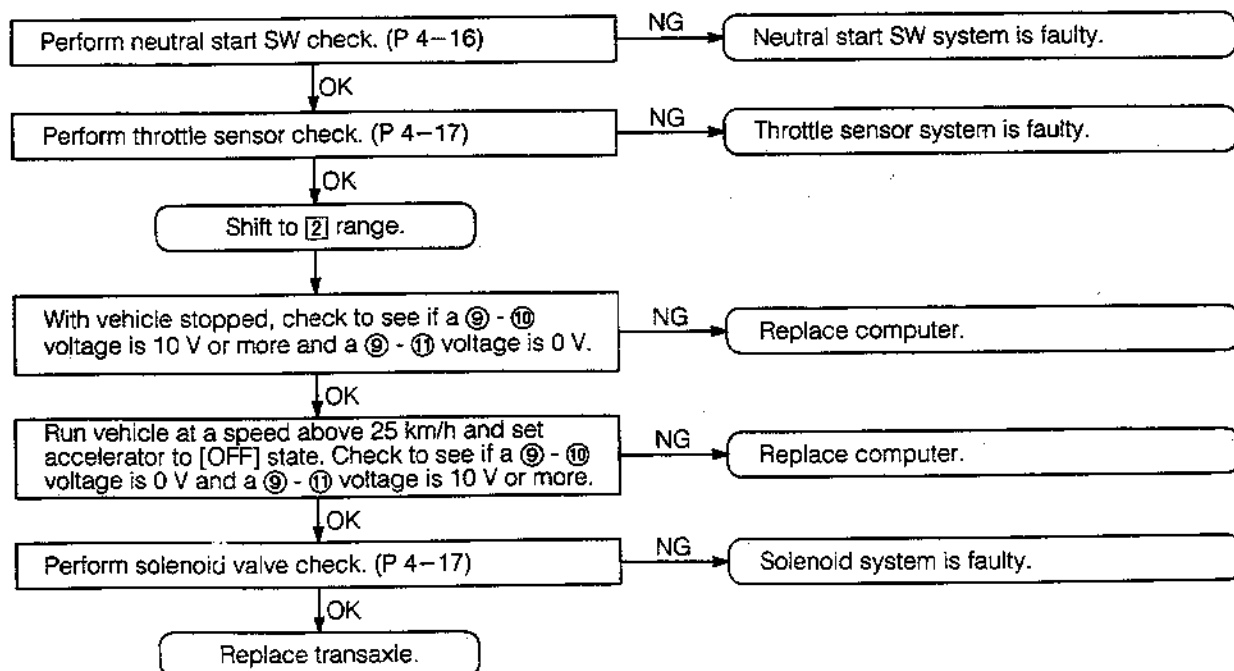
## AUTOMATIC TRANSMISSION

### 2. CHECK B



WR-04035

### 3. CHECK C

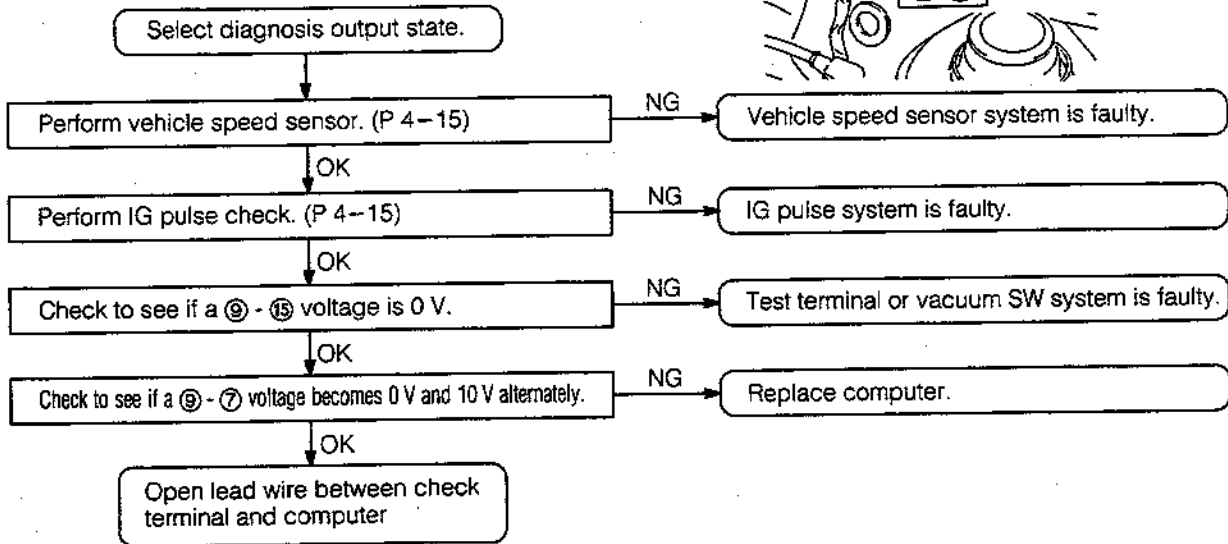
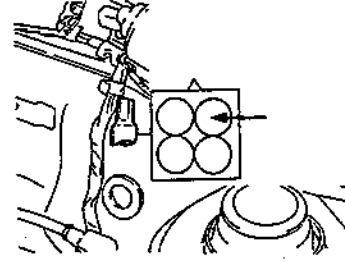


WR-04036



## 4. CHECK D

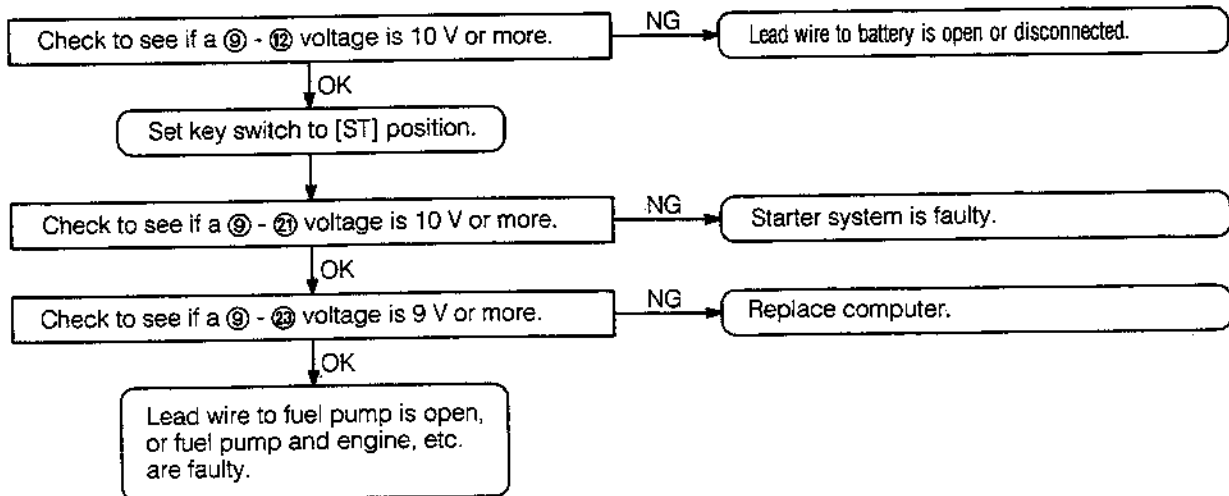
Prior to this check, ensure that the battery voltage is applied to the terminal shown in the figure.



WR-04037

## 5. CHECK E

Perform this check with the key switch set to the [ON] position, but without starting the engine.

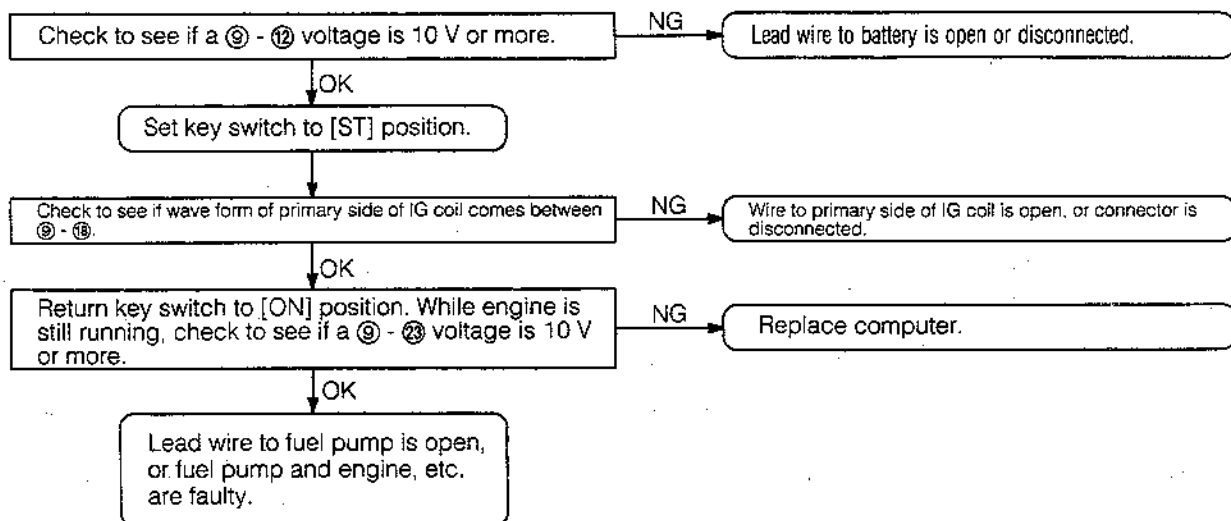


WR-04038

## AUTOMATIC TRANSMISSION

### 6. CHECK F

Perform this check with the key switch set to the [ON] position, but without starting the engine.



WR-04039

### 7. MEMORY ELIMINATION OF DIAGNOSIS CODE

After repairing abnormal part, remove the fuse (tail) or battery negative ⊖ terminal for more than 10 seconds in order to cancel the memory.

### FLUID CHANGE

1. Jack up the vehicle.
2. Allow the transmission to cool. Remove the drain plug and drain out the automatic fluid.

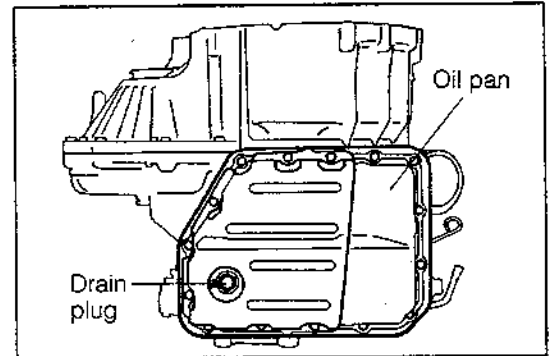


Fig. 4-15

WR-04041

3. Install the drain plug gasket and drain plug. Tighten the plug to the specified torque.  
**Tightening Torque: 1.8 - 2.3 kg-m (13 - 17 ft-lb)**
4. While the vehicle is still in a raised state, check the transmission and adjacent areas (including oil hose and oil cooler) for oil leakage, loose connecting sections or damage.
5. Pull out the oil level gauge from the oil filler tube. Add 1.5 ℓ (2.64 Imp.pt) of new fluid through the oil filler tube.

#### NOTE 1:

When the automatic transmission has been overhauled and the torque converter is to be reused, add 3.5 ℓ (6.2 Imp.pt) of new automatic fluid.

#### NOTE 2:

As for the torque converter and automatic transmission which contain no fluid at all, add 5 ℓ (8.8 Imp.pt) of new automatic fluid.

6. Check the fluid level only after the vehicle has reached the running state (70 - 80°C, 158 - 176°F).

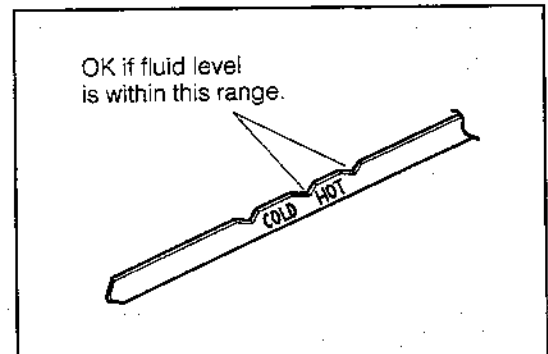


Fig. 4-16

WR-04043

### **TRANSMISSION REMOVAL AND INSTALLATION**

#### **REMOVAL**

1. Remove the air suction guide from the air cleaner.
2. Disconnect the negative  $\ominus$  terminal of the battery.
3. Disconnect the positive  $\oplus$  terminal of the battery.
4. Remove the battery and battery tray.
5. Disconnect the earth terminal from the transmission.
6. Disconnect the solenoid wire coupler and neutral start switch wire coupler.
7. Disconnect the wire harness from the transmission.
8. Disconnect the speedometer cable from the transmission.
9. Disconnect the oil pressure control cable from the accelerator cable. Remove the accelerator cable from the transmission.
10. Remove the control cable from the transmission. (See APPENDIX.)
11. Remove the starter motor.
12. Drain out the automatic fluid from the transmission.
13. Disconnect the fluid inlet/outlet pipes. Then, hang them by means of wire so that no fluid may flow out from the oil cooler and hose.
14. Jack up or lift up the vehicle.
15. Remove the exhaust front pipe.
16. Remove the clutch housing undercover.
17. Remove the six bolts at the drive plate.

#### **NOTE:**

It is advisable to lock the drive plate by inserting a common screwdriver to the drive plate gear through the clutch housing cut-out section.

18. Remove the right and left drive shafts in accordance with the "DRIVE SHAFT DISASSEMBLY" of the SECTION 5 (FRONT AXLE).
19. In order to remove the transmission, securely support the engine and transmission separately, using jacks or the like.
20. Remove the engine lower/left mounting.
21. Remove the bolt connecting the engine and transmission.
22. Remove the transmission from the engine. Carefully lower the transmission.

#### **NOTE 1:**

When removing the transmission from the engine, be very careful not to apply excessive forces to the drive plate or the torque converter.

#### **NOTE 2:**

After the transmission has been removed, keep the transmission in such a way that the oil pan may come at the bottom so that no fluid may flow out.

## INSTALLATION

Reverse the removal procedure to install the transmission, following the operating instructions given below.

### NOTE 1:

Prior to the installation, apply grease around the cup located at the center of the torque converter.

### NOTE 2:

Prior to the installation, measure the dimension A indicated in the right figure.

Specified Value: 27.2 mm (1.07 inch) or more

If the measured value does not conform to the specifications, rework the installation.

### NOTE 3:

Tighten the six bolts on the drive plate and the torque converter to the following torque.

Tightening Torque: 1.5 - 2.2 kg-m (11 - 16 ft-lb)

### NOTE 4:

Tighten the bolts attaching the transmission to the engine to the following torque.

Tightening Torque: 5.0 - 7.0 kg-m (36 - 51 ft-lb)

### NOTE 5:

Tighten the lower/left mounting bracket to the following torque.

Tightening Torque: 3.0 - 4.5 kg-m (22 - 33 ft-lb)

### NOTE 6:

Install the right and left drive shafts in accordance with the "ASSEMBLY OF DRIVE SHAFT" of the SECTION 5 (FRONT AXLE).

### NOTE 7:

After completion of the installation, check the automatic fluid level with the vehicle placed on a level place.

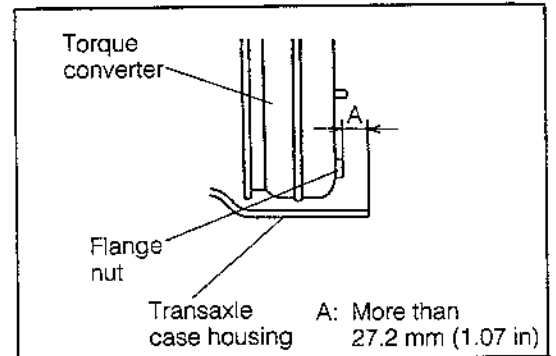


Fig. 4-18

WR-04047

## AUTOMATIC TRANSMISSION

### DISASSEMBLY OF TRANSMISSION

#### INSTRUCTIONS ON DISASSEMBLY

1. In order to prevent dirt or dust from getting into the transmission case, observe the following instructions.
  - (1) Prior to the disassembly, thoroughly wash off any sand or mud adhering to the outside of the transmission case.
  - (2) Perform the disassembly at a clean place.
  - (3) Do not wear gloves or use cloth.
2. Prior to the disassembly, check to see if any fluid leakage exists.
3. To prevent the removed parts from being lost or mixed with each other, place those parts removed from the transmission case in order.
4. Perform the disassembly, while paying attention to the trouble shooting, too.
5. Do not remove any parts unnecessarily.
6. Completely peel off any trace of the gaskets from the parts, making sure that no damage is made to the gasket mate surfaces.
7. When removing the snap rings, care must be exercised not to damage other parts.
8. When removing the bearings, be very careful not to apply forces to the balls and rollers.
9. When disassembling the transmission case, rear cover, oil pump, housing, valve body and so forth, never pry them off by a common screwdriver. Instead, disassemble them by lightly tapping them using a plastic hammer.

WR-04048

1. Remove the torque converter.

**NOTE:**

Be sure to receive fluid which may leak with a pan or the like.

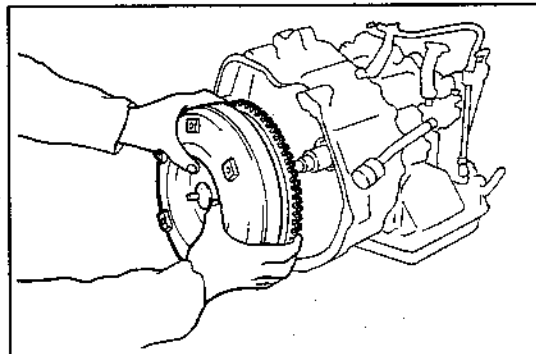


Fig. 4-19

WR-04049

2. Remove the oil filler tube and oil level gauge.

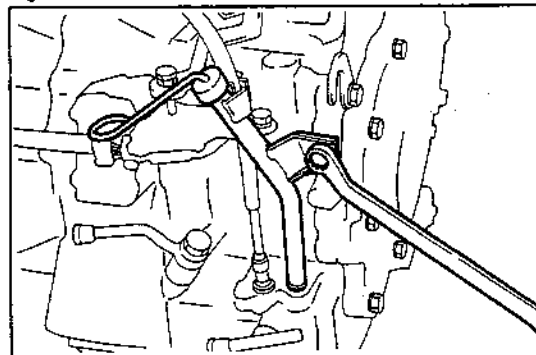


Fig. 4-20

WR-04050

3. Remove the drain plug and drain out the transmission fluid.

**NOTE:**

Completely drain out the fluid remaining inside the differential case by tilting it in various directions.

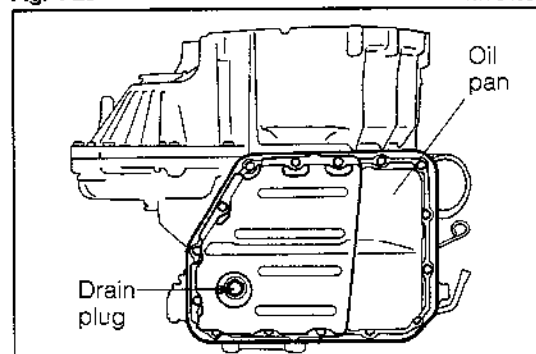


Fig. 4-21

WR-04051

4. Remove the oil pan and oil pan gasket.

**NOTE:**

- (1) Do not raise the oil pan side higher than the transmission case during the removal. Failure to observe this note will cause foreign matters at the bottom of the oil pan to contaminate the valve body.
- (2) Remove the oil pan by lightly tapping the entire periphery of the oil pan using a plastic hammer. Never pry off the oil pan, using a common screwdriver.

5. Disconnect the solenoid connector. (Two points)

6. Remove the oil tube.

**NOTE:**

Raise the end of the tube, using a common screwdriver.

7. Remove the throttle cable from the throttle valve cam.

8. Remove the valve body and oil strainer.

**NOTE:**

Remove the 11 bolts indicated in the figure.

9. Remove the throttle cable from the transmission case.

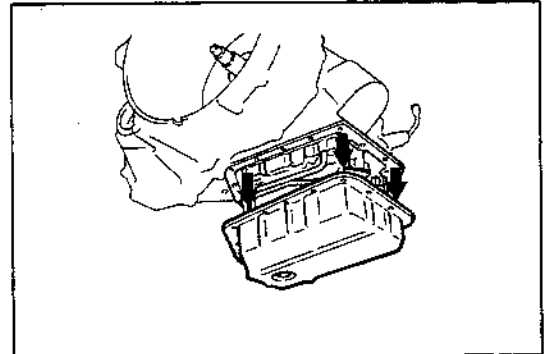


Fig. 4-22

WR-04052

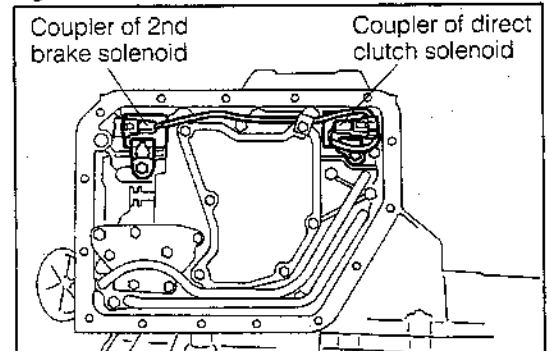


Fig. 4-23

WR-04053

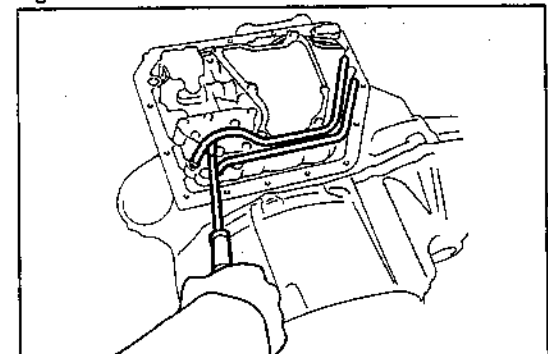


Fig. 4-24

WR-04054

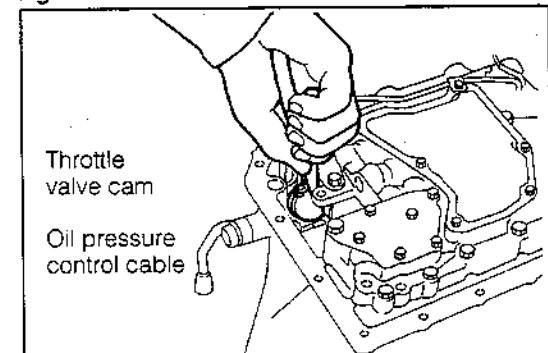


Fig. 4-25

WR-04055

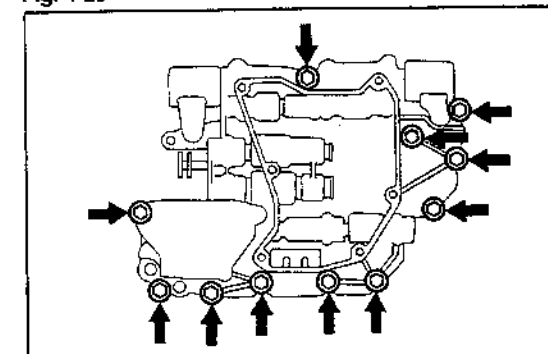


Fig. 4-26

WR-04056

## AUTOMATIC TRANSMISSION

### 9. Removal of the accumulator piston

- (1) Cover with a cloth so as to prevent the piston from jumping out or the fluid from splashing.
- (2) To remove the piston, gently applying compressed air with a low pressure (1 kg/cm<sup>2</sup>, 15 psi at the maximum) into the oil hole indicated in the figure.

#### NOTE:

Care must be exercised as to jumping out of the piston or fluid splashing.

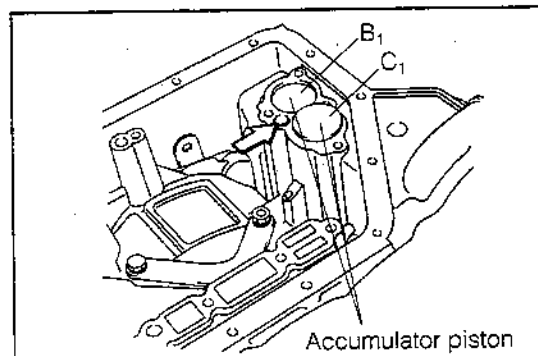


Fig. 4-27

WR-04057

### 10. Removal of the neutral start switch and the case side cover

- (1) Prior to the removal, shift to **N** range and scribe marks between the manual valve control lever and the neutral start switch and between the switch and the switch attaching position of the case in order to be easy to install.
- (2) Remove the manual valve control lever and the neutral start switch.
- (3) Remove the case side cover and the gasket.

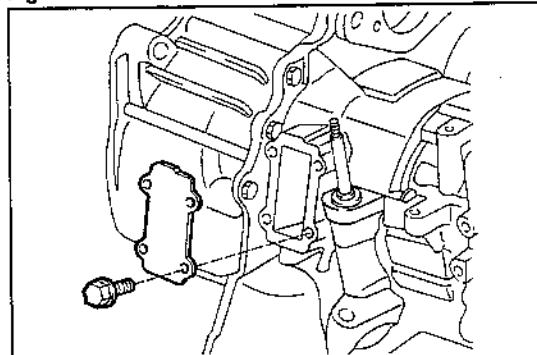


Fig. 4-28

WR-04058

### 11. Check of the 2nd brake piston rod stroke

- (1) Scribe a mark on the piston rod.
- (2) Apply compressed air into the oil hole indicated in the right figure and measure the rod stroke.

**Specified Value: 1.5 - 3.0 mm (0.059 - 0.118 inch)**

**(The length of difference (A) represents the rod stroke.)**

- (3) If the measured value does not comply with the specification, select a rod from the table below and replace it. Or replace the brake band.

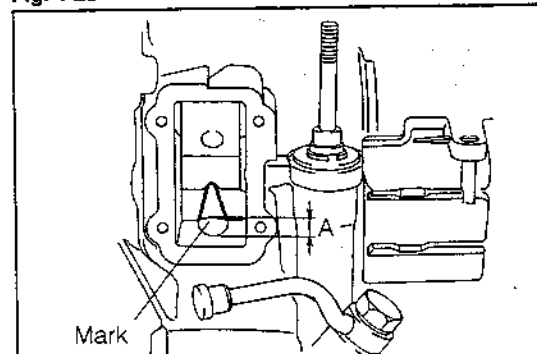


Fig. 4-29

WR-04059

Evaluation	Piston rod length	Identification mark
Too short	121.3 mm (4.77 inches)	Not provided
Too long	122.7 mm (4.83 inches)	Provided (See figure below.)

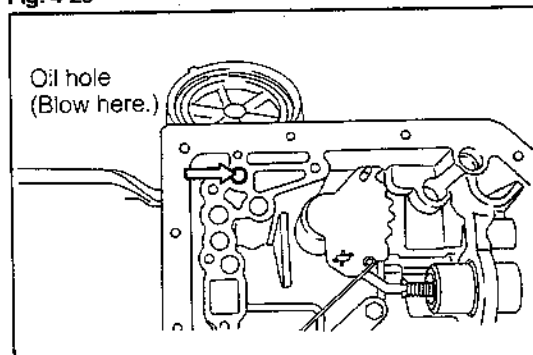


Fig. 4-30

WR-04060

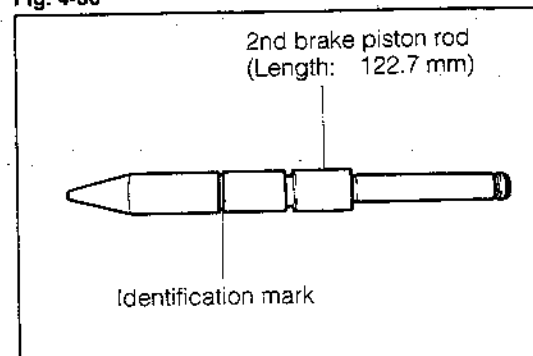


Fig. 4-31

WR-04061



## 12. Removal of the 2nd brake piston

- (1) Detach the snap ring, using a common screwdriver or the like. Remove the cover and piston.

### NOTE 1:

If the 2nd brake piston and rod are encountered with no trouble, this removal is not required.

### NOTE 2:

When removing the 2nd brake piston by applying compressed air, care must be exercised as to jumping out of the piston or fluid splashing.

## 13. Removal of the solenoid wire harness

- (1) Remove the nut retaining the lock plate. Remove the wire.
- (2) Remove the wire clamps (2 points) of the rear cover.

## 14. Removal of the oil pump

- (1) Remove the oil pump attaching bolts (6 pieces).
- (2) Remove the oil pump, using the following SST.

SST: 09350-87702-000

09350-87702-000

## 15. Removal of the torque converter housing

- (1) Remove the bolts at both inside and outside of the housing.
- (2) Remove the housing by lightly tapping the periphery of the housing, using a plastic hammer.

### NOTE:

Before removing the housing, detach the speedometer driven gear.

## 16. Draw out the straight pin, using pliers.

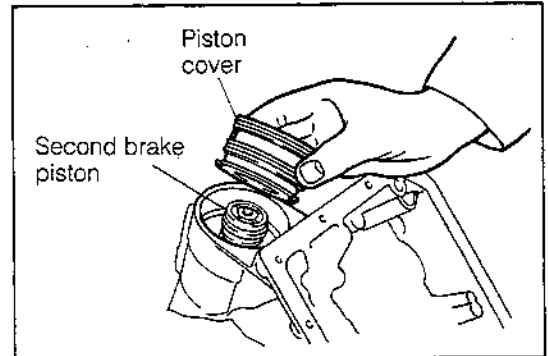


Fig. 4-32

WR-04052

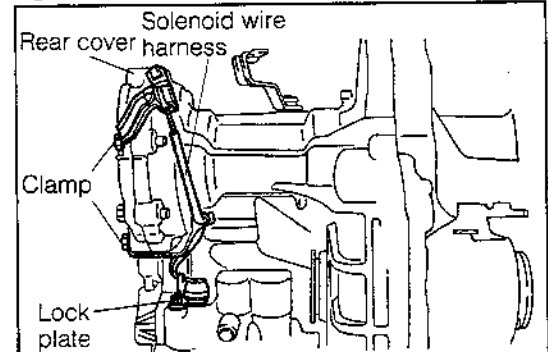


Fig. 4-33

WR-04063

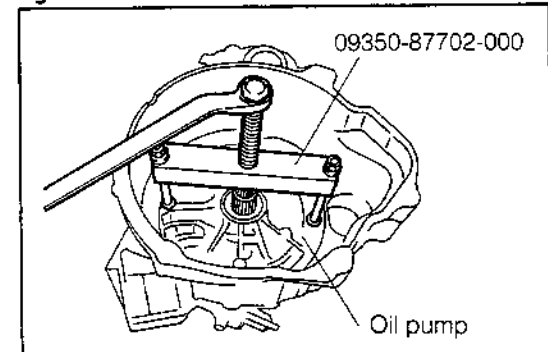


Fig. 4-34

WR-04064

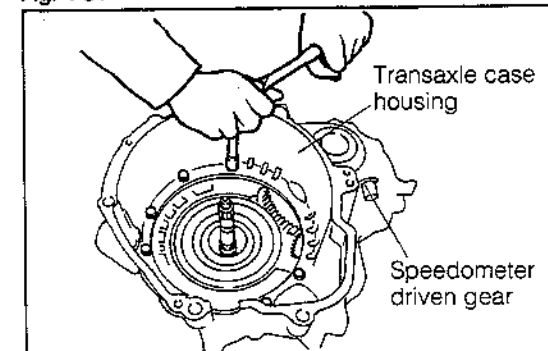


Fig. 4-35

WR-04065

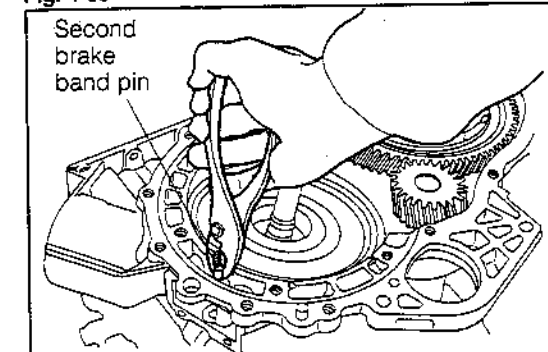


Fig. 4-36

WR-04066

## AUTOMATIC TRANSMISSION

17. Removal of the direct clutch and forward clutch  
(1) While holding the input shaft, remove the direct clutch and forward clutch at the same time.

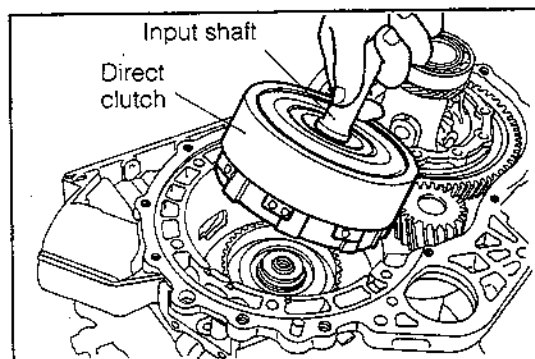


Fig. 4-37

WR-04067

- (2) Remove the direct clutch from the input shaft.

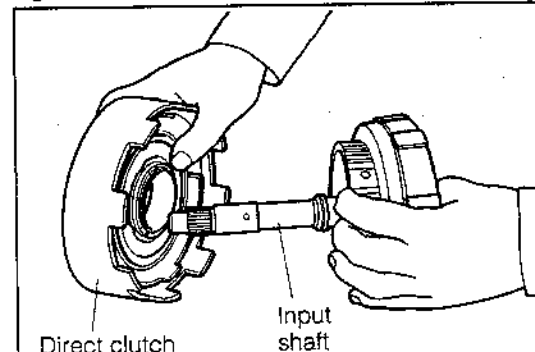


Fig. 4-38

WR-04068

18. Remove the 2nd brake band.

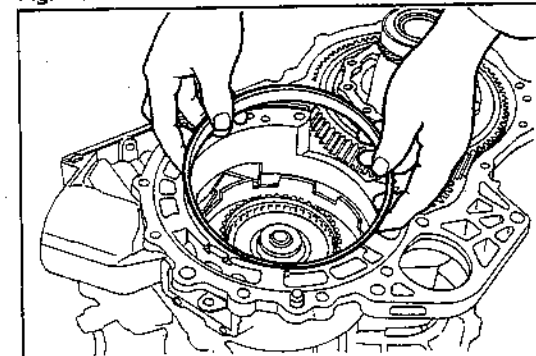


Fig. 4-39

WR-04069

19. Remove the front planetary ring gear.  
**NOTE:**  
Check the thrust needle roller bearing.

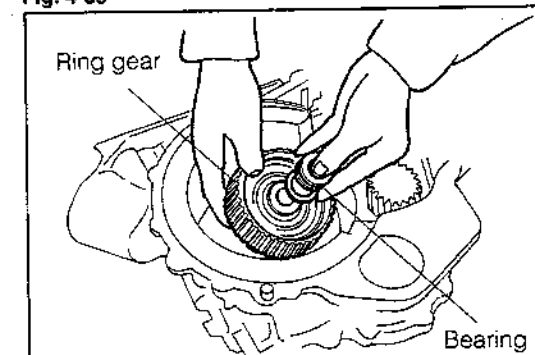


Fig. 4-40

WR-04070

20. Remove the front planetary ring gear assembly.  
**NOTE:**  
Check the thrust needle roller bearing.

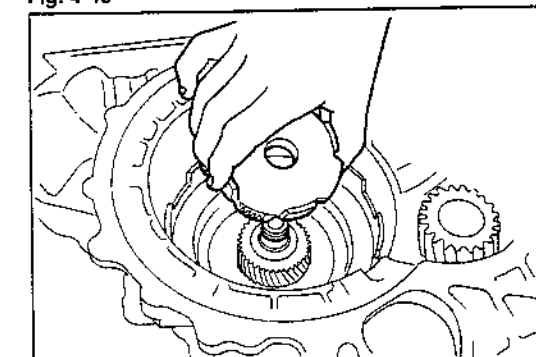


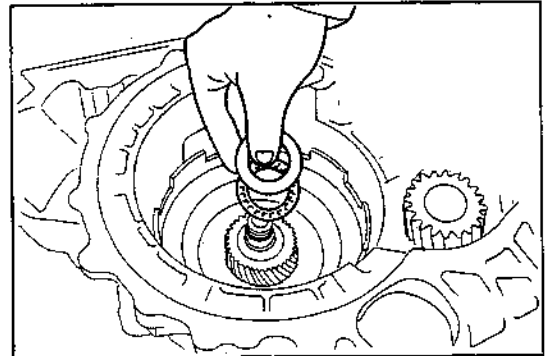
Fig. 4-41

WR-04071

21. Remove the thrust needle bearing from the planetary sun gear.

**NOTE:**

Check the thrust needle roller bearing.



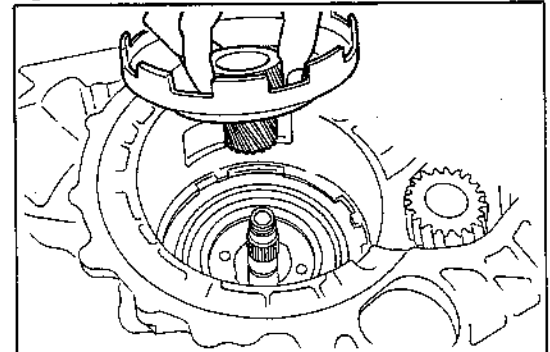
**Fig. 4-42**

WR-04072

22. Remove the planetary sun gear assembly

**NOTE:**

Check the thrustwasher.



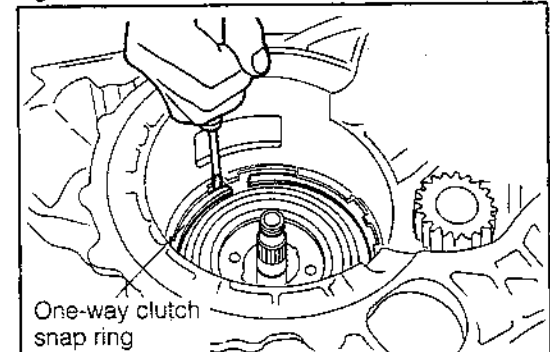
**Fig. 4-43**

WR-04073

23. Detach the one-way clutch snap ring.

**NOTE:**

Be very careful not to scratch other parts.



One-way clutch  
snap ring

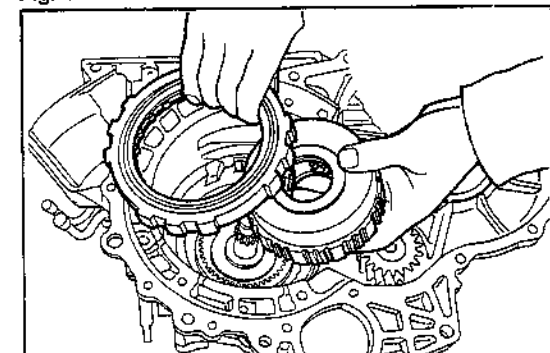
**Fig. 4-44**

WR-04074

24. Remove the one-way clutch and rear planetary gear.

**NOTE:**

Check the thrust washer.



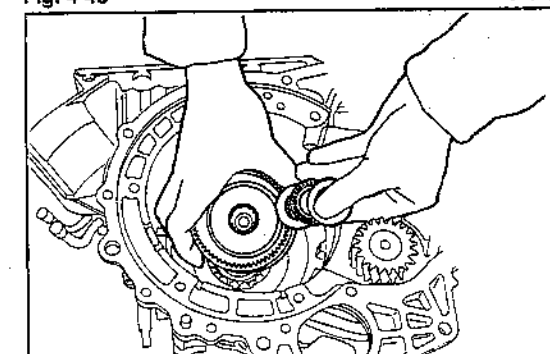
**Fig. 4-45**

WR-04075

25. Remove the rear planetary ring gear and thrust bearing.

**NOTE:**

Check the thrust needle roller bearing.



**Fig. 4-46**

WR-04076

## AUTOMATIC TRANSMISSION

26. Check of the 1st & reverse brake clearance
- (1) Measure the clearance indicated in the right figure, using a thickness gauge.  
Specified Value: 0.58 - 1.92 mm (0.023 - 0.075 inch)
  - (2) If the measure value does not comply with the specification, replace the clutch disc or the plate.
27. Detach the snap rings (2 pieces), using a common screwdriver.
- NOTE:**  
Be very careful not to scratch other parts.
28. Remove the 1st & reverse brake flange, disc, plate and damper plate.
29. Remove the differential gear assembly.
30. Removal of the rear cover
- (1) Remove the bolts (7 pieces) and nuts (2 pieces).
  - (2) Remove the rear cover by lightly tapping the position indicated in the figure, using a plastic hammer.

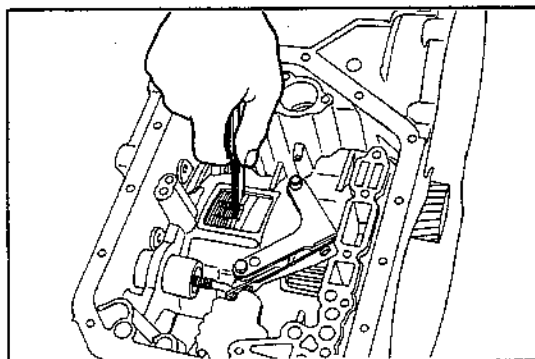


Fig. 4-47

WR-04077

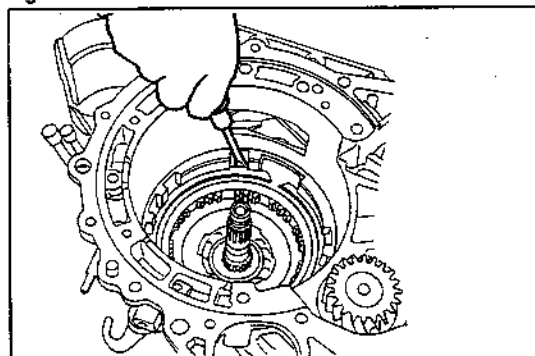


Fig. 4-48

WR-04078

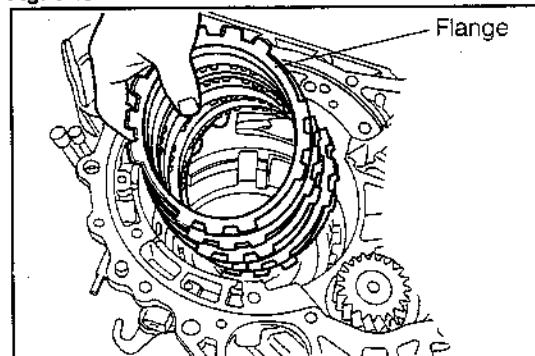


Fig. 4-49

WR-04079

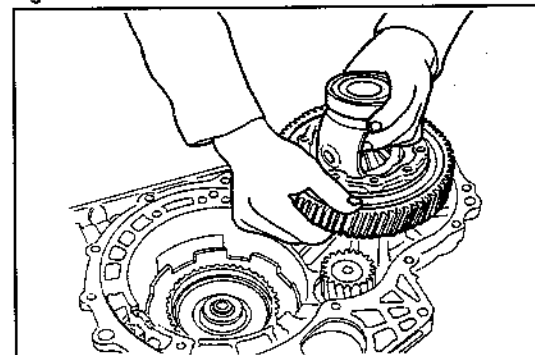


Fig. 4-50

WR-04080

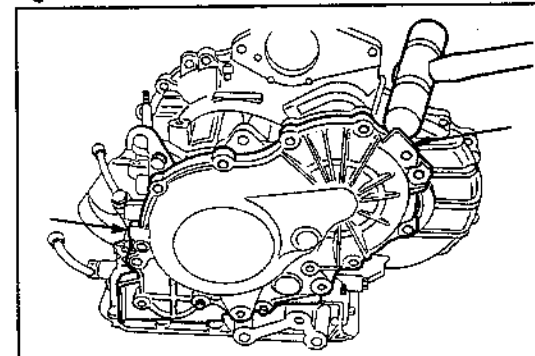


Fig. 4-51

WR-04081

1. Removal of the counter shaft lock nut
  - (1) Release the staked state of the lock nut by means of a chisel.
  - (2) Shift to the P range so that the gear may not turn.
  - (3) Loosen the lock nut.

**NOTE:**

Carefully loosen the lock nut so that no shocks may be given to the parking lock pawl and output shaft.

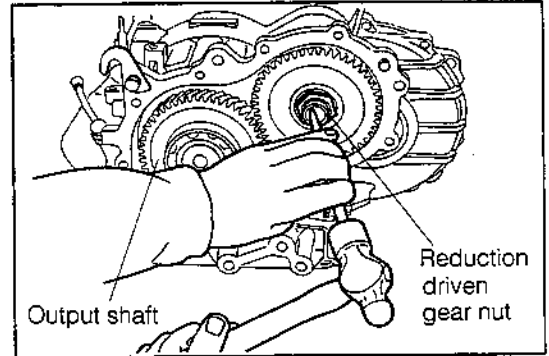


Fig. 4-52

WR-04082

32. Draw out the reduction driven gear.

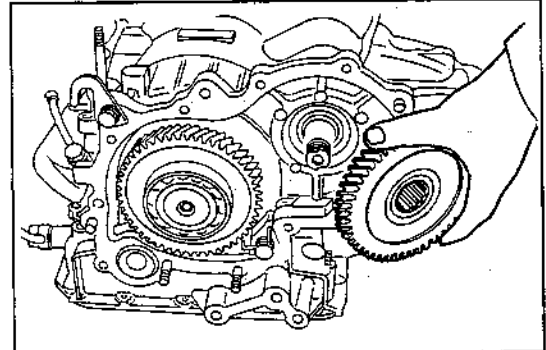


Fig. 4-53

WR-04083

33. Remove the drive counter shaft by lightly tapping it, using a plastic hammer.

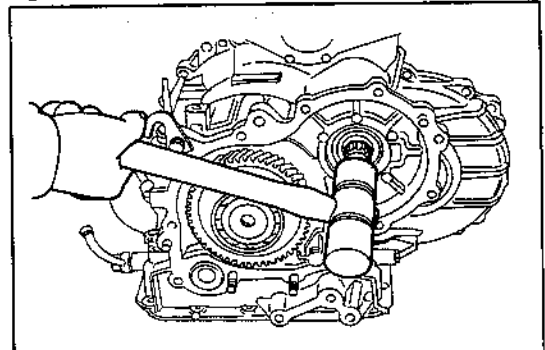


Fig. 4-54

WR-04084

34. Removal of the counter drive gear
  - (1) Remove the output shaft by pushing the bearing outer race of the inner output shaft. During this operation, use the following SST as shown in the figure.

**NOTE:**

Never tap the output shaft.

SST: 09350-87702-000

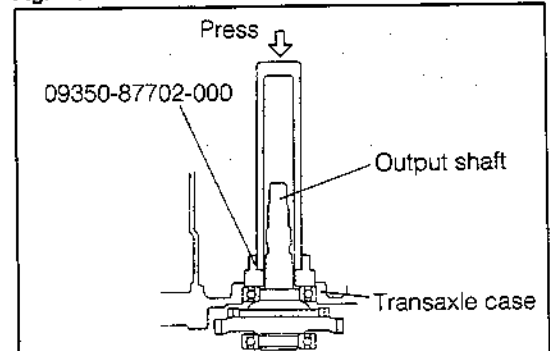


Fig. 4-55

WR-04085

35. Removal of the parking lock pawl
  - (1) Draw out the parking lock pawl shaft and spring.
  - (2) Remove the parking lock pawl.

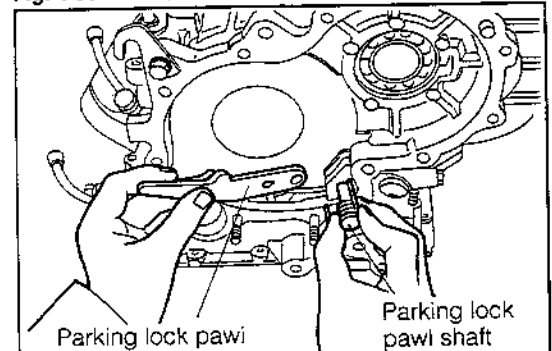


Fig. 4-56

WR-04086

## AUTOMATIC TRANSMISSION

- (3) Remove the parking lock pawl sleeve.

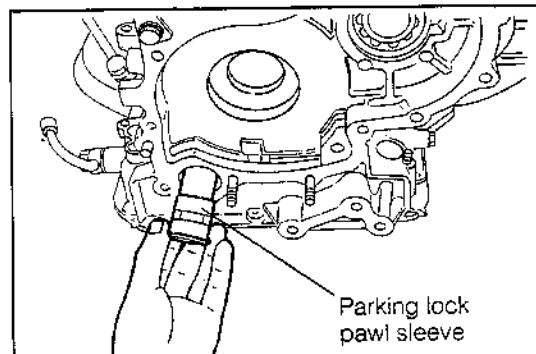


Fig. 4-57

WR-04087

36. Removal of the 1st & reverse brake piston

- (1) Compress the return spring, using the SST indicated in the figure.

SST: 09350-87702-000

**NOTE:**

Do not compress the return spring beyond its compression allowance (deflection allowance).

- (2) Detach the snap ring.

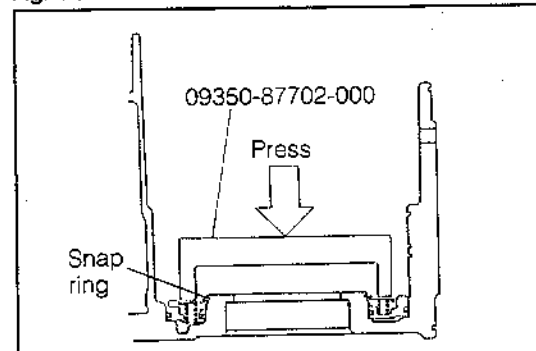


Fig. 4-58

WR-04088

- (3) Remove the return spring subassembly.

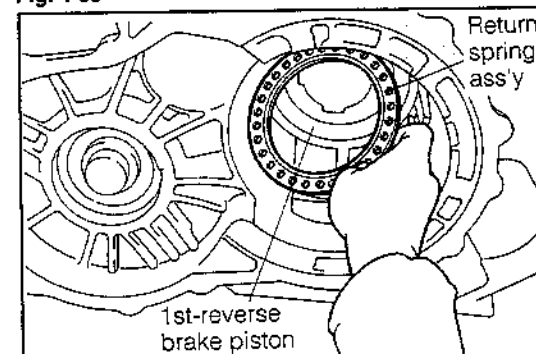


Fig. 4-59

WR-04089

- (4) Remove the piston by applying compressed air into the oil hole indicated in the figure.

**NOTE:**

Slowly apply compressed air with a low pressure (1 kg/cm<sup>2</sup>, 15 psi) so that the piston may not tilt.

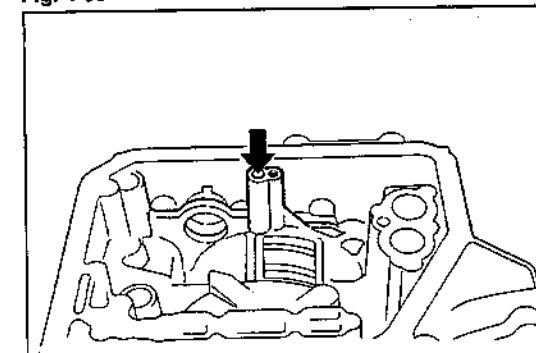


Fig. 4-60

WR-04090

- (5) Remove the "O" ring from the piston.

WR-04091

# INSPECTION AND REPAIRS OF EACH PART

## OIL PUMP

### COMPONENTS

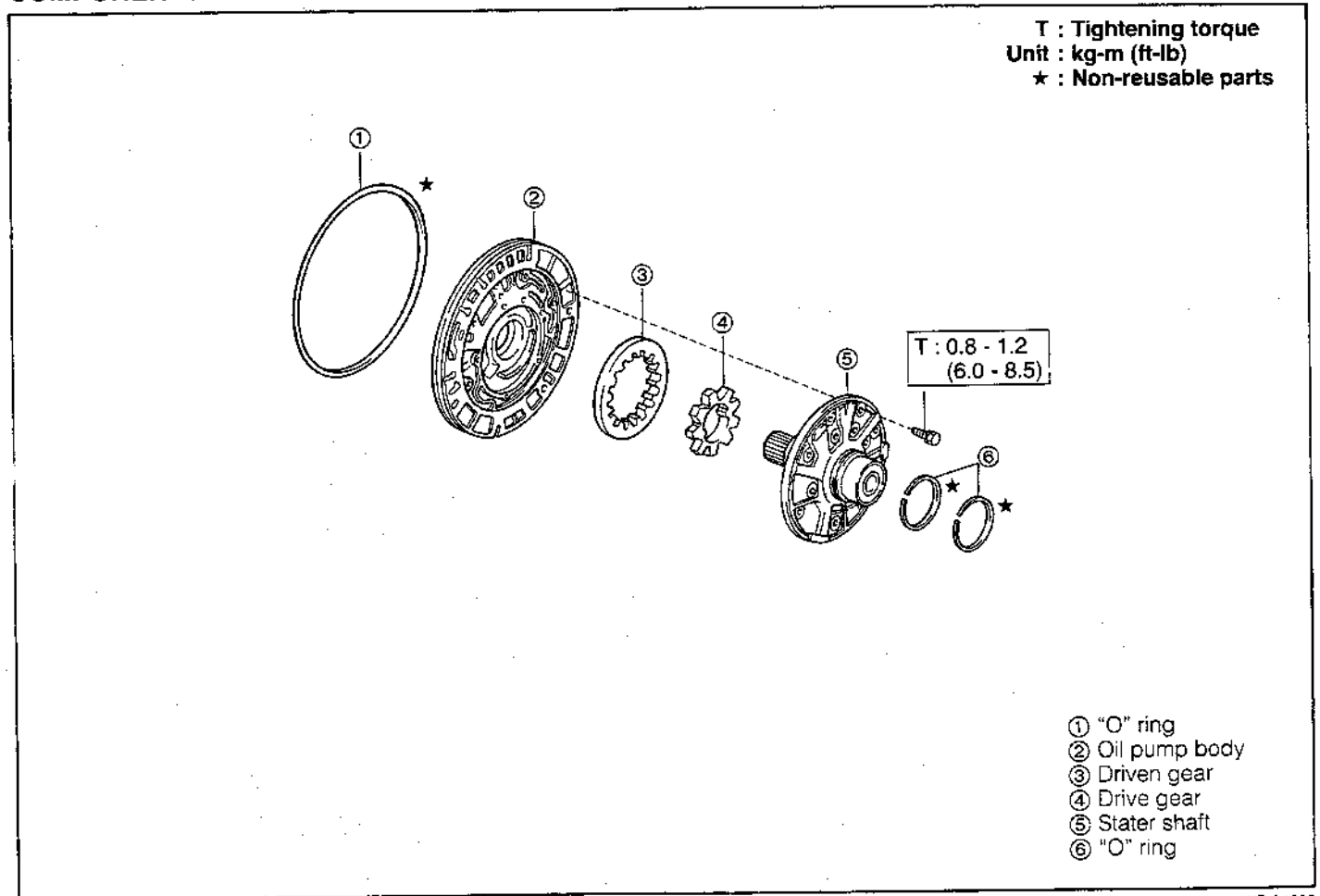


Fig. 4-61

WR-04092

### DISASSEMBLY

1. Remove the following parts from the oil pump body.
  - (1) "O" ring
  - (2) Bolts (11 pieces)
  - (3) Stator shaft

WR-04093

### INSPECTION

1. Check the pump body oil seal for wear, damage and cracks.

#### NOTE:

Replace any parts that exhibit defects.

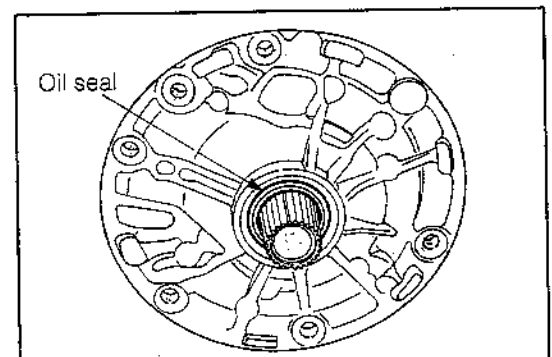


Fig. 4-62

WR-04094

## AUTOMATIC TRANSMISSION

### 2. Body clearance check

- (1) Push the driven gear against the one side of the body.
- (2) Measure the clearance between the driven gear and the body, using a thickness gauge.

**Specified Value:** 0.07 - 0.15 mm  
(0.0028 - 0.0059 inch)

**Allowable Limit:** 0.30 mm (0.011 inch)

**NOTE:**

If the clearance exceeds the allowable limit, replace the driven gear.

### 3. Tip clearance check

- (1) Measure the clearance between the driven gear tooth and the crescent, using a thickness gauge.

**Specified Value:** 0.11 - 0.14 mm  
(0.0043 - 0.0055 inch)

**Allowable Limit:** 0.30 mm (0.011 inch)

**NOTE:**

If the clearance exceeds the allowable limit, replace the driven gear.

### 4. Side clearance check

- (1) Measure the side clearance between the gear and the installation surface of the stator shaft over the entire periphery, using a straight edge (square) in combination with a thickness gauge.

**Specified Value:** 0.02 - 0.05 mm  
(0.0008 - 0.0019 inch)

**Allowable Limit:** 0.1 mm (0.0039 inch)

**NOTE:**

If the side clearance exceeds the allowable limit, replace the part.

## ASSEMBLY

**NOTE:**

Be sure to replace the "O" rings with new ones.

1. Install the driven gear and drive gear into the pump body.

**NOTE:**

Prior to the installation, apply the automatic fluid to the parts.

2. Install the stator shaft to the pump body. Tighten the bolts (11 pieces).

**Tightening Torque:** 0.8 - 1.2 kg-m (6.0 - 8.5 ft-lb)

3. Install the cover seal rings (2 pieces).
4. Apply the automatic fluid to the oil pump bush and "O" ring.
5. Install the "O" ring.

**NOTE:**

Ensure that the seal is not corrugated and that it is fitted properly in the groove.

6. Ensure that the drive gear rotates smoothly.

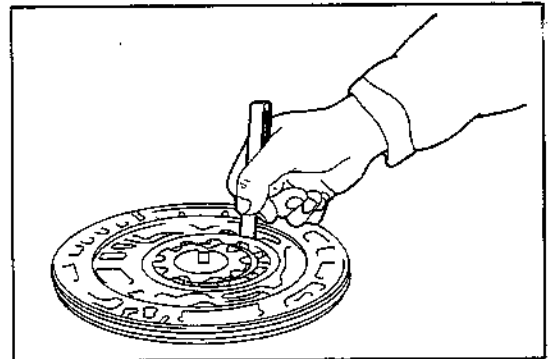


Fig. 4-63

WR-04095

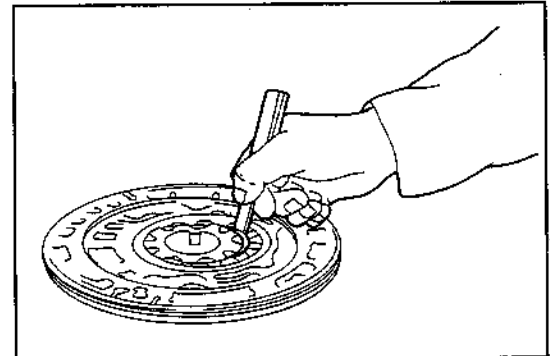


Fig. 4-64

WR-04096

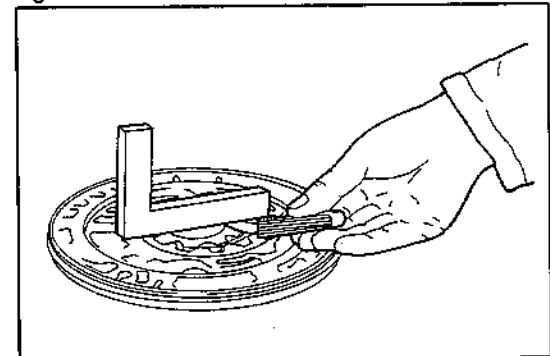


Fig. 4-65

WR-04097

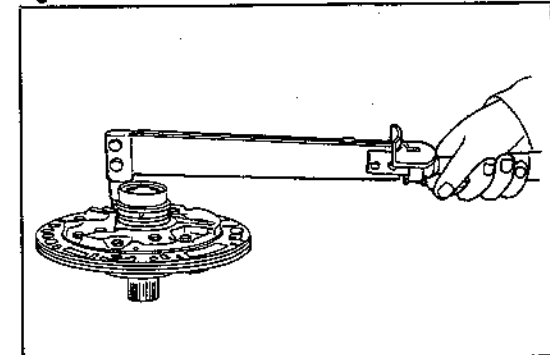


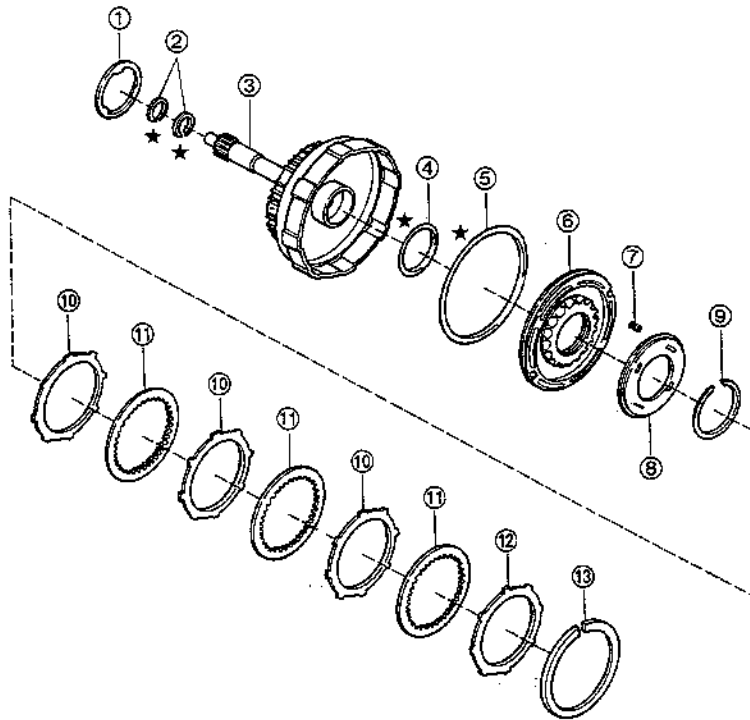
Fig. 4-66

WR-04098



## FORWARD CLUTCH COMPONENTS

★ : Non-reusable parts



- ① Direct clutch washer
- ② Input shaft "O" ring
- ③ Input shaft sub-assy
- ④ "O" ring (inner)
- ⑤ "O" ring (outer)
- ⑥ Forward clutch piston
- ⑦ Return spring
- ⑧ Return spring seat
- ⑨ Spring seat snap ring
- ⑩ Clutch plate
- ⑪ Clutch disc
- ⑫ Clutch flange
- ⑬ Clutch plate snap ring

Fig. 4-67

WR-04099

### DISASSEMBLY

1. Compress the return spring, using the following SST.  
Remove the spring seat snap ring.

SST: 09350-87702-000

#### NOTE:

Do not compress the return spring beyond its compression allowance (deflection allowance).

2. Remove the spring seat and return spring.
3. Detach the clutch plate snap ring. Remove the flange, disc and plate.

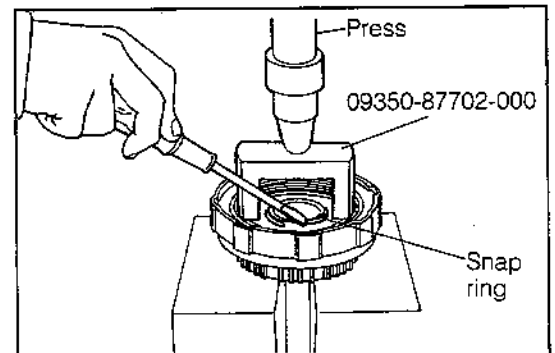


Fig. 4-68

WR-04100

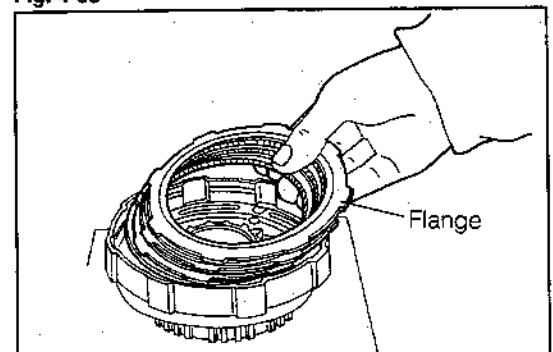


Fig. 4-69

WR-04101

## AUTOMATIC TRANSMISSION

4. Remove the forward clutch piston by applying compressed air into the the input shaft oilhole indicated in the figure.
5. Remove the outer and inner "O" rings from the forward clutch piston.

### INSPECTION

1. Ensure that the valve (ball) moves freely in the clutch piston.
2. Check the valve for leakage by applying compressed air with a low pressure.

#### NOTE:

If any valve seizure or air leakage exists, replace the forward clutch piston.

### ASSEMBLY

#### NOTE:

Be sure to replace the "O" rings and the seal rings with new ones.

1. Apply the automatic fluid to "O" rings (both inner and outer). Proceed to install the "O" rings to the forward clutch piston.
2. Insert the forward clutch piston to the input shaft drum.

#### NOTE:

Be careful not to twist the "O" rings or not to have them caught by other parts.

WR-04104

3. Install the return springs (18 pieces) and spring seats.

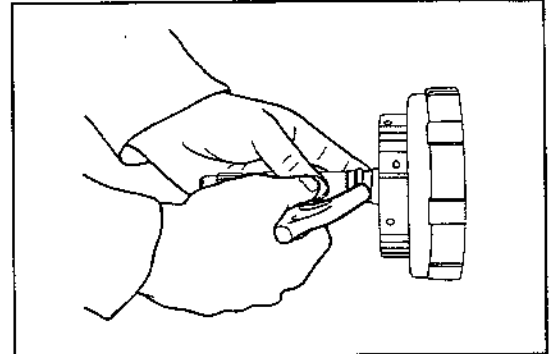


Fig. 4-70

WR-04102

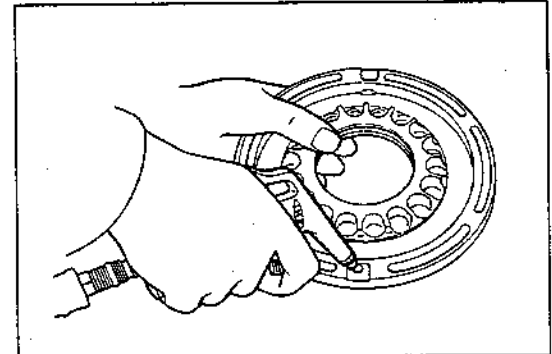


Fig. 4-71

WR-04103

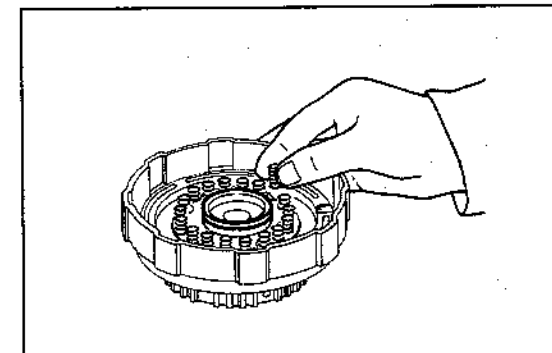


Fig. 4-72

WR-04105

4. Compress the return spring and attach the spring seat snap ring, using the following SST.

SST: 09350-87702-000

#### NOTE 1:

Check to see if the spring seat snap ring is fitted properly on the spring seat.

#### NOTE 2:

Do not compress the return spring beyond its compression allowance (deflection allowance).

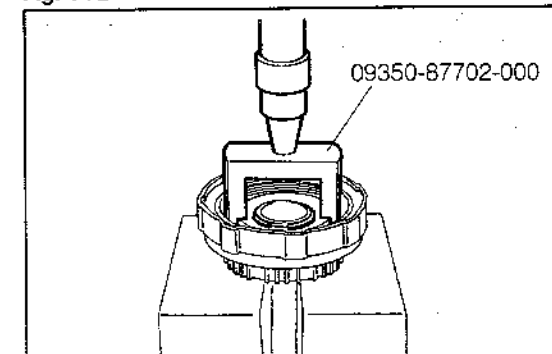


Fig. 4-73

WR-04106

5. Install the following parts in this order.

- (1) Plate
- (2) Clutch disc
- (3) Plate
- (4) Clutch disc
- (5) Plate
- (6) Clutch disc
- (7) Flange

6. Attach the clutch plate snap ring.

WR-04107

7. Clutch clearance measurement

- (1) Measure the clearance indicated in the figure, using a thickness gauge.

**Specified Value:** 0.41 - 1.08 mm (0.016 - 0.043 inch)

**NOTE 1:**

If the measured clearance does not comply with the specification, replace the clutch disc or plate.

**NOTE 2:**

If the measured clearance does not comply with the specification although a new clutch disc or plate has been used, select a proper one from the following two flanges having different thicknesses.

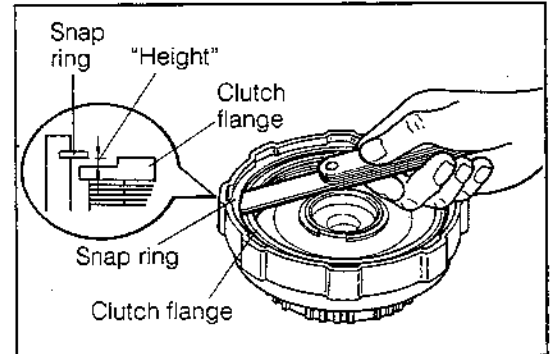


Fig. 4-74

WR-04108

Evaluation	Flange thickness
Too small	3.00 mm (0.118 inch)
Too large	3.37 mm (0.132 inch).

8. Apply compressed air into the oil hole of the input shaft indicated in the figure and check to see if the clutch piston moves freely.

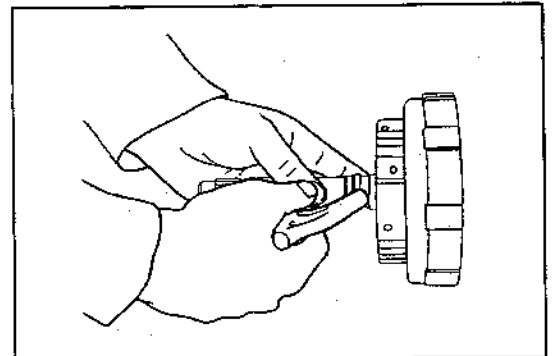


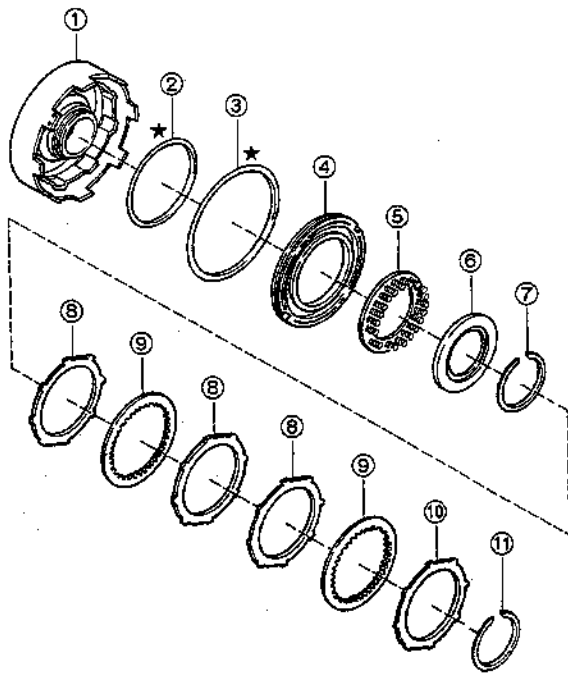
Fig. 4-75

WR-04109

# AUTOMATIC TRANSMISSION

## DIRECT CLUTCH COMPONENTS

★ : Non-reusable parts



- |                        |                          |
|------------------------|--------------------------|
| ① Direct clutch drum   | ⑦ Spring seat snap ring  |
| ② "O" ring (inner)     | ⑧ Clutch plate           |
| ③ "O" ring (outer)     | ⑨ Clutch disc            |
| ④ Direct clutch piston | ⑩ Clutch flange          |
| ⑤ Return spring S/A    | ⑪ Clutch plate snap ring |
| ⑥ Return spring seat   |                          |

Fig. 4-76

WR-04110

### DISASSEMBLY

1. Compress the return spring and detach the spring seat snap ring, using the following SST.

SST: 09350-87702-000

#### NOTE:

Do not compress the return spring beyond its compression allowance (deflection allowance).

2. Remove the return spring seat and return spring sub-assembly.
3. Detach the clutch plate snap ring. Remove the flange, disc and plate.

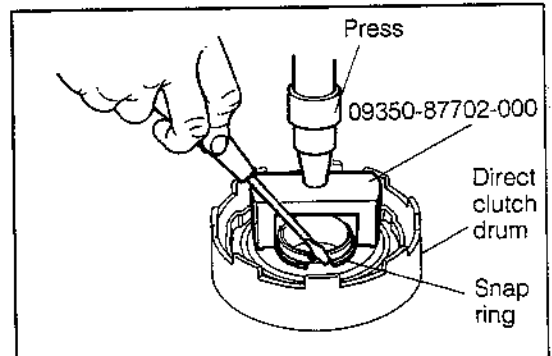


Fig. 4-77

WR-04111

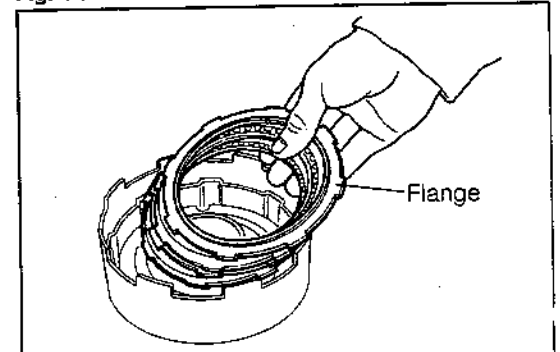


Fig. 4-78

WR-04112

4. Remove the direct clutch piston by applying compressed air into the oil hole indicated in the figure.

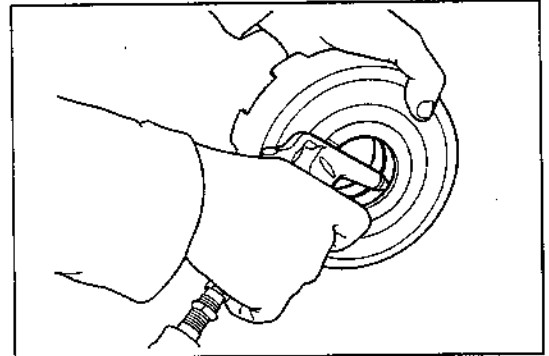


Fig. 4-79

WR-04113

5. Remove the "O" ring from the direct clutch drum.
6. Remove the "O" ring from the direct clutch piston. WR-04114

## INSPECTION

1. Check to see if the check valve (ball) moves freely in the clutch piston.
2. Check the valve for leakage by applying compressed air with a low pressure.

### NOTE:

If any valve seizure or air leakage exists, replace the direct clutch piston.

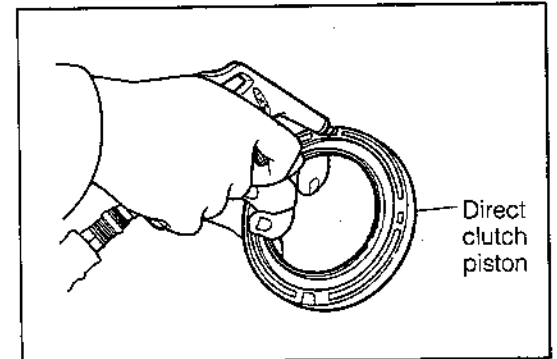


Fig. 4-80

WR-04115

## ASSEMBLY

### NOTE:

Be sure to replace the "O" rings with new ones.

1. Apply the automatic fluid to the "O" ring. Proceed to install the "O" ring to the direct clutch drum.
2. Apply the automatic fluid to the "O" ring. Proceed to install the "O" ring to the direct clutch piston.
3. Insert the direct clutch piston to the direct clutch drum.

### NOTE:

Be careful not to twist the "O" ring or not to have it caught by other parts.

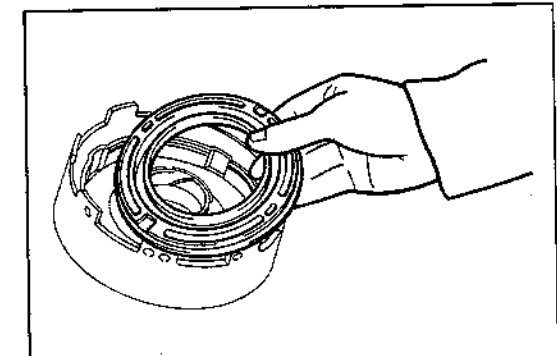


Fig. 4-81

WR-04116

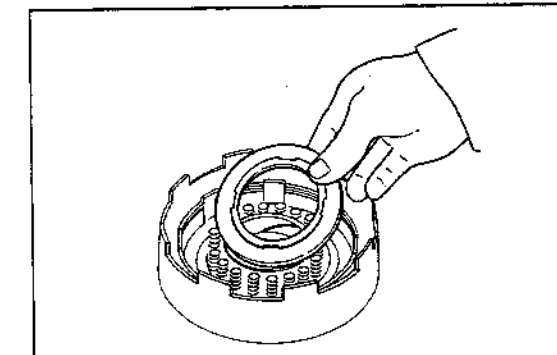


Fig. 4-82

WR-04117

4. Install the spring seat subassembly.
5. Install the spring seat.

## AUTOMATIC TRANSMISSION

6. Compress the return spring and attach the spring seat snap ring, using the following SST.

SST: 09350-87702-000

**NOTE 1:**

Check to see if the spring seat snap ring is fitted properly on the spring seat.

**NOTE 2:**

Do not compress the return spring beyond the compression allowance (deflection allowance).

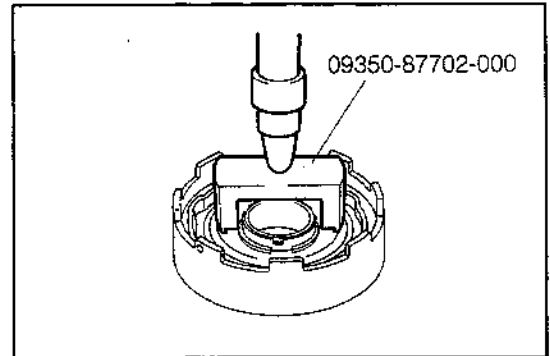


Fig. 4-83

WR-04118

7. Install the following parts in this order.

- (1) Plate
- (2) Clutch disc
- (3) Plate
- (4) Plate
- (5) Clutch disc
- (6) Flange

**NOTE:**

Prior to the installation, immerse the clutch discs in the automatic fluid for at least two hours.

WR-04119

8. Attach the clutch plate snap ring.

9. Measurement of the clutch ( $C_2$ ) clearance

- (1) Measure the clearance indicated in the figure, using a thickness gauge.

Specified Value: 0.89 - 1.46 mm (0.035 - 0.057 inch)

**NOTE 1:**

If the measured clearance does not comply with the specification, replace the clutch disc or plate.

**NOTE 2:**

If the measured clearance does not comply with the specification although a new clutch disc or plate has been used, select a proper one from the following two flanges having different thicknesses.

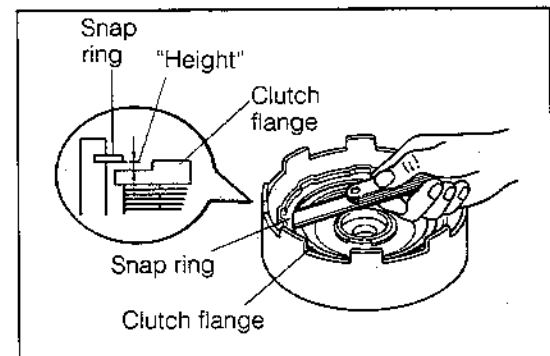


Fig. 4-84

WR-04120

Evaluation	Flange thickness
Too large	3.37 mm (0.132 inch)
Too small	3.00 mm (0.118 inch)

10. Apply compressed air into the oil hole indicated in the figure and check to see if the direct clutch moves.

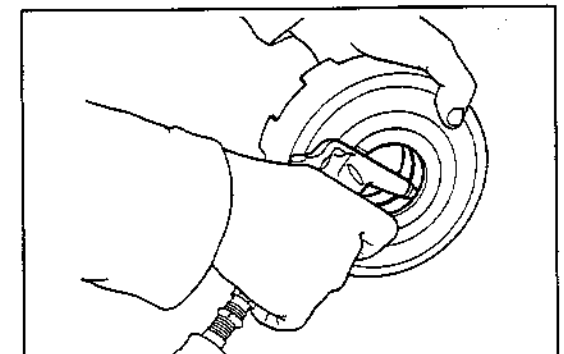


Fig. 4-85

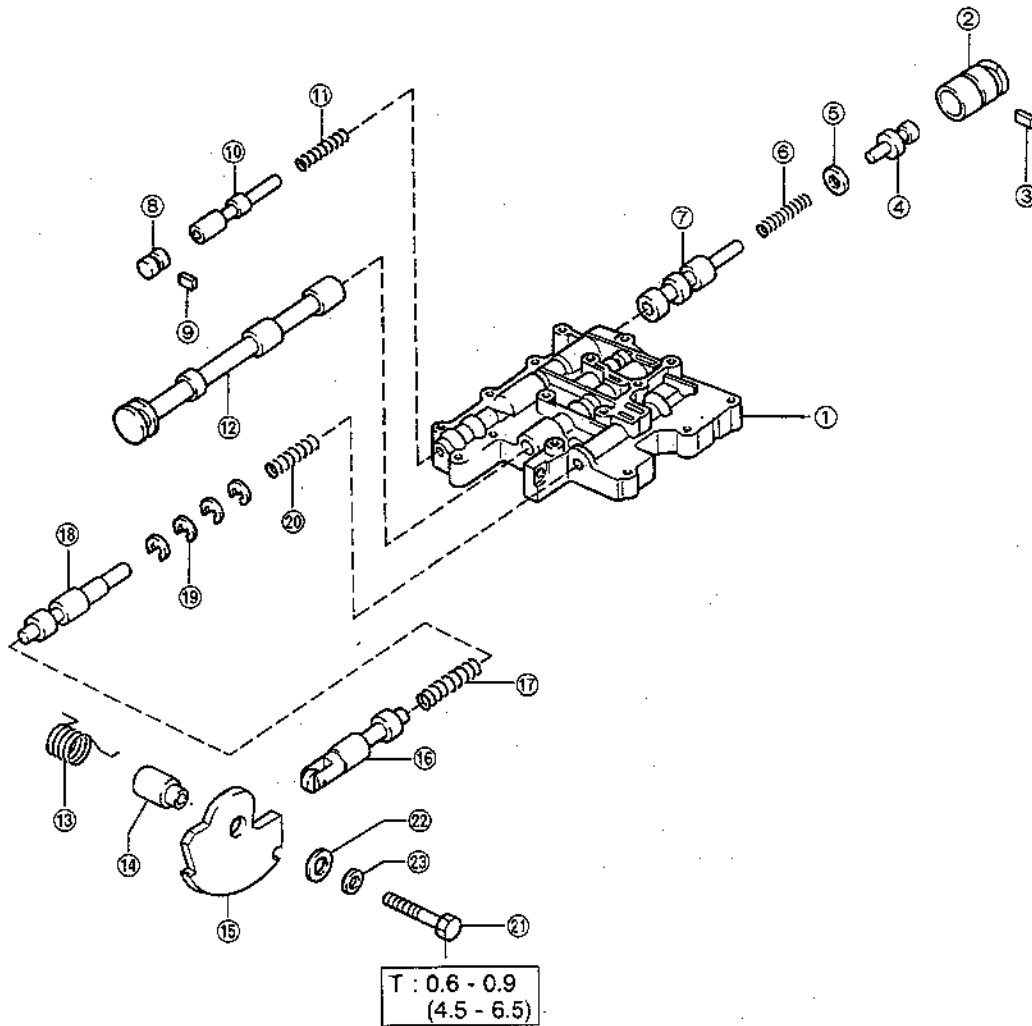
WR-04121

## VALVE BODY

### COMPONENTS

#### Upper valve body

T : Tightening torque  
Unit : kg-m (ft-lb)



- |  |  |
|--|--|
| ① Upper valve body   | ⑬ Throttle valve spring                                    |
| ② Pressure regulator valve sieve   | ⑭ Throttle valve cam pin                                   |
| ③ No. 1 key (ℓ = 9.2 mm, 0.36 inch)                                      | ⑮ Throttle valve cam                                       |
| ④ Primary regulator valve plunger  | ⑯ Downshift plug   |
| ⑤ Plate washer   | ⑰ Throttle valve No. 2 spring<br>(Purple. Length: 31.5 mm) |
| ⑥ Primary regulator valve spring<br>(Red. Length: 52.5 mm)               | ⑱ Throttle valve   |
| ⑦ Primary regulator valve  | ⑲ Throttle valve ring(s)                                   |
| ⑧ Plug   | ⑳ Throttle valve No. 1 spring<br>(White. Length: 22.2 mm)  |
| ⑨ No. 3 key (ℓ = 11 mm, 0.43 inch)                                       | ㉑ Throttle valve cam bolt                                  |
| ⑩ B <sub>1</sub> control valve   | ㉒ Washer plate   |
| ⑪ B <sub>1</sub> control valve spring<br>(Yellow-green. Length: 34.1 mm) | ㉓ Spring washer  |
| ⑫ Manual valve   |  |

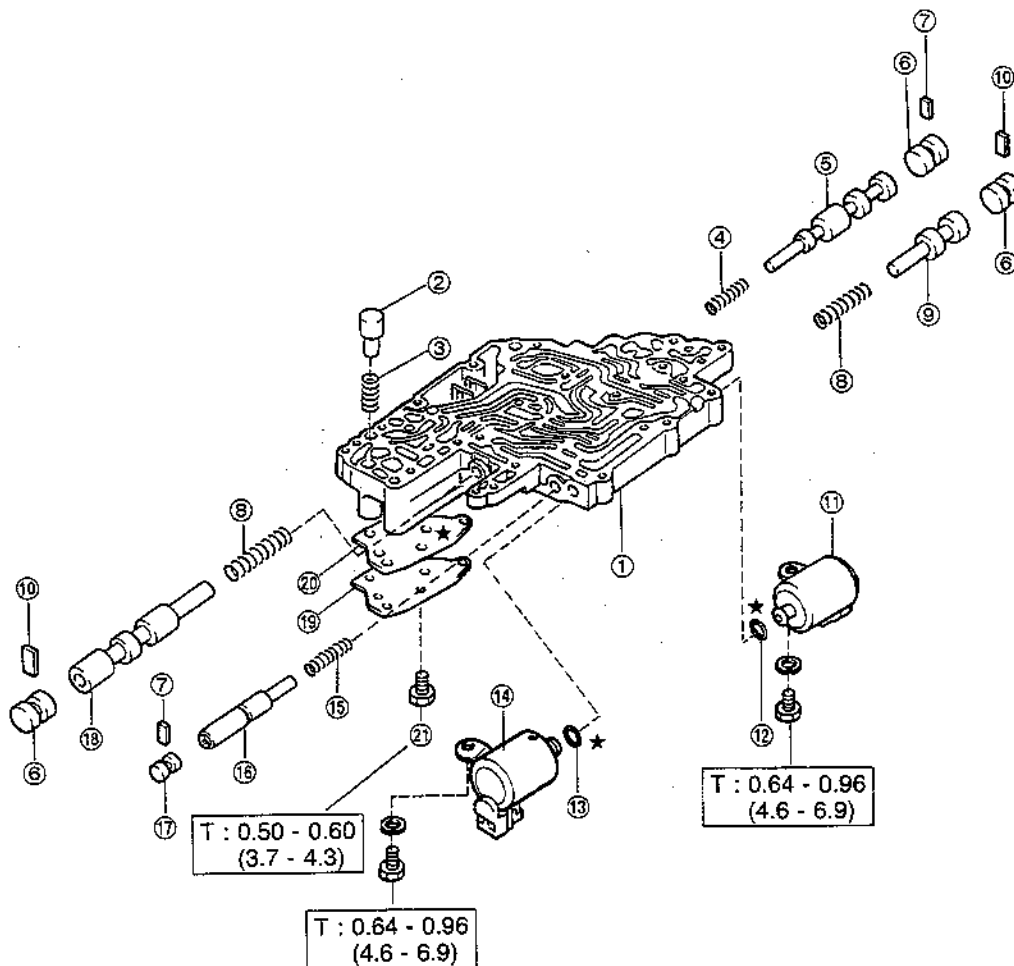
Fig. 4-86

WR-04122

# AUTOMATIC TRANSMISSION

## Lower valve body

T : Tightening torque  
Unit : kg-m (ft-lb)  
★ : Non-reusable parts



- ① Lower valve body
- ② Cooler by-pass valve
- ③ Spring  
(Orange. Length: 19.9 mm)
- ④ Secondary regulator valve spring  
(Yellow. Length: 31.4 mm)
- ⑤ Secondary regulator valve
- ⑥ Plug
- ⑦ No. 3 key (ℓ = 11 mm, 0.43 inch)

- ⑧ Shift valve spring  
(Pink. Length: 39.6 mm)
- ⑨ 2 - 3 shift valve
- ⑩ No. 2 key (ℓ = 15 mm, 0.59 inch)
- ⑪ Direct clutch solenoid
- ⑫ "O" ring
- ⑬ "O" ring
- ⑭ 2nd brake solenoid

- ⑮ B<sub>2</sub> control valve spring  
(Blue. Length: 28.1 mm)
- ⑯ B<sub>2</sub> control valve
- ⑰ B<sub>2</sub> control valve plug
- ⑱ 1 - 2 shift valve
- ⑲ Lower valve body cover
- ⑳ Gasket
- ㉑ Lower valve body cover bolt

Fig. 4-87

WR-04123



## DISASSEMBLY

### Instructions on disassembly

- (1) The automatic transmission employs many valves, springs, plugs and so forth which are similar in their shapes. It is, therefore, advisable to arrange disassembled parts by putting a mark showing the item No. on each part.
- (2) The "E" rings on the throttle valve are used to adjust the hydraulic pressure. Hence, when disassembling the "E" rings, record the number of the "E" rings.
- (3) Thoroughly wash the valve body and components.
- (4) Store the gasket in a vinyl bag. Do not leave the gasket in the atmosphere for more than three hours.
- (5) Before disassembling, draw out the manual valve for fear of fall itself.

1. Separation of the upper valve body and lower valve body
  - (1) Remove the bolts (16 pieces) indicated in the figure.  
(Upper valve body side)

#### NOTE:

Prior to the disassembly, take out the manual valve, for it drops by its own weight.

- (2) With the upper valve body held at the lower side, separate the lower valve body.

#### NOTE 1:

If this separation is made with the upper valve body held at the upper side, there is a possibility that the steel balls drop and will be lost.

#### NOTE 2:

After completion of the separation, remove the steel balls from the upper valve body.

2. Disassembly of the upper valve body assembly
  - (1) Remove the throttle valve cam attaching bolt. Remove the cam, spring and pin.
  - (2) Remove the downshift plug and spring.

- (3) Remove the throttle valve after the "E" rings have been removed from the outside of the valve body.

#### NOTE:

Record the number of the "E" rings used.

WR-04124

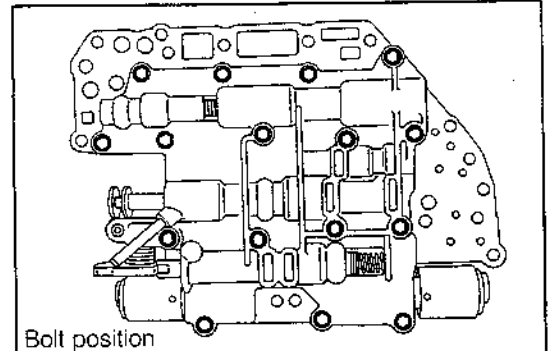


Fig. 4-88

WR-04125

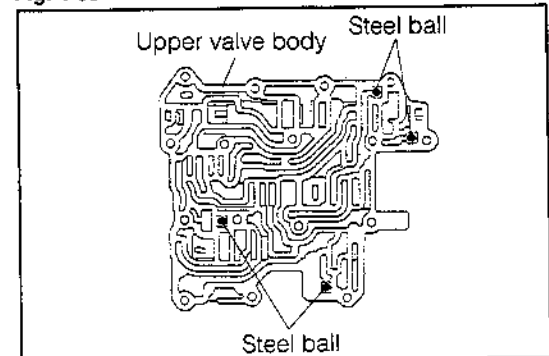


Fig. 4-89

WR-04126

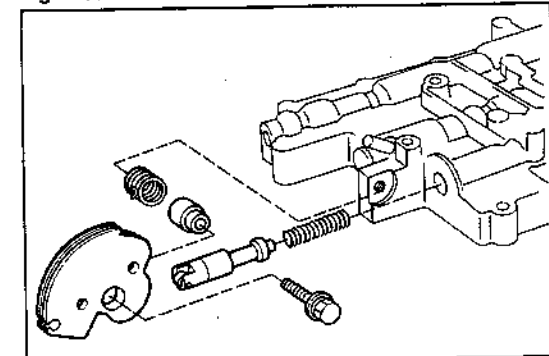


Fig. 4-90

WR-04127

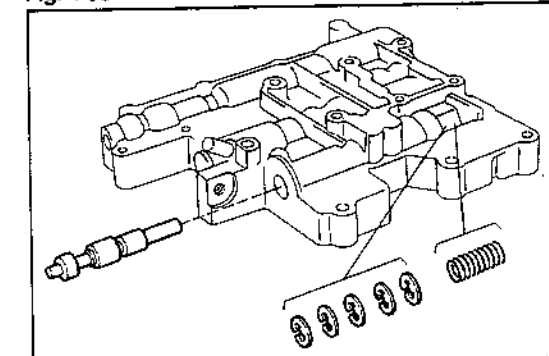


Fig. 4-91

WR-04128

## AUTOMATIC TRANSMISSION

- (4) While lightly pushing the plug at the valve inserting hole, remove the straight key. Remove the plug, B<sub>1</sub> control valve and spring.

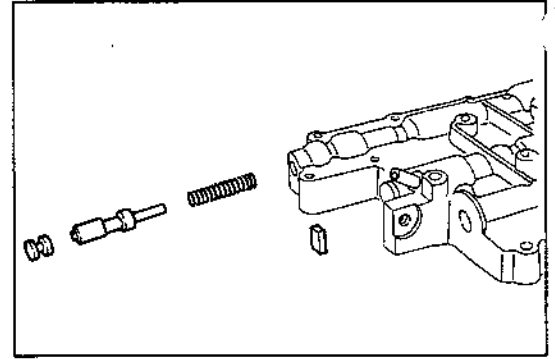


Fig. 4-92

WR-04129

- (5) While lightly pushing the sleeve at the valve inserting hole, remove the straight key. Remove the sleeve, plunger, washer, spring and primary regulator valve.

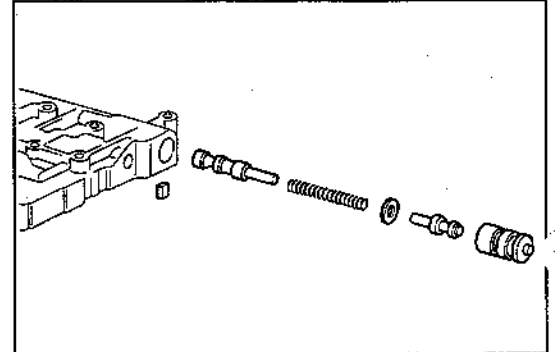


Fig. 4-93

WR-04130

### 3. Disassembly of the lower valve body assembly

- (1) Remove the direct clutch solenoid assembly and second brake solenoid assembly.  
(2) Remove the gasket and lower valve body cover.

#### NOTE:

Care must be exercised as to the jumping out of the cooler bypass valve during this operation.

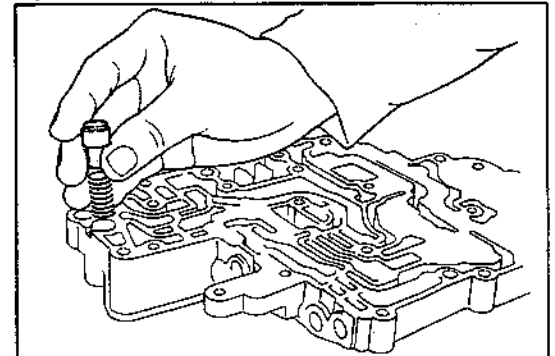


Fig. 4-94

WR-04131

- (3) Remove the straight key. Remove the plug, secondary regulator valve and spring.  
(4) Remove the straight key. Remove the plug, 2 - 3 shift valve and spring.

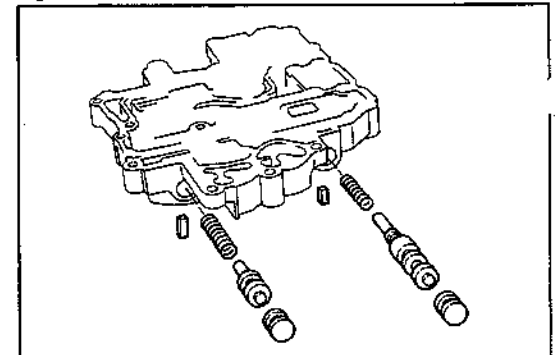


Fig. 4-95

WR-04132

- (5) Remove the straight key. Remove the plug, B<sub>2</sub> control valve and spring.  
(6) Remove the straight key. Remove the plug, 1 - 2 shift valve and spring.

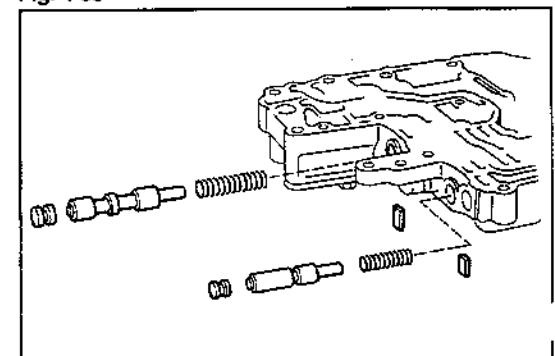


Fig. 4-96

WR-04133

## INSPECTION

1. Check the oil passage of the valve body for restriction.
2. Check to see if scratches are present at the valve body hole and valve sliding surface.
3. Check the spring for a flattened condition.

(See "LIST OF SPRINGS" of the APPENDIX at page 4-73.)

## ASSEMBLY

### NOTE:

Be sure to replace the "O" rings and gaskets with new ones.

### Instructions on assembly

- (1) Prior to the installation, apply the automatic fluid to the valve, spring, plug, straight key and so forth.
- (2) Correctly insert the valve to the spring.
- (3) Be very careful to insert the components, such as the valves and springs, to their correct positions.

### NOTE 1:

Install these parts in accordance with the marks showing the item numbers which were put during the disassembly.

### NOTE 2:

See "LIST OF SPRINGS" at page 4-73 during the assembly.

- (4) Care must be exercised to ensure that the valves are inserted in their correct directions.
- (5) When inserting the valve, spring, plug and straight key, be careful not to damage the valve body.
- (6) Check to see if the valve moves smoothly.

### NOTE 1:

Make sure that each part (particularly plunger and sleeve) goes in by its own weight during the insertion.

WR-04135

## 1. Assembly of the upper valve body

### (1) Installation of primary regulator valve

- ① Hold the valve body horizontally. Insert the primary regulator valve approx. 80 % of its overall length. Then, push the spring (red) so as to insert the primary regulator valve.
- ② Put the plunger into the sleeve. Install the washer plate. Then, insert it into position.
- ③ Insert the straight key ( $\ell = 9.2 \text{ mm}$ , 0.36 inch) so as to secure the sleeve.

### (2) Installation of B<sub>1</sub> control valve

- ① Install the spring to the valve. Insert them together into position.
- ② Insert the plug. Secure it by means of the straight key ( $\ell = 11 \text{ mm}$ , 0.43 inch).

### (3) Installation of throttle valve and downshift plug

- ① Push the spring (purple) so as to insert the throttle valve.
- ② Working from the outside of the valve body, install the "E" rings to the throttle valve.

### NOTE:

Install the "E" rings in the same number as that prior to the disassembly.

- ③ Install the spring (white).

- ④ Install the downshift plug.

### (4) Installation of throttle valve cam

- ① Install the pin and spring to the cam.

### NOTE:

Attach the hook of the spring to the cam hole.

## AUTOMATIC TRANSMISSION

- ② Tighten the throttle valve cam, together with the spring washer and washer plate, to the valve body.

M6 bolt Nominal length: 28 mm (1.1 inch)

Tightening Torque: 0.6 - 0.9 kg-m (4.3 - 6.5 ft-lb)

**NOTE 1:**

Attach the other end of the spring to the outside of the valve body.

**NOTE 2:**

While pushing the cam against the roller section of the downshift plug, screw-in the cam.

**NOTE 3:**

Make sure that the roller of the downshift plug is located at the center of the throttle valve cam.

**NOTE 4:**

Insert the manual valve after the upper body and lower body have been assembled.

WR-04136

2. Assembly of the lower valve body

(1) Installation of secondary regulator valve

- ① Insert the spring (yellow), secondary regulator valve and plug.

- ② Insert the straight key ( $\ell = 11$  mm, 0.43 inch). Secure it by means of the plug.

(2) Installation of 1 - 2 shift valve

- ① Insert the spring (pink), 1 - 2 shift valve and plug.

- ② Insert the straight key ( $\ell = 11$  mm, 0.43 inch). Secure it by means of the plug.

(3) Installation of B<sub>2</sub> control valve

- ① Insert the spring (blue), B<sub>2</sub> control valve and plug.

- ② Insert the straight key ( $\ell = 15$  mm, 0.59 inch). Secure it by means of the plug.

(4) Installation of 2 - 3 shift valve

- ① Insert the spring (pink), 2 - 3 shift valve and plug.

- ② Insert the straight key ( $\ell = 15$  mm, 0.59 inch). Secure it by means of the plug.

(5) Installation of direct clutch solenoid assembly and second brake solenoid assembly

- ① Prior to the insertion, apply the automatic fluid to the new "O" ring.

- ② Care must be exercised as to the tightening bolt holes. When tightening the bolts, be sure not to mistake the right and left holes.

M6 bolt Nominal length: 10 mm (0.39 inch) × 2 pieces

Tightening Torque: 0.64 - 0.96 kg-m (4.6 - 6.9 lb-ft)

WR-0413

(6) Installation of lower valve body cover

- ① Install the cover, using a new gasket.

M5 bolt Nominal length:

14 mm (0.55 inch) × 10 pieces

Tightening Torque: 0.50 - 0.60 kg-m (3.6 - 4.3 ft-lb)

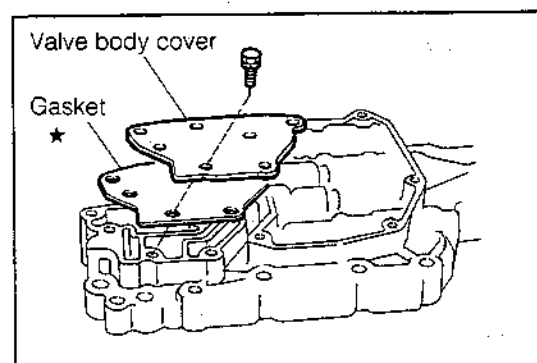


Fig. 4-97

WR-04140

3. Assembly of the valve body assembly
  - (1) Insert the spring (orange) and cooler bypass valve to the lower valve body.
  - (2) Install the steel balls (4 pieces) to the upper valve body.

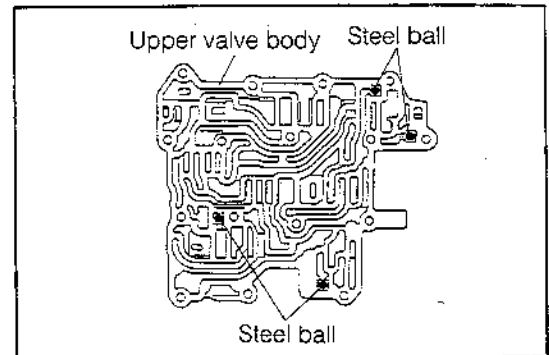


Fig. 4-98

WR-04142

- (3) Install new gaskets on both surfaces of the valve body plate. Place the valve body plate on the upper valve body.
- (4) Turn over the upper valve body, while making sure that the plate may not separate from the upper valve body. Then, place the upper valve body on the lower valve body.

**NOTE 1:**

When the upper valve body is being turned over, be very careful not to allow the steel balls to drop.

**NOTE 2:**

Do not pry the cooler bypass valve.

**NOTE 3:**

Ensure that the plate or gasket may not be displaced from its installation position.

WR-04143

4. Installation of the bolts
  - (1) List of bolts used

Stand-ard	Nominal length	Shape of head	Number	Installation position
M5	29.5 mm (1.16 inch) Length of threaded portion: 22.0 mm	Deep recess	6	A
M5	38.0 mm (1.50 inch)	Deep recess	6	B
M5	44.0 mm (1.73 inch)	Deep recess	2	C
M5	29.5 mm (1.16 inch) Length of threaded portion: 19.5 mm	Normal recess	2	D

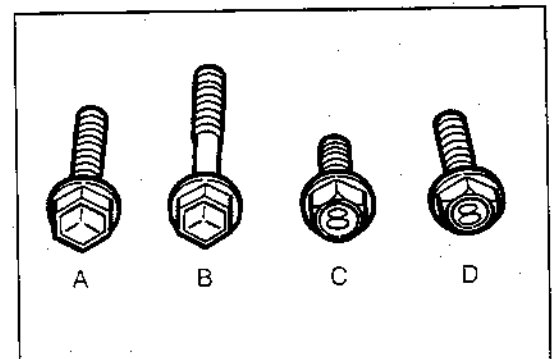


Fig. 4-99

WR-04144

## AUTOMATIC TRANSMISSION

- (2) Tightening sequence of bolts  
Lightly tighten two bolts marked with ①.  
Securely tighten four bolts marked with ②.  
Securely tighten eight bolts marked with ③.  
Securely tighten four bolts marked with ④.

**NOTE:**

At the same time, securely tighten the bolts which were temporarily tightened in step ①.

Tightening Torque: 0.5 - 0.6 kg-m (3.6 - 4.3 ft-lb)

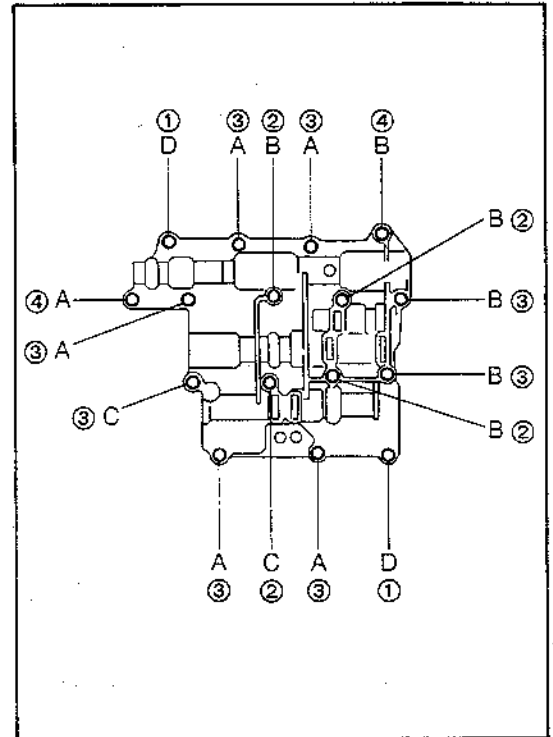


Fig. 4-100

WR-04145

5. Insert the manual valve into the upper valve body.

WR-04146

## ASSEMBLY OF TRANSMISSION

### INSTRUCTIONS ON ASSEMBLY

1. Be sure to replace the following parts with new ones: gaskets, lock nut, "O" rings, oil seals, seal rings of each piston, seal washers of the oil pump set bolts, oil deflector and test plug.
2. When replacing the low brake band and clutch disc with new ones, immerse the new parts in the automatic fluid for at least two hours preceding the assembly.
3. Be sure to apply the automatic fluid to the sliding sections of the parts.
4. Thoroughly clean the bolts or threaded holes, to which a sealing agent has been applied.
5. Prior to the assembly, ensure that air continuity exists in each oil passage by applying compressed air into each oil passage.
6. Be careful not to damage each gasket surface of the transmission case, rear cover, oil pump, valve body and housing.
7. Tighten the bolts and nuts to the specified torque.
8. Install the bearing and race in their correct positions and directions.
9. In order to prevent foreign matters, such as dust or dirt, from getting into the transmission case, clean each part by applying compressed air prior to the installation.
10. When applying grease, use the specified MP (multipurpose) type.

WR-04147

1. Installation of the manual shift shaft and parking lock pawl
  - (1) Install the lower washer and parking rod to the manual shift shaft.
  - (2) Insert the manual shift shaft into the transmission case.

**NOTE:**

When the manual shift shaft passes through the oil seal, be careful not to damage the lip section of the oil seal.

- (3) Lock the shift shaft by the washer and the "E" ring.

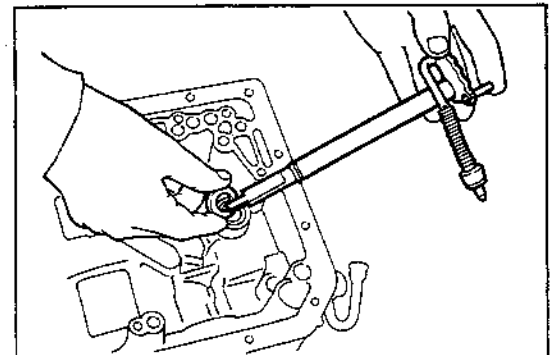


Fig. 4-101

WR-04148

(3) Install the manual detent spring subassembly.

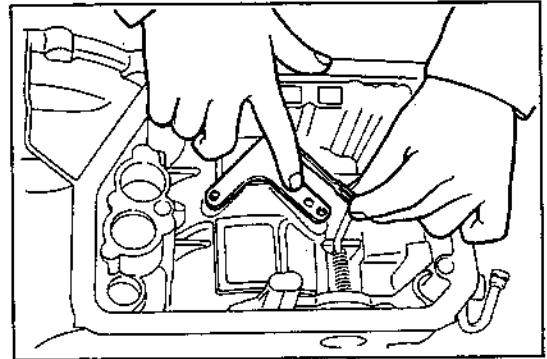


Fig. 4-102

WR-04148A

(4) Install the pin and snap ring to the parking lock pawl sleeve. Install the sleeve in the transmission case in such a way that the rod may get into the sleeve.

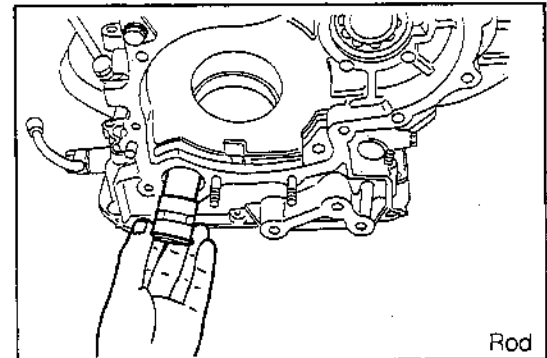


Fig. 4-103

WR-04150

(5) Installation of parking lock pawl and parking lock pawl shaft

- ① Install the pawl in the correct position.
- ② Pass the shaft through the spring. Install them to the pawl, as shown in the right figure.
- ③ Shift the manual shift lever to the **P** range. Ensure that the parking lock pawl moves smoothly.

WR-04151

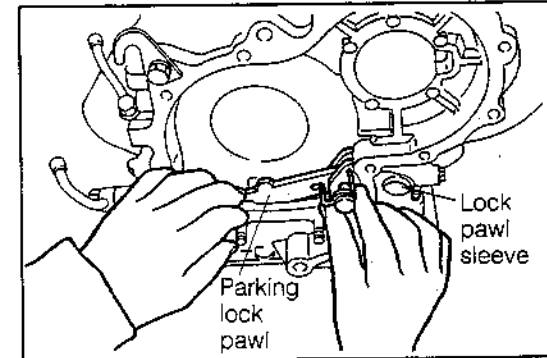


Fig. 4-104

WR-04151

2. Installation of the 1st & reverse brake piston

- (1) Apply the automatic fluid to the "O" rings (both inner and outer). Then, install them to the piston.
- (2) Insert the piston into the transmission case in the direction indicated in the right figure.

**NOTE:**

Be careful not to twist the "O" rings or not to have them caught by other parts.

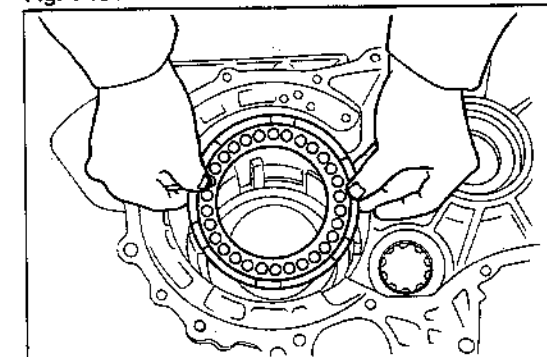


Fig. 4-105

WR-04152

## AUTOMATIC TRANSMISSION

- (3) Install the return spring subassembly in such a way that it is fitted into the round groove of the piston. Compress the spring as shown in the right figure, using the following SST. Then, attach the return spring snap ring.

SST: 09350-87702-000

**NOTE 1:**

Ensure that the snap ring is attached to four grooves of the spring seat.

**NOTE 2:**

Do not compress the return spring beyond its compression allowance (deflection allowance).

- (4) Install the following parts in this order.

- ① Cushion plate
- ② Plate
- ③ Disc
- ④ Plate Total number of plates: 4
- ⑤ Disc Total number of discs: 4
- ⑥ Plate
- ⑦ Disc
- ⑧ Plate
- ⑨ Disc
- ⑩ Flange

**NOTE 1:**

Make sure that the cushion plate is installed in the correct installing direction.

(Install it in such a way that, as viewed from above, the floated side may come to the center, whereas the recessed side may come to the outside.)

**NOTE 2:**

Immerse the discs in the automatic fluid for at least two hours preceding the installation.

**NOTE 3:**

Care must be exercised as to the assembling sequence and the number of the discs and plates.

- (5) Install the snap ring.  
(6) Measure the clearance indicated in the right figure, using a thickness gauge  
Specified Value: 0.58 - 1.92 mm (0.023 - 0.075 inch)

**NOTE:**

If the measure value does not comply with the specification, check the installing condition of the clutch discs and the plates.

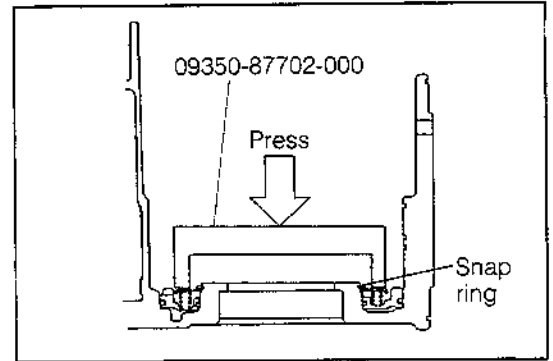


Fig. 4-106

WR-04153

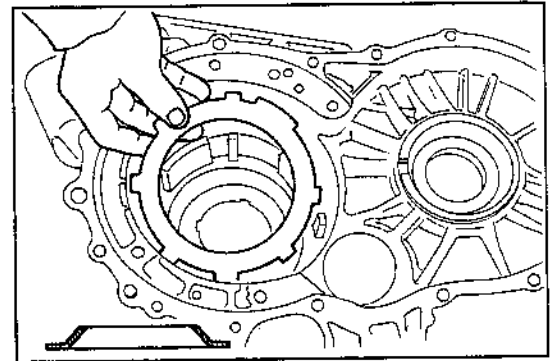


Fig. 4-107

WR-04154

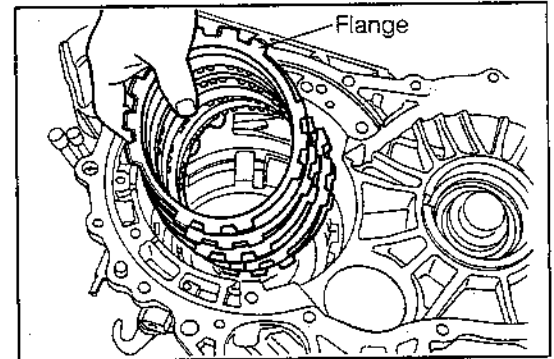


Fig. 4-108

WR-04155

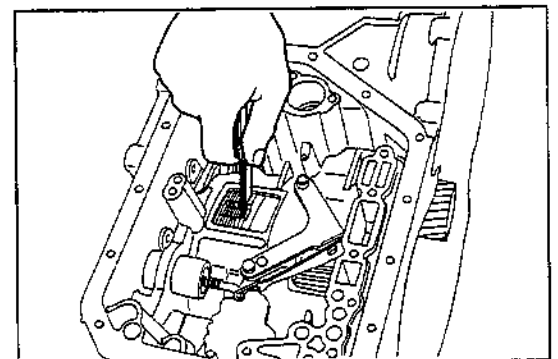


Fig. 4-109

WR-04155A



- (7) Apply compressed air into the oil hole indicated in the right figure and check to see if the piston moves freely.

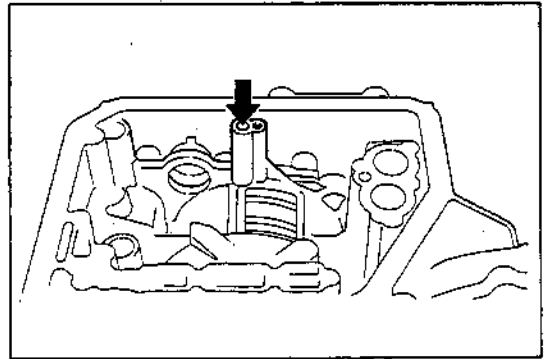


Fig. 4-110

WR-04156

3. Installation of the counter shaft, reduction gear and rear cover

- (1) Press the ball bearing into the output shaft, using the following SST.

SST: 09350-87702-000

**NOTE:**

Prior to the press-fitting, apply the automatic fluid to the inner race and outer race.

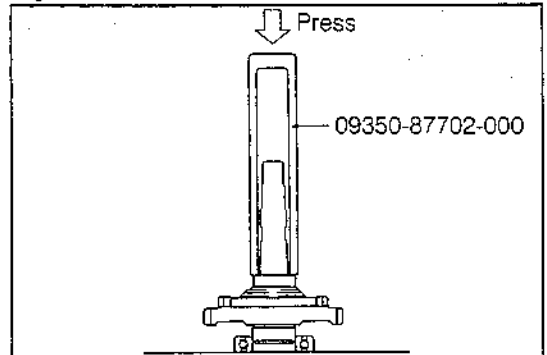


Fig. 4-111

WR-04157

- (2) Drive the ball bearing into the transmission case, using a hammer in combination with the following SST.

SST: 09608-30011-000

**NOTE:**

Prior to the press-fitting, apply the automatic fluid to the inner race and outer race.

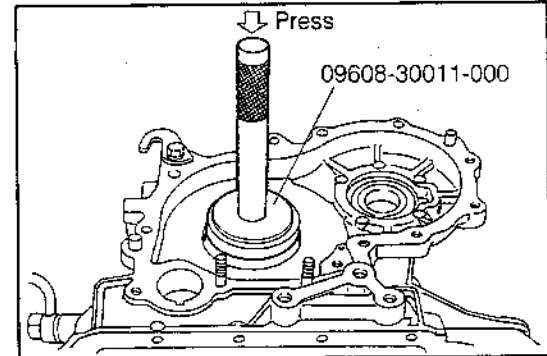


Fig. 4-112

WR-04158

- (3) Press the output shaft into the transmission case using the following SST, as indicated in the figure.

SST: 09350-87702-000

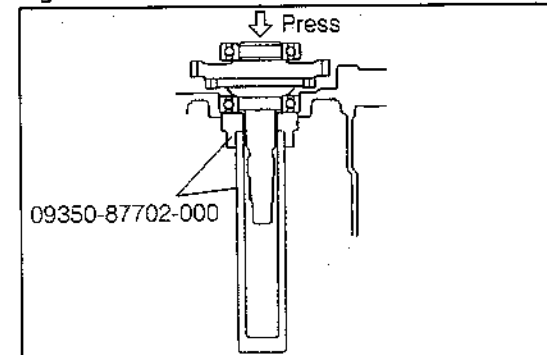


Fig. 4-113

WR-04159

- (4) Press the roller bearing from the differential gear side of the counter shaft case, using the following SST. Then, attach the snap ring.

SST: 09608-30011-000

**NOTE:**

Prior to the press-fitting of the bearing, apply the automatic fluid to the inner race and outer race.

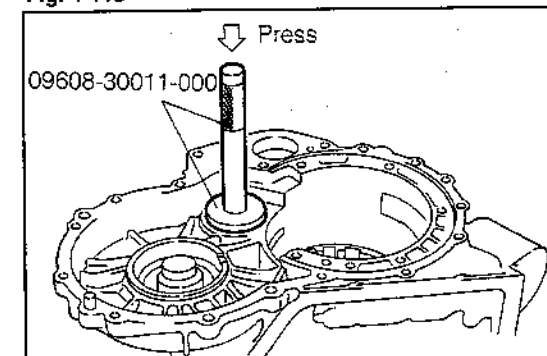


Fig. 4-114

WR-04160

## AUTOMATIC TRANSMISSION

- (5) In advance, put the spacer on the counter shaft case.
- (6) Press the ball bearing from the reduction gear side of the counter shaft case, using the following SST.

SST: 09608-30011-000

### NOTE:

Prior to the press-fitting of the bearing, apply the automatic fluid to the inner race and outer race.

- (7) Install the bearing packing plate along the groove. Attach the snap ring.

- (8) While the inner race of the ball bearing is being sustained, pass the spacer through the counter shaft and press the counter shaft into position.

SST: 09350-87702-000

- (9) Install the reduction driven gear to the counter shaft. Tighten the lock nut. Tightening Torque: 11 - 15 kg-m (80 - 108 ft-lb)

- (10) Stake the lock nut, using a chisel.

### NOTE:

Be careful not to apply excessive forces to the counter shaft.

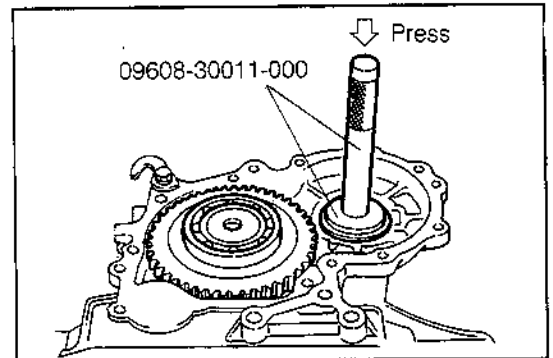


Fig. 4-115

WR-04161

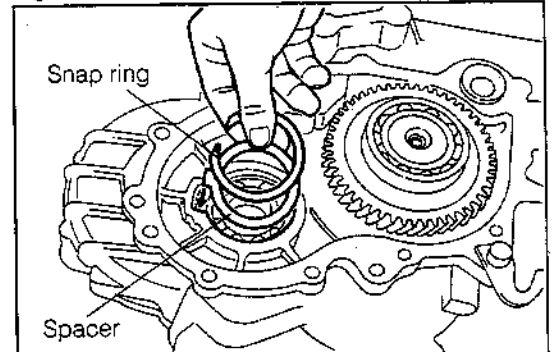


Fig. 4-116

WR-04162

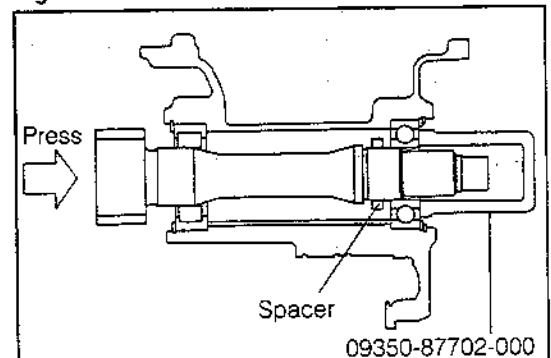


Fig. 4-117

WR-04162A

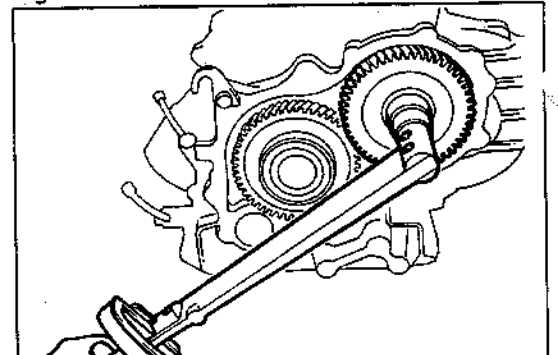


Fig. 4-118

WR-04163

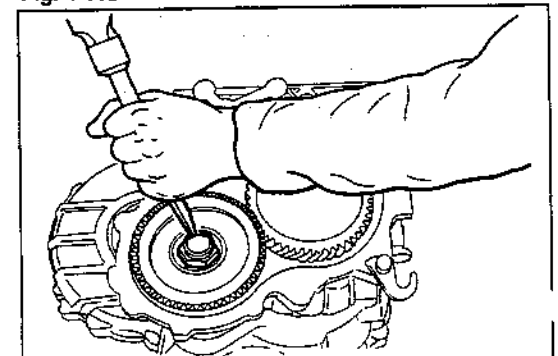


Fig. 4-119

WR-04164

- (11) Install the gasket, making sure that it is aligned with the straight pin of the case. Install the rear cover.

**NOTE 1:**

Be sure that the bearing smoothly gets into the bearing hole of the rear cover.

**NOTE 2:**

Check to see if the shaft emits any abnormal gear sound, while rotating the shaft.

WR-04165

- (12) Secure the rear cover by tightening the ten bolts and two nuts.

**Tightening Torque:** Bolt 1.6 - 2.3 kg-m (12 - 16 ft-lb)  
Nut 1.1 - 1.5 kg-m (8.0 - 10 ft-lb)

**NOTE:**

As for the arrow-headed bolt in the right figure, use this bolt to secure the solenoid wire harness in common.

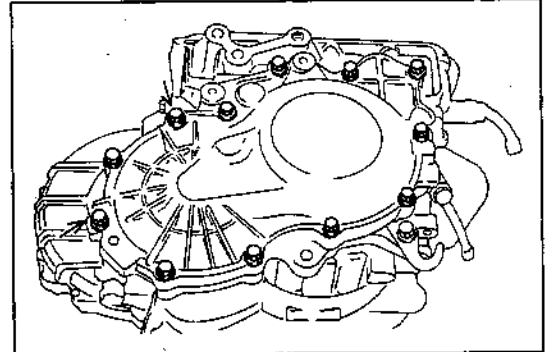


Fig. 4-120

WR-04166

- (13) Working from the inside of the case, push the bearing outer race against the rear cover side, using the following SST.

**SST:** 09350-87702-000

**NOTE 1:**

For this operation, use the four cut-out sections of the transmission case.

**Pushing Force:** 500 kg (1100 lb)

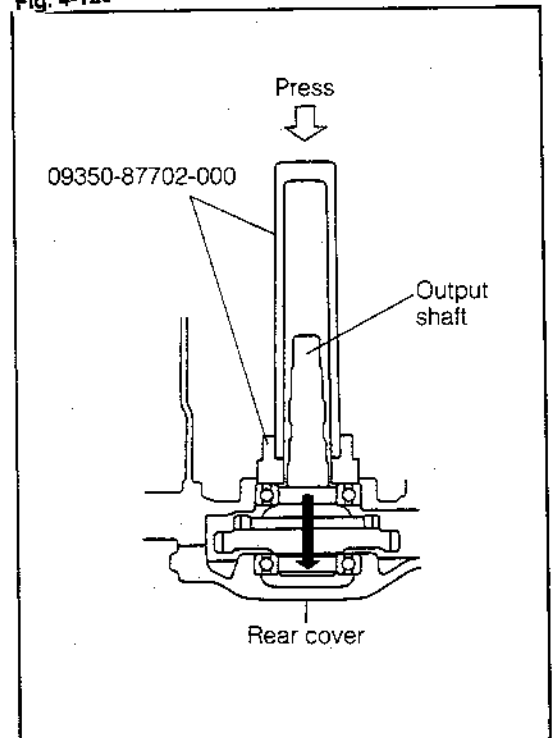


Fig. 4-121

WR-04167

**4. Installation of the rear planetary gear and one-way clutch**

- (1) Install the rear planetary ring gear, making sure that it is aligned with the spline of the output shaft.

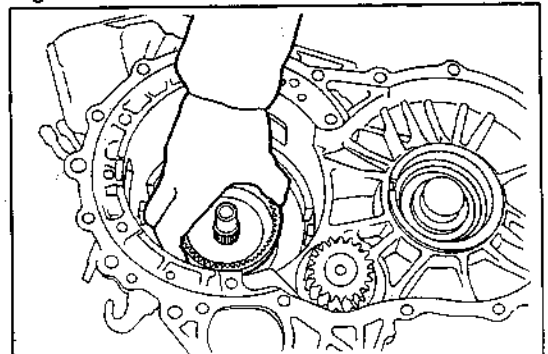


Fig. 4-122

WR-04168

## AUTOMATIC TRANSMISSION

- (2) Install the bearing races (both sides) and thrust needle roller bearing.

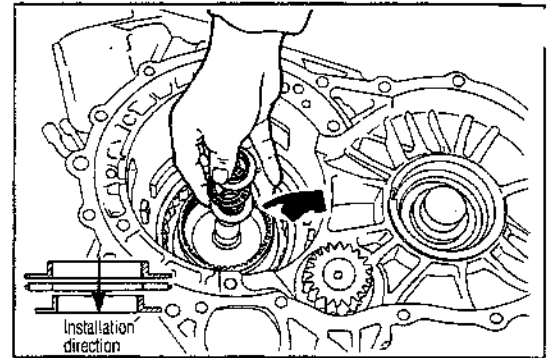


Fig. 4-123

WR-04169

- (3) Fit the one-way clutch race snap ring to the groove at the 1st reverse brake side of the transmission case.

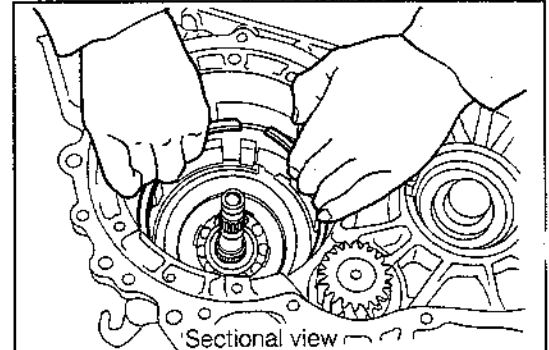


Fig. 4-124

WR-04170

- (4) Install the thrust washers on each of the front and rear sections of the planetary gear assembly.

**NOTE 1:**

Apply grease to the washers.

**NOTE 2:**

Fit the recessed sections of the gear assembly with the two protruding sections correctly.

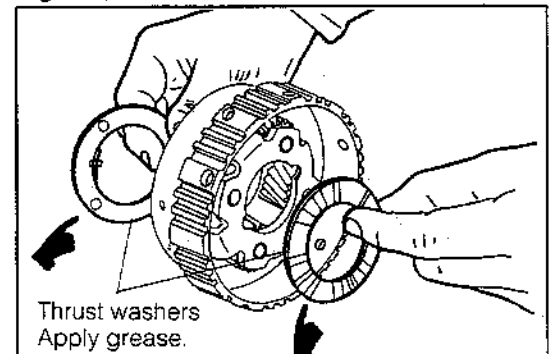


Fig. 4-125

WR-04171

- (5) While turning the one-way clutch assembly counterclockwise, install it to the planetary gear assembly.

**NOTE:**

After completion of the installation, be sure that the planetary gear assembly freely rotates clockwise when the one-way clutch outer race is secured.

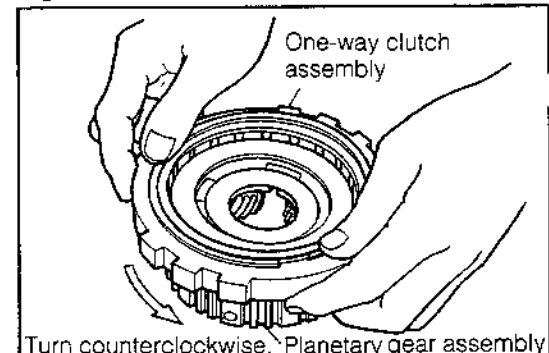


Fig. 4-126

WR-04172

- (6) Insert the planetary gear assembly fitted with the one-way clutch assembly into the transmission case, while rotating the planetary gear assembly.

**NOTE 1:**

For easier insertion, align the pawls of the brake disc in advance.

**NOTE 2:**

If the shift lever is shifted to the **P** range, the shaft is locked, thus making it easier to align the cut-out sections with each other.

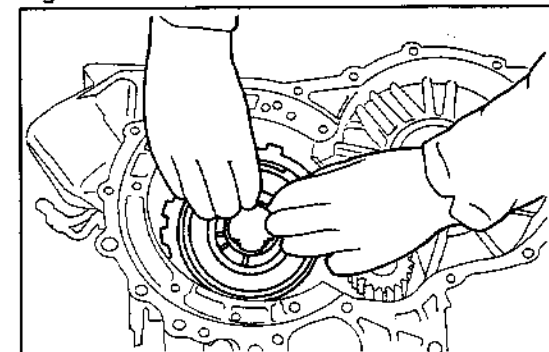


Fig. 4-127

WR-04173

## NOTE 3:

After completion of the insertion, check the one-way clutch operation.

Clockwise rotation: Free

Counterclockwise rotation: Locked

- (7) Attach the one-way clutch race snap ring to secure the one-way clutch assembly.

## 5. Installation of the planetary sun gear assembly

- (1) Install the cushion plate and the snap ling (sheet type) to the sun gear.

### NOTE:

Be sure to install the cushion plate in the correct direction.

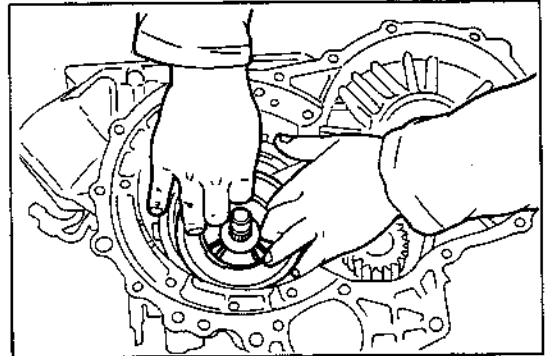


Fig. 4-128

WR-04174

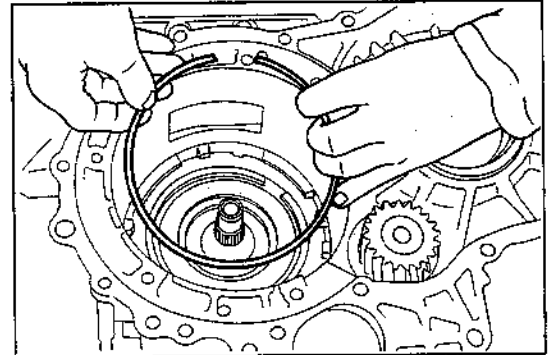


Fig. 4-129

WR-04175

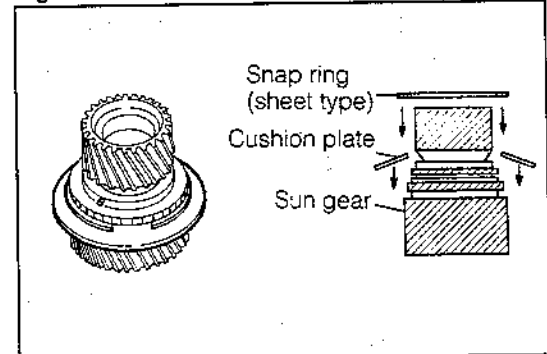


Fig. 4-130

WR-04176

- (2) Insert the sun gear into the sun gear input drum.

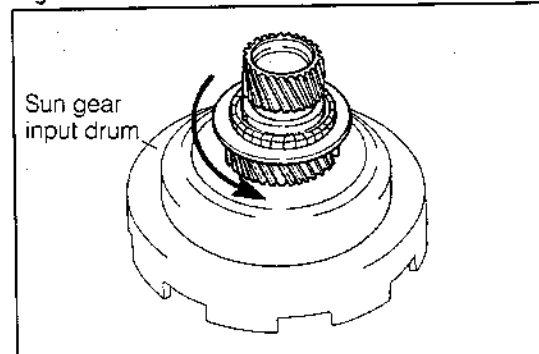


Fig. 4-131

WR-04176A

- (3) Temporarily lock the sun gear input drum with another snap ring (wire type).

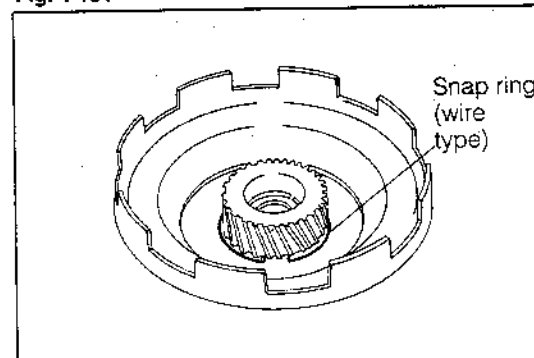


Fig. 4-132

WR-04176B

## AUTOMATIC TRANSMISSION

- (4) Install the snap ring (wire type) in the correct position by pressing the cushion plate.

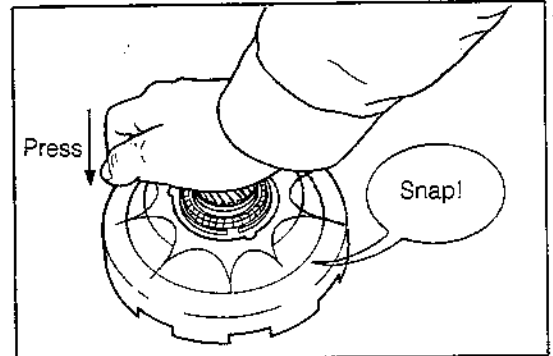


Fig. 4-133

WR-04176C

- (5) Insert the straight pin into the sun gear.  
(6) Install the washer in such a way that the straight pin gets into the cut-out section of the planetary thrust washer.

**NOTE:**

Prior to the installation, apply grease to the washer to prevent it from dropping.

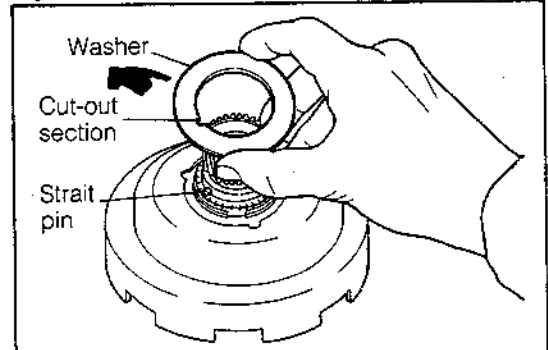


Fig. 4-134

WR-04177

- (7) While meshing the sun gear assembly with the rear planetary gear, insert the sun gear assembly into the transmission case.

**NOTE 1:**

Be careful not to damage the bush provided inside of the sun gear.

**NOTE 2:**

Be certain that the flange section of the thrust bearing race, which was installed in the previous step, has been installed positively into the sun gear bore.

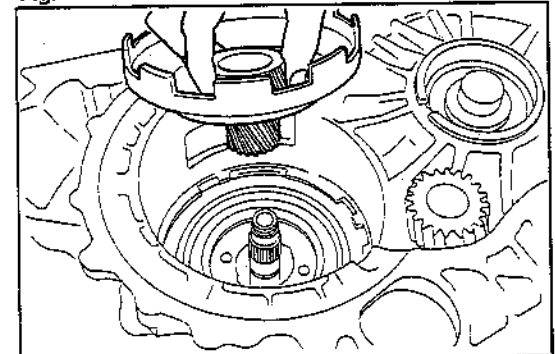


Fig. 4-135

WR-04178

6. Installation of the front planetary gear  
(1) Place the thrust needle roller bearing and bearing race on the sun gear.

**NOTE:**

Be sure to place the bearing race in the correct direction on the sun gear.

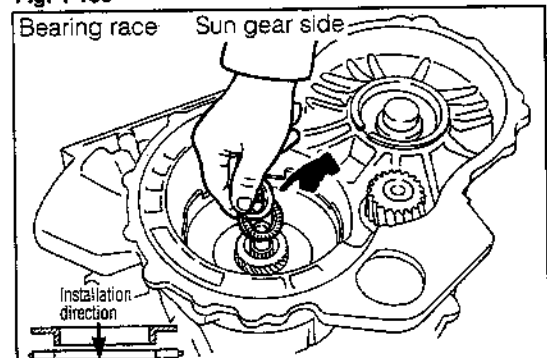


Fig. 4-136

WR-04179

- (2) While rotating the front planetary gear assembly, fit the pinion gear in the sun gear.

**NOTE:**

Care must be exercised to ensure that the thrust bearing or the race may not be displaced from the correct position.

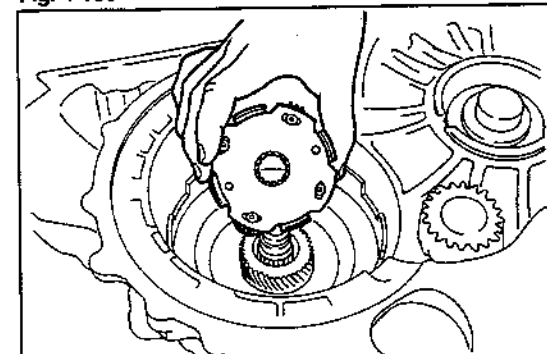


Fig. 4-137

WR-04180

- (3) Place the following parts on the front planetary gear assembly in this order.

- ① Bearing race
- ② Thrust needle roller bearing
- ③ Bearing race

**NOTE:**

Be sure to place the bearing races in the correct direction on the front planetary gear assembly.

- (4) Install the front planetary ring gear to the thrust bearing which was installed in the preceding step.

- (5) Install the "O" ring at the forward end of the output shaft.

**NOTE:**

Do not expand the "O" ring excessively during the installation.

7. Installation of the 2nd brake band

- (1) Install the brake 2nd band in the transmission case.

**NOTE:**

Be sure to install the brake band in the correct direction.

8. Installation of the forward clutch and direct clutch

- (1) When the "O" ring of the input shaft is replaced, apply grease to the input shaft side before installing the new "O" ring.

**NOTE 1:**

Be sure to install the "O" ring to the correct groove.

**NOTE 2:**

Do not expand the "O" ring excessively during the installation.

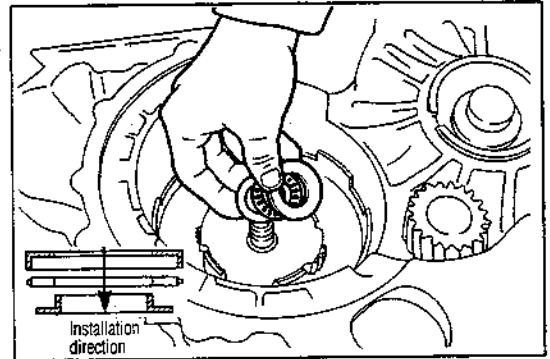


Fig. 4-138

WR-04181

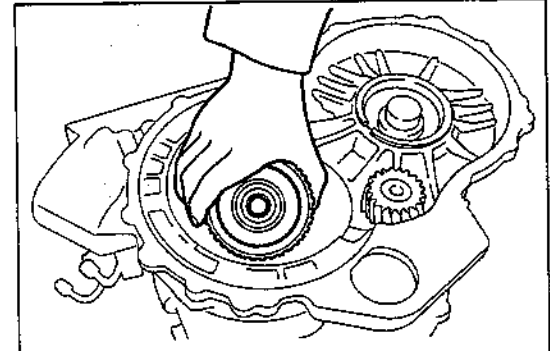


Fig. 4-139

WR-04182

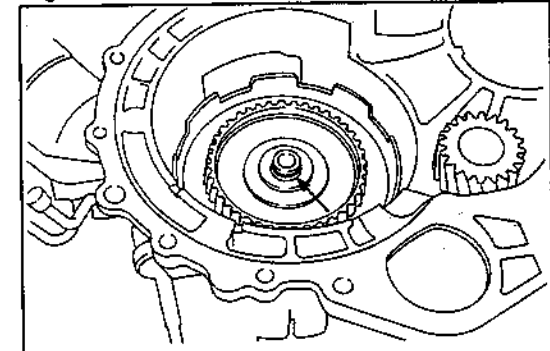


Fig. 4-140

WR-04183

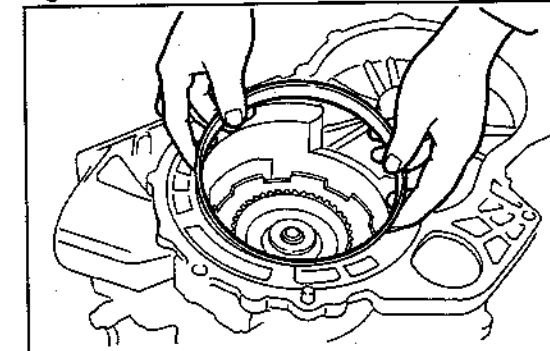


Fig. 4-141

WR-04184

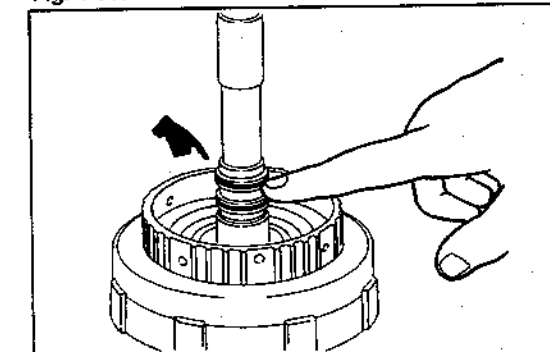


Fig. 4-142

WR-04185

## AUTOMATIC TRANSMISSION

- (2) Apply grease to the thrust bearing race and thrust needle roller bearing as well as to their installing sections at the forward clutch. Then, install these parts into positions.

**NOTE:**

Be certain to install the bearing race in the correct direction.

- (3) Install the thrust washer, with the side having no groove facing toward the direct clutch. For easier installation, apply grease to the side of the direct clutch.

**NOTE:**

Be sure to install the thrust washer in the correct direction.

- (4) Install the direct clutch to the forward clutch.

**NOTE 1:**

For easier insertion, align the pawls of the clutch disc prior to the installation.

**NOTE 2:**

Be careful not to drop the thrust washer which was installed in the preceding step.

- (5) Apply grease on the front planetary ring gear in the transmission case. Install the thrust bearing race and thrust needle roller bearing in position.

**NOTE:**

Care must be exercised as to the installing direction and sequence.

- (6) While holding the input shaft of the forward clutch, install the forward clutch fitted with the direct clutch to the transmission.

**NOTE 1:**

For easier insertion, align the pawls of the forward clutch disc prior to the installation.

**NOTE 2:**

Be careful not to drop the thrust bearing which was installed in the preceding step.

**NOTE 3:**

Be very careful not to damage the oil seal of the output shaft.

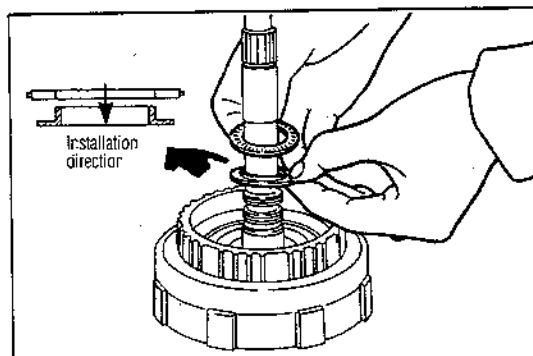


Fig. 4-143

WR-04186

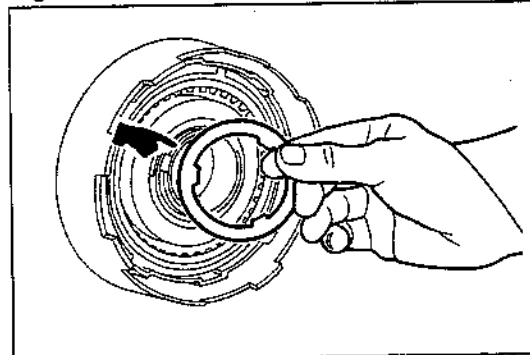


Fig. 4-144

WR-04187

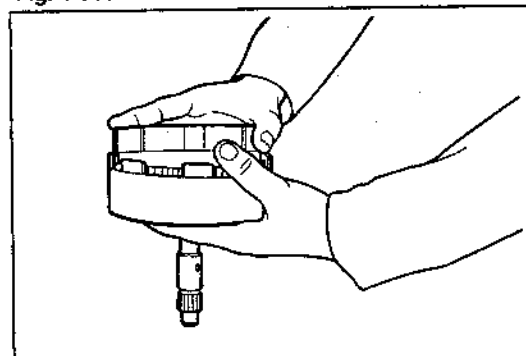


Fig. 4-145

WR-04188

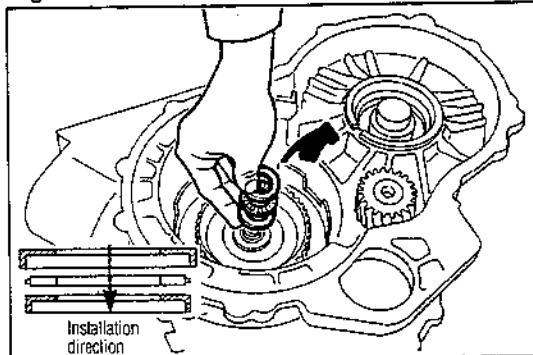


Fig. 4-146

WR-04189

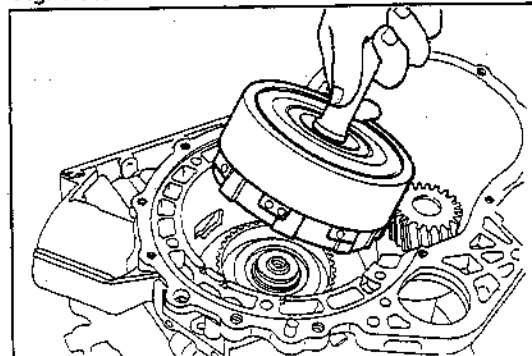


Fig. 4-147

WR-04190



- (7) Secure the 2nd brake band by passing the straight pin through the transmission case and the hole of the 2nd brake band.

**NOTE:**

Prior to the installation, apply the automatic fluid to the pin.

9. Installation of the differential assembly
  - (1) Place the transmission case, with its rear cover side facing downward. While meshing the pinion gear of the counter shaft with the teeth of the differential ring gear, install the differential assembly.

**NOTE 1:**

Be careful not to damage the teeth of the gear during the installation.

**NOTE 2:**

The counter shaft pinion gear and the differential ring gear have been set as a pair. Hence, be careful not to mix these parts with other parts.

10. Installation of the torque converter housing

- (1) Install the gasket.

**NOTE:**

Make sure that the gasket is not protruding to the inside.

- (2) While aligning the center of the differential gear bearing and the locating pin position, install the housing in the transmission case.

- (3) Tighten the housing attaching bolts indicated in the right figure.

Tightening Torque: 1.6 - 2.3 kg-m (12 - 16 ft-lb)

**NOTE:**

Apply the sealant to the entire threaded portion of each bolt which bears a star mark (indicated by an arrow mark in the figure).

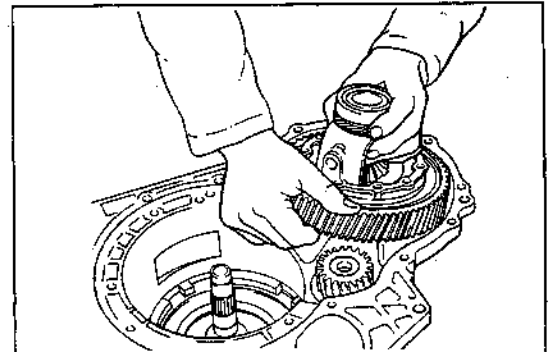


Fig. 4-148

WR-04191

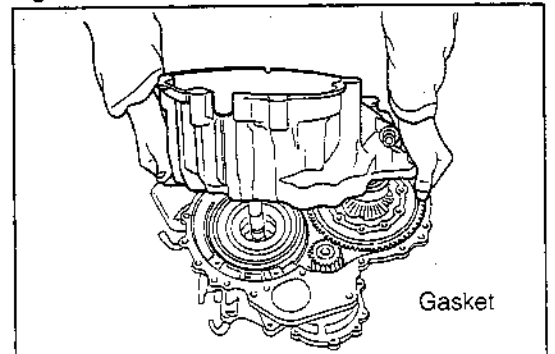


Fig. 4-149

WR-04192

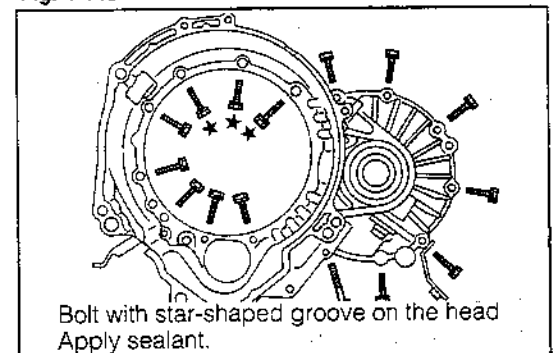


Fig. 4-150

WR-04193

11. Installation of the oil pump assembly
  - (1) Apply grease to the thrust bearing race and thrust needle roller bearing. Install them to the input shaft.

**NOTE 1:**

Be sure to install the bearing race in the correct direction.

**NOTE 2:**

Make sure that the bearing race and bearing are fitted positively.

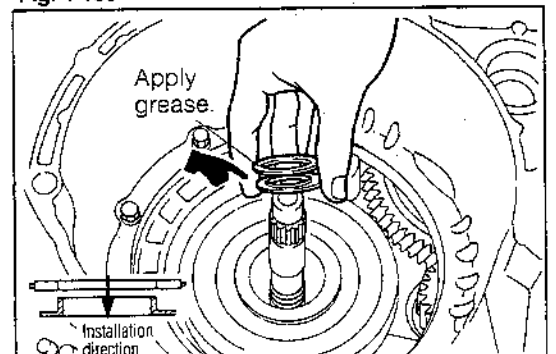


Fig. 4-151

WR-04194

## AUTOMATIC TRANSMISSION

- (2) Install the thrust bearing race, after coating the oil pump side with grease.

- (3) Attach the clutch drum thrust washer to the oil pump.

**NOTE 1:**

Align the flange of the washer with the cut-out section of the pump.

**NOTE 2:**

Prior to the installation, apply grease to retain the thrust washer.

- (4) When the oil seal is replaced, apply grease to the oil seal prior to the installation.

**NOTE 1:**

Do not expand the oil seal excessively during the installation.

**NOTE 2:**

Be certain to install the oil seal to the correct groove.

- (5) Install the "O" ring to the periphery of the oil pump.

**NOTE 1:**

Prior to the installation, apply grease to the "O" ring.

**NOTE 2:**

Use a new "O" ring.

**NOTE 3:**

Make sure that the "O" ring is not twisted or displaced from the groove on the periphery of the oil pump.

- (6) Install the oil pump assembly in the transmission case.

**NOTE:**

Care must be exercised to ensure that the "O" ring of the input shaft and the "O" rings provided inside or outside of the pump may not be pinched or damaged.

WR-04198

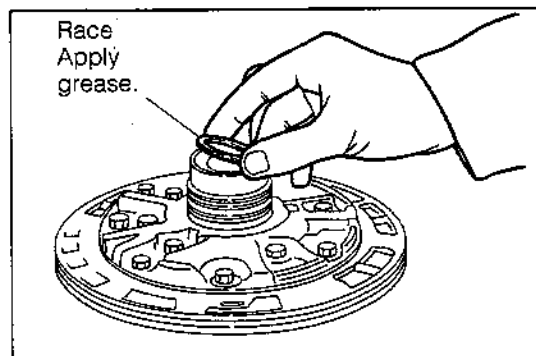


Fig. 4-152

WR-04195

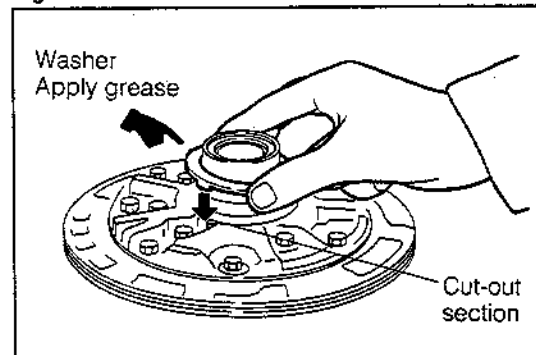


Fig. 4-153

WR-04196

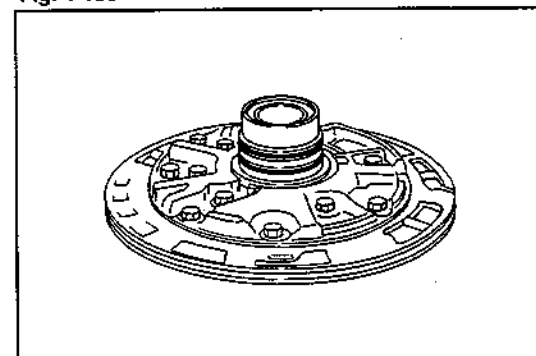


Fig. 4-154

WR-04197

(7) Tighten the six flange bolts.

**Tightening Torque:** 1.8 - 2.7 kg-m (14 - 19 ft-lb)

**NOTE:**

Note that only the bolt indicated by the ↴ mark in the figure is a M10 bolt.

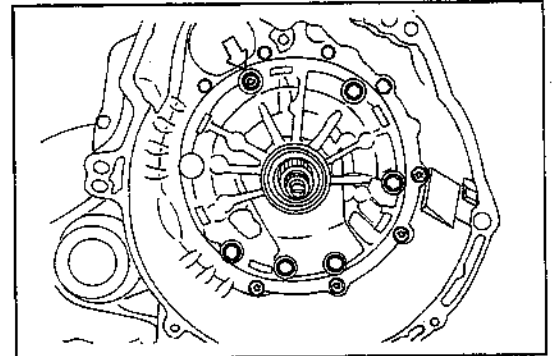


Fig. 4-155

WR-04199

12. Check of the input shaft end play

(1) Measure the play in the axial direction by applying the plunger of a dial gauge to the end surface of the input shaft.

**Specified Value:** 0.3 - 0.9 mm (0.012 - 0.035 inch)

(2) If the measured value does not comply with the specification, select a proper one from the following two thrust bearing races having different thicknesses. Then, replace the race which was installed in Step 12-(3) at page 00 with the newly-selected bearing race.

**Thrust bearing race thickness**

Too large end play → 1.4 mm (0.055 inch)

Too small end play → 0.8 mm (0.031 inch)

(3) After the reinstallation, ensure that the input shaft rotates smoothly.

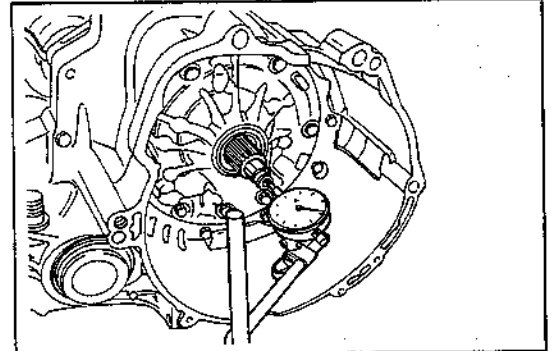


Fig. 4-156

WR-04200

13. Installation of the solenoid wire harness

(1) Fit the lock plate into the groove of the solenoid wire grommet. Install the solenoid wire to the stud bolt of the transmission case.

(2) Attach the washer to the stud bolt and tighten it with the nut.

(3) Clamp the wire harness at two points of the rear cover.

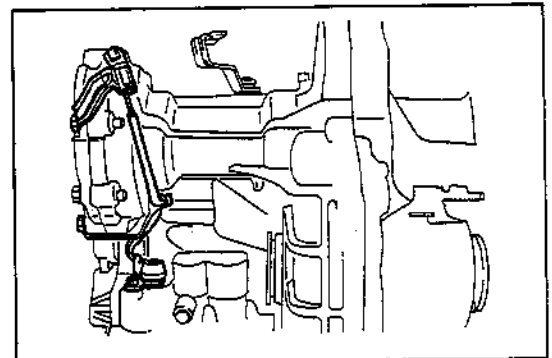


Fig. 4-157

WR-04201

14. Installation of the throttle cable

(1) Insert the throttle cable into the hole of the transmission case.

**NOTE 1:**

Apply the automatic fluid to the "O" ring.

**NOTE 2:**

Care must be exercised to ensure that the "O" ring may not be damaged or pinched.

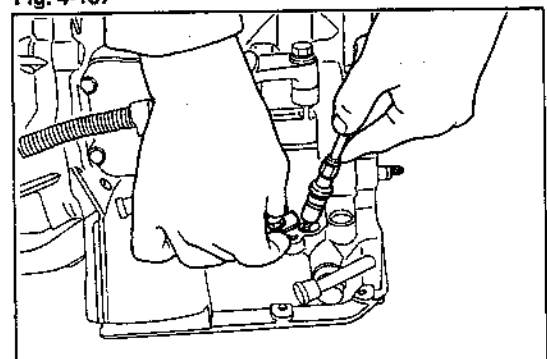


Fig. 4-158

WR-04202

## AUTOMATIC TRANSMISSION

### 15. Installation of the 2nd brake piston

- (1) Install the "O" ring and washer to the piston rod.

**NOTE:**

Prior to the installation, apply grease to the "O" ring.

- (2) Insert the spring and rod to the piston. Secure it with the "E" ring.

**NOTE:**

Prior to the installation, apply the automatic fluid to the inserting section of the rod.

- (3) Install the two "O" rings to the piston.

**NOTE 1:**

Be careful not to damage the "O" rings.

**NOTE 2:**

Do not expand the "O" rings excessively.

- (4) Put the spring in the transmission case. Insert the piston assembly into the case.

**NOTE 1:**

Apply the automatic fluid to the inserting section of the piston rod.

**NOTE 2:**

Care must be exercised to ensure that the "O" ring may not be damaged or pinched.

**NOTE 3:**

Make sure that the forward end of the rod is aligned with the metal fitting of the brake band.

- (5) Install two "O" rings to the piston cover.

**NOTE:**

Prior to the installation, apply the automatic fluid to the "O" rings.

- (6) Insert the piston cover into the transmission case.

**NOTE:**

Care must be exercised to ensure that the "O" ring may not be damaged or pinched.

- (7) With the piston cover pushed to the inside, attach the snap ring in position.

- (8) Through the side cover hole, check to see if the forward end of the rod is in contact with the metal fitting of the brake band at its specified position.

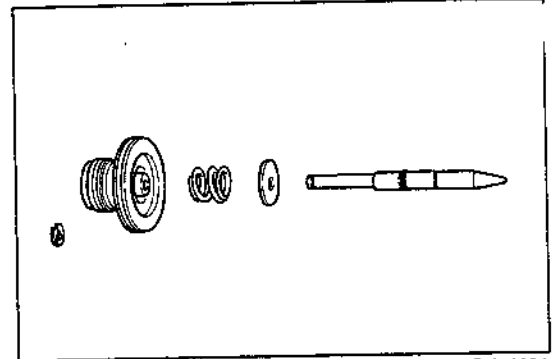


Fig. 4-159

WR-04202A

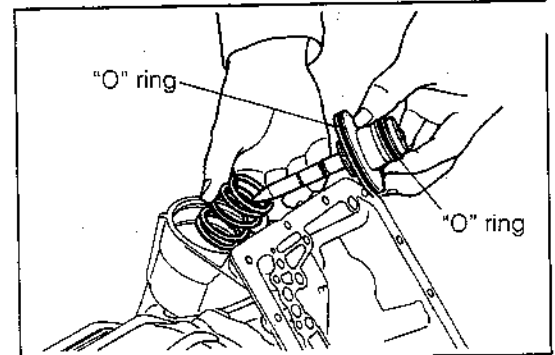


Fig. 4-160

WR-04203

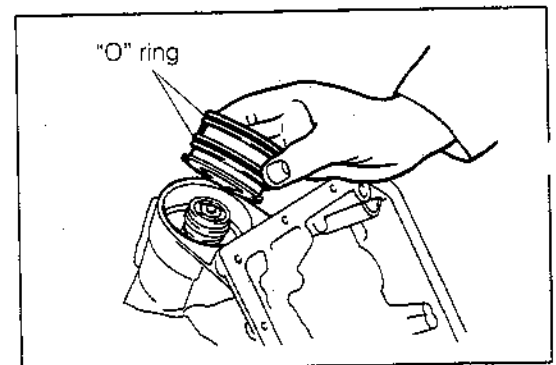


Fig. 4-161

WR-04204

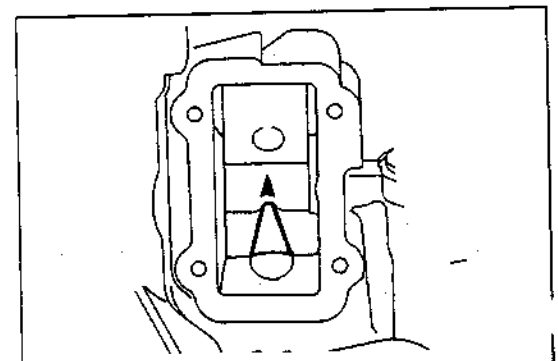


Fig. 4-162

WR-04205

- (9) Perform the 2nd brake piston stroke check in the same way as with the disassembly. WR-04206

- (10) Install the transmission case side cover and its gasket. Tighten them by means of the four bolts.  
Tightening Torque: 0.7 - 0.9 kg-m (5.5 - 6.5 ft-lb)

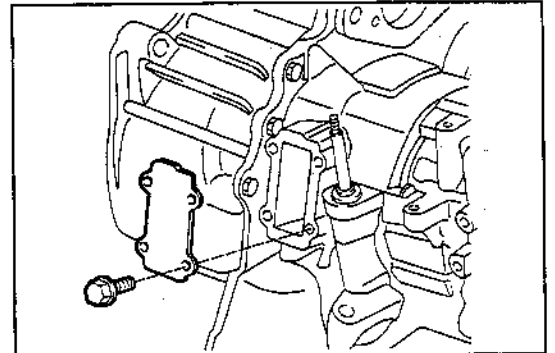


Fig. 4-163

WR-04207

16. Installation of the neutral start switch and the manual valve outer lever.

- (1) Install the neutral start switch.
- ① Set the manual shaft to the "N" position.
  - ② Insert the switch into the control shaft.
  - ③ Temporarily secure the switch bolt (nominal length: 35 mm).
  - ④ Align the scribe lines on the control rod and switch with each other.
  - ⑤ Securely tighten the bolt which has been secured temporarily in the step ③ above.
- Tightening Torque: 1.6 - 2.3 kg-m (12 - 17 ft-lb)
- ⑥ Ensure that the switch is functioning properly

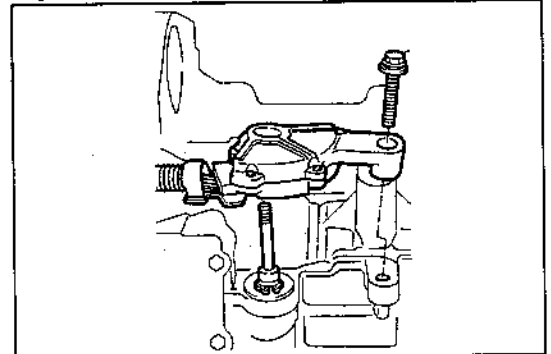


Fig. 4-164

WR-04149

- (2) Pass the upper washer and then the shift lever through the manual shift shaft which protrudes above the transmission upper section. Then, secure them by means of double nuts.

**NOTE:**

The following shows the tightening sequence of double nuts.

- ① Tighten the lower nut.  
Tightening Torque: 0.9 - 1.7 kg-m (6.5 - 12 ft-lb)
- ② Tighten the upper nut.  
Tightening Torque: 0.9 - 1.7 kg-m (6.5 - 12 ft-lb)
- ③ With the upper nut locked, tighten the lower nut in the reverse direction.  
Tightening Torque: 0.9 - 1.7 kg-m (6.5 - 12 ft-lb)

- (3) Check to see if the shaft rotates smoothly.

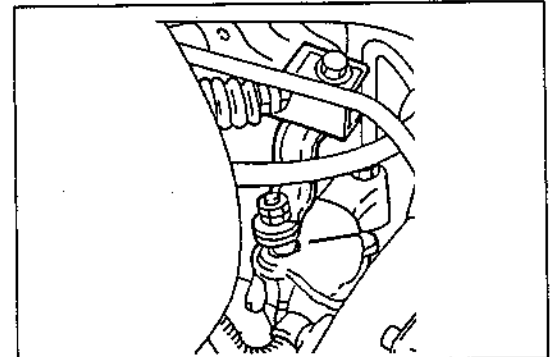


Fig. 4-165

WR-04149A

## AUTOMATIC TRANSMISSION

### 17. Installation of the accumulator piston

- (1) Install the "O" ring on the piston.

#### NOTE:

Prior to the installation, apply the automatic fluid to the piston and "O" ring.

- (2) Insert the spring into the piston.
- (3) Insert the piston into the transmission case.

#### NOTE 1:

	Number of "O" ring	Spring length mm (inch)	Spring outer diameter mm (inch)
B <sub>1</sub>	2	52 (2.05)	10.0 (0.394)
C <sub>1</sub>	1	64.1 (2.52)	15.0 (0.591)

#### NOTE 2:

Care must be exercised to ensure that the "O" ring may not be damaged or pinched.

### 18. Installation of the valve body assembly

- (1) Place the valve body assembly on the transmission case.
- (2) Install the pin of the manual lever in the manual valve.
- (3) Temporarily tighten the two bolts indicated in the figure.

- (4) Install the throttle cable to the throttle cam.

#### NOTE:

Do not pull the cable more than 40 mm (1.57 inches).

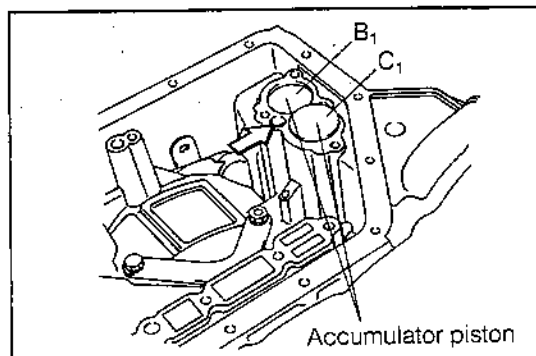


Fig. 4-166

WR-04208

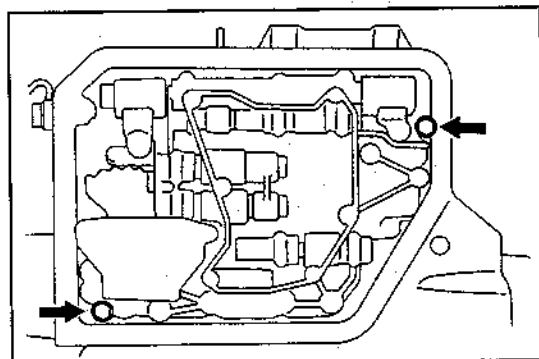


Fig. 4-167

WR-04209

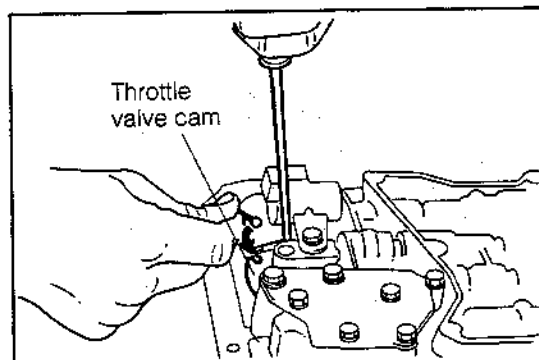


Fig. 4-168

WR-04210

(5) Tighten all bolts.

No.	Standard	Nominal length mm (inch)	Tightening torque kg-m (ft-lb)	Number	Shape of head
①	M6	36 (1.417)	0.80 - 1.20 (6.0 - 8.5)	7	Deep recess
②	M6	47 (1.850)	0.80 - 1.20 (6.0 - 8.5)	1	Deep recess
③-1	M6	25 (0.984)	0.80 - 1.20 (6.0 - 8.5)	2	Normal recess
④	M6	32 (1.260)	0.80 - 1.20 (6.0 - 8.5)	1	Normal recess

(6) Install the oil tubes.

**NOTE 1:**

First insert the oil tube's end having no stopper (1 in the right figure) about 2 mm (0.079 inch). Then, insert the end having a stopper (2 in the right figure).

**NOTE 2:**

To prevent the tube from being deformed, lightly tap the tube using a plastic hammer.

**NOTE 3:**

Positively insert the tube, until the stopper of the tube comes into contact with the case.

**NOTE 4:**

Install the tubes in parallel with the valve body.

(7) Connect the solenoid connector.

**NOTE:**

The wire harness differs in length to prevent wrong connections. Therefore, do not pull it forcibly.

(8) Install the oil strainer. At the same time, clamp the two solenoid connectors. Tighten them all together.

Tightening Torque: 0.4 - 0.6 kg-m (3.0 - 4.0 ft-lb)

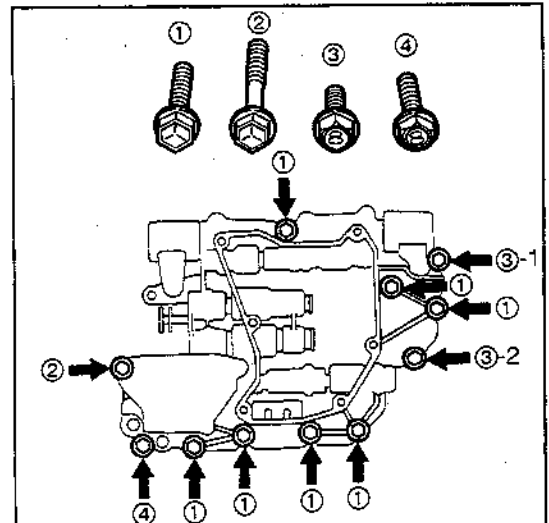


Fig. 4-169

WR-04211

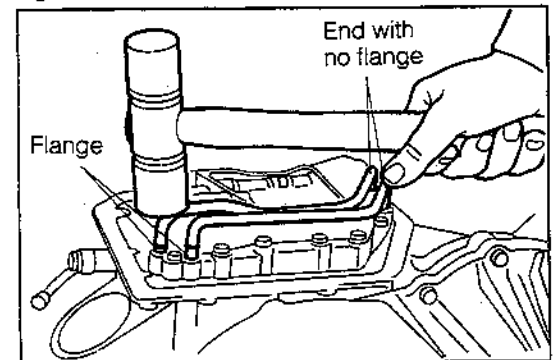


Fig. 4-170

WR-04212

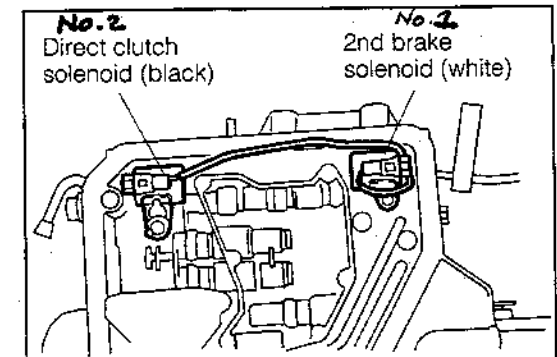


Fig. 4-171

WR-04213

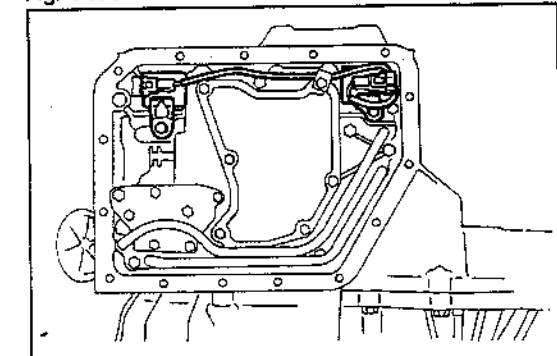


Fig. 4-172

WR-04214

## AUTOMATIC TRANSMISSION

### 19. Installation of the oil pan

- (1) Set the gasket on the transmission case.

**NOTE:**

Make sure that the bolt holes of the gasket are aligned with those in the transmission case.

- (2) Place the magnet on the oil pan.

**NOTE:**

It is advisable to place the magnet at the position indicated in the figure.

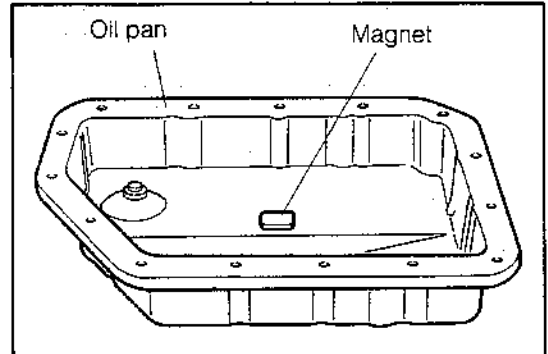


Fig. 4-173

WR-04215

- (3) Tighten the oil pan by means of the bolts (13 pieces) and screws (two pieces).

Tightening Torque: 0.4 - 0.6 kg-m (3.0 - 4.0 ft-lb)

**NOTE 1:**

Apply the sealant to the two screws indicated in the figure.

**NOTE 2:**

Make sure that the tube and oil pan do not interfere with each other.

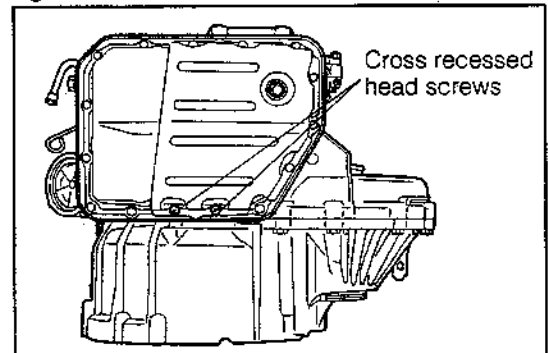


Fig. 4-174

WR-04216

- (4) Tighten the drain plug.

Tightening Torque: 1.8 - 2.3 kg-m (13.5 - 16.5 ft-lb)

WR-04217

### 20. Installation of the oil filler tube

- (1) Install the "O" ring to the oil filler tube. Insert the oil filler tube into the transmission case.

**NOTE 1:**

Apply the automatic fluid to the "O" ring.

**NOTE 2:**

Insert the oil filler tube up to the flange position.

- (2) Secure the oil filler tube by means of the bolt.

Tightening Torque: 0.3 - 0.7 kg-m (2.4 - 5.6 ft-lb)

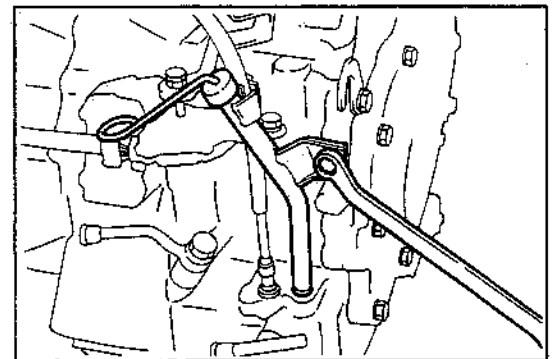


Fig. 4-175

WR-04218

### 21. Installation of the test plug at the detecting hole

- (1) Install the "O" ring and tighten the plug.

Tightening Torque: 0.6 - 0.9 kg-m (4.3 - 6.5 ft-lb)

**NOTE:**

Apply the automatic fluid to the "O" ring.

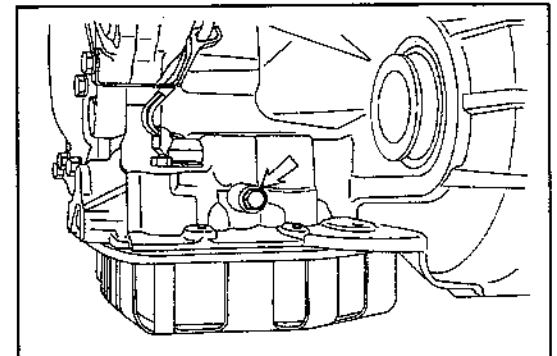


Fig. 4-176

WR-04220



### 22. Installation of the torque converter

- (1) Install the torque converter. Check to see if the attaching dimension indicated in the right figure complies with the specification.

#### NOTE 1:

Be careful not to damage the oil seal.

#### NOTE 2:

Make sure that the torque converter rotates lightly.

#### NOTE 3:

Apply grease to the point indicated in the figure.

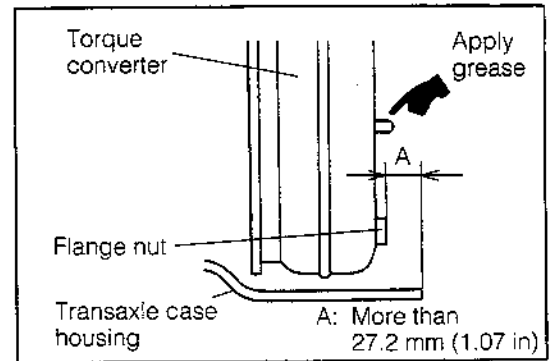


Fig. 4-177

WFI-04221

## APPENDIX

### SHIFT LEVER CONSTRUCTION

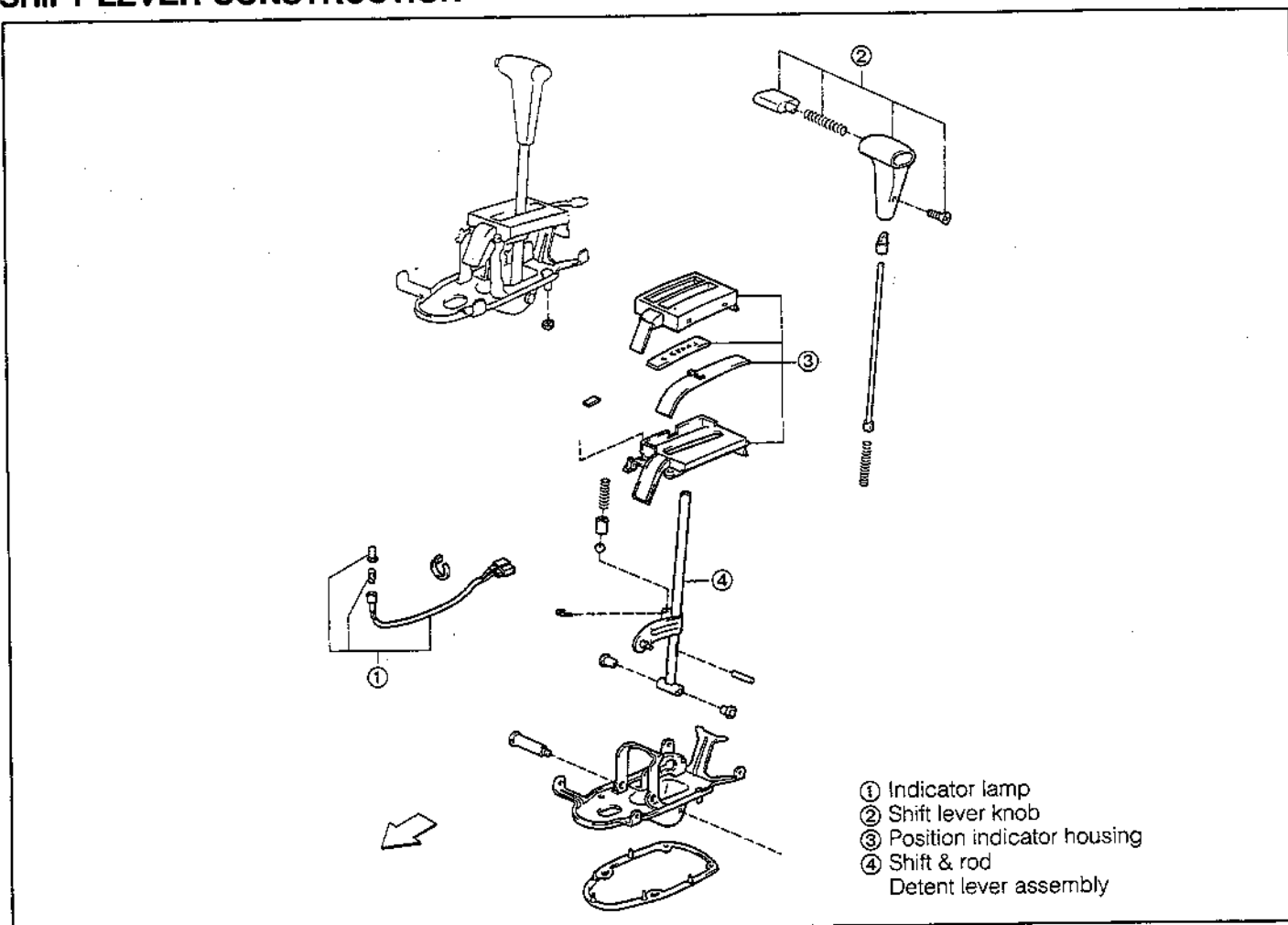


Fig. 4-178

WR-04222

#### Shift lever components

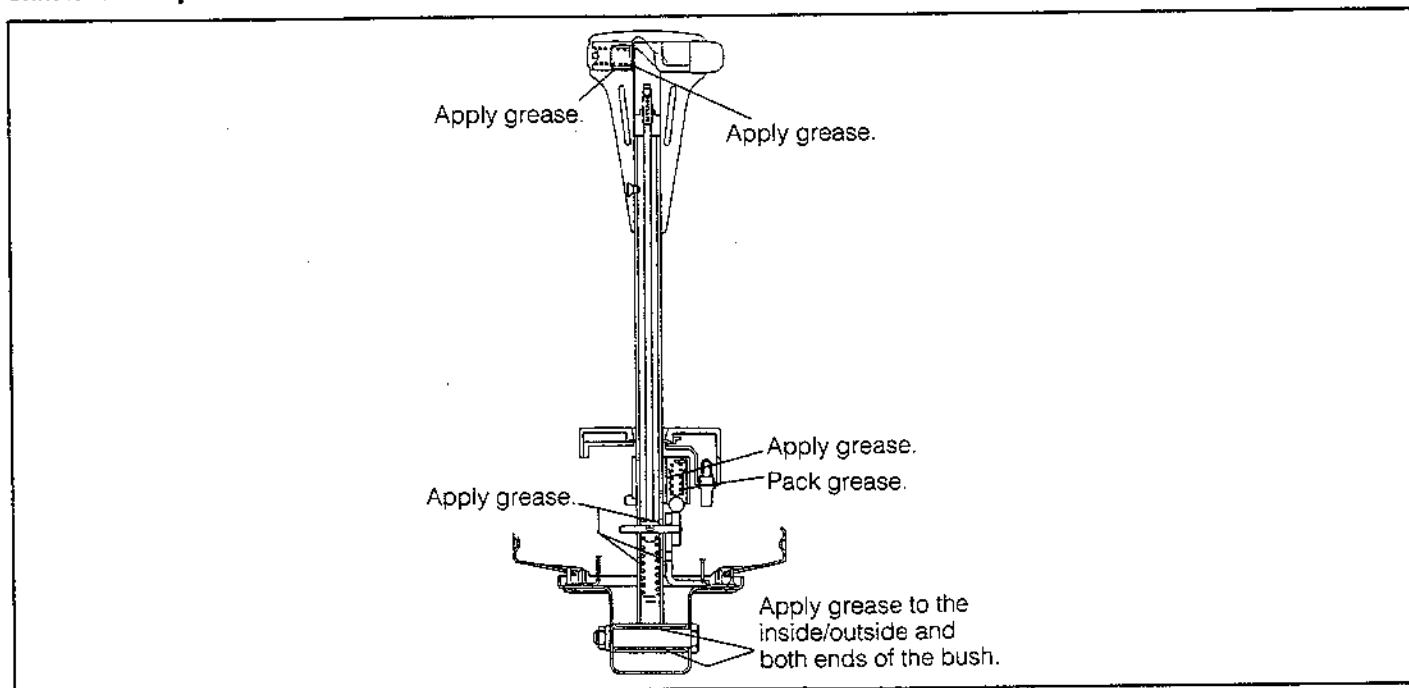


Fig. 4-179

WR-04222A

## CONTROL CABLE CONSTRUCTION

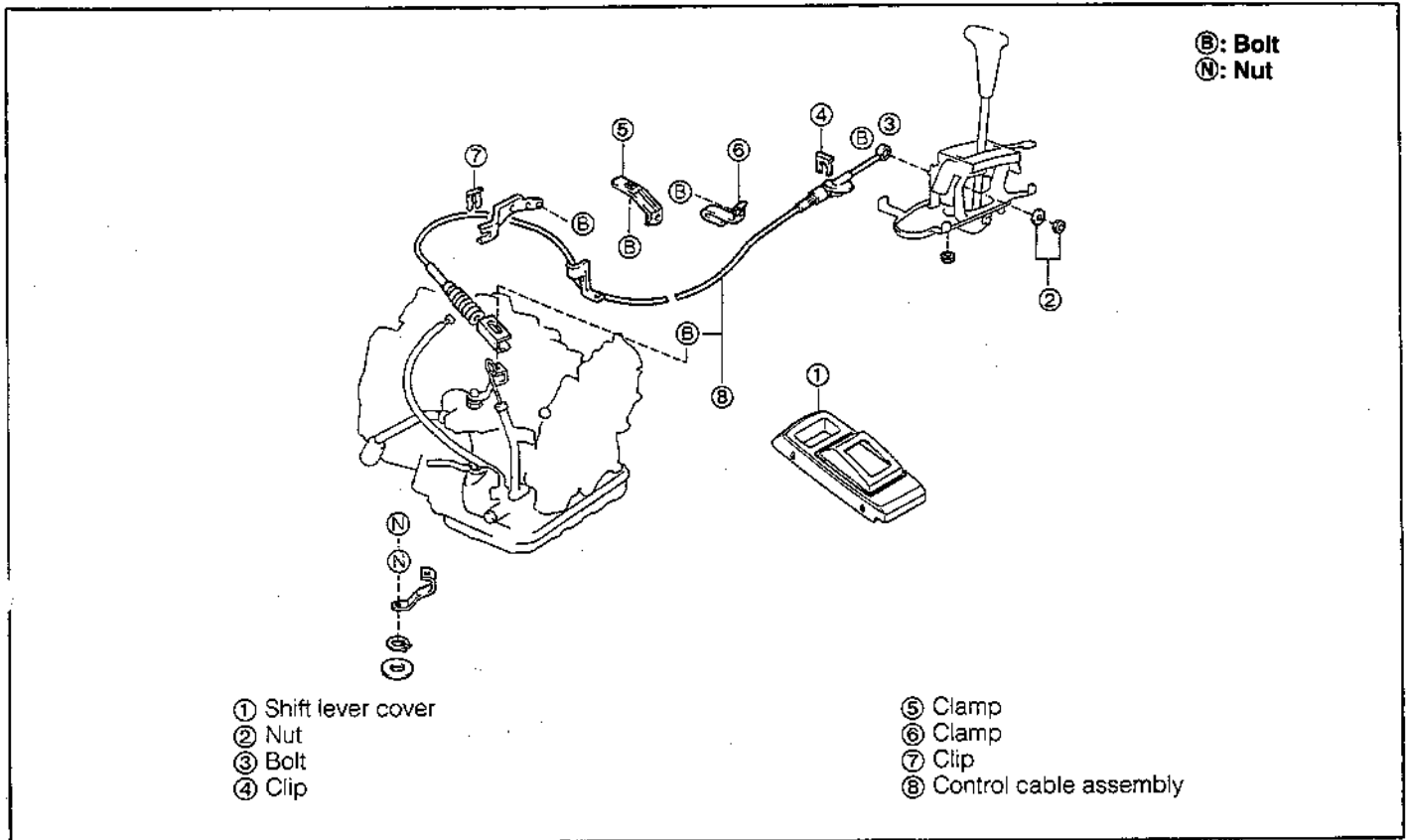


Fig. 4-180

WR-04223

## Control cable components

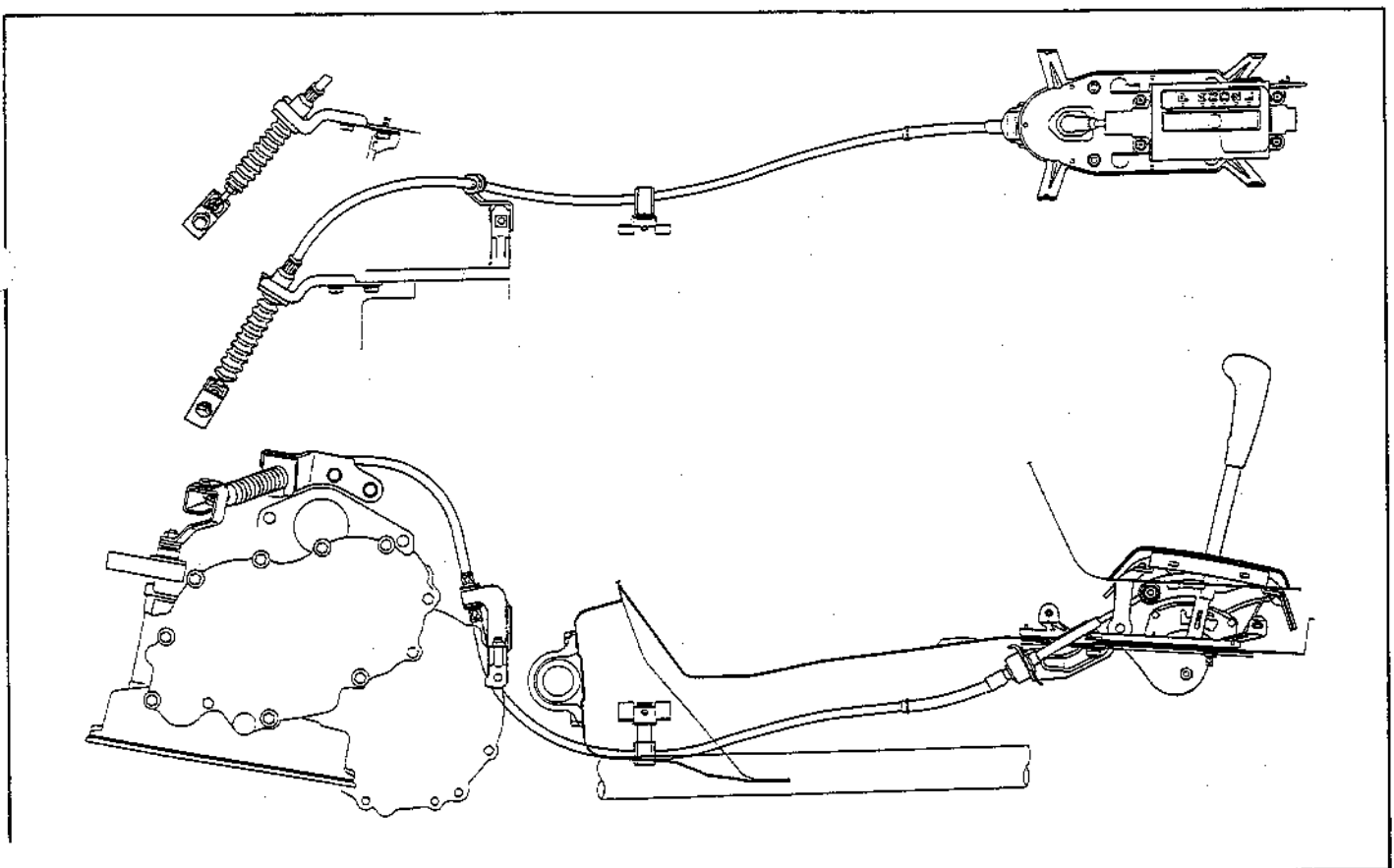
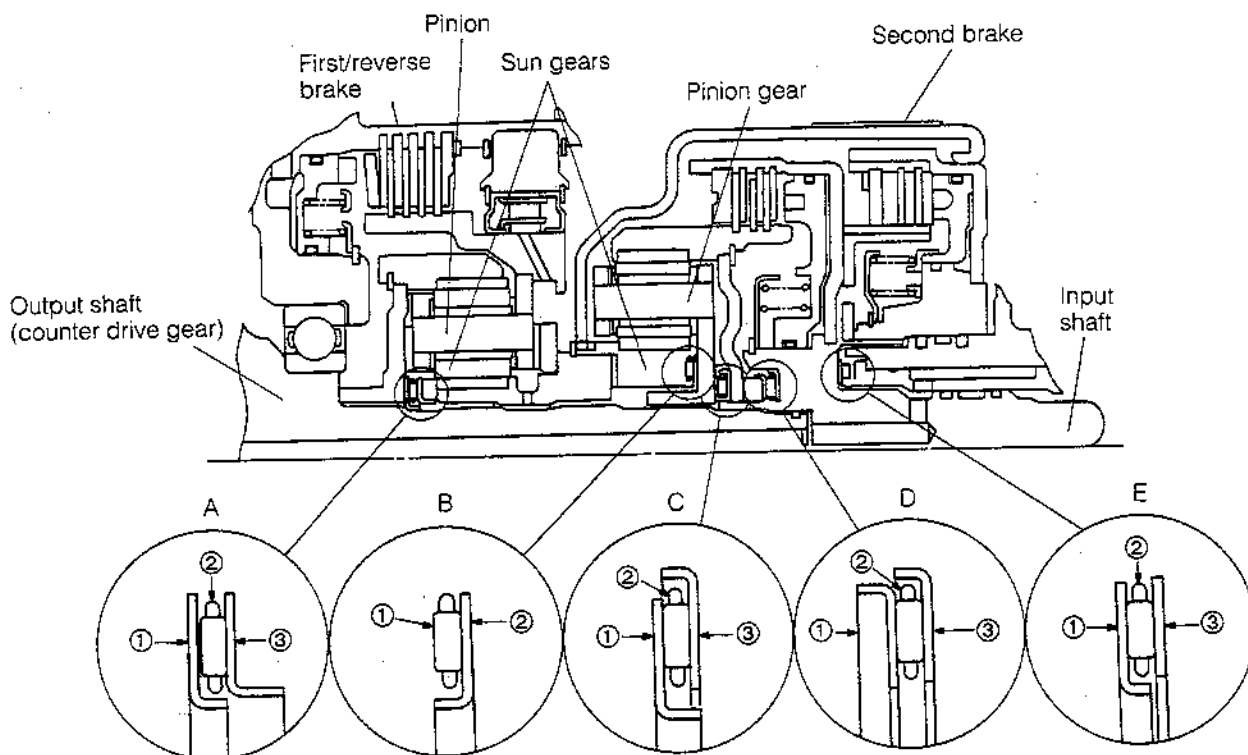


Fig. 4-181

WR-04223A

# AUTOMATIC TRANSMISSION

## ASSEMBLING POSITION AND DIRECTION OF THRUST BEARING



Position	Part	Inner diameter mm (inch)	Outer diameter mm (inch)	Flange	Thick- ness	Remarks
A	① Race ② Bearing ③ Race	22.15 (0.872) 24 (0.94) 24 (0.94)	37.5 (1.47) 37.5 (1.47) 37.5 (1.47)	Inner diameter flange — Inner diameter flange		
B	① Bearing ② Race	30 (1.18) 28 (1.10)	45 (1.77) 45 (1.77)	— Inner diameter flange		
C	① Race ② Bearing ③ Race	19 (0.75) 22.3 (0.88) 22 (0.87)	35 (1.38) 36 (1.42) 37.9 (1.49)	Inner diameter flange — Outer diameter flange		
D	① Race ② Bearing ③ Race	23 (0.91) 22.3 (0.88) 22 (0.87)	35.8 (1.41) 36 (1.42) 37.9 (1.49)	Outer diameter flange — Outer diameter flange		Shared in common with C ② Shared in common with C ③
E	① Race ② Bearing ③ Race ③ Race	27.1 (1.07) 30 (1.18) 30.5 (1.20) 30.5 (1.20)	42 (1.65) 42 (1.65) 43 (1.69) 43 (1.69)	Inner diameter flange — Not provided Not provided	0.8 1.4	Option Option

Fig. 4-182

WR-04224

**LIST OF SPRINGS**

	Installing position	Color	Free length (Reference value mm (inch))	Coil outer diameter mm (inch)
Upper valve	Primary regulator valve	Red	52.5 (2.06)	10 (0.39)
	Orifice control valve	Yellow/green	34.1 (1.34)	8.5 (0.33)
	Throttle valve	White	22.25 (0.8760)	9.2 (0.36)
	Throttle valve ( Gasoline turbo, )	Purple	31.81 (1.252)	Inner diameter 6.0 (0.24)
	Throttle valve ( diesel turbo )	Light blue	31.04 (1.252)	Inner diameter 6.0 (0.24)
	Throttle valve cam	—	—	Inner diameter 14 (0.55)
Lower valve	Secondary regulator valve (Same as above)	Yellow	31.4 (1.24)	7.4 (0.29)
		Brown	30.17 (1.188)	7.4 (0.29)
	2 - 3 shift valve	Pink	39.6 (1.56)	10.5 (0.413)
	1 - 2 shift valve	Pink	39.6 (1.56)	10.5 (0.413)
	B <sub>2</sub> control valve	Blue	28.1 (1.11)	7.9 (0.31)
	Cooler bypass	Orange	19.9 (0.783)	11.0 (0.433)
Case	B <sub>1</sub> accumulator	—	52.0 (2.05)	10.0 (0.394)
	C <sub>1</sub> accumulator	—	64.1 (2.52)	15.0 (0.591)
B <sub>1</sub> servo	Inner	—	19 (0.75)	23 (0.91)
	Outer	—	45.9 (1.81)	39 (1.5)
C <sub>1</sub>	For forward clutch (18 pieces)	—	14.90 (0.5866)	7.7 (0.30)
	Shaft parking pawl	—	—	Inner diameter 10.25 (0.4035)

(NOTE)

- Figures in ( ) in the column of "Coil outer diameter" represent the inner diameter.
- Figures in ( ) in the column of "Installing point" represent the number of the part.
- This list does not post those springs which are incorporated in assemblies.

WR-04225

**LIST OF "O" RINGS**

Installing point	Inner diameter mm (inch)	Installing point	Inner diameter mm (inch)
Oil pump body	200 (7.87)	B <sub>2</sub> brake	135 (5.31)
Direct clutch drum, inner	75.9 (3.00)	B <sub>1</sub> servo rod	8.8 (0.35)
C <sub>2</sub> piston, outer	117 (4.61)	C <sub>1</sub> , B <sub>1</sub> accumulators	23.47 (0.9240)
B <sub>1</sub> servo cover	59.6 (2.35)	B <sub>1</sub> accumulator	15.4 (0.606)
C <sub>1</sub> piston, inner	46.52 (1.831)	Filler tube	9.6 (0.38)
C <sub>1</sub> piston, outer	117 (4.61)	Speedometer	19.7 (0.776)
B <sub>2</sub> brake	94.1 (3.70)		

- C<sub>1</sub>: Forward clutch  
 C<sub>2</sub>: Direct clutch  
 B<sub>1</sub>: 2nd brake  
 B<sub>2</sub>: 1st & reverse brake

WR-04226

## AUTOMATIC TRANSMISSION

### LIST OF BOLTS USED (I)

Installing point	Number	Standard	Tightening torque kg-m (ft-lb)	Nominal length (mm)	Shape
Housing × case	11	M8	1.6 - 2.3 (12 - 16)	35	B, W/W
Rear cover × case	10	M8	1.6 - 2.3 (12 - 16)	35	B, W/W
Rear cover × case	2	M8	0.5 (3.6)	9/16	B, S
Rear cover × case	2	M8	1.1 - 1.5 (8.0 - 10)	—	N
Rear cover × case	2	φ 8	—	—	W
Oil pump assembly × case	5	M8	1.8 - 2.7 (14 - 19)	28	B, F
Stator shaft × Oil pump body	11	M6	0.8 - 1.2 (6.0 - 8.5)	17	B, W/W
Case side cover × case	4	M6	0.7 - 0.9 (5.5 - 6.5)	18	B, W/W
Counter shaft × counter driver gear	1	M22	11 - 15 (80 - 108)	—	N
Differential gear × differential ring gear	10	M10	8.0 - 1.0 (58 - 72)	—	B, F
Manual shift shaft × Manual valve outer lever	2	M8	0.9 - 1.7 (6.5 - 12)	—	N
Detent × case	1	M6	0.8 - 1.2 (6.0 - 8.5)	16.5	B, W/W
Detent × case	1	M6	0.2 (1.4)	1 1/8	B, S
Detent × case	1	M6	0.8 - 1.2 (6.0 - 8.5)	—	N
Detent × case	1	φ 6	—	—	W
Valve body assembly × case	7	M6	0.8 - 1.2 (6.0 - 8.5)	36	B, F
Valve body assembly × case	1	M6	0.8 - 1.2 (6.0 - 8.5)	47	B, F
Valve body assembly × case	2	M6	0.8 - 1.2 (6.0 - 8.5)	25	B, F
Valve body assembly × case	1	M6	0.8 - 1.2 (6.0 - 8.5)	32	B, F
Upper valve body × lower valve body	6	M5	0.5 - 0.6 (3.6 - 4.3)	29.5	B, F
Upper valve body × lower valve body	6	M5	0.5 - 0.6 (3.6 - 4.3)	38	B, F
Upper valve body × lower valve body	2	M5	0.5 - 0.6 (3.6 - 4.3)	44	B, F
Upper valve body × lower valve body	2	M5	0.5 - 0.6 (3.6 - 4.3)	29.5	B, F
Lower cover × lower valve body	6	M5	0.5 - 0.6 (3.6 - 4.3)	14	B, F
Strainer × lower valve body	6	M5	0.5 - 0.6 (3.6 - 4.3)	14	B, F
Solenoid × lower valve body	2	M6	0.64 - 0.96 (4.6 - 6.9)	10	B, W/W
Throttle cam × lower valve body	1	M6	0.6 - 0.9 (4.3 - 6.5)	28	B, F
Oil pan × case	13	M6	0.4 - 0.6 (3.0 - 4.3)	16	B, W/W
Drain plug × oil pan	1	M10	1.8 - 2.3 (13 - 17)	8.3	P
Wire-to-solenoid × case	1	M6	0.2 (1.4)	1 1/8	B, S
Wire-to-solenoid × case	1	M6	0.5 - 0.6 (3.6 - 4.3)	—	N
Wire-to-solenoid × case	1	φ 6	—	—	W

WR-04227

## LIST OF BOLTS USED (II)

Installing point	Number	Standard	Tightening torque kg-m (ft-lb)	Nominal length (mm)	Shape
Speedometer × housing	1	M6	0.7 - 1.0 (5.1 - 7.2)	12	B, W/W
Filler tube × case	1	M8	0.3 - 0.7 (2.4 - 5.6)	20	B, W/W
Test plug × case	1	5/16 24UNF	0.6 - 0.9 (4.3 - 6.5)	9.5	P
* Oil pan × case	2	M6	0.4 - 0.6 (3.0 - 4.3)	16	S, W/W
* Housing × case	3	M8	1.6 - 2.3 (12 - 16)	35	B, W/W
Housing × case	1	M8	1.6 - 2.3 (12 - 16)	50	B, W/W
Speedometer sleeve plate lock × case	1	M6	0.6 - 0.9 (4.3 - 6.5)	12	B, W/W
Throttle cable clamp × case	1	M6	0.6 - 0.9 (4.3 - 6.5)	12	B, W/W
O/P assembly × case	1	M10	1.8 - 2.7 (14 - 19)	28	B, F
Neutral start switch × case	1	M8	1.6 - 2.3 (12 - 16)	35	B, W/W
Clamp × case	1	M8	0.9 - 1.7 (6.5 - 12)	20	B, W/W
Mount bracket × case	3 (5)	M10	3.0 - 4.5 (22 - 33)	25	B, W/W

\*: Apply sealant to the bolt bearing the "\*" mark.

case: Transmission case

WR-04226

### Explanation of shape

B, W/W	: Bolt with washer
B, S	: Stud bolt
N	: Nut
W	: Washer
B, F	: Bolt flange
P	: Plug
S, W/W	: Screw with washer

WR-04229





# **DAIHATSU**

# **CHARADE**

## Chassis

## **SECTION 5**

## **FRONT AXLE & SUSPENSION**

**5**

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WR-05001

## FRONT AXLE & SUSPENSION

### FRONT AXLE SECTIONAL VIEW

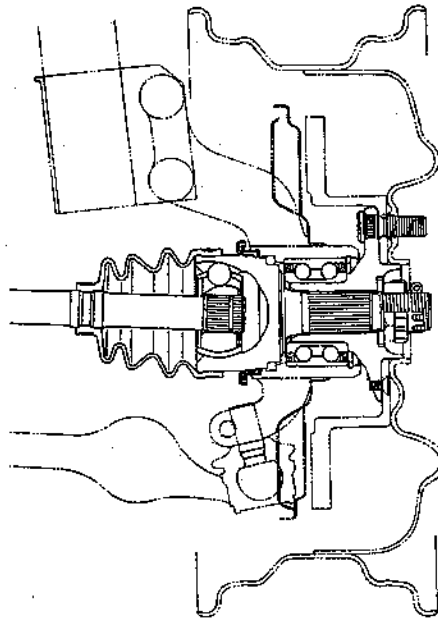


Fig. 5-1

WR-05002

### COMPONENTS

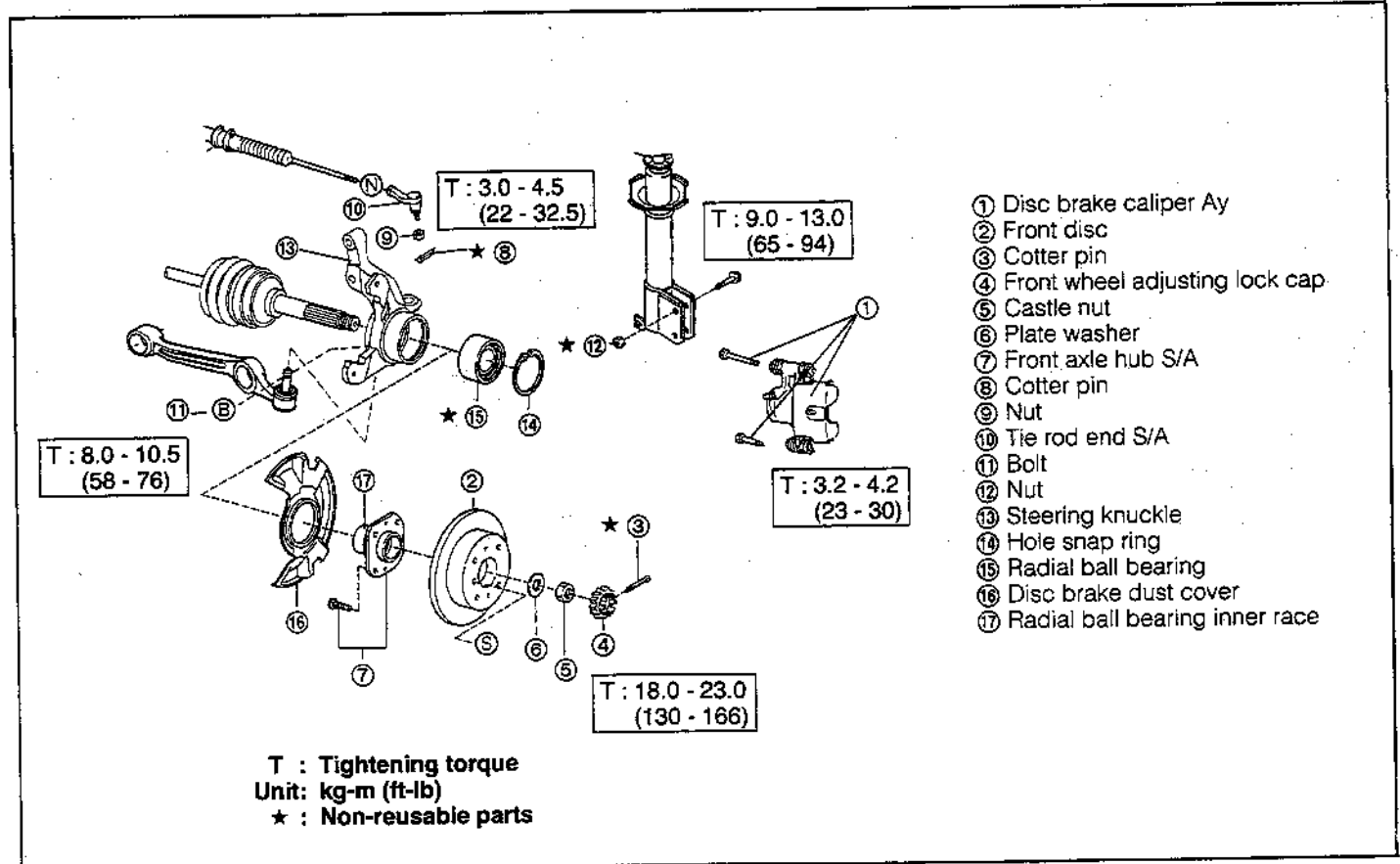


Fig. 5-2

WR-05003

## REMOVAL

1. Jack up the vehicle at the front side. Support the body with safety stands.
2. Remove the front wheel.

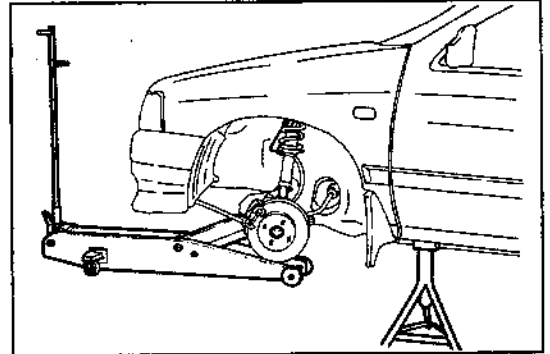


Fig. 5-3

WR-05004

3. Disc brake caliper removal
  - (1) Remove the attaching bolts of the disc brake caliper.
  - (2) Suspend the caliper.

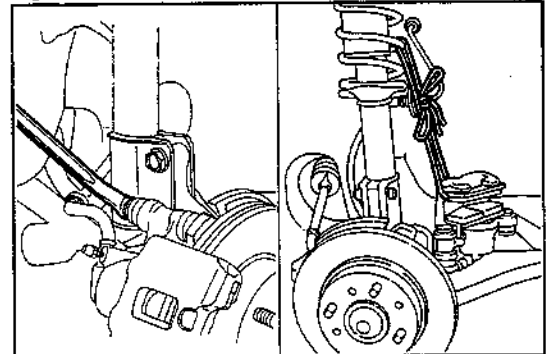


Fig. 5-4

WR-05005

4. Remove the disc rotor.

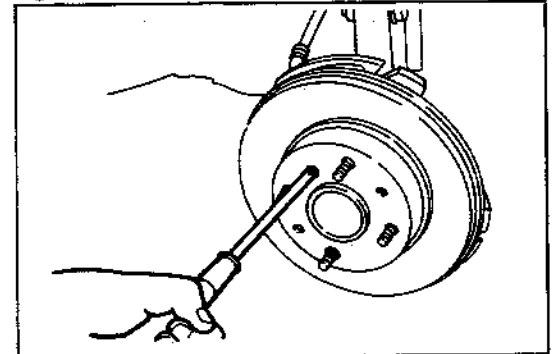


Fig. 5-5

WR-05006

5. Front axle hub removal
  - (1) Remove the cotter pin and front wheel adjusting lock cap.
  - (2) Remove the castle nut, using the following SST.  
SST: 09511-87202-000

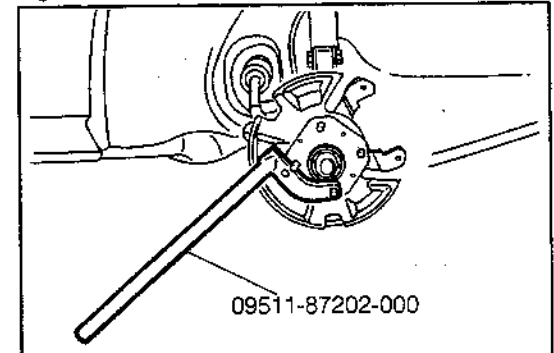


Fig. 5-6

WR-05007

- (3) Draw out the axle hub, using the following SST.

### NOTE:

Do not separate the axle hub from the steering knuckle unless such separation is necessary.

SST: 09520-00031-000

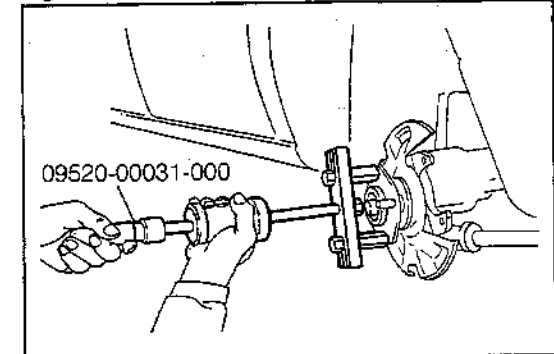


Fig. 5-7

WR-05008

## FRONT AXLE & SUSPENSION

### 6. Tie rod end separation

- (1) Remove the cotter pin castle nut from the tie rod end.
- (2) Separate the tie rod end from the steering knuckle, using the following SST.

SST: 09611-87701-000

#### NOTE:

While using the SST, be very careful not to damage the boot and threaded portion.

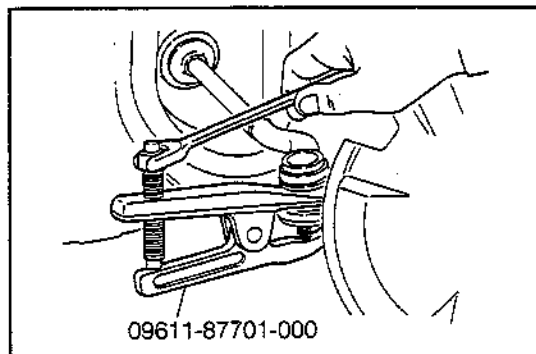


Fig. 5-8

WR-05009

### 7. Remove the lower ball joint attaching bolt and nut.

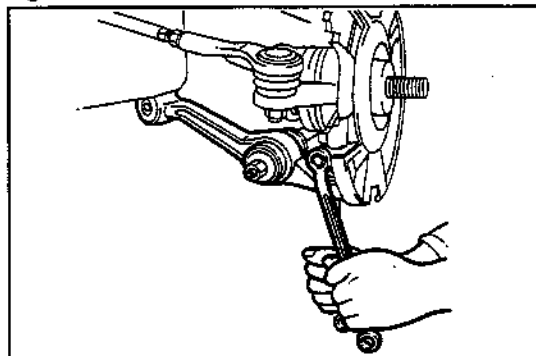


Fig. 5-9

WR-05010

### 8. Steering knuckle separation

Remove the attaching nuts. Leave the bolts in their inserted conditions.

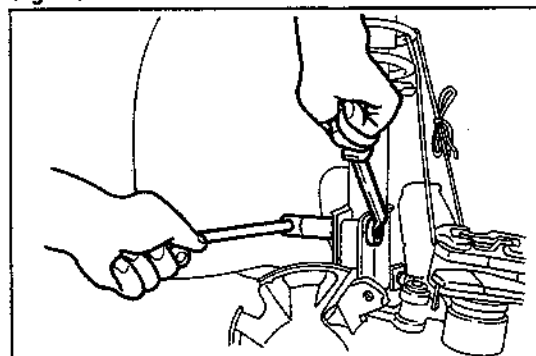


Fig. 5-10

WR-05011

### 9. Steering knuckle removal

- (1) While supporting the steering knuckle, draw out the attaching bolts of the shock absorber lower bracket.
- (2) Disengage the axle hub from the drive shaft. Remove the steering knuckle.

#### NOTE:

- Protect the drive shaft boot with cloth or the like so that it may not be damaged during the operation.
- Wind a tape or the like on the drive shaft threaded portion so that the oil seal may not be damaged.

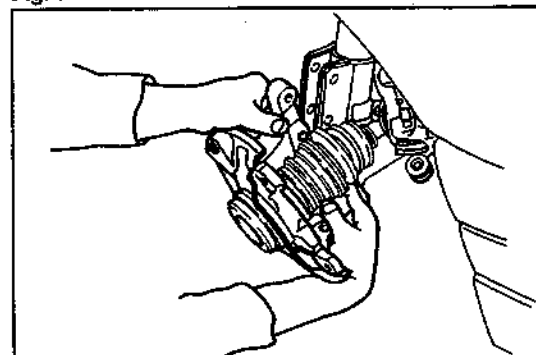


Fig. 5-11

WR-05012

### 10. Front axle bearing removal

- (1) Remove the dust seal from the axle hub, using a common screwdriver.
- (2) Remove the bearing inner race (outer side) from the axle hub, using the following SST.

SST: 09950-20014-000

09720-00010-000 (Use the item No.3 that is part of the set.)

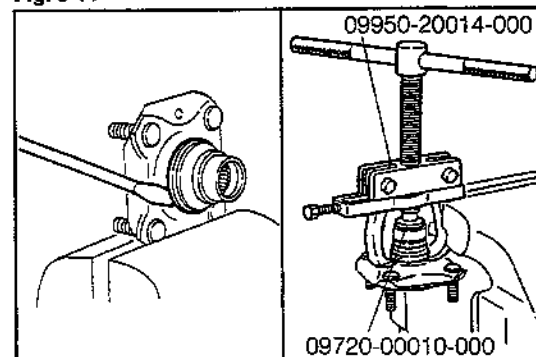


Fig. 5-12

WR-05013

(3) Detach the snap ring, using snap ring pliers.

(4) Remove the bearing from the steering knuckle, using a press in combination with the following SSTs.

SST: 09527-87301-000

09550-10012-000 (09554-10010-000, part of the preceeding tool)

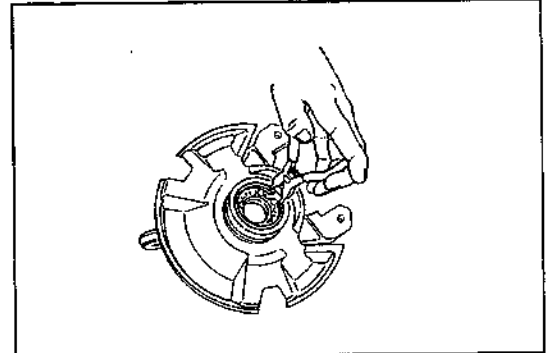


Fig. 5-13

WR-05014

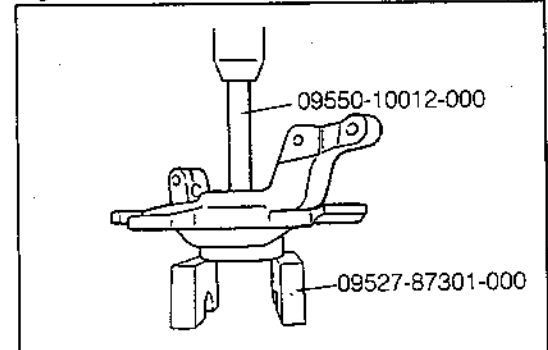


Fig. 5-14

WR-05015

## INSPECTION

Inspect the following parts.

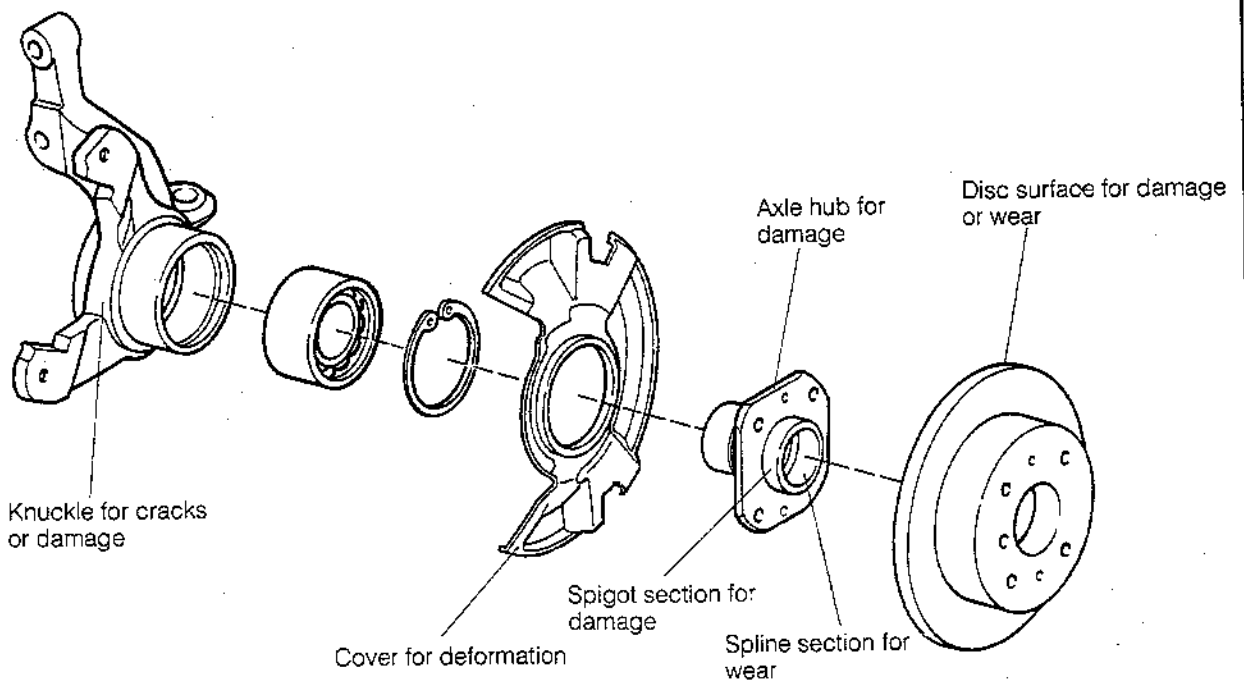


Fig. 5-15

WR-05016

## FRONT AXLE & SUSPENSION

### 1. Disc brake cover replacement

- (1) Separate the disc brake cover from the knuckle, using a common screwdriver or the like.

#### NOTE:

Do not remove the disc brake cover unless its replacement is required.

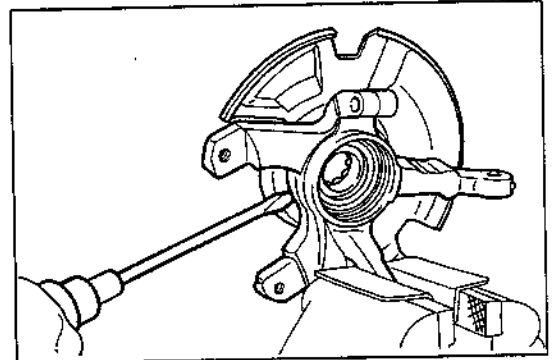


Fig. 5-16

WR-0507

- (2) Press the disc brake cover until it comes into close contact with the knuckle, using the following SSTs.

SST: 09506-87302-000

09718-87701-000

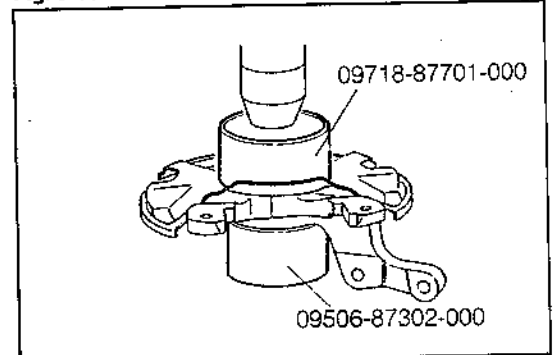


Fig. 5-17

WR-05018

## INSTALLATION

### 1. Front axle bearing installation

- (1) Press the bearing into position, using the following SSTs.

SST: 09506-87302-000

09550-10012-000 (09554-10010-000, part of the preceeding tool)

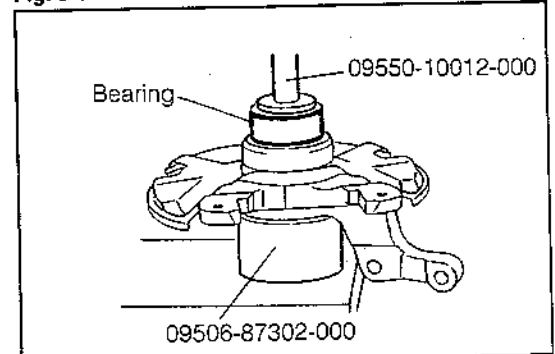


Fig. 5-18

WR-05019

- (2) Install a new snap ring, using snap ring pliers.
- (3) Press the front axle hub into position, using the following SST.

SST: 09550-10012-000 (09554-10010-000, part of the preceeding tool)

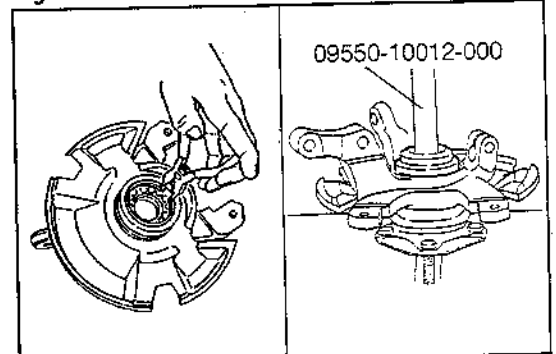


Fig. 5-19

WR-05020

### 2. Steering knuckle installation

- (1) Insert the steering knuckle into the drive shaft.

#### NOTE:

- Be careful not to allow the drive shaft to come into contact with the oil seal at the knuckle side.
- Pay utmost attention not to damage the ball joint dust cover.

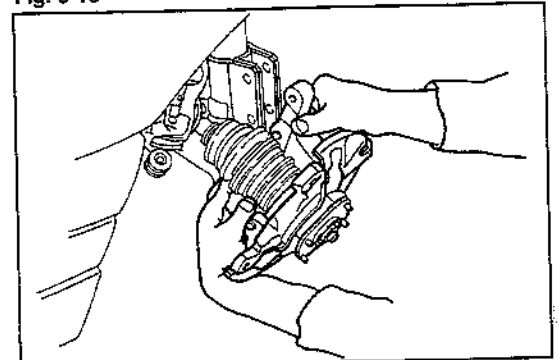


Fig. 5-20

WR-05021

- (2) Mount the steering knuckle on the lower ball joint.
- (3) Mount the steering knuckle on the shock absorber lower bracket. Tighten the bolts and nuts.  
Tightening Torque: 9.0 - 13.0 kg-m (65 - 94 ft-lb)

**NOTE:**

With the knuckle pushed against the lower side, tighten the bolts and nuts.

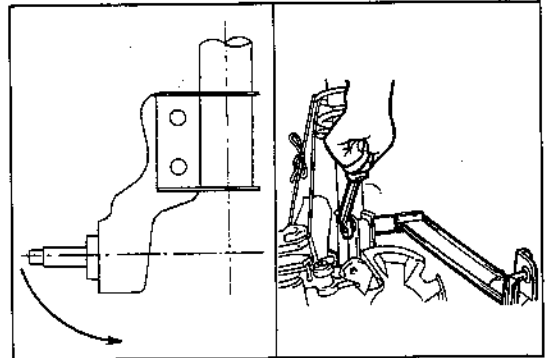


Fig. 5-21

WR-05022

- (4) Install the lower ball joint. Tighten the bolt and nut.  
Tightening Torque: 8.0 - 10.5 kg-m (58 - 76 ft-lb)

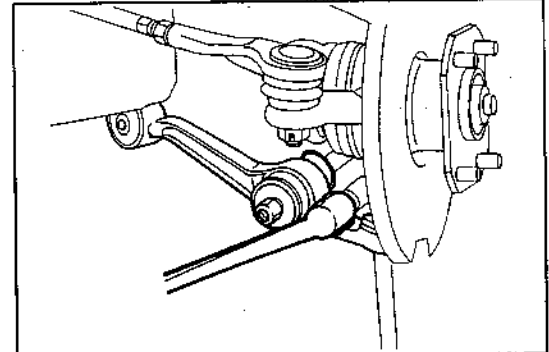


Fig. 5-22

WR-05023

- (5) Install the washer. Install the nut temporarily.

**NOTE:**

Be sure to install the washer in the correct direction.

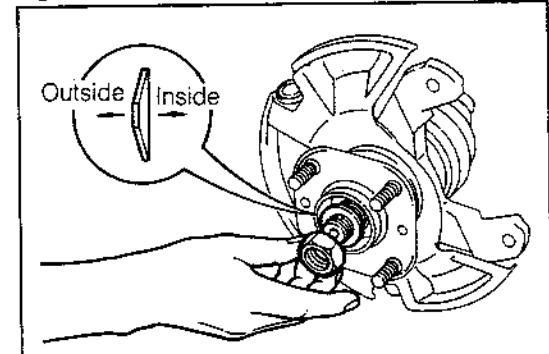


Fig. 5-23

WR-05024

3. Install the disc rotor.

**NOTE:**

Care must be exercised to ensure that no foreign matter lodge between the hub and the disc rotor.

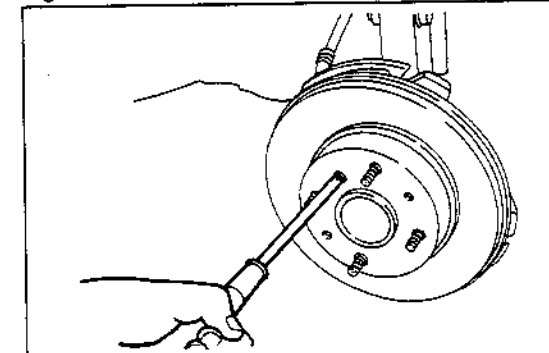


Fig. 5-24

WR-05025

4. Disc brake caliper installation

- (1) Install the pad guide plate to the steering knuckle.
- (2) Tighten the attaching bolts of the disc brake caliper.  
Tightening Torque: 3.2 - 4.2 kg-m (23 - 30 ft-lb)

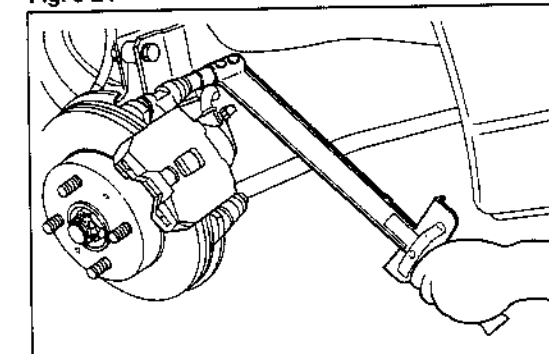


Fig. 5-25

WR-05026

## FRONT AXLE & SUSPENSION

5. Tightening of castle nut using the following SST.
  - (1) Tighten the castle nut.  
SST: 09511-87202-000  
Tightening Torque: 18.0 - 23.0 kg-m (130 - 160 ft-lb)
  - (2) Install the front wheel adjusting lock cap and a new cotter pin.
6. Tie rod end installation
  - (1) Attach the tie rod end to the steering knuckle and tighten the castle nut.  
Tightening Torque: 3.0 - 4.5 kg-m (22 - 32.5 ft-lb)
  - (2) Install a new cotter pin.
7. Install the wheel.
8. Front wheel alignment inspection and adjustment  
(See page 5-38.)

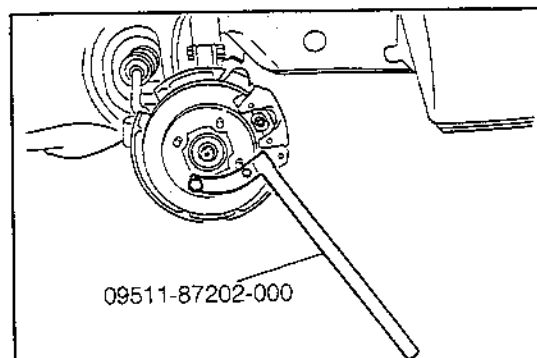


Fig. 5-26

WR-05027

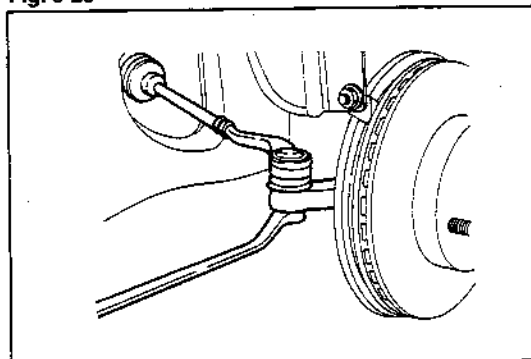


Fig. 5-27

WR-05028

WR-05029



FRONT SUSPENSION

SECTIONAL VIEW

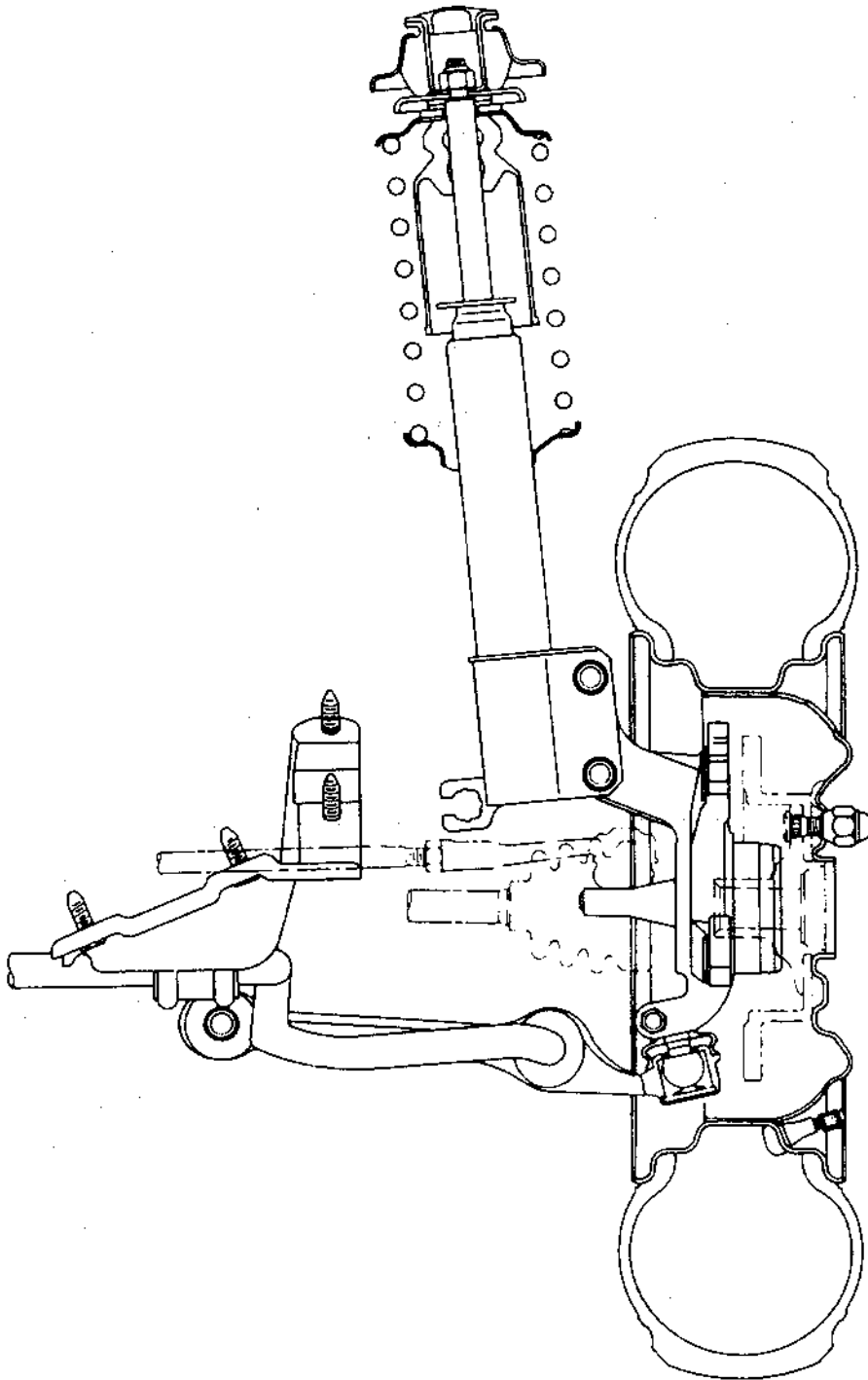


Fig. 5-28

WR-05030

## FRONT AXLE & SUSPENSION

### FRONT SHOCK ABSORBER COMPONENTS

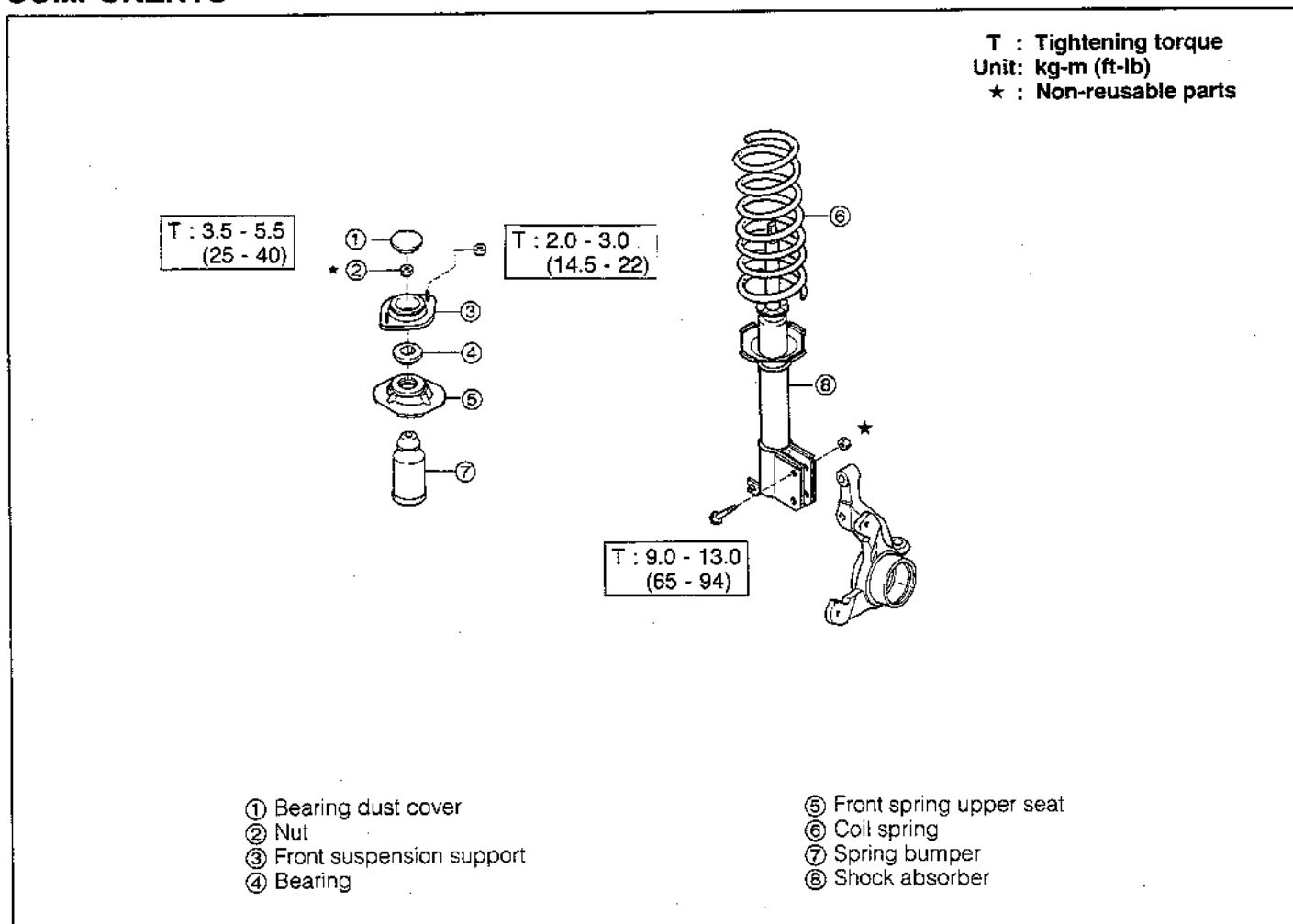


Fig. 5-29

WR-05031

### REMOVAL

1. Jack up the vehicle at the front side. Support the body with safety stands.
2. Remove the front wheel.

3. Flexible hose removal
  - (1) Remove the clip at the shock absorber side.
  - (2) Disconnect the flexible hose at the shock absorber bracket.

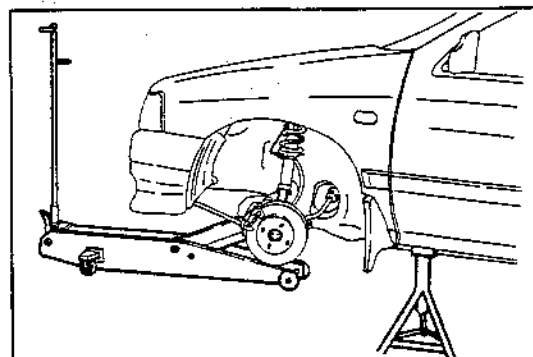


Fig. 5-30

WR-05032

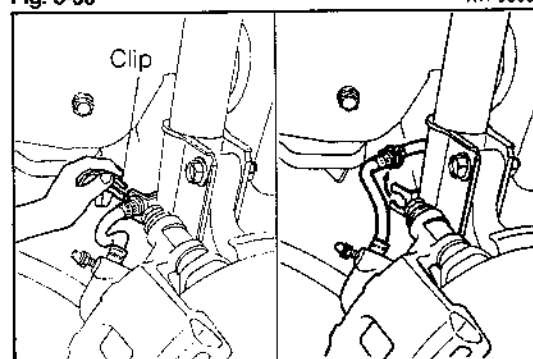


Fig. 5-31

WR-05033

## 4. Shock absorber removal

- (1) Remove the attaching bolts and nuts of the steering knuckle. Separate the shock absorber from the steering knuckle.

### NOTE:

Before removing the left shock absorber, remove the disc brake caliper attaching bolt (upper side).

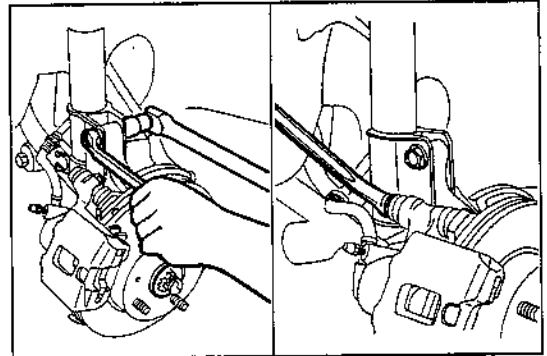


Fig. 5-32

WR-05034

- (2) Remove the two attaching nuts of the suspension support located at the fender upper section. Remove the shock absorber from the body.

### NOTE:

Be sure to protect the drive shaft boot with cloth or the like so that it may not be damaged.

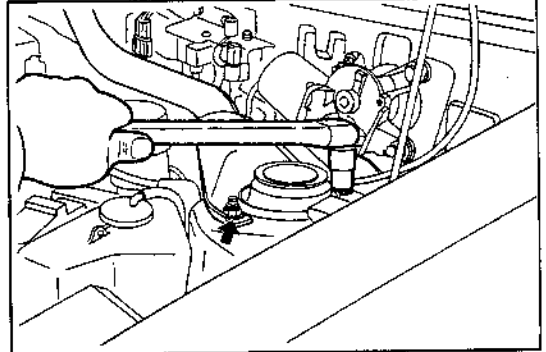


Fig. 5-33

WR-05035

## DISASSEMBLY

1. Compress the coil spring, using the following SST.  
SST: 09727-87701-000

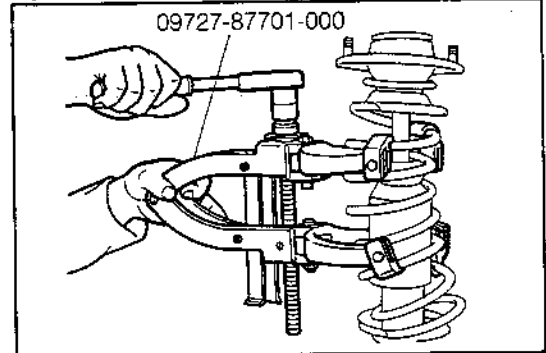


Fig. 5-34

WR-05036

## 2. Coil spring disassembly

- (1) Clamp the front suspension support in a vice.
- (2) Remove the bearing dust cover and loosen the nut.

### NOTE:

Never remove the nut by applying impacts on it, using an impact wrench or the like.

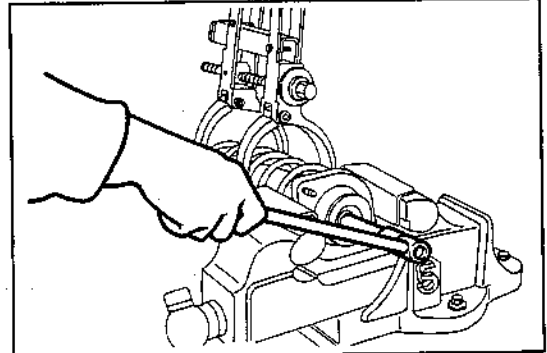


Fig. 5-35

WR-05037

## FRONT AXLE & SUSPENSION

- (3) Remove the following parts; the front suspension support, bearing, front spring upper seat, coil spring and spring bumper.

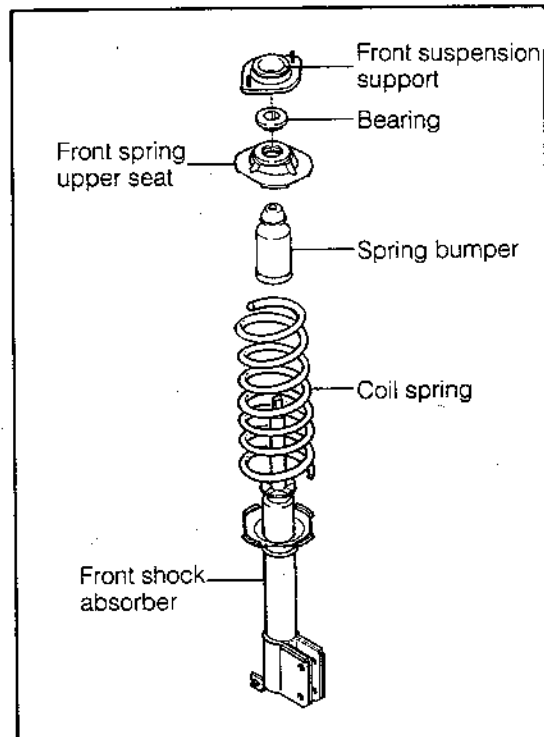


Fig. 5-36

WR-05038

## INSPECTION

1. Inspect the following parts.

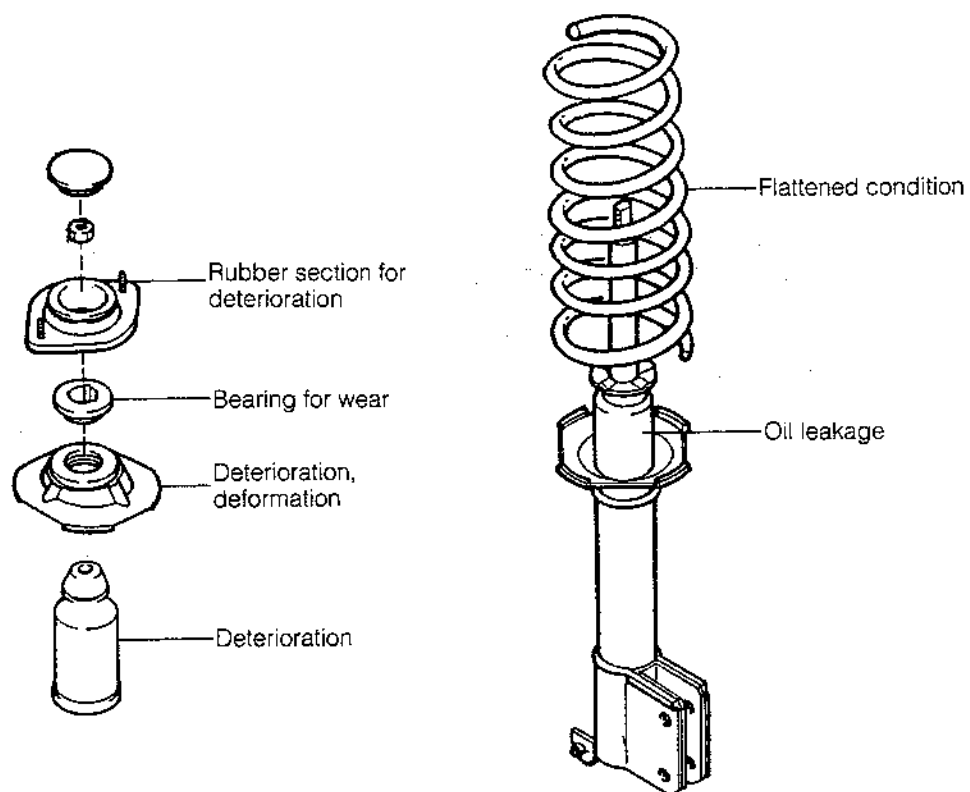


Fig. 5-37

WR-05039

## 2. Shock absorber operation inspection

- (1) Push or pull the piston rod of the shock absorber at a constant speed. Ensure that the force required to move the rod is uniform over the entire stroke. However, when the piston rod is pulled strongly, the pulling force may become slightly greater over the stroke 30 mm (1.2 inches) toward the end of the pulling stroke. It should be noted that this phenomenon is not abnormal.
- (2) Move the piston rod quickly in a up-and-down direction with a stroke of 5 - 10 mm (0.2 - 0.4 inch). Ensure that the force required to move the rod will not change.
- (3) If any abnormal feeling or noise is encountered during the inspection above, replace the shock absorber.

### NOTE:

- Perform this inspection after the piston rod has been moved in a up-and-down direction three or four times.
- When the gas filling type shock absorber is replaced, previous to the disposal, be sure to release the gas from the shock absorber.

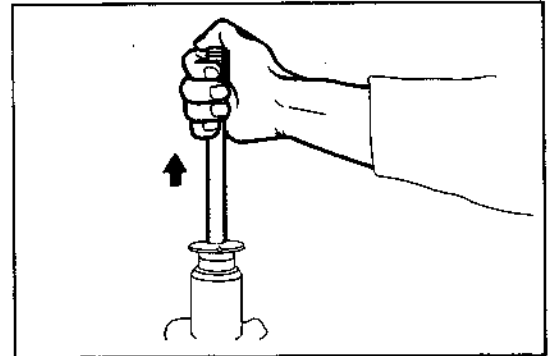


Fig. 5-38

WR-05040

## ASSEMBLY

### 1. Assembly of coil spring

- (1) Insert the spring bumper at a point below the cut-out section of the piston rod.
- (2) Compress the coil spring, using the following SST. Install it to the shock absorber.

SST: 09727-87701-000

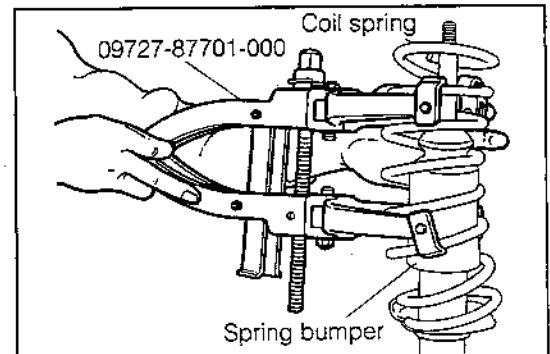


Fig. 5-39

WR-05041

- (3) Install the front spring upper seat and bearing.

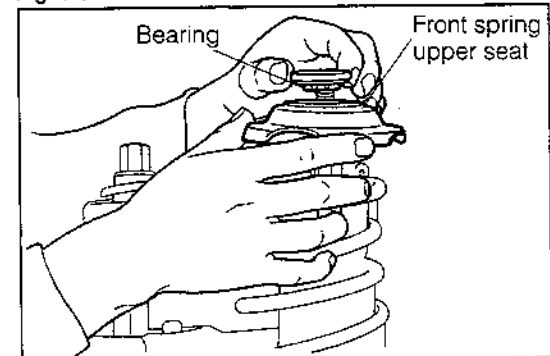


Fig. 5-40

WR-05042

- (4) Install the front suspension support.

### NOTE:

Be sure to align the cut-out section of the front suspension support with that of the piston rod during the assembly.

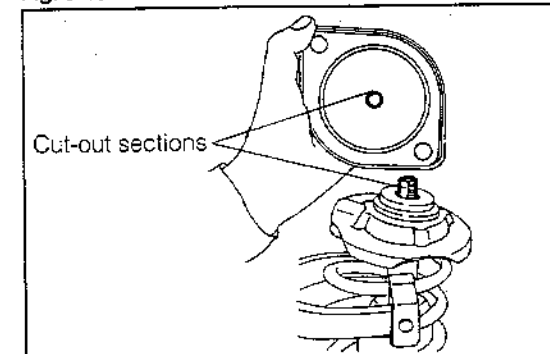


Fig. 5-41

WR-05043

## FRONT AXLE & SUSPENSION

- (5) Clamp the front suspension support in a vice. Tighten the suspension support, using a new nut.  
Tightening Torque: 3.5 - 5.5 kg-m (25 - 40 ft-lb)
- (6) Install the bearing dust cover.
- (7) Align the coil spring end with the recessed sections of the upper and lower seats. Proceed to remove the SST.

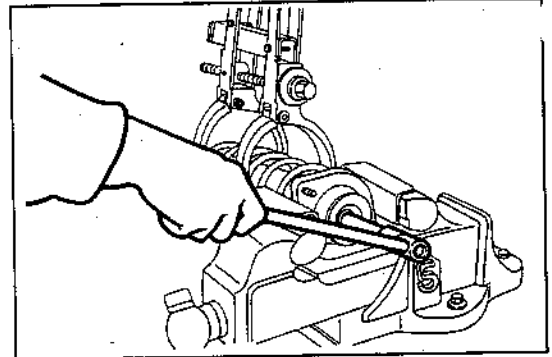


Fig. 5-42

WR-05044

### INSTALLATION

1. Installation of shock absorber upper section
  - (1) Install the suspension support on the fender apron.  
(Use a new nut.)  
Tightening Torque: 2.0 - 3.0 kg-m (14.5 - 22 ft-lb)

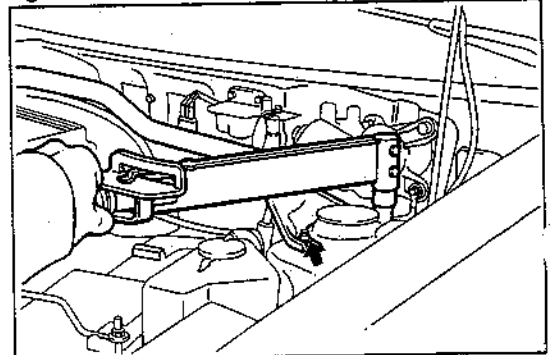


Fig. 5-43

WR-05045

2. Installation of steering knuckle section
  - (1) Mount the steering knuckle on the shock absorber lower bracket.
  - (2) Install the bolt and nut in position and tighten them.  
Tightening Torque: 9.0 - 13.0 kg-m (65 - 94 ft-lb)

#### NOTE:

With the knuckle pushed against the lower side, tighten the bolt and nut.

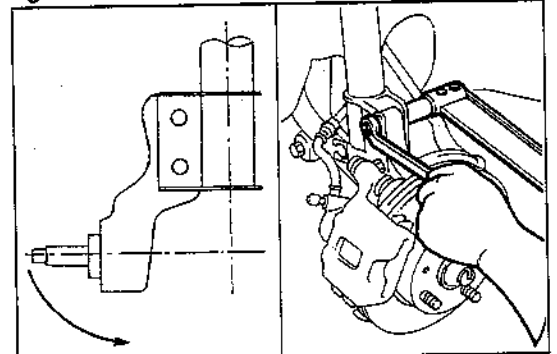


Fig. 5-44

WR-05046

#### NOTE:

In the case of the removal/installation of the left shock absorber, install the attaching bolt (upper side) of the disc brake caliper after the steering knuckle section has been installed.

Tightening Torque: 3.2 - 4.2 kg-m (23 - 30 ft-lb)

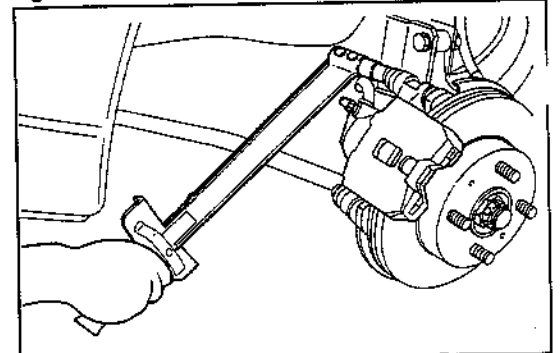


Fig. 5-45

WR-05047

3. Install the flexible hose, as follows:
  - (1) Install the flexible hose to the shock absorber bracket.
  - (2) Install the flexible hose clip.
4. Install the wheels. Jack down the vehicle.
5. Front wheel alignment inspection (See page 5-38.)

WR-05048

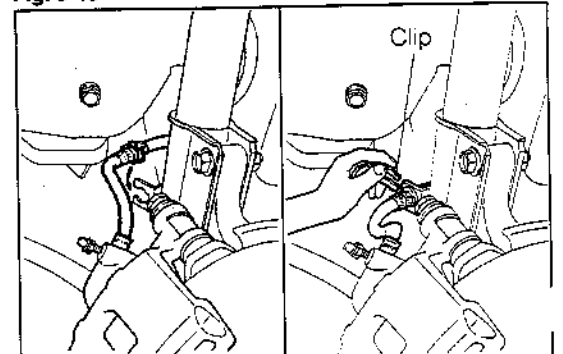


Fig. 5-46

WR-05048

## FRONT STABILIZER BAR COMPONENTS

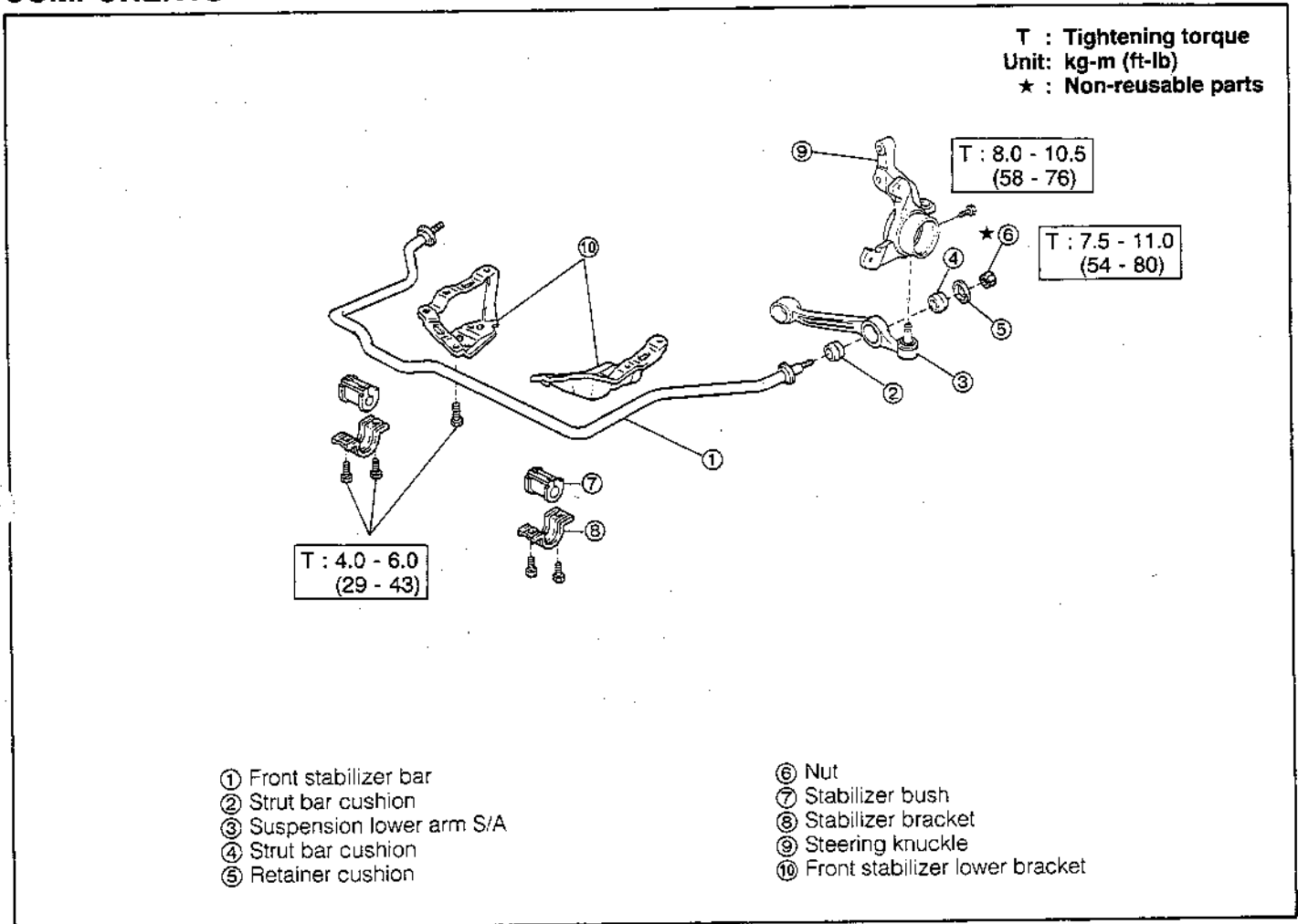


Fig. 5-47

WR-05049

## REMOVAL

1. Jack up the vehicle at the front side. Support the body with safety stands.
2. Remove the engine under-cover. (Vehicles mounted with Type CL-11 and CL-61 engines only)
3. Remove the stabilizer bar, as follows:
  - (1) Remove the stabilizer bar end nuts and retainer.

- (2) Remove the attaching bolts of the stabilizer bar brackets.

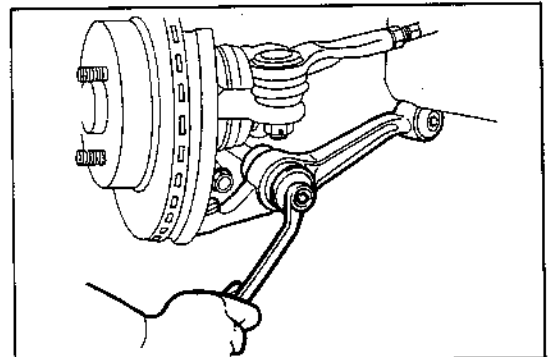


Fig. 5-48

WR-05050

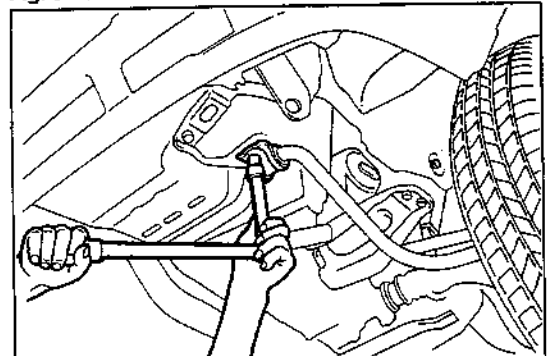


Fig. 5-49

WR-05051

## FRONT AXLE & SUSPENSION

(3) Remove the stabilizer bar from the vehicle.

### NOTE:

If any difficulty in removing the stabilizer bar is encountered, remove the stabilizer bar by using a jack on the tire.

(4) Remove the bush from the stabilizer bar.

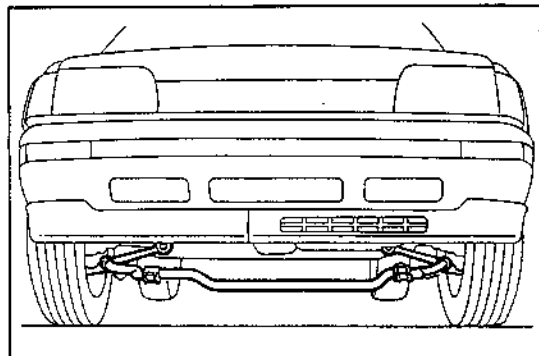


Fig. 5-50

WR-05052

## INSPECTION

Inspect the following parts.

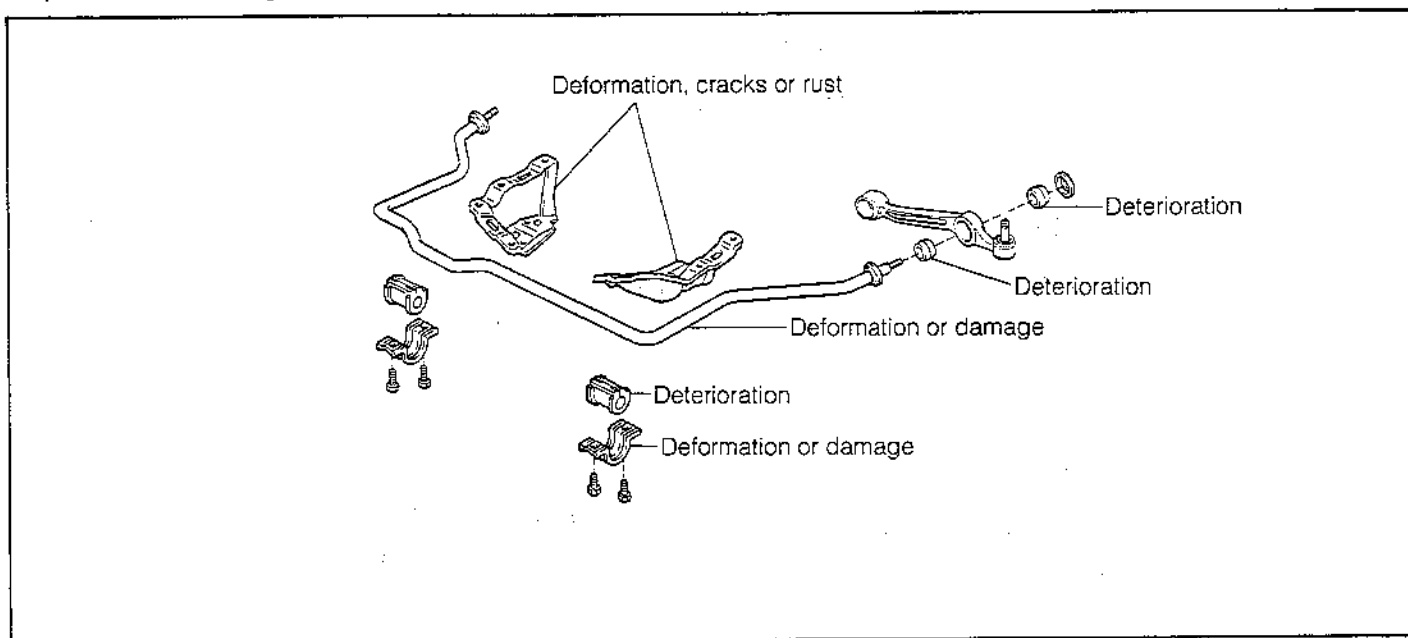


Fig. 5-51

WR-05053

## INSTALLATION

### 1. Stabilizer bar installation

(1) Install the cushions to the stabilizer bar.

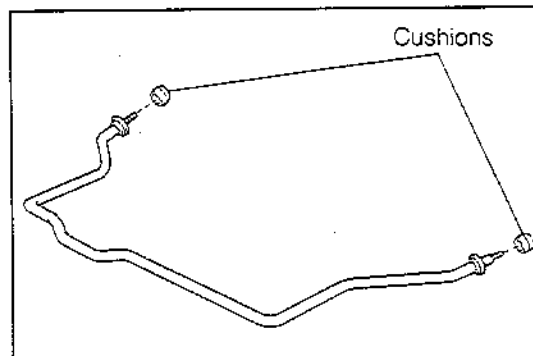


Fig. 5-52

WR-05054

(2) Install the stabilizer bar to the lower arm.

### NOTE:

If the stabilizer bar end is not aligned with the lower arm attaching hole, use a jack on the tire so as to align the holes with each other.

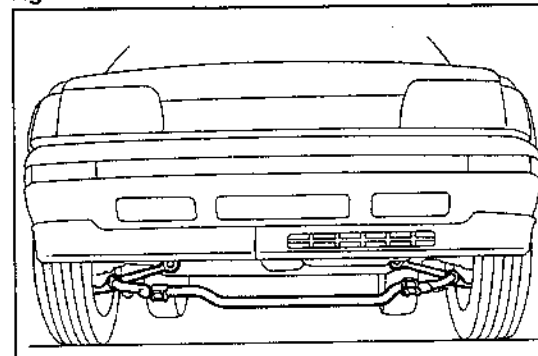


Fig. 5-53

WR-05055



- (3) Install the cushion and stabilizer bar brackets.  
Tightening Torque: 4.0 - 6.0 kg-m (29 - 43 ft-lb)

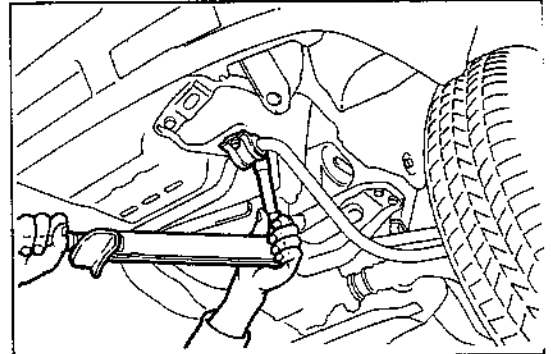


Fig. 5-54

WR-05056

- (4) Install the cushions and retainers, while paying attention to the direction of the retainer. Tighten them temporarily, using a new nuts.  
(5) Rock the front section of the vehicle in an up-and-down direction two or three times so as to settle the suspension.  
(6) With the vehicle in an unloaded state (the lower arm is horizontal), tighten the nuts.

Tightening Torque: 7.5 - 11 kg-m (54 - 80 ft-lb)

**NOTE:**

If the nut is tightened at the rebound side, the cushion twisting angle will become large, resulting in reduced riding comfort.

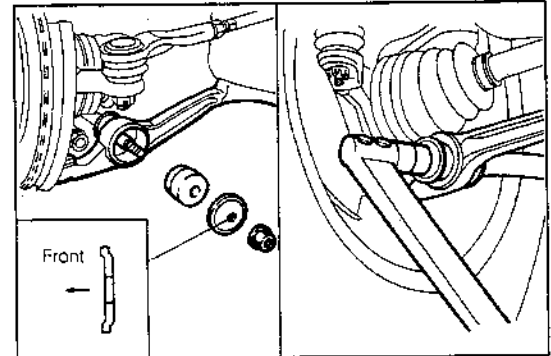


Fig. 5-55

WR-05057

2. Install the engine under-cover. (Vehicles mounted with Type CL-11 and CL-61 engines only)  
3. Front wheel alignment inspection (See page 5-38.)

## LOWER ARM COMPONENTS

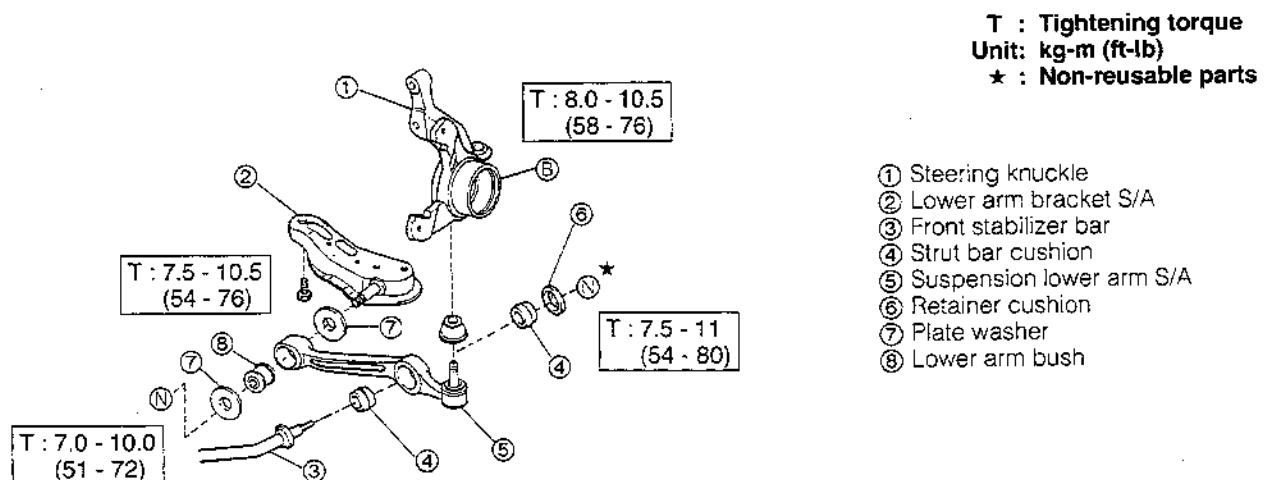


Fig. 5-56

WR-05058

## FRONT AXLE & SUSPENSION

### REMOVAL

1. Jack up the vehicle at the front side. Support the body with safety stands.
2. Remove the front wheel.
3. Lower arm removal.
  - (1) Remove the stabilizer bar end nut.
  - (2) Remove the attaching bolt and nut of the ball joint.

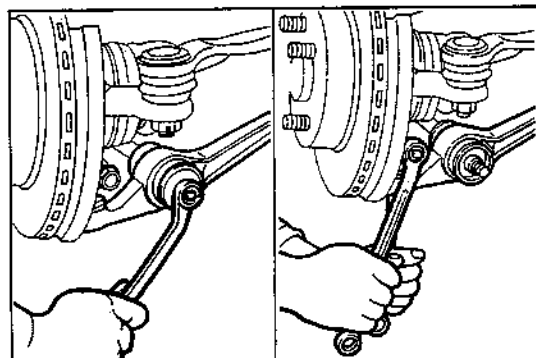


Fig. 5-57

WR-05059

- (3) Remove the attaching nut of the lower arm at the body side.

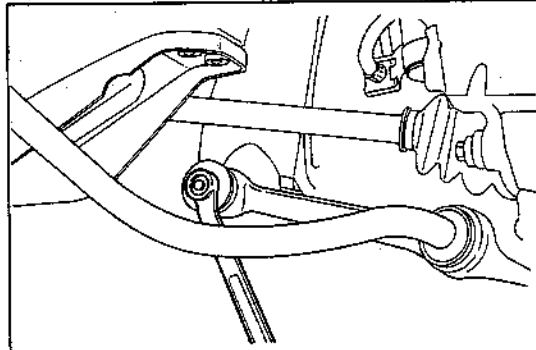


Fig. 5-58

WR-05060

- (4) Remove the attaching bolts of lower suspension brace.  
(TURBO and GTti grades only)
  - (5) Remove the lower arm bracket.
  - (6) Remove the lower arm.

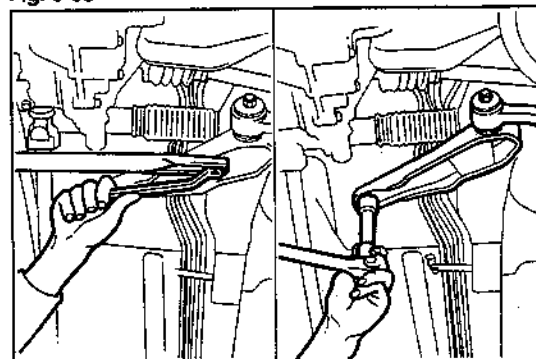


Fig. 5-59

WR-05061

## INSPECTION

Inspect the following parts.

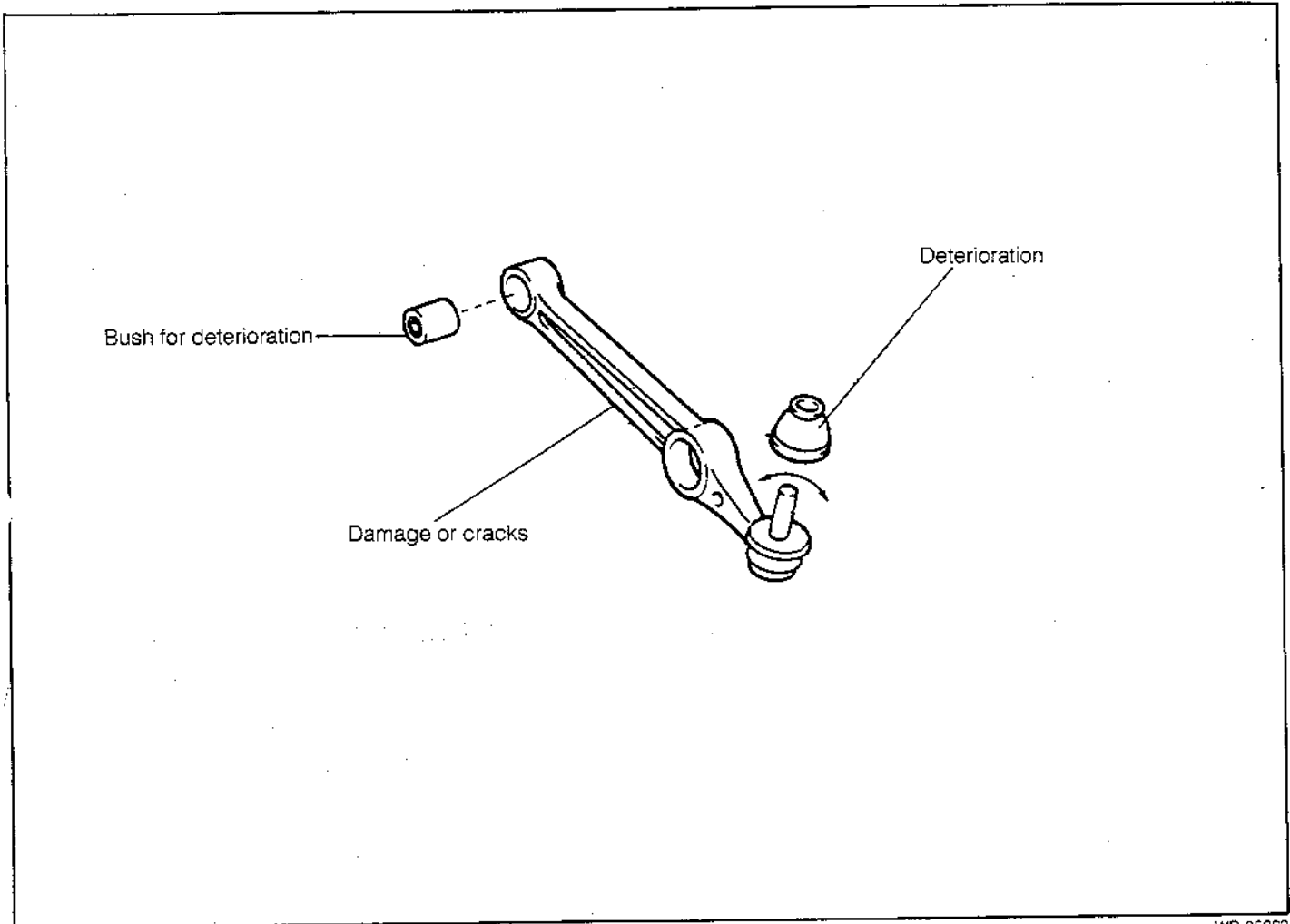


Fig. 5-60

WR-05062

1. Lower ball joint dust cover replacement
  - (1) Remove the dust cover, using a common screwdriver.

**NOTE:**  
Be very careful not to damage the socket section.

- (2) When assembling the lower ball joint dust cover, apply grease to the following sections.

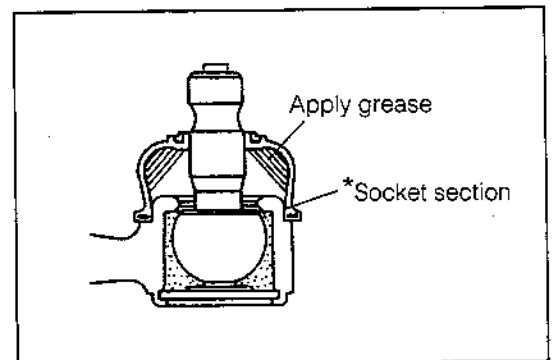


Fig. 5-61

WR-05063

- (3) Press the dust cover into position, using a press in combination with the following SST.

SST: 09618-87301-000

**NOTE:**  
Make sure that no grease or oil gets to the socket section (indicated by a "\*" mark) during the press operation.

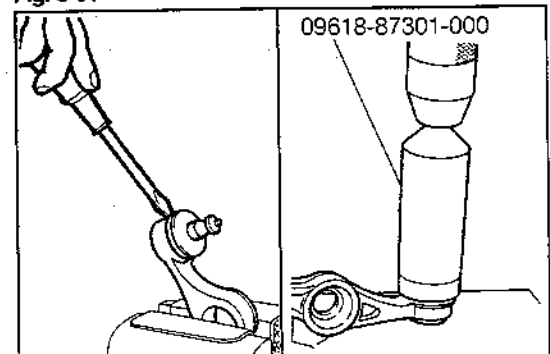


Fig. 5-62

WR-05064

## FRONT AXLE & SUSPENSION

### 2. Lower arm bush replacement

- (1) Remove the bush, using the following SSTs.

SST: 09301-87701

09636-20010

- (2) Press the bush into position, using a press in conjunction with the following SSTs.

SST: 09301-87701

09636-20010

## INSTALLATION

### 1. Lower arm installation

- (1) Temporarily tighten the lower arm ball joint section and stabilizer bar end nut section.

- (2) Tighten the bolt and nut of the ball joint section.

Tightening Torque: 8.0 - 10.5 kg-m (58 - 76 ft-lb)

- (3) Install the lower arm bracket.

Tightening Torque: 7.5 - 10.5 kg-m (54 - 76 ft-lb)

- (4) Tighten the lower arm attaching nut temporarily.

- (5) Installation of lower suspension brace.  
(TURBO and GTti grades only)

Tightening Torque: 4.0 - 5.5 kg-m (29 - 40 ft-lb)

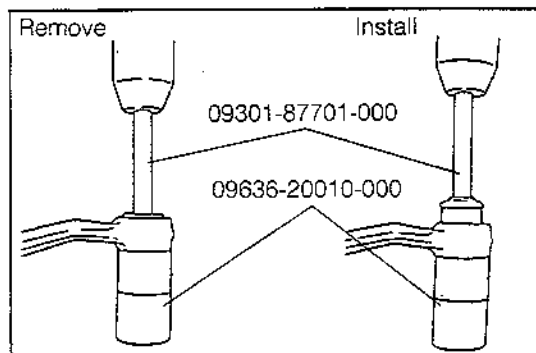


Fig. 5-63

WR-05065

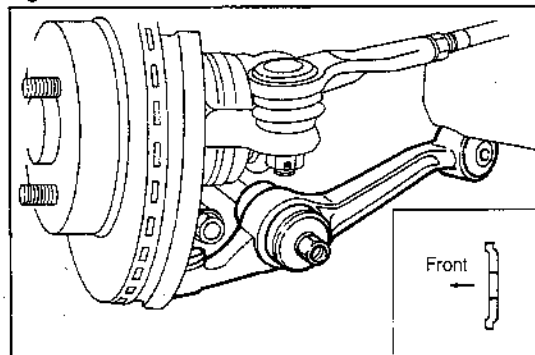


Fig. 5-64

WR-05066

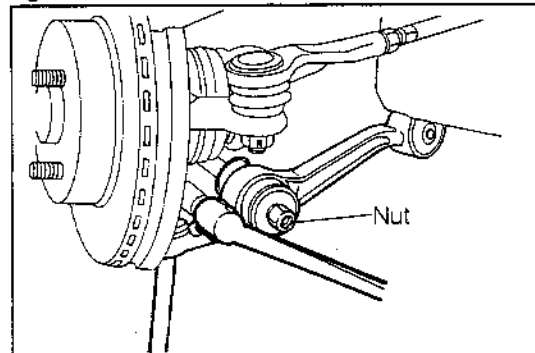


Fig. 5-65

WR-05067

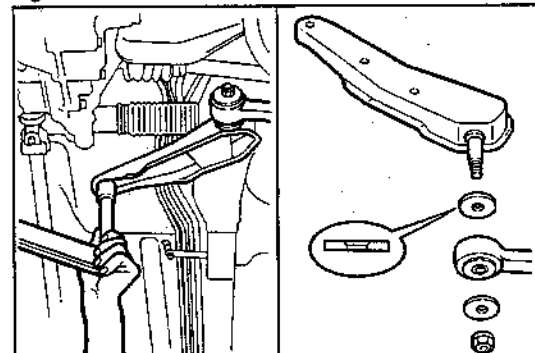


Fig. 5-66

WR-05068

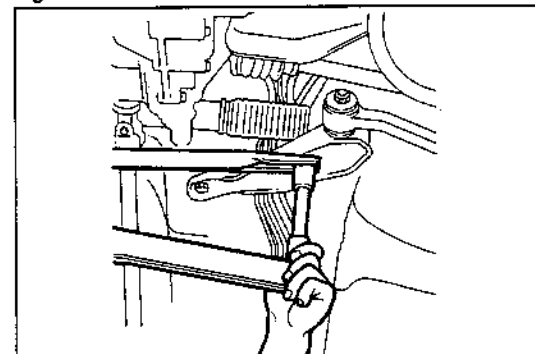


Fig. 5-67

WR-05069

- (6) Install the front wheel.
- (7) Jack down the vehicle. Rock the front section of the vehicle in an up-and-down direction two or three times so as to settle the suspension.
- (8) With the vehicle in an unloaded state (lower arm is horizontal), tighten the nut.

(Stabilizer bar)

Tightening Torque:

7.5 - 11.0 kg-m (54 - 80 ft-lb)

(Lower arm)

Tightening Torque:

7.0 - 10.0 kg-m (51 - 72 ft-lb)

- 2. Front wheel alignment inspection (See page 5-38.)

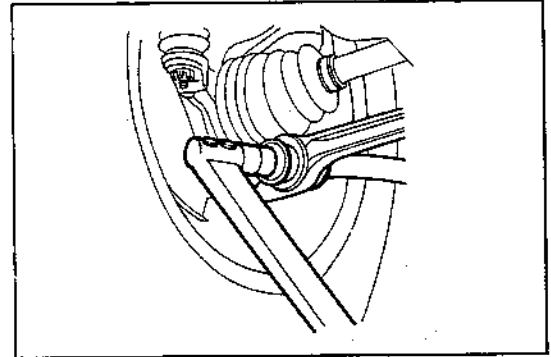


Fig. 5-68

WR-05070

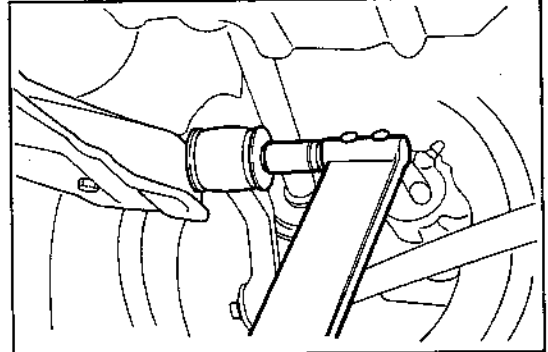


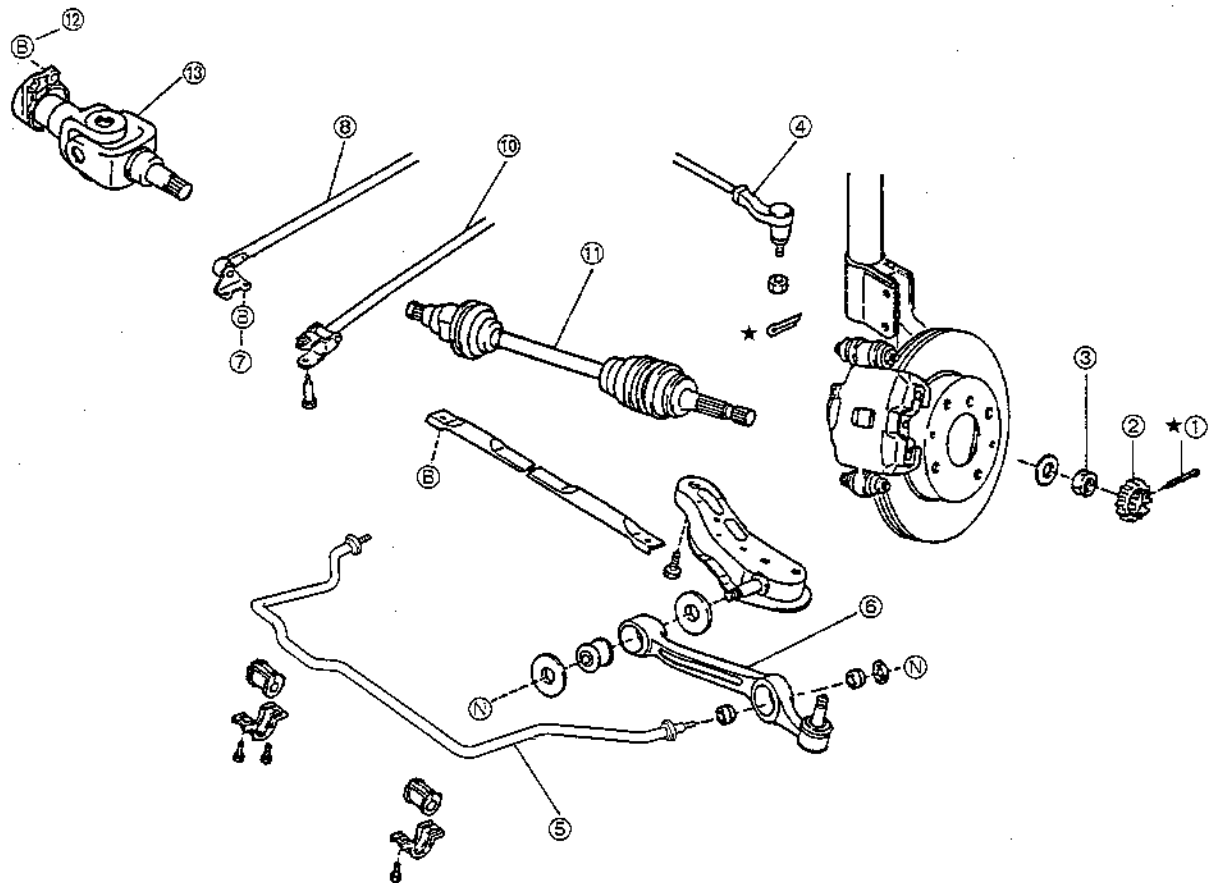
Fig. 5-69

WR-05071

## FRONT AXLE & SUSPENSION

### DRIVE SHAFT

#### DRIVE SHAFT-RELATED PARTS



★: Non-reusable parts

- |                                  |  |
|----------------------------------|--|
| ① Cotter pin                     | ⑧ Extension rod S/A                            |
| ② Front wheel adjusting lock cap | ⑨ Lower suspension brace                       |
| ③ Nut                            | (Vehicles mounted with Type CB-80 engine only) |
| ④ Tie rod Ay                     | ⑩ Shift & select shaft S/A                     |
| ⑤ Stabilizer bar                 | ⑪ Front drive shaft Ay                         |
| ⑥ Lower arm Ay                   | ⑫ Bolt   |
| ⑦ Bolt                           | ⑬ Front drive bearing shaft Ay                 |
|                                  | (Vehicles mounted with Type CB-80 engine only) |

Fig. 5-70

WR-05072

## OPERATION PRIOR TO REMOVAL

1. Jack up the vehicle.
2. Drain the transmission fluid.
3. Remove the front wheels.

## REMOVAL

1. Pull out the cotter pin. Remove the front wheel adjusting lock cap.

2. Remove the nut, using the following SST.  
SST: 09511-87202-000

3. Disconnect the tie rod, using the following SST.  
SST: 09611-87701-000

4. Remove the stabilizer bar.

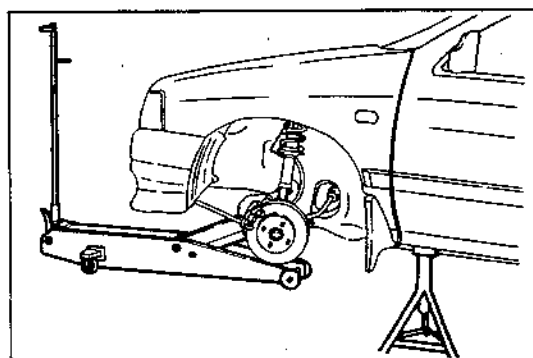


Fig. 5-71

WR-05073

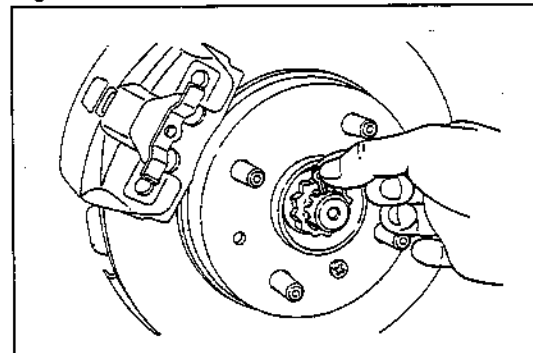


Fig. 5-72

WR-05074

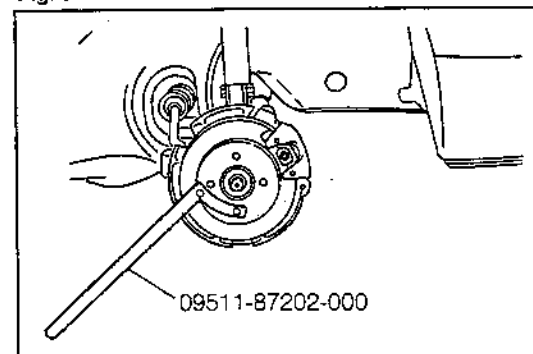


Fig. 5-73

WR-05075

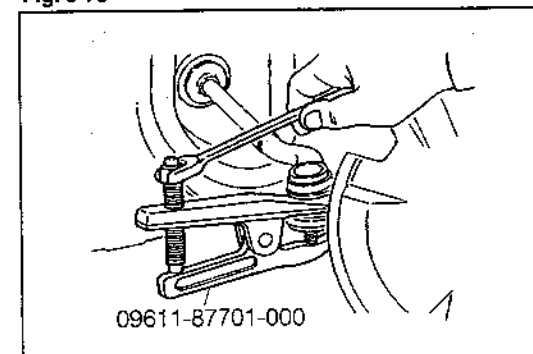


Fig. 5-74

WR-05076

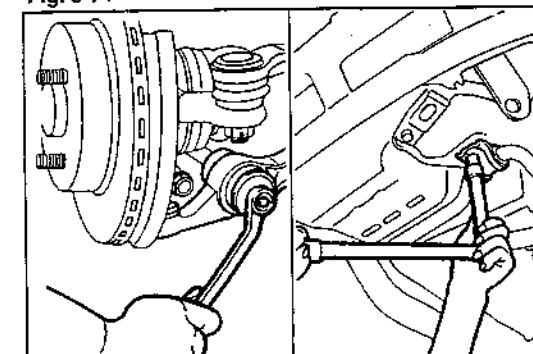


Fig. 5-75

WR-05077

## FRONT AXLE & SUSPENSION

5. Remove the lower arm. (Bracket side only)

6. Remove the bolts. Separate the extension rod subassembly and shift & select shaft subassembly from the transmission.

7. Pull out the front drive shaft, using the following SST.

SST: 09648-87201-000

**NOTE:**

1. As for the inboard side of the drive shaft, no stopper is provided at the inside. Therefore, be sure to support the inboard joint section by your hand during the removal.

2. As for the right side of vehicles mounted with Type CB-80 engine, insert a crowbar into between the protruding section of the bearing shaft and the drive shaft. Then, take out the front drive shaft, being very careful not to deform the dust cover of the drive shaft.

9. Remove the two bolts. Remove the front drive shaft bearing shaft assembly. (Vehicles mounted with Type CB-80 engine only)

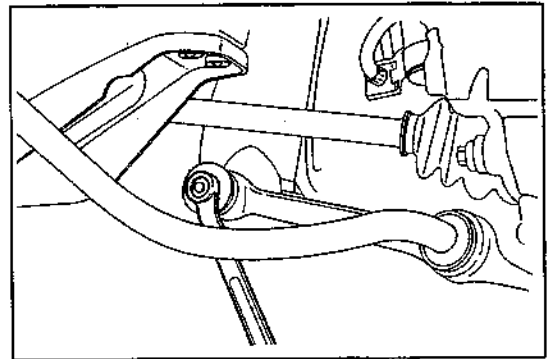


Fig. 5-76

WR-05078

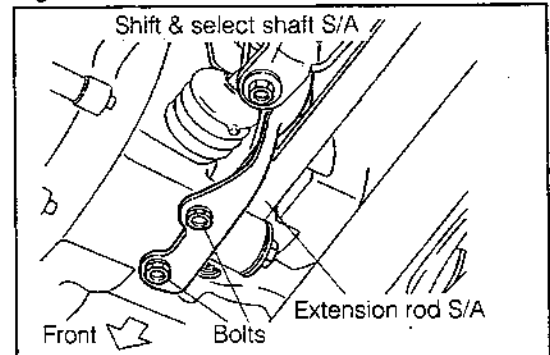


Fig. 5-77

WR-05079

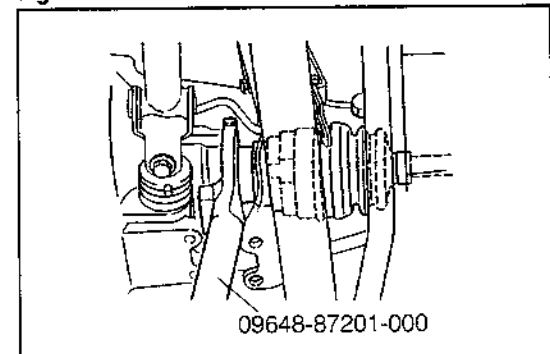


Fig. 5-78

WR-05080

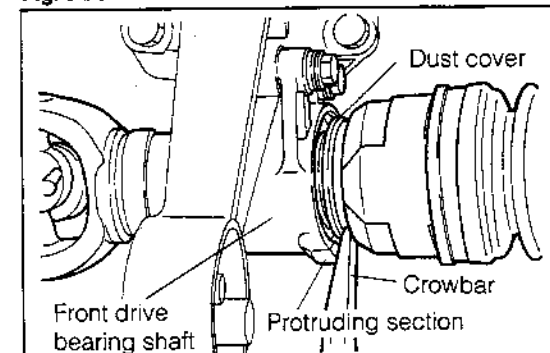


Fig. 5-79

WR-05081

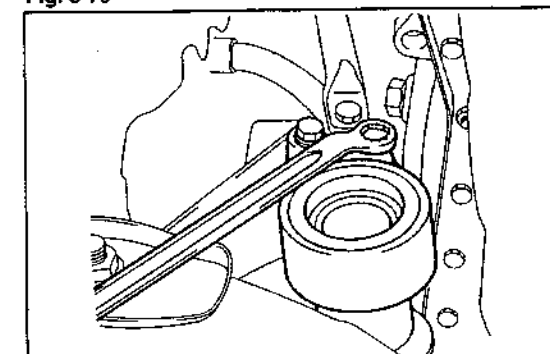


Fig. 5-80

WR-05082



### INSPECTION

inspect the following sections.

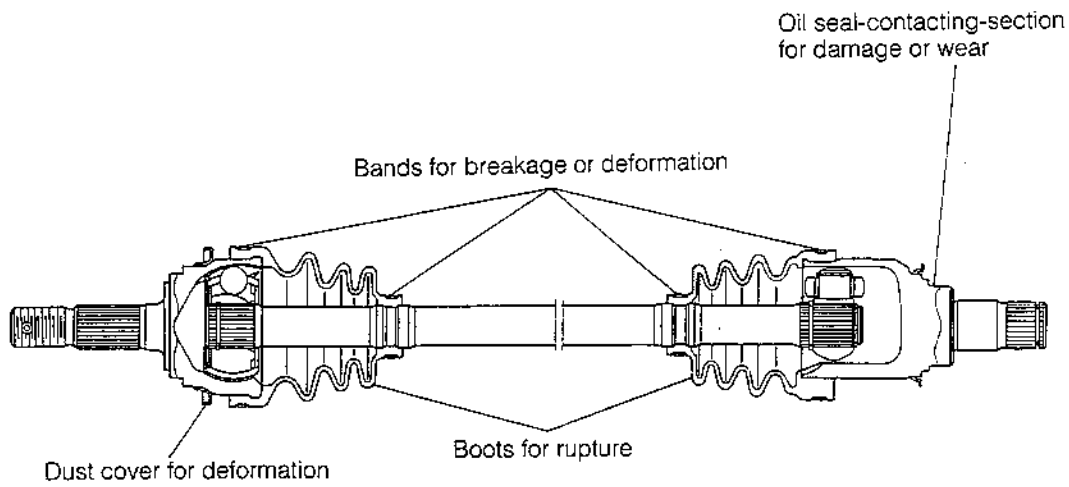


Fig. 5-81

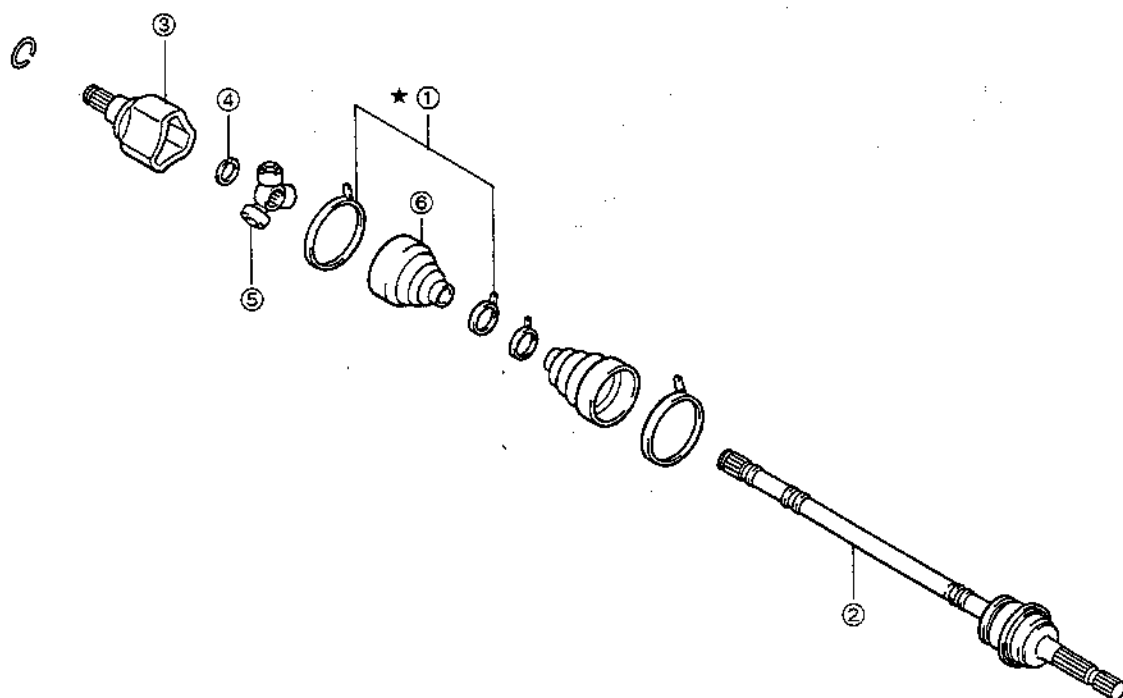
WR-05083

## FRONT AXLE & SUSPENSION

### COMPONENTS

**NOTE:**

When replacing the parts of the drive shaft, each of the boot, the inboard joint and the outboard joint (with the front axle shaft) should be replaced only as a complete unit.



★: Non-reusable parts

- ① Boot band
- ② Outboard joint S/A
- ③ Front axle inboard joint S/A
- ④ Shaft snap ring
- ⑤ Inboard joint tripod Ay
- ⑥ Front axle joint boot

Fig. 5-82

WR-05084

## DISASSEMBLY

1. Pry up the boot band clip with a common screwdriver. Detach the boot.

### NOTE:

Be very careful not to damage the boot.

2. Put a mating mark on the inboard joint and shaft, as shown in the figure. Remove the front axle inboard joint subassembly.

### NOTE:

Put mating marks by painting. (Never use a punch to put mating marks.)

3. Detach the shaft snap ring, using a snap ring expander.

4. Remove the inboard joint tripod assembly, as follows:
  - (1) Put a mating mark at the tip end of the tripod and shaft, using a punch.

- (2) Pull out the tripod from the shaft, using a brass bar.

### NOTE:

Be sure to apply the brass bar to the tripod boss section, not to the roller section.

5. Remove the front axle joint boot.

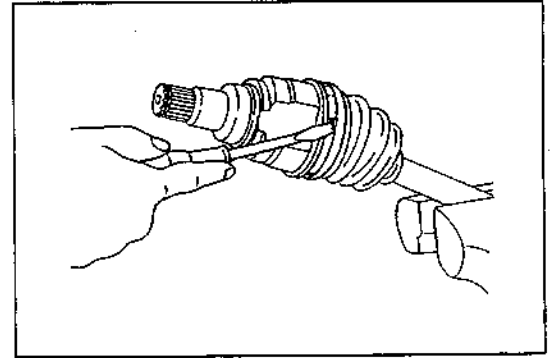


Fig. 5-83

WR-05085

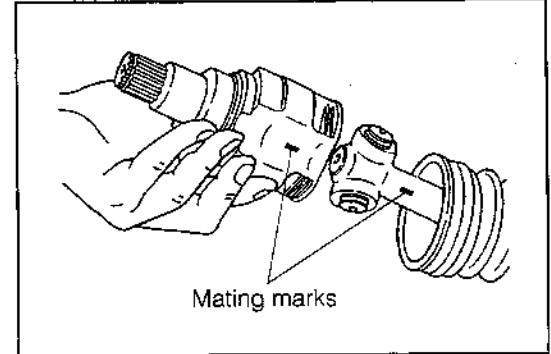


Fig. 5-84

WR-05086

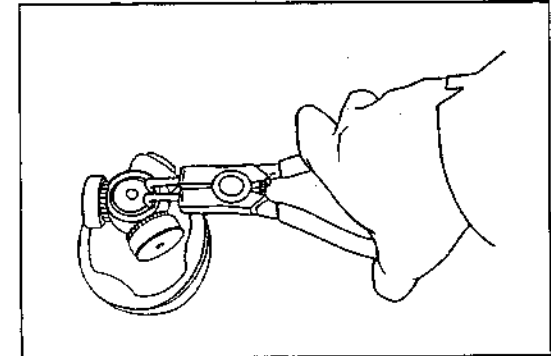


Fig. 5-85

WR-05087

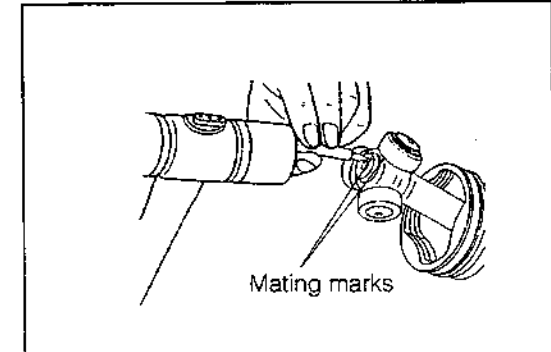


Fig. 5-86

WR-05088

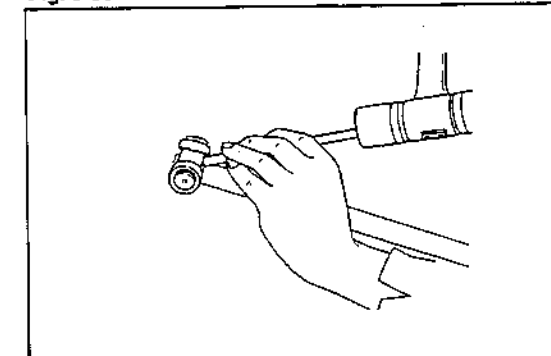


Fig. 5-87

WR-05089

## FRONT AXLE & SUSPENSION

### INSPECTION

Inspect the following sections.

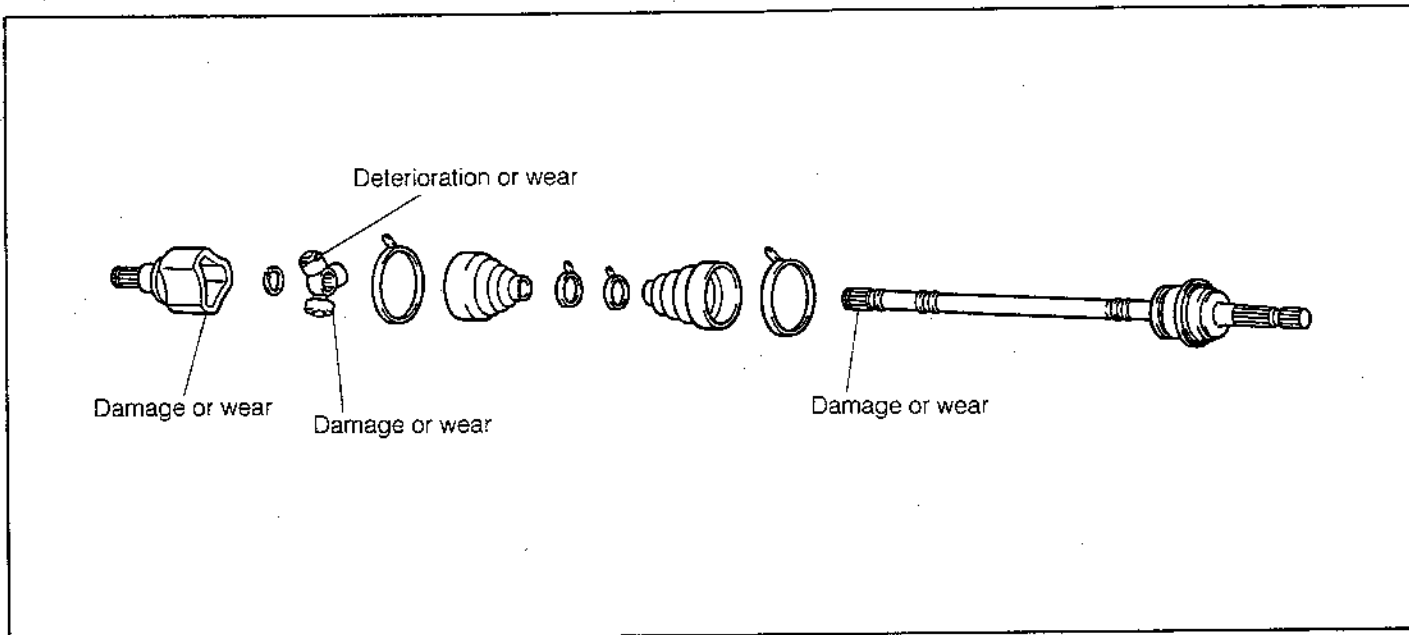


Fig. 5-88

WR-05090

### ASSEMBLY

1. Assemble the front axle joint boot in position.
2. Assemble the inboard joint tripod assembly, as follows:
  - (1) Face the non-splined side of the tripod toward the outboard joint.
  - (2) Align the mating marks which were put during the disassembly.

- (3) Drive the tripod assembly into the shaft lightly, using a brass bar.

#### NOTE:

Be sure to apply the brass bar to the boss section of the tripod, not to the roller section.

3. Attach the shaft snap ring in position, using a snap ring expander.

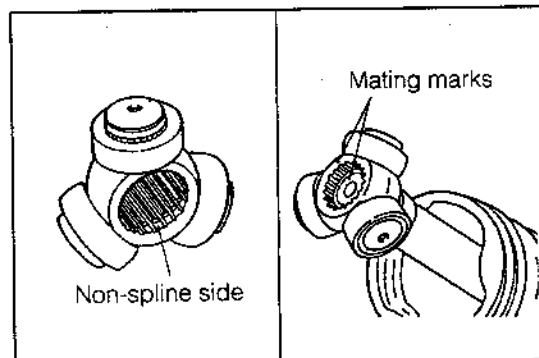


Fig. 5-89

WR-05091

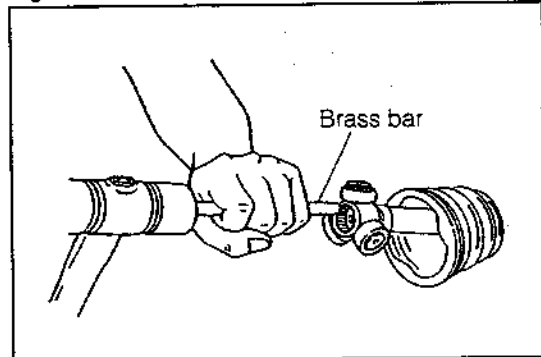


Fig. 5-90

WR-05092

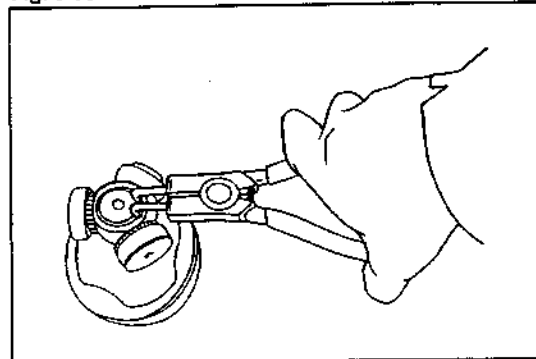


Fig. 5-91

WR-05093

4. Assemble the front axle inboard joint, as follows:

- (1) Pack the inboard joint with joint grease.

**NOTE:**

Use the grease which has been provided in the boot kit of the replacement parts.

- (2) Install the inboard joint, aligning the mating marks which were put during the disassembly.

5. Prior to assembling the boot of the front axle outboard joint, pack the outboard joint with joint grease.

**NOTE:**

1. Use the grease which has been provided in the boot kit of the replacement parts.
2. On vehicles other than those mounted with Type CB-80 engine, it should be noted that the grease to be used for the inboard joint differs from that to be used for the outboard joint.

Grease for inboard joint ... Yellow

Grease for outboard joint ... Black

6. Assemble a new boot band, as shown in the figure.

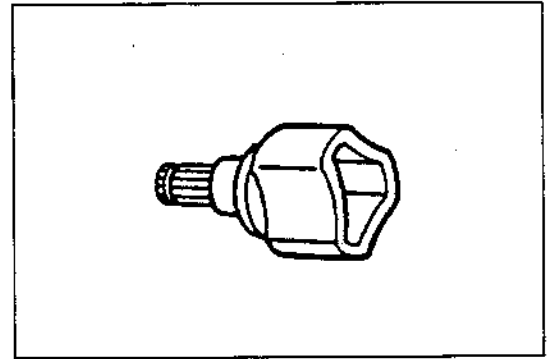


Fig. 5-92

WR-05094

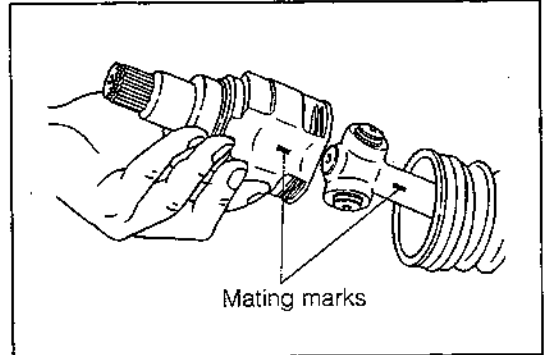


Fig. 5-93

WR-05095

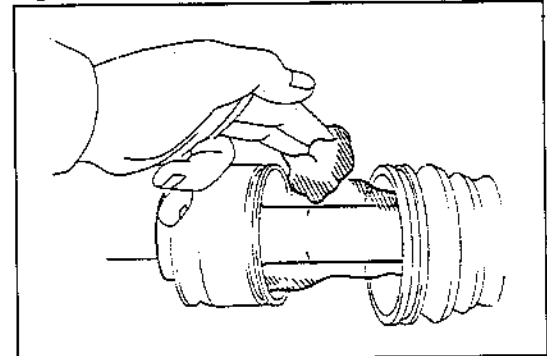


Fig. 5-94

WR-05096

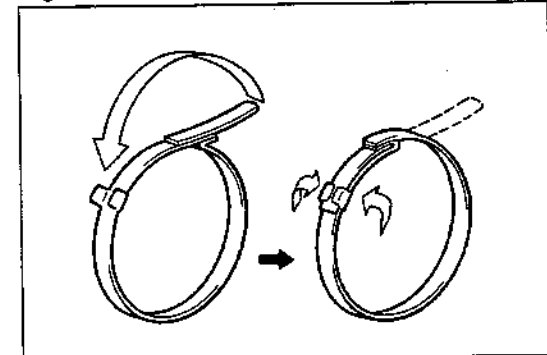


Fig. 5-95

WR-05097

## INSTALLATION

### Grease applying points

1. Apply chassis grease to the whole serrated section of the front axle hub installation section.

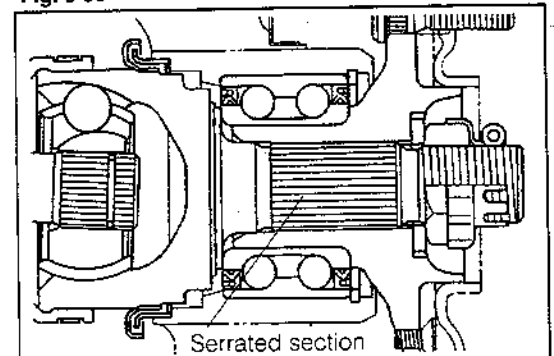


Fig. 5-96

WR-05098

## FRONT AXLE & SUSPENSION

2. Install the front drive bearing shaft in position.  
(Vehicles mounted with Type CB-80 engine only)  
Tightening Torque: 3.0 - 4.5 kg-m (22 - 33 ft-lb)

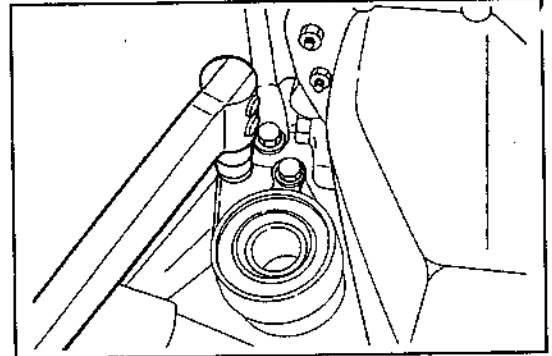


Fig. 5-97

WR-05099

3. Install the front drive bearing shaft in position.  
**NOTE:**  
Be very careful not to damage the oil seal during the installation.

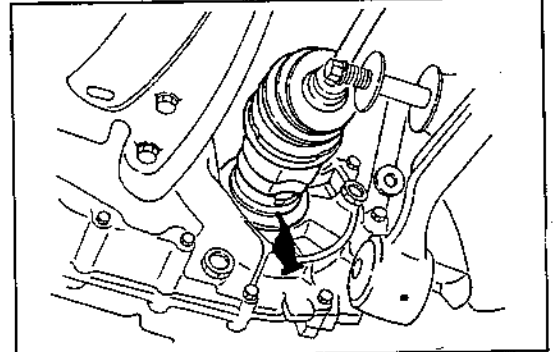


Fig. 5-98

WR-05100

4. Install the shift & select shaft subassembly and extension rod subassembly in position.  
Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)

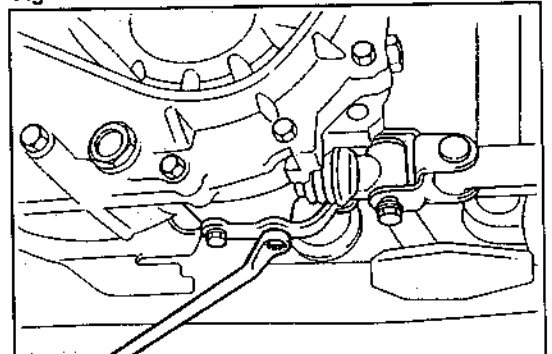


Fig. 5-99

WR-05101

5. Install the bracket side of the lower arm assembly in position.  
Tightening Torque: 7.0 - 10.0 kg-m (51 - 72 ft-lb)

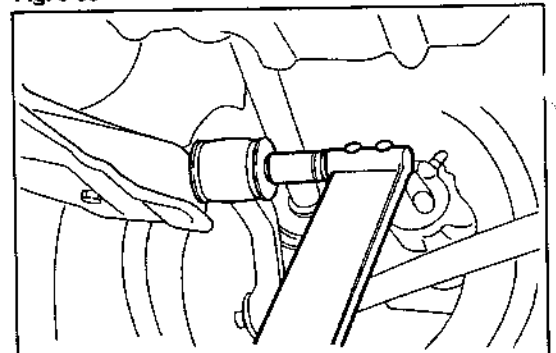


Fig. 5-100

WR-05102

6. Install the stabilizer bar to the lower arm assembly.  
Tightening Torque: 7.5 - 11.0 kg-m (54 - 80 ft-lb)
7. Install the stabilizer lower bracket to the body.  
Tightening Torque: 4.0 - 6.0 kg-m (29 - 43 ft-lb)

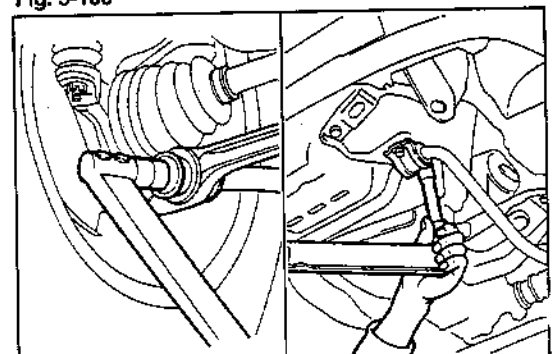


Fig. 5-101

WR-05103

## FRONT AXLE & SUSPENSION

9. Install the tierod assembly to the steering knuckle.  
Tightening Torque: 3.0 - 4.5 kg-m (22 - 33 ft-lb)

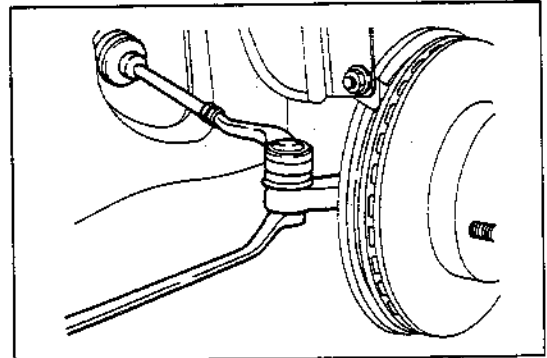


Fig. 5-102

WR-05104

9. Install the drive shaft to the front axle hub. Secure the axle hub, using the following SST.  
SST: 09511-87202-000

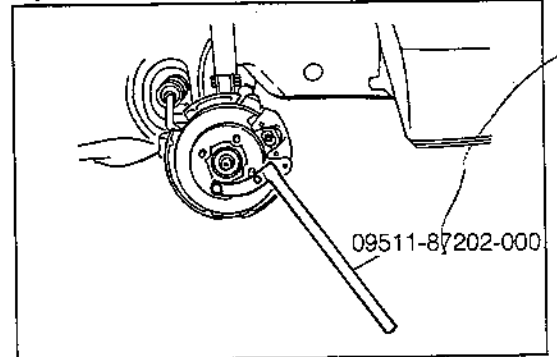


Fig. 5-103

WR-05105

10. Tighten the nut.  
Tightening Torque:  
18.0 - 23.0 kg-m (130 - 166 ft-lb)

**NOTE:**

1. When this nut is tightened to the specified torque, the specified preload of the front wheel is attained.
2. Assemble the spring washer in such a way that its recessed side comes to the hub side.

11. Install the front wheel adjusting lock cap to the nut.

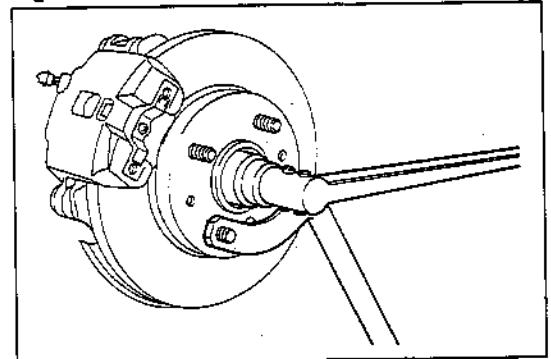


Fig. 5-104

WR-05106

12. Install the cotter pin, as shown in the right figure.

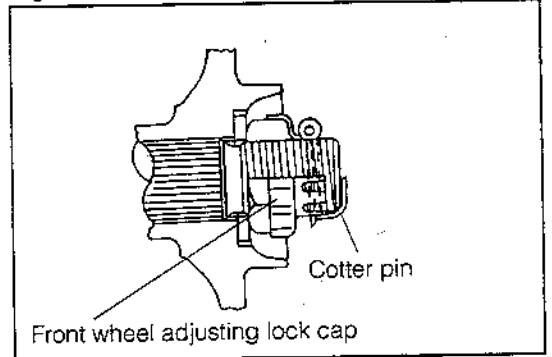


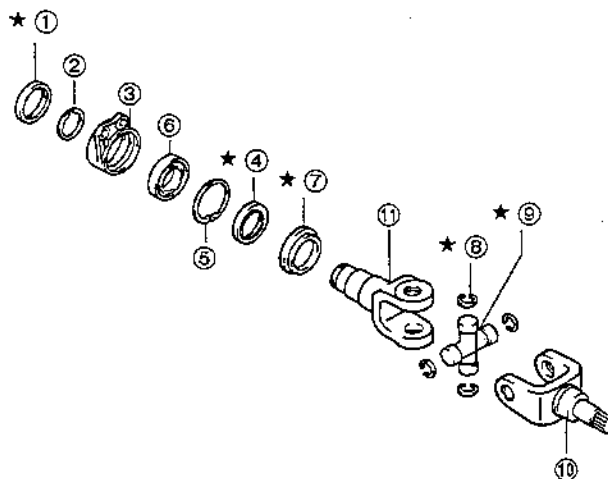
Fig. 5-105

WR-05107

## FRONT DRIVE BEARING SHAFT

(Vehicles Mounted with Type CB-80 Engine Only)

### COMPONENTS



★: Non-reusable parts

- ① Oil seal
- ② Shaft snap ring
- ③ Drive shaft bearing bracket
- ④ Oil seal
- ⑤ Hole snap ring
- ⑥ Radial ball bearing

- ⑦ Dust deflector
- ⑧ Hole snap ring
- ⑨ Universal joint spider S/A
- ⑩ Universal joint No.2 yoke
- ⑪ Universal joint yoke S/A

Fig. 5-106

WR-05'08

### INSPECTION

Inspect the following parts.

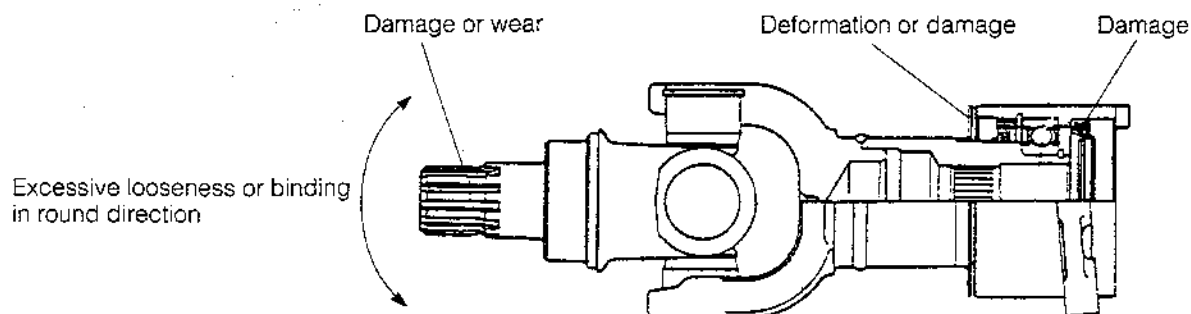


Fig. 5-107

WR-05109



## DISASSEMBLY

1. Remove the oil seal, using a common screwdriver.
2. Detach the shaft snap ring, using a snap ring expander.
3. Remove the drive shaft bearing bracket, using the following SSTs.  
 SST: 09334-87201-000  
 SST: 09608-87501-000
4. Remove the another oil seal, using a common screwdriver.
5. Detach the hole snap ring, using a snap ring expander.
6. Remove the radial ball bearing, using the following SSTs.  
 SST: 09547-87301-000  
 SST: 09608-87501-000
7. Remove the dust deflector, using a brass bar and a hammer. Be careful not to damage the dust deflector during the removal.

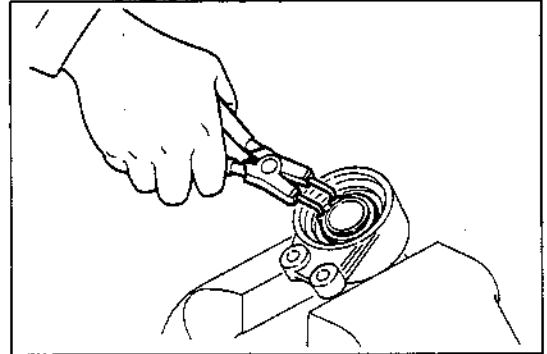


Fig. 5-108

WR-05110

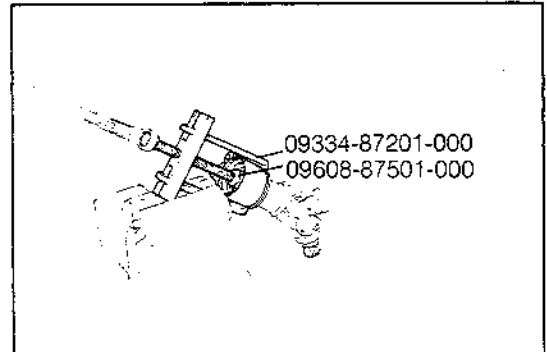


Fig. 5-109

WR-05111

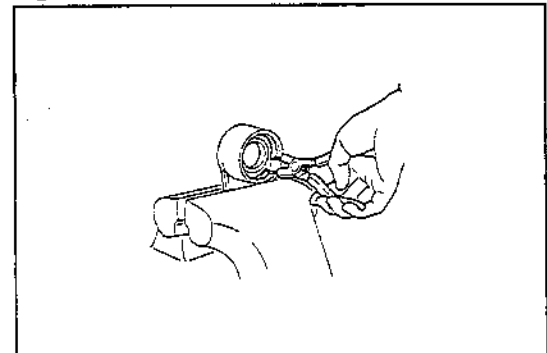


Fig. 5-110

WR-05112

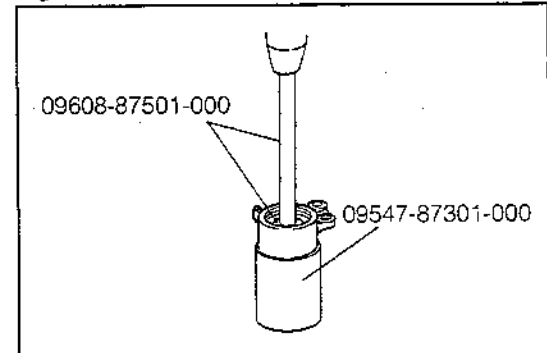


Fig. 5-111

WR-05113

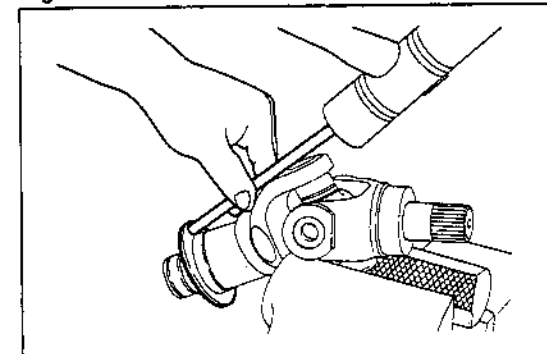


Fig. 5-112

WR-05114

## FRONT AXLE & SUSPENSION

8. Put a mating mark on the yoke and universal yoke.
9. Detach the hole snap ring, using a snap ring expander.

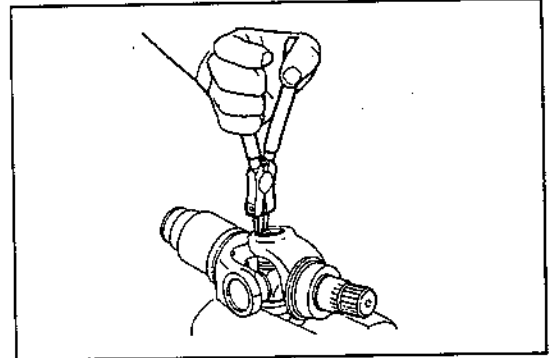


Fig. 5-113

WR-05115

10. Remove the universal joint spider subassembly, following the procedure given below.

- (1) Push off the spider bearing cap, using a vice in combination with a 19 mm socket and the following SST.

SST: 09628-10020-000

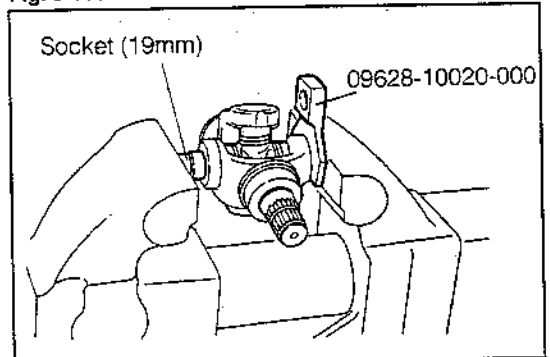


Fig. 5-114

WR-05116

- (2) Clamp the pushed-out cap in a vice. Remove the bearing cap from the yoke No.2 by tapping the yoke No.2 lightly.
- (3) Tap the spider from the side of the cap removed, thus pushing out the another cap.

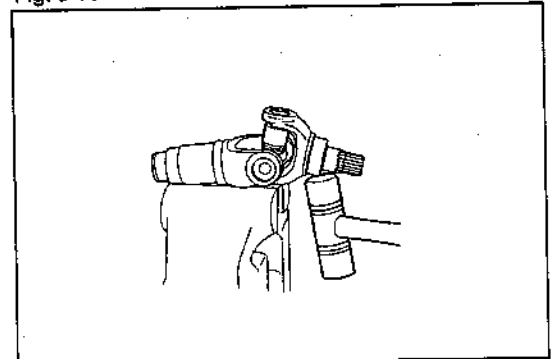


Fig. 5-115

WR-05117

- (4) Clamp the cap in a vice. Remove the cap by tapping the yoke No.2 lightly. Separate the yoke No.2 from the universal joint yoke subassembly.
- (5) Remove the remaining caps, following the same procedure.

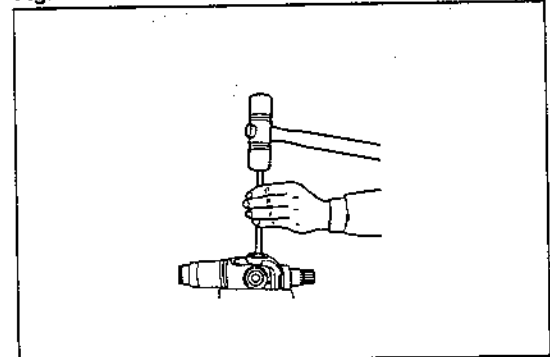


Fig. 5-116

WR-05118

11. Disconnect the universal joint No.2 yoke from the universal joint yoke subassembly.

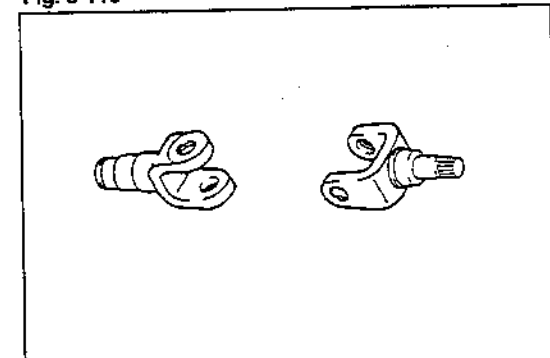


Fig. 5-117

WR-05119

## INSPECTION

Inspect the following sections.

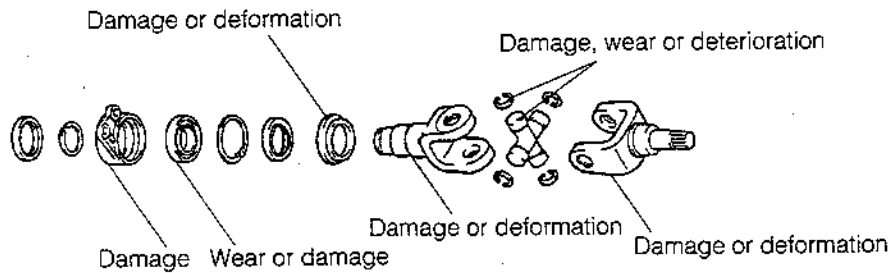


Fig. 5-118

WR-05120

## ASSEMBLY

### Grease applying points

Apply MP grease to the points shown in the right figure.

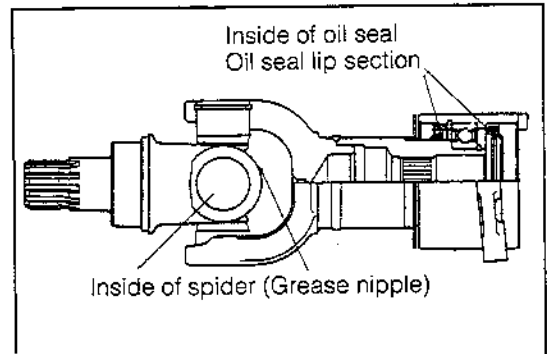


Fig. 5-119

WR-05121

1. Assemble the universal joint yoke spider subassembly, following the procedure given below.
  - (1) Assemble the spider to the universal joint yoke sub-assembly. Push them in a vice from both sides until the bearing cap becomes flush with the end surface of the yoke subassembly.
  - (2) Using a 19 mm socket, push the spider cap in a vice until the snap ring can be inserted in position.
  - (3) Install the universal joint yoke No.2 to the spider. Assemble it in the sequence (1) and (2) described above.

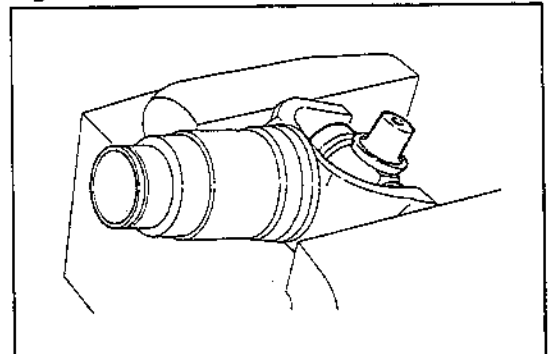


Fig. 5-120

WR-05122

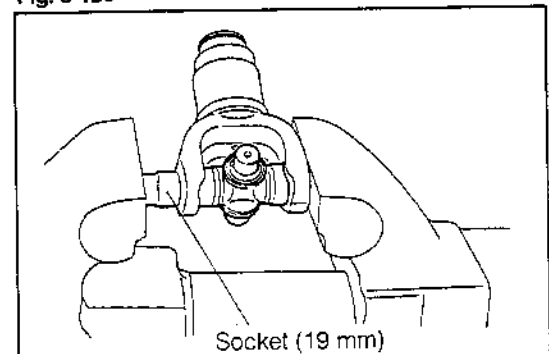


Fig. 5-121

WR-05123

## FRONT AXLE & SUSPENSION

2. Assemble the hole snap ring, using a snap ring expander, in accordance with the procedure given below.
  - (1) Select a proper snap ring so that the play of the spider in the axial direction will not exceed 0.05 mm (0.002 inch) and the thickness of the snap ring becomes the same at both sides.

### Reference: Snap Ring Availability

Part number	Thickness
90045-21046-000	1.45 mm (0.057 inch)
90045-21047-000	1.50 mm (0.059 inch)
90045-21048-000	1.55 mm (0.061 inch)

- (2) Assemble the selected snap ring.
- (3) Check the spider bearing for excessive looseness.

3. Install the dust deflector, using the following SST.
 

SST: 09547-87501-000

4. Assemble the radial ball bearing, using the following SSTs.
 

SST: 09547-87301-000

SST: 09608-87501-000

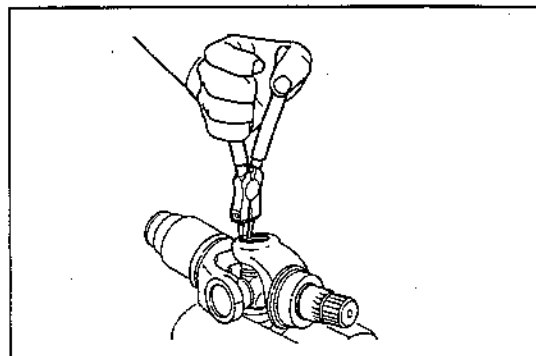


Fig. 5-122

WR-05124

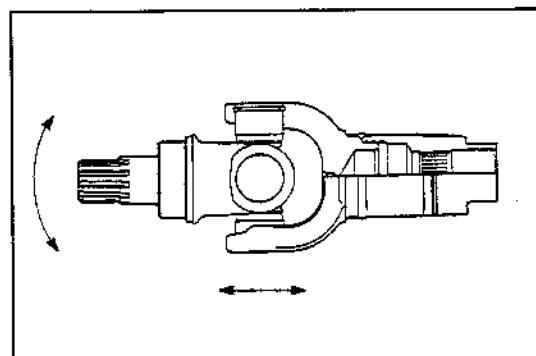


Fig. 5-123

WR-05125

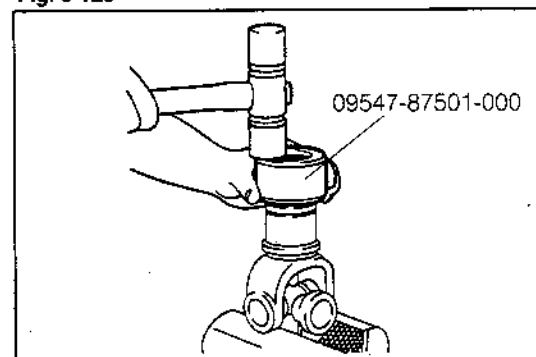


Fig. 5-124

WR-05126

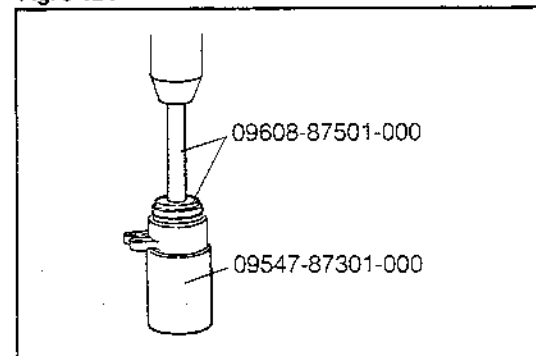


Fig. 5-125

WR-05127

5. Attach the hole snap ring, using a snap ring expander.

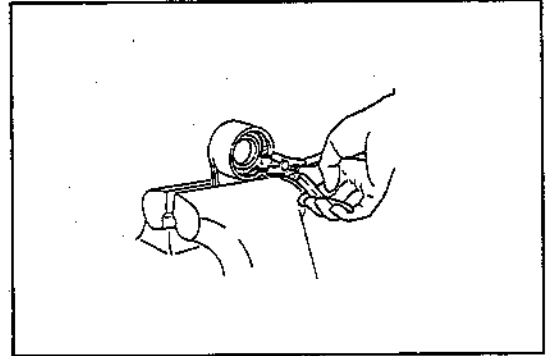


Fig. 5-126

WR-05128

6. Install the oil seal, using the following SST.  
SST: 09608-87501-000

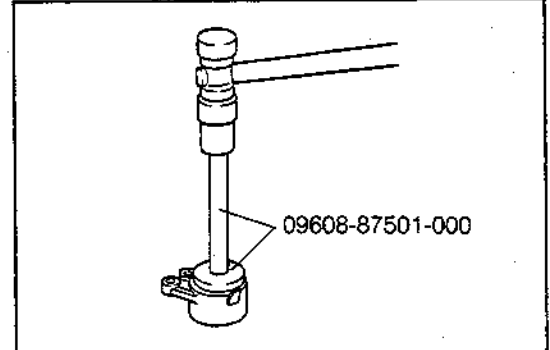


Fig. 5-127

WR-05129

7. Install the drive shaft bearing bracket, using the following SSTs.  
SST: 09506-30011-000  
SST: 09608-87501-000

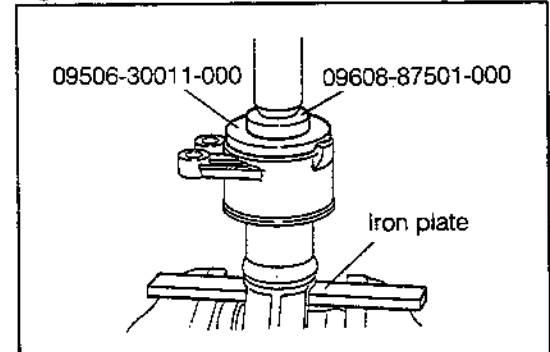


Fig. 5-128

WR-05130

8. Attach the shaft snap ring, using a snap ring expander.  
9. Assemble the oil seal, using the following SST.  
SST: 09608-87501-000

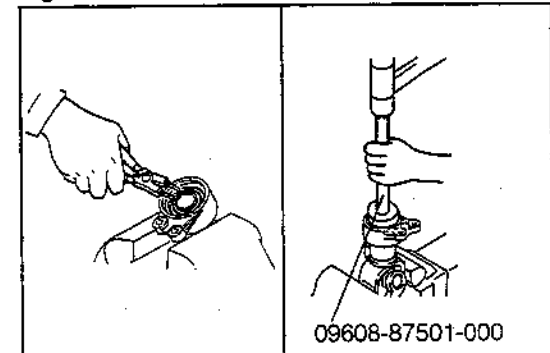


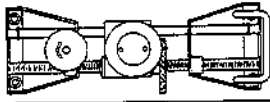
Fig. 5-129

WR-05131

## FRONT AXLE & SUSPENSION

### WHEEL ALIGNMENT (FRONT AND REAR)

#### TOOLS AND INSTRUMENTS

	Shape	Nomenclature	Use
Tools		CCK gauge compensator CCK-IN Supplied by Banzai, Ltd.	Attachment for camber, caster and kingpin gauge
	Brake pusher, hexagon wrench key (width across flats: 8 mm)		
Instruments	Turning radius gauge, tire pressure gauge, camber, caster, kingpin gauge and dial gauge		

WR-05132

#### CHECKS PRIOR TO WHEEL ALIGNMENT MEASUREMENT

1. Checking Tires for Wear
2. Checking Tires for Air Pressure

Tire	Air inflation pressure kg/cm <sup>2</sup> (psi)	
	G-100	G-101
6.00.12.4PR	1.9 (27)	1.9 (27)
145/80R13 74S, 145SR13	1.8 (26)	2.0 (29)
155/80R13 78S, 155SR13	1.8 (26)	2.0 (29)
165/70R13 79S, 165/70SR13	1.8 (26)	2.0 (29)
175/60R14 78H	1.8 (26)	
185/60R14 82H (Pirelli)	1.8 (26)	

3. Checking Tires for Runout  
(Up-and-down and right-and-left directions)  
Maximum Limit: 3.0 mm (0.12 inch)  
2. mm
4. Checking Bolts of Related Sections for Tightened Condition

5. Checking Related Sections for Excessive Play
  - (1) Jack up the vehicle. Alternately push and pull the upper and lower parts of each tire. Ensure that the tire exhibits no excessive play.
  - (2) If the tire exhibits an excessive play, perform the following check while the brake pedal is being depressed.
    - The excessive play disappears:  
This indicates that the front wheel bearing is loose.
    - The excessive play still persists:  
This indicates that the knuckle section, axle carrier section or suspension is loose.

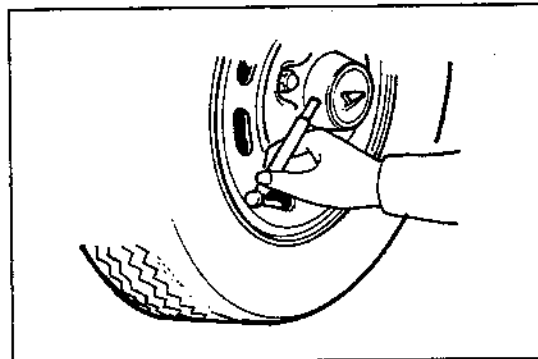


Fig. 5-130

WR-05133

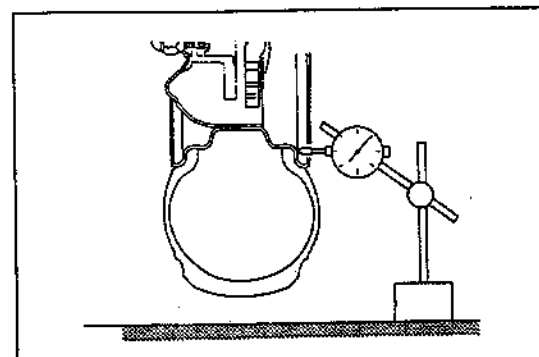


Fig. 5-131

WR-05134

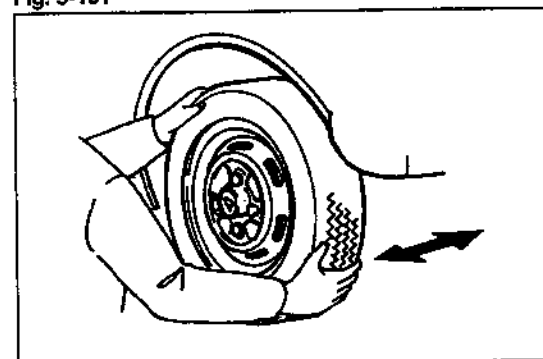


Fig. 5-132

WR-05135

- (3) If the wheel bearing is judged as being loose, proceed to check the play in the axial direction, using the following SST.

SST: 09510-87301-000

(Front and rear wheel bearings)

Specified Value: Not to exceed 0.2 mm (0.008 inch)

Maximum Limit: 0.05 mm (0.002 inch)

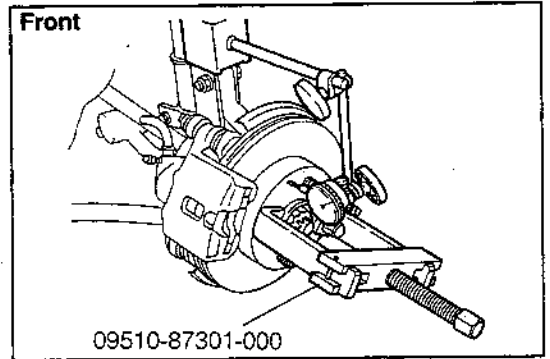


Fig. 5-133

WR-05136

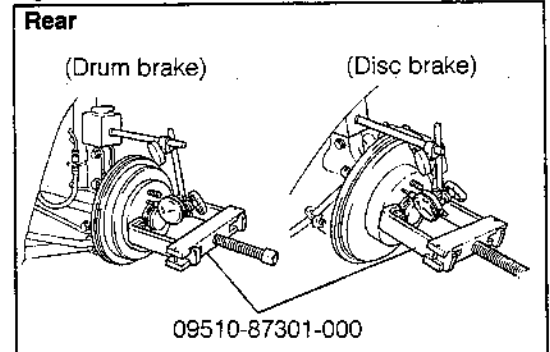


Fig. 5-134

WR-05137

## CHECKS AND ADJUSTMENT OF FRONT WHEEL ALIGNMENT

### 1. Turning Radius Gauge Set

- (1) Set the turning radius gauge to the zero point. Proceed to lock the gauge.
- (2) Place the vehicle on the gauge in such a way that the center of the tire-to-floor contact surface may be aligned with the center of the turning radius gauge.

#### NOTE:

- Perform the check on a level floor.
- When a portable type turning radius gauge is employed, a plate having the same thickness as that of the gauge should be placed under the rear wheel so that the vehicle levelness may be maintained.
- Make sure that the wheels are in their straightahead conditions.
- Keep the vehicle in an unloaded state. In order to prevent the vehicle from moving during the check, be sure to apply the foot brake, using a brake pedal pusher or the like.
- Remove the stop lamp fuse so as to prevent the stop lamp from glowing.

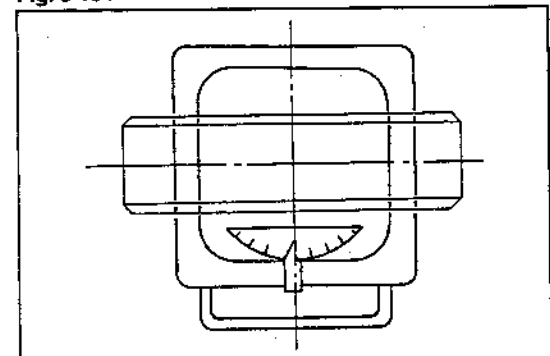


Fig. 5-135

WR-05138

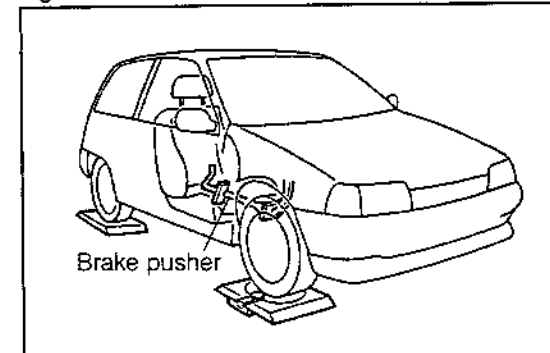


Fig. 5-136

WR-05139

## FRONT AXLE & SUSPENSION

### 2. Checking Wheel Turning Angle

- (1) Measure the wheel turning angle, using a turning radius gauge.

Specified Value:

Inner side	$39^{\circ}55' \pm 2^{\circ}$
Outer side	$35^{\circ}39' 0'' \pm 2^{\circ}$

- (2) If the wheel turning angle differs between the right and left sides, correct the turning angle.

### 3. Correction Wheel Turning Angle

- (1) Slacken the lock nuts of the tie rod ends.
- (2) Make the length indicated in the right figure equal between the right and left sides.

NOTE:

- Make sure that the boot is not twisted during the correction.
- Make sure that the tie rods at the right and left sides are turned by the same amount.

### 4. Checking Camber, Caster and Kingpin Angles

- (1) In the case of steel wheels, perform the measurement, using the following SST (attachment).

SST: 09722-87702-000

- (2) In the case of aluminum wheels, perform the measurement, using the CCK (Camber, Caster, Kingpin) gauge compensator (available in the market).

NOTE:

The CCK gauge compensator can be used for the measurement on steel wheels, too.

- (3) Installation procedure for the CCK gauge compensator, and the camber, caster and kingpin gauge.

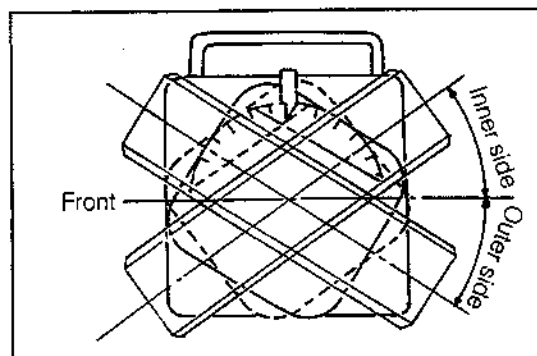


Fig. 5-137

WR-05140

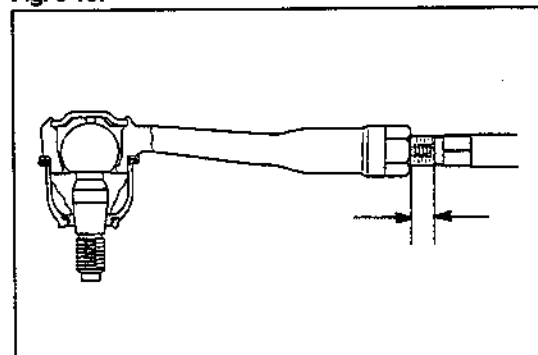


Fig. 5-138

WR-05141

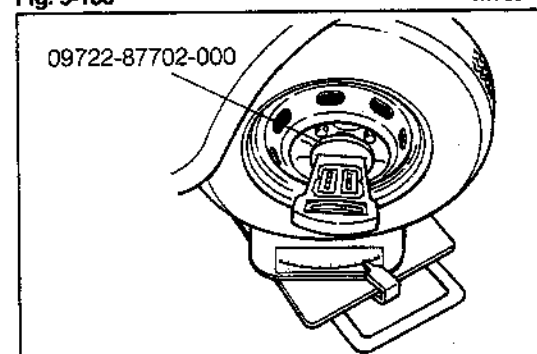


Fig. 5-139

WR-05142

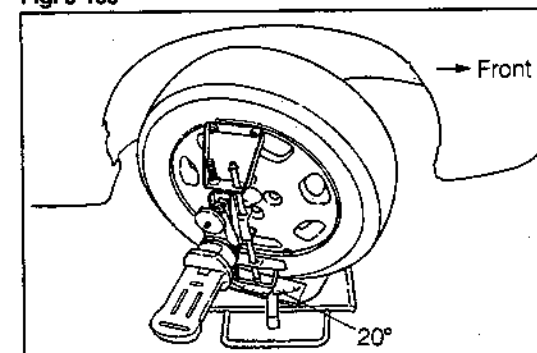


Fig. 5-140

WR-05143

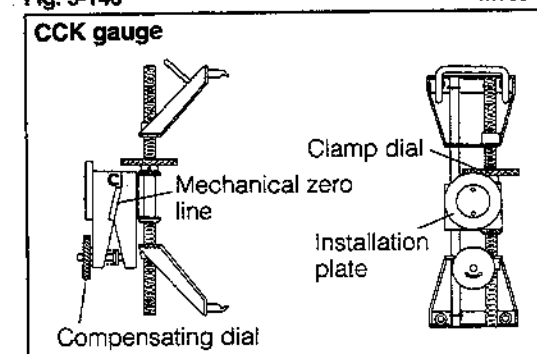


Fig. 5-141

WR-05144



- Jack up the vehicle.
- Before installing the CCK gauge to the wheel, set the CCK gauge compensator to the mechanical zero line by turning the compensating dial of the compensator.

- While turning the clamp dial of the CCK gauge compensator, hook the four pawls to the wheel edges securely. While pushing the compensator, lock the compensator positively by turning the clamp dial.

## NOTE:

In order to prevent the wheel edges from being scratched, affix tapes or the like on the wheel edge sections to which the four pawls of the compensator are hooked.

- Set the camber caster and kingpin gauge to the installation plate of the CCK gauge compensator. At this point, align the set lines on the gauge and compensator with each other.

- Turn the wheel so that the level air bubble in the gauge may come to the central position. At this position, turn the caster adjusting screw of the gauge so that the caster air bubble may be aligned with the graduation zero position.

- Turn the wheel 180 degrees so that the gauge may be turned over. Proceed to align the set lines on the gauge and compensator with each other. Next, turn the wheel so that the level air bubble in the gauge may come to the central position.

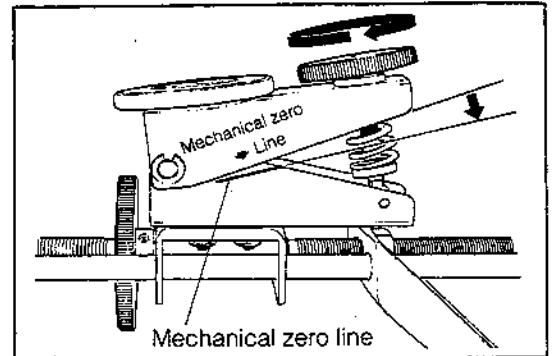


Fig. 5-142

WR-05145

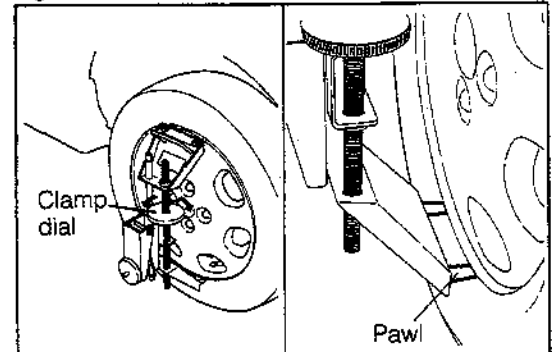


Fig. 5-143

WR-05146

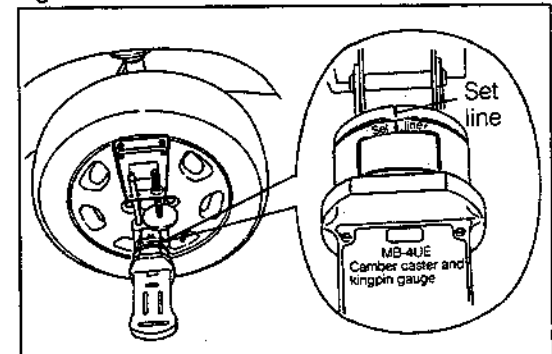


Fig. 5-144

WR-05147

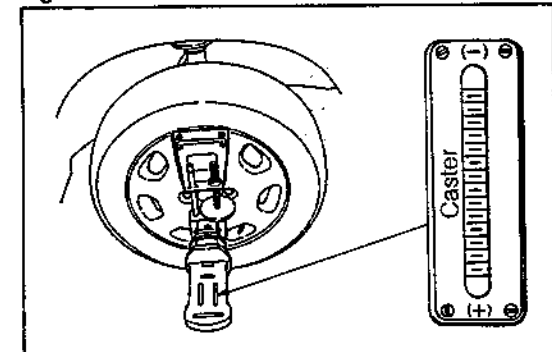


Fig. 5-145

WR-05148

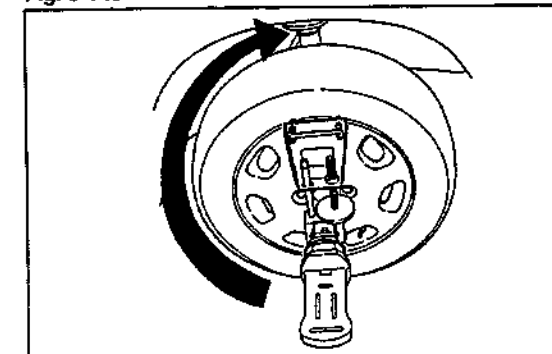


Fig. 5-146

WR-05149

## FRONT AXLE & SUSPENSION

- Record the caster reading of the gauge. Turn the compensating dial of the compensator so that it may be aligned with the 1/2 of the recorded caster reading.

### NOTE:

Be sure not to tamper the caster adjusting screw of the gauge.

- Repeat the steps described in Fig 5-86 and Fig. 5-87.  
Ensure that the air bubble of the caster gauge registers the same reading when the wheel is turned 180 degrees in a normal direction and in a reversed direction.
- Jack down the wheel on the turning radius gauge. Rock the vehicle in an up-and-down direction so as to settle the suspension.

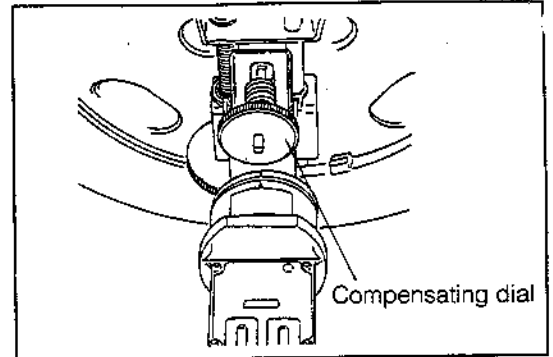


Fig. 5-147

WR-05150

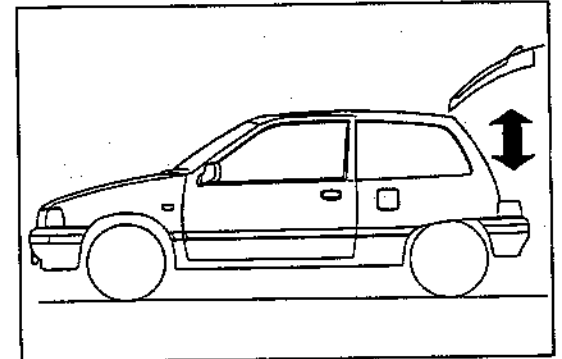


Fig. 5-148

WR-05151

### (4) Camber check

- Ensure that the wheels are in their straight-ahead conditions.
- Align the level air bubble with the central position.
- Take the camber reading of the gauge.

Specified Value:  $0^{\circ}20' \pm 1^{\circ}$

$0^{\circ}20' + 40'$   
 $- 20'$

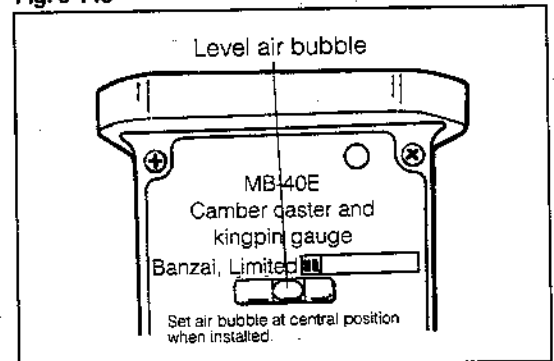


Fig. 5-149

WR-05152

## (5) Checking caster and kingpin angles

(Right wheel)

- Turn the steering wheel to the right side, until the right front tire comes at a point where the turning radius gauge registers 20 degrees.
- Turn each of the caster and kingpin adjusting screws so that the respective air bubble may be aligned with the zero point.
- Turn the steering wheel to the left side, until the right front tire comes at a point where the turning radius gauge registers 20 degrees.
- Take the gauge readings of the caster and kingpin angles.

Specified Value: Caster .....  $2^{\circ}55' \pm 1^{\circ}$

Kingpin angle .....  $12^{\circ} \pm 30'$

(Left wheel)

- Perform the check, following the same procedure as with the right wheel. However, the turning direction of the steering wheel must be reversed.

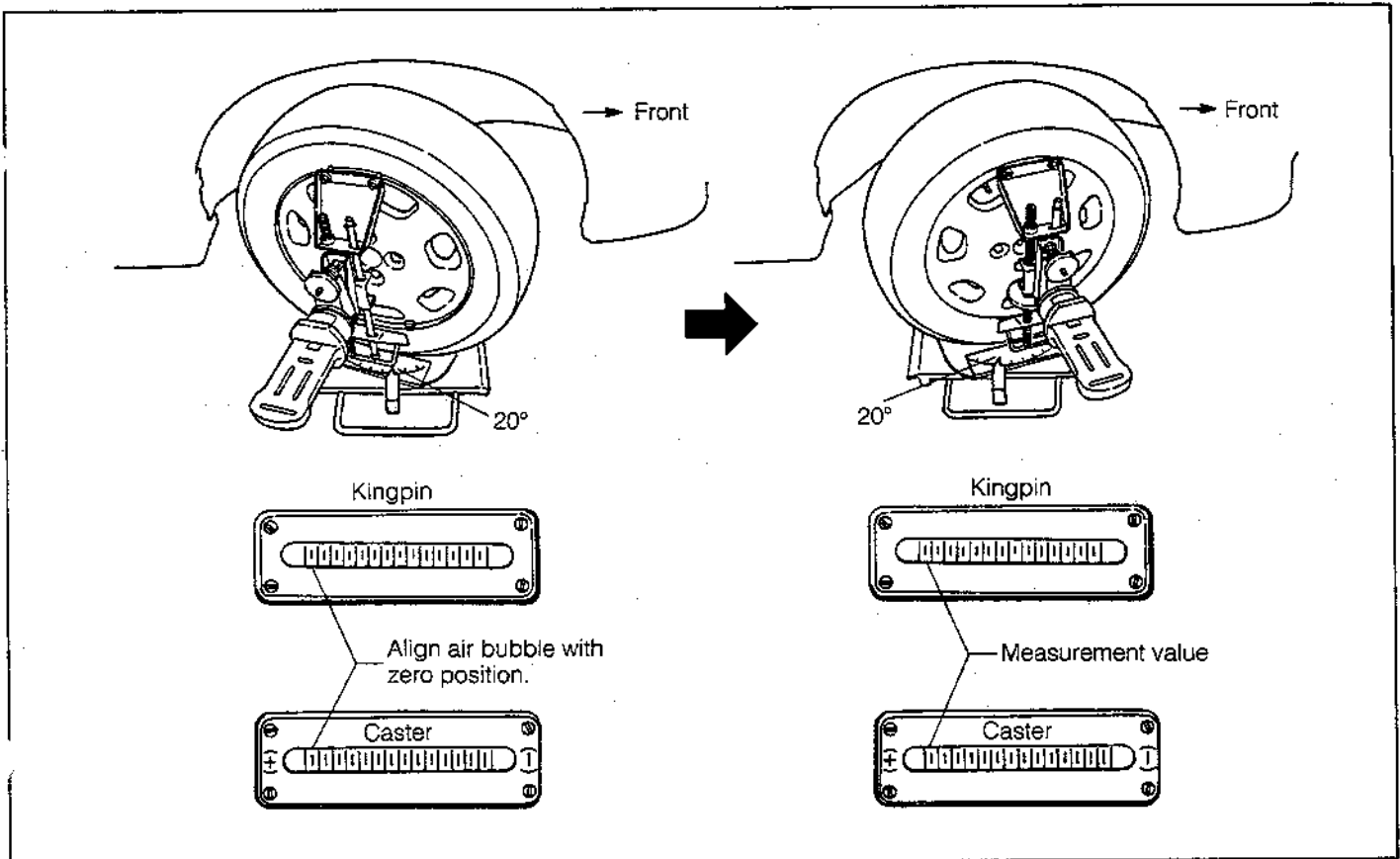


Fig. 5-150

WR-05153

## 5. Toe-In Measurement

- (1) Rock the vehicle so that the vehicle height may stabilize.
- (2) Move the vehicle forward about five meters so that the front wheels may become in their straight-ahead conditions.

### NOTE:

Do not move the vehicle backward during the measurement.

- (3) Align the height of the toe-in gauge pointers with the center height of the front wheels.
- (4) Put a mark on the tread center of each front wheel tire at the rear side. Measure the distance between the two marks (Dimension A) in the figure.

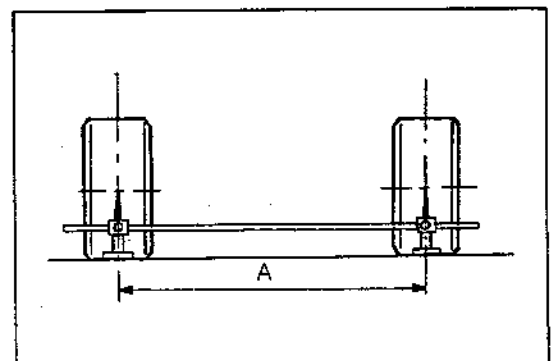


Fig. 5-151

WR-05154

## FRONT AXLE & SUSPENSION

- (5) Slowly move the vehicle forward by pushing the vehicle, until the wheels turn 180 degrees.

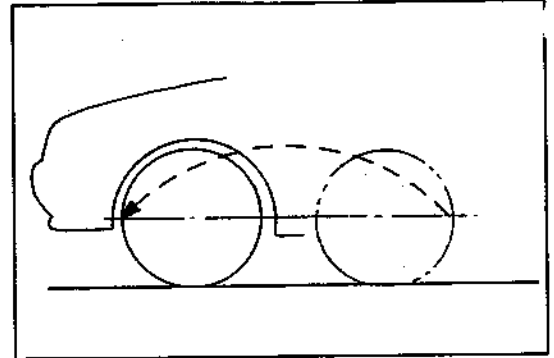


Fig. 5-152

WR-05155

- (6) Measure the distance (Dimension B) between the two marks which were put in the preceding step. This measurement is performed at the front side of the vehicle.

Calculate the amount of toe-in, i.e. (Dimension A - Dimension B).

Specified Value:  $-1 - +3$  mm ( $-0.04 - +0.12$  inch)

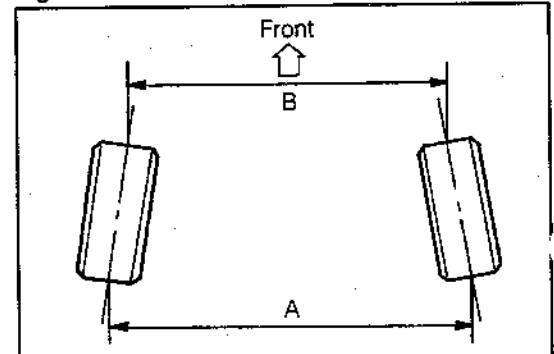


Fig. 5-153

WR-05156

### 6. Toe-In Adjustment

- (1) Slacken the lock nuts of the tie rod ends.
- (2) Perform the toe-in adjustment by turning the tie rod ends.

#### NOTE:

- Care must be exercised to ensure that the boot is not twisted during the adjustment.
- When adjusting the toe-in, the tie rods at the right and left sides should be turned by the same amount.
- The length indicated in the right figure must be the same amount.

(If the length differs between the right and left sides, a difference occurs in the wheel turning angle between the right and left sides.)

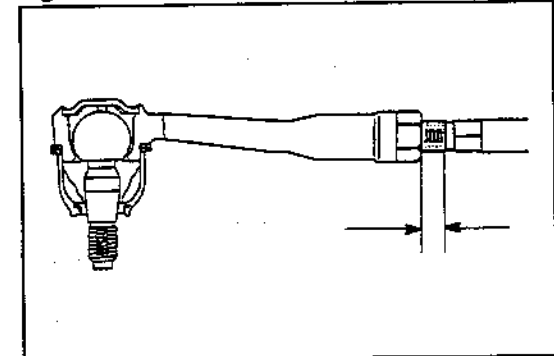


Fig. 5-154

WR-05157

### 7. Sideslip Check

Check the sideslip, using a sideslip tester.

Specified Value:  $-3 - +3$  mm ( $-0.12 - +0.12$  inch)

Per 1 meter (3.28 ft)

WR-05158

$-4 \sim +4$

## CHECK AND ADJUSTMENT OF REAR TOE-IN

### 1. Toe-In Check

- (1) Rock the vehicle so that the vehicle height may stabilize.
- (2) Move the vehicle forward about five meters so that the front wheels may become in their straight-ahead conditions.
- (3) Align the height of the toe-in gauge pointers with the center height of the rear wheels.
- (4) Put a mark on the tread center of each rear wheel tire at the rear side. Measure the distance between the two marks (Dimension A) in the figure.

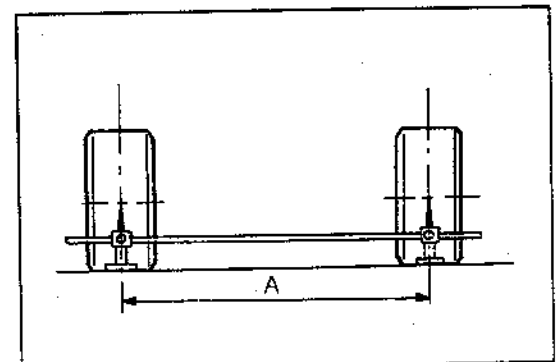


Fig. 5-155

WR-05159

- (5) Slowly move the vehicle forward by pushing the vehicle, until the wheels turn 180 degrees.

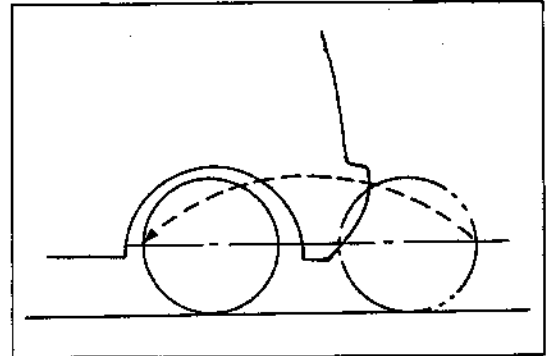


Fig. 5-156

WR-05160

- (6) Measure the distance (Dimension B) between the two marks which were put in the preceding step. This measurement is performed at the front side of the rear wheels.
  - (7) Calculate the amount of toe-in, i.e. (Dimension A - Dimension B).
- Specified Value:** +4 - +8 mm (+0.16 - +0.31)

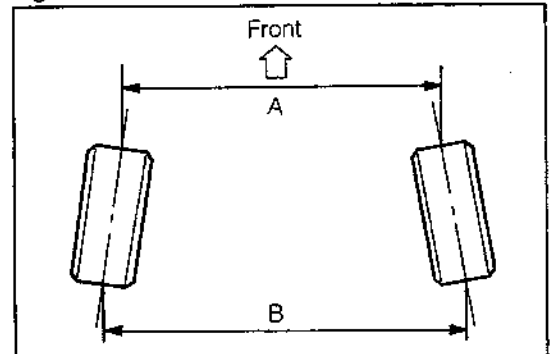


Fig. 5-157

WR-05161

## 2. Toe-In Adjustment

- (1) Slacken the set bolt of the toe adjusting cam.

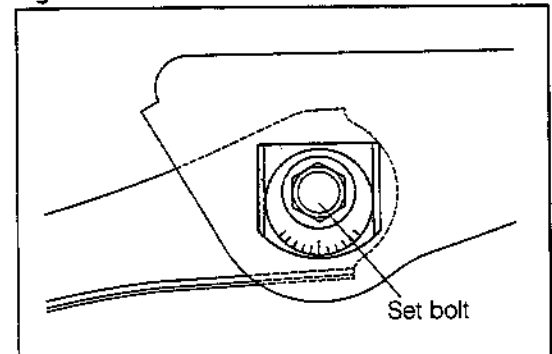


Fig. 5-158

WR-05162

- (2) Insert a hexagon wrench key into the hexagonal hole provided at the back side of the toe adjusting cam. Turn the hexagon wrench key.  
(Inside: IN, Outside: OUT)

### (Reference)

When each of the adjusting cams provided at both sides is turned by one graduation, the toe-in will change approximately 5 mm (0.20 inch).

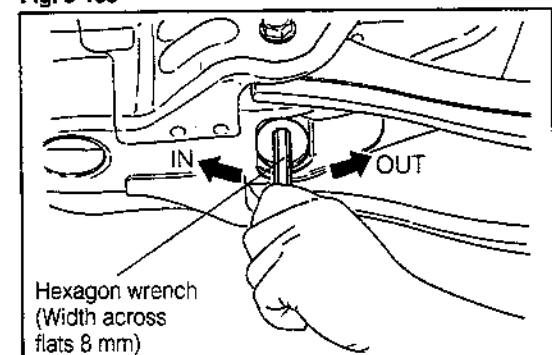


Fig. 5-159

WR-05163

## 3. Sideslip Check

Check the sideslip, using a sideslip tester.

**Specified Value:** 1 - 7 mm (-0.04 - 0.28 inch)  
Per 1 meter (3.28 ft)



# **DAIHATSU**

# **CHARADE**

## Chassis

## **SECTION 6**

## **REAR AXLE & SUSPENSION**

6

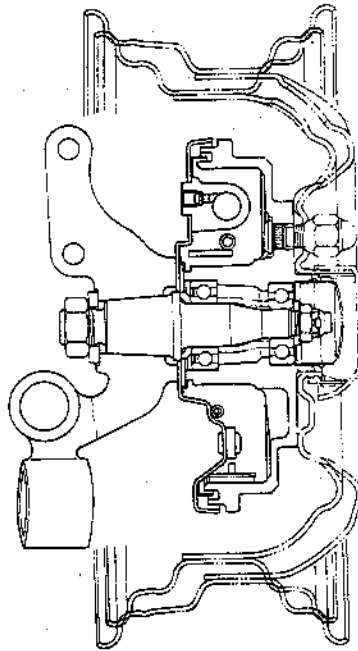
<b>REAR AXLE</b> ..... 6- 2 SECTIONAL VIEW ..... 6- 2 COMPONENTS ..... 6- 3 REMOVAL ..... 6- 4 INSPECTION ..... 6- 7 INSTALLATION ..... 6- 8 <b>REAR SUSPENSION</b> ..... 6-11 SECTIONAL VIEW ..... 6-11 <b>REAR SHOCK ABSORBER</b> ..... 6-11 COMPONENTS ..... 6-11 REMOVAL ..... 6-12 DISASSEMBLY ..... 6-13 INSPECTION ..... 6-14 ASSEMBLY ..... 6-15 INSTALLATION ..... 6-16	<b>SUSPENSION ARM</b> ..... 6-18 COMPONENTS ..... 6-18 REMOVAL ..... 6-18 INSPECTION ..... 6-20 INSTALLATION ..... 6-20 <b>STRUT ROD</b> ..... 6-22 REMOVAL ..... 6-22 INSPECTION ..... 6-22 INSTALLATION ..... 6-22 <b>STABILIZER BAR</b> ..... 6-23 COMPONENTS ..... 6-23 REMOVAL ..... 6-23 INSPECTION ..... 6-24 INSTALLATION ..... 6-25
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WR-06001

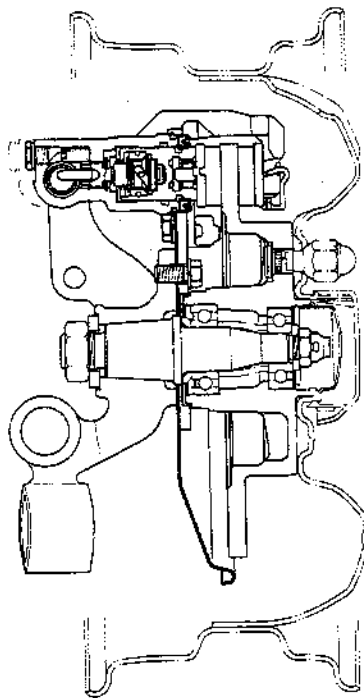
## REAR AXLE & SUSPENSION

### REAR AXLE SECTIONAL VIEW

**Drum Brake**



**Disc Brake**

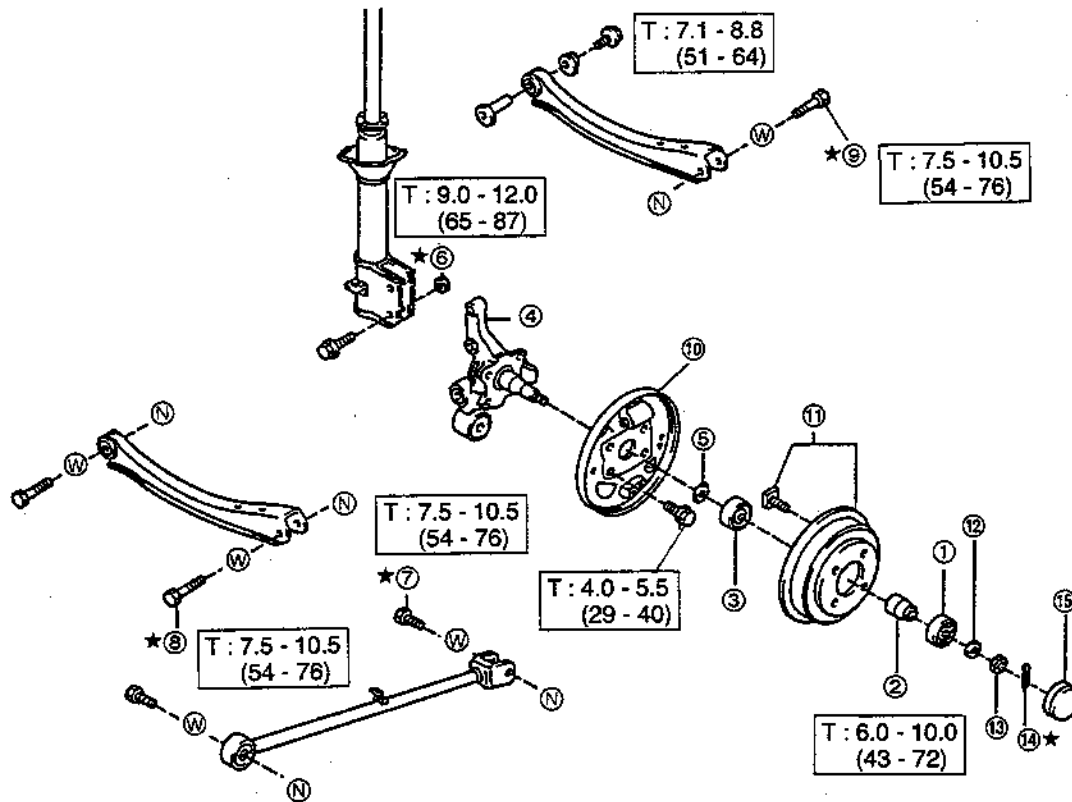


**Fig. 6-1**

WR-06002



## COMPONENTS



T : Tightening torque  
Unit: kg-m (ft-lb)  
★ : Non-reusable parts

- ① Radial ball bearing
- ② Rear axle bearing outer retainer
- ③ Radial ball bearing
- ④ Rear axle carrier S/A
- ⑤ Rear axle bearing inner retainer
- ⑥ Nut
- ⑦ Bolt
- ⑧ Bolt

- ⑨ Bolt
- ⑩ Rear brake Ay
- ⑪ Rear brake drum
- ⑫ Plate washer
- ⑬ Castle nut
- ⑭ Cotter pin
- ⑮ Grease retainer cap

Fig. 6-2

WR-06003

## REAR AXLE & SUSPENSION

### REMOVAL

1. Jack up the vehicle at the rear side. Support the body with safety stands.
2. Remove the rear wheel.

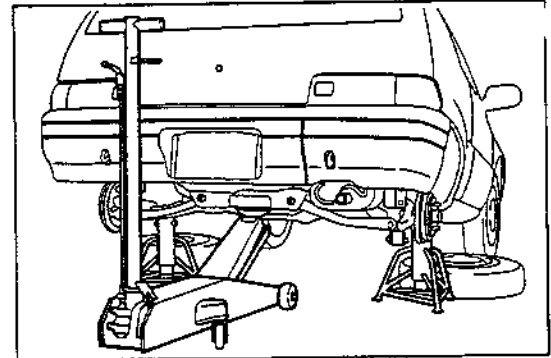


Fig. 6-3

WR-06004

3. Backing plate removal  
(Drum brake equipped vehicle)
  - (1) Remove the grease retainer cap.
  - (2) Remove the cotter pin, castle nut and plate washer.

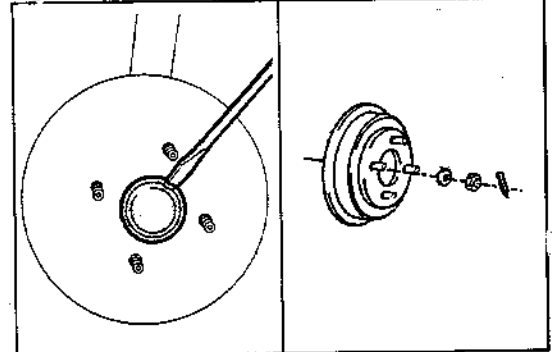


Fig. 6-4

WR-06005

- (3) Remove the brake drum, using the following SST.  
Remove the bearing inner retainer.  
SST: 09510-87301-000

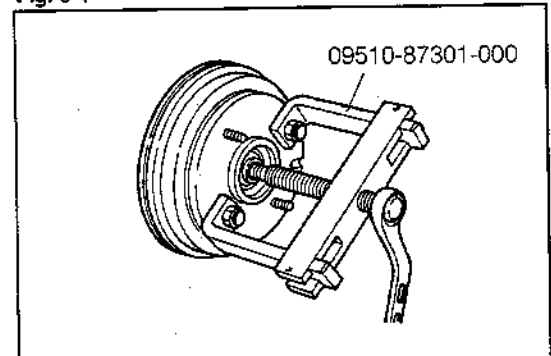


Fig. 6-5

WR-06006

- (4) Disconnect the brake tube from the wheel cylinder, using the following SST.  
SST: 09751-36011-000

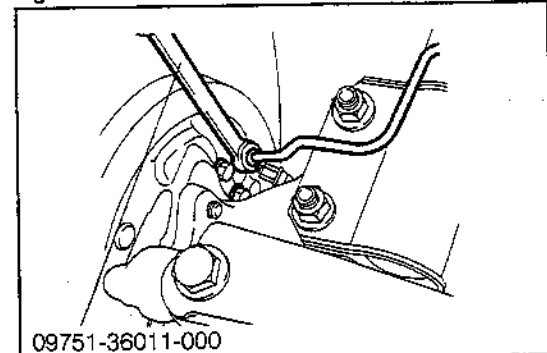


Fig. 6-6

WR-06007

- (5) Remove the backing plate with the brake shoe installed.

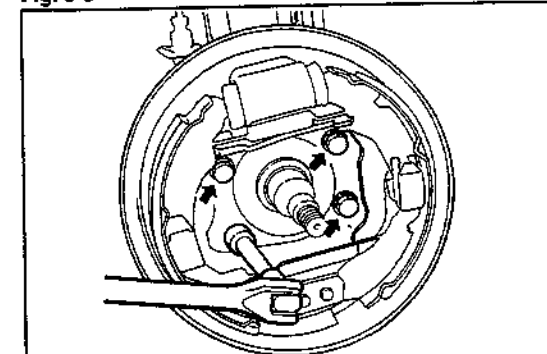


Fig. 6-7

WR-06008

## REAR AXLE & SUSPENSION

(Disc brake equipped vehicle)

- (1) Remove the parking cable guide.
- (2) Remove the anti-rattle spring.

- (3) Remove the caliper.

**NOTE:**

Suspend the caliper as shown in the right figure.

- (4) Remove the caliper support.

- (5) Remove the grease retainer cap.
- (6) Remove the cotter pin, castle nut and plate washer.

- (7) Remove the disc rotor and bearing inner retainer.

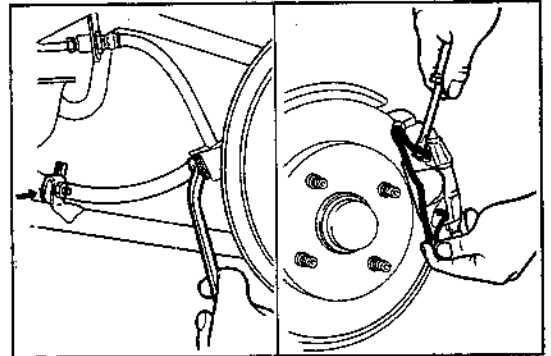


Fig. 6-8

WR-06009

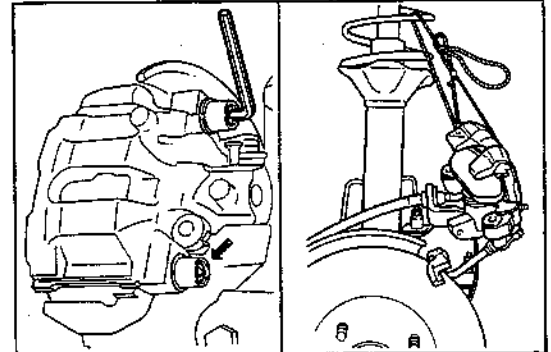


Fig. 6-9

WR-06010

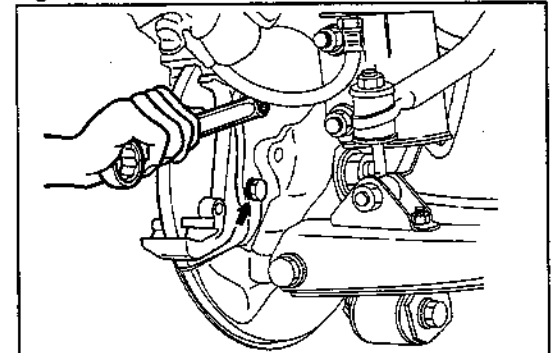


Fig. 6-10

WR-06011

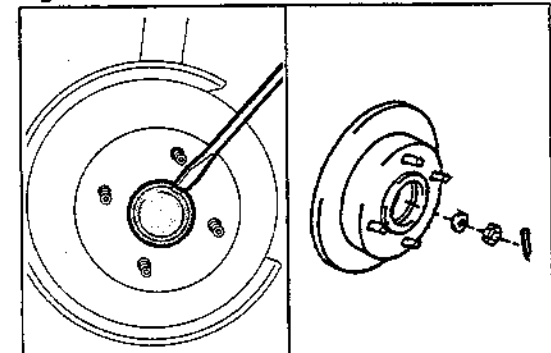


Fig. 6-11

WR-06012

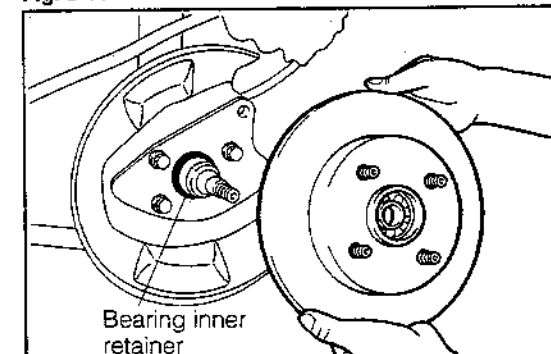


Fig. 6-12

WR-06013

## REAR AXLE & SUSPENSION

- (8) Remove the backing plate.

### 4. Axle carrier removal

- (1) Remove the attaching bolt and nut of the axle carrier from the strut rod.

- (2) Remove the attaching bolt and nut of the axle carrier from the suspension arm No.1.

- (3) Remove the attaching bolt and nut of the axle carrier from the suspension arm No.2.

- (4) Remove the attaching bolts and nuts of the axle carrier from the shock absorber. Remove the axle carrier.

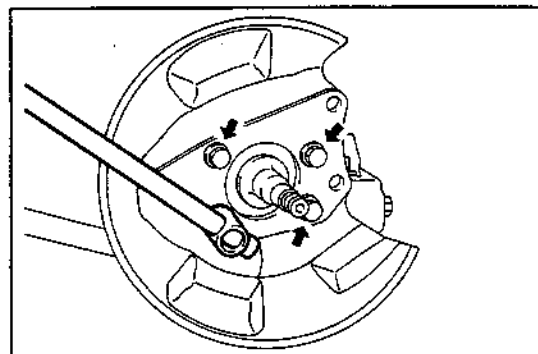


Fig. 6-13

WR-06014

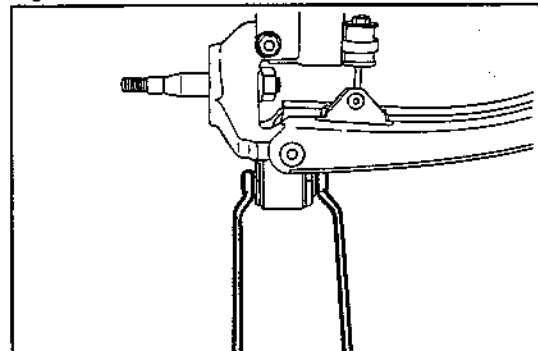


Fig. 6-14

WR-06015

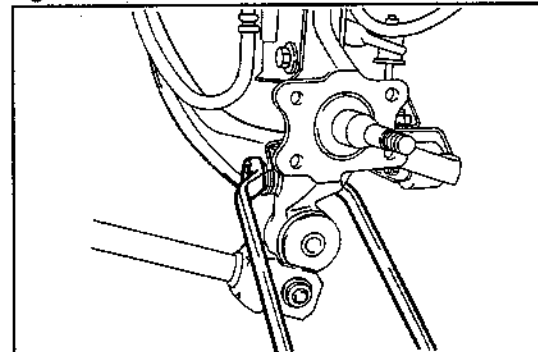


Fig. 6-15

WR-06016

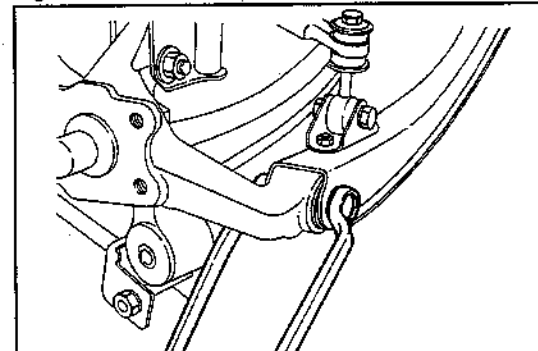


Fig. 6-16

WR-06017

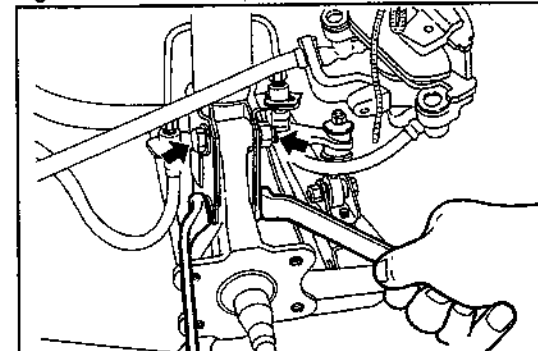


Fig. 6-17

WR-06018

## 5. Hub bearing removal

- (1) Drive out the inner bearing, using a brass bar. At the same time, drive out the bearing outer retainer, too.
- (2) Drive out the outer bearing, using a brass bar.

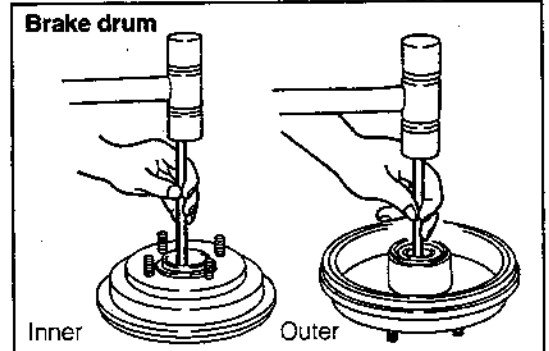


Fig. 6-18

WR-06019

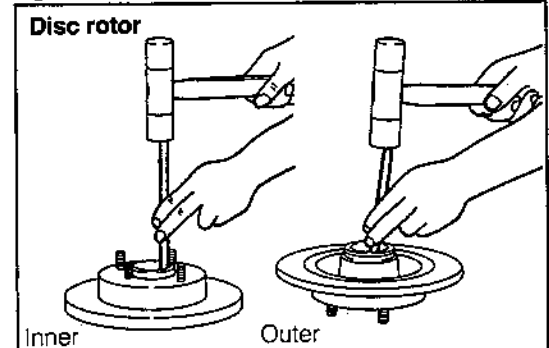


Fig. 6-19

WR-06020

## INSPECTION

Inspect the following parts.

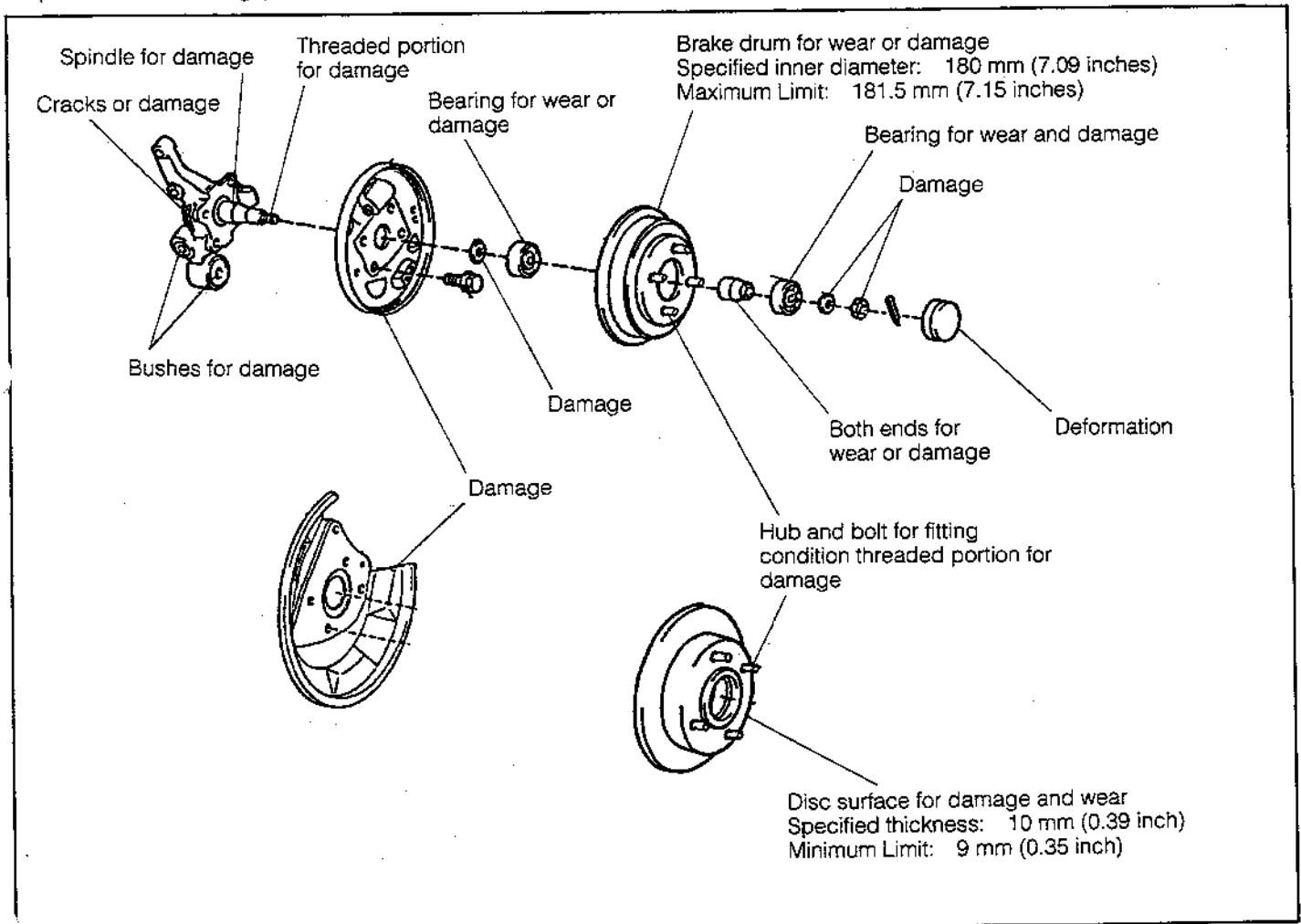


Fig. 6-20

WR-06021

## REAR AXLE & SUSPENSION

### INSTALLATION

#### 1. Hub bearing installation

Pack the hub and bearing with grease. Then, press the outer bearing, outer retainer and inner bearing, in this order, using a press in conjunction with the following SST.

SST: 09608-12010-000

(For the outer bearing, use No. 13 of the SST set.)

(For the inner bearing, use No. 5 of the SST set.)

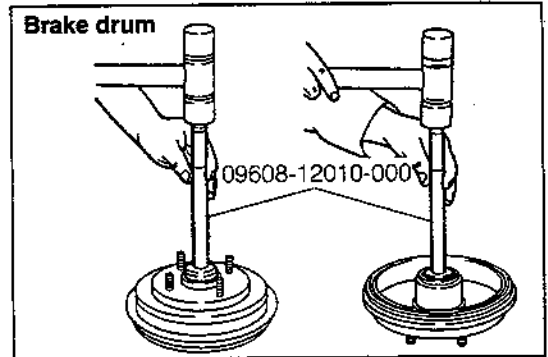


Fig. 6-21

WR-06022

#### Disc rotor

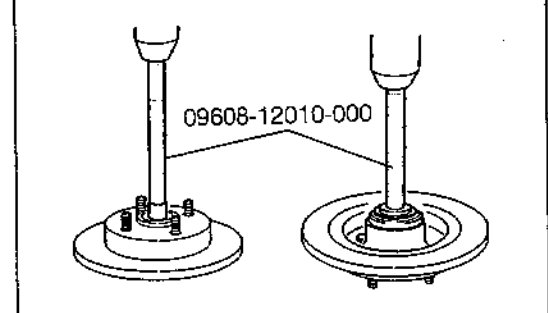


Fig. 6-22

WR-06023

#### 2. Axle carrier installation

##### NOTE:

As for those suspension-related bolts and nuts on which a friction stabilizing agent has been coated, be certain not to reuse them if they have been once removed

- (1) Mount the axle carrier to the shock absorber.
- (2) Install the attaching bolts and new nuts of the axle carrier. Proceed to tighten them.

Tightening Torque: 9.0 - 12.0 kg-m (65 - 87 ft-lb)

##### NOTE:

Tighten the bolts and nuts while pushing the axle carrier to the lower side (positive side).

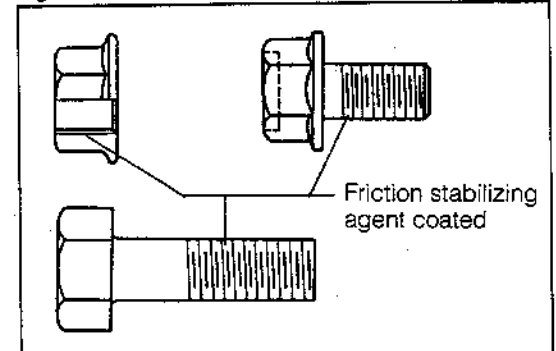


Fig. 6-23

WR-06024

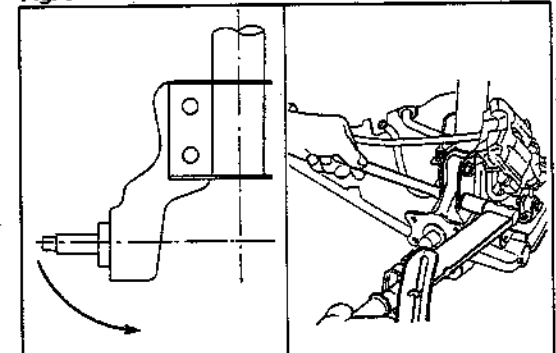


Fig. 6-24

WR-06024

- (3) Mount the axle carrier on the suspension arm No.1. Tighten the new bolt and nut temporarily.
- (4) Mount the axle carrier on the suspension arm No.2. Temporarily tighten the new bolt and nut.

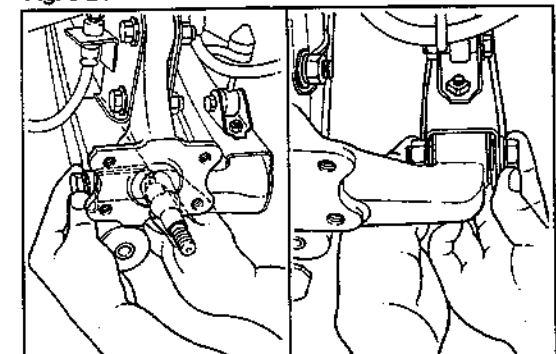


Fig. 6-25

WR-06025

## 5. Hub bearing removal

- (1) Drive out the inner bearing, using a brass bar. At the same time, drive out the bearing outer retainer, too.
- (2) Drive out the outer bearing, using a brass bar.

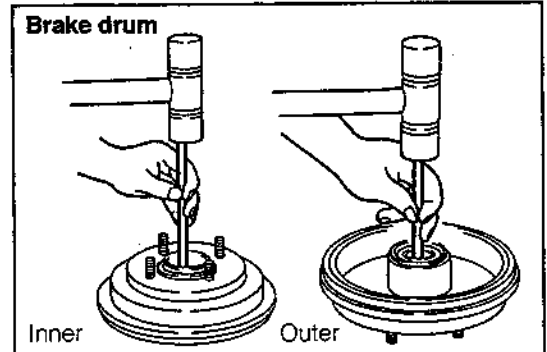


Fig. 6-18

WR-06019

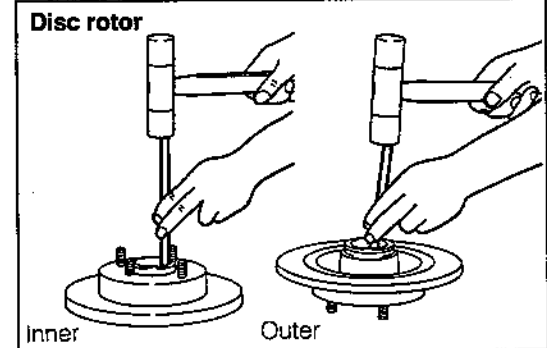


Fig. 6-19

WR-06020

## INSPECTION

Inspect the following parts.

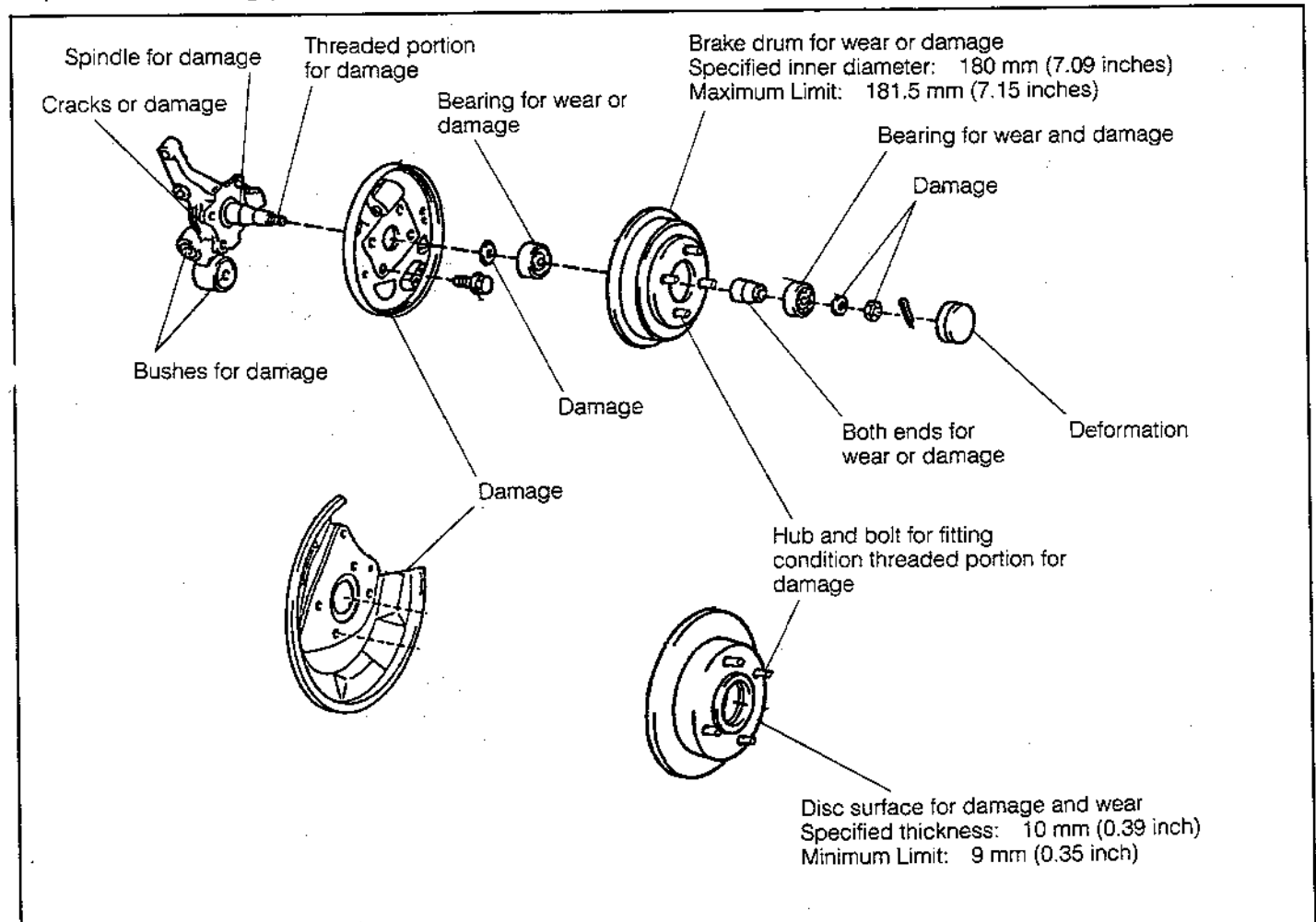


Fig. 6-20

WR-06021

## REAR AXLE & SUSPENSION

### INSTALLATION

#### 1. Hub bearing installation

Pack the hub and bearing with grease. Then, press the outer bearing, outer retainer and inner bearing, in this order, using a press in conjunction with the following SST.

SST: 09608-12010-000

(For the outer bearing, use No. 13 of the SST set.)

(For the inner bearing, use No. 5 of the SST set.)

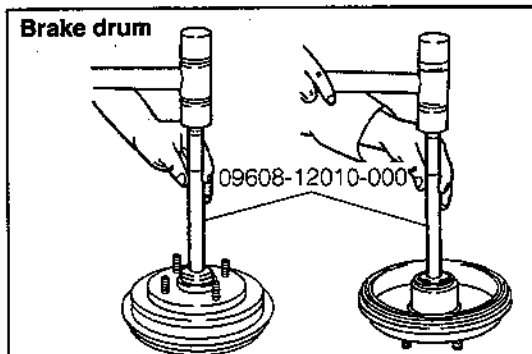


Fig. 6-21

WR-06022

#### Disc rotor

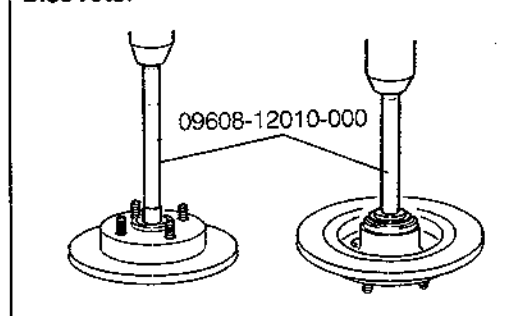


Fig. 6-22

WR-06023

#### 2. Axle carrier installation

##### NOTE:

As for those suspension-related bolts and nuts on which a friction stabilizing agent has been coated, be certain not to reuse them if they have been once removed

- (1) Mount the axle carrier to the shock absorber.
- (2) Install the attaching bolts and new nuts of the axle carrier. Proceed to tighten them.

Tightening Torque: 9.0 - 12.0 kg-m (65 - 87 ft-lb)

##### NOTE:

Tighten the bolts and nuts while pushing the axle carrier to the lower side (positive side).

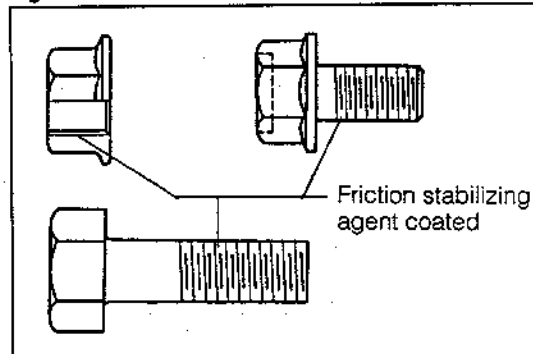


Fig. 6-23

WR-06024

- (3) Mount the axle carrier on the suspension arm No.1. Tighten the new bolt and nut temporarily.
- (4) Mount the axle carrier on the suspension arm No.2. Temporarily tighten the new bolt and nut.

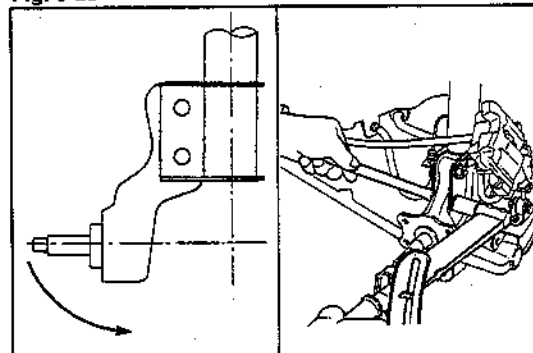


Fig. 6-24

WR-06024

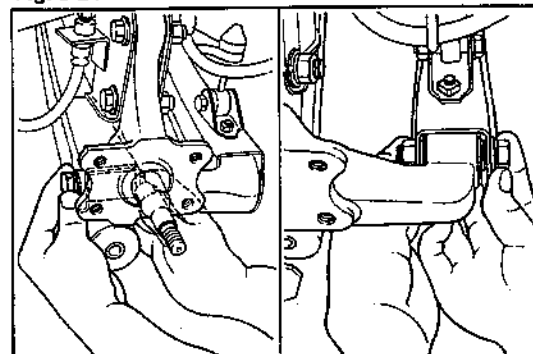


Fig. 6-25

WR-06025



- (5) Mount the axle carrier on the strut rod. Tighten the new bolt and nut temporarily.

## 3. Installation of brake drum or disc rotor (Drum brake equipped vehicle)

- (1) Install the backing plate.

**Tightening Torque:** 4.0 - 5.5 kg-m (29 - 40 ft-lb)

### NOTE:

Be sure to apply DAIHATSU Bond No.4 (999-6304-6323-00) to the mating surface between the rear brake and the axle carrier. During this sealer application, be very careful not to restrict the 5 mm (0.20 inch) dia. grease releasing hole.

- (2) Install the brake tube to the backing plate.  
**Tightening Torque:** 1.3 - 1.8 kg-m (9.4 - 13.0 ft-lb)
- (3) Install the bearing inner retainer, brake drum, plate washer and castle nut.
- (4) Tighten the castle nut.  
**Tightening Torque:** 6.0 - 10.0 kg-m (43 - 72 ft-lb)
- (5) Install a new cotter pin. Install the grease retainer cap.
- (6) Perform air bleeding for the brake system. (See page 8-5.)

## (Disc brake equipped vehicle)

- (1) Install the backing plate.

**Tightening Torque:** 4.0 - 5.5 kg-m (29 - 40 ft-lb)

- (2) Install the bearing inner retainer, disc rotor, plate washer and castle nut.
- (3) Tighten the castle nut.  
**Tightening Torque:** 6.0 - 10.0 kg-m (43 - 72 ft-lb)
- (4) Install a new cotter pin. Install the grease retainer cap.

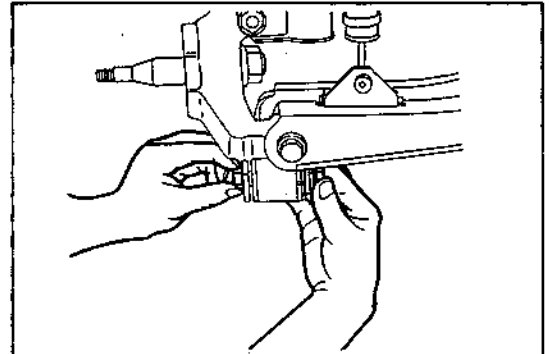


Fig. 6-26

WR-06026

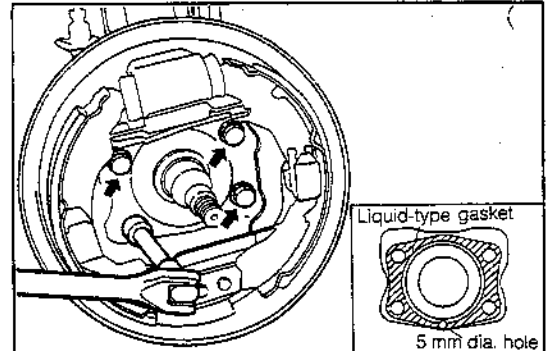


Fig. 6-27

WR-06027

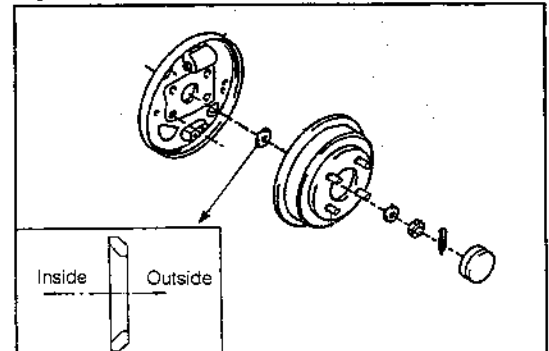


Fig. 6-28

WR-06028

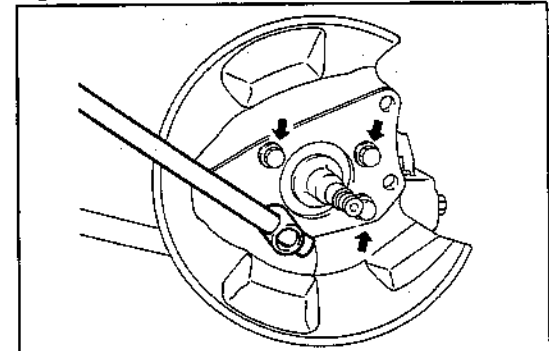


Fig. 6-29

WR-06029

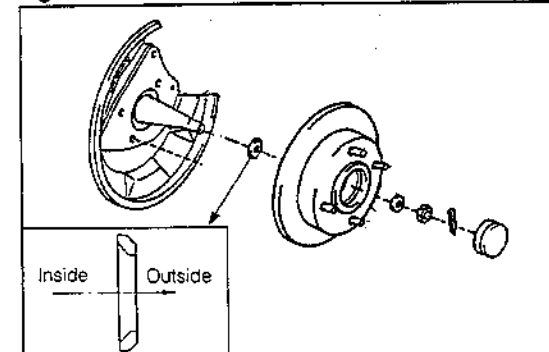


Fig. 6-30

WR-06030

## REAR AXLE & SUSPENSION

- (5) Install the caliper support.  
Tightening Torque: 4.0 - 5.5 kg-m (29 - 40 ft-lb)
- (6) Install the caliper.

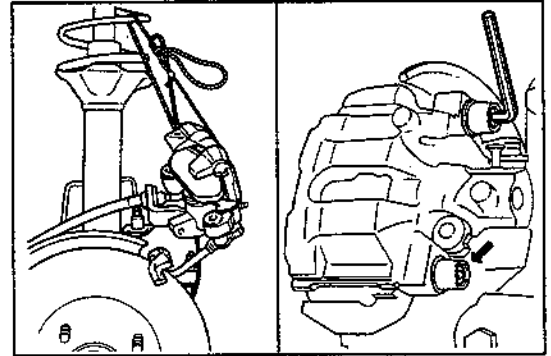


Fig. 6-31

WR-06031

- (7) Install the anti-rattle spring.
- (8) Install the parking cable guide.

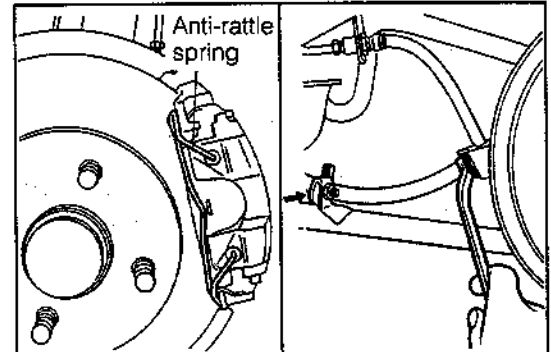


Fig. 6-32

WR-06032

- 4. Tightening of axle carrier attaching bolts
  - (1) Install the tires.
  - (2) With the vehicle in an unloaded state, jack down the vehicle. Rock the vehicle in an up-and-down direction several times to settle the suspensions.

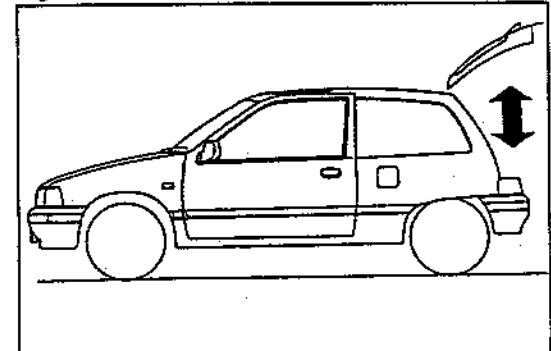


Fig. 6-33

WR-06033

- (3) With the vehicle weight being applied to the suspensions, tighten the bolt and nut of each section.  
Tightening Torque: 7.5 - 10.5 kg-m (54 - 76 ft-lb)

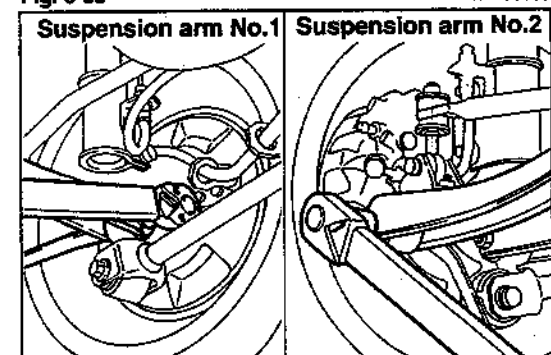


Fig. 6-34

WR-06034

- 5. Rear wheel alignment inspection  
(See Fig. 5-38)

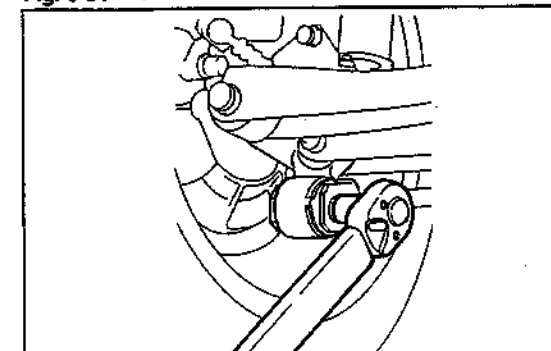


Fig. 6-35

WR-06035

## REAR SUSPENSION

### SECTIONAL VIEW

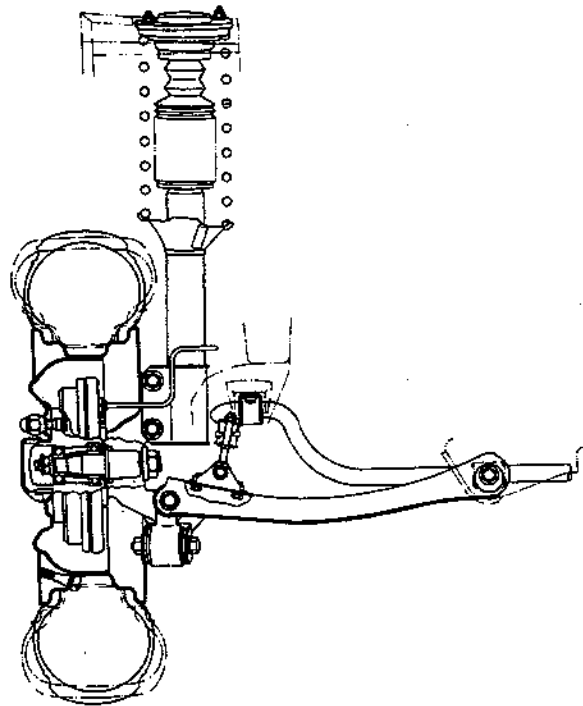


Fig. 6-36

WR-06036

## REAR SHOCK ABSORBER

### COMPONENTS

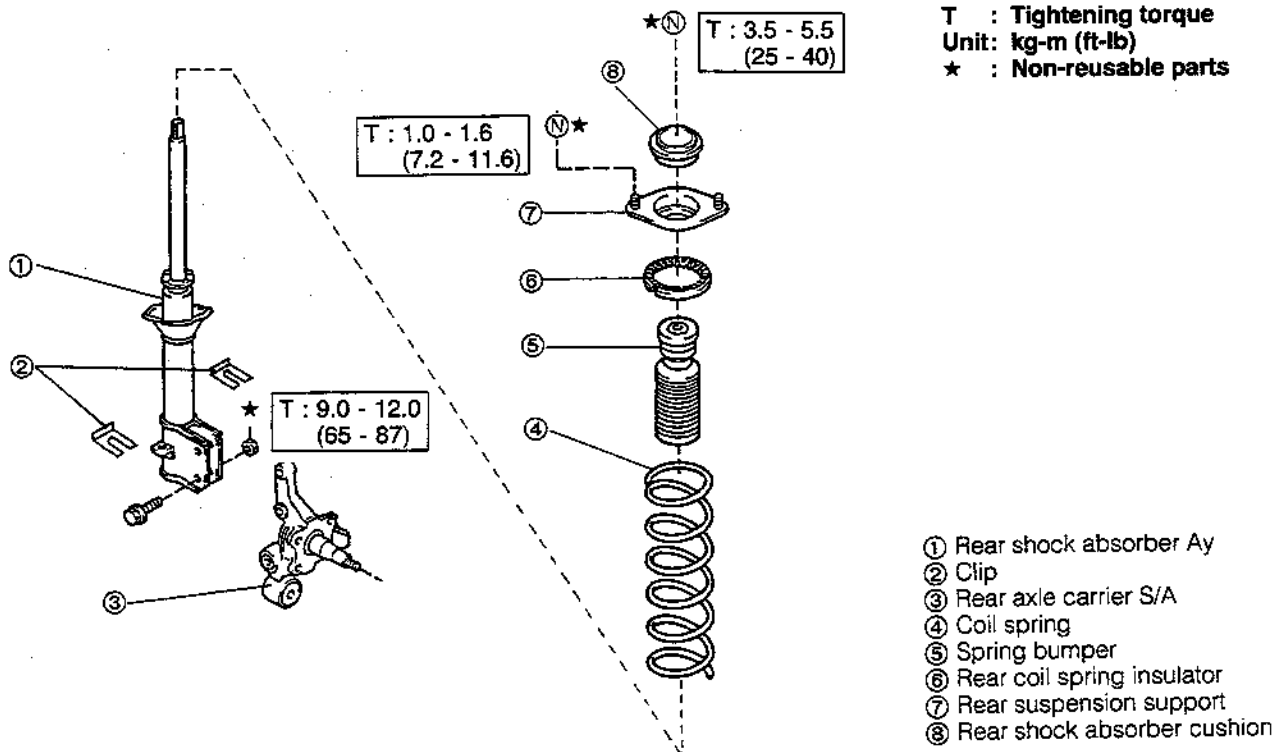


Fig. 6-37

WR-06037

## REAR AXLE & SUSPENSION

### REMOVAL

1. Jack up the vehicle at the rear section. Support the body with safety stands.
2. Remove the wheel.
3. Removal of brake tube and flexible hose
  - (1) Disconnect the brake tube from the flexible hose.  
SST: 09751-36011-000
  - (2) Detach the clip. Disconnect the flexible hose from the shock absorber.
4. Remove the nuts attaching the shock absorber to the axle carrier. Leave the bolts in an inserted condition.
5. Trim removal
  - (1) Remove the package tray.
  - (2) Remove the package tray side trim.

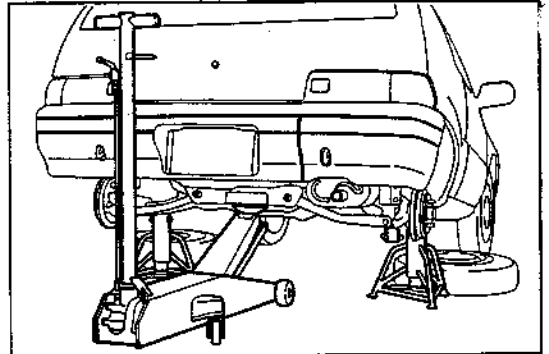


Fig. 6-38

WR-06036

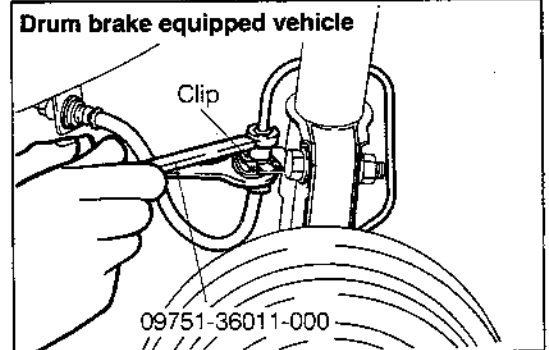


Fig. 6-39

WR-06039

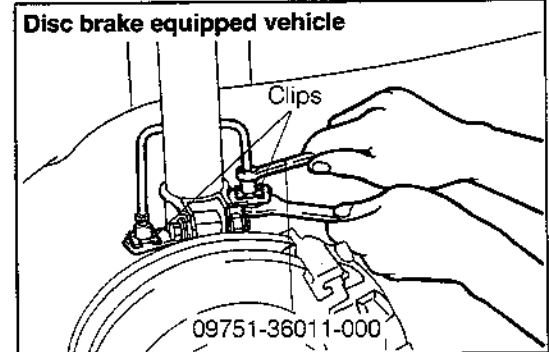


Fig. 6-40

WR-06040

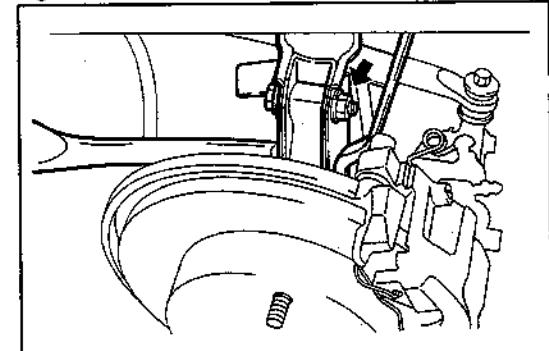


Fig. 6-41

WR-06041

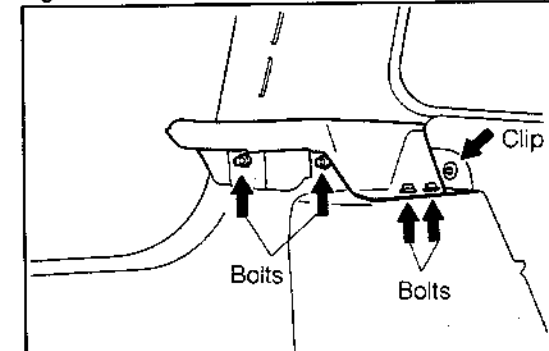


Fig. 6-42

WR-06042

## REAR AXLE & SUSPENSION

3. Slacken the nut attaching the shock absorber to the suspension support.

**NOTE:**

Do not remove the nut.

7. Remove the nuts attaching the suspension support to the body.
8. Remove the attaching bolts of the axle carrier and shock absorber. Remove the shock absorber from the body.

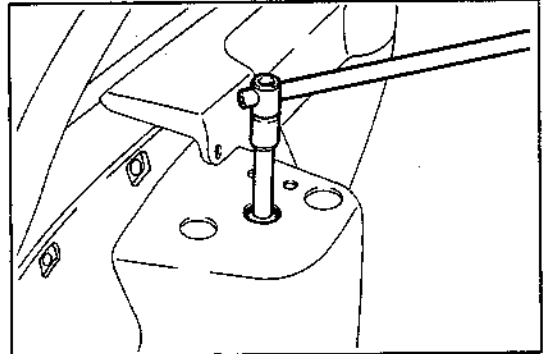


Fig. 6-43

WR-06043

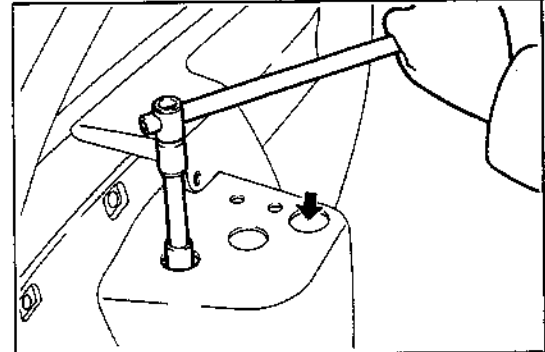


Fig. 6-44

WR-06044

### DISASSEMBLY

1. Coil spring removal
  - (1) Compress the coil spring, using the following SST.  
SST: 09727-87701-000

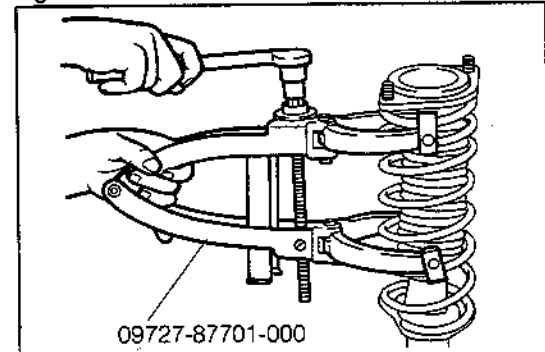


Fig. 6-45

WR-06045

- (2) Remove the nut.

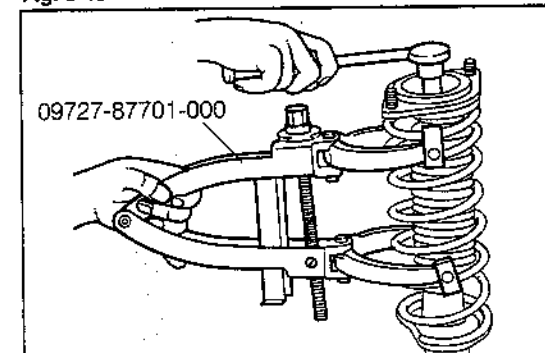


Fig. 6-46

WR-06046

## REAR AXLE & SUSPENSION

- (3) Remove the rear shock absorber cushion, rear suspension support, rear coil spring insulator, spring bumper and coil spring.

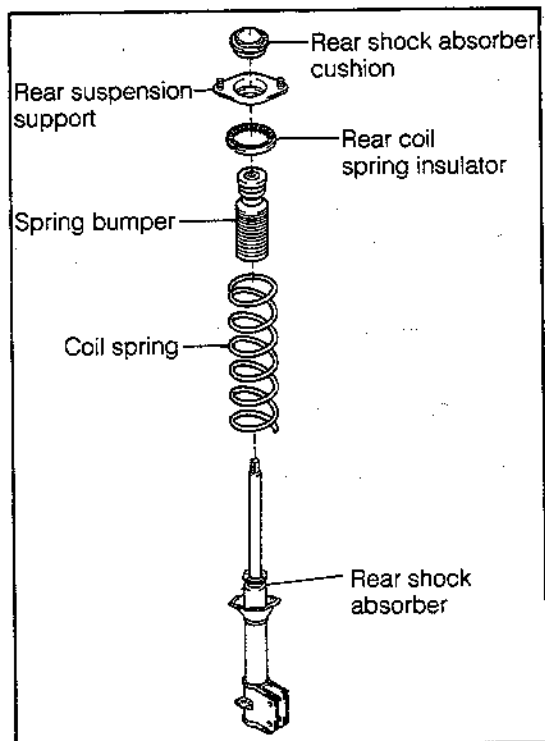


Fig. 6-47

WR-06047

## INSPECTION

1. Inspect the following parts.

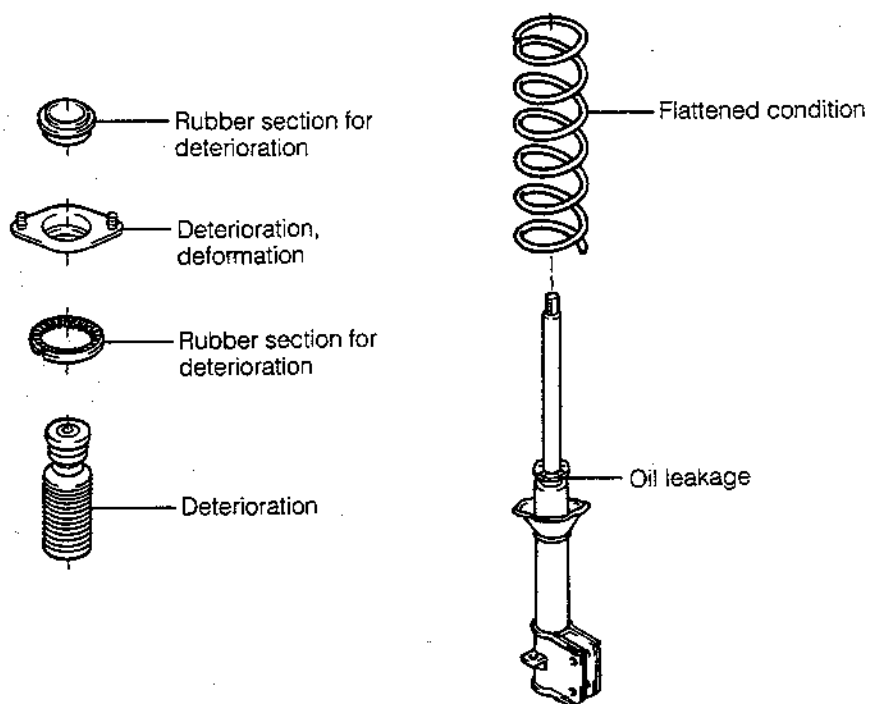


Fig. 6-48

WR-06048

## 2. Shock absorber operation inspection

- (1) Push or pull the piston rod of the shock absorber at a constant speed. Ensure that the force required to move the rod is uniform over the entire stroke. However, when the piston rod is pulled strongly, the pulling force may become slightly greater over the stroke 30 mm (1.2 inches) toward the end of the pulling stroke. It should be noted that this phenomenon is not abnormal.
- (2) Move the piston rod quickly in a up-and-down direction with a stroke of 5 - 10 mm (0.2 - 0.4 inch). Ensure that the force required to move the rod will not change.
- (3) If any abnormal feeling or noise is encountered during the inspection above, replace the shock absorber.

### NOTE:

- Perform this inspection after the piston rod has been moved in a up-and-down direction three or four times.
- When the gas filling type shock absorber is replaced, previous to the disposal, be sure to release the gas from the shock absorber.

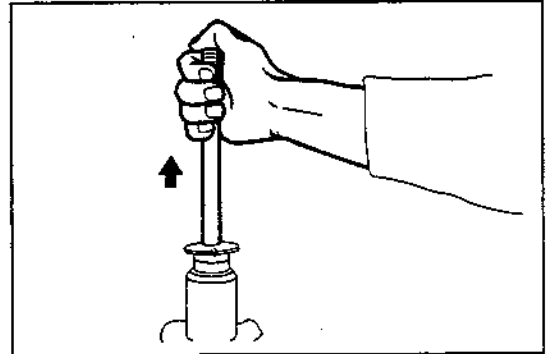


Fig. 6-49

WR-06049

## ASSEMBLY

### 1. Assembly of coil spring

- (1) Install the spring bumper at a point below the cut-out section of the piston rod.
- (2) Compress the coil spring, using the following SST. Install it to the shock absorber.  
SST: 09727-87701-000

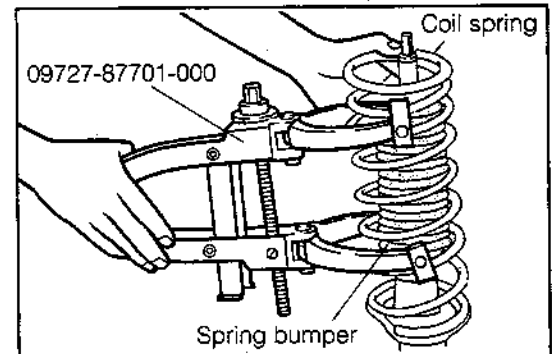


Fig. 6-50

WR-06050

- (3) Install the rear shock absorber cushion to the rear suspension support.
- (4) Install the rear coil spring insulator to the rear suspension support.

### NOTE:

Be sure to align the cut-out section of the rear coil spring insulator with the stud bolt section of the rear suspension support during the assembly.

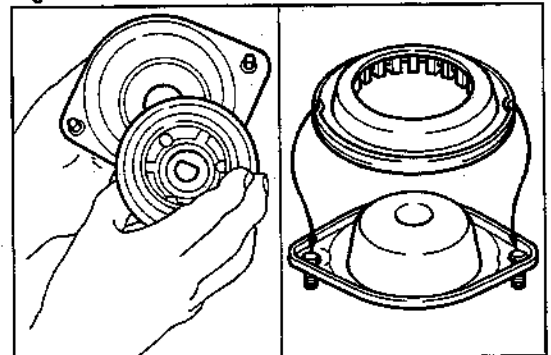


Fig. 6-51

WR-06051

- (5) Install the rear suspension support.

### NOTE:

- Be sure to align the cut-out section of the rear suspension support with that of the piston rod during the assembly.
- Align the rear suspension support on the shock absorber lower bracket, as shown in Fig. 6-53.

- (6) Fit the suspension support. Tighten it temporarily, using a new nut.

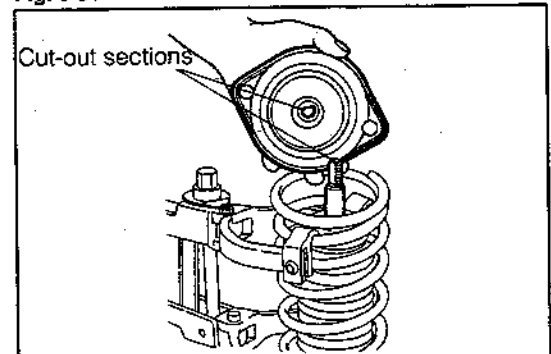


Fig. 6-52

WR-06052

## REAR AXLE & SUSPENSION

- (7) Align the coil spring end with the recessed sections of the upper and lower seats. Proceed to remove the SST.

### INSTALLATION

1. Install the suspension support to the body, using a new nuts.

Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)

2. Mount the axle carrier on the shock absorber. Fit the bolts and new nuts in position and tighten them.

Tightening Torque: 9.0 - 12.0 kg-m (65 - 87 ft-lb)

#### NOTE:

- The steering carrier attaching nuts are special nuts on which a friction stabilizing agent has been coated. Hence, be certain not to reuse them.
- Tighten the bolts and nuts while pushing the axle carrier to the lower side (positive side).

3. Install the flexible hose and brake tube, as follows:

- (1) Install the flexible hose to the shock absorber. Secure it with the clip.
- (2) Install the brake tube to the flexible hose.

SST: 09751-36011-000

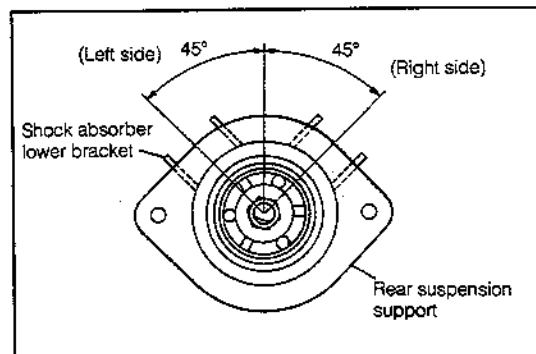


Fig. 6-53

WR-06053

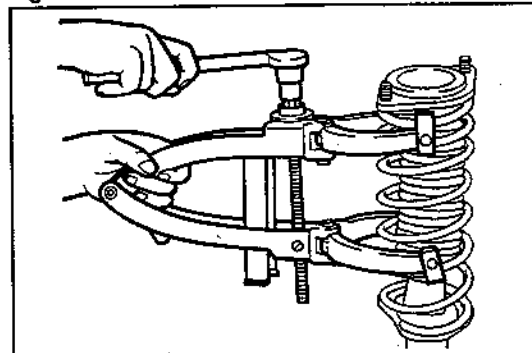


Fig. 6-54

WR-06054

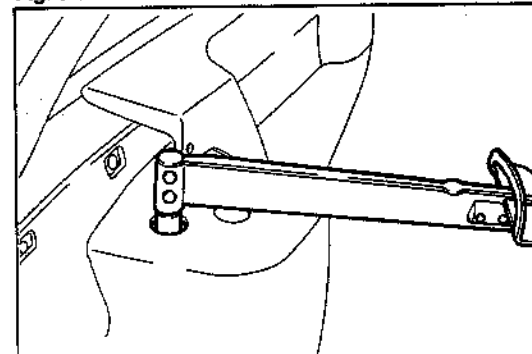


Fig. 6-55

WR-06055

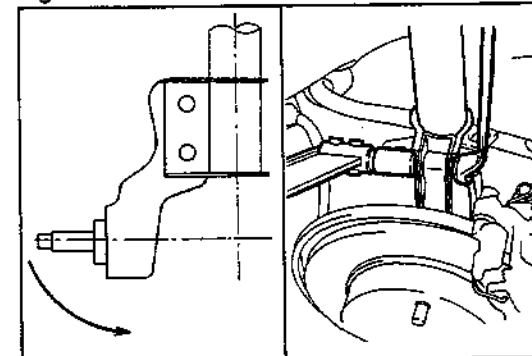


Fig. 6-56

WR-06056

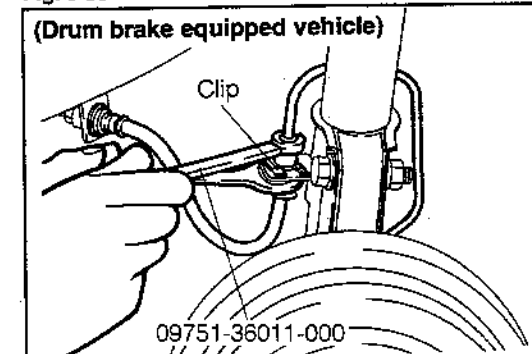


Fig. 6-57

WR-06057



4. Tighten the suspension support attaching nut.  
Tightening Torque: 3.5 - 5.5 kg-m (25 - 40 ft-lb)

5. Trim installation
  - (1) Install the package tray side trim.
  - (2) Install the package tray.

6. Perform air bleeding for the brake system. (See page 8-5.)
7. Install the wheels. Jack down the vehicle.
8. Check the rear wheel alignment. (See page 5-38.)

WR-06061

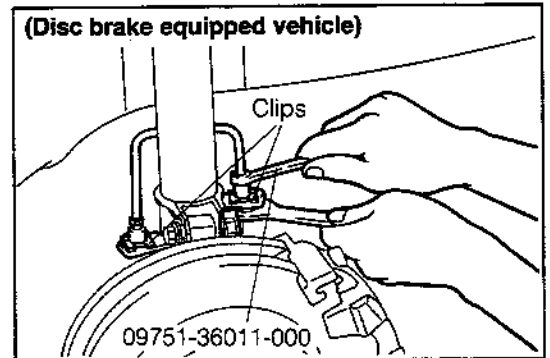


Fig. 6-58

WR-06058

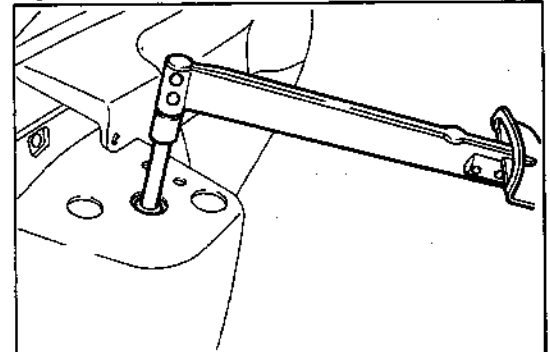


Fig. 6-59

WR-06059

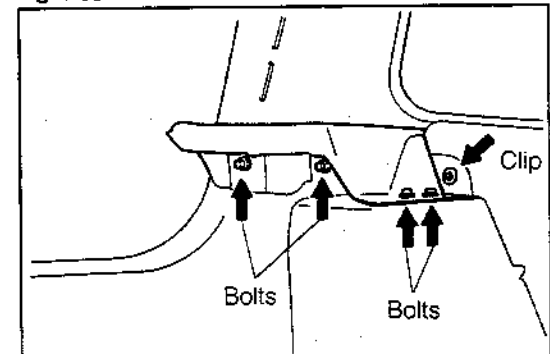


Fig. 6-60

WR-06060

## REAR AXLE & SUSPENSION

### SUSPENSION ARM COMPONENTS

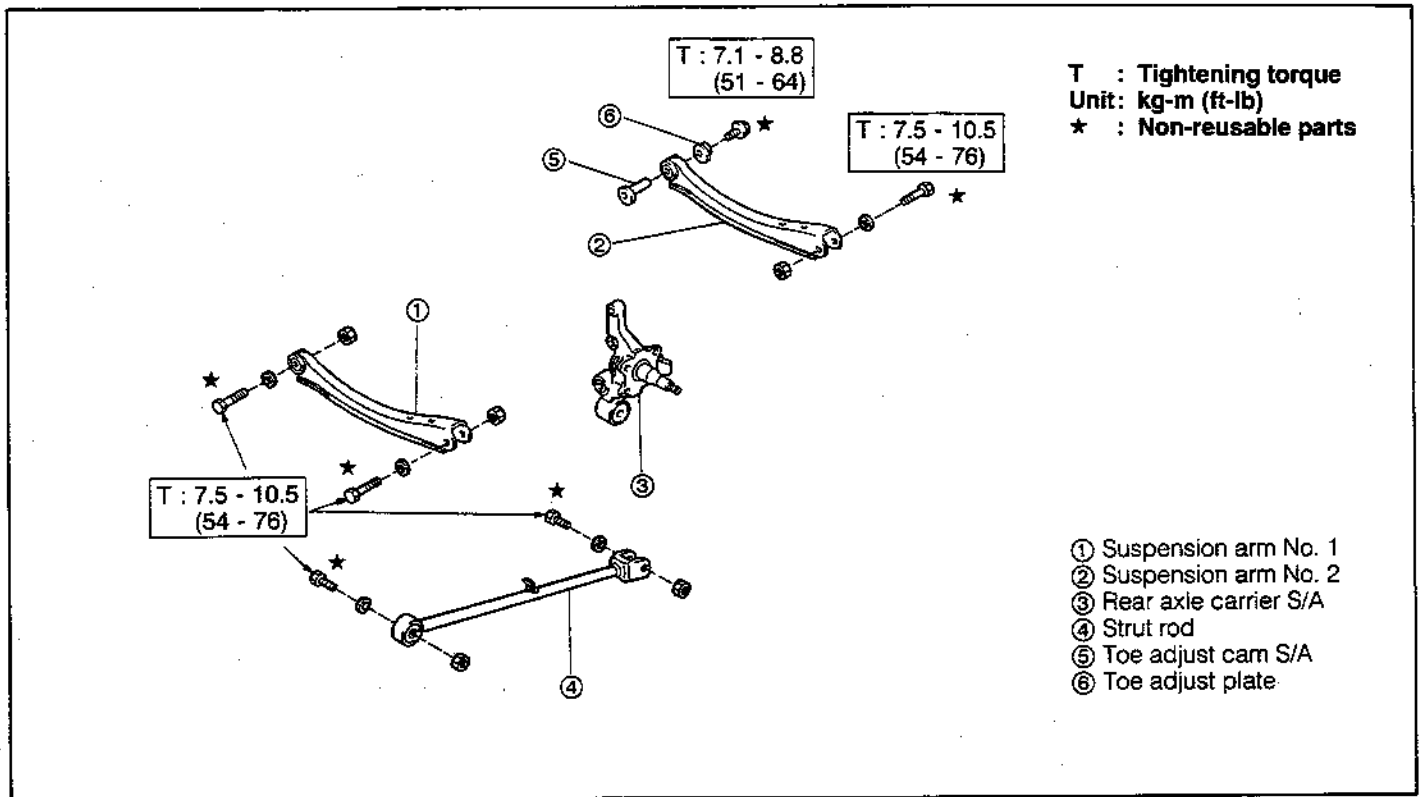


Fig. 6-61

WR-06062

### REMOVAL

1. Jack up the vehicle.
  - (1) Jack up the vehicle and support the body with safety stands.
  - (2) Remove the wheel.
2. Removal of suspension arm No.2
  - (1) Remove the attaching bolt and nut of the stabilizer link.
  - (2) Remove the attaching bolt and nut of the suspension arm at the axle carrier side.

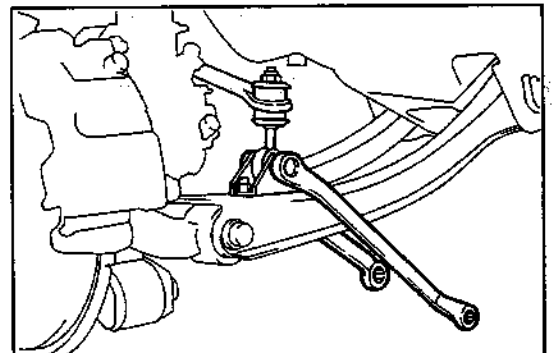


Fig. 6-62

WR-06063

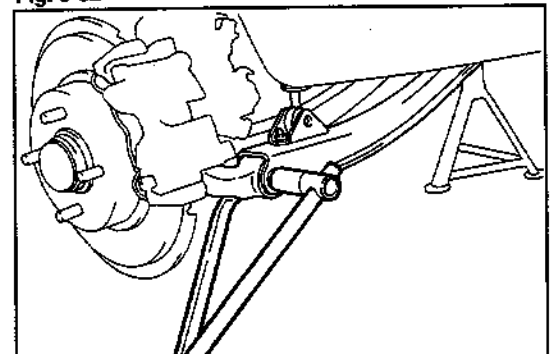


Fig. 6-63

WR-06064

## REAR AXLE & SUSPENSION

- (3) Remove the attaching bolt of the suspension arm and cam at the body side. Then, remove the suspension arm.

**NOTE:**

Put a mate mark on the body bracket and the toe adjusting cam so that the mark may be used as guide during the installation.

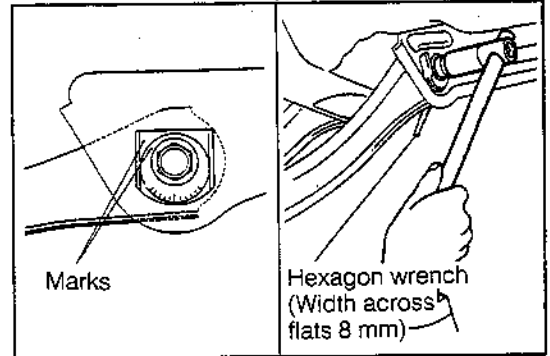


Fig. 6-64

WR-06065

- (4) Remove the rear stabilizer bar bracket from the suspension arm.

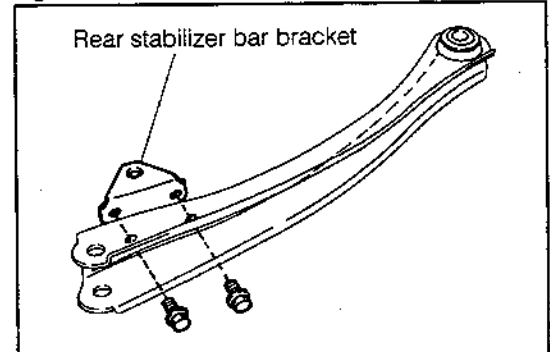


Fig. 6-65

WR-06066

**3. Removal of suspension arm No.1**

- (1) Remove the attaching bolt and nut of the suspension arm at the axle carrier side.

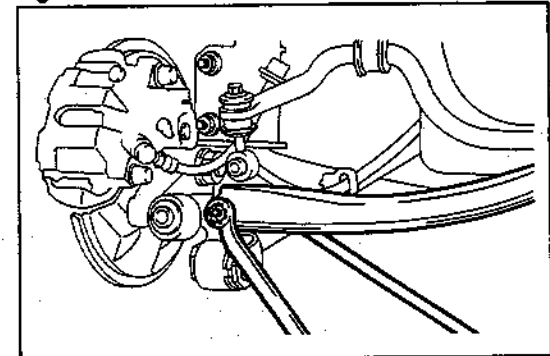


Fig. 6-66

WR-06067

- (2) Remove the attaching bolt and nut of the suspension arm at the body side. Then, remove the suspension arm.

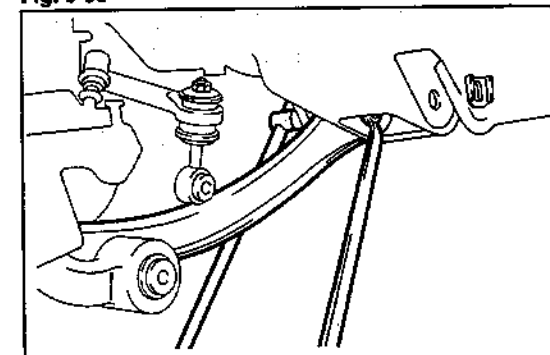


Fig. 6-67

WR-06068

## REAR AXLE & SUSPENSION

### INSPECTION

Inspect the parts as right figure.

### INSTALLATION

#### NOTE:

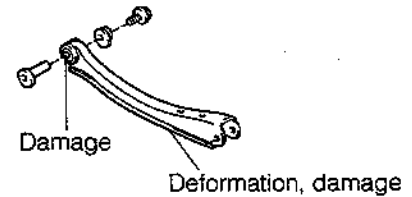
The suspension arm attaching bolts are special bolts on which a friction stabilizing agent has been coated. Hence, be certain not to reuse them.

1. Installation of suspension arm No.1
  - (1) Tighten the suspension arm to the body temporarily with the new bolt and nut.
  - (2) Tighten the suspension arm to the axle carrier temporarily with the new bolt and nut.
2. Installation of suspension arm No.2
  - (1) Install the rear stabilizer bar bracket to the suspension arm.

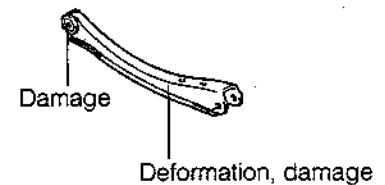
**Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)**

- (2) Mount the suspension arm on the body.
- (3) Tighten the suspension arm to the body temporarily with the new bolt and cam.
- (4) Prior to secure tightening, align the mate marks on the toe adjuster cam and body with each other.

**Suspension arm No.2**

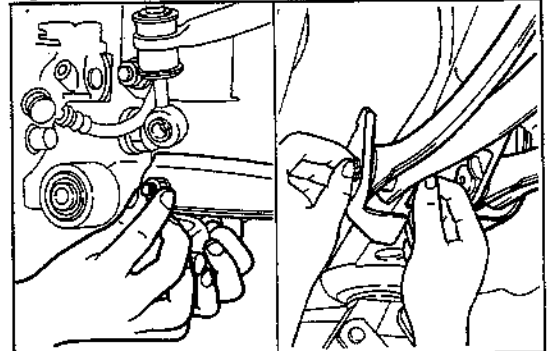


**Suspension arm No.1**



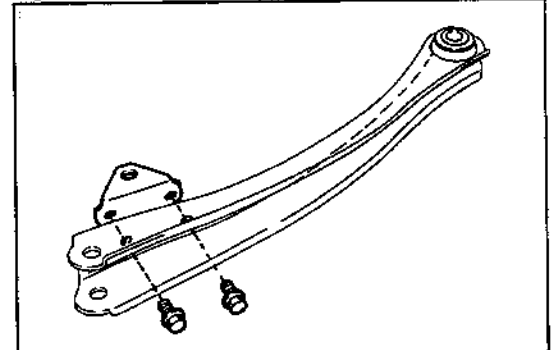
**Fig. 6-68**

WR-06069



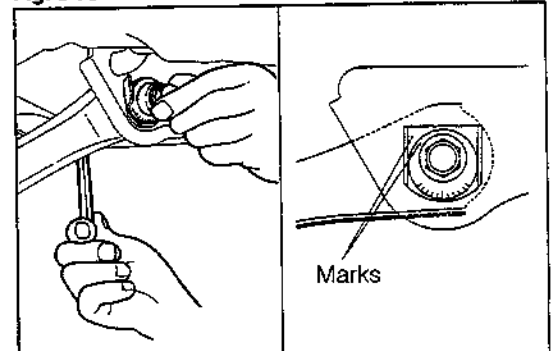
**Fig. 6-69**

WR-06070



**Fig. 6-70**

WR-06071



**Fig. 6-71**

WR-06072

- (5) Tighten the suspension arm to the axle carrier temporarily with the new bolt and nut.

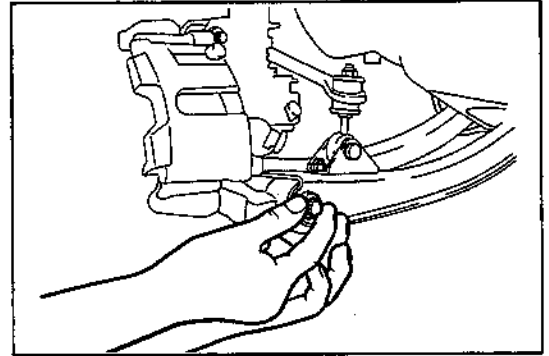


Fig. 6-72

WR-06073

- (6) Tighten the attaching bolt and nut of the stabilizer link to the specified torque.

**Tightening Torque:** 1.9 - 3.1 kg-m (14 - 22 ft-lb)

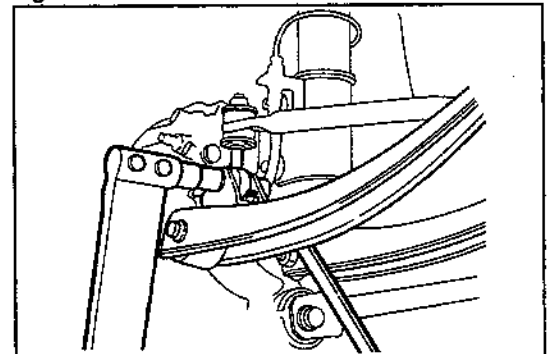


Fig. 6-73

WR-06074

## 3. Tightening of suspension arm attaching bolt

- (1) Install the wheel.
- (2) With the vehicle in an unloaded state, jack down the vehicle. Rock the vehicle in an up-and-down direction a few times so as to settle the suspension.

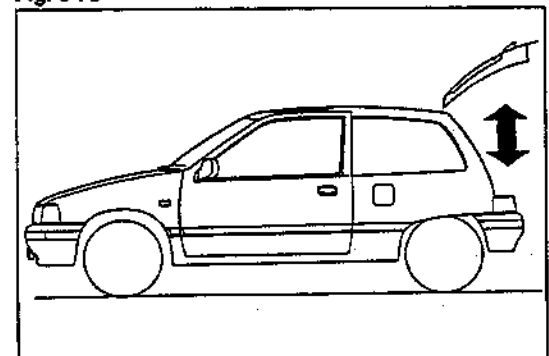


Fig. 6-74

WR-06075

- (3) With the vehicle weight applied to the suspension, tighten the bolts and nuts.

[Suspension arm No.1]

(Axle carrier side)

**Tightening Torque:** 7.5 - 10.5 kg-m (54 - 76 ft-lb)

(Body side)

**Tightening Torque:** 7.5 - 10.5 kg-m (54 - 76 ft-lb)

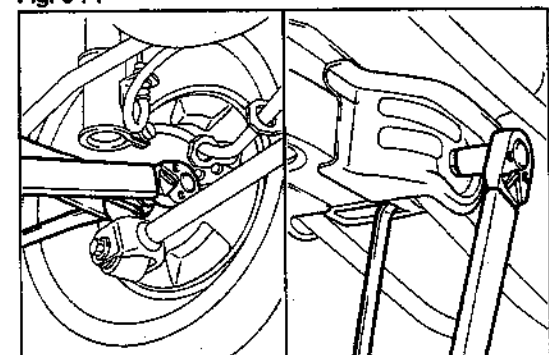


Fig. 6-75

WR-06076

[Suspension arm No.2]

(Axle carrier side)

**Tightening Torque:** 7.5 - 10.5 kg-m (54 - 76 ft-lb)

(Body side)

**Tightening Torque:** 7.1 - 8.8 kg-m (51 - 64 ft-lb)

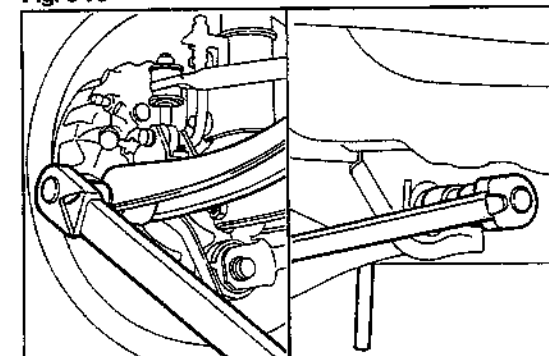


Fig. 6-76

WR-06077

4. Check the rear wheel alignment.  
(See page 5-38.)

## REAR AXLE & SUSPENSION

### STRUT ROD

#### REMOVAL

1. Jack up the vehicle.
  - (1) Jack up the vehicle. Support the body with safety stands.
  - (2) Remove the wheel.
2. Strut rod removal
  - (1) Remove the attaching bolt and nut of the strut rod at the axle carrier side.
  - (2) Remove the attaching bolt and nut of the strut rod at the body side. Then, remove the strut rod.

WR-06078

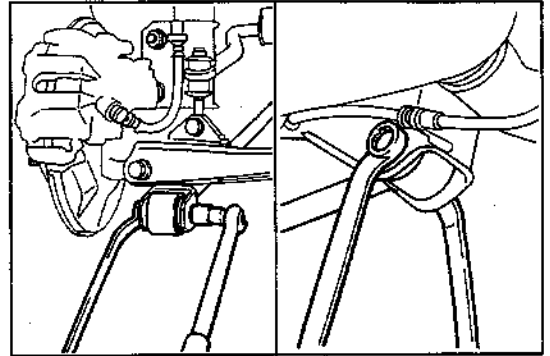


Fig. 6-77

WR-06079

#### INSPECTION

Inspect the parts as right figure.

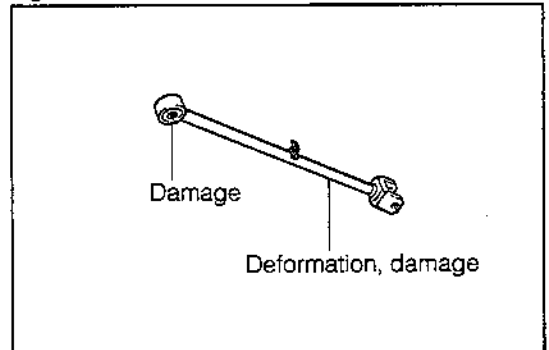


Fig. 6-78

WR-06080

#### INSTALLATION

1. Strut rod installation
  - (1) Tighten the strut rod to the body temporarily with the new bolt and nut.
  - (2) Tighten the strut rod to the axle carrier temporarily with the new bolt and nut.

##### NOTE:

The strut rod attaching bolts are special bolts on which a friction stabilizing agent has been coated. Hence, be certain not to reuse them.

2. Tightening of strut rod attaching bolt
  - (1) Install the wheel.
  - (2) With the vehicle in an unloaded state, jack down the vehicle. Rock the vehicle in an up-and-down direction a few times so as to settle the suspension.

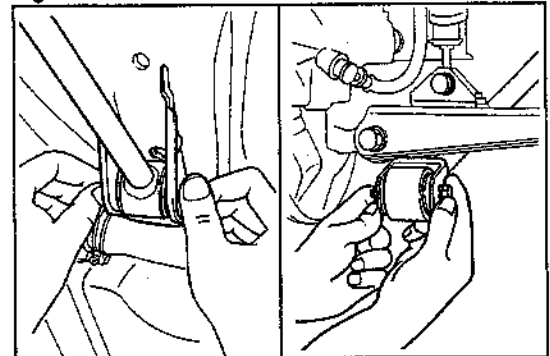


Fig. 6-79

WR-06081

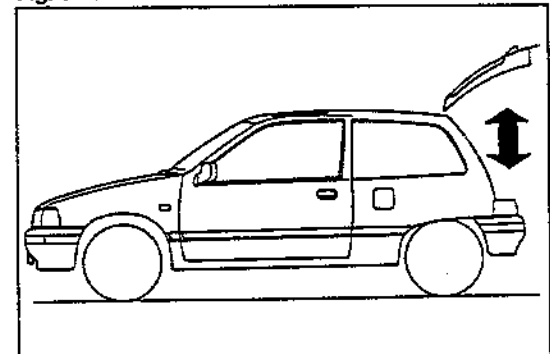


Fig. 6-80

WR-06082

- (3) With the vehicle weight applied to the suspension, tighten the bolt and nut.

Tightening Torque: 7.5 - 10.5 kg-m (54 - 76 ft-lb)

3. Check the rear wheel alignment. (See page 5-38.)

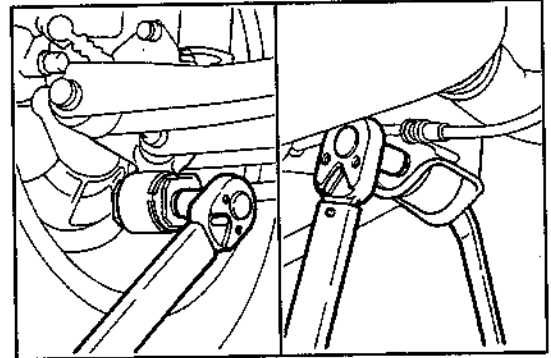
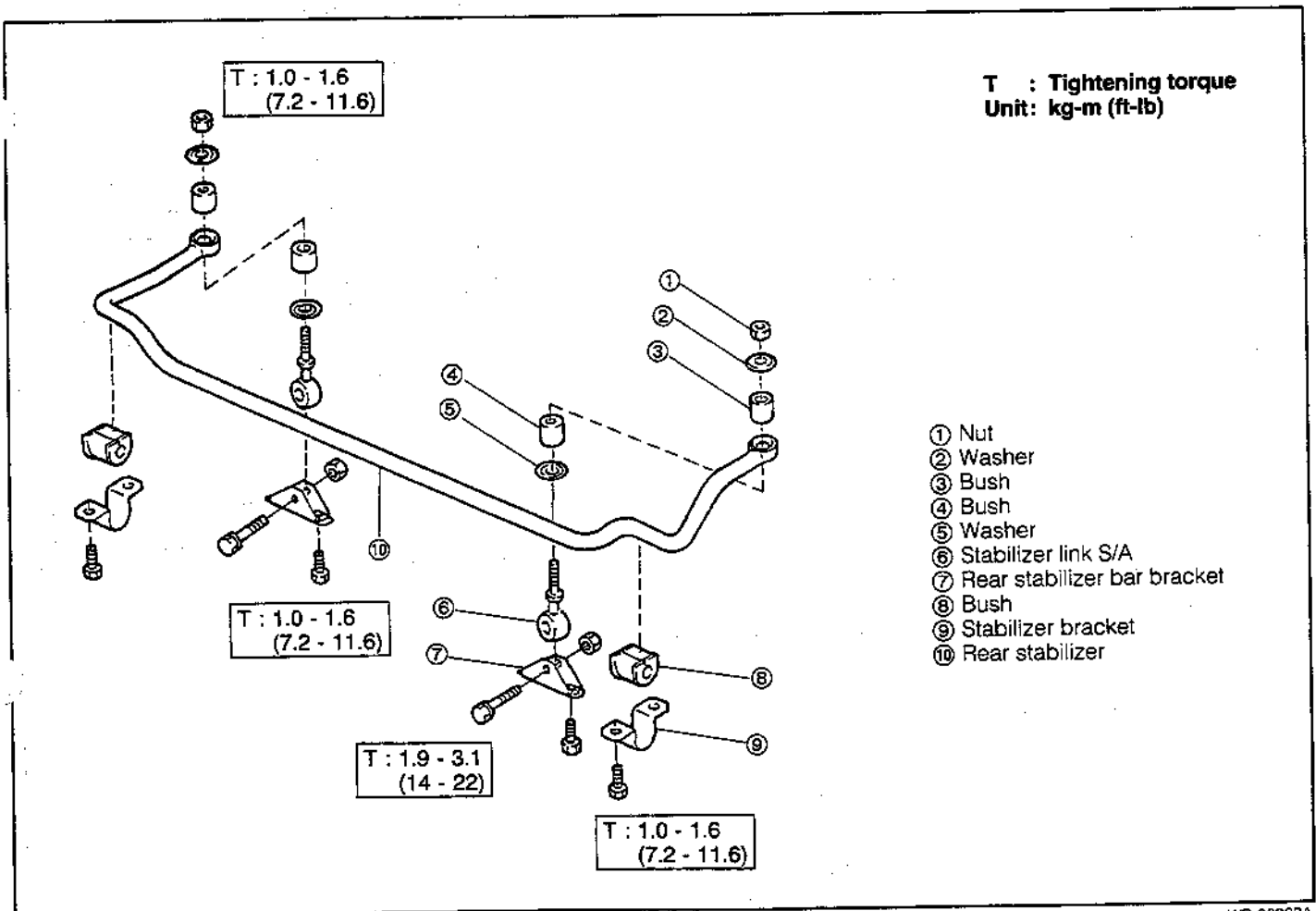


Fig. 6-81

WR-06083

## STABILIZER BAR COMPONENTS



WR-06083A

## REMOVAL

1. Jack up the vehicle. Support the body with safety stands.
2. Stabilizer bar removal
  - (1) Remove the stabilizer bar attaching nuts from the stabilizer link.

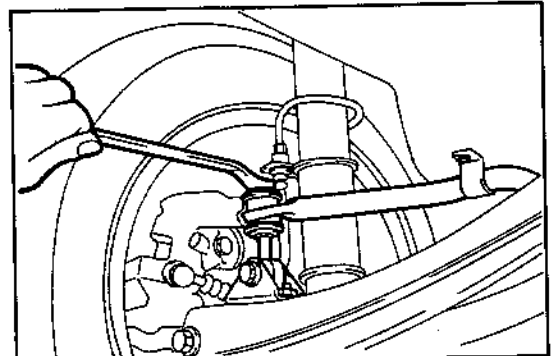


Fig. 6-83

WR-06084

## REAR AXLE & SUSPENSION

- (2) Remove the stabilizer bar attaching bolts at the body side. Remove the stabilizer bar.

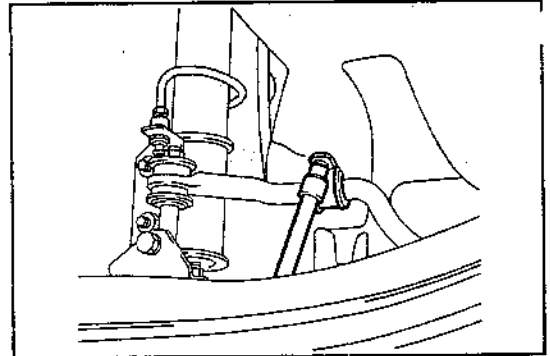


Fig. 6-84

WR-06085

- (3) Remove the attaching bolts and nuts of the stabilizer link. Remove the stabilizer link.

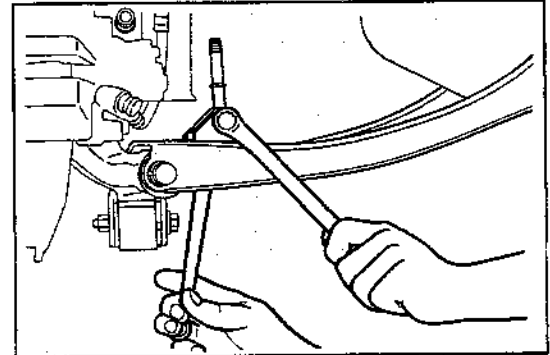


Fig. 6-85

WR-06086

- (4) Remove the rear stabilizer bar bracket attaching bolts. Proceed to remove the stabilizer bar bracket.

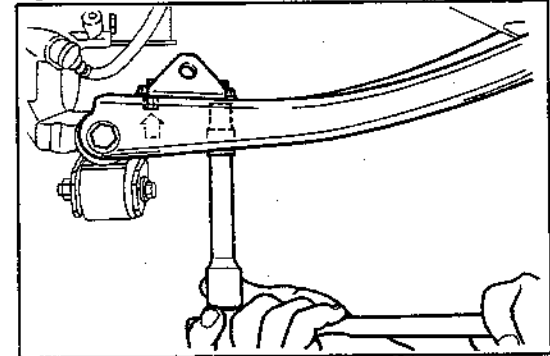


Fig. 6-86

WR-06087

## INSPECTION

Inspect the following parts.

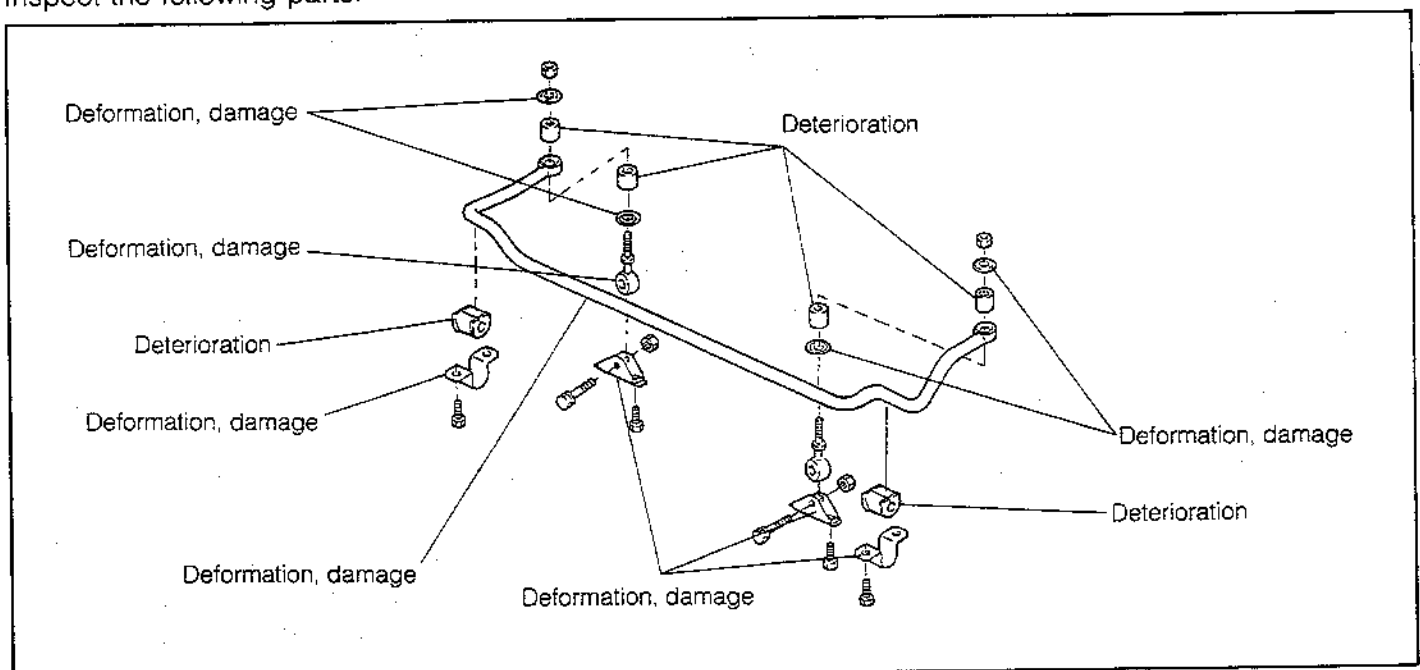


Fig. 6-87

WR-06088



## INSTALLATION

### 1. Stabilizer bar installation

- (1) Install the rear stabilizer bar bracket to the suspension arm No.2.

Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)

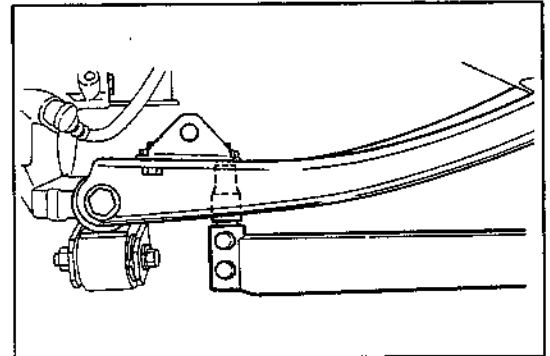


Fig. 6-88

WR-06089

- (2) Tighten the stabilizer link to the rear stabilizer bar bracket temporarily with the bolts and nuts.

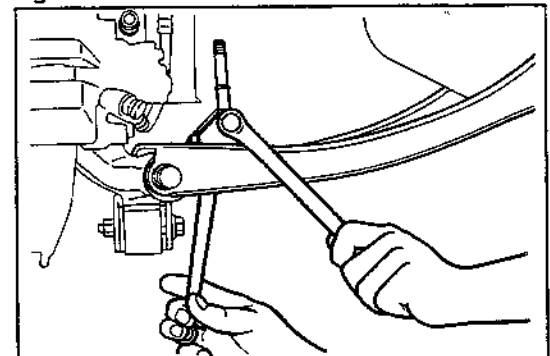


Fig. 6-89

WR-06090

- (3) Fit temporarily the bush, bracket and stabilizer bar to the body.

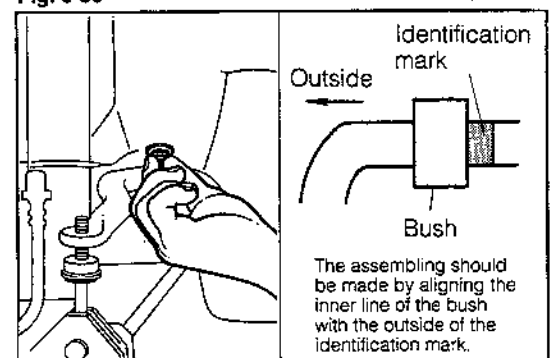


Fig. 6-90

WR-06091

- (4) Fit the stabilizer bar to the stabilizer link. Tighten the nuts temporarily.

#### NOTE:

Assemble the bush and bracket, as shown in the right figure.

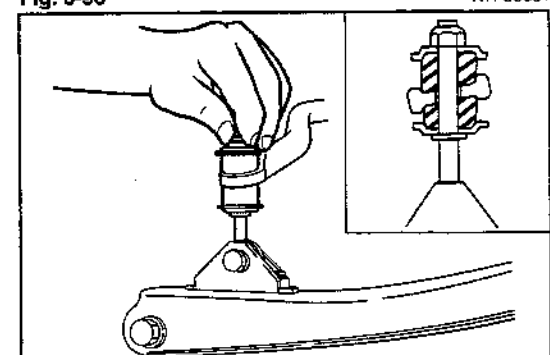


Fig. 6-91

WR-06092

### 2. Tightening of bolts and nuts

- (1) Tighten the nuts attaching the stabilizer bar to the stabilizer link.

Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)

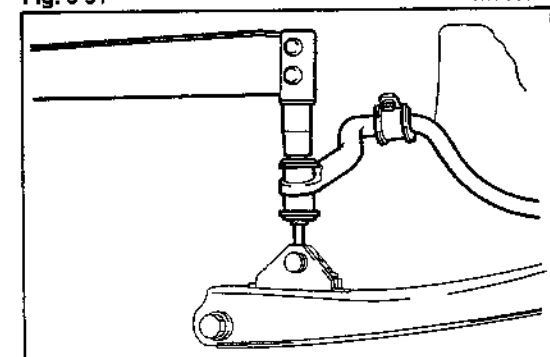


Fig. 6-92

WR-06093

## REAR AXLE & SUSPENSION

- (2) Tighten the stabilizer bar attaching bolts at the body side.

Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)

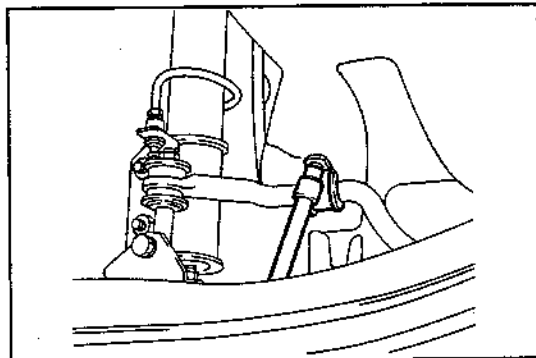


Fig. 6-93

WR-06094

- (3) Tighten the attaching bolts and nuts of the stabilizer link.

Tightening Torque: 1.9 - 3.1 kg-m (14 - 22 ft-lb)

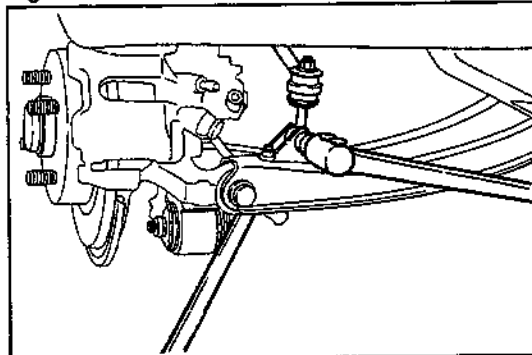


Fig. 6-94

WR-06095

# DAIHATSU

# CHARADE

## Chassis

## SECTION 7

## STEERING

7

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WR-07001

## STEERING

## STEERING

### SCHEMATIC VIEW

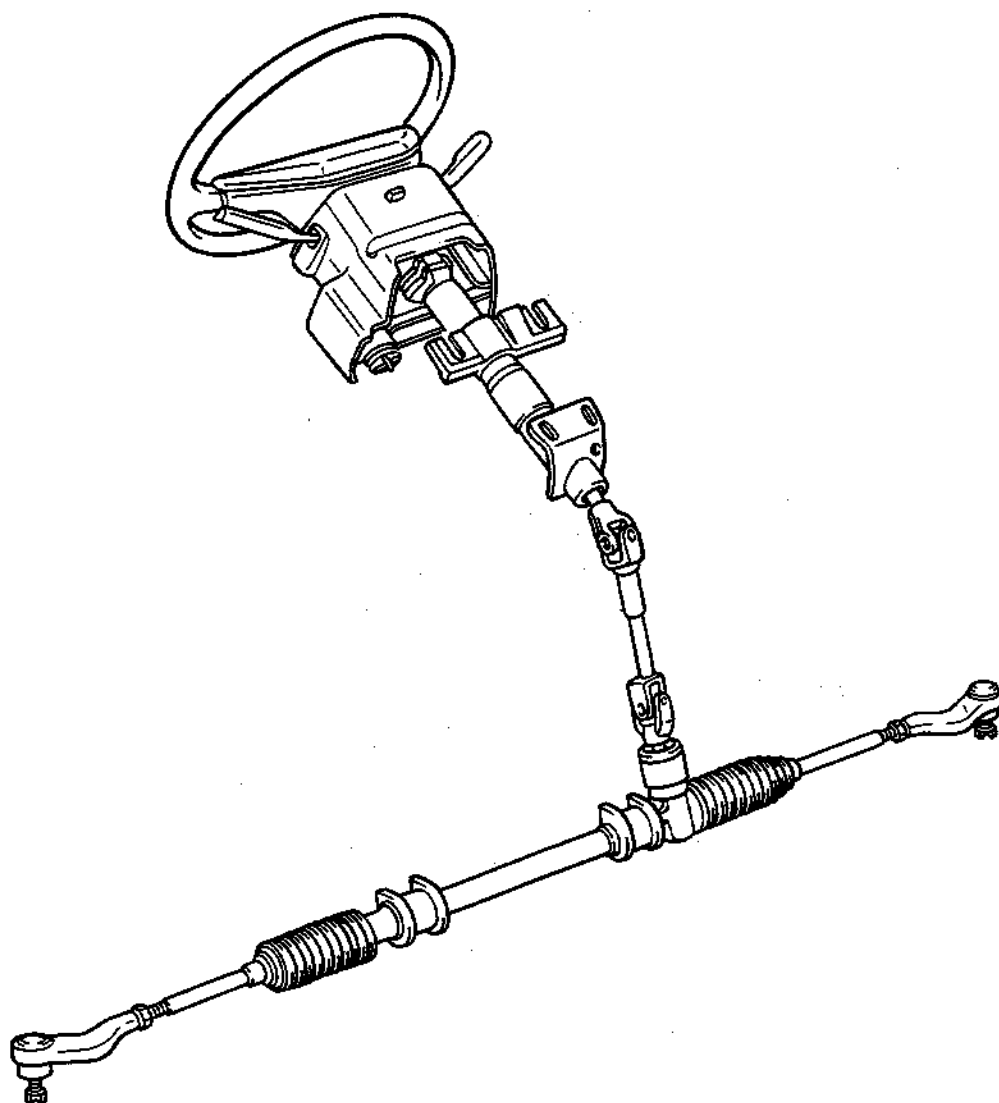
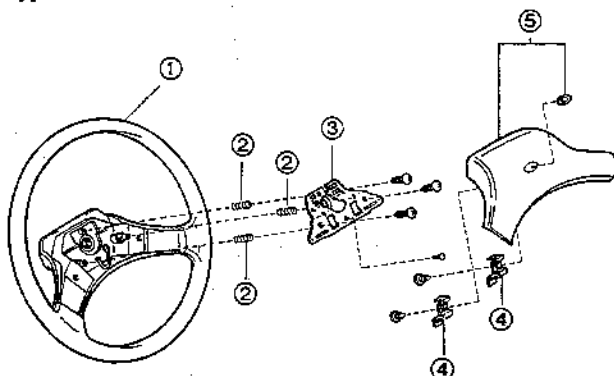


Fig. 7-1

WR-07002

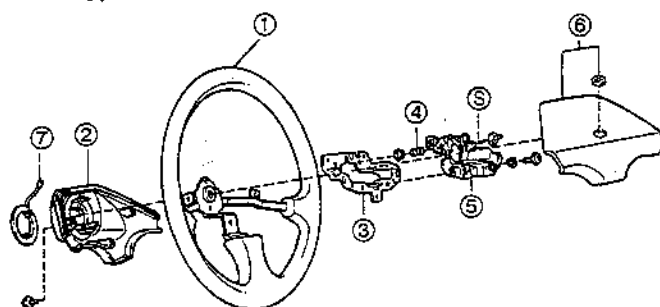
## STEERING WHEEL COMPONENTS

### Resin type



- ① Steering wheel
- ② Horn contact spring
- ③ Horn button contact ring or plate
- ④ Steering wheel pad set spring
- ⑤ Steering wheel pad S/A

### Urethane type



- ① Steering wheel
- ② Steering wheel boss lower cover
- ③ Horn button contact plate
- ④ Horn contact spring
- ⑤ Horn contact spring set plate
- ⑥ Steering wheel cover S/A
- ⑦ Horn contact ring

Fig. 7-2

WR-07003

## REMOVAL

1. Disconnect the battery negative (–) terminal.
2. Hold the steering wheel pad at its lower end by your fingers. Then, detach the steering wheel pad by pulling it toward your side.
3. Remove the steering wheel lock nut.

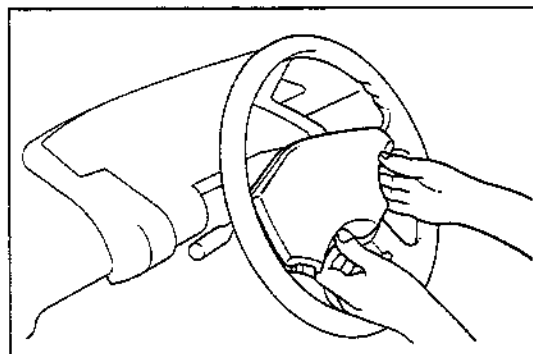


Fig. 7-3

WR-07004

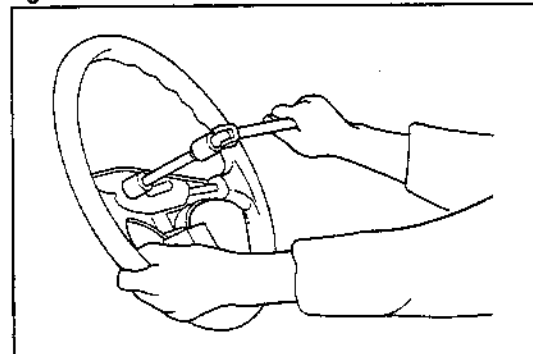


Fig. 7-4

WR-07005

## STEERING

4. Remove the steering wheel, using the following SST.  
SST: 09609-20011-000

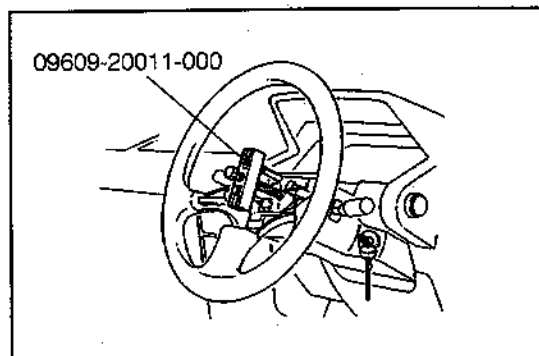


Fig. 7-5

WR-07006

## INSTALLATION

1. Fit the steering wheel and tighten the lock nut.  
Tightening Torque: 3.5 - 5.5 kg-m (25 - 40 ft-lb)
2. Install the steering wheel pad.
3. Connect the battery negative (-) terminal.

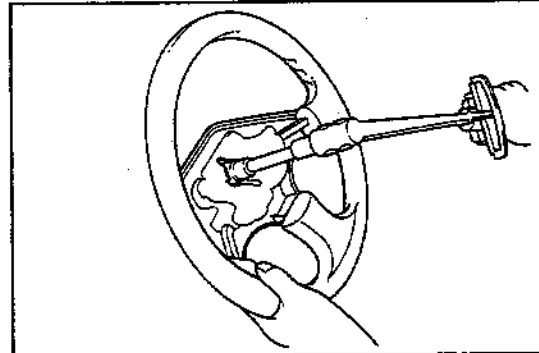


Fig. 7-6

WR-07007

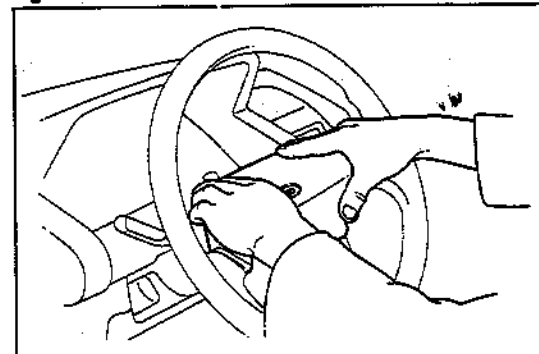


Fig. 7-7

WR-07008

## ENGINE KEY CYLINDER

### REMOVAL

1. Loosen six screws and remove the steering column lower cover.
2. Engine key cylinder removal
  - (1) Fabricate a rod as shown in the right figure, by bending an approx. 2 mm (0.08 inch) diameter rod.
  - (2) Set the engine key to the [ACC] position.

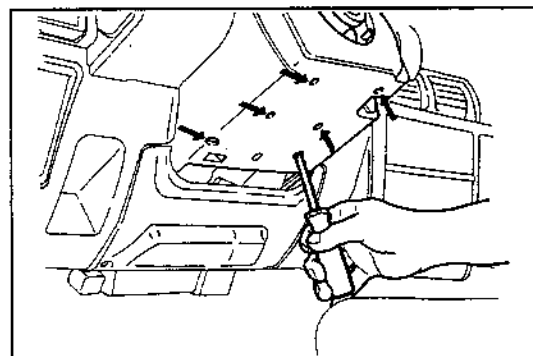


Fig. 7-8

WR-07009

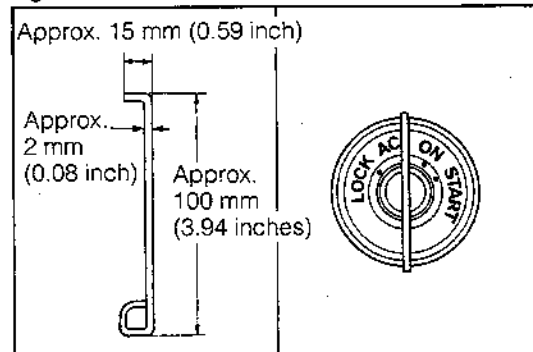


Fig. 7-9

WR-07010

- (3) While pushing the stop pin by means of the rod, draw out the cylinder.

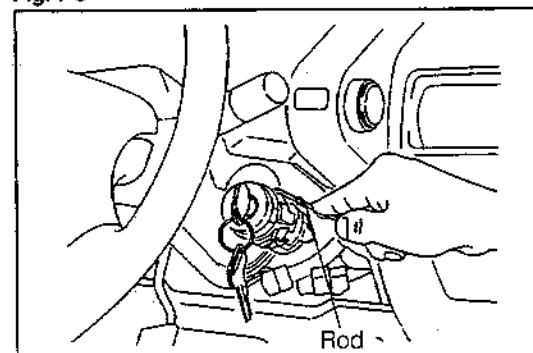


Fig. 7-10

WR-07011

### INSTALLATION

1. Engine key cylinder installation
  - (1) Insert a common screwdriver into the pawl groove of the lock cylinder. Set the pawl groove to the [ACC] position.
  - (2) Set the engine key to the [ACC] position. Insert the key cylinder. Ensure that the stop pin is locked to the lock cylinder.
2. Install the steering column lower cover.

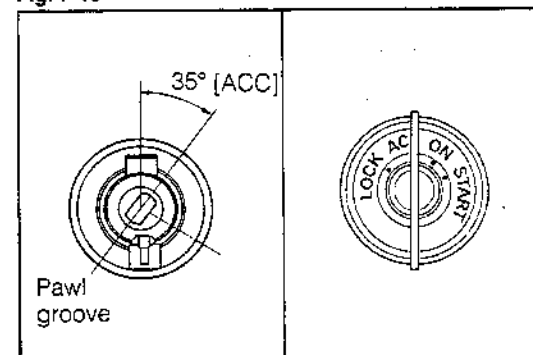


Fig. 7-11

WR-07012

## STEERING

### STEERING COLUMN COMPONENTS

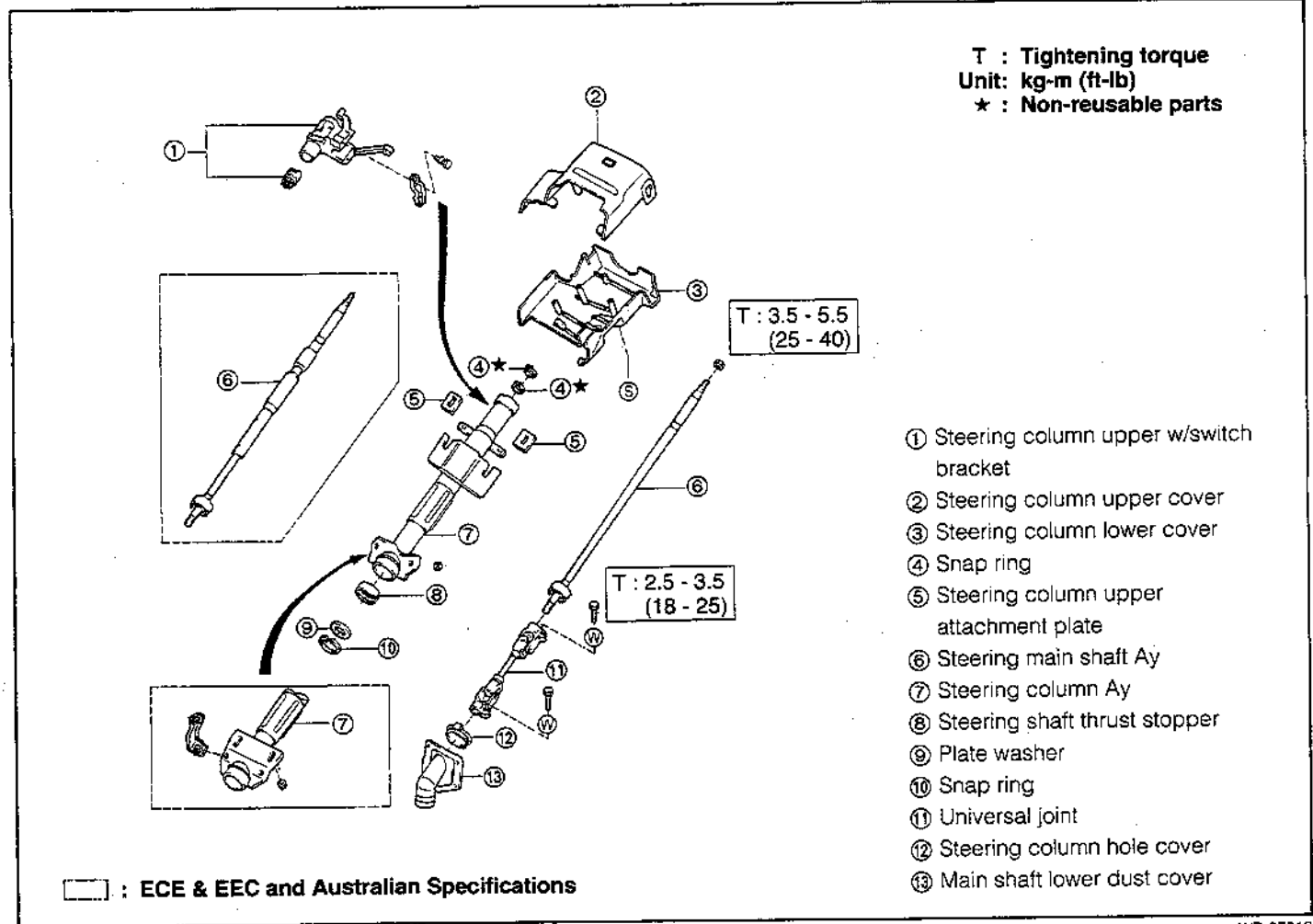


Fig. 7-12

WR-07013

### REMOVAL

1. Disconnect the battery negative (-) terminal.
2. Remove the steering wheel. (See page 7-3.)

3. Detach the instrument lower finish panel and steering column lower cover.

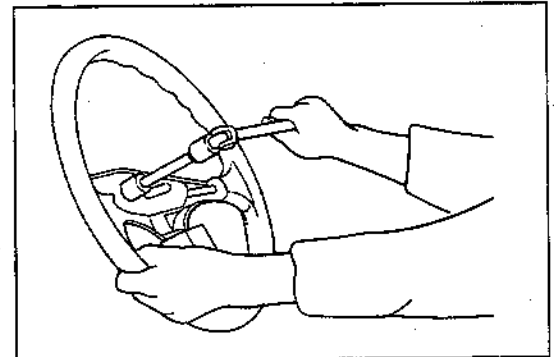


Fig. 7-13

WR-07014

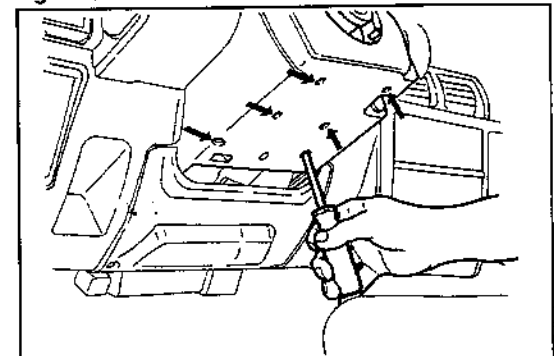


Fig. 7-14

WR-07015



4. Remove the instrument panel lower reinforcement.
5. Remove the connectors for the multi-use lever switch and engine key switch.

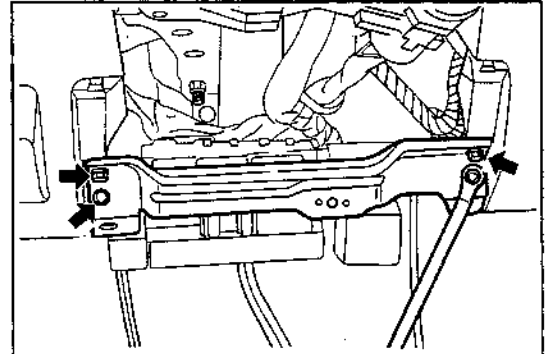


Fig. 7-15

WR-07016

6. Remove the bolt of the universal joint.

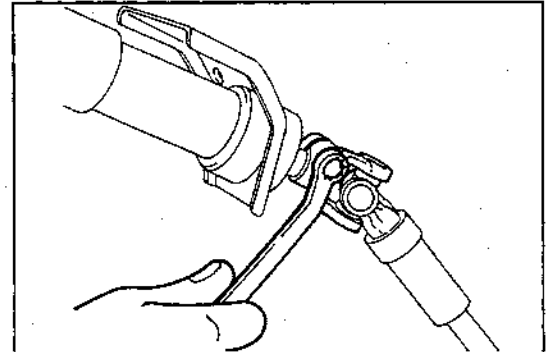


Fig. 7-16

WR-07017

7. Steering column assembly removal
  - (1) Remove three bolts and two nuts.
  - (2) Remove the steering column assembly from the body.

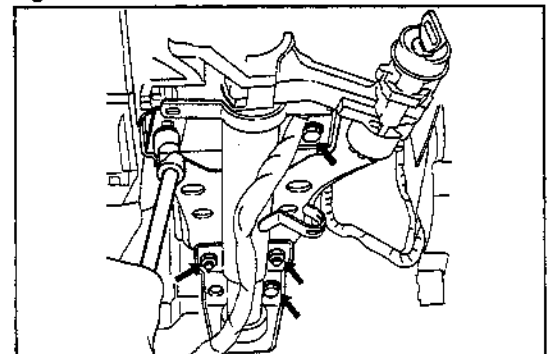


Fig. 7-17

WR-07018

8. Remove the steering column upper cover and multi-use lever switch from the steering column assembly.

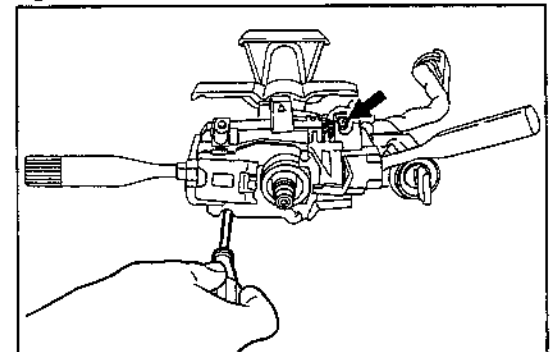


Fig. 7-18

WR-07019

## DISASSEMBLY

1. Detach the snap ring and plate washer located at the lower side of the steering main shaft.

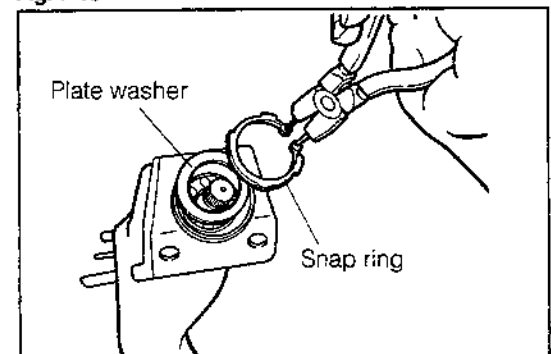


Fig. 7-19

WR-07020

## STEERING

2. Detach the snap ring located at the upper side of the steering main shaft.

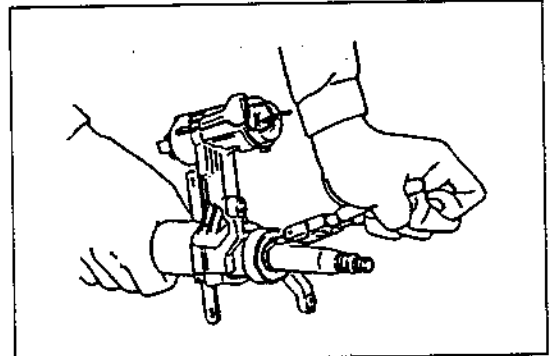


Fig. 7-20

WR-0702\*

3. Steering main shaft subassembly removal
  - (1) Remove the steering main shaft subassembly by tapping the main shaft lightly with a plastic hammer.

**NOTE:**

Never tap the main shaft strongly. If the main shaft should be tapped strongly, the resin pin of the steering main shaft may be damaged. (ECE & EEC and Australian specifications)

- (2) Remove the stopper from the steering main shaft.
  - (3) Detach the snap ring from the steering main shaft.

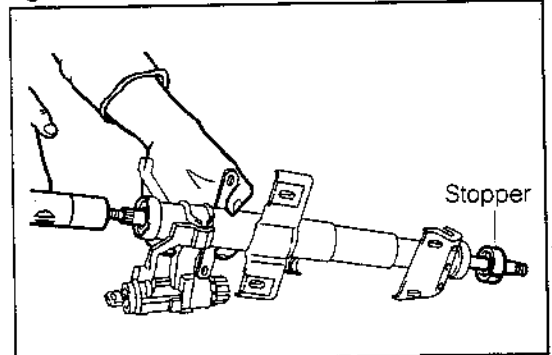


Fig. 7-21

WR-0702\*

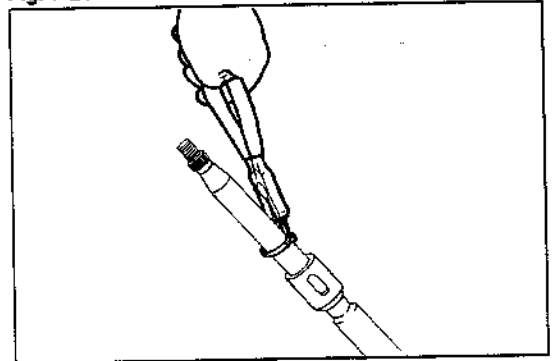


Fig. 7-22

WR-07023

**INSPECTION**

Inspect the following parts.

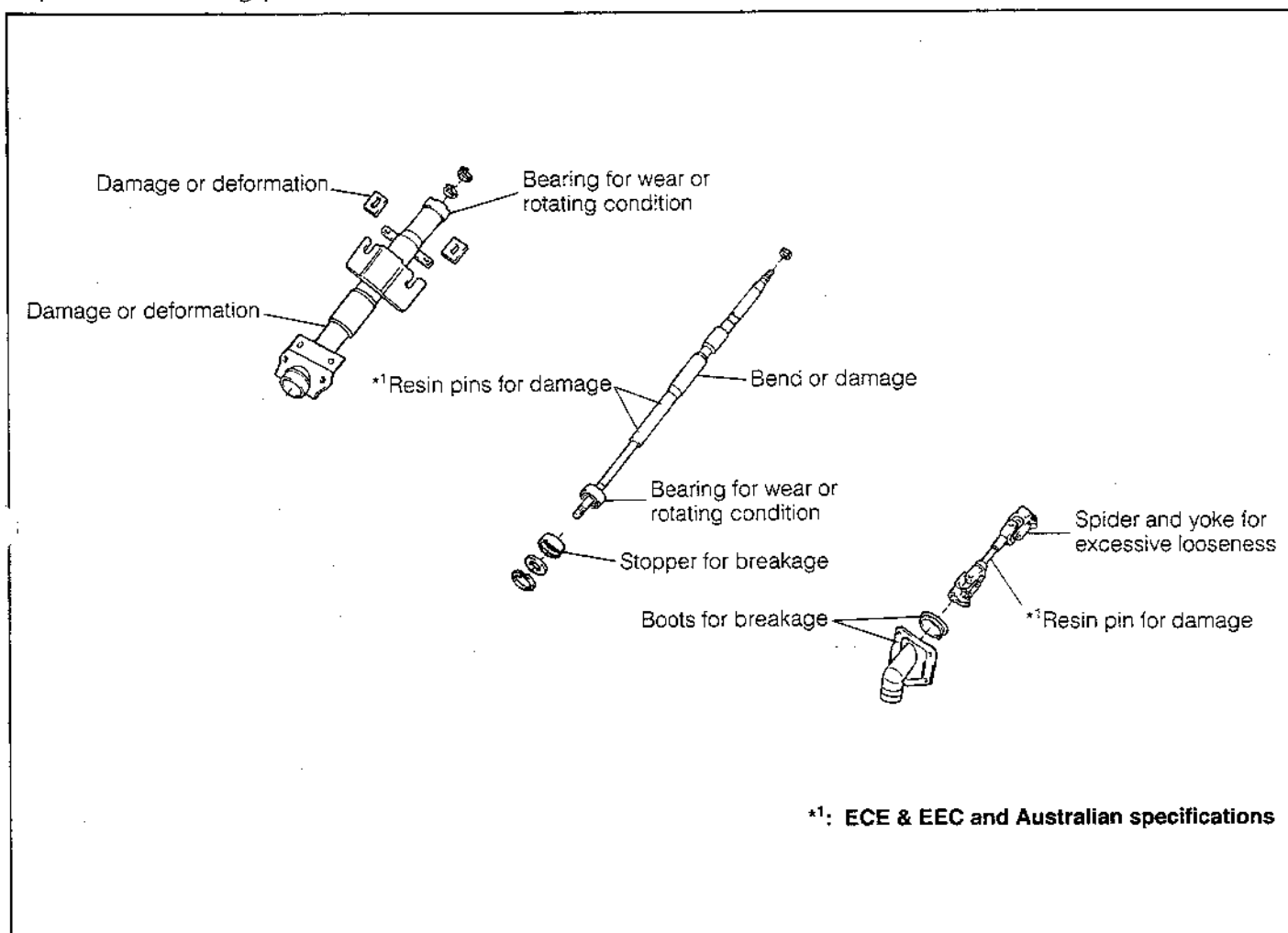


Fig. 7-23

WR-07024

**ASSEMBLY**

1. Assembly of steering main shaft
  - (1) Fit a new snap ring to the steering main shaft.
  - (2) Place the stopper on the bearing.
2. Insert the main shaft (with the bearing) into the steering column, using a plug wrench.

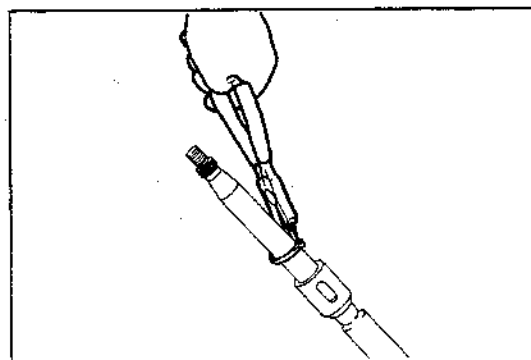


Fig. 7-24

WR-07025

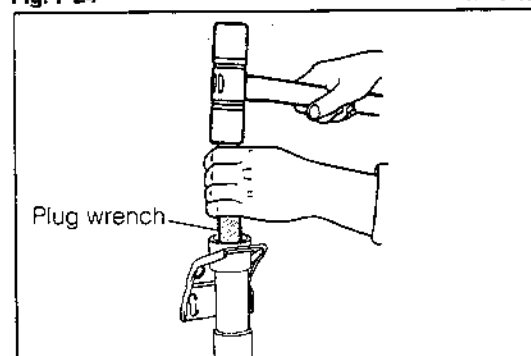


Fig. 7-25

WR-07026

## STEERING

3. Fit the new snap ring to the upper side of the steering main shaft.

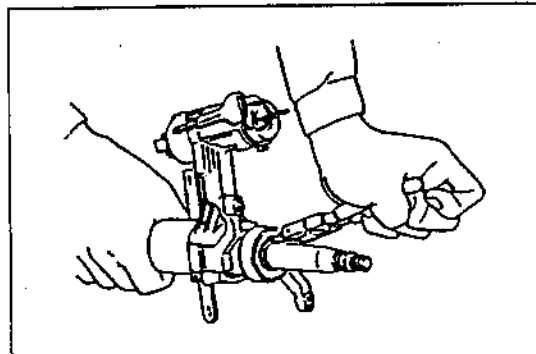


Fig. 7-26

WR-07027

4. Install the plate washer and snap ring.

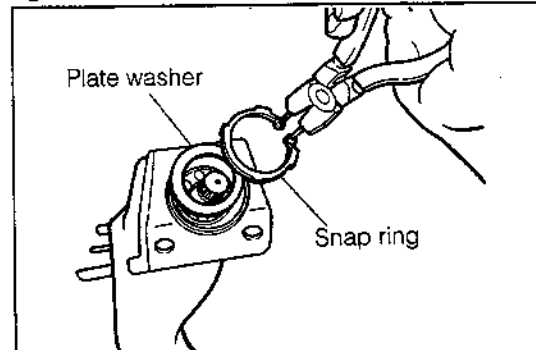


Fig. 7-27

WR-07028

5. Install the multi-use lever switch to the steering column.

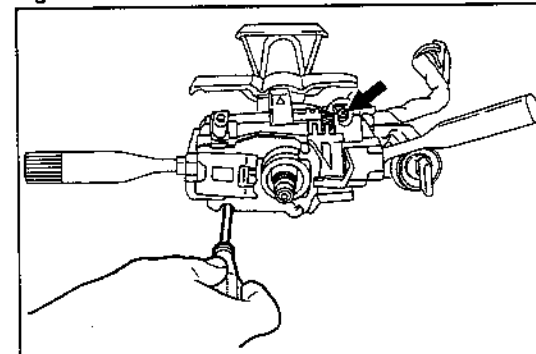


Fig. 7-28

WR-07029

## INSTALLATION

1. Steering column assembly installation
  - (1) Install the steering column upper cover to the steering column.
  - (2) Tighten the attaching bolt of the universal joint.  
Tightening Torque: 2.5 - 3.5 kg-m (18 - 25 ft-lb)

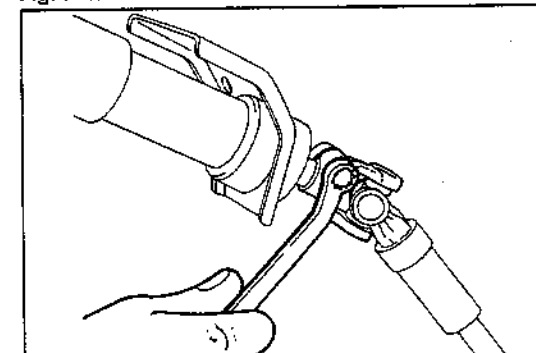


Fig. 7-29

WR-07030

- (3) Install the steering column with the three bolts and two nuts.

Tightening Torque:

Bolt 1.5 - 2.2 kg-m (11 - 16 ft-lb)

Nut 2.5 - 3.5 kg-m (18 - 25 ft-lb)

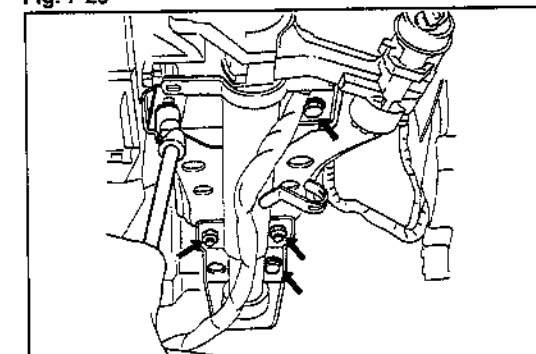


Fig. 7-30

WR-07031

2. Install the connector for the multi-use lever and engine key switch.
3. Install the instrument panel lower reinforcement.
4. Install the instrument lower finish panel and steering column lower cover.
5. Install the steering wheel.  
(See page 7-4.)
6. Install the battery negative (-) terminal.

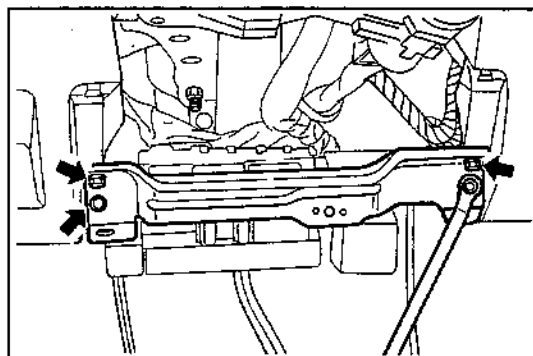


Fig. 7-31

WR-07032

## STEERING

### STEERING GEAR ASSEMBLY COMPONENTS

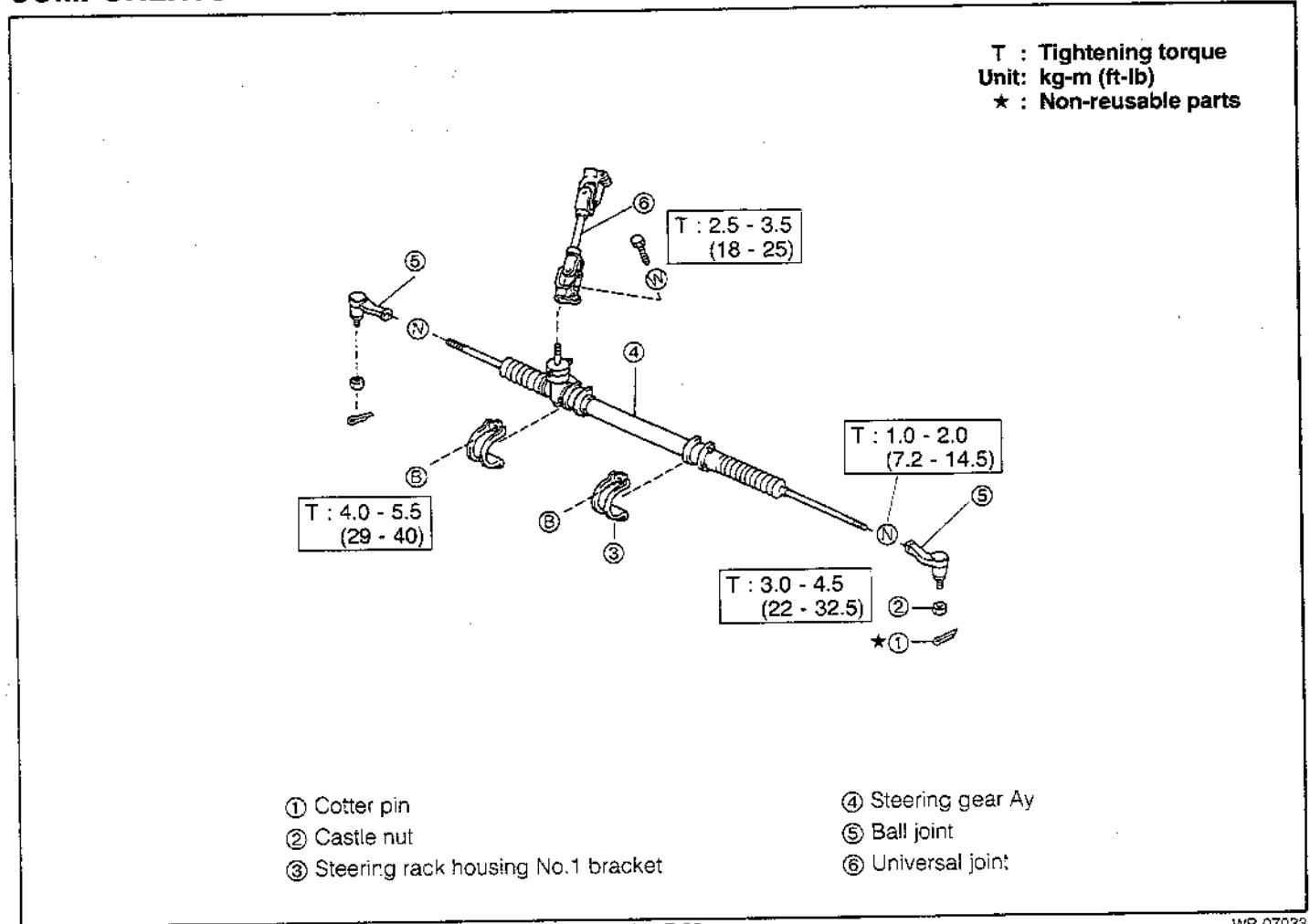


Fig. 7-32

WR-07033

### REMOVAL

1. Jack up the vehicle at the front side. Support the body with safety stands.
2. Remove the wheel.

3. Steering universal joint removal
  - (1) Remove the bolt.
  - (2) Remove the universal joint.

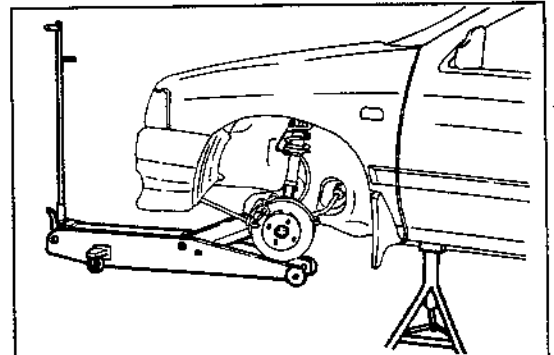


Fig. 7-33

WR-07034

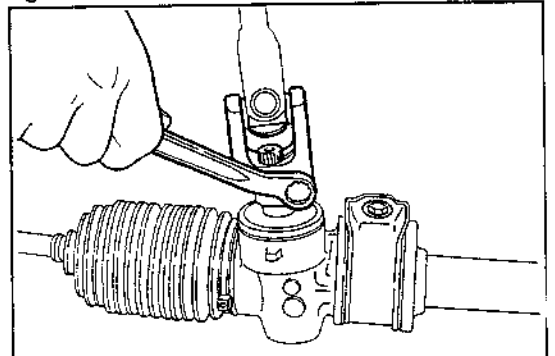


Fig. 7-34

WR-07035

## 4. Tie rod end removal

- (1) Remove the cotter pins and castle nuts.
- (2) Remove the tie rod end from the knuckle arm, using the following SST.

SST: 09611-87701-000

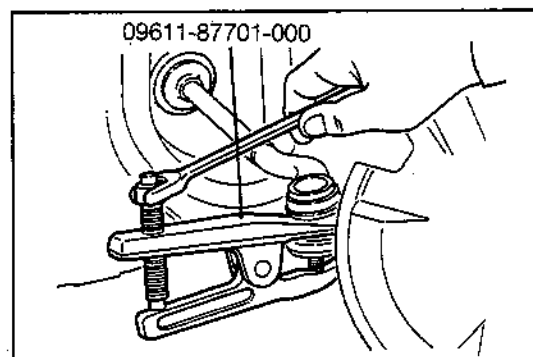


Fig. 7-35

WR-07036

## 5. Steering gear assembly removal

- (1) Remove the four pieces of steering rack housing bracket set bolts.

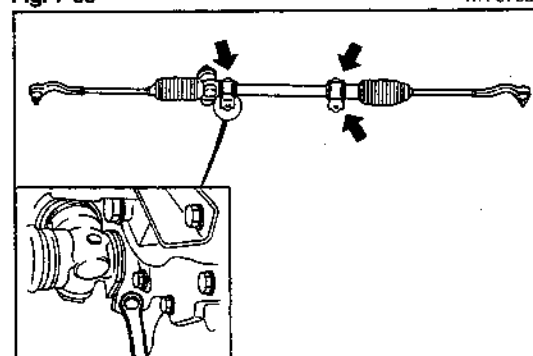


Fig. 7-36

WR-07037

- (2) Remove the steering gear assembly from the vehicle.

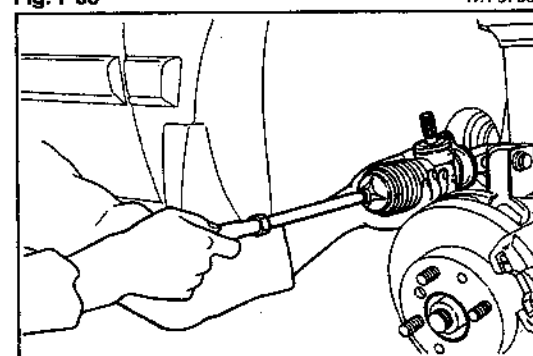


Fig. 7-37

WR-07038

## STEERING

### STEERING GEAR HOUSING

#### SECTIONAL VIEW

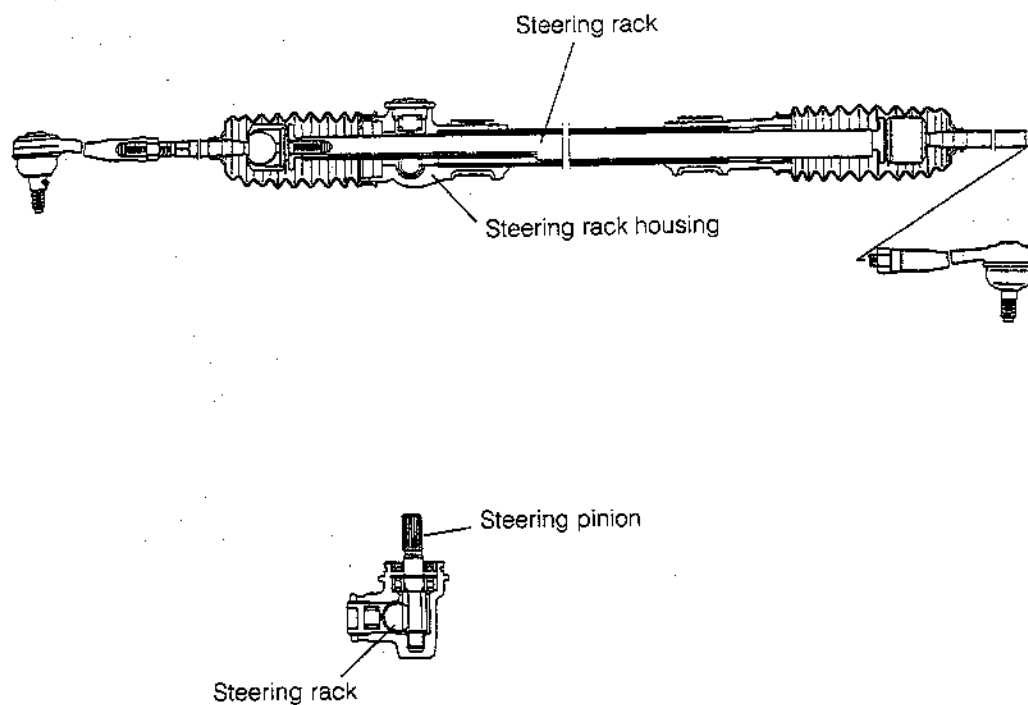


Fig. 7-38

WR-07039

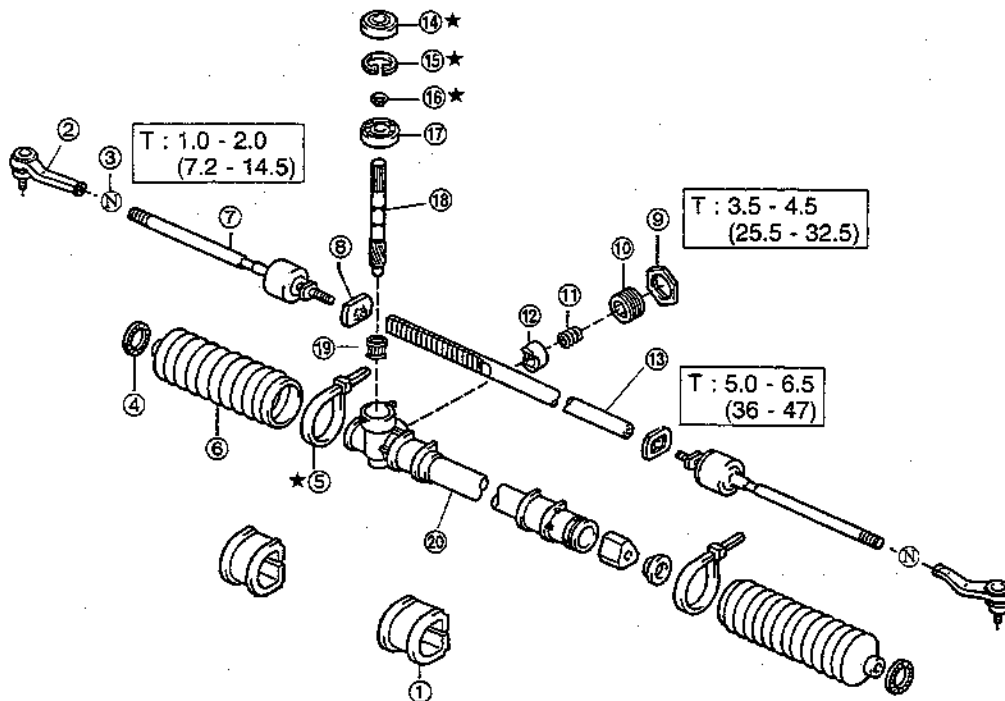
#### Specifications

Maximum turns from lock to lock		3.82
Rack stroke	mm (inch)	141.5 (5.571)
Steering pinion tooth number		6
Rack tooth number		26

WR-07040



## COMPONENTS



T : Tightening torque  
Unit: kg-m (ft-lb)  
★ : Non-reusable parts

- ① Steering rack housing grommet
- ② Tie rod end S/A
- ③ Nut
- ④ Steering boot band No.2
- ⑤ Steering rack boot band
- ⑥ Steering rack boot
- ⑦ Steering rack end
- ⑧ Rack end plug
- ⑨ Hexagon nut
- ⑩ Rack guide spring cap

- ⑪ Compression spring
- ⑫ Rack guide
- ⑬ Steering rack
- ⑭ Oil seal
- ⑮ Snap ring
- ⑯ Shaft snap ring
- ⑰ Radial ball bearing
- ⑱ Steering pinion
- ⑲ Needle roller bearing
- ⑳ Steering rack housing S/A

Fig. 7-39

WR-07041

## STEERING

### DISASSEMBLY

1. Clamp the mounting section of the steering rack housing in a vice with copper sheets or aluminum sheets interposed.
2. Tie rod end removal
  - (1) Before the steering tie rod end is removed, put a mark on the rack end section in order that this mark may be used as guide to ensure easier toe-in adjustment during the reassembly.
  - (2) Slacken the lock nut. Remove the tie rod end from the rack end.
3. Remove the boot band No.2 and rack boot band. Remove the rack boot.
4. Steering rack end removal
  - (1) Slacken the rack end plug, using the flat sections of the steering rack (width across flats: 19 mm) and the flat sections of the rack end plug (width across flats: 26 mm).
  - (2) Remove the steering rack end from the steering rack.
  - (3) Remove the rack end plug from the steering rack end.
5. Remove the lock nut (hexagon nut), using the following SST.  
SST: 09617-22030-000
6. Rack guide spring cap removal
  - (1) Remove the rack guide spring cap, using a simple spinner.
  - Simple Spinner (Width across flats: 17 mm)
  - (2) Remove the compression spring and rack guide from the steering rack housing.

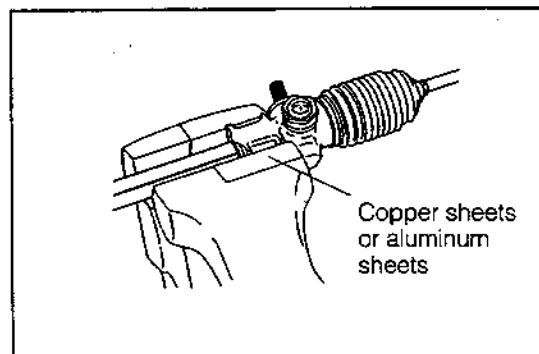


Fig. 7-40

WR-07042

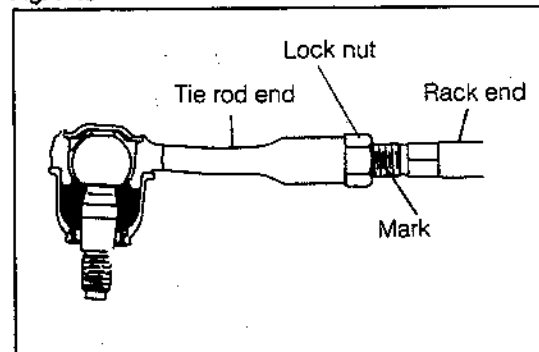


Fig. 7-41

WR-07043

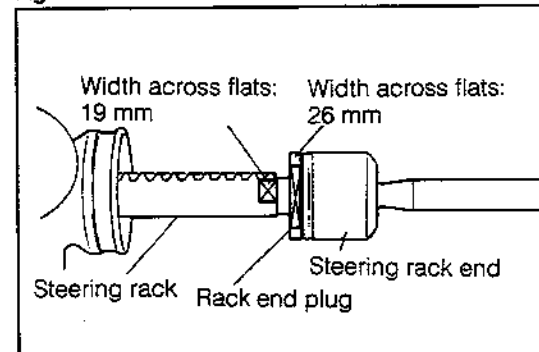


Fig. 7-42

WR-07044

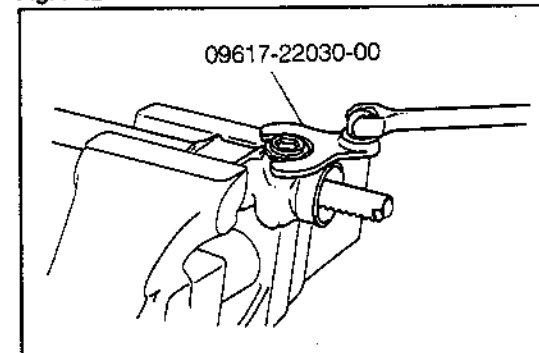


Fig. 7-43

WR-07045

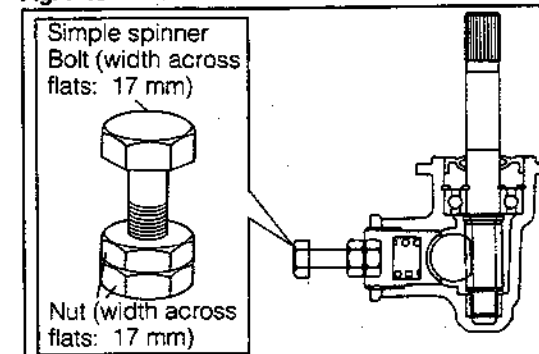


Fig. 7-44

WR-07046

7. Remove the steering rack.

**NOTE:**

- Be sure to draw out the rack toward the housing side so that the rack bush may not be damaged by the rack tooth surface.
- Draw out the rack straight, not allowing the rack to rotate.

8. Remove the oil seal, using a common screwdriver or the like. Be careful not to damage the housing during the removal.

9. Detach the snap ring, using a snap ring expander.

10. Remove the steering pinion, together with the bearing, from the steering rack housing.

**11. Radial ball bearing removal**

- (1) Detach the shaft snap ring, using a snap ring expander.
- (2) Remove the bearing, using the following SST.  
SST: 09950-20014-000

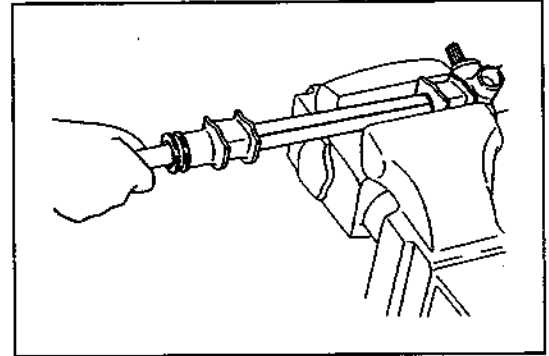


Fig. 7-45

WR-07047

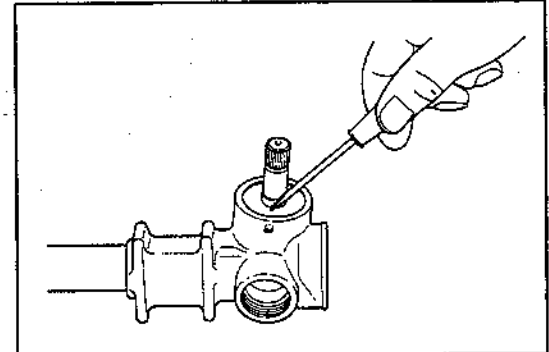


Fig. 7-46

WR-07048

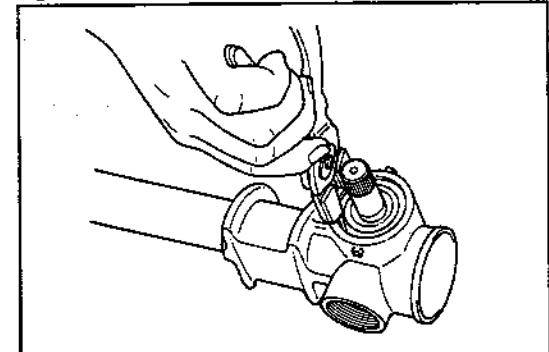


Fig. 7-47

WR-07049

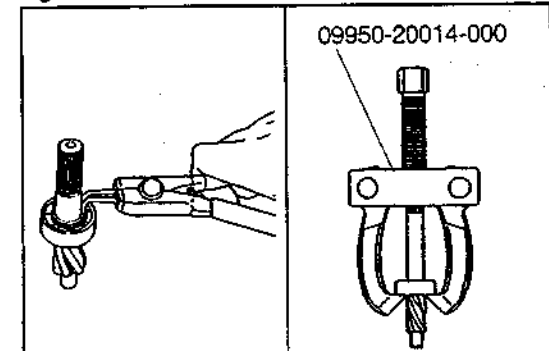


Fig. 7-48

WR-07050

## STEERING

### INSPECTION

Inspect the following parts.

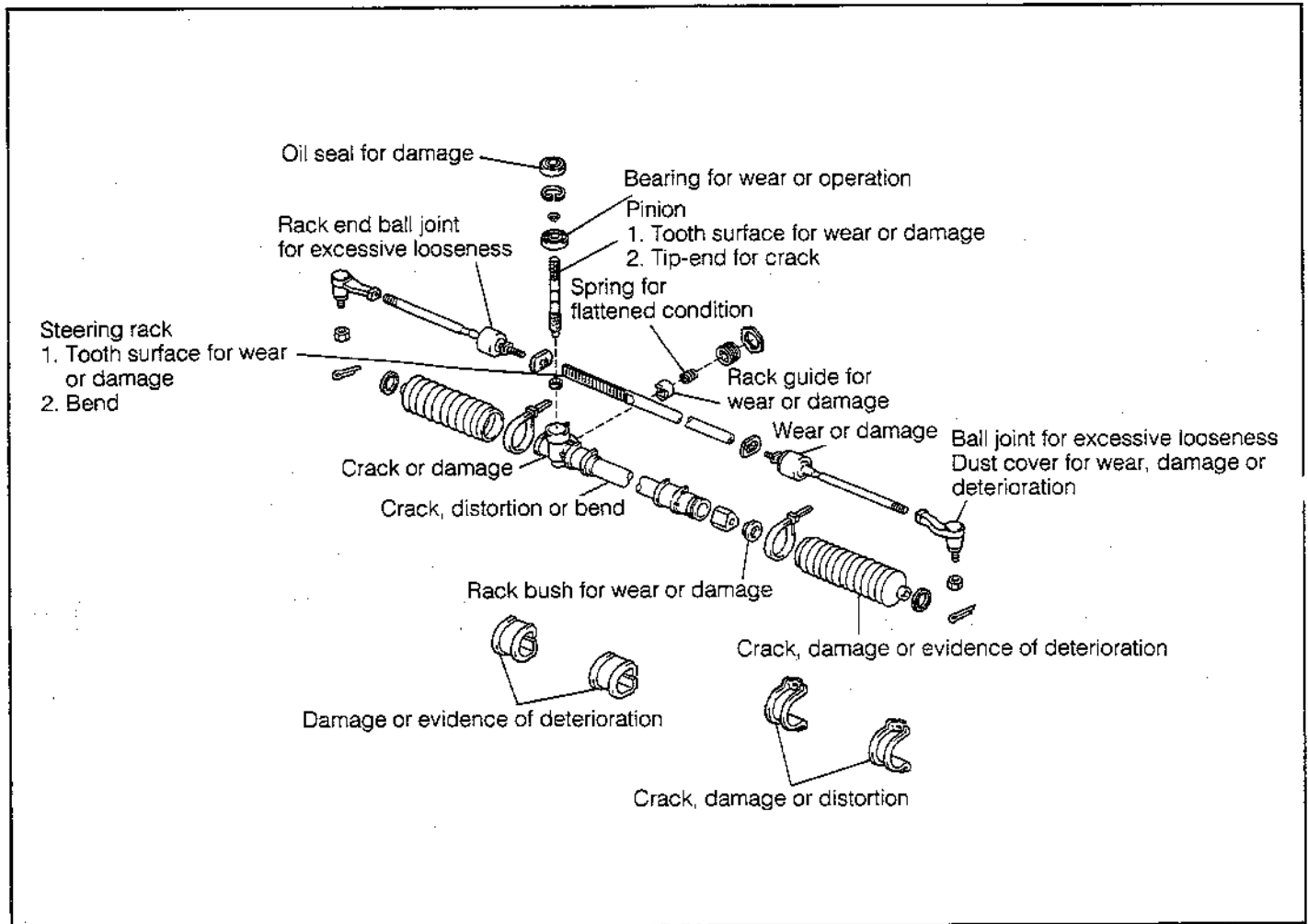


Fig. 7-49

WR-07051

### ASSEMBLY

1. Apply grease to the following sections.

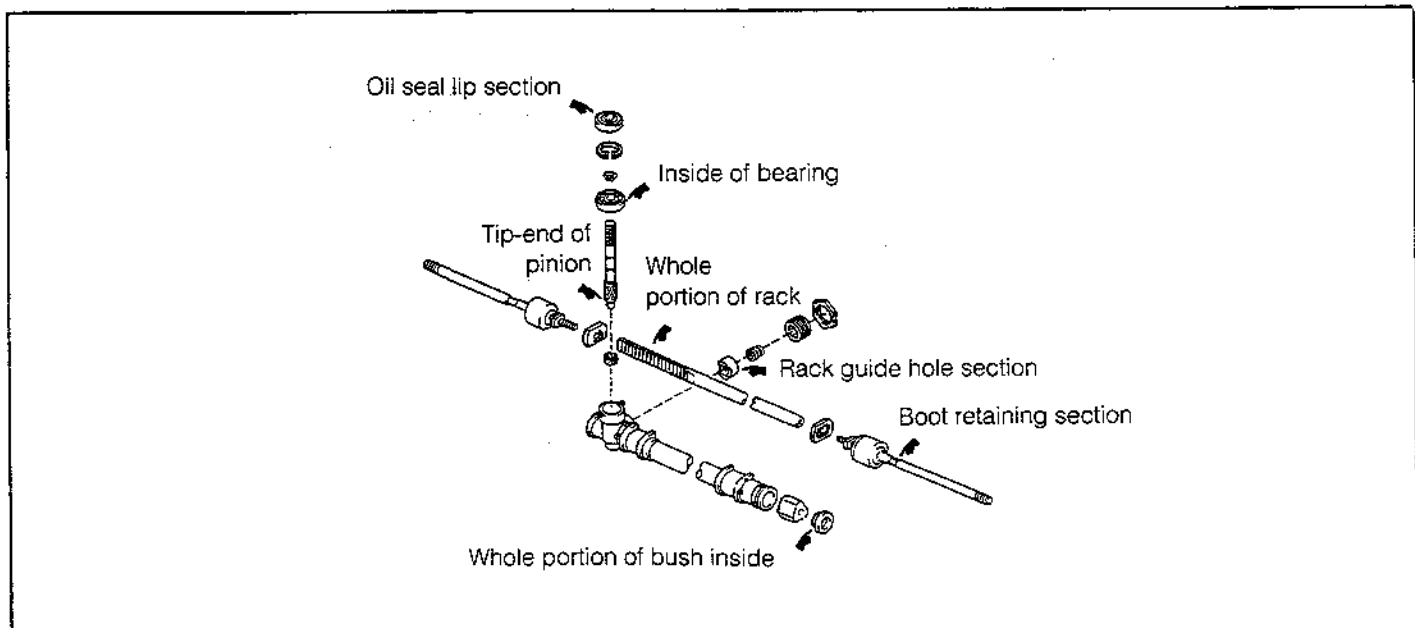


Fig. 7-50

WR-07052

## 2. Radial ball bearing installation

- (1) Install the bearing to the steering pinion, using the following SST.

SST: 09612-10061-000

- (2) Attach the shaft snap ring, using a snap ring expander.

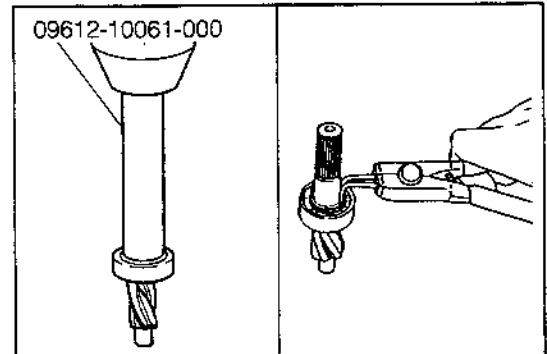


Fig. 7-51

WR-07053

## 3. Steering pinion installation

- (1) Install the steering pinion to the steering rack housing, using the following SST.

SST: 09309-87102-000

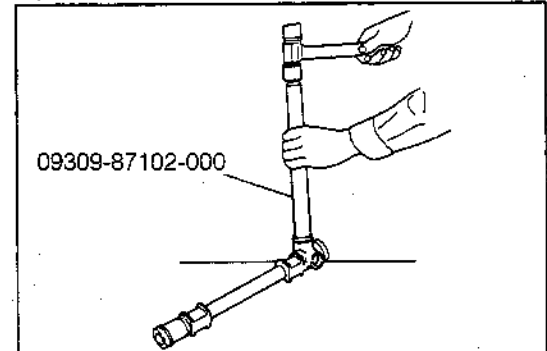


Fig. 7-52

WR-07054

- (2) Attach the snap ring, using a snap ring expander.

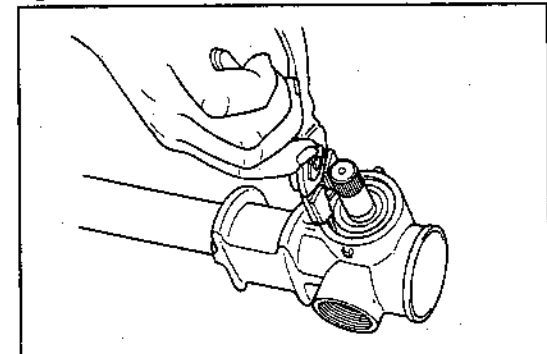


Fig. 7-53

WR-07055

- (3) Install the oil seal to the steering rack housing, using the following SST.

SST: 09309-87201-000

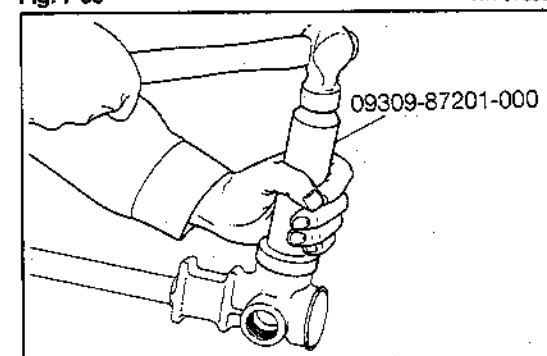


Fig. 7-54

WR-07056

## 4. Assembly of steering rack

- (1) Apply EP grease to the tooth surface and whole peripheral portion of the steering rack.
- (2) Assemble the steering rack, paying attention not to damage the rack bush.

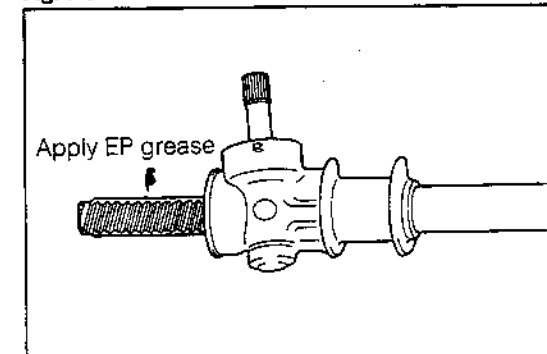


Fig. 7-55

WR-07057

## STEERING

5. Assemble the rack guide, compression spring and rack guide spring cap to the steering rack housing.

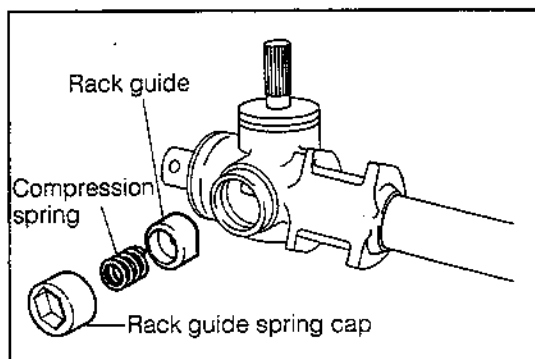


Fig. 7-56

WR-07058

6. Rack preload adjustment

- (1) Tighten the rack guide spring cap, using a simple spinner.

Tightening Torque: 0.7 kg-m (5.1 ft-lb)

- (2) Move the steering rack back and forth about 15 times so as to settle the steering rack. Then, proceed to tighten the rack guide spring cap again.

Tightening Torque: 1.25 kg-m (0.9 ft-lb)

- (3) Back off the rack guide spring cap  $45^{\circ} \pm 10^{\circ}$ , using a simple spinner.

- (4) Measure the rack preload, using the following SST.

SST: 09616-87701-000

Specified Value [Starting Torque]:

3 - 6 kg-cm (2.6 - 5.2 inch-lb)

- (5) If the preload does not comply with the specification, repeat the operations (1) through (4).

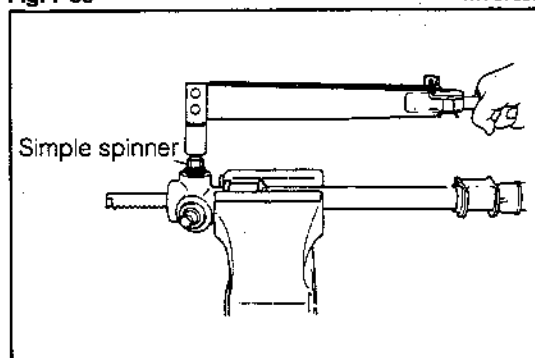


Fig. 7-57

WR-07059

7. Hexagon nut (lock nut) installation

- (1) Tighten the lock nut using the SST, while holding the rack guide spring cap with a simple spinner so as to prevent the rack guide spring cap from turning during the tightening.

SST: 09617-22030-000

Tightening Torque: 3.5 - 4.5 kg-m (25.5 - 32.5 ft-lb)

### NOTE:

The actual reading of the torque wrench will be a product that is obtained by multiplying the figure above by the following figure given below:

$$\frac{\text{Length of torque wrench}}{\text{Length of torque wrench} + 6 \text{ cm}}$$

- (2) Check the pinion starting torque again.

SST: 09616-87701-000

Specified Value [Starting Torque]:

3 - 6 kg-cm (2.6 - 5.2 inch-lb)

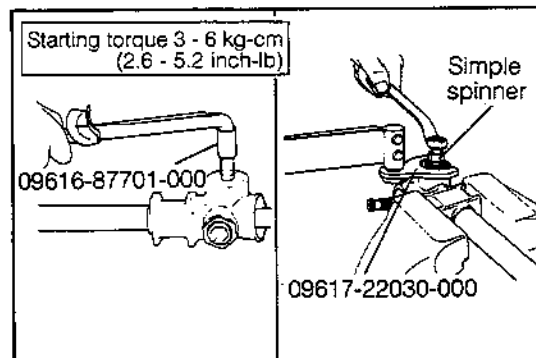


Fig. 7-58

WR-07060

## 8. Steering rack end installation

- (1) Screw in the rack end plug into the rack end.  
(Set the rack end plug in such a way that the side having a larger flange comes to the rack end side.)
- (2) Under the condition described in (1), tighten the rack end to the steering rack.
- (3) Secure the steering rack. Tighten the rack end plug.  
**Tightening Torque: 5.0 - 6.5 kg-m (36 - 47 ft-lb)**

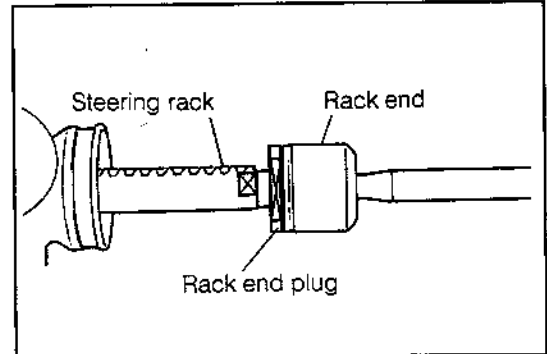


Fig. 7-59

WR-07061

## 9. Install the steering rack boot. Install the boot band No.2 and rack boot band.

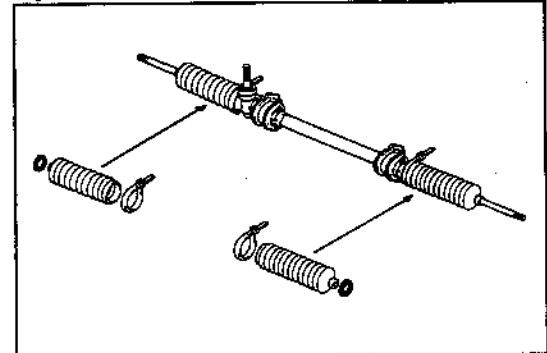


Fig. 7-60

WR-07062

## 10. Tie rod end installation

- (1) Screw in the lock nut and tie rod end into the rack end up to the mating mark. Tighten the lock nut temporarily.
- (2) Tighten the lock nut securely after the toe-in check and adjustment have been carried out.

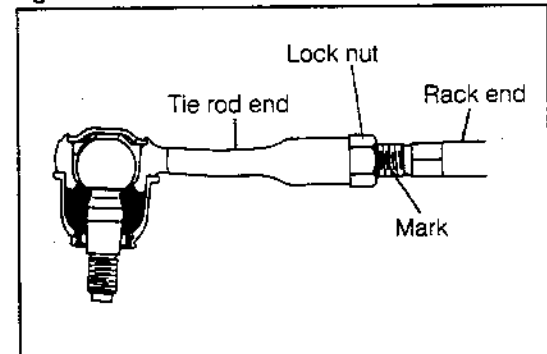


Fig. 7-61

WR-07063

## INSTALLATION

### 1. Steering rack assembly installation

- (1) Install the grommet to the steering rack assembly.  
Then, insert it to the vehicle.

#### NOTE:

Be very careful not to damage the steering rack boot during the insertion.

- (2) Install the steering universal joint to the steering pinion.  
Tighten the bolt temporarily.

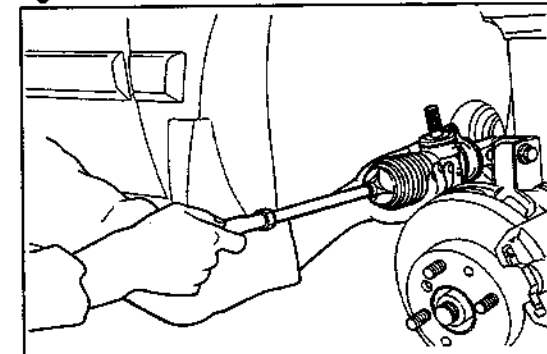


Fig. 7-62

WR-07064

- (3) Install the steering rack assembly to the body.  
**Tightening Torque: 4.0 - 5.5 kg-m (29 - 40 ft-lb)**

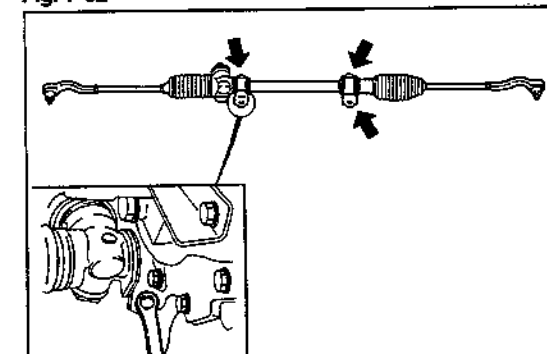


Fig. 7-63

WR-07065

## STEERING

2. Tighten the attaching bolt of the steering universal joint.

Tightening Torque: 2.5 - 3.5 kg-m (18 - 25 ft-lb)

**NOTE:**

When tightening the bolt, be sure to limit the protruding length of the serration sections of the universal joint and pinion to 5 mm (0.20 inch).

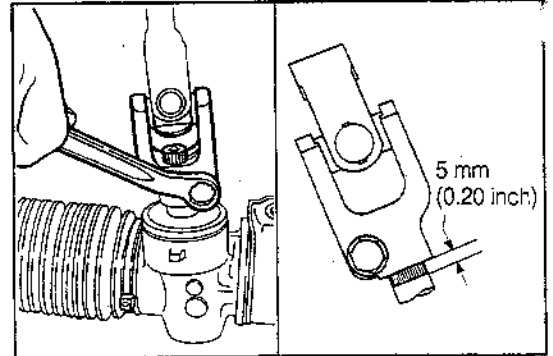


Fig. 7-64

WR-07065

3. Tie rod end installation

- (1) Install the tie rod end to the knuckle. Tighten the castle nuts.

Tightening Torque: 3.0 - 4.5 kg-m (22 - 32.5 ft-lb)

- (2) Install a new cotter pins.

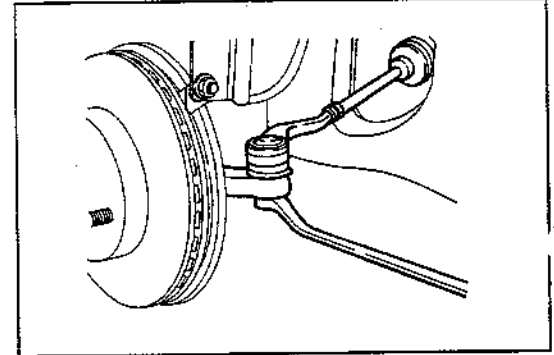


Fig. 7-65

WR-07067

4. Install the wheel. Jack down the vehicle.
5. Check the steering wheel play.
6. Perform the toe-in adjustment. (See page 5-44.)
7. Confirm the straight-ahead position of steering wheel.

WR-07068



# DAIHATSU

# CHARADE

## Chassis

## SECTION 8 BRAKES

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## **BRAKE PEDAL CHECKS AND ADJUSTMENTS**

### **1. Pedal height check**

Measure the brake pedal height (the dimension from the center of the pedal applying surface to the dash panel).

**Specified Value:** 176 - 181 mm (6.93 - 7.13 inch)

### **2. Pedal height adjustment**

- (1) Disconnect the connector from the stop lamp switch. Slacken the nut ① and turn the switch, until the pedal has a free travel.
- (2) Slacken the nut ②. Turn the push rod ③ so as to adjust the pedal height. Lock the nut ②.
- (3) Turn the switch, until the pedal cushion comes in contact with the edge of the threaded portion of the stop lamp switch. Lock the nut ①.
- (4) Connect the connector of the stop lamp switch.
- (5) Upon completion of the pedal height adjustment, ensure that the pedal free travel is proper and the stop lamp functions properly.

### **3. Pedal free travel check**

After stopping the engine, depress the brake pedal strongly several times so that no vacuum may remain the brake booster. Measure the brake pedal free travel by pushing the brake pedal lightly by fingers. Here, the pedal free travel means the distance from a point where the brake pedal is free to a point where you begin to feel a resistance.

**Specified Value:**

6-inch Booster 3 - 7 mm (0.12 - 0.28 inch)

7-inch Booster 0.5 - 2 mm (0.02 - 0.08 inch)

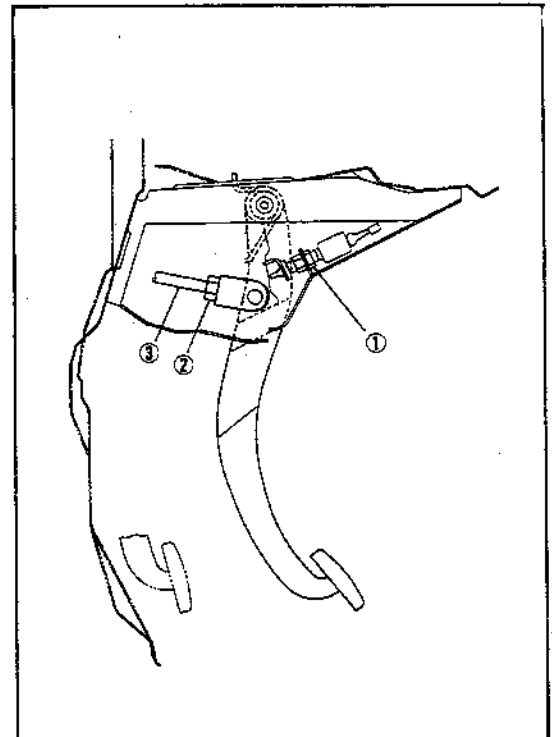
### **4. Pedal free travel adjustment**

- (1) Slacken the nut ②. Turn the push rod ③ so as to adjust the pedal free travel.
- (2) Upon completion of the adjustment, ensure that the pedal height is proper and the stop lamp functions properly.

### **5. Pedal reserve travel check**

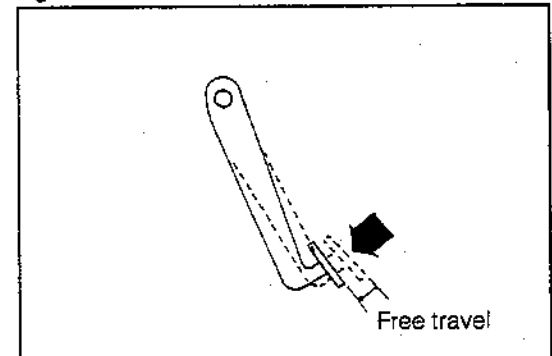
With the engine running at the idling speed and with the parking brake lever in its returned state, depress the brake pedal with a pedal applying force of 30 kg (66 lb). Measure the gap between the position where the depressed pedal stops and the floor panel.

**Specified Value:** 102 mm (4.0 inches) or more



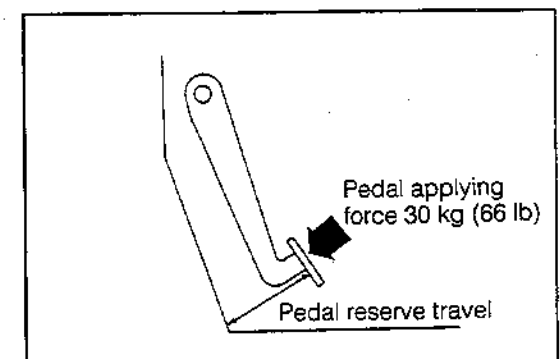
**Fig. 8-1**

WR-08002



**Fig. 8-2**

WR-08003



**Fig. 8-3**

WR-08004

# BRAKE BOOSTER OPERATION CHECK

## 1. SIMPLE CHECK

### (1) Booster air-tight performance check

Start the engine. After running the engine for one to two minutes, stop the engine. Depress the brake pedal several times, applying a force which will be used during normal brake applications. If the position of the brake pedal rises progressively at the second and third applications and so on, it indicates the brake booster is functioning properly.

#### NOTE:

Intervals between the first and second applications as well as between the second and third applications should be at least five seconds.

### (2) Booster air-tight performance check under loaded condition

With the engine running, depress the brake pedal. While maintaining this condition, stop the engine. If the brake pedal height remains at the same level at least 30 seconds, it indicates that the booster is functioning properly.

### (3) Booster operation check

With the engine stopped, depress the brake pedal several times, applying the same force at each brake application. Ensure that the brake pedal height will not vary at each brake application. Then, start the engine while depressing the brake pedal. If the brake pedal moves in slightly, it indicates that the booster is functioning properly.

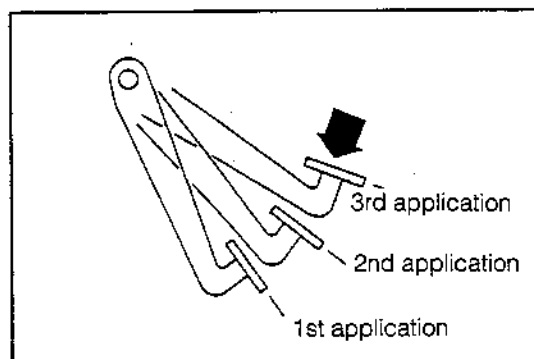


Fig. 8-4

WR-08005

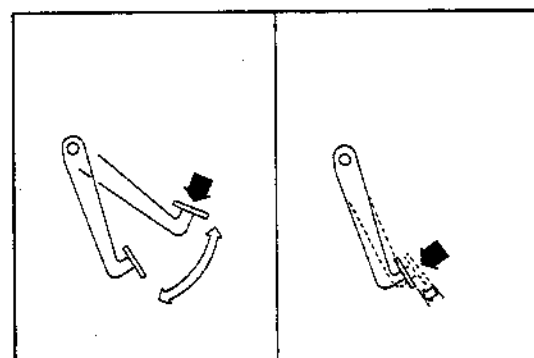


Fig. 8-5

WR-08006

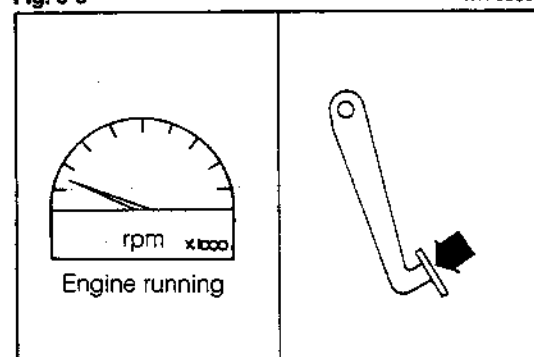


Fig. 8-6

WR-08007

## 2. CHECK EMPLOYING PORTABLE BRAKE BOOSTER TESTER

### (1) Connection of portable brake booster tester

Connect the portable booster tester. Carry out air bleeding for the booster tester.

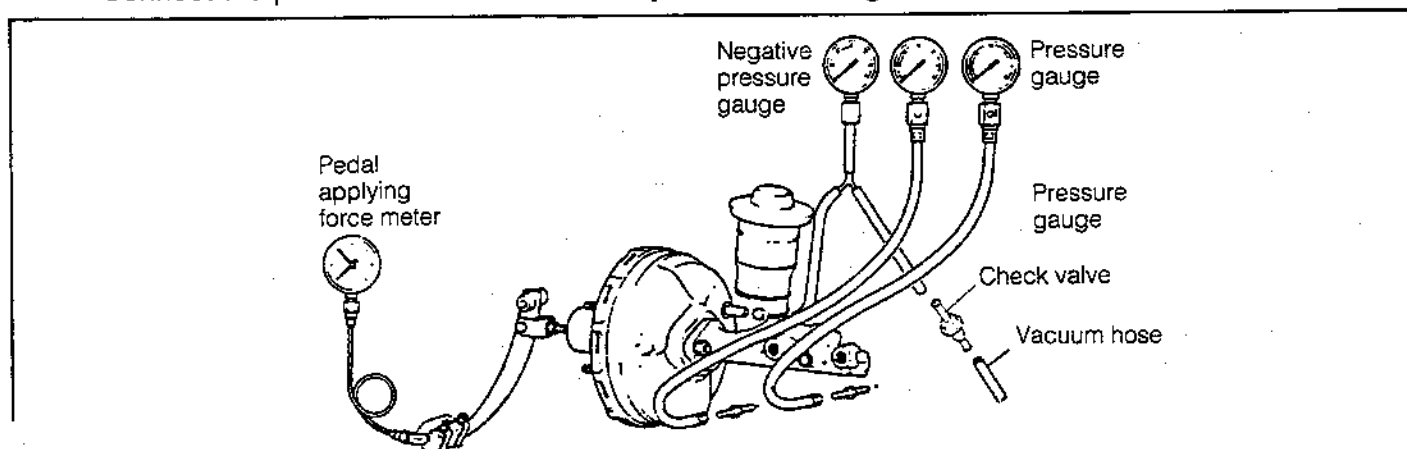


Fig. 8-7

WR-08008

## BRAKES

### (2) Booster air-tight performance check

Start the engine. When the negative pressure exceeds 500 mmHg, stop the engine. Proceed to measure the negative pressure. Ensure that the negative pressure will not drop for a period of 15 seconds following the stoppage of the engine.

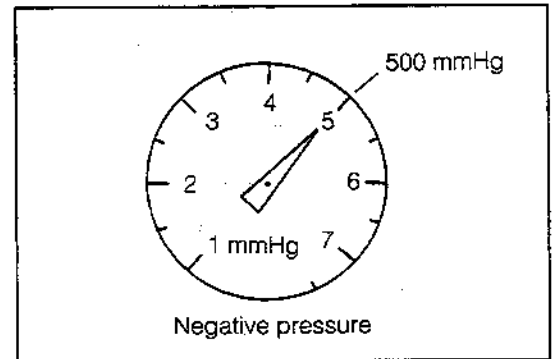


Fig. 8-8

WR-08009

### (3) Booster air-tight performance check under loaded condition

With the engine running, depress the brake pedal with a pedal applying force of 20 kg (44 lb). Stop the engine when the negative pressure exceeds 500 mm Hg, stop the engine. Proceed to measure the negative pressure. Ensure that the negative pressure will not drop more than 25 mmHg for a period of 15 seconds following the stoppage of the engine.

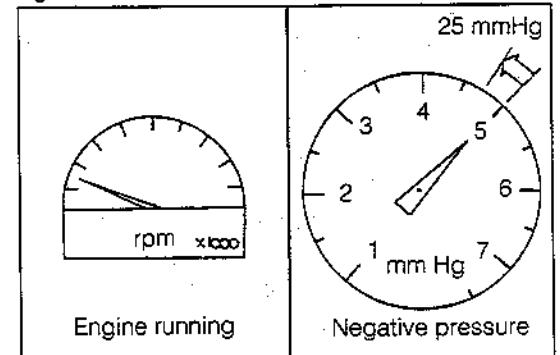


Fig. 8-9

WR-08010

### (4) No-boosting operation check

With the engine stopped, set the reading of the negative pressure gauge to zero. Under this condition, check the relationship between the pedal applying force and the hydraulic pressure.

#### Specified Value:

Pedal applying force kg (lb)	Hydraulic pressure      kg/cm <sup>2</sup> (Psi)	
	6-inch	7-inch
10 (22)	6.5 (92)	5.6 (80)
30 (66)	37.8 (538)	32.4 (461)

WR-08011

### (5) Boosting operation check

With the engine running, set the reading of the negative pressure gauge to 500 mmHg. After stopping the engine, depress the brake pedal. Check the relationship between the pedal applying force and the hydraulic pressure.

#### Specified Value:

Pedal applying force kg (lb)	Hydraulic pressure      kg/cm <sup>2</sup> (Psi)	
	6-inch	7-inch
5 (11)	18.4 (262)	13.6 (193)
10 (22)	46.4 (660)	34.2 (487)
15 (33)	56.0 (797)	54.8 (779)
20 (44)	63.9 (909)	67.2 (955)

WR-08012

# AIR BLEEDING OF BRAKE SYSTEM

## 1. Filling brake fluid

Fill the brake master cylinder reservoir with the brake fluid.

### NOTE:

If the brake fluid is spilled inadvertently over the paint-finish surface of the vehicle, quickly wipe off the brake fluid.

## 2. Connection of vinyl hose to bleeder plug of wheel cylinder

- (1) Submerge one end of a vinyl hose in a container filled with the brake fluid. Connect the other end of the vinyl hose to the wheel cylinder bleeder plug of the vehicle.
- (2) Start this air bleeding operation at the wheel cylinder which is located at the farthest point from the master cylinder.

## 3. Air bleeding

- (1) Perform the operation by two persons. One person should depress the brake pedal slowly and hold it in a depressed state.
- (2) The other person slackens the bleeder plug 1/3 through 1/2 turn at a time. Be sure to tighten the bleeder plug before the hydraulic pressure ceases to exist in the cylinder.
- (3) Repeat the steps (1) and (2) above , until you no longer observe bubbles in the fluid.

## 4. Checking of brake fluid leakage

Depress the brake pedal and ensure that each section of the pipe line exhibits no fluid leakage.

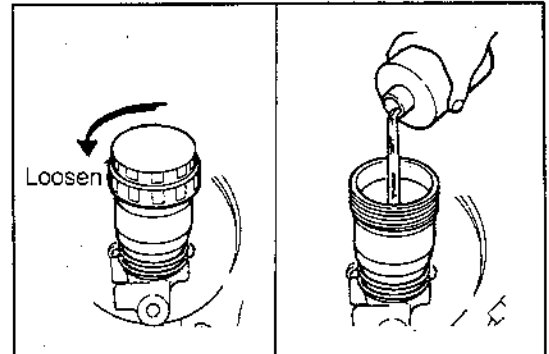


Fig. 8-10

WR-08013

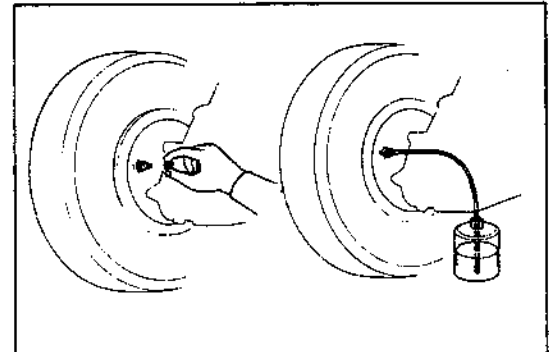


Fig. 8-11

WR-08014

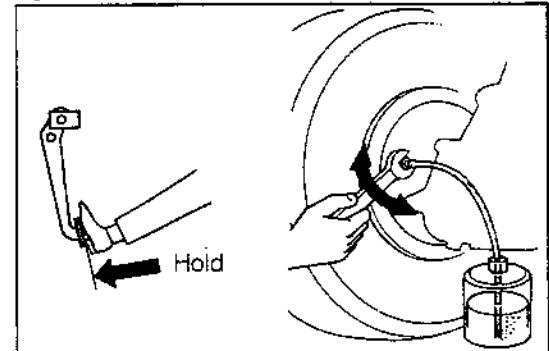


Fig. 8-12

WR-08015

WR-08016

## BRAKES

### SCHEMATIC VIEW

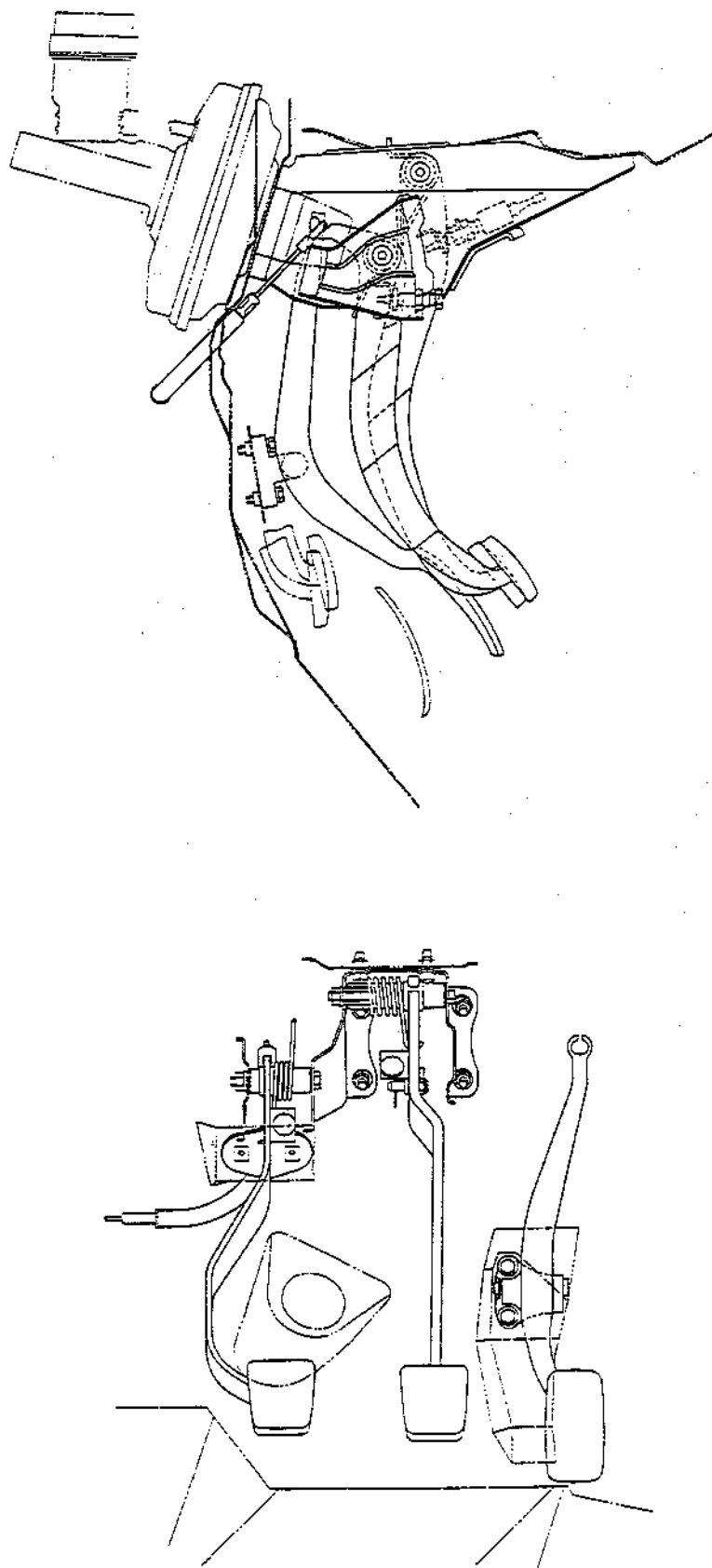
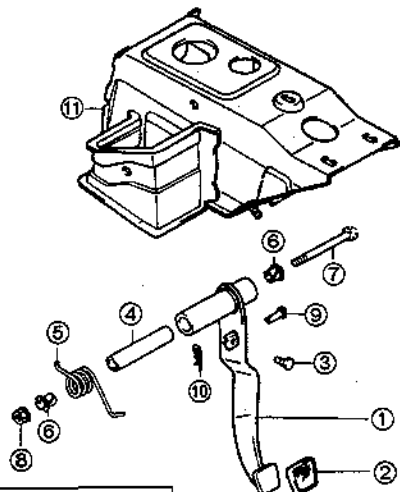


Fig. 8-13

WR-08017

## BRAKE PEDAL COMPONENTS

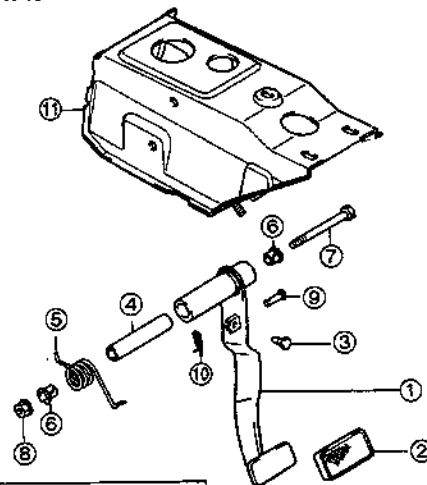
Manual Transmission



RHD: T : 1.5 - 2.2 (11 - 16)  
LHD: T : 1.5 - 2.0 (11 - 15)

- ① Brake pedal
- ② Brake pedal pad
- ③ Cushion
- ④ Spacer
- ⑤ Spring
- ⑥ Bush

Automatic Transmission



RHD: T : 1.5 - 2.2 (11 - 16)  
LHD: T : 1.5 - 2.0 (11 - 15)

T : Tightening torque  
Unit: kg-m (ft-lb)

- ⑦ Bolt
- ⑧ Nut
- ⑨ With-hole pin
- ⑩ Clip
- ⑪ Brake pedal bracket

Fig. 8-14

WR-08018

## REMOVAL

1. Detach the clamp of the stop lamp switch wiring.
2. Remove the clip and the with-hole pin from the connecting section of the master cylinder push rod with the brake pedal.

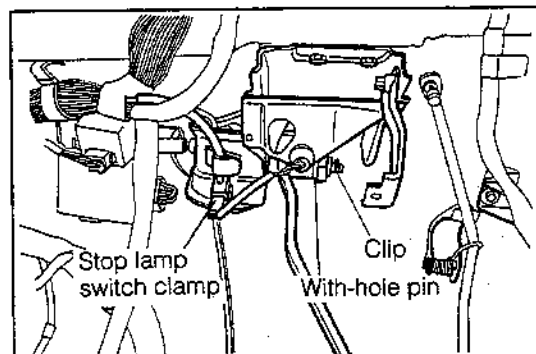


Fig. 8-15

WR-08019

## BRAKES

3. Remove the brake pedal attaching bolt and nut.
4. Remove the brake pedal from the brake pedal bracket.

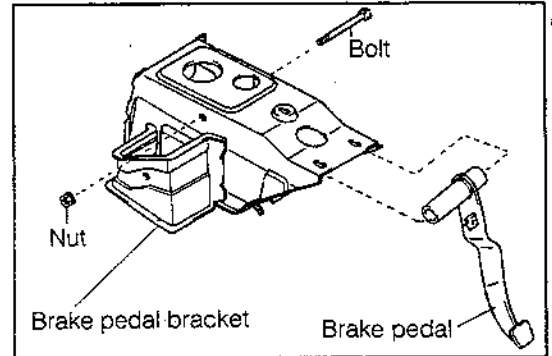


Fig. 8-16

WR-08020

5. Remove the spring, bush, spacer, brake pedal pad and cushion from the brake pedal.

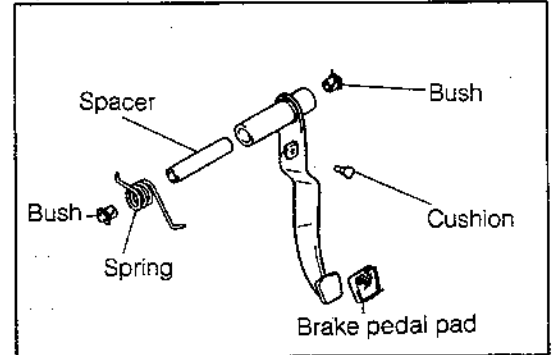


Fig. 8-17

WR-08021

## INSPECTION

Inspect the following parts.

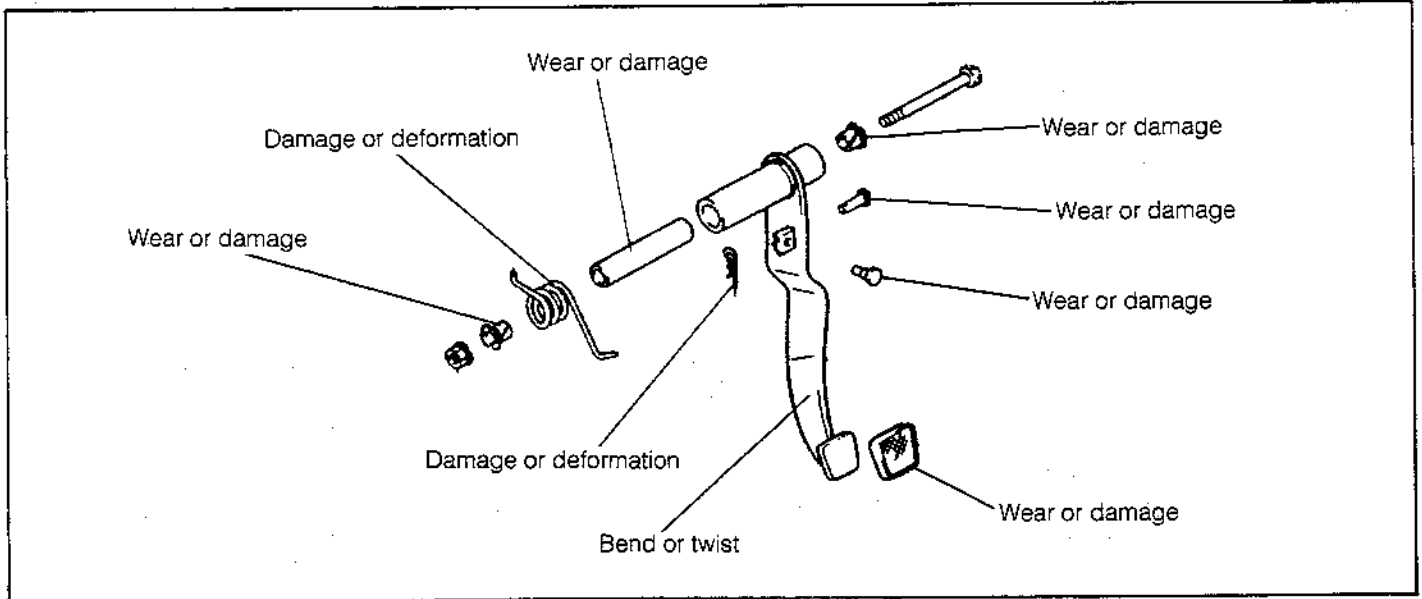


Fig. 8-18

WR-08022

## INSTALLATION

1. Install the cushion, brake pedal pad, spacer, bush and spring on the brake pedal.

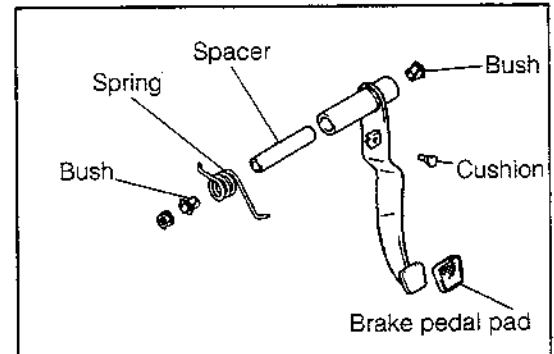
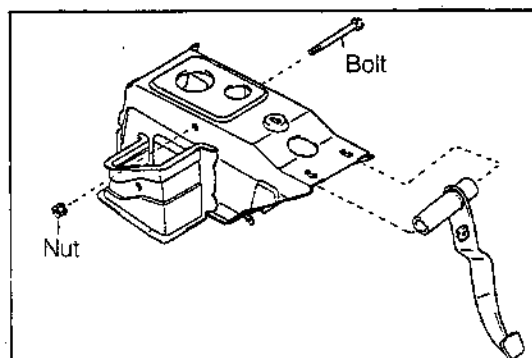


Fig. 8-19

WR-08023



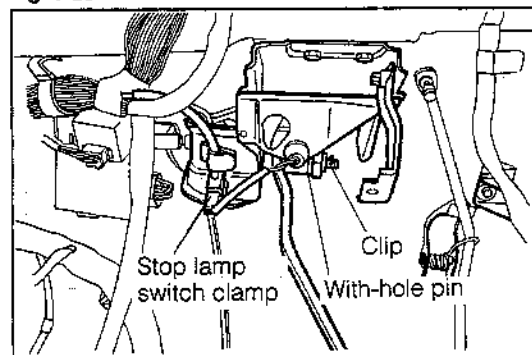
2. Install the brake pedal on the brake pad brake.
3. Install the brake pedal attaching bolt and nut.



**Fig. 8-20**

WR-08024

4. Install the with-hole pin and the clip on the connecting section of the master cylinder push rod with the brake pedal.
5. Attach the clamp of the stop lamp switch wiring.
6. Perform the check and adjustment of the brake pedal.  
(See page 8-2.)



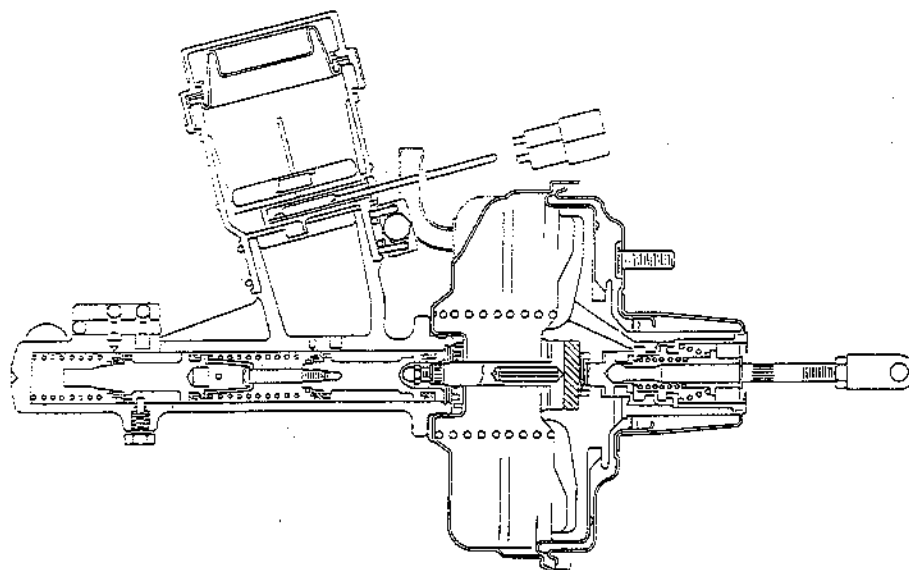
**Fig. 8-21**

WR-08025

## BRAKES

### BRAKE MASTER CYLINDER AND BRAKE BOOSTER SECTIONAL VIEW

6-inch



7-inch

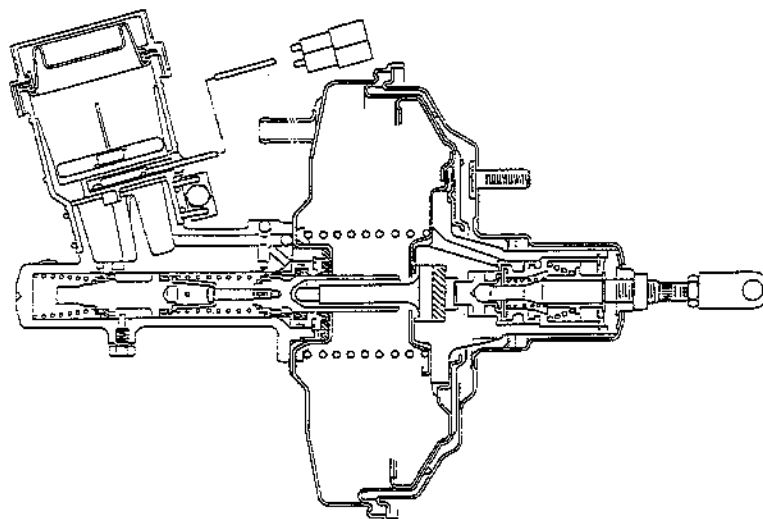
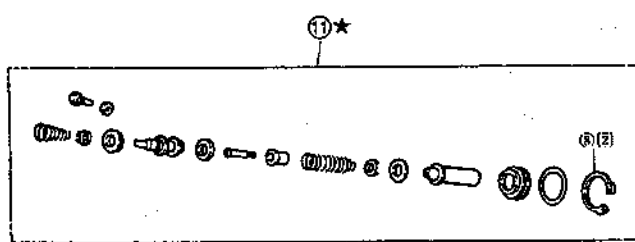
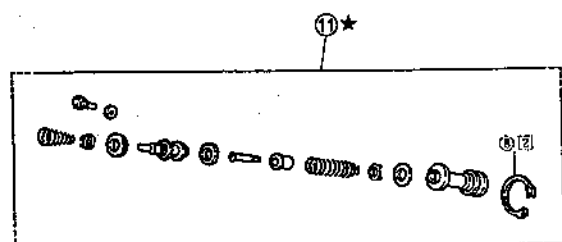
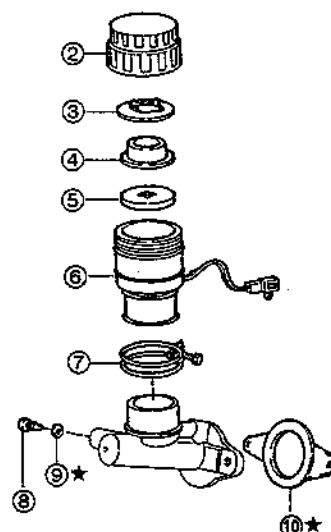
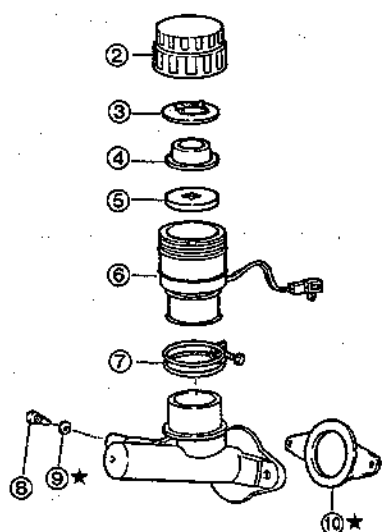
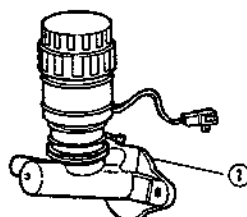
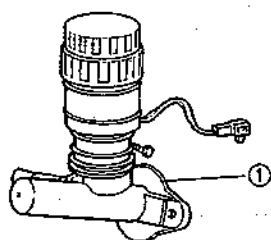


Fig. 8-22

WR-08026

# MASTER CYLINDER COMPONENTS

6 inch



T : Tightening torque  
Unit: kg-m (ft-lb)  
★ : Non-reusable parts

- ① Brake master cylinder Ay
- ② Reservoir filler cap
- ③ Reservoir cap spacer
- ④ Reservoir diaphragm
- ⑤ Master cylinder reservoir float

- ⑥ Master cylinder reservoir Ay
- ⑦ Clamp
- ⑧ Set bolt
- ⑨ Gasket
- ⑩ Gasket
- ⑪ Tandem master cylinder repair kit

Fig. 8-23

WR-08027

## BRAKES

### REMOVAL

1. Remove the level switch connector.
2. Drain the brake fluid.
3. Disconnect the three brake tubes, using the following SST.  
SST: 09751-36011-000

#### NOTE:

If the brake fluid is spilled inadvertently over the paint-finish surface of the vehicle, quickly wipe off the brake fluid.

4. Remove the two attaching nuts of the master cylinder. Remove the master cylinder and gasket from the brake booster.

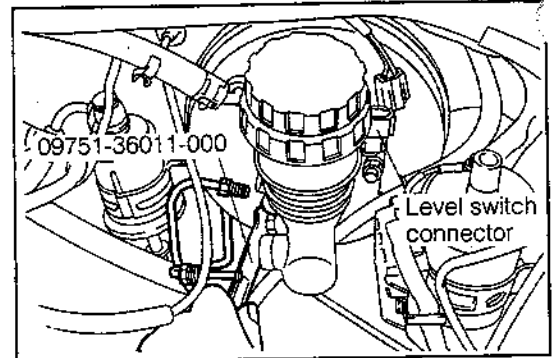


Fig. 8-24

WR-08028

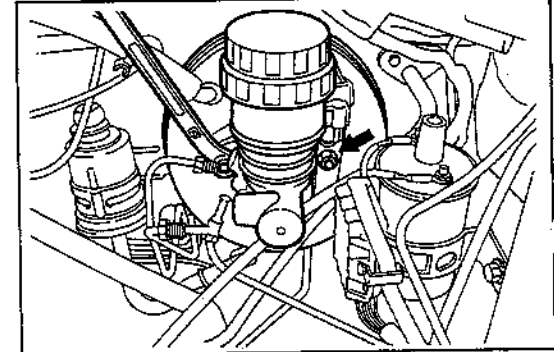


Fig. 8-25

WR-08029

### DISASSEMBLY

1. Clamp the flange section of the master cylinder in a vise, with jaw plates or the like interposed.

#### NOTE:

Be sure not to clamp the cylinder portion of the master cylinder in a vise. Failure to observe this caution will cause cylinder distortion.

2. Remove the reservoir filler cap, reservoir diaphragm, reservoir cap spacer, master cylinder reservoir float, clamp and master cylinder reservoir assembly from the master cylinder.

3. Remove the set bolt and gasket while the pistons are being pushed fully by means of a cross point screwdriver.

#### NOTE:

During the removal, be sure to push the piston slowly so as to prevent the brake fluid from splashing.

4. Detach the snap ring.  
Using a snap ring, detach the snap ring while the pistons are being pushed by means of a screwdriver.
5. Remove the pistons No.1 and No.2 from the master cylinder.

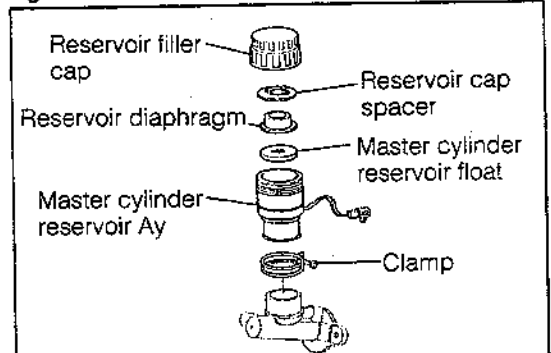


Fig. 8-26

WR-08030

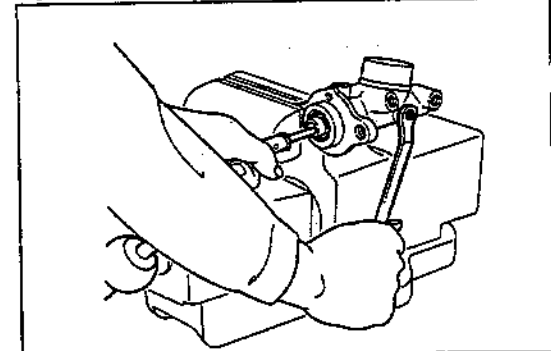


Fig. 8-27

WR-08031

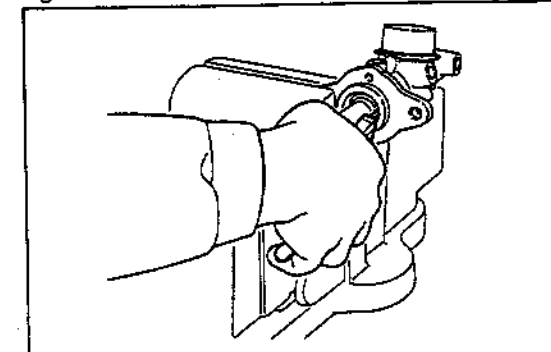


Fig. 8-28

WR-08032

## INSPECTION

Inspect the following parts.

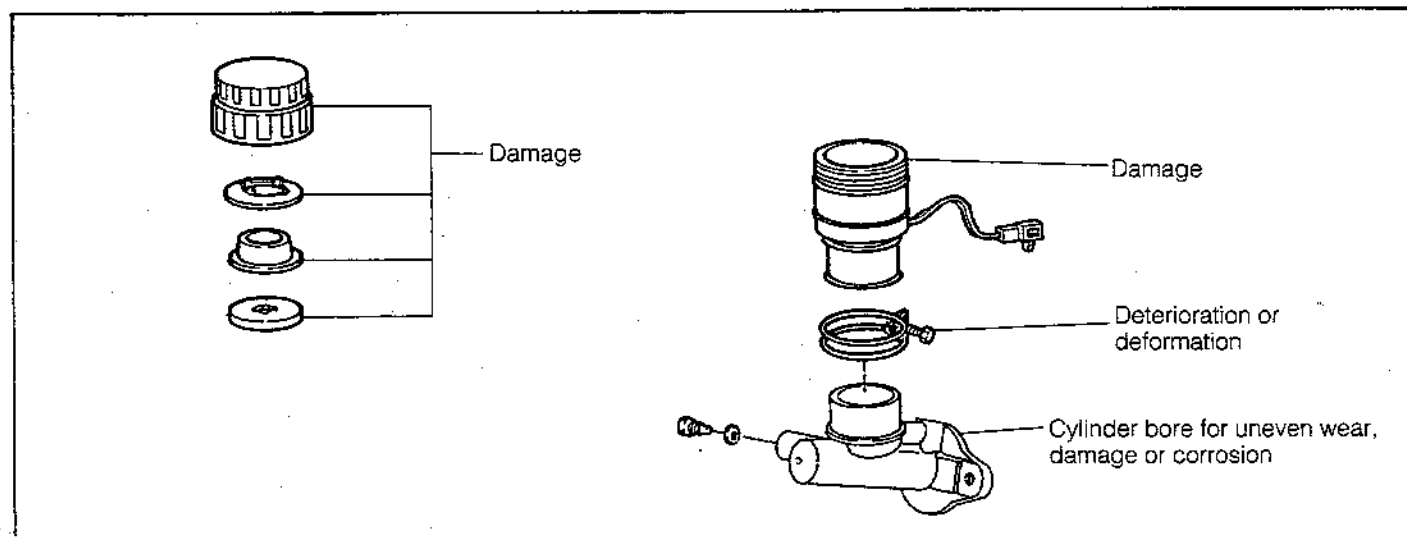


Fig. 8-29

WR-08033

## ASSEMBLY

1. Assemble a new tandem master cylinder repair kit (comprising the pistons No.1 and No.2) in the master cylinder.

NOTE:

Apply rubber grease to those points indicated by arrow heads in the figure below.

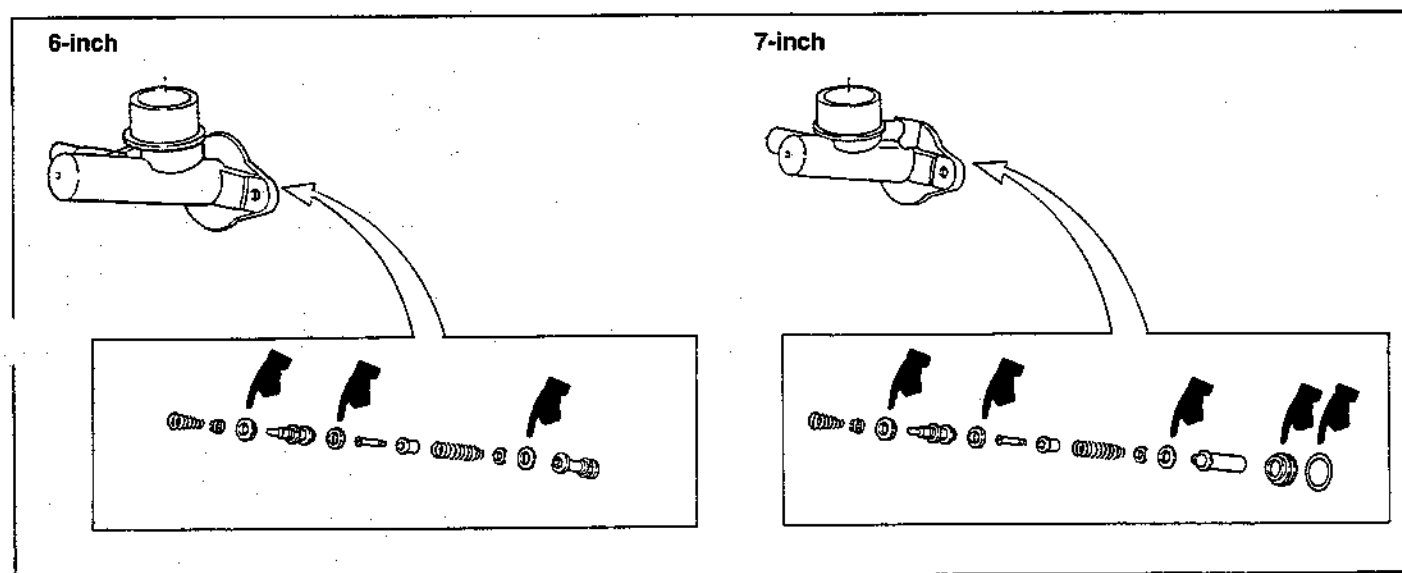


Fig. 8-30

WR-08034

2. Install the snap ring.  
With the pistons in their fully pushed-in state, install a new snap ring.

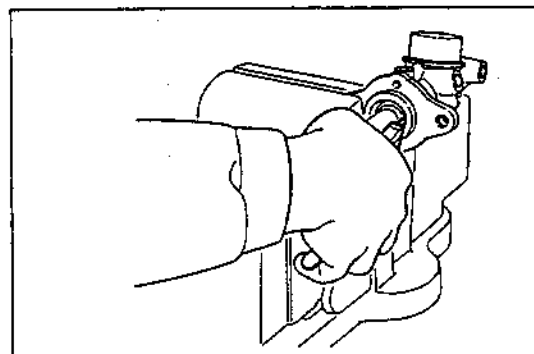


Fig. 8-31

WR-08035

## BRAKES

3. While pushing the pistons fully by means of a cross point screwdriver, assemble the set bolt with a new gasket interposed.
4. Install the clamp, master cylinder reservoir assembly, master cylinder reservoir float, reservoir cap spacer, reservoir diaphragm and reservoir filler cap.

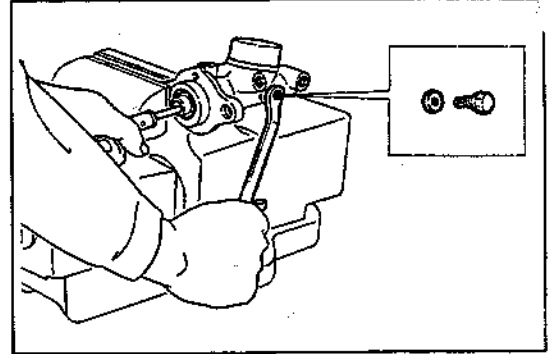


Fig. 8-32

WR-08036

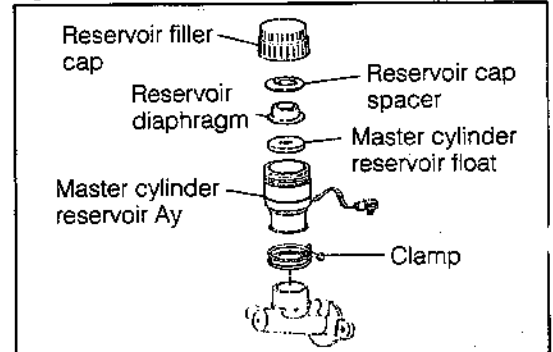


Fig. 8-33

WR-08037

## INSTALLATION

1. Adjust the clearance of the brake booster push rod.  
6-inch Booster: See page 8-20.  
7-inch Booster: See page 8-26.
2. With a new gasket interposed, install the master cylinder, using the two nuts.

### NOTE:

The master cylinder's attaching nut at the right side, as viewed toward the vehicle, should be used to tighten the bracket, too.

3. Connect the brake tubes.
  - (1) Temporarily connect the three brake tubes to the master cylinder by hands.
  - (2) Tighten the brake tube, using the following SST.  
SST: 09751-36011-000

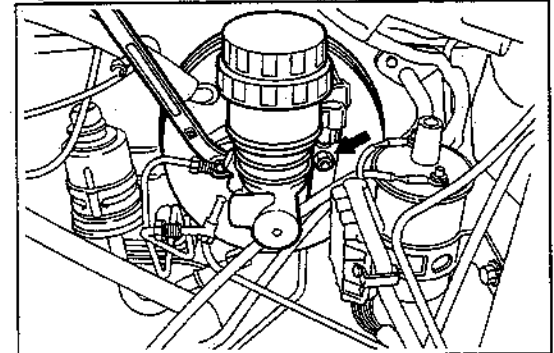


Fig. 8-34

WR-08038

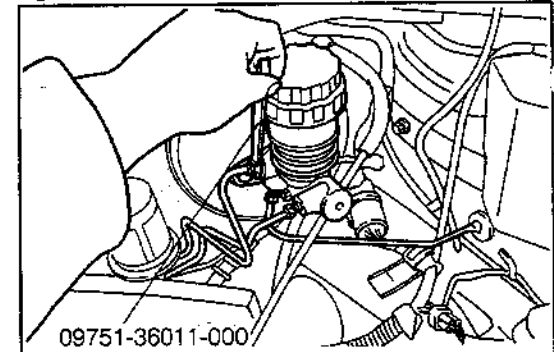


Fig. 8-35

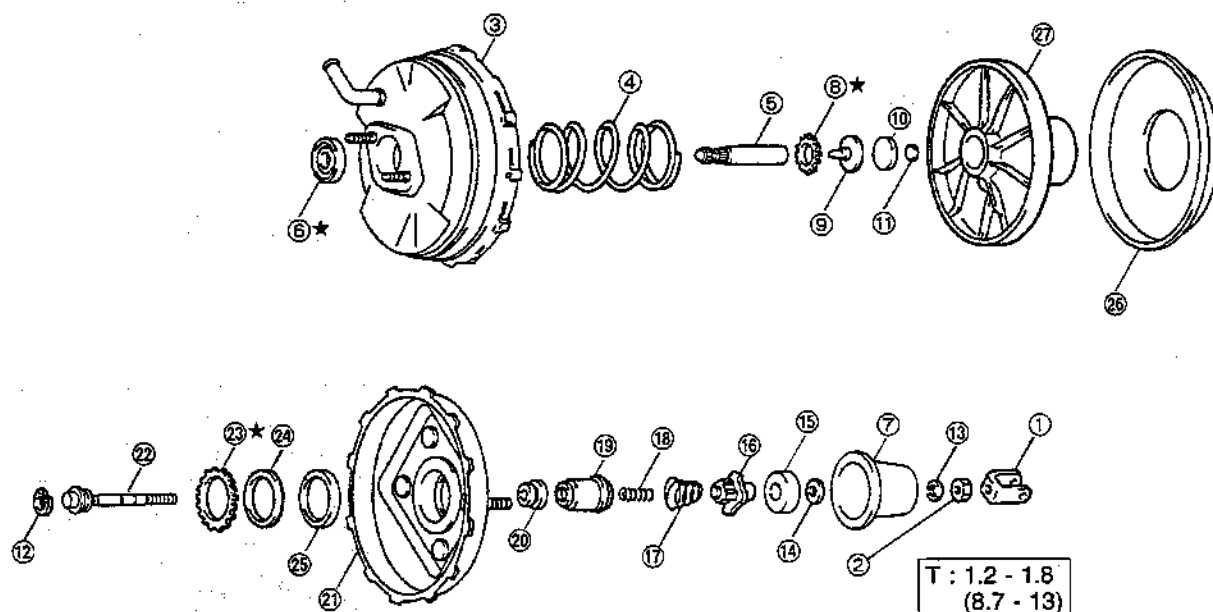
WR-08039

4. Connect the level switch connector.
5. Fill the brake fluid.
6. Perform air bleeding for the brake system.  
(See page 8-5.)
7. Check the brake system for brake fluid leakage.
8. Perform the checks and adjustments for the brake pedal.  
(See page 8-2.)

## BRAKE BOOSTER

## COMPONENTS

(6-inch Booster)



T : Tightening torque  
Unit: kg-m (ft-lb)  
★ : Non-reusable parts

- ① Master cylinder push rod clevis
- ② Nut
- ③ Booster body
- ④ Booster spring
- ⑤ Output rod
- ⑥ Rod seal
- ⑦ Boot
- ⑧ Rod stopper
- ⑨ Reaction ring
- ⑩ Reaction rubber
- ⑪ Reaction plate
- ⑫ Snap ring
- ⑬ "E" ring
- ⑭ Plate washer

- ⑮ Element
- ⑯ Spring seat
- ⑰ Valve spring
- ⑱ Poppet spring
- ⑲ Valve stopper
- ⑳ Poppet valve
- ㉑ Booster housing
- ㉒ Push rod W/valve
- ㉓ Bush stopper
- ㉔ Bush
- ㉕ Piston seal
- ㉖ Diaphragm
- ㉗ Booster piston

Fig. 8-36

WR-08041

## BRAKES

### REMOVAL

1. Remove the master cylinder. (See page 8-12.)
2. Disconnect the vacuum hose.
3. Remove the front suspension upper brace subassembly. (RHD TURBO and GT<sub>ti</sub> grades only)
4. Remove the clutch cable and ignition coil. (LHD TURBO and GT<sub>ti</sub> grades only)
5. Working from the passenger room side, remove the clip and the with-hole pin. Separate the master cylinder push rod clevis and from the brake pedal. (See Fig. 8-15.)
6. Remove the brake booster assembly.
  - (1) Remove the four attaching nuts of the brake booster, using a long socket wrench (having a width across flat of 12 mm), as indicated in Fig. 8-38.
  - (2) Remove the brake booster assembly and gasket from the vehicle.

### (6-inch Booster) DISASSEMBLY

1. Remove the master cylinder pushrod clevis and lock nut.
2. Separate the booster housing from the booster body as follows:
  - (1) Put mate marks on the booster body and booster housing.

- (2) Secure the brake booster on the following SST.  
SST: 09753-87701-000

#### NOTE:

Be certain to evenly tighten the SST nuts at the right and left sides. Also, be very careful not to tighten the SST nuts excessively.

- (3) Turn the SST screw clockwise so as to disengage the booster housing from the booster body.
- (4) Detach the brake booster from the SST.

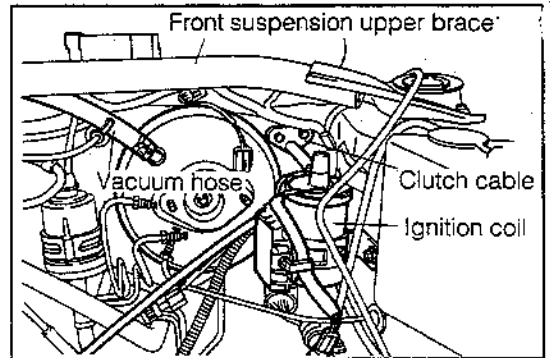


Fig. 8-37

WR-08042

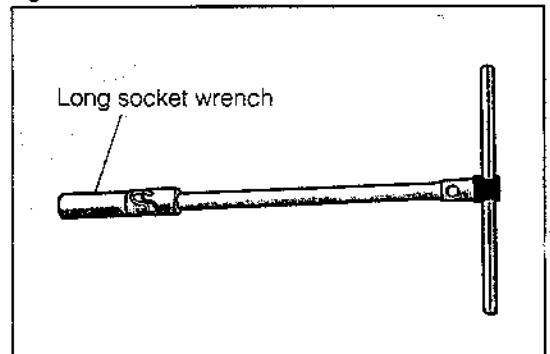


Fig. 8-38

WR-08043

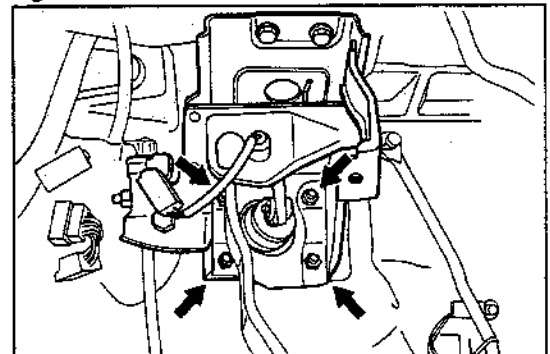


Fig. 8-39

WR-08044

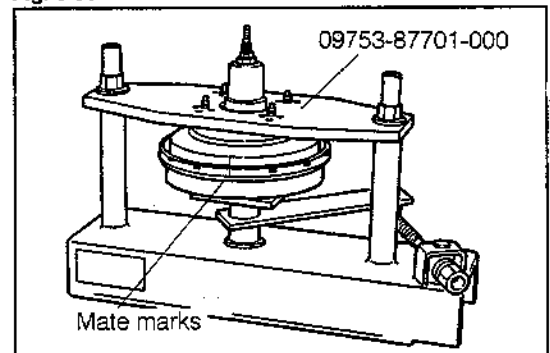


Fig. 8-40

WR-08045

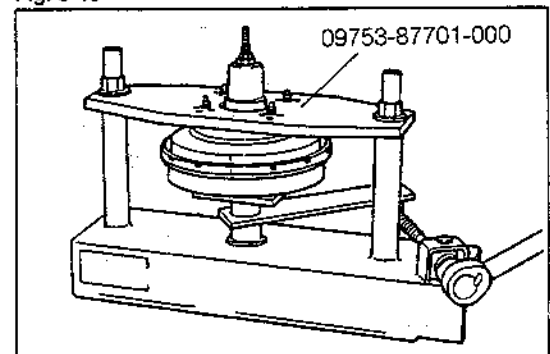


Fig. 8-41

WR-08046



(5) Disassemble the brake booster.

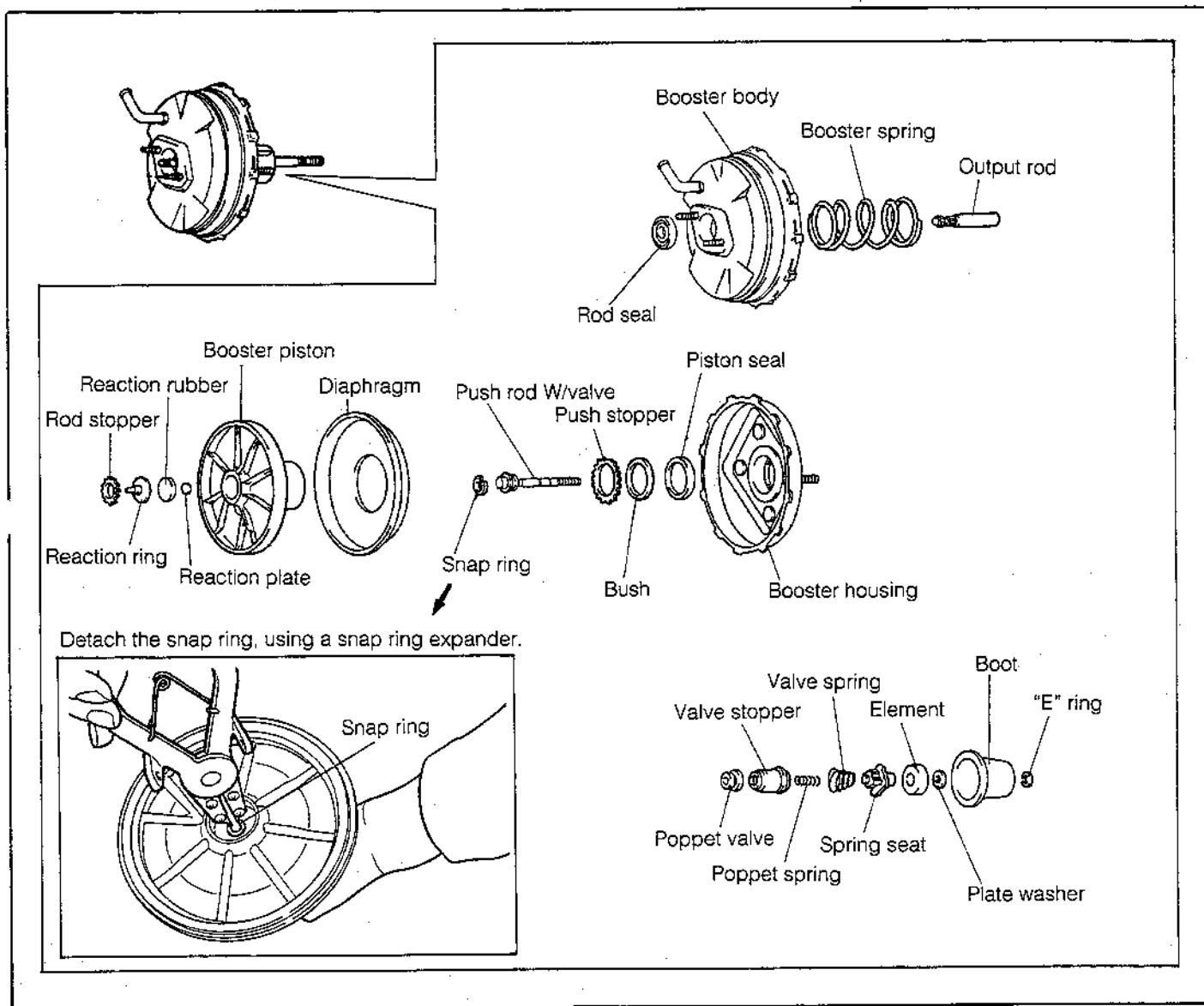


Fig. 8-42

WR-08047

## INSPECTION

Inspect the following parts.

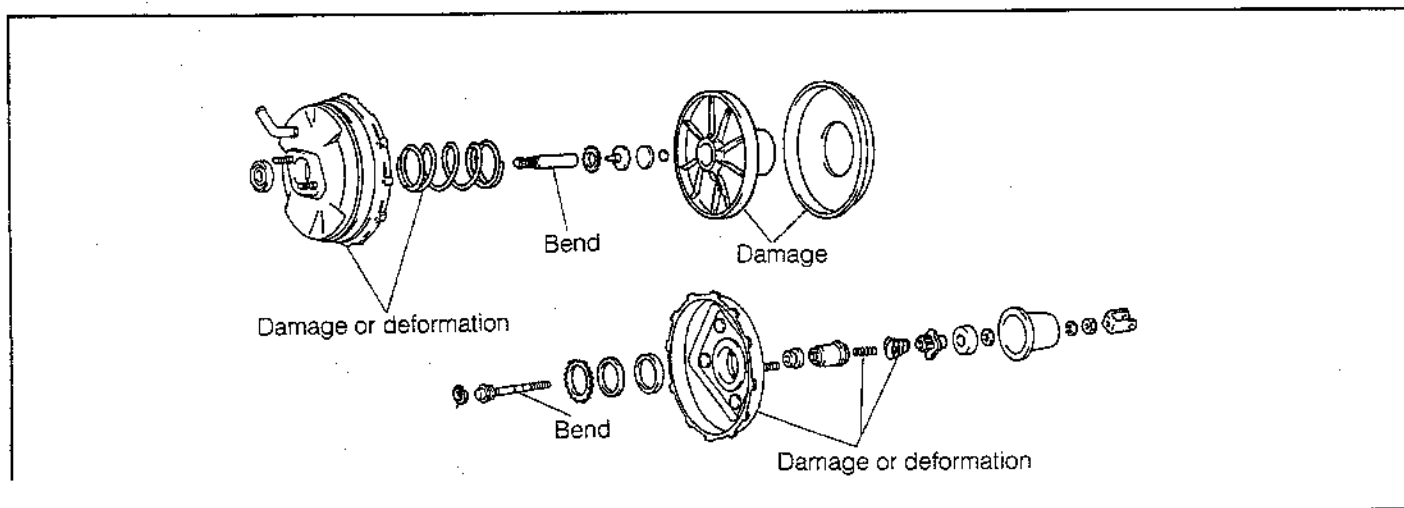


Fig. 8-43

WR-08048

## BRAKES

### ASSEMBLY

1. Application of silicon grease  
Apply silicon grease to those points indicated by arrow heads in the figure below.

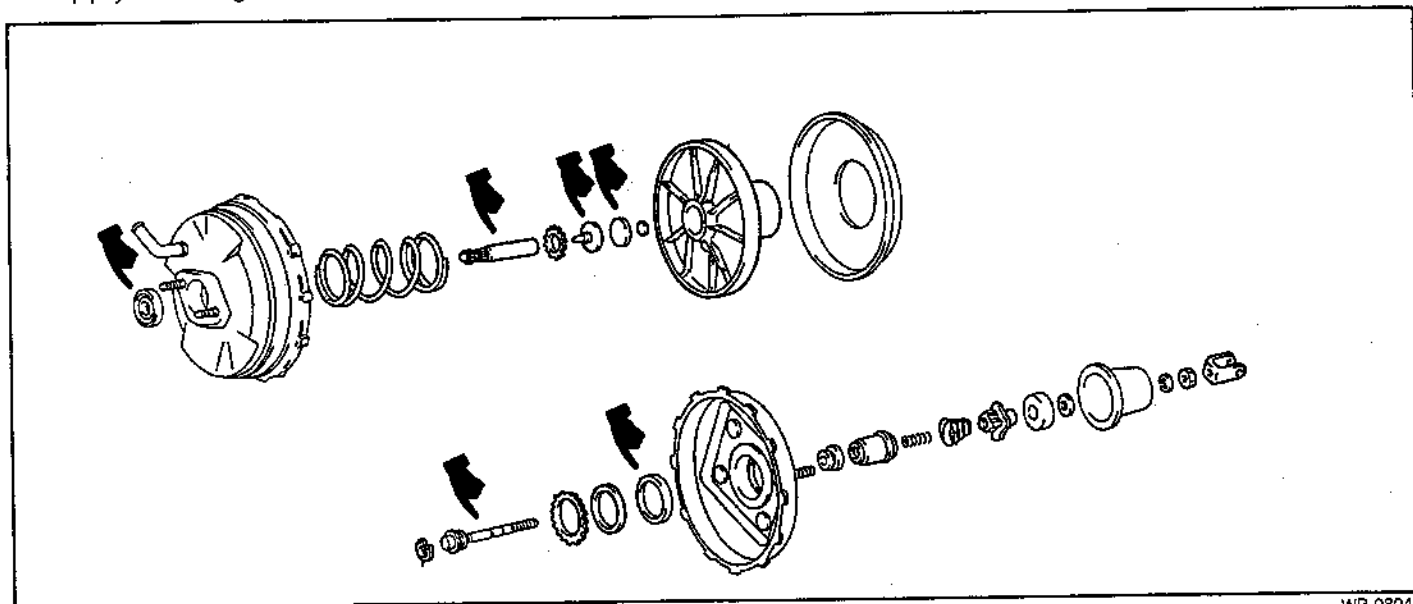


Fig. 8-44

WR-08049

2. Assemble the following parts in the booster piston.
  - (1) Install the diaphragm in position.
  - (2) Assemble the push rod with valve. Retain it with the snap ring.

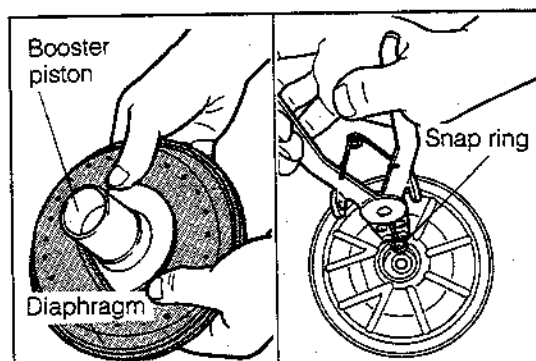


Fig. 8-45

WR-08050

- (3) Install the reaction plate, reaction rubber and reaction ring.
- (4) Install the rod stopper.

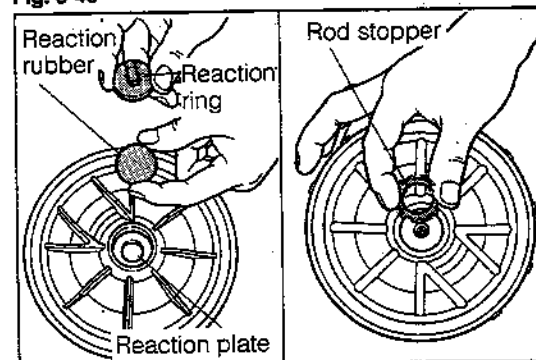


Fig. 8-46

WR-08051

3. Assemble the following parts in the booster housing.
  - (1) Install the piston seal, bush and bush stopper.
  - (2) Install the booster piston.

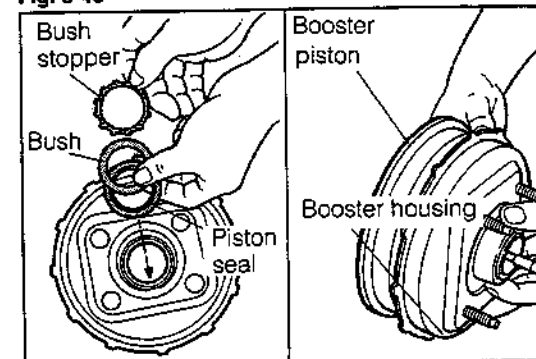


Fig. 8-47

WR-08052

- (3) Assemble the poppet valve to the valve stopper. Then, install them in the booster housing.
- (4) Install the poppet spring, valve spring and spring seat in place.

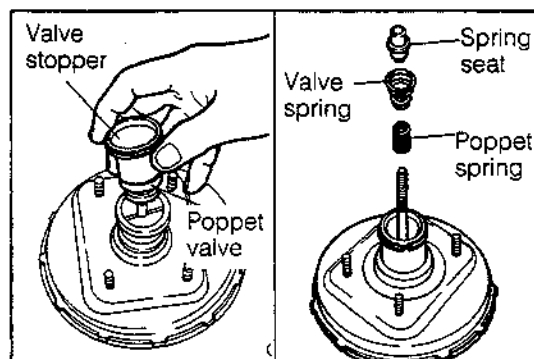


Fig. 8-48

WR-08053

- (5) Install the element, plate washer and "E" ring.
- (6) Install the boot.

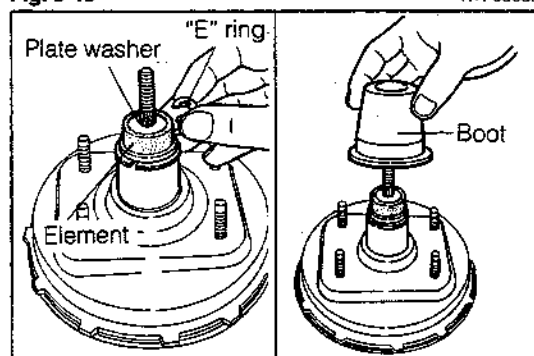


Fig. 8-49

WR-08054

4. Assemble the booster body and booster housing as follows:

- (1) Place the booster body and booster spring in the following SST.

SST: 09753-87701-000

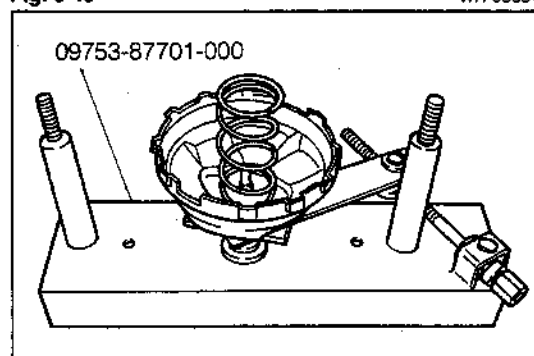


Fig. 8-50

WR-08055

- (2) Place the booster housing in the following SST.

SST: 09753-87701-000

## NOTE:

Be certain to evenly tighten the SST nuts at the right and left sides. Also, be very careful not to tighten the SST nuts excessively.

Furthermore, care must be exercised to ensure that the diaphragm will not be pinched.

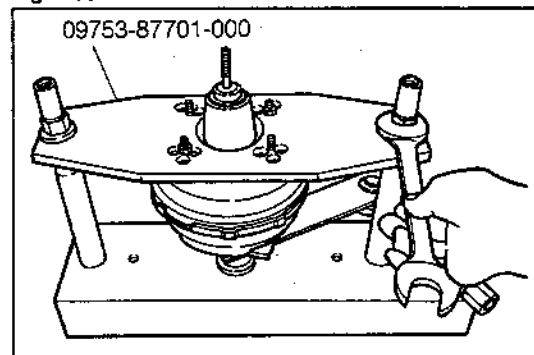


Fig. 8-51

WR-08056

- (3) Turn the SST screw counterclockwise so that the mating marks may be lined up.  
If the force required for turning is great, apply a small amount of silicon grease to the portion where the booster body is making contact with the booster housing.

- (4) Remove the brake booster from the SST.

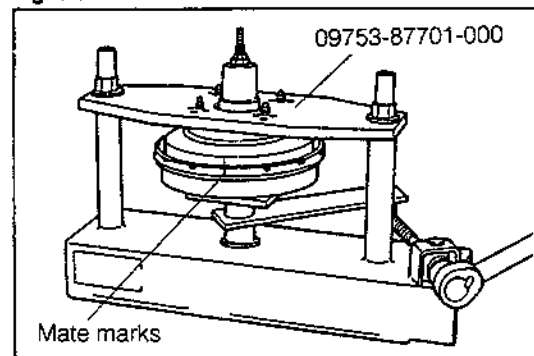


Fig. 8-52

WR-08057

## BRAKES

5. Install the output rod and rod seal in the brake booster.
6. Temporarily install the master cylinder push rod clevis and nut.

7. Adjust the brake booster push rod clearance as follows:
  - (1) Set the SST in such a way that the SST rod makes a light contact with the piston of the master cylinder, as indicated in Fig. 8-54.

SST: 09737-22011-000

**NOTE:**

Be sure to carry out this adjustment with the gasket attached in position.

- (2) Connect a MityVac to the union of the brake booster. Apply a negative pressure of 500 mmHg.
  - (3) Set the SST as indicated in Fig. 8-55. Adjust the push rod so that the push rod clearance may become zero.

- (4) Perform the adjustment of the push rod clearance by turning the nut provided at the tip end of the push rod.

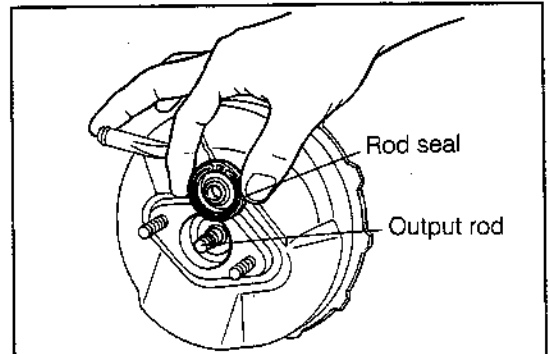


Fig. 8-53

WR-08058

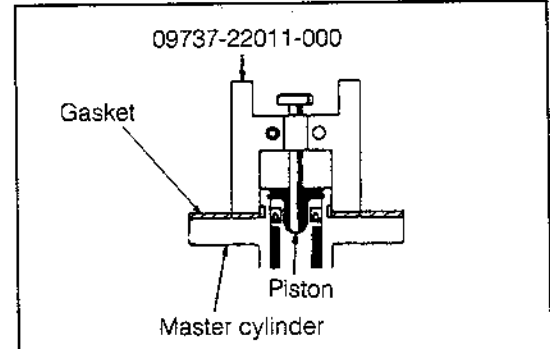


Fig. 8-54

WR-08059

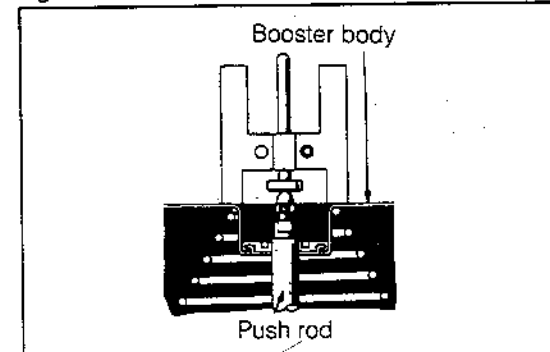


Fig. 8-55

WR-08060

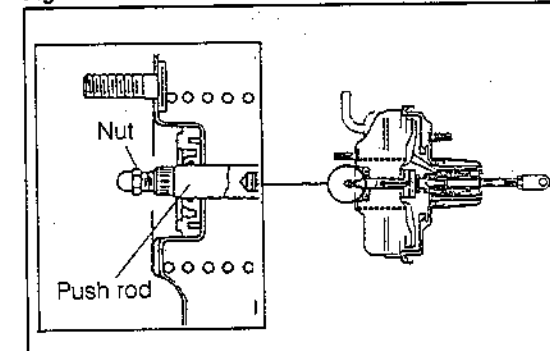
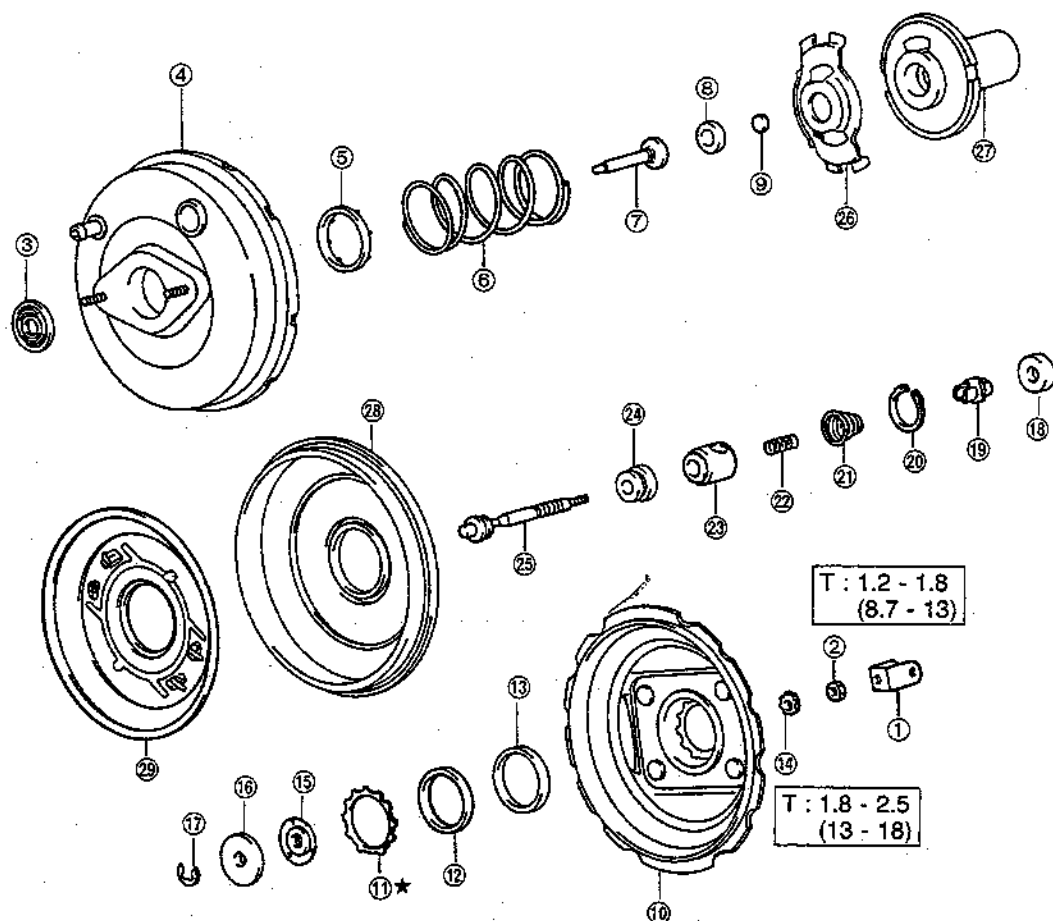


Fig. 8-56

WR-08061

## COMPONENTS

(7-inch Booster)



T : Tightening torque  
Unit: kg-m (ft-lb)  
★ : Non-reusable parts

- ① Master cylinder push rod clevis
- ② Nut
- ③ Rod seal
- ④ Booster body
- ⑤ Retainer spring
- ⑥ Booster spring
- ⑦ Booster piston rod
- ⑧ Reaction disc
- ⑨ Reaction plate
- ⑩ Booster housing
- ⑪ Booster push rod seal retainer
- ⑫ Valve ring
- ⑬ Piston seal
- ⑭ Nut

- ⑮ Adjuster nut
- ⑯ Element B
- ⑰ "E" ring
- ⑱ Element A
- ⑲ Control valve spring retainer
- ⑳ Piston return spring retainer
- ㉑ Valve spring
- ㉒ Control valve spring
- ㉓ Air valve spring retainer
- ㉔ Poppet valve
- ㉕ Booster with rod, valve S/A
- ㉖ Set cover
- ㉗ Valve body
- ㉘ Diaphragm
- ㉙ Booster plate

Fig. 8-57

WR-08062

## BRAKES

### (7-inch Booster) DISASSEMBLY

1. Remove the master cylinder push rod clevis and lock nut.
2. Remove the rod seal.
3. Separate the booster housing from the booster body as follows:

(1) Put mate marks on the booster body and booster housing.

(2) Secure the brake booster on the following SST.  
SST: 09753-87701-000

#### NOTE:

Be certain to evenly tighten the SST nuts at the right and left sides. Also, be very careful not to tighten the SST nuts excessively.

- (3) Turn the SST screw clockwise so as to disengage the booster housing from the booster body.
- (4) Remove the brake booster from the SST.

4. Disassemble the brake booster.

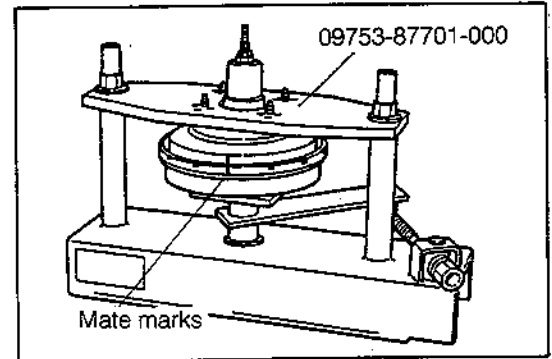


Fig. 8-58

WR-08063

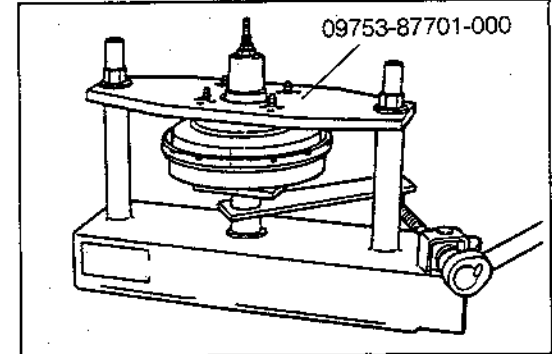


Fig. 8-59

WR-08064

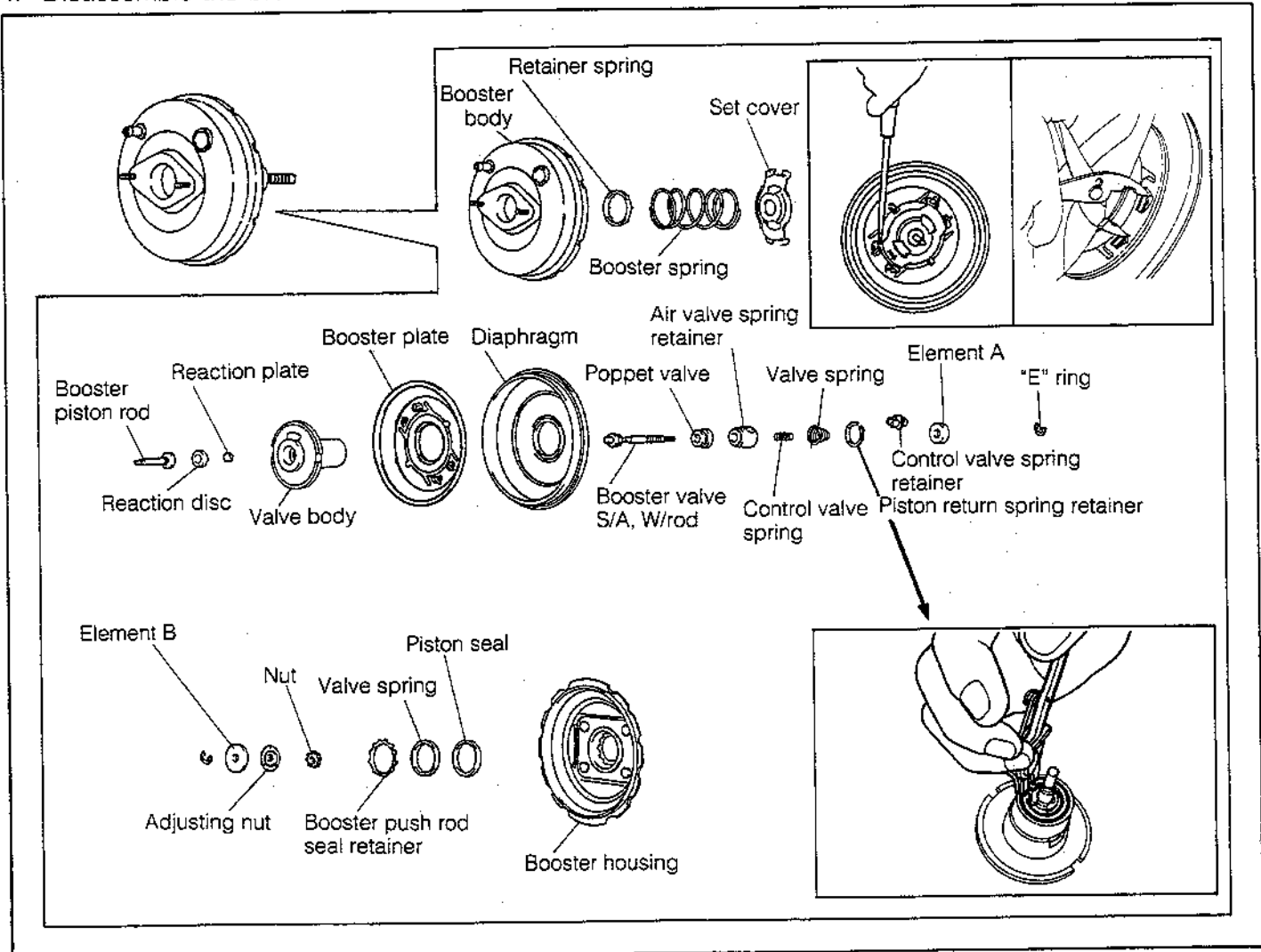


Fig. 8-60

WR-08065

## INSPECTION

Inspect the following parts.

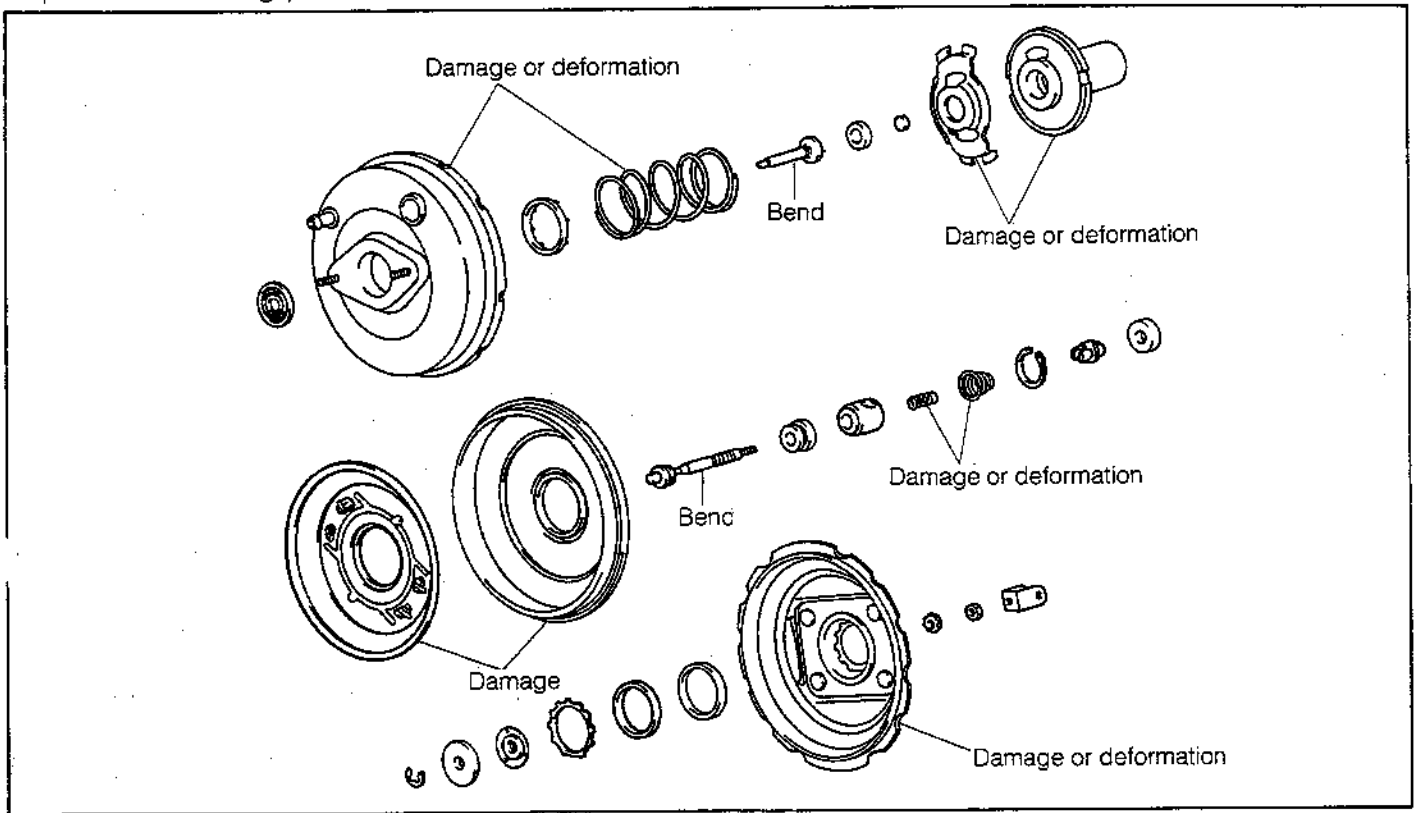


Fig. 8-61

WR-08066

## ASSEMBLY

1. Application of silicon grease  
Apply silicon grease to those points indicated by arrow heads in the figure below.

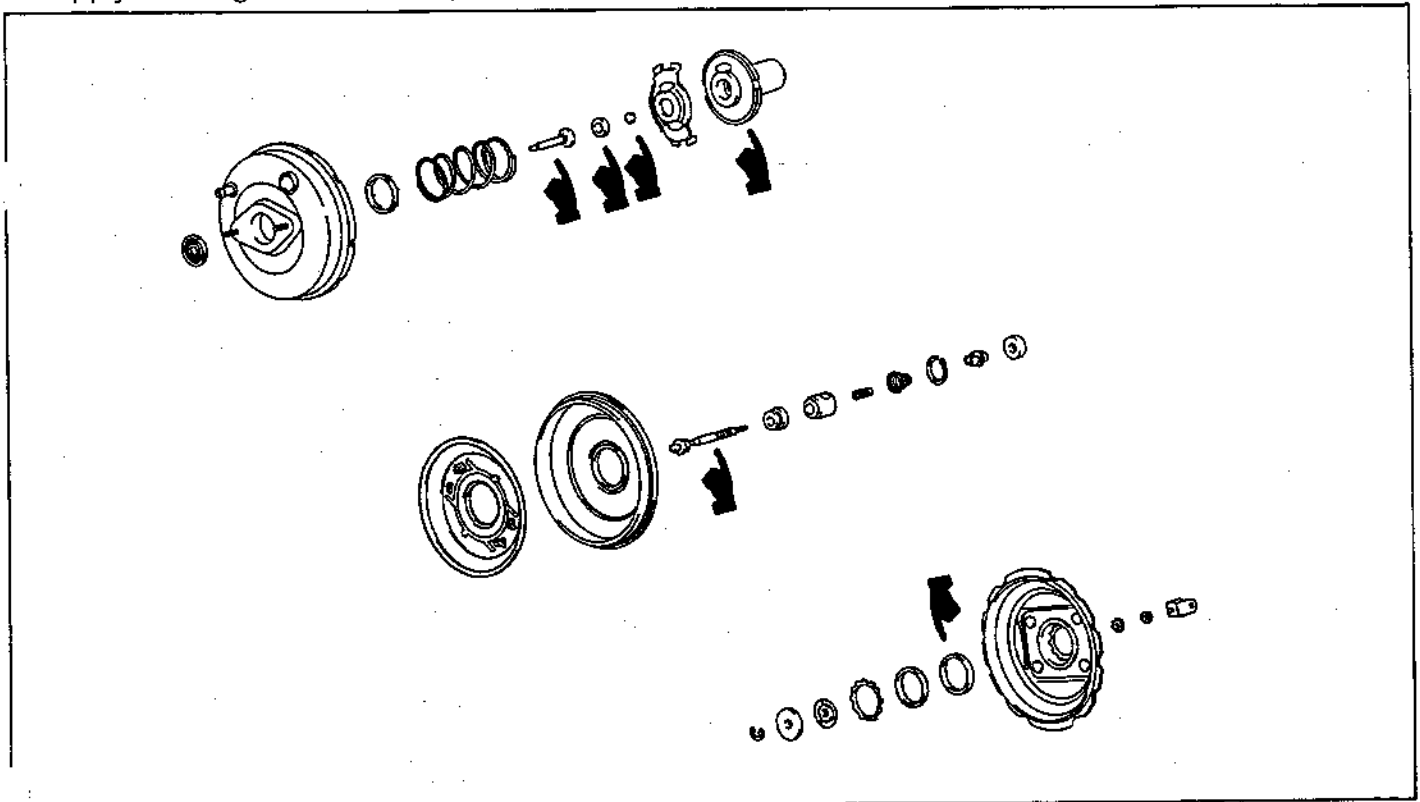


Fig. 8-62

WR-08067

## BRAKES

2. Assemble the following parts in the booster valve sub-assembly with rod.
  - (1) Install the poppet valve in the air valve spring retainer. Install them in the booster valve subassembly with rod.
  - (2) Install the control valve spring, valve spring, control valve spring retainer, element and "E" ring.
3. Install the booster valve subassembly with rod and the piston return spring retainer in the valve body.

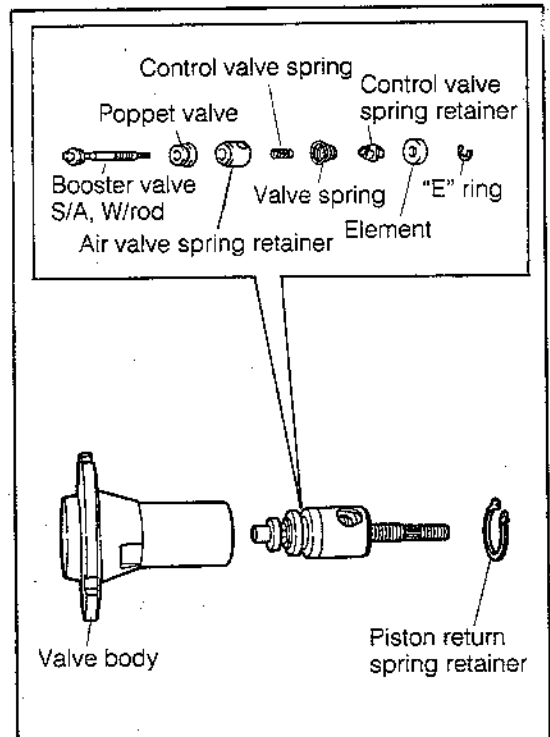


Fig. 8-63

WR-08068

4. Install the element, adjusting nut and nut in place.

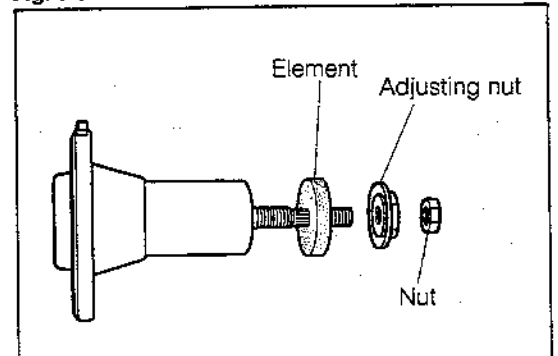


Fig. 8-64

WR-08069

5. Assemble the following parts in the booster plate.
  - (1) Install the diaphragm.
  - (2) Install the valve body, reaction plate, reaction disc and booster piston rod.

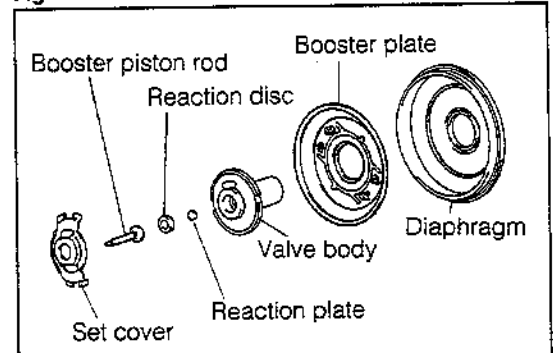


Fig. 8-65

WR-08070

- (3) Install the set cover as follows:
  - Temporarily install the set cover on the booster plate.
  - Assemble the set cover by pinching the joint section of the booster plate with the claw section of the set cover, using pliers.
  - Slide the claw section of the set cover using a common screwdriver, until it is no longer possible to move the claw section.

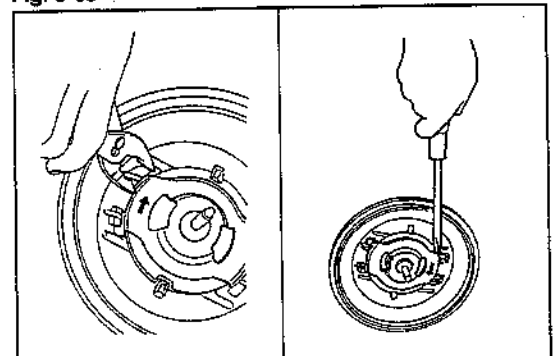


Fig. 8-66

WR-08071



6. Install the piston seal, valve ring and booster push rod seal retainer in the booster housing.

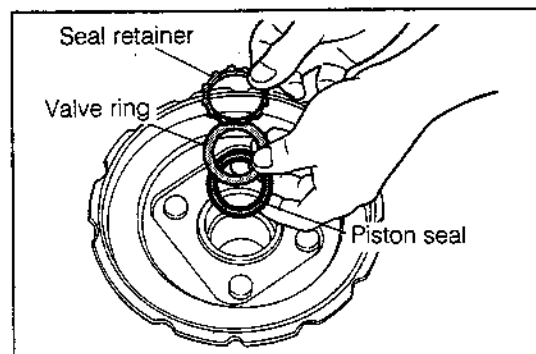


Fig. 8-67

WR-08072

7. Assemble the booster housing and booster plate.

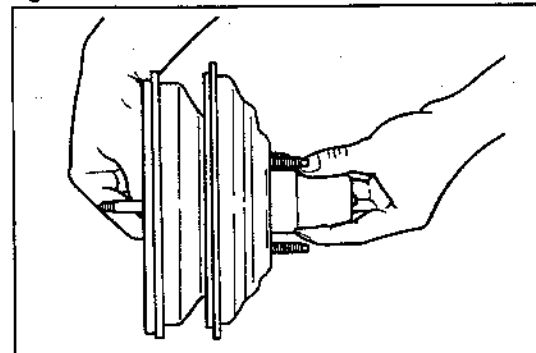


Fig. 8-68

WR-08073

8. Assemble the booster body and booster housing as follows:

- (1) Place the booster body, spring retainer and booster spring in the following SST.

SST: 09753-87701-000

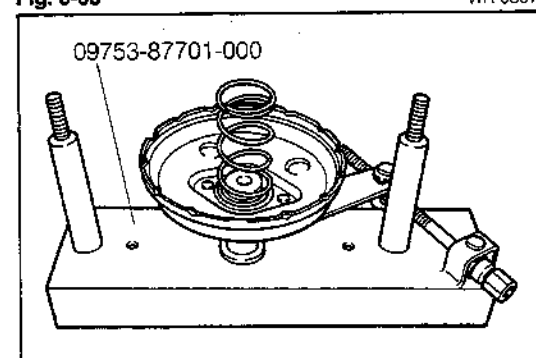


Fig. 8-69

WR-08074

- (2) Place the booster housing in the following SST.

SST: 09753-87701-000

## NOTE:

Be certain to evenly tighten the SST nuts at the right and left sides. Also, be very careful not to tighten the SST nuts excessively.

Furthermore, care must be exercised to ensure that the diaphragm will not be pinched.

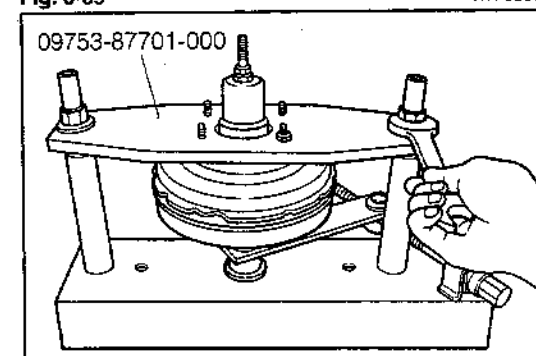


Fig. 8-70

WR-08075

- (3) Turn the SST screw counterclockwise so that the mating marks may be lined up.

If the force required for turning is great, apply a small amount of silicon grease to the portion where the booster body is making contact with the booster housing.

- (4) Remove the brake booster from the SST.

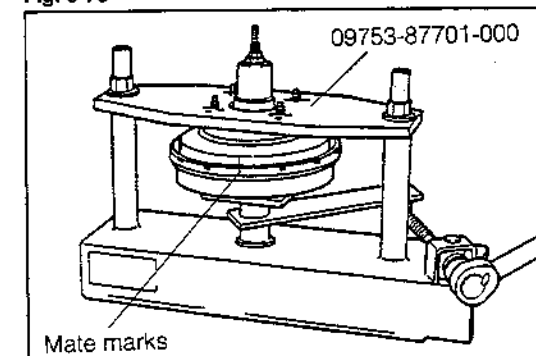


Fig. 8-71

WR-08076

## BRAKES

9. Install the rod seal in the brake booster.
10. Temporarily install the master cylinder push rod clevis and nut.

11. Adjust the brake booster push rod clearance as follows:
  - (1) Set the SST in such a way that the SST rod makes a light contact with the piston of the master cylinder, as indicated in Fig. 8-73.

SST: 09737-87001-000

### NOTE:

Be sure to carry out this adjustment with the gasket attached in position.

- (2) Set the SST as indicated in Fig. 8-74. Adjust the push rod so that the push rod clearance may become zero.

- (3) Perform the adjustment of the push rod clearance by turning the nut provided at the tip end of the push rod.

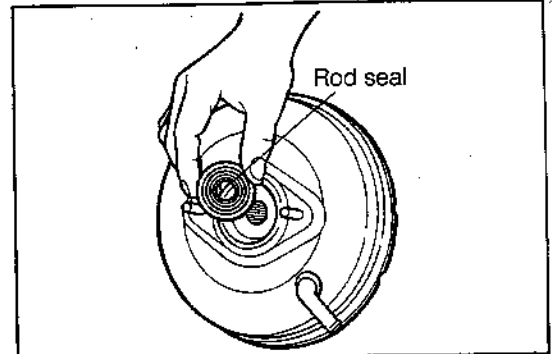


Fig. 8-72

WR-08077

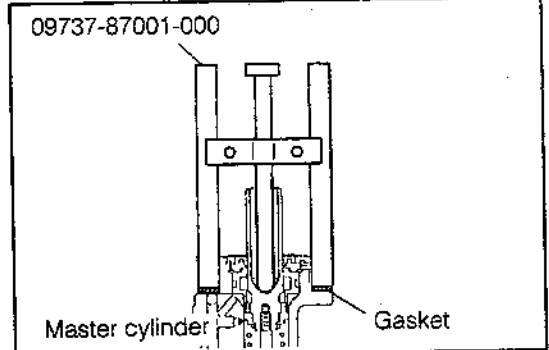


Fig. 8-73

WR-08078

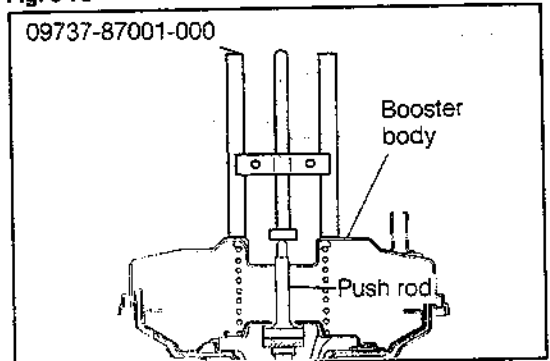


Fig. 8-74

WR-08079

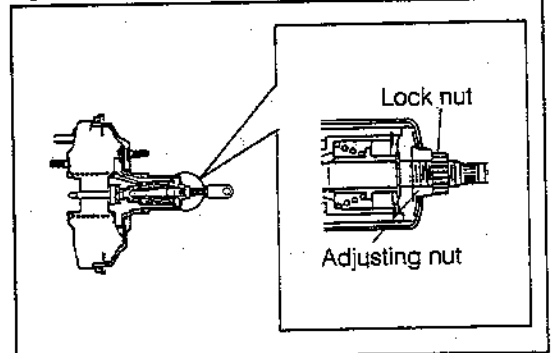


Fig. 8-75

WR-08080

## INSTALLATION

1. Install the brake booster on the body with a new gasket interposed, using the four nuts.
2. Attach the master cylinder push rod clevis to the brake pedal by means of the with-hole pin and clip.

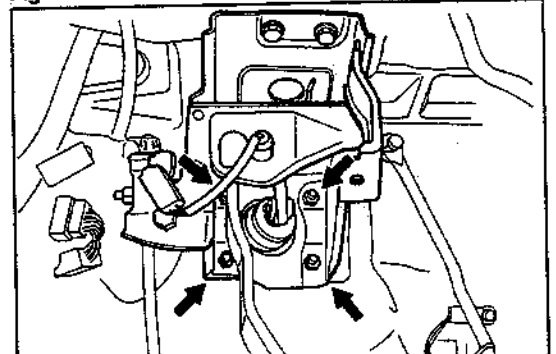


Fig. 8-76

WR-08081

3. Attach the vacuum hose.
4. Install the front suspension upper brace subassembly.  
(RHD TURBO and GT<sub>i</sub> grades only)
5. Install the clutch cable and ignition coil.  
(LHD TURBO and GT<sub>i</sub> grades only)
6. Install the master cylinder. (See page 8-14.)

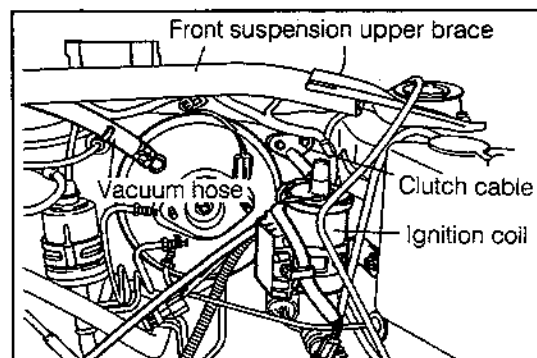


Fig. 8-77

WR-08082

## BRAKES

### FRONT BRAKE SECTIONAL VIEW

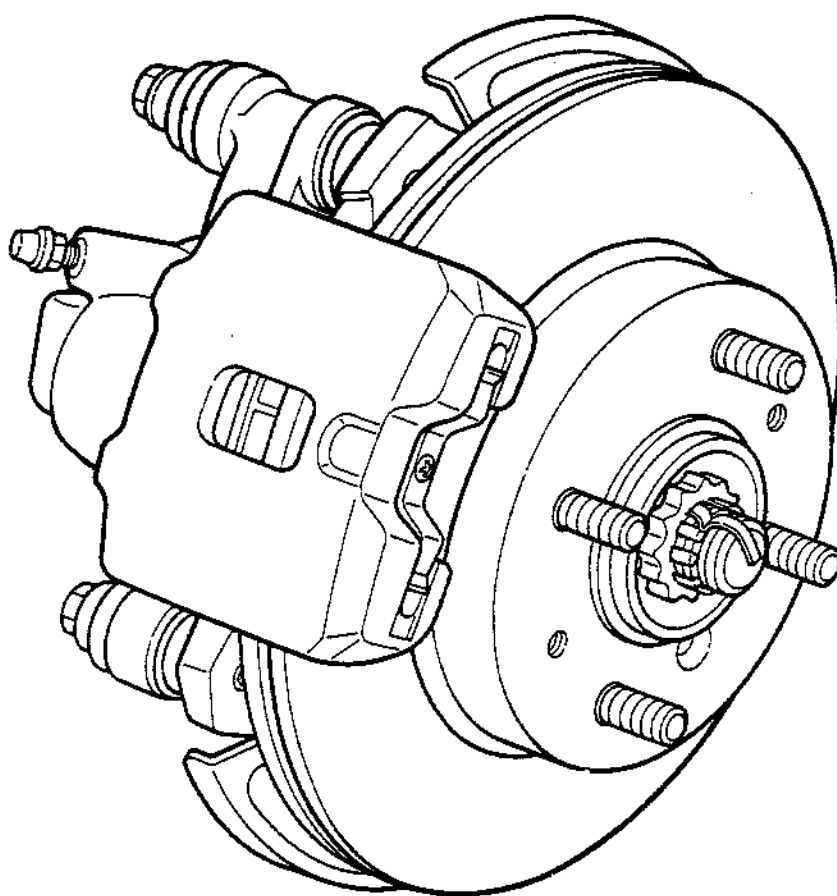
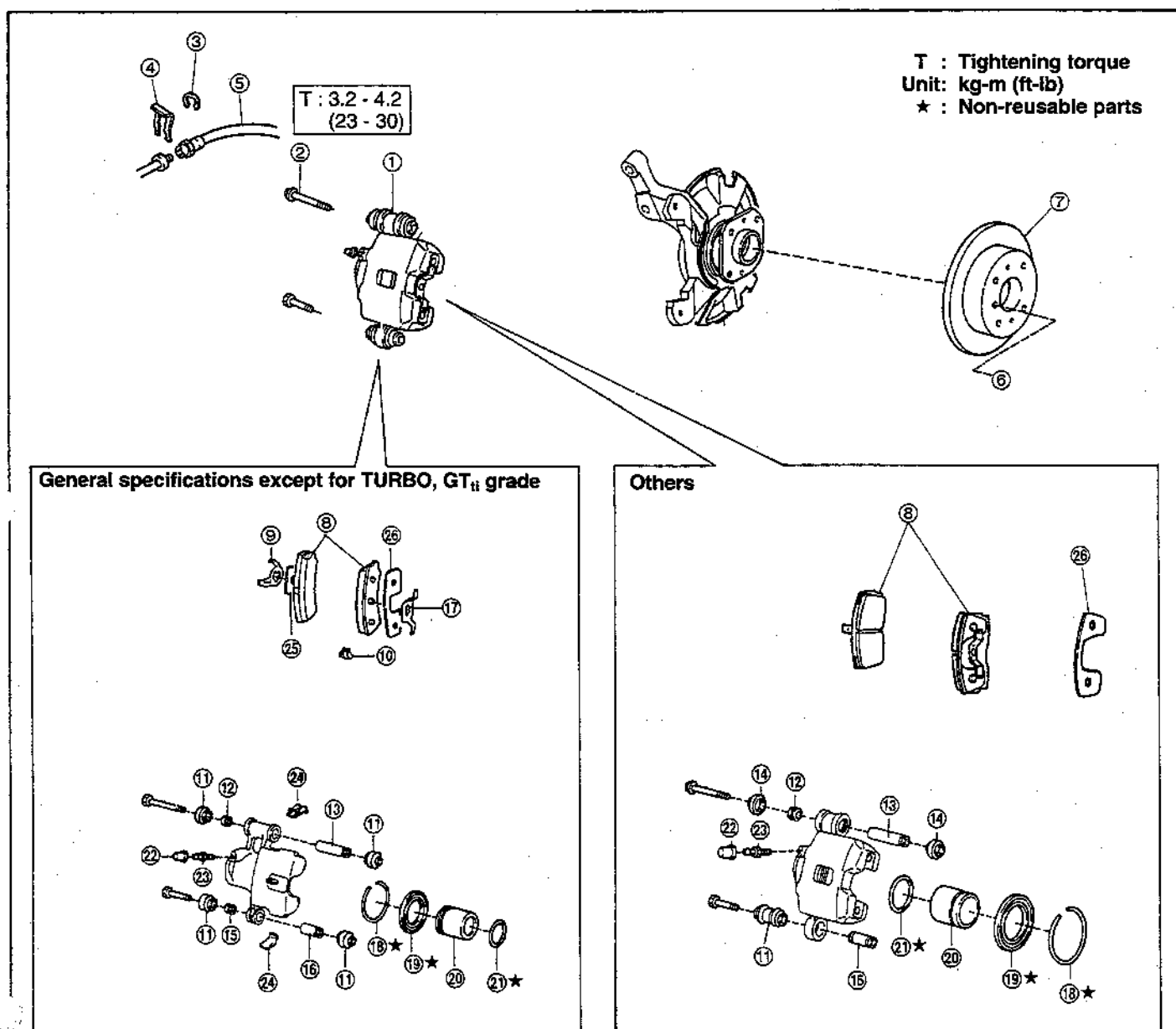


Fig. 8-78

WR-08083

## COMPONENTS



- ① Disc brake front caliper Ay
- ② Bolt
- ③ "E" ring
- ④ Tube clamp
- ⑤ Flexible hose
- ⑥ Screw
- ⑦ Front disc
- ⑧ Disc brake pad
- ⑨ Anti-rattle spring No. 1
- ⑩ Pad wear indicator plate
- ⑪ Bush dust boot
- ⑫ Bush retainer
- ⑬ Cylinder slide bush

- ⑭ Piston boot
- ⑮ Bush retainer
- ⑯ Cylinder slide bush
- ⑰ Anti-rattle spring No. 2
- ⑱ Set ring
- ⑲ Cylinder boot
- ⑳ Front disc brake piston
- ㉑ Piston seal
- ㉒ Bleeder plug cap
- ㉓ Bleeder plug
- ㉔ Disc brake pad guide plate
- ㉕ Anti-squeal shim No. 1
- ㉖ Anti-squeal shim No. 2

Fig. 8-79

WR-08084

## BRAKES

### DISC BRAKE PAD REMOVAL

1. Jack up the front end of the vehicle. Support the body with safety stands. Remove the front wheel.
2. Inspect the brake pad thickness through the inspection hole provided in the disc brake front caliper.

	General specifications except for TURBO, GT <sub>ti</sub> grade	Others
Specified Thickness	10 mm (0.39 inch)	9 mm (0.35 inch)
Minimum Limit	1 mm (0.04 inch)	1 mm (0.04 inch)

3. Remove the two attaching bolts of the disc brake front cylinder assembly.
4. Remove the disc brake pad and anti-squeal shim.
5. Detach the disc brake pad guide plate.
6. Check the front disc thickness. (See Fig. 8-98.)

	General specifications except for TURBO, GT <sub>ti</sub> grade	Others
Specified Thickness	11 mm (0.43 inch)	18 mm (0.71 inch)
Minimum Limit	10 mm (0.39 inch)	17 mm (0.67 inch)

7. Drain a small amount of brake fluid from the master cylinder reservoir. Push in the piston with the handle of a hammer or the like.

**NOTE:**

Be sure to carry out the pad replacement operation for one wheel at a time, for there is a possibility that the piston at the opposite side may be jumped out.

### INSTALLATION

1. Install a new disc brake pad guide plate on the knuckle.

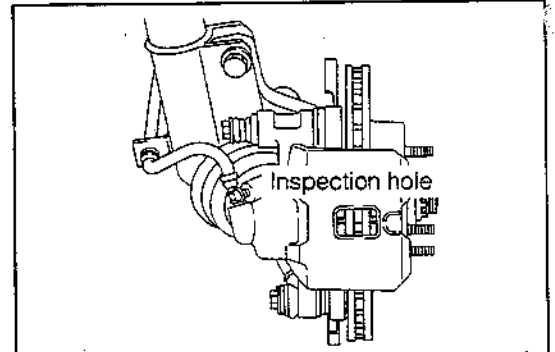


Fig. 8-80

WR-08085

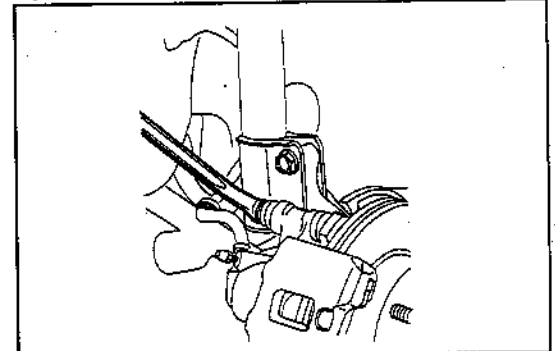


Fig. 8-81

WR-08086

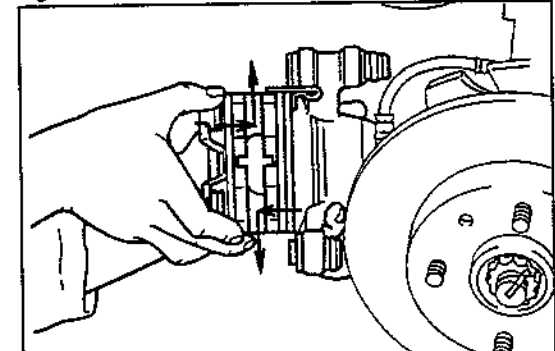


Fig. 8-82

WR-08087

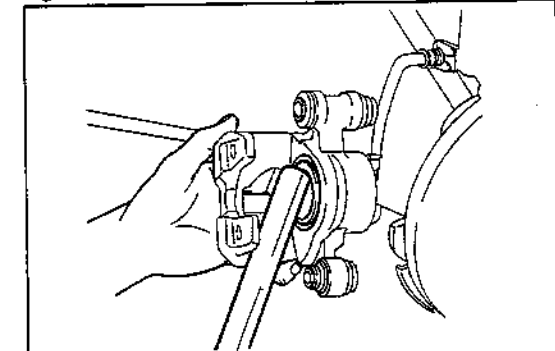


Fig. 8-83

WR-08088

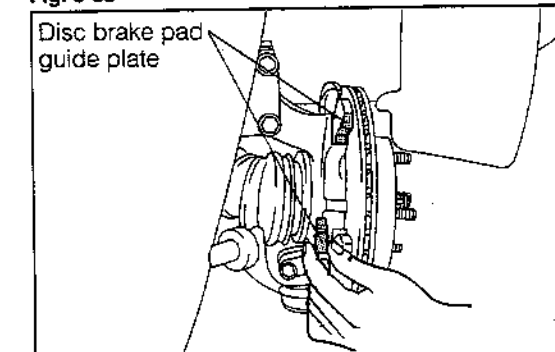


Fig. 8-84

WR-08089

2. Assemble a new anti-squeal shim at a new disc brake pad (outboard side). Then, install them on the disc brake front caliper.

3. Install the disc brake front caliper assembly on the knuckle.

**Tightening Torque:** 3.2 - 4.2 kg-m (23 - 30 ft-lb)

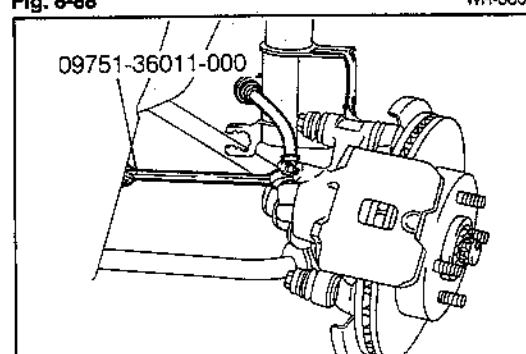
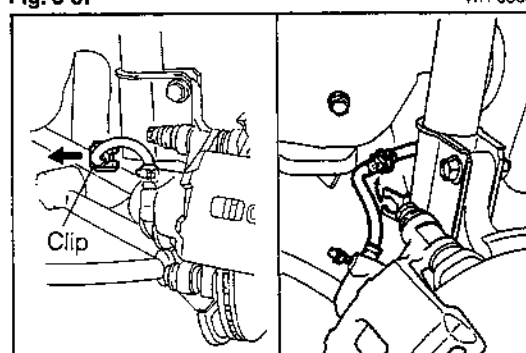
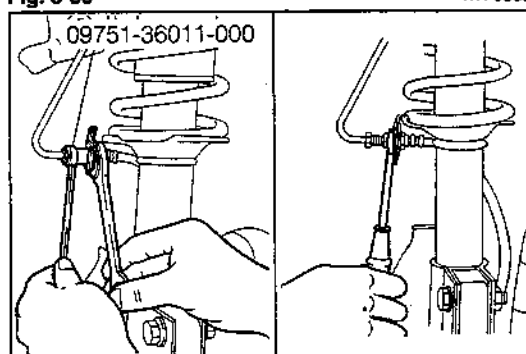
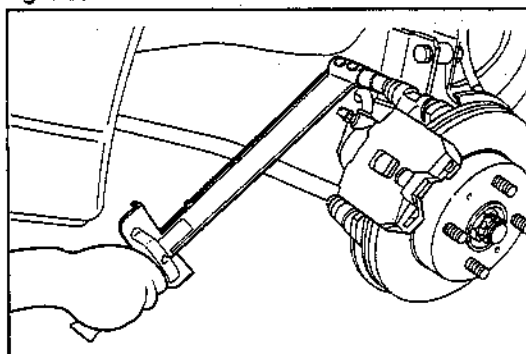
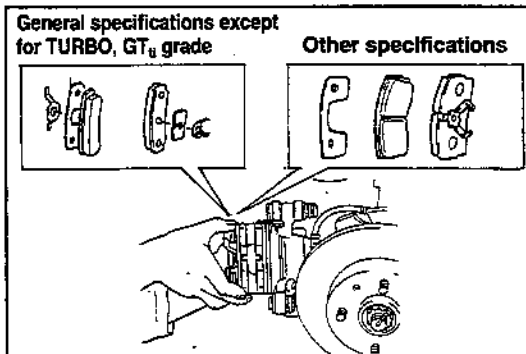
**NOTE:**

Care must be exercised so that the caliper boot may not be pinched during the installation.

1. Install the front wheel.
5. Fill the brake fluid up to the "MAX" reference line of the master cylinder reservoir.

## DISC BRAKE FRONT CALIPER REMOVAL

1. Jack up the front end of the vehicle. Support the body with safety stands. Remove the front wheel.
2. Disconnect the flexible hose as follows:
  - (Body side)
  - (1) Separate the flexible hose from the brake tube, using the following SST.
  - SST: 09751-36011-000**
  - (2) Detach the clip.
  - (Shock absorber side)
  - (3) Detach the clip.
  - (4) Disconnect the flexible hose from the shock absorber bracket.
- (5) Disconnect the flexible hose from the disc brake front caliper, using the following SST.
- SST: 09751-36011-000**



## BRAKES

3. Remove the caliper from the vehicle by removing the two attaching bolts of the disc brake front caliper.
4. Detach the disc brake pad from the disc brake front caliper.

### DISASSEMBLY

1. Remove the following parts from the disc brake front caliper.
    - (1) General specifications except for TURBO, GT<sub>II</sub> grade  
(Bush dust boot, bush retainer, cylinder slide bush, bleeder plug and plug cap)
    - (2) Other specifications  
(Piston boot, bush dust boot, bush retainer, cylinder slide bush, bleeder plug and plug cap)
  2. Detach the cylinder boot set ring and cylinder boot, using a common screwdriver.
  3. With a wooden piece or a cloth placed at the end of the disc cylinder, as indicated in the right figure, drive out the piston by applying compressed air.
- NOTE:**  
Special caution must be exercised so that no brake fluid may be splashed. Also, be very careful not to allow your finger be pinched.

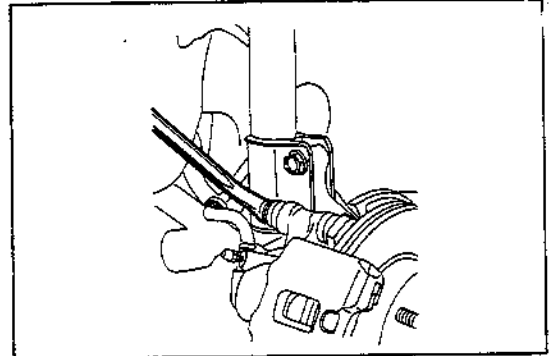


Fig. 8-90

WR-08095

#### General specifications except for TURBO, GT<sub>II</sub> grade

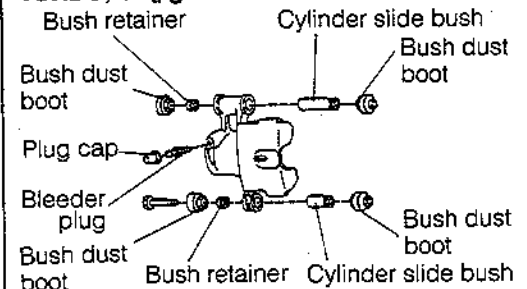


Fig. 8-91

WR-08096

#### Other specifications

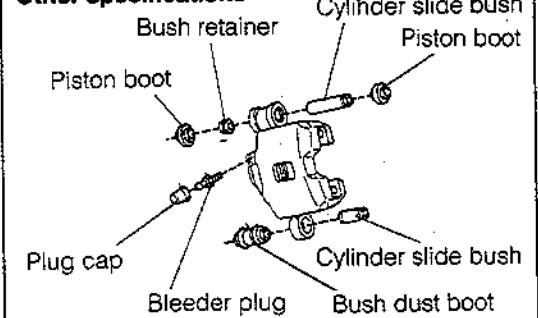


Fig. 8-92

WR-08097

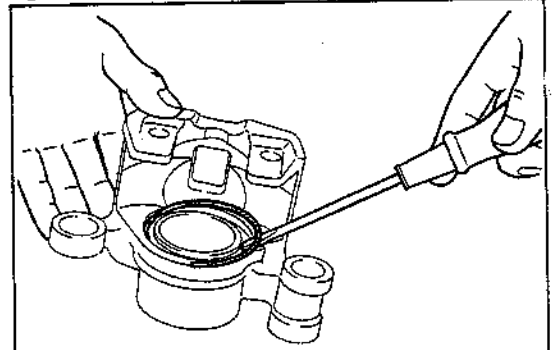


Fig. 8-93

WR-08098

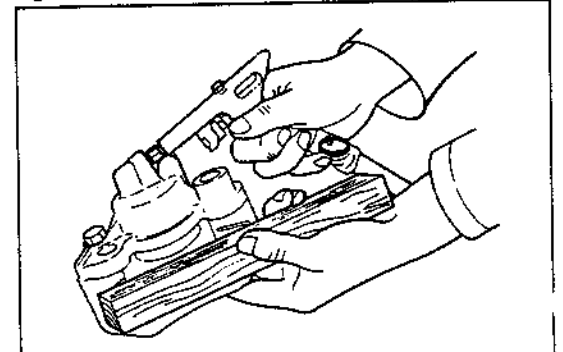


Fig. 8-94

WR-08099



4. Detach the piston seal, using a common screwdriver.

## INSPECTION

1. Inspect each part of the disc brake front caliper assembly.

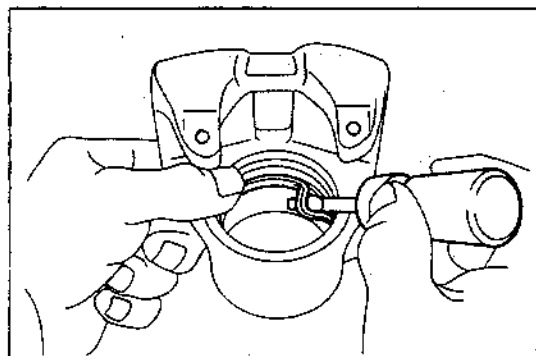
2. Measurement of pad thickness

	General specifications except for TURBO, GT <sub>ti</sub> grade	Others
Specified Thickness	10 mm (0.39 inch)	9 mm (0.35 inch)
Minimum Limit	1 mm (0.04 inch)	1 mm (0.04 inch)

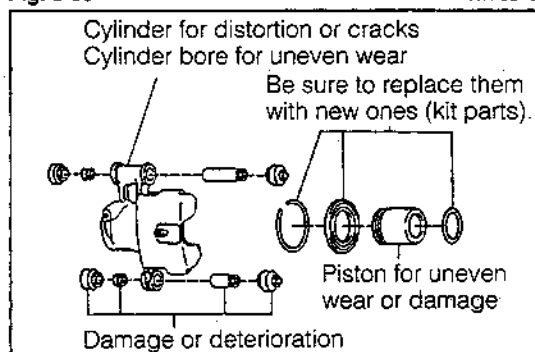
3. Checking of disc thickness

	Specifications other than GT <sub>ti</sub>	GT <sub>ti</sub> grade
Specified Thickness	11 mm (0.43 inch)	18 mm (0.71 inch)
Minimum Limit	10 mm (0.39 inch)	17 mm (0.67 inch)

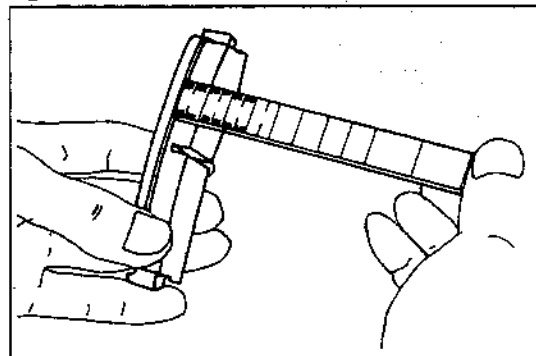
4. Replace the front disc.


**Fig. 8-95**

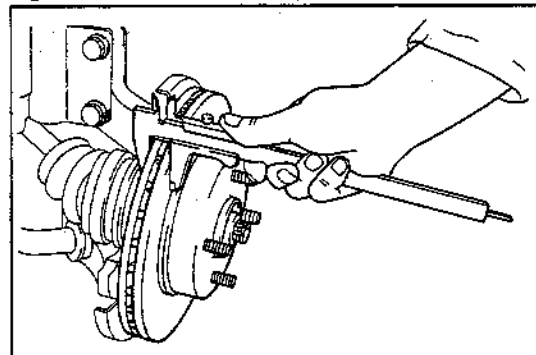
WR-08100


**Fig. 8-96**

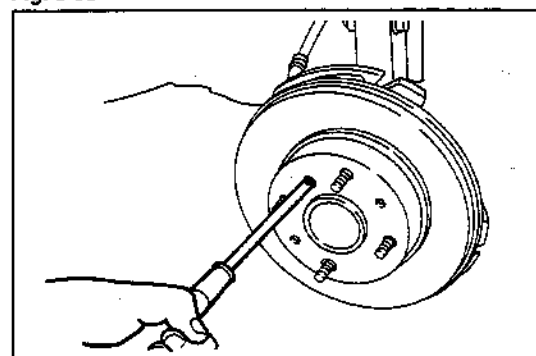
WR-08101


**Fig. 8-97**

WR-08102


**Fig. 8-98**

WR-08103

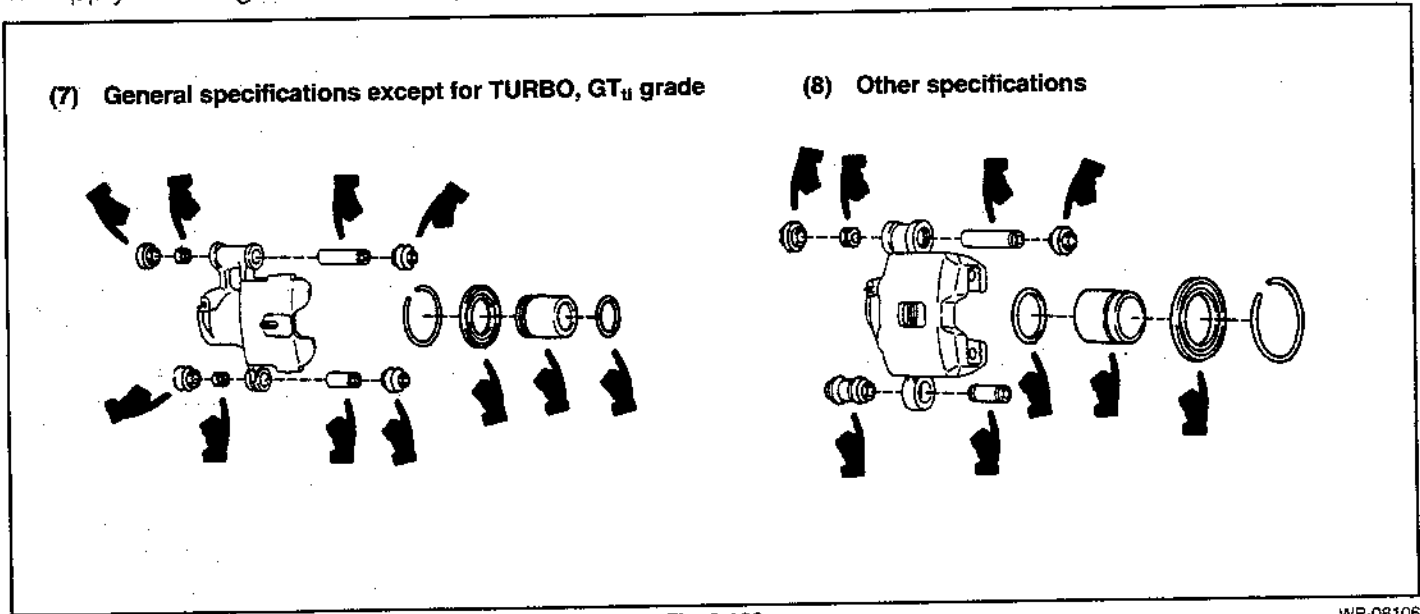

**Fig. 8-99**

WR-08105

## BRAKES

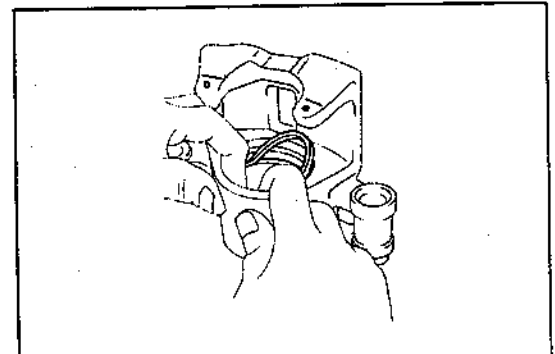
### ASSEMBLY

1. Apply rubber grease to those points indicated by arrow heads in the figure below.

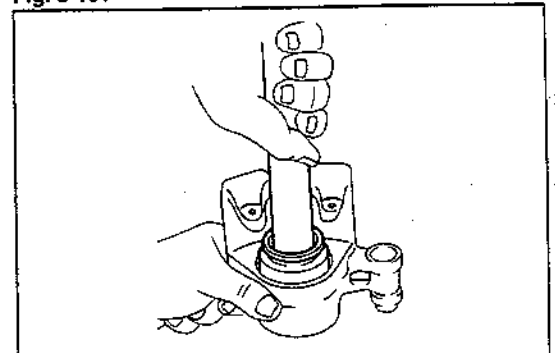


2. Assemble the piston seal and piston.

- (1) Assemble the piston seal in the disc brake front caliper.



- (2) Insert the piston into the disc brake front caliper, making sure that the piston is not tilted during the installation.

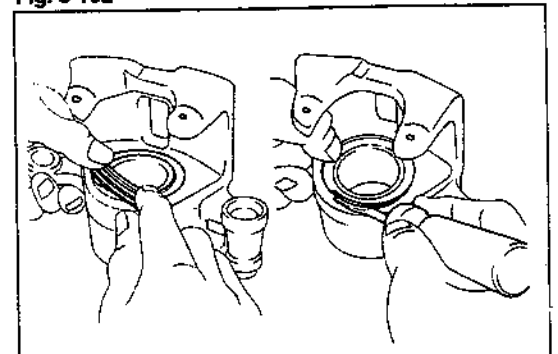


3. Assemble the cylinder boot in the disc brake front caliper.

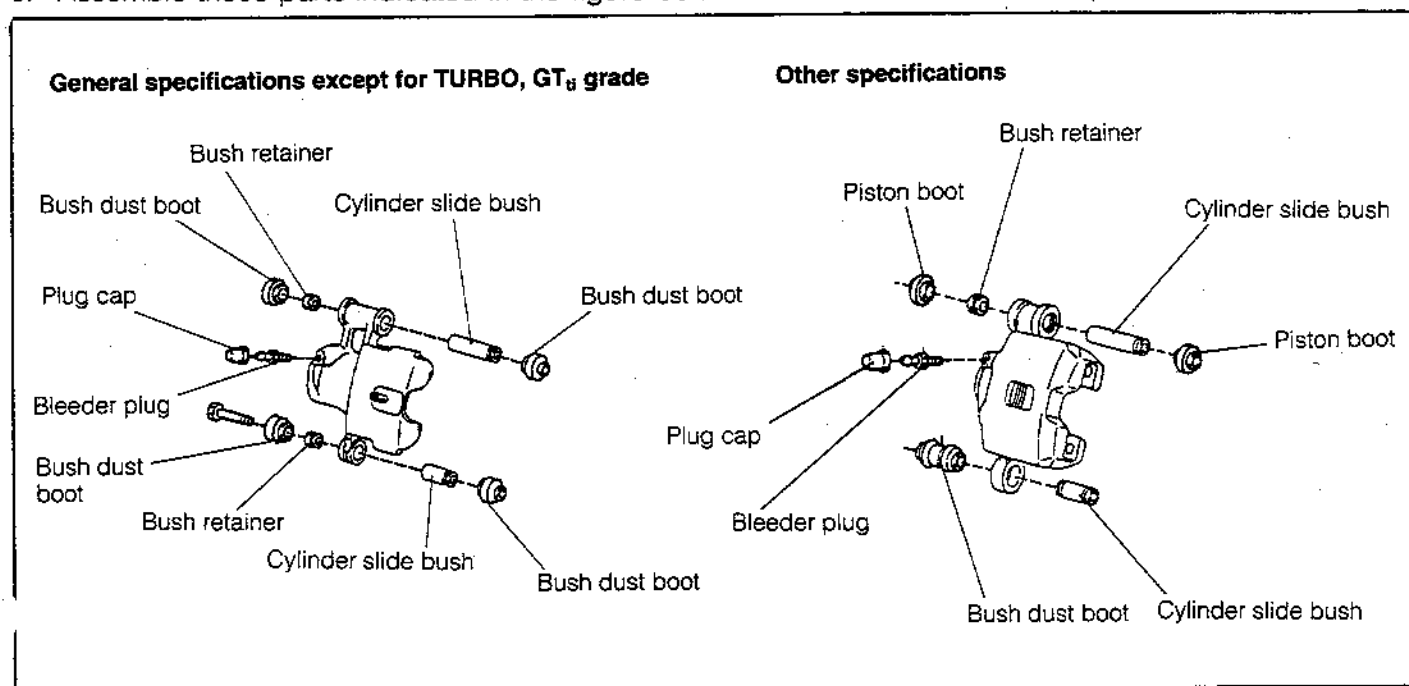
**NOTE:**

Make sure that the boot is fitted securely in the groove.

4. Assemble the cylinder boot set ring, making sure that no scratch is made to the boot.



5. Assemble those parts indicated in the figure below in the disc brake front caliper.


**Fig. 8-104**

WR-08109

## INSTALLATION

1. Install the disc brake pad guide plate on the knuckle. (See Fig. 8-84.)
2. Install the anti-squeal shim at the disc brake pad (out-board side). Then, install them on the disc brake front caliper.

3. Install the disc brake front caliper assembly on the knuckle.

**Tightening Torque:** 3.2 - 4.2 kg-m (23 - 30 ft-lb)

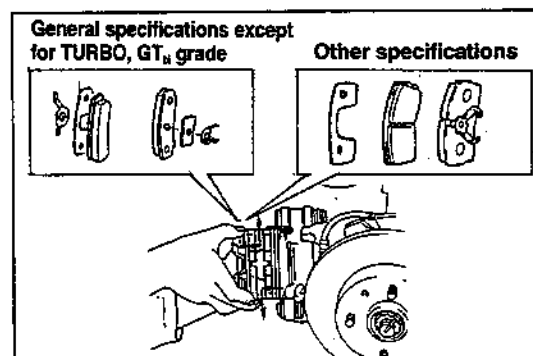
### NOTE:

Care must be exercised so that the caliper boot may not be pinched during the installation.

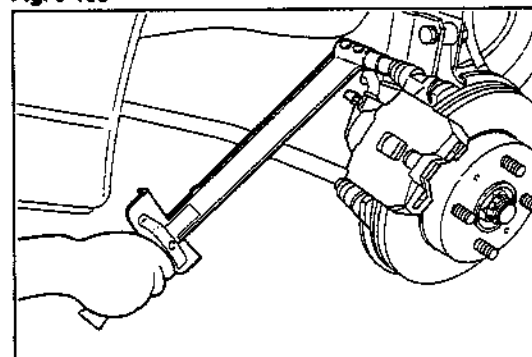
4. Install the flexible hose.
  - (1) Attach the flexible hose to the disc brake front caliper, using the following SST.

**SST:** 09751-36011-000

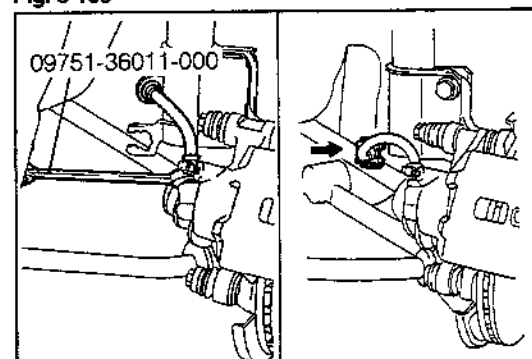
- (2) Attach the flexible hose to the bracket section at the shock absorber side, using the clip.


**Fig. 8-105**

WR-08110


**Fig. 8-106**

WR-08111


**Fig. 8-107**

WR-08112

## BRAKES

(3) Temporarily install the flexible hose and brake tube by hands.

(4) Tighten the flexible hose and brake tube.

**NOTE:**

Make sure that the flexible hose is not twisted or stretched excessively.

(5) Attach the clip at the bracket section at the body side.

**NOTE:**

After completion of the installation, turn the steering wheel from lock to lock position. Make sure that the flexible hose is not interfering with any part of the body.

5. Perform air bleeding for the brake system.

(See page 8-5.)

6. Check the brake system for brake fluid leakage.

(See page 8-5.)

WR-08114

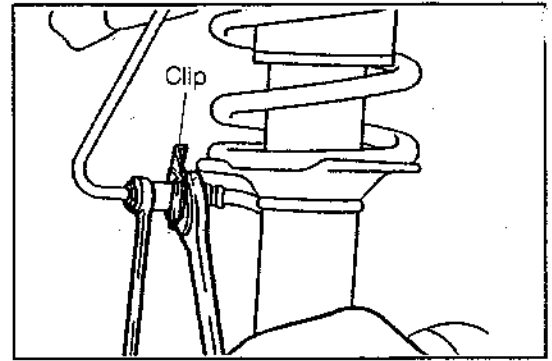


Fig. 8-108

WR-08113

# REAR DRUM BRAKE

## SECTIONAL VIEW

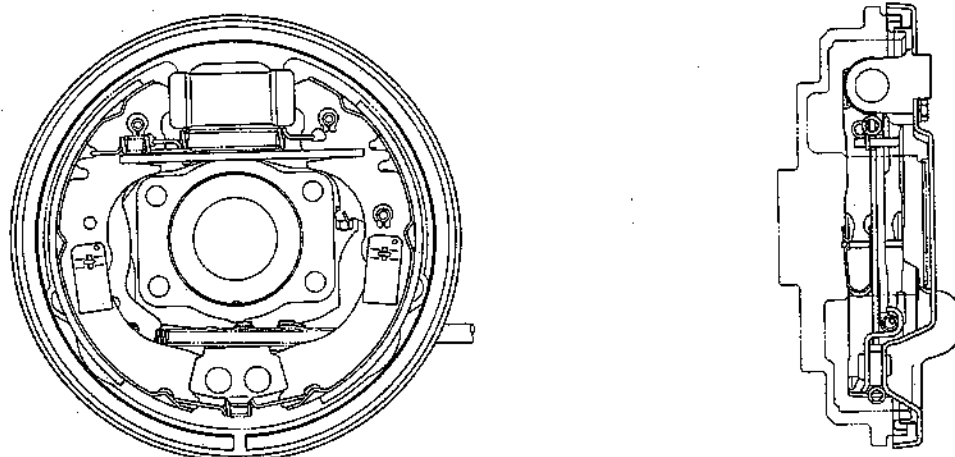
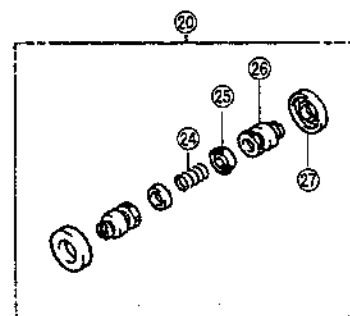
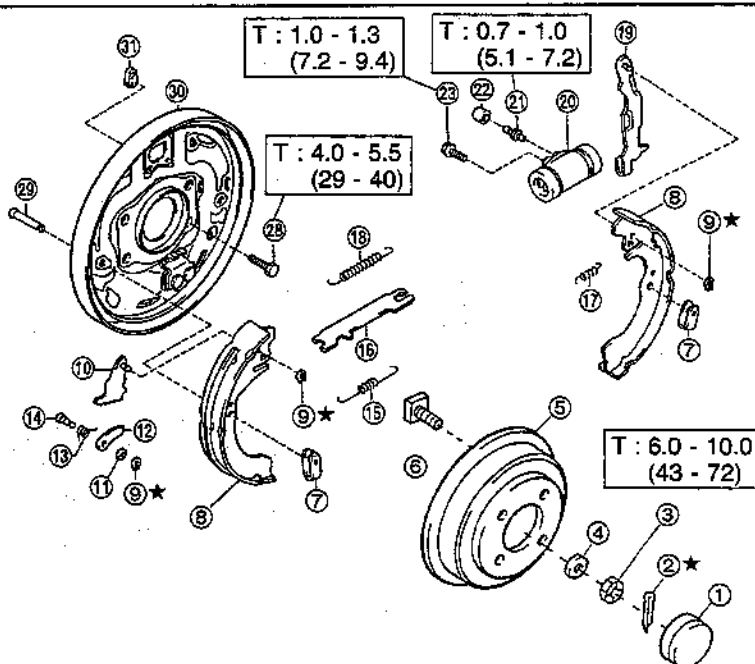


Fig. 8-109

WR-08115

## COMPONENTS



T : Tightening torque  
Unit: kg-m (ft-lb)  
★ : Non-reusable parts

- |                                 |                                 |                                |
|---------------------------------|---------------------------------|--------------------------------|
| ① Grease cap                    | ⑫ Automatic adjusting latch     | ⑳ Bolt                         |
| ② Cotter pin                    | ⑬ Torsion spring                | ㉑ Compression spring           |
| ③ Castle nut                    | ⑭ Automatic adjusting lever pin | ㉒ Cylinder cup                 |
| ④ Plate washer                  | ⑮ Tension spring                | ㉓ Wheel brake cylinder piston  |
| ⑤ Brake drum Ay                 | ⑯ Parking brake shoe strut      | ㉔ Wheel cylinder boot          |
| ⑥ Bolt                          | ⑰ Tension spring                | ㉕ Bolt                         |
| ⑦ Shoe hold-down spring         | ⑱ Tension spring                | ㉖ Shoe hold-down pin           |
| ⑧ Brake shoe                    | ㉒ Parking brake shoe lever S/A  | ㉗ Rear brake backing plate S/A |
| ⑨ "C" ring                      | ㉓ Rear wheel brake cylinder Ay  | ㉘ Hole plug                    |
| ⑩ Automatic adjusting lever S/A | ㉔ Bleeder plug                  |                                |
| ⑪ Washer                        | ㉕ Bleeder plug cap              |                                |

Fig. 8-110

WR-08116

## BRAKES

### REMOVAL

1. Jack up the rear section of the vehicle. Support the body with safety stands. Remove the rear wheel.
2. Remove the grease cap, cotter pin, castle nut and plate washer.
3. Remove the brake drum, using the following SST.  
SST: 09510-87301-000
4. Remove the tension spring, using the following SST.  
SST: 09703-30010-000
5. Detach the tension spring, using a common screwdriver.
6. Removal of brake shoe (leading side)
  - (1) Detach the shoe hold-down spring and pin.
  - (2) Remove the brake shoe, parking brake shoe strut and tension spring at the leading side.

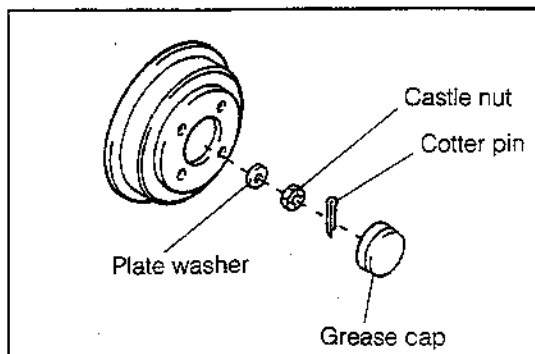


Fig. 8-111

WR-08117

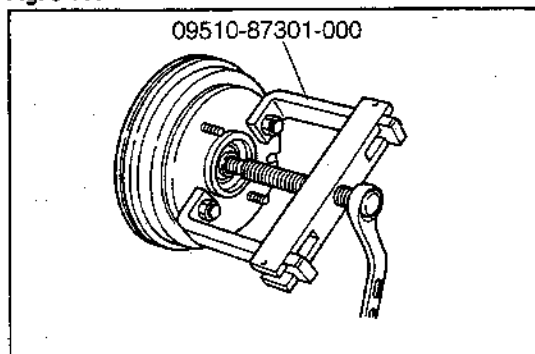


Fig. 8-112

WR-08118

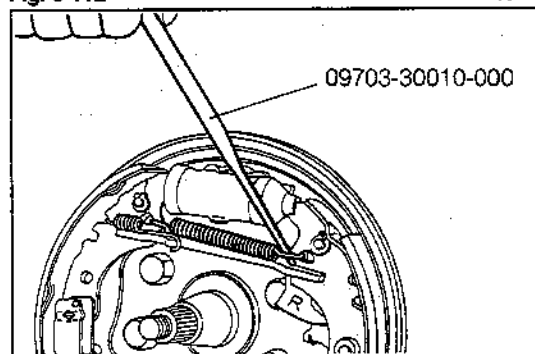


Fig. 8-113

WR-08119

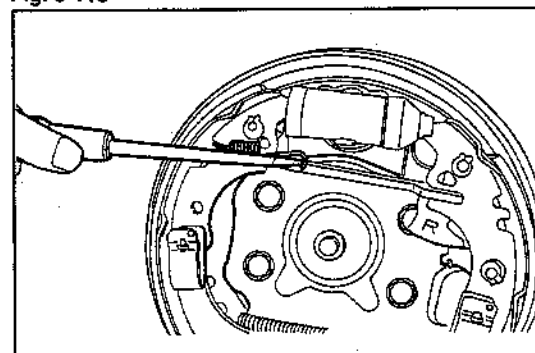


Fig. 8-114

WR-08120

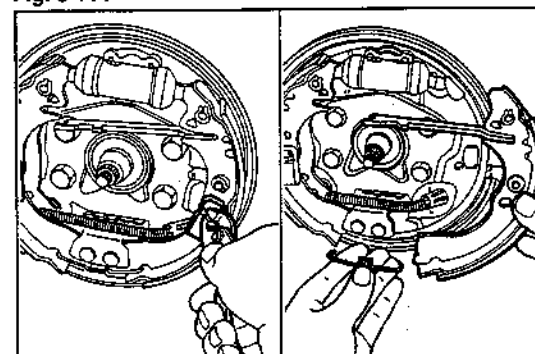


Fig. 8-115

WR-08121

## 7. Brake shoe (trailing side) removal

- (1) Remove the shoe hold-down spring and pin.
- (2) Remove the parking brake cable from the parking brake shoe lever, using pliers.

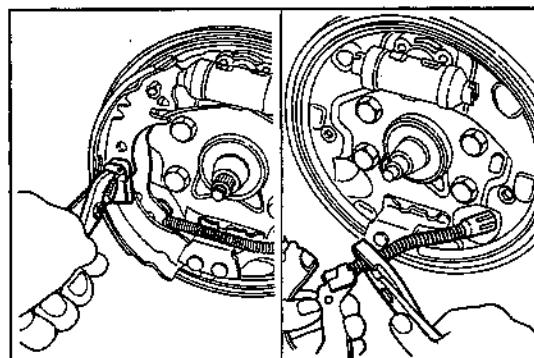


Fig. 8-116

WR-08122

8. Detach the "C" ring, using a common screwdriver. Remove the parking brake shoe lever and automatic adjusting lever-related parts.

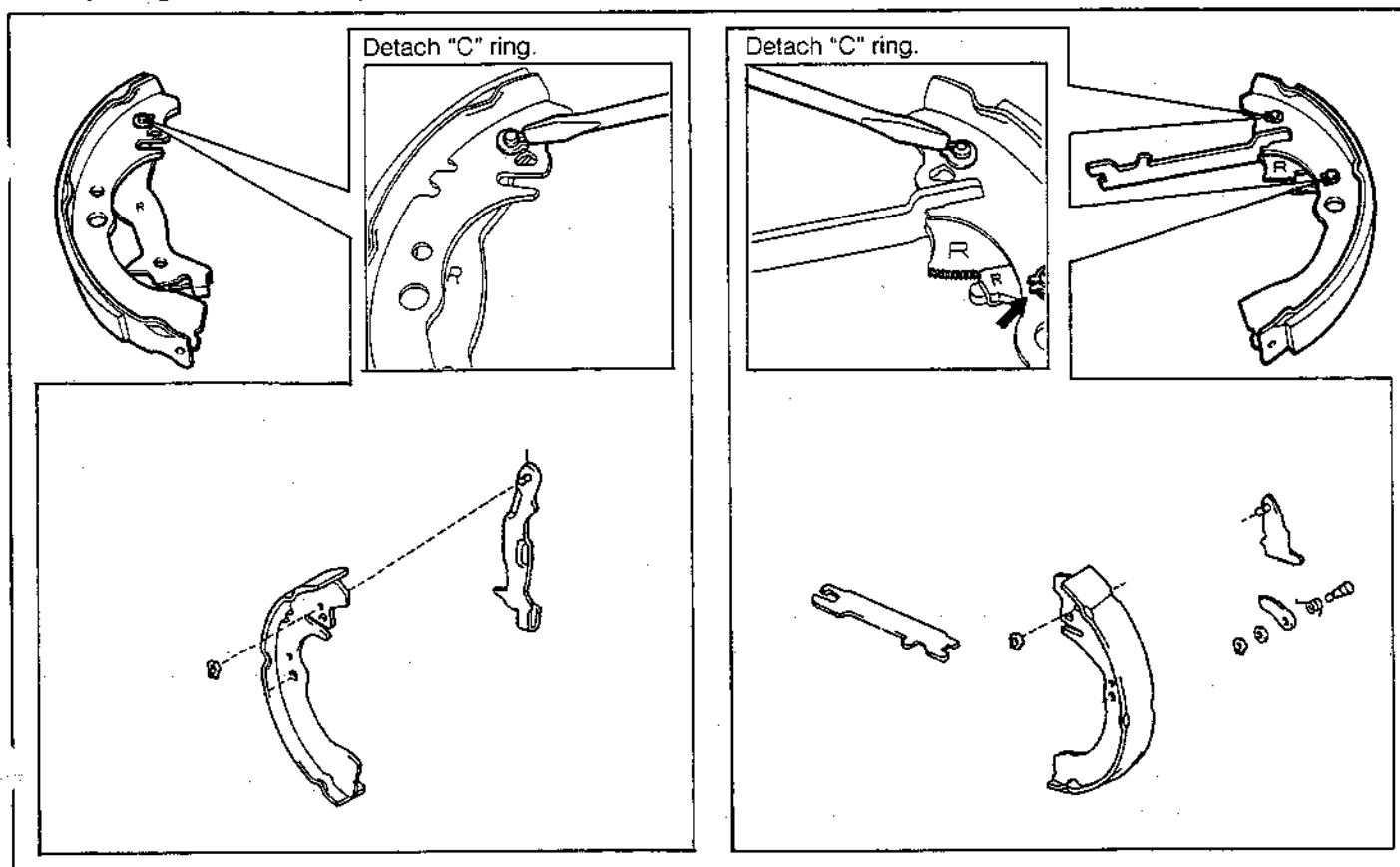


Fig. 8-117

WR-08123

## 9. Wheel cylinder removal

- (1) Disconnect the brake tube from the wheel cylinder, using the following SST.

SST: 09751-36011-000

- (2) Remove the two attaching bolts of the wheel cylinder. Proceed to remove the wheel cylinder from the backing plate.

### NOTE:

The wheel cylinder can be disassembled or checked with the wheel cylinder mounted on the backing plate. It is, therefore, unnecessary to remove the wheel cylinder from the backing plate except for cases where the wheel cylinder assembly is replaced.

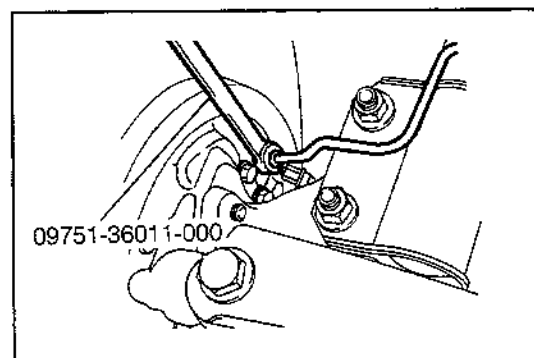


Fig. 8-118

WR-08124

## BRAKES

10. Remove the following parts from the wheel cylinder.

- (1) Wheel cylinder boots (2 pieces)
- (2) Wheel cylinder pistons (2 pieces)
- (3) Wheel cylinder piston cups (2 pieces)
- (4) Compression spring

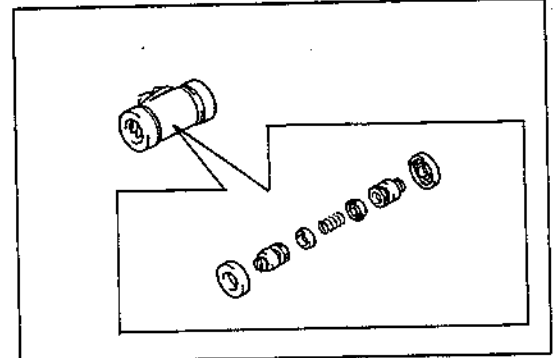


Fig. 8-119

WR-08125

## INSPECTION

Inspect the following parts.

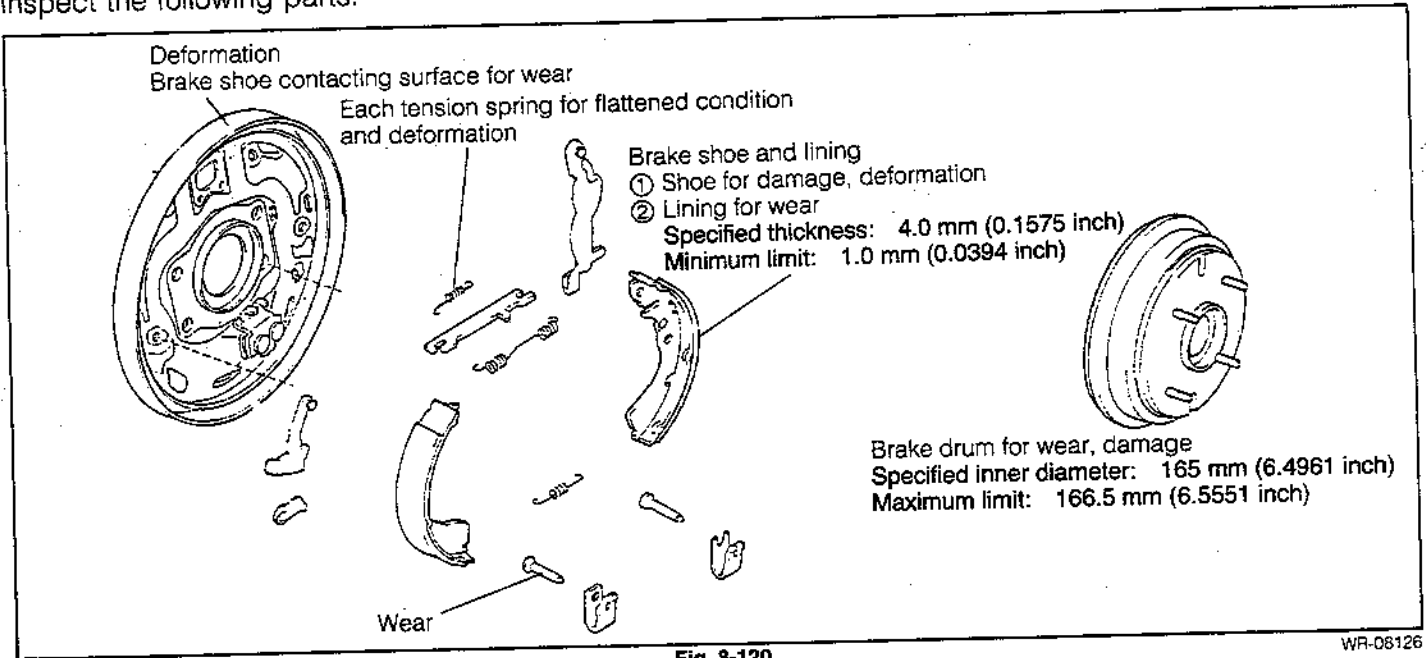


Fig. 8-120

WR-08126

### 1. Rear brake backing plate replacement

- (1) Remove the four attaching bolts of the rear brake backing plate.
- (2) Apply Daihatsu Bond No.4 (999-6304-6323-00) to the installation surface of the rear brake backing plate with the rear axle carrier. At this time, do not plug the grease releasing hole [5 mm (0.20 inch) dia.] with the grease.
- (3) Install the rear brake backing plate, using the four bolts.

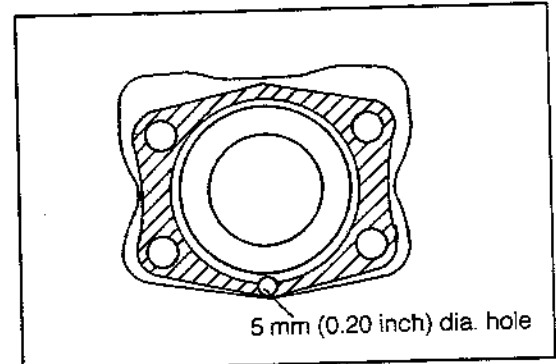


Fig. 8-121

WR-08127

### 2. Brake drum replacement

- (1) Apply Mp grease to the points indicated in the right figure.

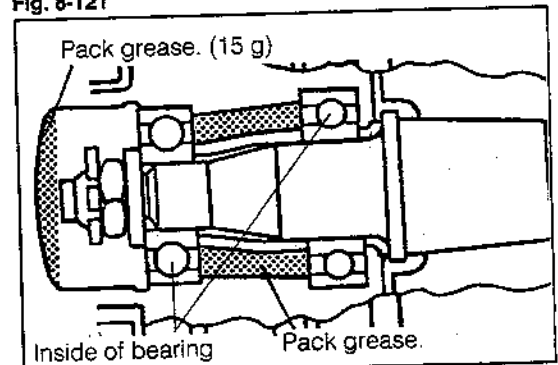


Fig. 8-122

WR-08128



- (2) Install the outer bearing, using the following SST.  
SST: 09608-12010-000 (No.13 in the set)
- (3) Install the outer retainer.
- (4) Install the inner bearing, using the following SST.  
SST: 09608-12011-000 (No.5 in the set)

## INSTALLATION

1. Assembly of wheel cylinder
  - (1) Apply rubber grease to the points indicated by arrows.
  - (2) Assemble the cup on the wheel cylinder piston.

**NOTE:**  
Be sure to install the cup in the correct direction.

  - (3) Install the two pistons and compression spring to the wheel cylinder.
  - (4) Assemble the two wheel cylinder boots.
2. Wheel cylinder installation
  - (1) Apply liquid gasket to the installation section of the rear brake backing plate with the wheel cylinder.
  - (2) Install the wheel cylinder to the rear brake backing plate, using the two bolts.

**Tightening Torque:** 4.0 - 5.5 kg-m (28.9 - 39.8 ft-lb)
3. Brake tube installation
  - (1) Install the brake tube to the wheel cylinder temporarily by hands.
  - (2) Tighten the brake tube to the wheel cylinder, using the following SST.

SST: 09751-36011-000

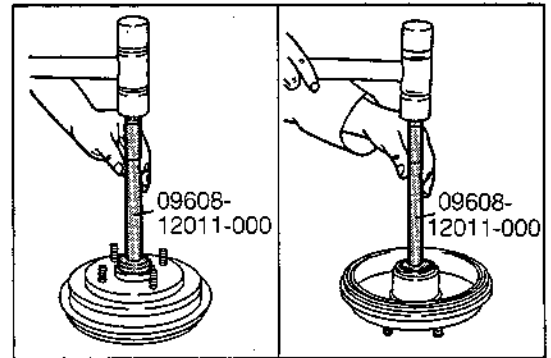


Fig. 8-123

WR-08129

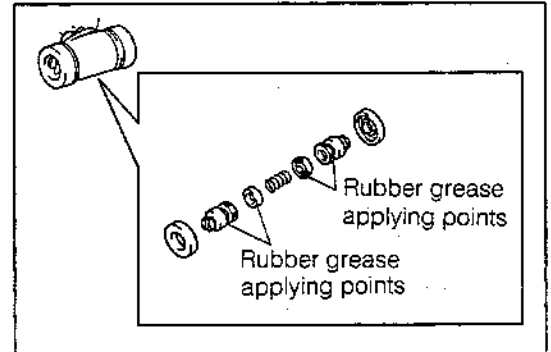


Fig. 8-124

WR-08130

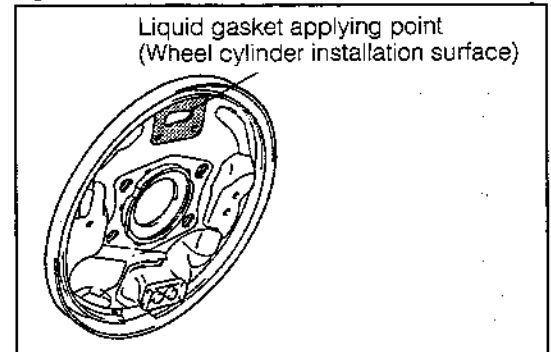


Fig. 8-125

WR-08131

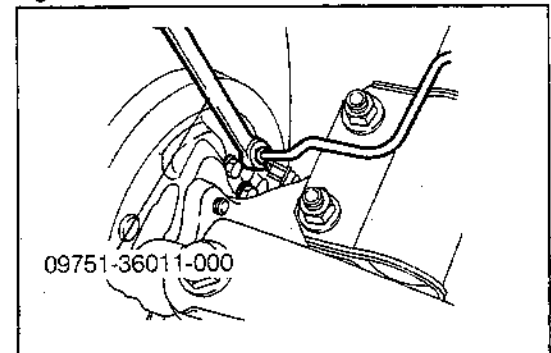


Fig. 8-126

WR-08132

## BRAKES

4. Install the parking brake shoe lever and automatic adjusting lever-related parts to the brake shoe.

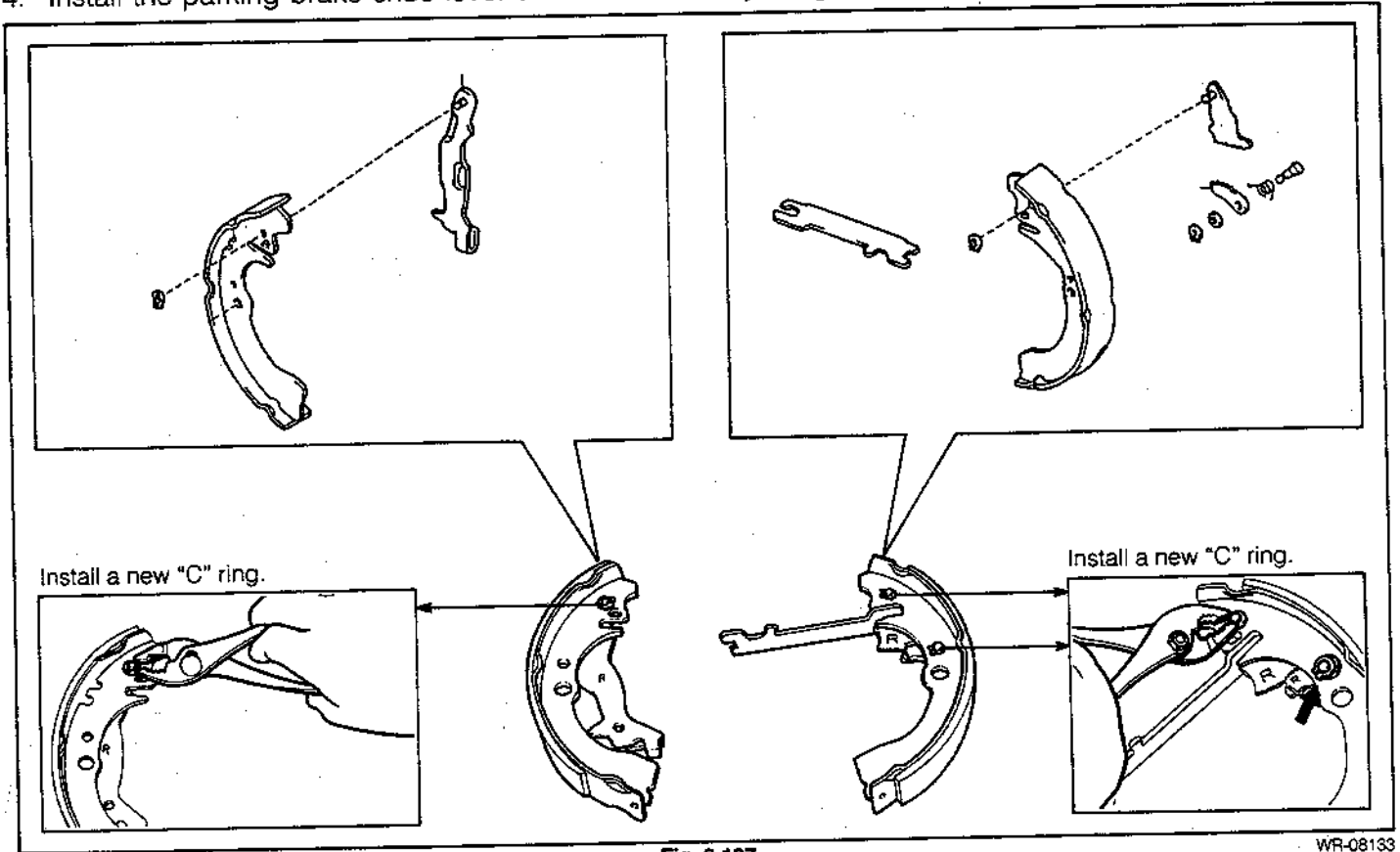


Fig. 8-127

WR-08133

5. Apply brake grease to the contacting points of the rear brake backing plate with the brake shoe.

**NOTE:**

Be careful not to allow lubricants, such as grease, to get to the wheel cylinder boot.

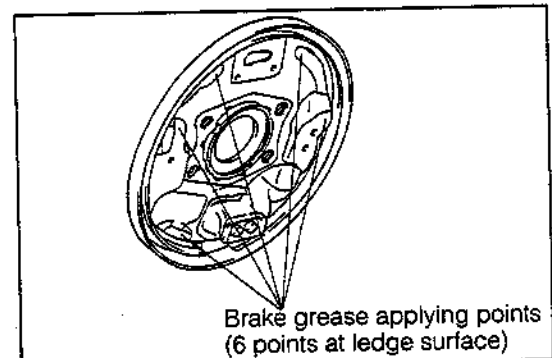


Fig. 8-128

WR-08134

6. Assembly of brake shoe (trailing side)

- (1) Assemble the parking brake cable to the parking brake shoe lever, using pliers.
- (2) Assemble the brake shoe on the rear brake backing plate. Install the shoe hold-down spring and pin.

**NOTE:**

Apply liquid gasket to the installation section of the rear brake backing plate with the shoe hold-down spring.

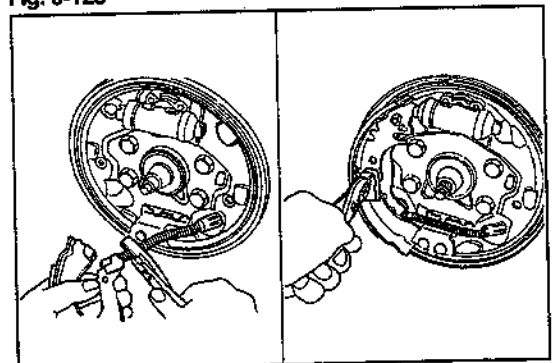


Fig. 8-129

WR-08135

7. Assemble the brake shoe (leading side) on the rear brake backing plate. Install the shoe hold-down spring and pin.

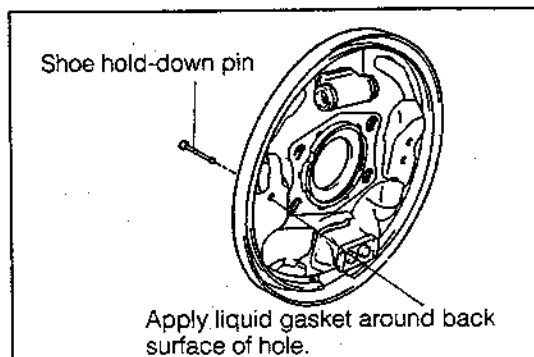


Fig. 8-130

WR-08136

8. Install the tension spring, using a cross point screwdriver.

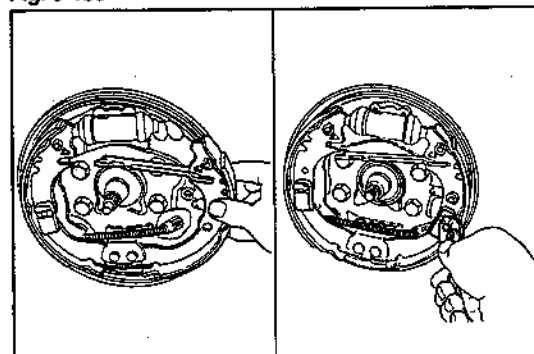


Fig. 8-131

WR-08137

9. Install the tension spring, using the following SST.

SST: 09703-30010-000

**NOTE:**

Be careful not to damage the wheel cylinder boot during the installation.

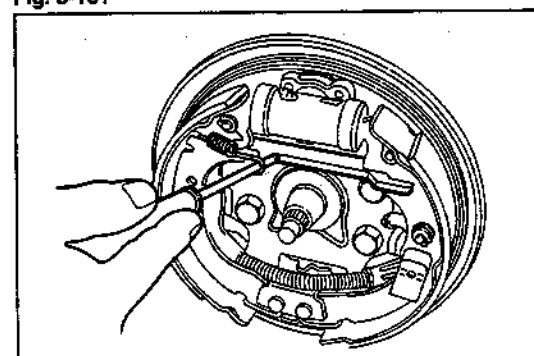


Fig. 8-132

WR-08138

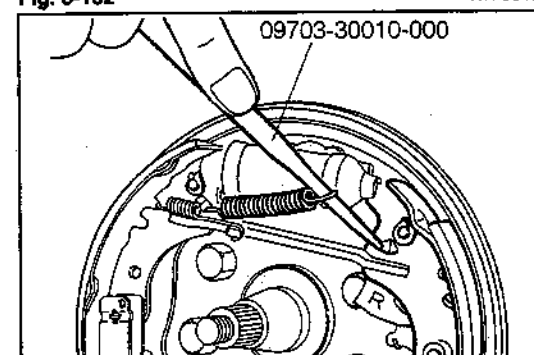


Fig. 8-133

WR-08139

## BRAKES

10. Ensure that the rear brake components have been assembled properly.

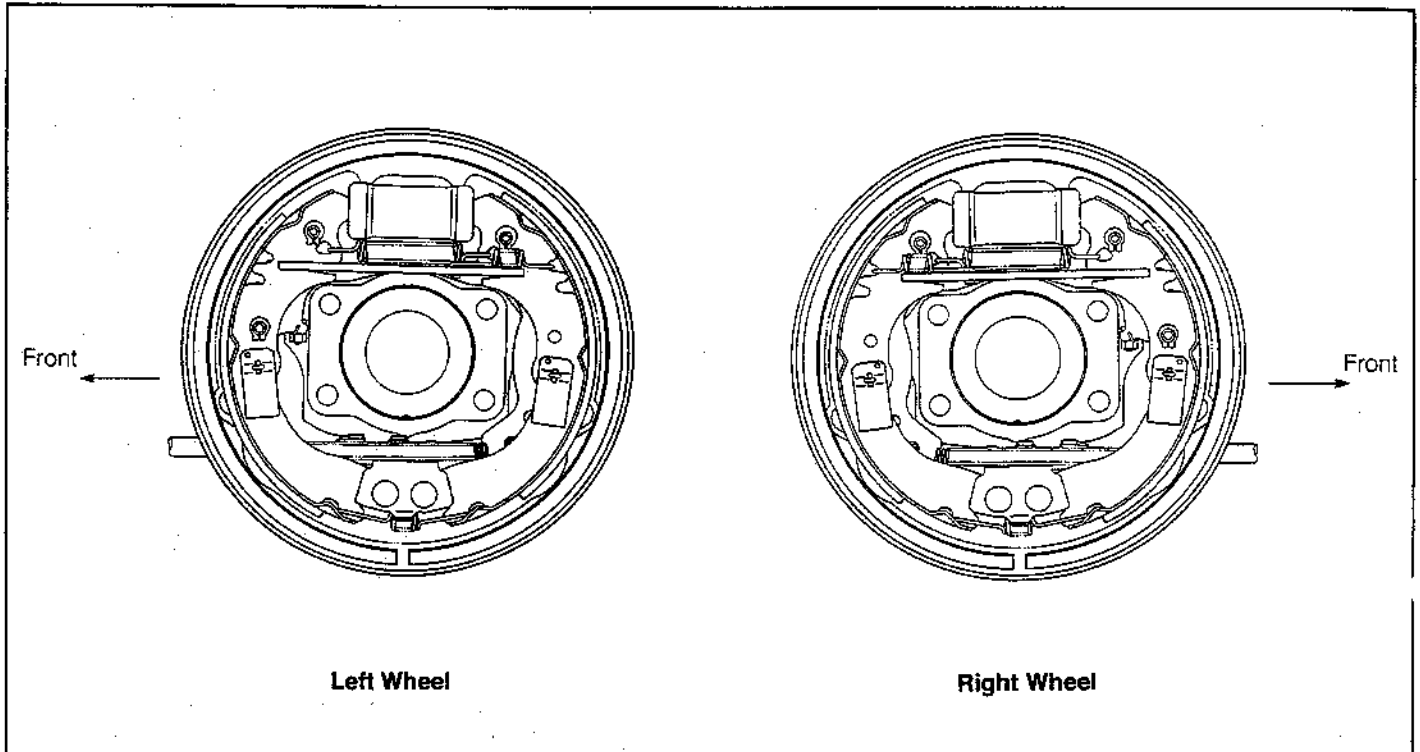


Fig. 8-134

WR-08140

### 11. Brake adjustment procedure

- (1) Retract the shoe by moving the engagement of the parking brake shoe strut, using a common screwdriver or the like.

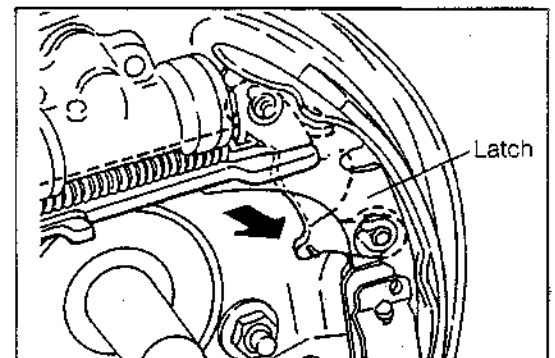


Fig. 8-135

WR-08141

### (2) Brake drum installation

(Bearing inner retainer, brake drum, plate washer, castle nut, new cotter pin and grease cap)

**Tightening Torque:** 6.0 - 10.0 kg-m (43 - 72 ft-lb)

- (3) Perform air bleeding for the brake system. (See page 8-5.)
- (4) Check the brake system for brake fluid leakage.
- (5) Depress the brake pedal and ensure that the automatic adjusting mechanism emits operating sound. Repeat this operation until you no longer hear the operating sound.
- (6) Adjust the working travel of the parking brake lever. (See page 8-57.)

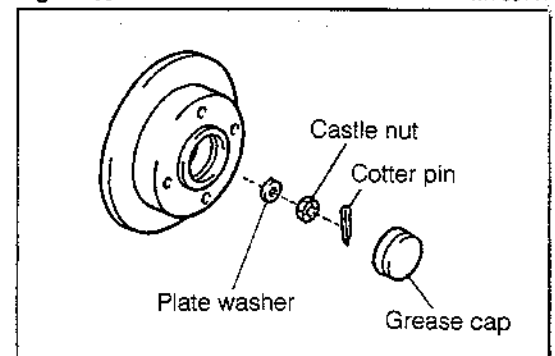


Fig. 8-136

WR-08142

## REAR DISC BRAKE SECTIONAL VIEW

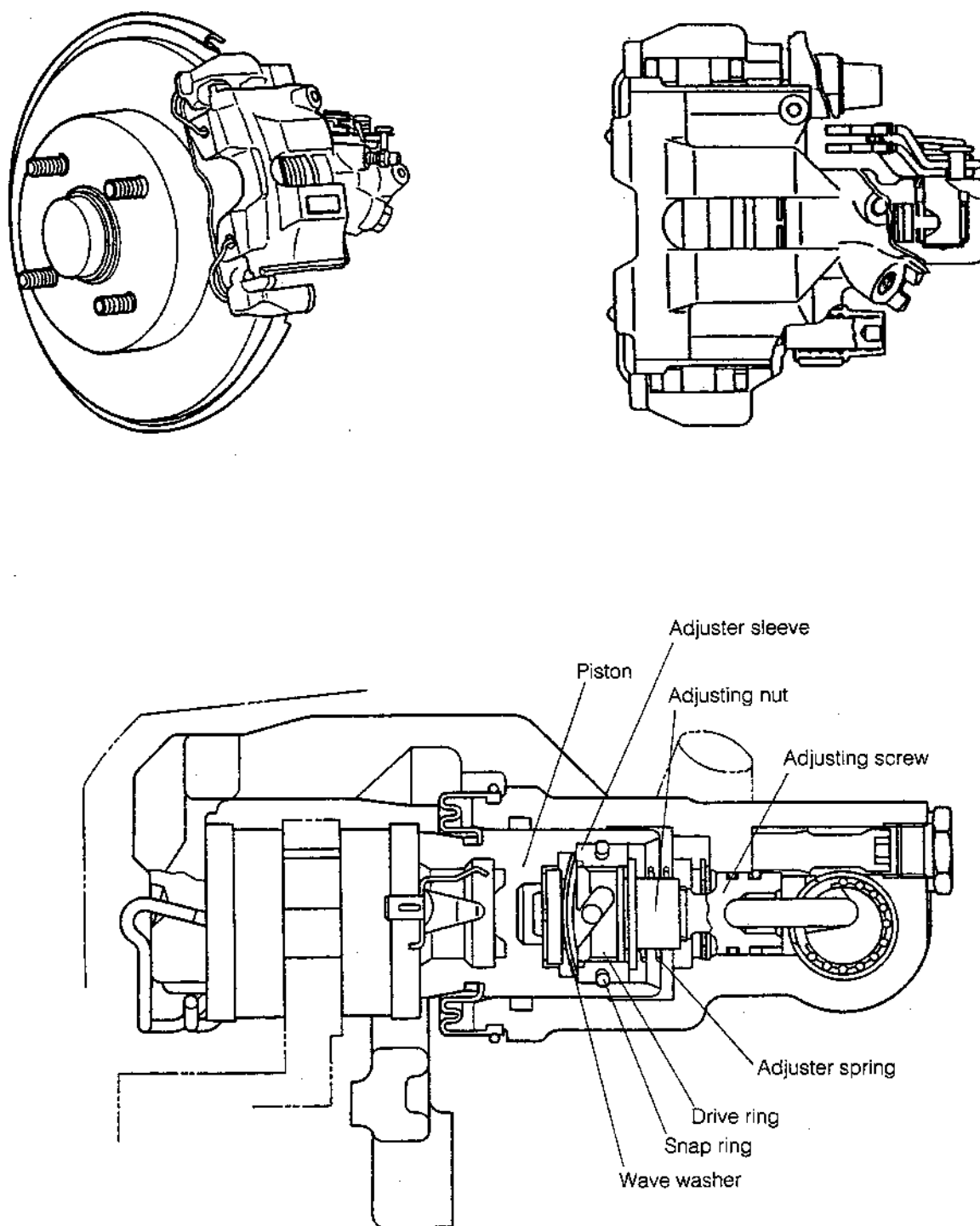


Fig. 8-137

WR-08143

# BRAKES

## COMPONENTS

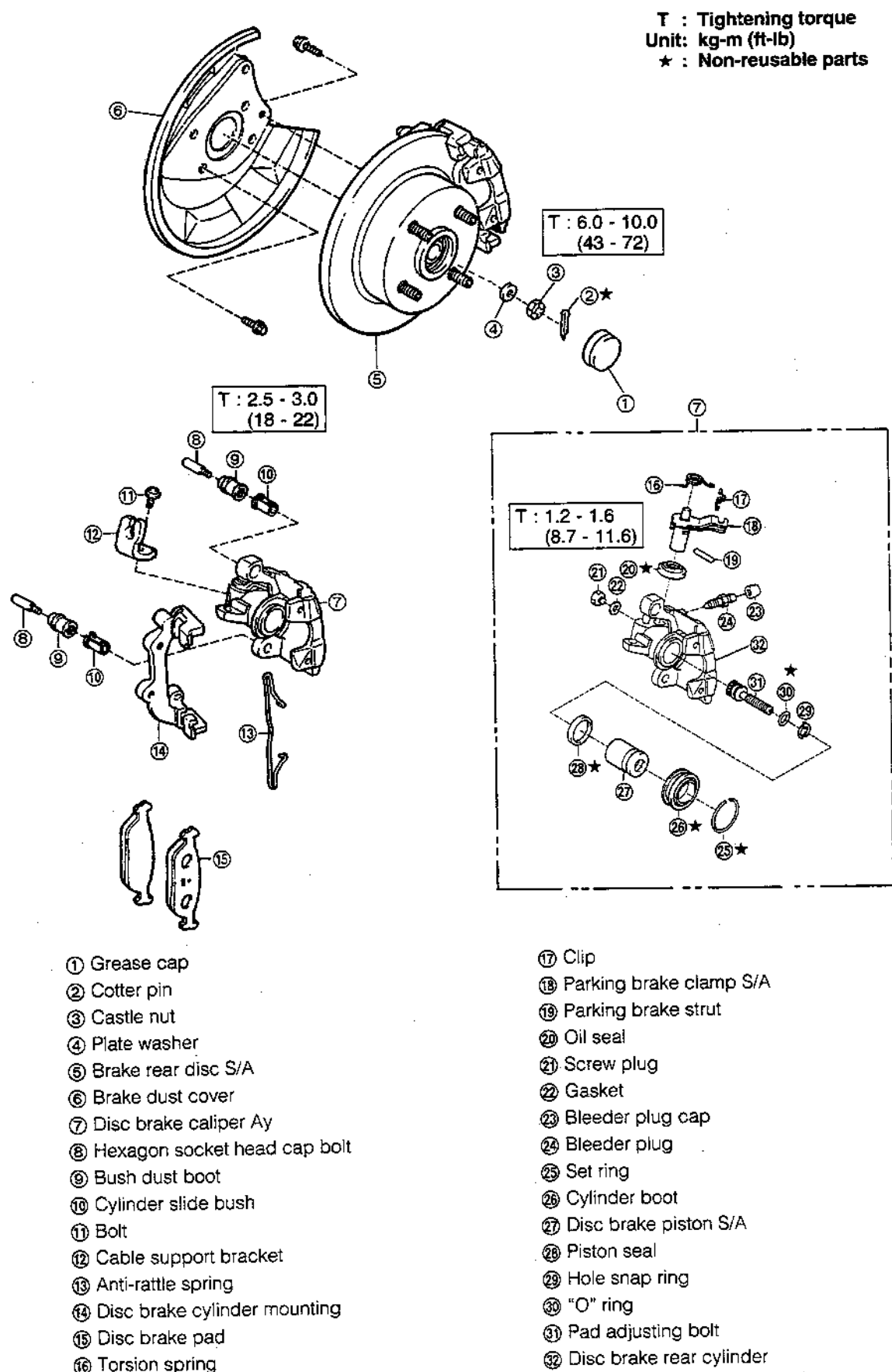


Fig. 8-138

WR-08144

## DISC BRAKE PAD REMOVAL

1. Jack up the rear section of the vehicle. Support the body with safety stands. Remove the rear wheel.
2. Inspect the pad thickness through the inspection hole provided in the disc brake caliper.

Specified Thickness: 9 mm (0.35 inch)

Minimum Limit: 1 mm (0.04 inch)

3. Remove the parking cable guide.
4. Detach the anti-rattle spring.

5. Remove the screw plug.
6. Turn the adjusting gear counterclockwise as far as it will go, using a hexagon wrench key, so that the piston may be retracted.

### NOTE:

It should be noted that the adjusting gear can not be removed.

7. Remove the hexagon socket head cap bolts (2 pieces), using a hexagon wrench key.

8. Remove the disc brake pad.

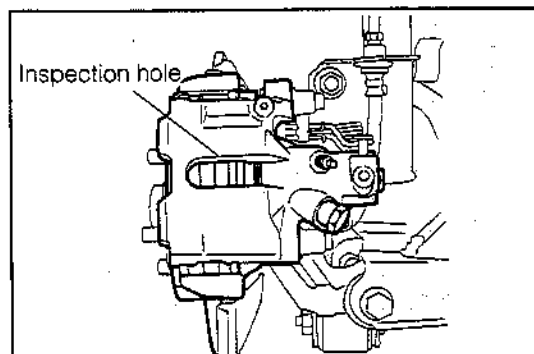


Fig. 8-139

WR-08145

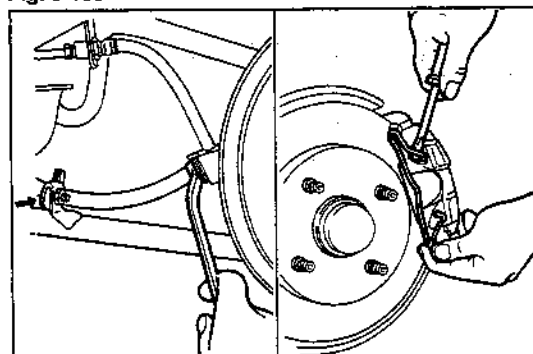


Fig. 8-140

WR-08146

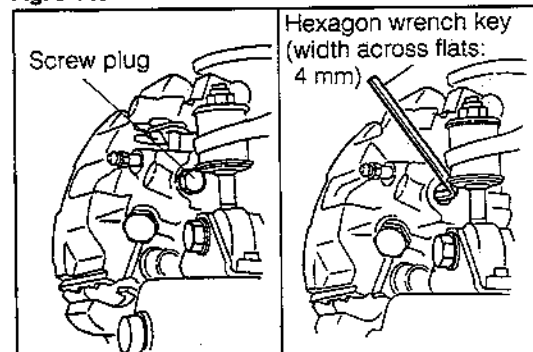


Fig. 8-141

WR-08147

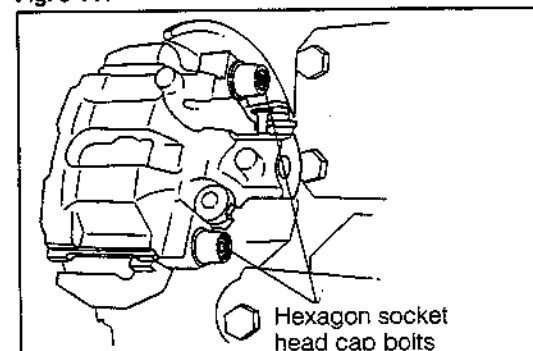


Fig. 8-142

WR-08148

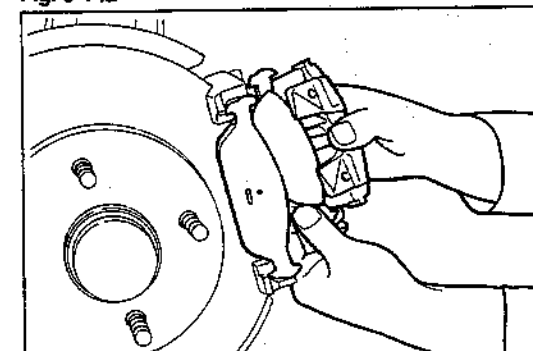


Fig. 8-143

WR-08149

## BRAKES

### INSTALLATION

#### 1. Disc brake pad installation

- (1) Install the inner disc brake pad to the disc brake caliper.
- (2) Install the outer disc brake pad to the disc brake cylinder mounting.

#### NOTE:

Be careful not to allow oil, grease and other dirt to get to the friction surfaces of the pad and brake disc.

#### 2. Disc brake caliper assembly installation

- (1) Tighten the hexagon socket head cap bolt, using a hexagon wrench key. Assemble the disc brake caliper assembly.
- (2) Install the anti-rattle spring.

3. Turn the adjusting gear clockwise, using a hexagon wrench key, until the disc brake pad is pressed against the brake disc. Then, back off the adjusting gear about 180 degrees counterclockwise.

4. Install the gasket and screw plug.

5. Install the parking cable guide.

6. Depress the brake pedal about 40 times. (This operation makes it possible to adjust the clearance between the disc brake pad and the rear brake disc.)

7. Adjust the working travel of the parking brake lever. (See Fig. 8-181.)

8. Install the rear wheel. Jack down the vehicle.

WR-08154

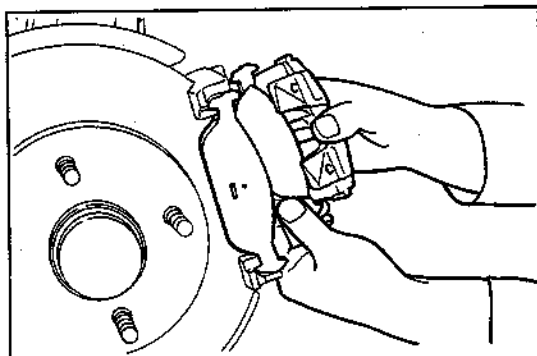


Fig. 8-144

WR-08150

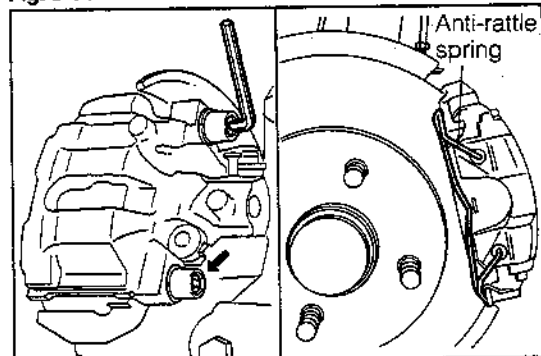


Fig. 8-145

WR-08151

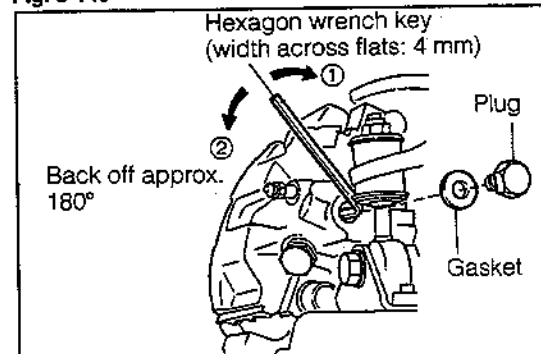


Fig. 8-146

WR-08152

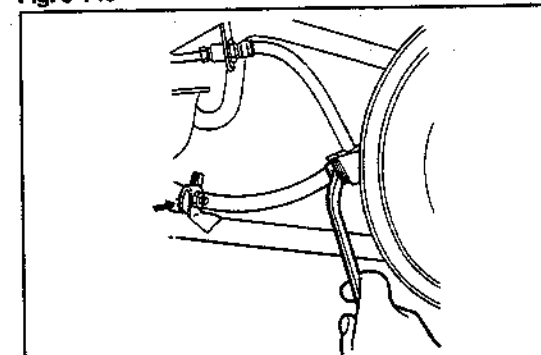


Fig. 8-147

WR-08153



## DISC BRAKE REAR CYLINDER REMOVAL

1. Jack up the rear section of the vehicle. Support the body with safety stands. Remove the rear wheel.
2. Disconnect the brake hose from the disc brake rear cylinder.
3. Detach the clip and torsion spring.
4. Parking brake cable removal
  - (1) Remove the parking brake cable guide.
  - (2) Remove the cable support bracket.
  - (3) Remove the parking brake cable from the disc brake cylinder.
5. Remove the anti-rattle spring.
6. Remove the hexagon socket head cap bolts (2 pieces), using a hexagon wrench key.
7. Remove the disc brake rear cylinder from the vehicle. Remove the disc brake pad.

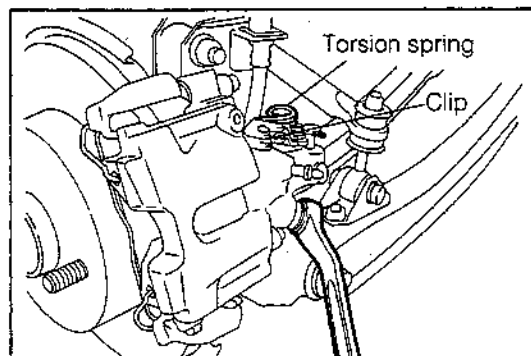


Fig. 8-148

WR-08155

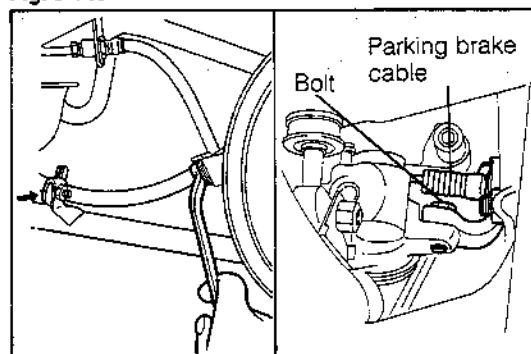


Fig. 8-149

WR-08156

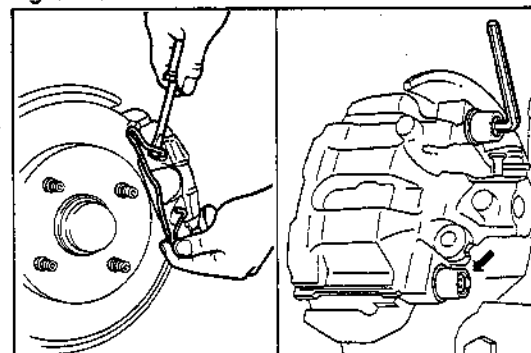


Fig. 8-150

WR-08157

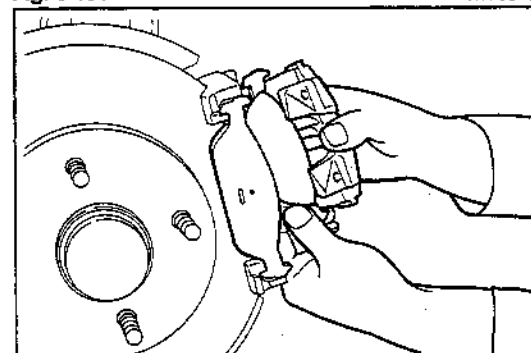


Fig. 8-151

WR-08158

## DISASSEMBLY

1. Remove the set ring and cylinder boot from the disc brake rear cylinder.

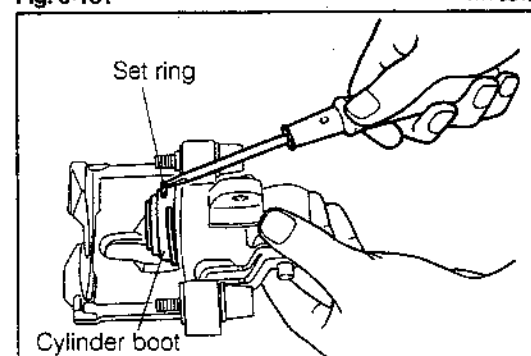


Fig. 8-152

WR-08159

## BRAKES

### 2. Disc brake piston assembly removal

- (1) Remove the screw plug and gasket.
- (2) Turn the adjusting gear clockwise, using a hexagon wrench key, so that the adjusting screw may be disengaged from the piston assembly. (Turn the adjusting gear, until it can be turned lightly.)
- (3) With a wooden piece or a cloth placed at the end of the disc brake cylinder, drive out the piston, using compressed air.

#### NOTE:

During this operation, care must be exercised as to the piston being jumped out from position.

### 3. Remove the piston seal.

### 4. Pad adjusting bolt removal

- (1) Detach the hole snap ring, using the SST.

SST: 09905-87701-000

- (2) Take out the pad adjusting bolt from the disc brake cylinder. Remove the "O" ring from the pad adjusting bolt.

### 5. Remove the parking brake strut, parking brake clamp subassembly and oil seal from the disc brake cylinder.

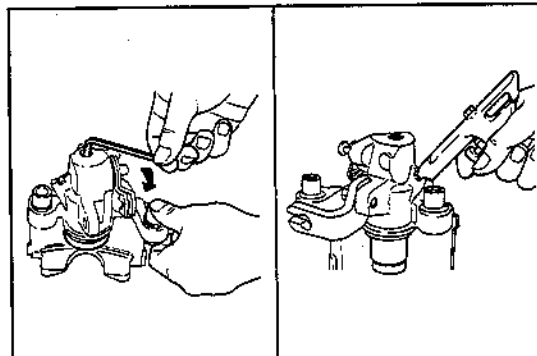


Fig. 8-153

WR-08160

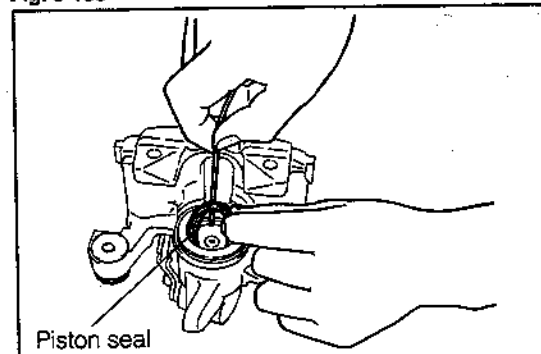


Fig. 8-154

WR-08161

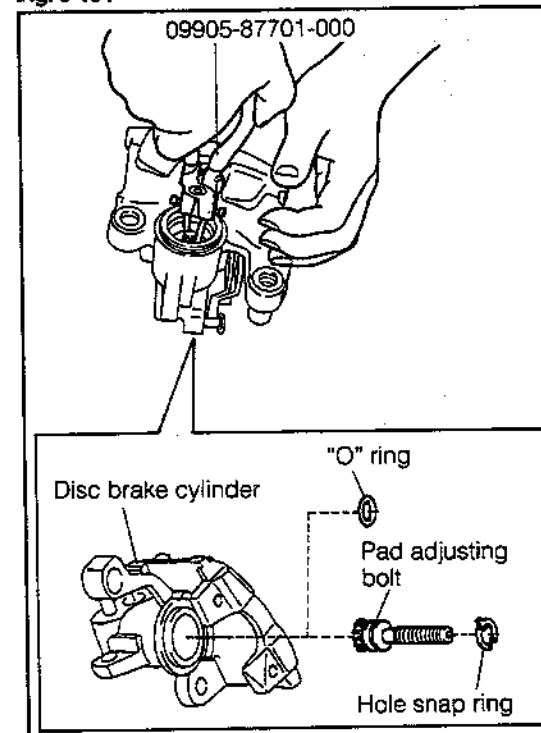


Fig. 8-155

WR-08162

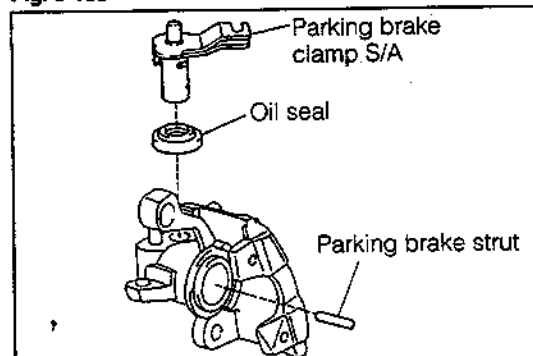


Fig. 8-156

WR-08163

- Remove the bush dust boot and cylinder slide bush from the disc brake cylinder.

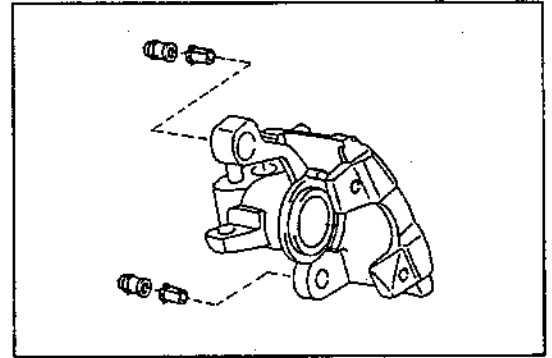


Fig. 8-157

WR-08164

## INSPECTION

- Inspect the following parts.

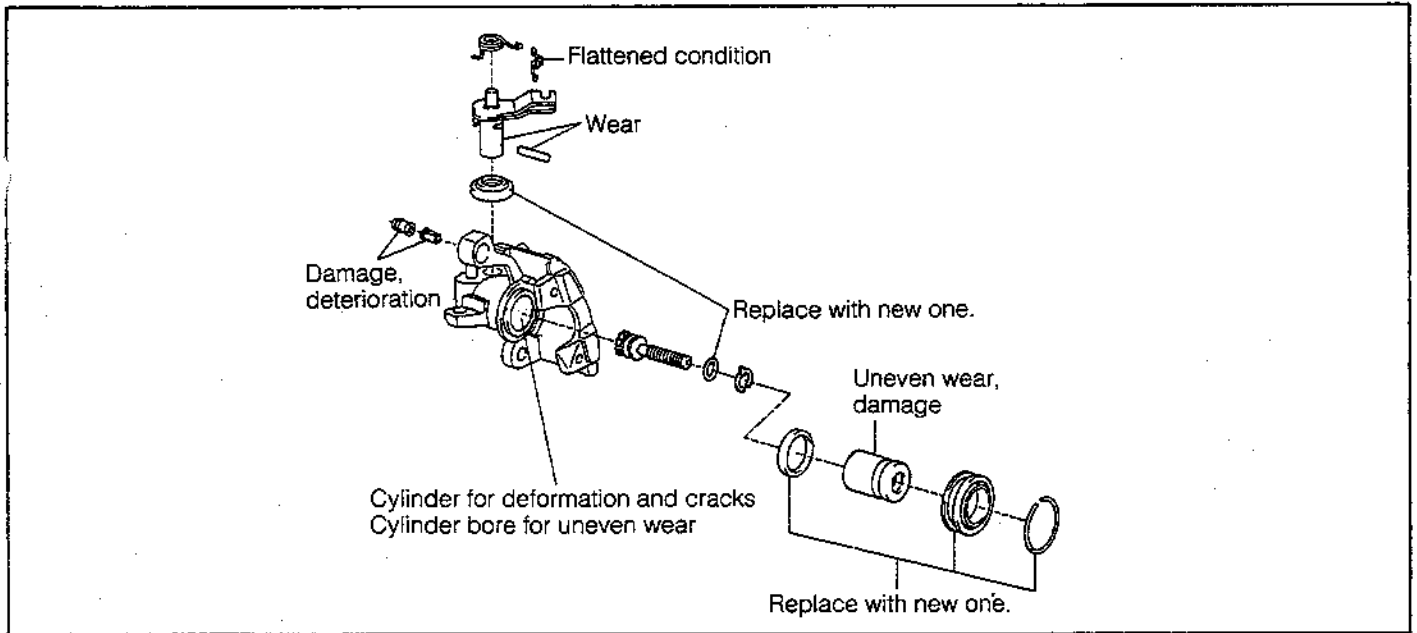


Fig. 8-158

WR-08165

- Pad thickness measurement  
 Specified Thickness: 9 mm (0.35 inch)  
 Minimum Limit: 1 mm (0.04 inch)

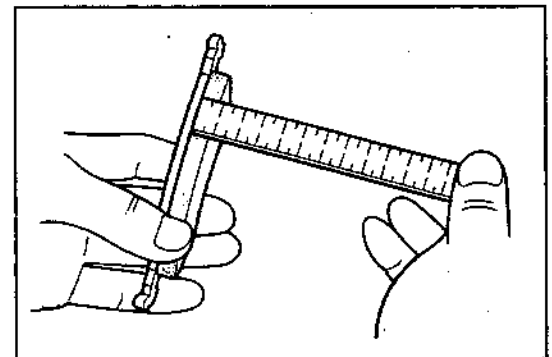


Fig. 8-159

WR-08166

- Brake rear disc thickness check  
 Specified Thickness: 10 mm (0.39 inch)  
 Minimum Limit: 9 mm (0.35 inch)

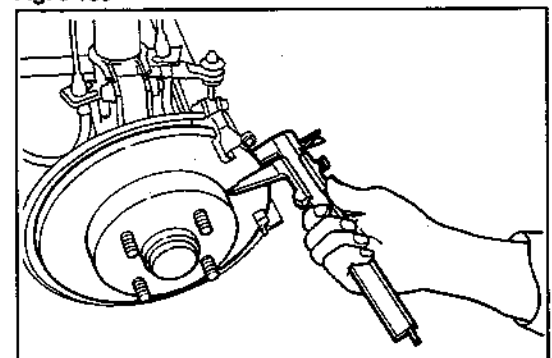


Fig. 8-160

WR-08167

## BRAKES

### 4. Checking of brake rear disc for runout

- (1) Before the brake rear disc is checked for runout, ensure that the rear axle bearing exhibits no excessive looseness.
- (2) Measure the runout of the brake rear disc at the outer edge surface.

**Maximum Limit:** 0.08 mm (0.003 inch)

### 5. Brake rear disc replacement

- (1) Remove the disc brake cylinder mounting, grease retainer cap, cotter pin, castle nut and brake rear disc.
- (2) Check the brake dust cover for defects, such as damage, cracks and deformation. Replace the brake dust cover which exhibits any defect.

**Tightening Torque:** 4.0 - 5.5 kg-m (28.9 - 39.8 ft-lb)

- (3) Install the outer bearing, outer retainer and inner bearing to the brake rear disc, using the following SSTs.

(Outer bearing)

SST: 09608-12010-000 (No.13)

(Inner bearing)

SST: 09608-12010-000 (No.5)

- (4) Apply chassis grease to the points indicated in the right figure.

- (5) Install the bearing inner retainer, brake rear disc, plate washer and castle nut.

**Tightening Torque:** 6.0 - 10.0 kg-m (43 - 72 ft-lb)

- (6) Install a new cotter pin. Attach the grease retainer cap.

- (7) Install the disc brake cylinder mounting.

**Tightening Torque:** 4.0 - 5.5 kg-m (29 - 40 ft-lb)

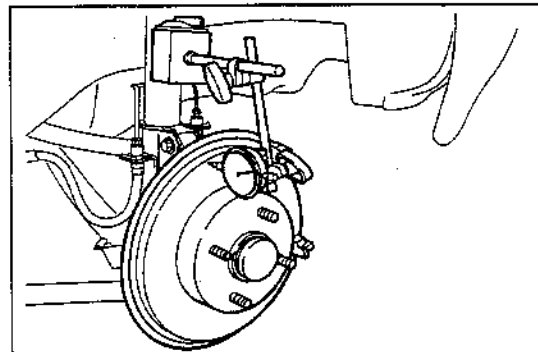


Fig. 8-161

WR-08168

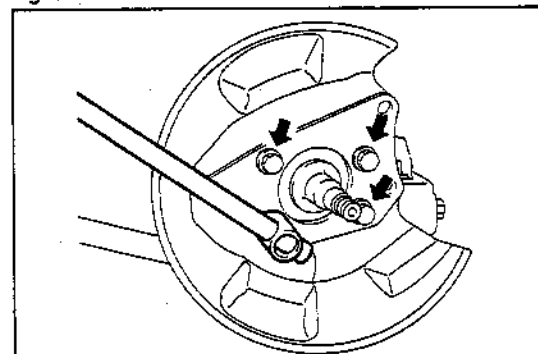


Fig. 8-162

WR-08169

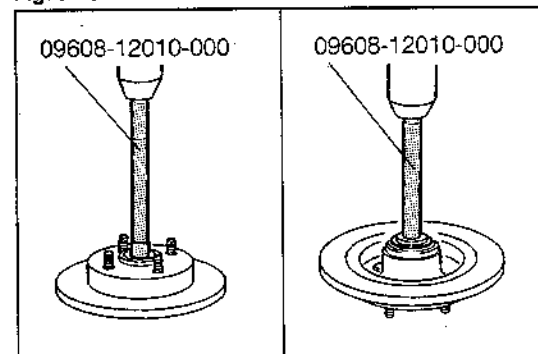


Fig. 8-163

WR-08170

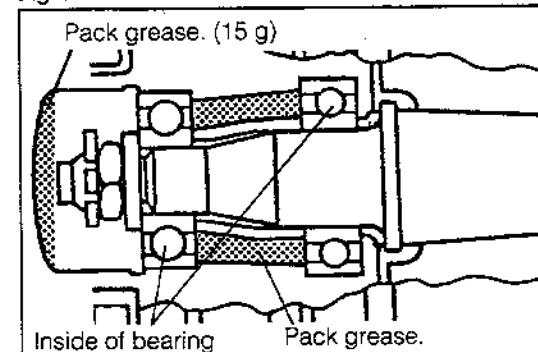


Fig. 8-164

WR-08171

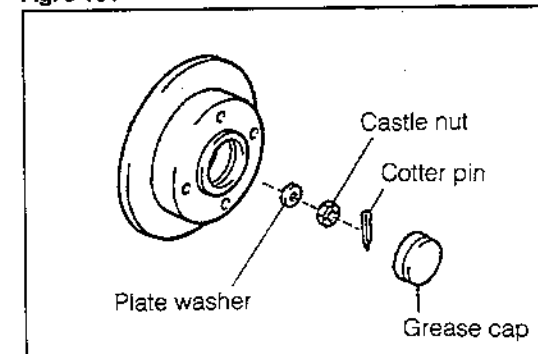


Fig. 8-165

WR-08172

## ASSEMBLY

1. Apply rubber grease to the points indicated in the figure below.

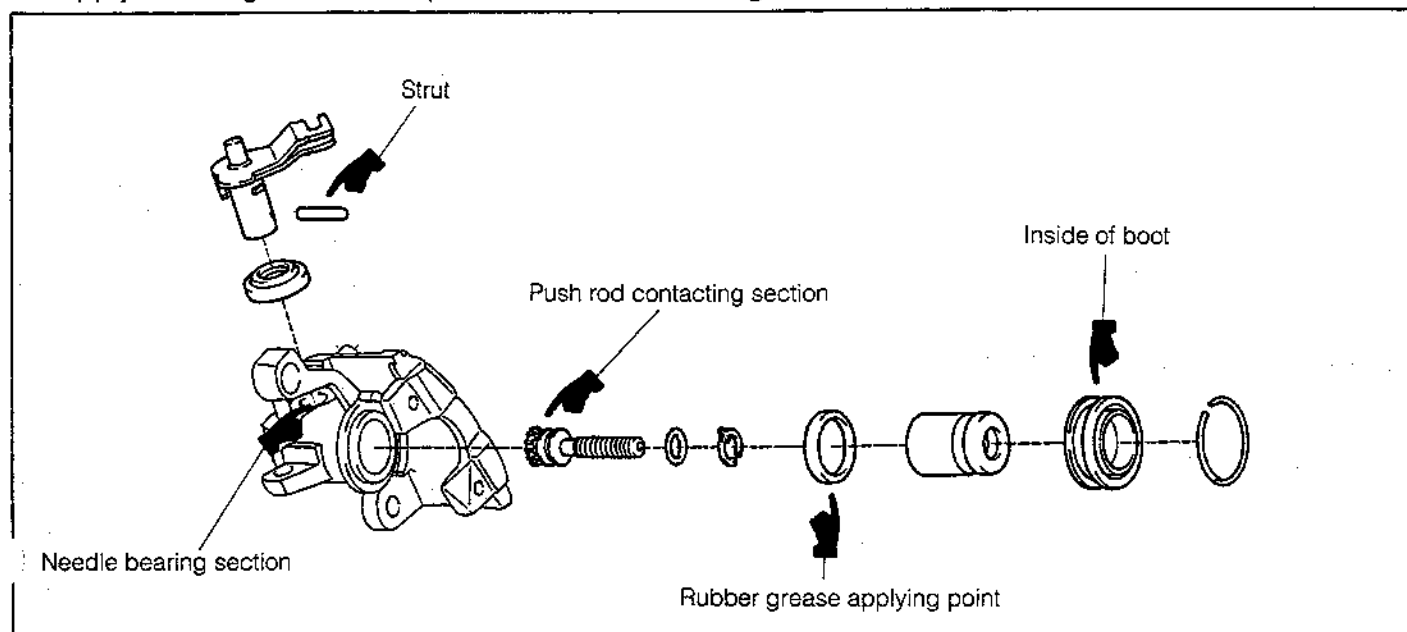


Fig. 8-166

WR-08173

2. Install the oil seal, parking brake clamp subassembly and parking brake stopper to the disc brake cylinder.

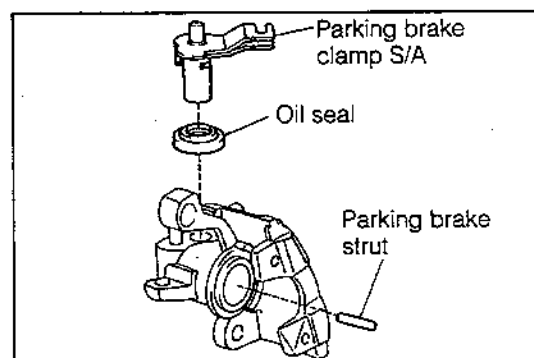


Fig. 8-167

WR-08174

3. Pad adjusting bolt installation

- (1) Install the "O" ring to the pad adjusting bolt. Assemble the pad adjusting bolt to the disc brake cylinder.
- (2) Attach the hole snap ring, using the following SST.

SST: 09905-87701-000

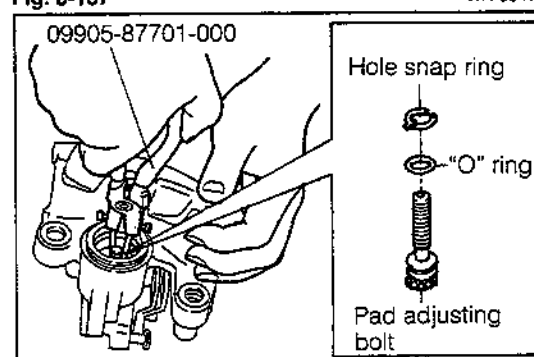


Fig. 8-168

WR-08175

4. Installation of disc brake piston assembly

- (1) Install the piston seal in the disc brake cylinder.
- (2) Insert the piston into the caliper. With the piston pushed lightly, turn the adjusting gear counterclockwise as far as it will go, using a hexagon wrench key. Then, pull back the piston, until it is no longer possible to turn the adjusting gear.

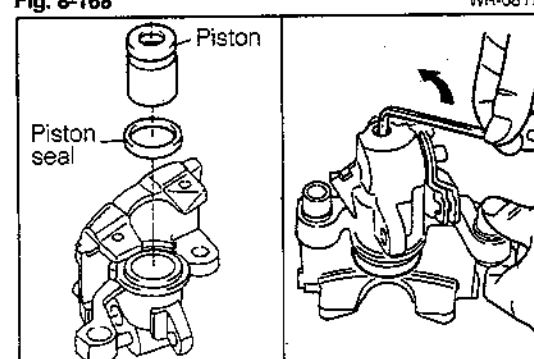


Fig. 8-169

WR-08176

## BRAKES

5. Install the cylinder boot and set ring to the disc brake cylinder.
6. Install the bush dust boot and cylinder slide bush to the disc brake cylinder.

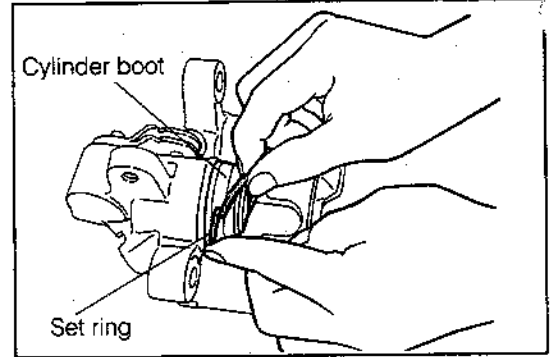


Fig. 8-170

WR-08177

## INSTALLATION

1. Disc brake cylinder installation
  - (1) Install the disc brake cylinder to the disc brake cylinder mounting, using a hexagon wrench key.
  - (2) Install the anti-rattle spring.
2. Parking brake cable installation
  - (1) Attach the tip end of the parking brake cable to the parking brake clamp subassembly.
  - (2) Install the cable support bracket.

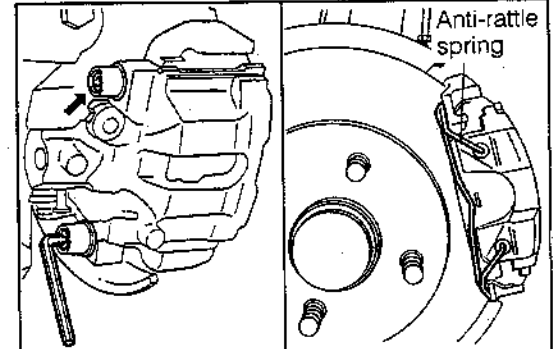


Fig. 8-171

WR-08178

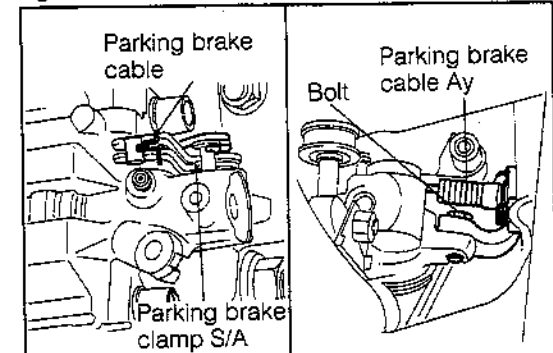


Fig. 8-172

WR-08179

3. Install the parking brake guide.

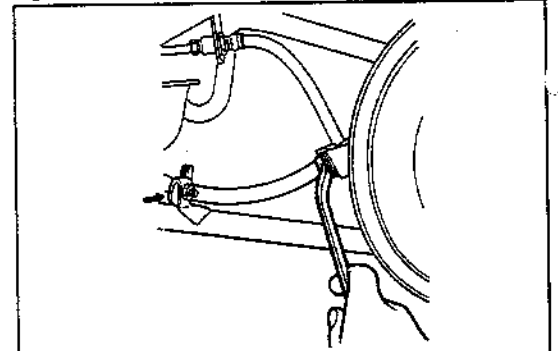


Fig. 8-173

WR-08180

4. Install the following parts to the disc brake cylinder.
  - (1) Install the torsion spring and clip.
  - (2) Connect the brake hose.  
(Use a new gasket.)

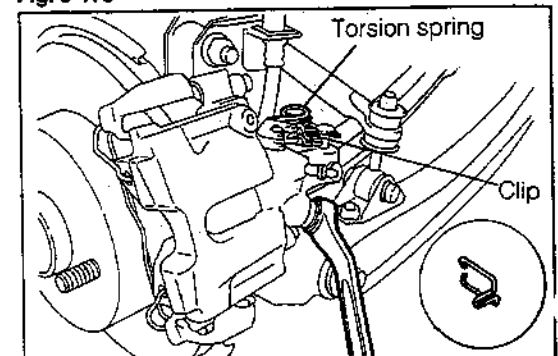


Fig. 8-174

WR-08181

## 5. Disc brake pad clearance adjustment

- (1) Turn the adjusting gear clockwise, using a hexagon wrench key, until the disc brake pad is pressed against the brake disc. Then, back off the adjusting gear about 180 degrees counterclockwise.
- (2) Install the gasket and screw plug.
- (3) Perform air bleeding for the brake system. Depress the brake pedal about 40 times. (This operation makes it possible to adjust the clearance between the disc brake pad and the brake disc.)
- (4) Adjust the working travel of the parking brake lever. (See Fig. 8-181.)

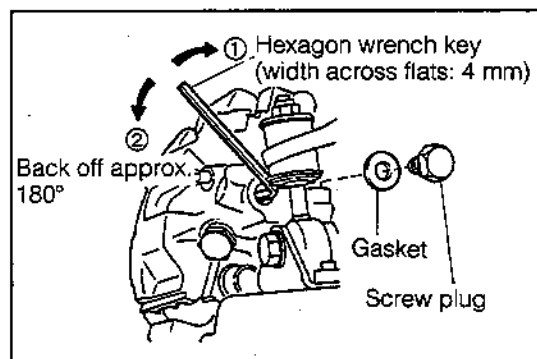


Fig. 8-175

WR-08182

Gasket

## BRAKES

### PARKING BRAKE

#### PARKING BRAKE LEVER COMPONENTS

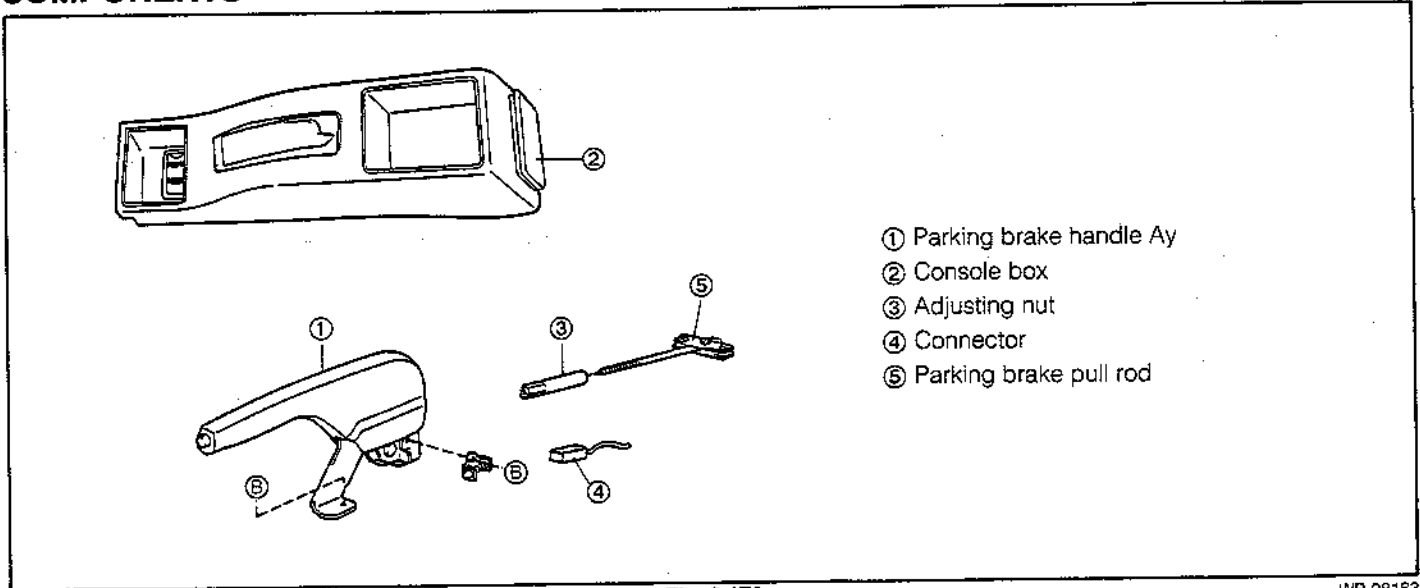


Fig. 8-176

WR-08183

#### REMOVAL

1. Console box
  - (1) Remove the coin box.
  - (2) Remove the console box from the vehicle by removing the bolts and screws, two each.
2. Remove the connector and adjusting nut.
3. Remove the two bolts. Remove the parking brake handle assembly from the vehicle.

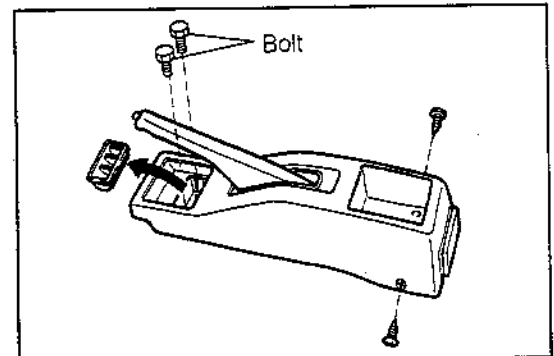


Fig. 8-177

WR-08184

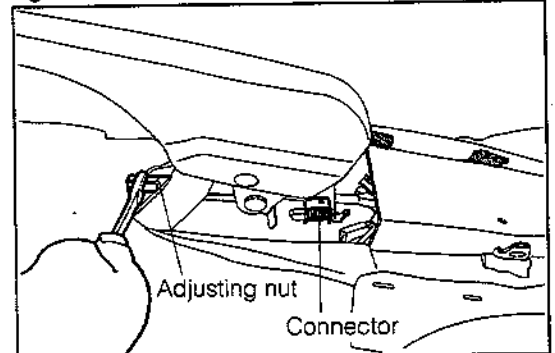


Fig. 8-178

WR-08185

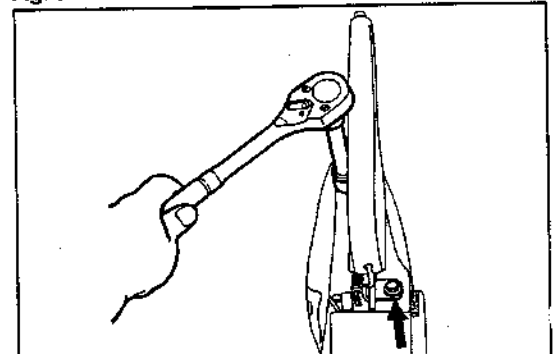


Fig. 8-179

WR-08186



## INSTALLATION

1. Install the parking brake handle assembly with the two bolts.

Tightening Torque: 1.0 - 1.6 kg-m (7.2 - 11.6 ft-lb)

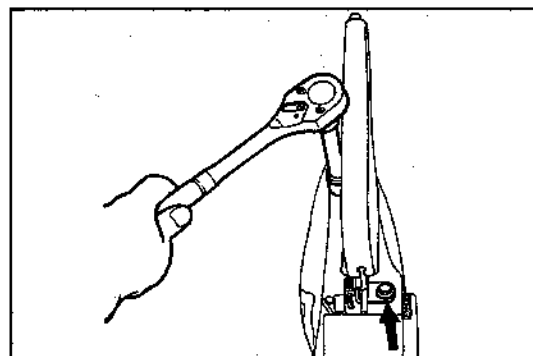


Fig. 8-180

WR-08187

2. Install the connector and adjusting nut. Adjust the working travel by turning the adjusting nut. (Check the parking brake indicator lamp for proper operation.)

Specified Value: 5 - 9 Notches

[When pulled by a force of 20 kg (44 lb)]

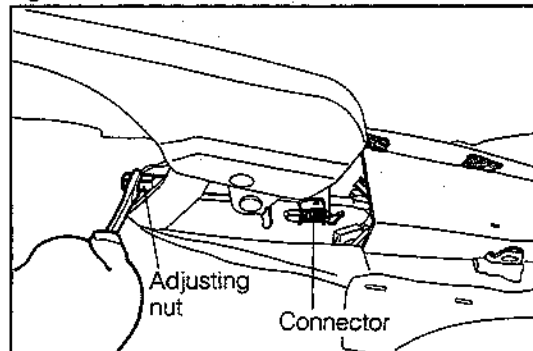


Fig. 8-181

WR-08188

3. Install the console box.
  - (1) Install the console box to the vehicle with the bolts and screws, two each.
  - (2) Install the coin box.

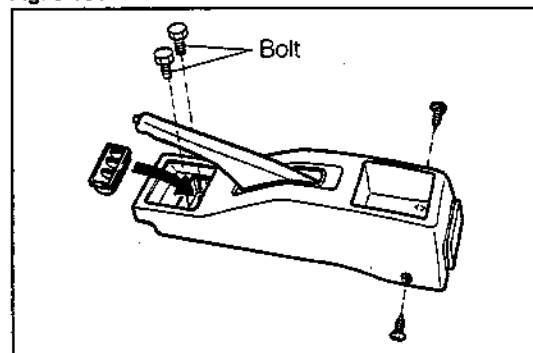


Fig. 8-182

WR-08189

## BRAKES

### PARKING BRAKE CABLE COMPONENTS

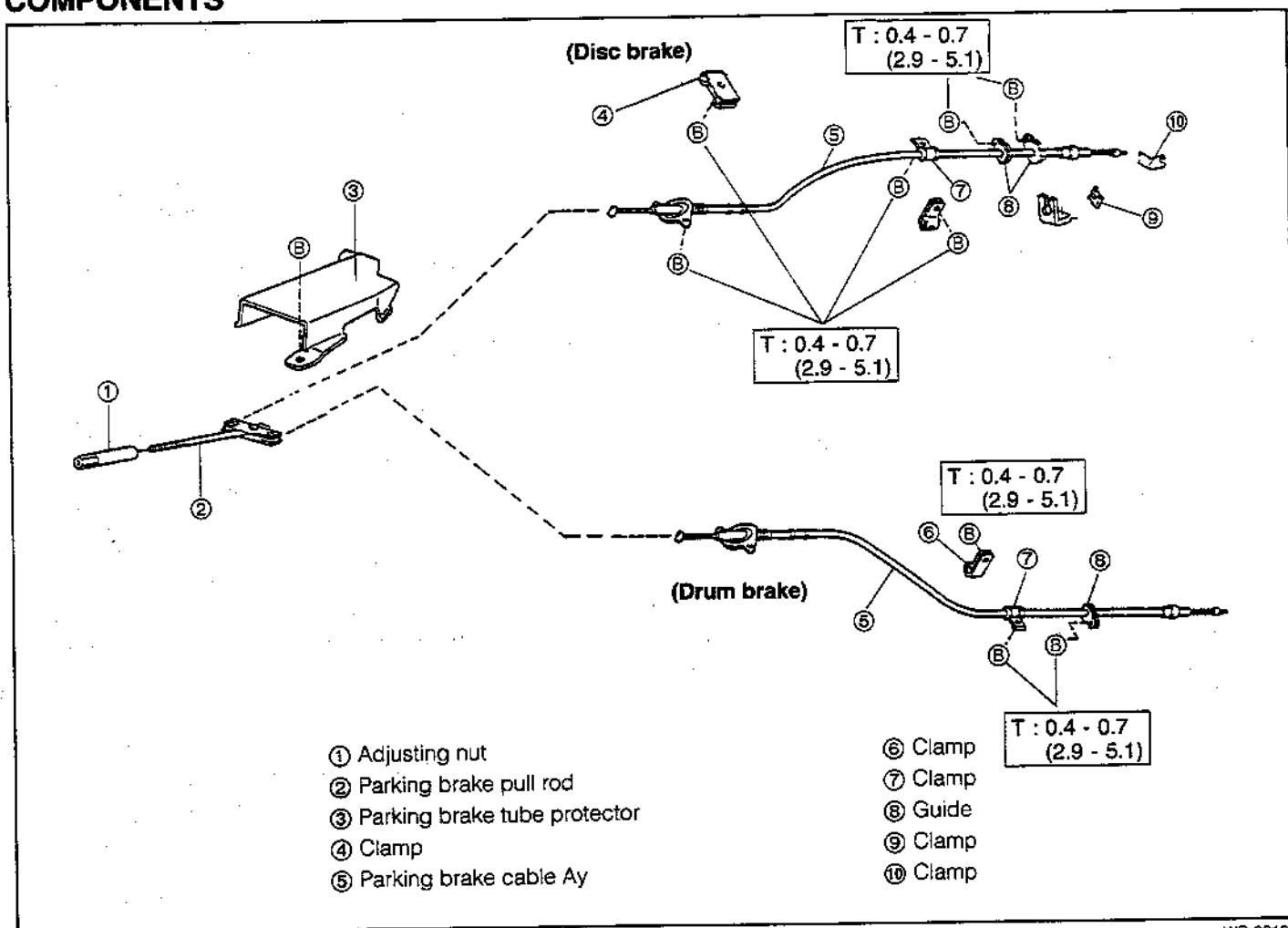


Fig. 8-183

WR-08190

### REMOVAL

1. Remove the console box. (See Fig. 8-177.)
2. Remove the parking brake tube protector.

3. Remove the parking brake cable from the parking brake pull rod.

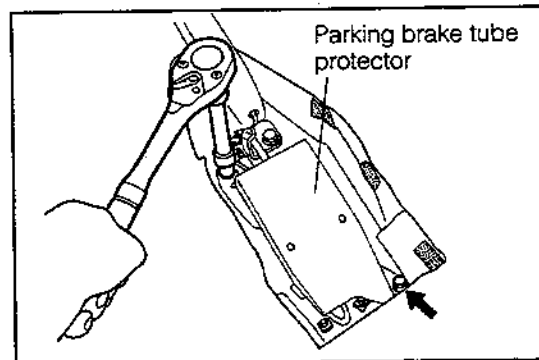


Fig. 8-184

WR-08191

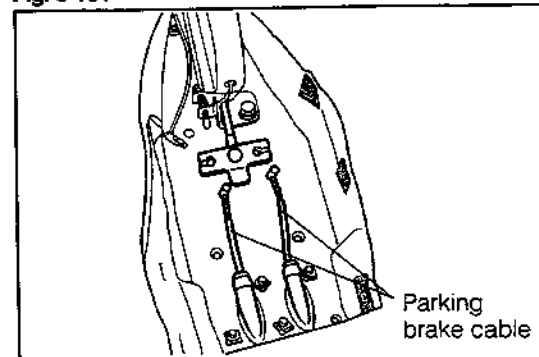


Fig. 8-185

WR-08192

4. Jack up the vehicle. Remove the clamp-related parts provided under the body.

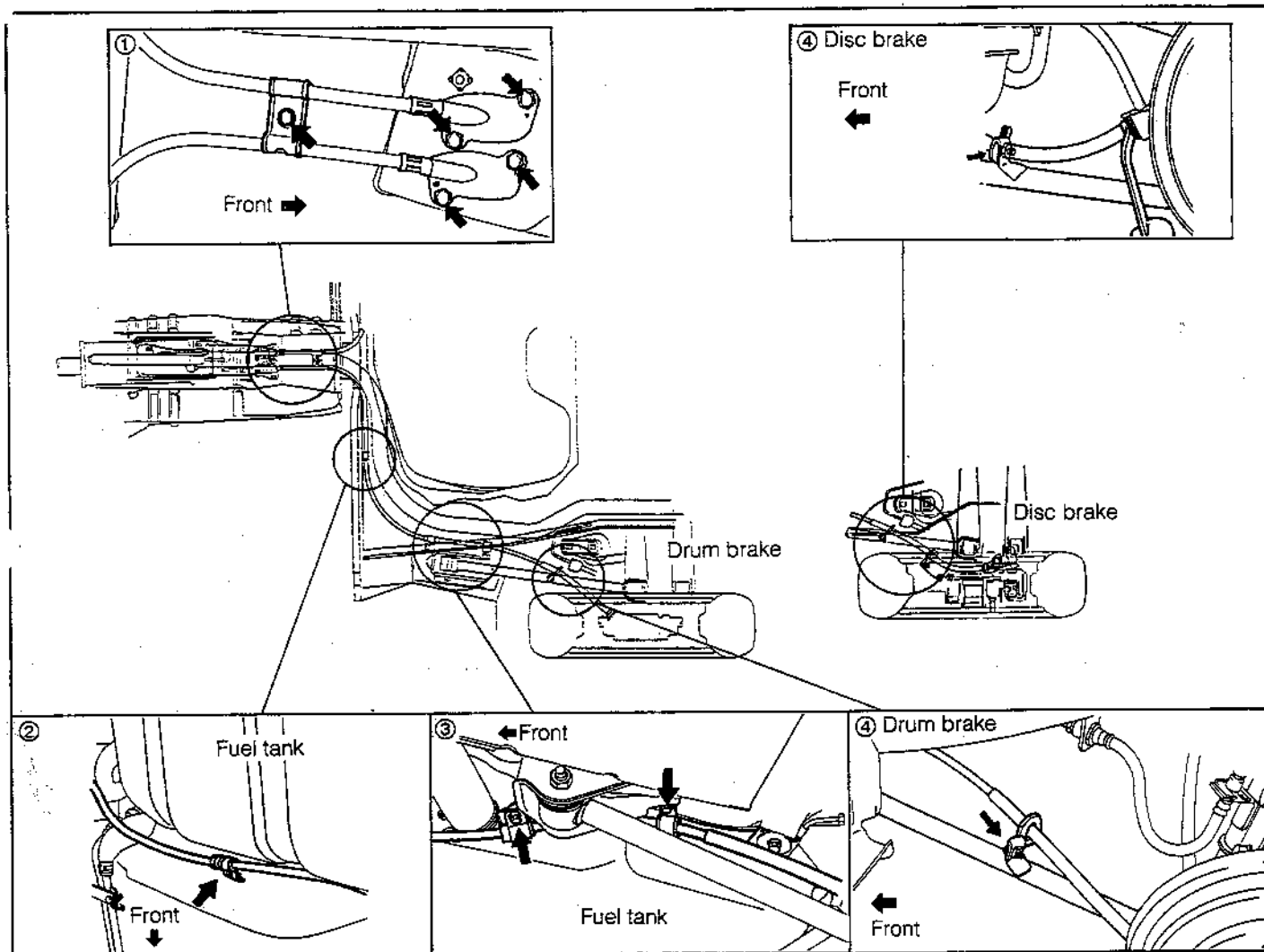


Fig. 8-186

WR-08193

5. Removal of rear brake-related parts  
(Drum brake)

- (1) Remove the brake shoe. (See page 8-38.)
- (2) Remove the parking brake cable from the rear brake backing plate.

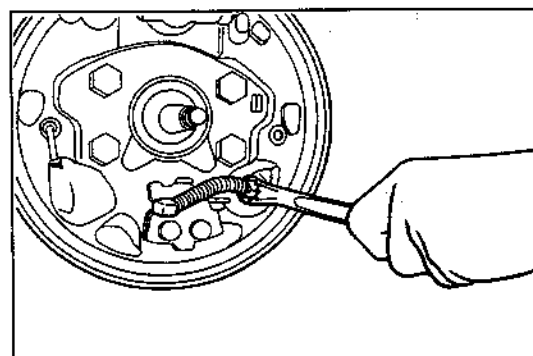


Fig. 8-187

WR-08194

(Disc brake)

- (1) Remove the clip attaching the parking brake cable to the cable support bracket.
- (2) Detach the clip from the parking brake clamp. Then, remove the parking brake cable.

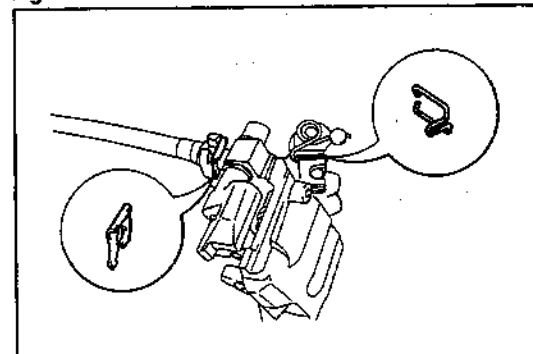


Fig. 8-188

WR-08195

## BRAKES

### INSTALLATION

#### 1. Installation of rear brake-related parts

(Drum brake)

- (1) Install the parking brake cable to the rear brake backing plate.
- (2) Install the brake shoe-related parts. (See page 8-41.)

WR-08196

(Disc brake)

- (1) Install the parking brake cable to the disc brake caliper.
- (2) Install the clips at two points.

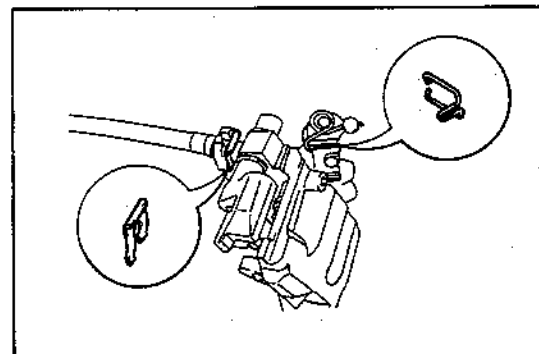


Fig. 8-189

WR-08197

2. Install the clamp-related parts provided under the body. (See Fig. 8-186.)
3. Attach the parking brake cable to the cable end.

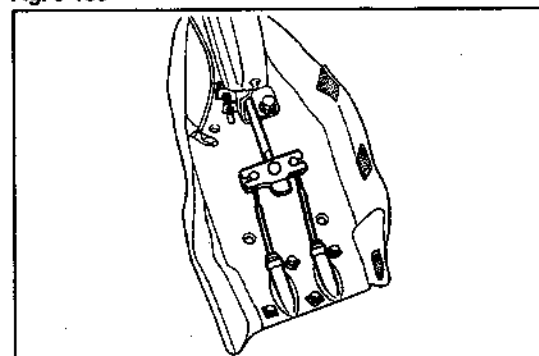


Fig. 8-190

WR-08198

4. Install the parking brake tube protector.

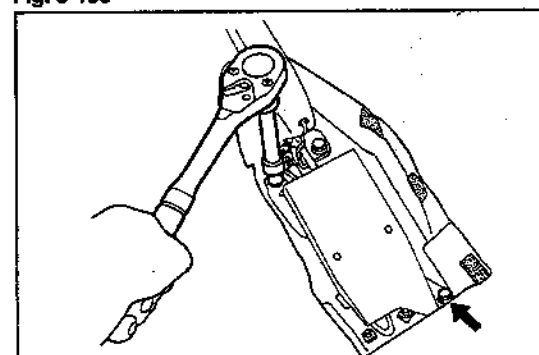


Fig. 8-191

WR-08199

#### 5. Rear brake adjustment

Drum brake (See Fig. 8-44.)

6. Adjust the working travel of the parking brake.

**Specified Value: 5 - 9 Notches**

**[When pulled by a force of 20 kg (44 lb)]**

7. Install the console box. (See Fig. 8-182.)

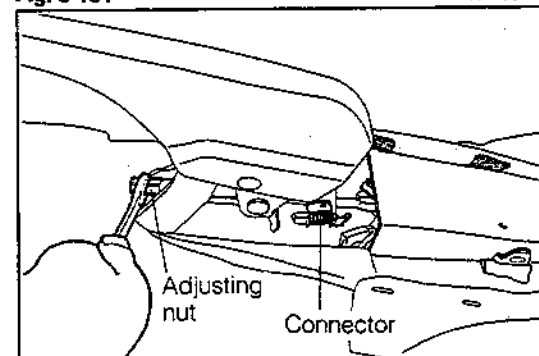


Fig. 8-192

# DAIHATSU

# CHARADE

## Chassis

## SECTION 9

## BODY

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9

# ALIGNMENT ADJUSTMENTS

## ENGINE HOOD ALIGNMENT ADJUSTMENT

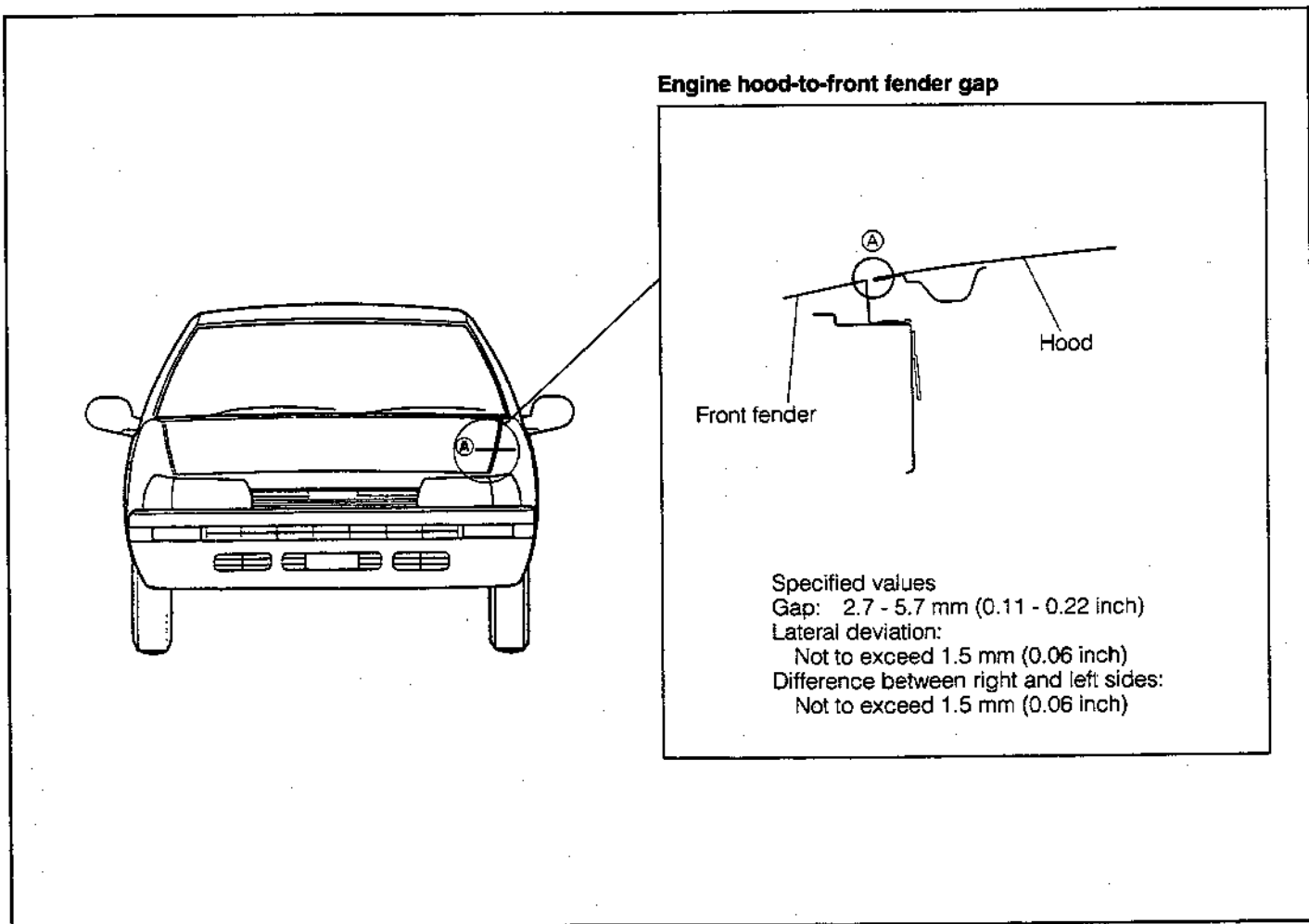


Fig. 9-1

WR-09002

1. Adjustment of engine hood-to-front fender gap  
 Loosen the bolts (A). Perform the adjustment by moving the hood.

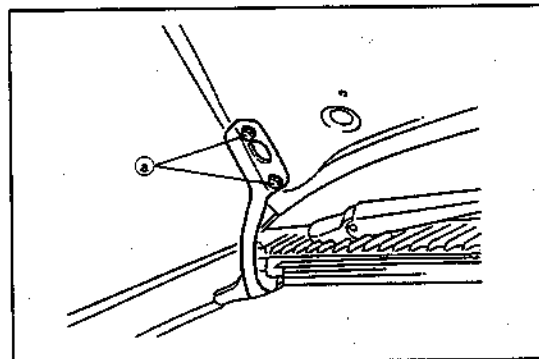


Fig. 9-2

WR-09003

2. Hood lock adjustment  
 Loosen the three attaching bolts of the hood lock. Perform the adjustment by moving the hood lock.  
 (Adjust the hood lock in such a way that you will feel a slight looseness when the center section of the hood end is pushed strongly.)

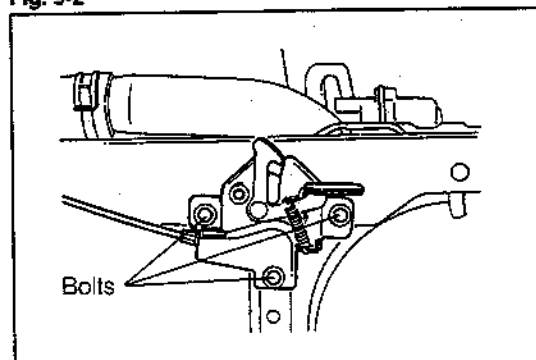
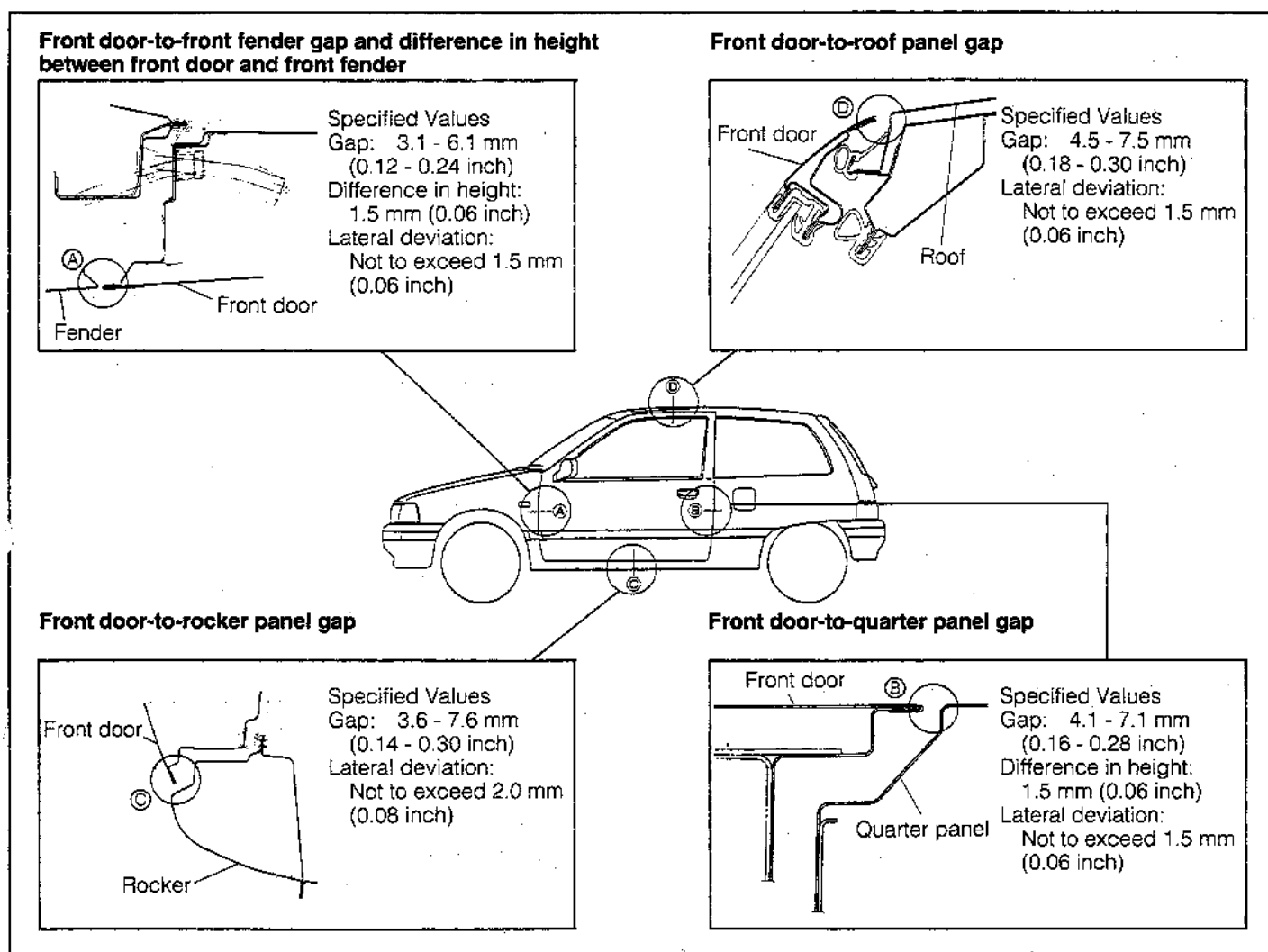


Fig. 9-3

WR-09004

# **FRONT DOOR ALIGNMENT ADJUSTMENT**



**Fig. 9-4**

WR-09005

1. Adjustments of Front Door-to-Front Fender Gap and Front Door-to-Quarter Panel Gap

Replace the bolts (a). Perform the adjustment by moving the door panel in a fore-and-aft direction.

**SST: 09812-30010-000**

**NOTE:**

Adjustment-free bolts have been employed in the assembly plant. Hence, the adjustment should be performed after replacing the bolts with the following bolts.

**Part Number of Bolt: 91661-60820-000**

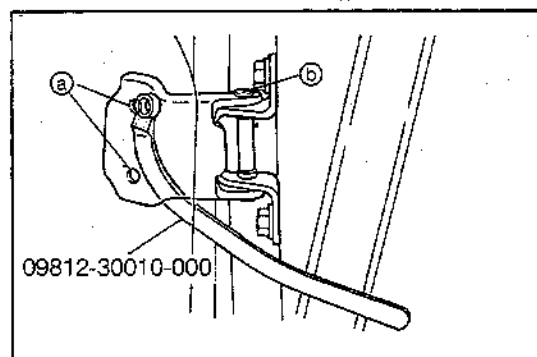
2. Adjustments of Front Door-to-Rocker Panel Gap and Front Door-to-Roof Panel Gap

Loosen the bolt (b). Perform the adjustment by moving the door panel in an up-and-down direction.

**SST: 09812-30010-000**

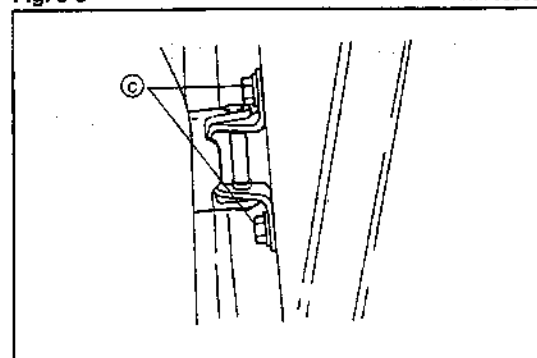
3. Adjustment of Difference in Height between Front Door and Front Fender

Loosen the bolts (c). Perform the adjustment by moving the door panel in a right-and-left direction.



**Fig. 9-5**

WR-09006



**Fig. 9-6**

WR-09007

## BODY

### 4. Door Lock Adjustment

Loosen the screws ③ of the lock striker. Perform the adjustment by tapping the striker lightly.

#### NOTE:

Never attempt to correct the door sagging at its rear part by the adjustment of this lock striker. The correction should be made by adjusting the door hinge section.

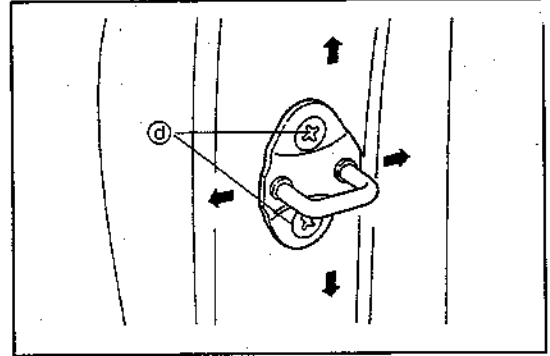


Fig. 9-7

WR-09008

## REAR DOOR ALIGNMENT ADJUSTMENT

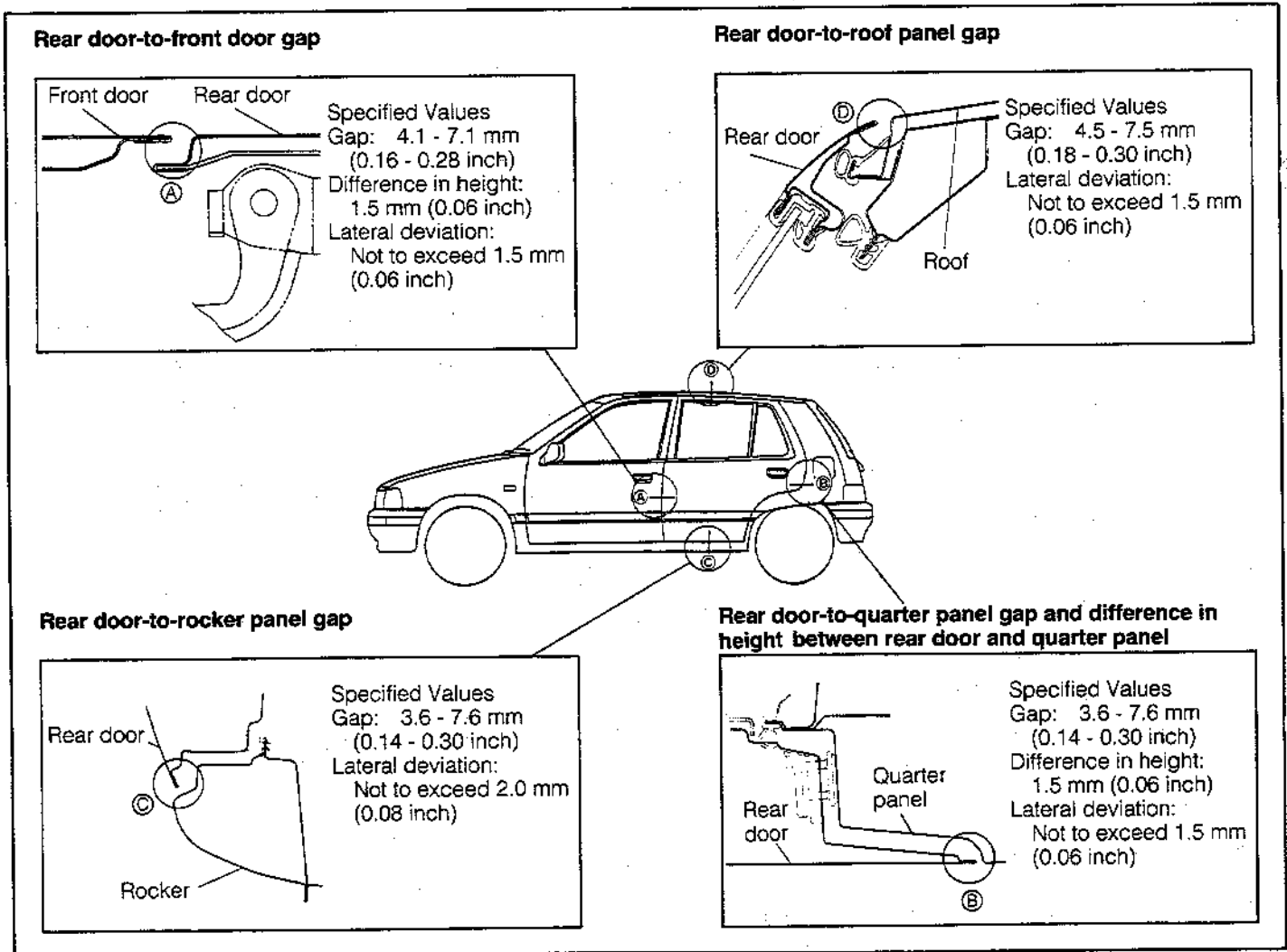


Fig. 9-8

WR-09009

### 1. Adjustments of Rear Door-to-Front Door Gap and Rear Door-to-Quarter Panel Gap

Replace the bolts ④. Perform the adjustment by moving the door panel in a fore-and-aft direction.

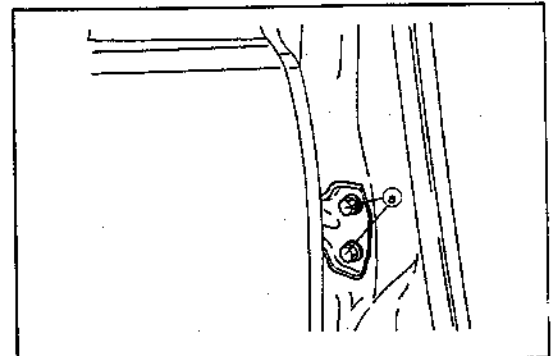


Fig. 9-9

WR-09010



2. Adjustment of Difference in Height between Rear Door and Front Door  
Loosen the bolts (b). Perform the adjustment by moving the door panel.

3. Adjustments of Rear Door-to-Rocker Panel Gap and Rear Door-to-Roof Panel Gap

Loosen the bolt (b). Perform the adjustment by moving the door panel in an up-and-down direction.

**NOTE:**

As for the bolts (b), adjustment-free bolts have been employed in the assembly plant. Hence, the adjustments described in the steps 2 and 3 should be performed after replacing the bolts with the following bolts.

Part Number of Bolt: 91661-60820-000

4. Adjustment of Difference in Height between Rear Door and Quarter Panel

Loosen the screws (c) of the lock striker. Perform the adjustment by moving the striker in a right-and-left direction.

5. Door Lock Adjustment

Loosen the screws (c) of the lock striker. Perform the adjustment by tapping the striker lightly.

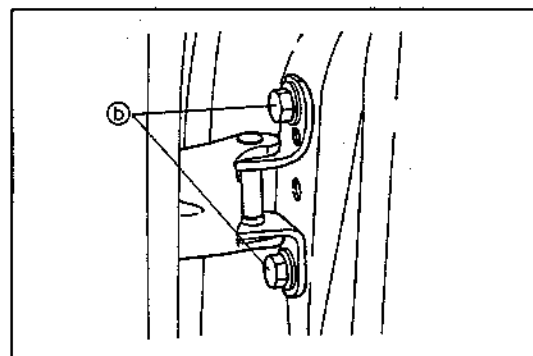


Fig. 9-10

WR-09011

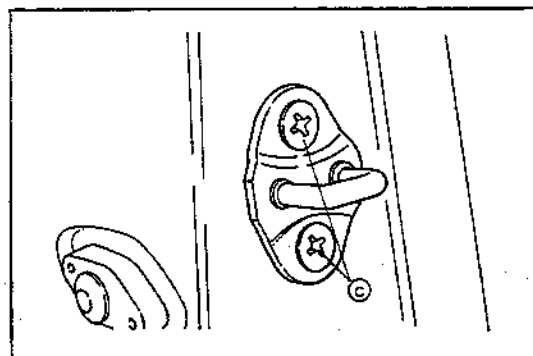


Fig. 9-11

WR-09012

## HATCHBACK DOOR ALIGNMENT ADJUSTMENT

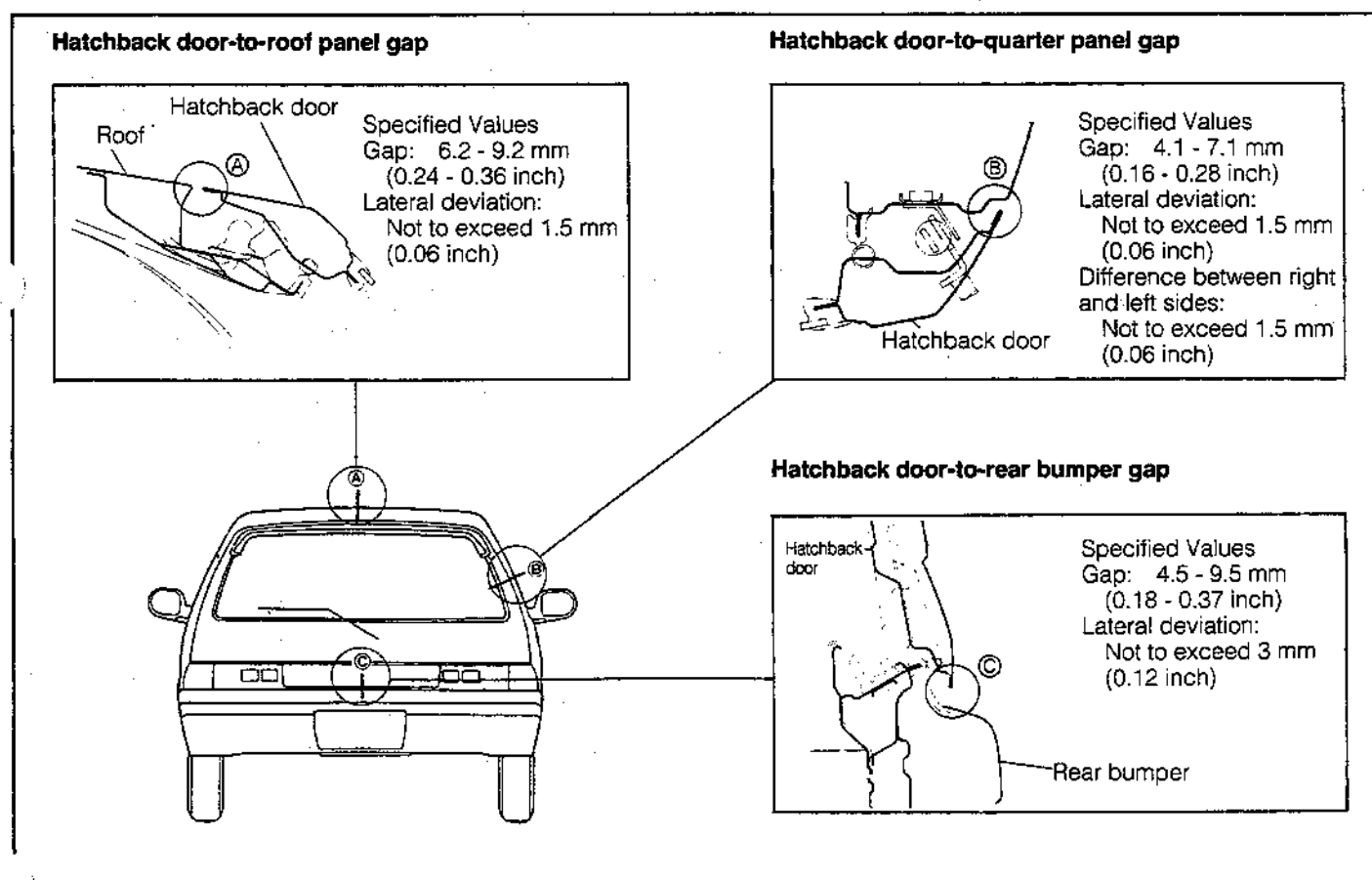


Fig. 9-12

WR-09013

## BODY

1. Adjustments of Hatchback Door-to-Roof Panel Gap, Hatchback Door-to-Quarter Panel Gap and Hatchback Door-to-Rear Bumper Gap

- (1) Loosen the bolts (a). Perform the adjustment.
- (2) If the adjustment can not be performed properly, loosen the nuts (b) at the vehicle interior and perform the adjustment.

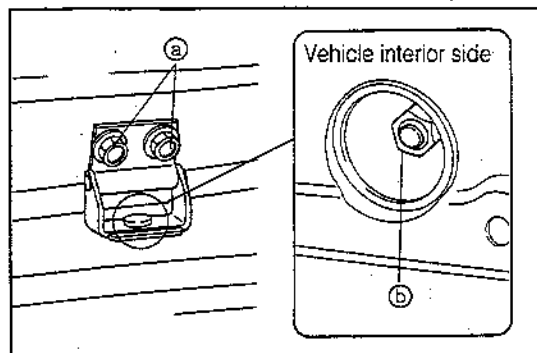


Fig. 9-13

WR-09014

2. Hatchback Door Lock Adjustment

Loosen the screws (c) of the lock striker. Perform the adjustment by tapping the striker lightly.

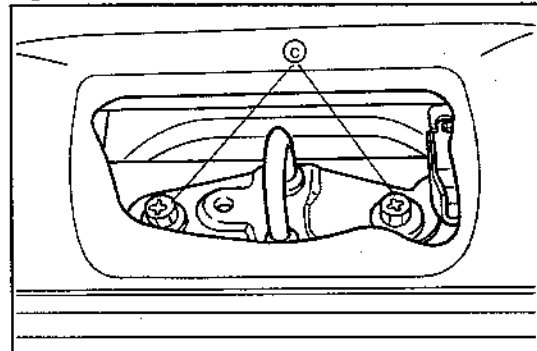


Fig. 9-14

WR-09015

## POWER SUNROOF ALIGNMENT ADJUSTMENT

1. Difference in Height (A) between Sliding Roof and Roof Panel

Specified Value:

Difference in height: 0 - 3 mm (0 - 0.12 inch)

Lateral deviation: Not to exceed 2 mm (0.08 inch)

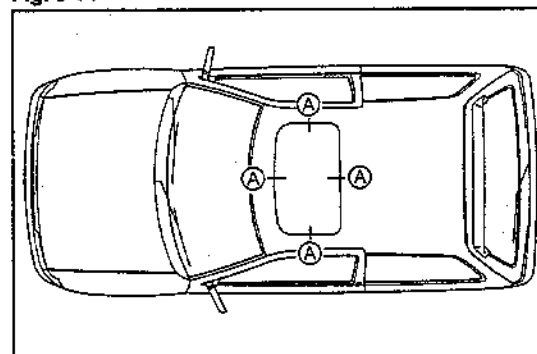


Fig. 9-15

WR-09016

(How to Move Sunroof Manually)

- (1) Detach the sunroof switch cover.
- (2) Loosen the screw (A) located at the right side of the motor about one turn, using the wrench for exclusive use in the sunroof.
- (3) Move the sunroof by turning the screw (B) at the left side.

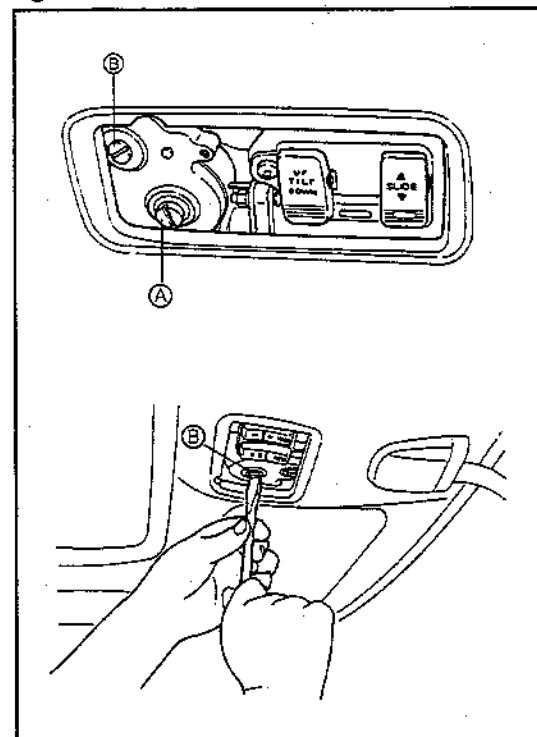


Fig. 9-16

WR-09017

2. Adjustment of Difference in Height between Sliding Roof and Roof Panel

Correct any difference in height between the sliding roof and the roof panel by increasing or decreasing the adjusting shims provided between the sliding roof and the sliding roof drive cable bracket.

**NOTE:**

If the sliding roof is higher at the front section (even under a condition where no shims are employed), there is a possibility that the sliding roof is not closed fully. Hence, make sure that the sliding roof is closed fully.

3. Adjustment of Sliding Roof in a Fore-and-Aft Direction

Loosen the attaching bolts of the sliding roof at both sides. Perform the adjustment by moving the panel.

4. Adjustment of Sliding Roof in a Right-and-Left Direction  
Loosen the nut of the rear shoe. Perform the adjustment by moving the sliding roof in a right-and-left direction.

5. Lateral Deviation in Sliding Roof-to-Roof Panel Gap

(1) If the sliding roof exhibits a deviation of about 2 mm (0.08 inch), detach the gear and advance the cable at the side having a wider gap one notch.

[One notch of cable: 2.5 mm (0.10 inch)]

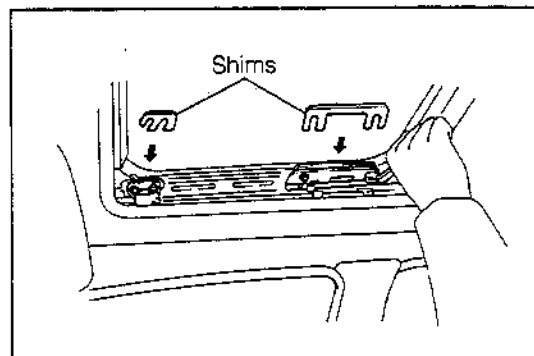


Fig. 9-17

WR-09018

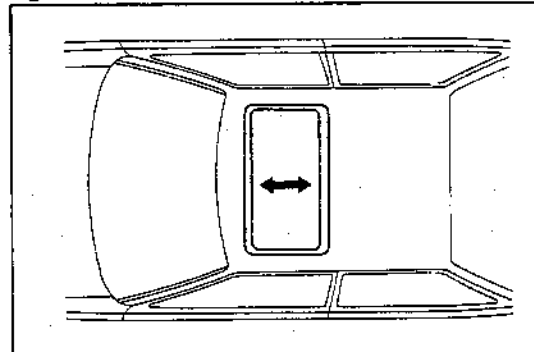


Fig. 9-18

WR-09019

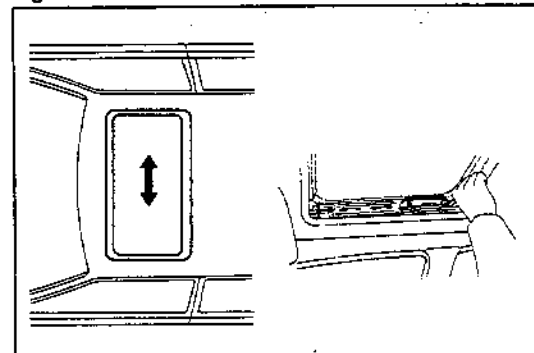


Fig. 9-19

WR-09020

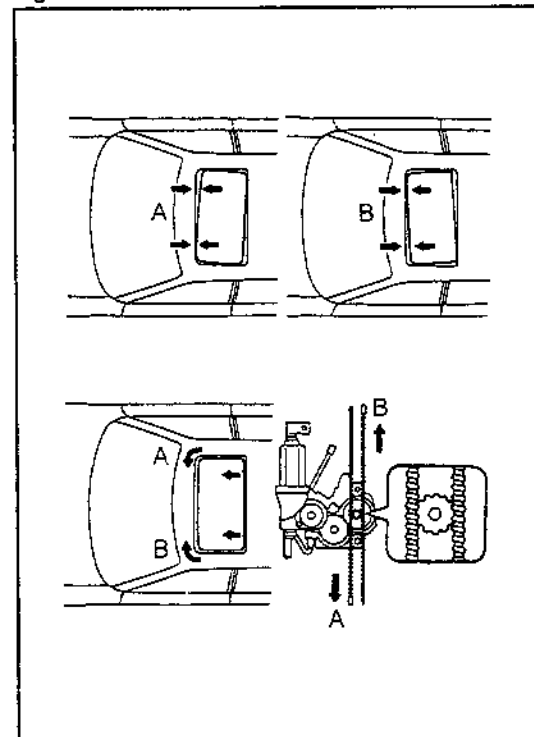


Fig. 9-20

WR-09021

## BODY

- (2) If the gear has been detached, align the link position by inserting a pin or the like into the reference hole. Then, set the sliding roof in the tilt fully-closed condition and attach the gear.

- (3) If the sliding roof exhibits a deviation of about 1 mm (0.04 inch), loosen the nut of the rear shoe. Then, readjust the installation position of the sliding roof to the normal position.

### Inspection After Adjustment

1. Ensure that the sliding roof operates from the fully-opened position to the fully-closed position (while the engine is running).
2. Ensure that the sliding roof exhibits no binding or emits no abnormal noise during the operation.
3. Make sure that no water leaks into the vehicle when the sliding roof is fully closed.

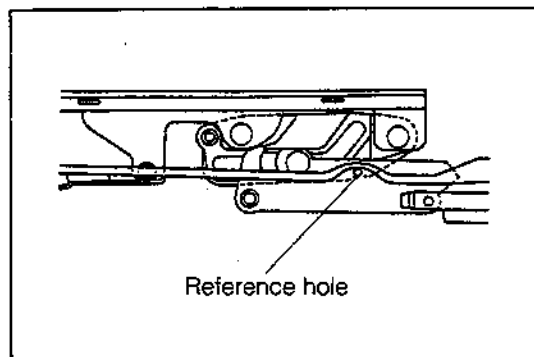


Fig. 9-21

WR-09022

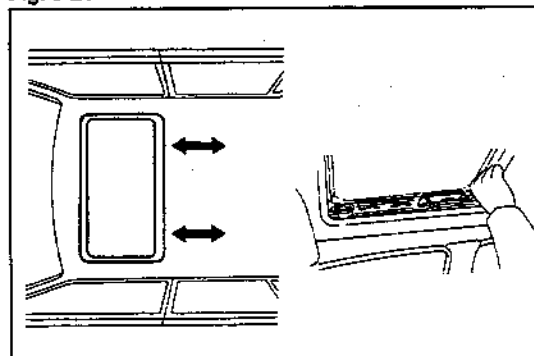
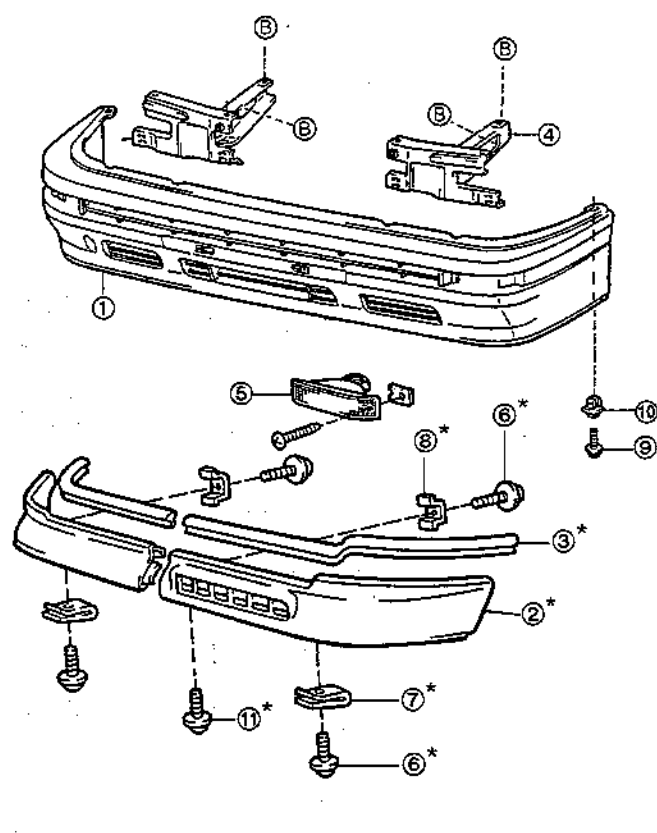


Fig. 9-22

WR-09023

# FRONT BUMPER COMPONENTS



- ① Front bumper S/A
- ② Front spoiler cover
- ③ Protector
- ④ Front bumper arm S/A
- ⑤ Turn signal lamp Ay
- ⑥ Bolt
- ⑦ Clip
- ⑧ Clip
- ⑨ Bolt
- ⑩ Clip
- ⑪ Bolt

\* : Front spoiler-equipped vehicle

Fig. 9-23

WR-09024

## REMOVAL

1. Remove the bolt attaching the front fender liner to the front bumper subassembly.
2. Remove the bolt attaching the front bumper subassembly to the front fender.
3. Remove the attaching bolts of the front bumper arm subassembly.

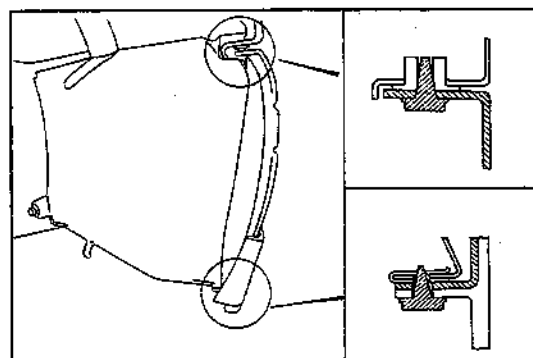


Fig. 9-24

WR-09025

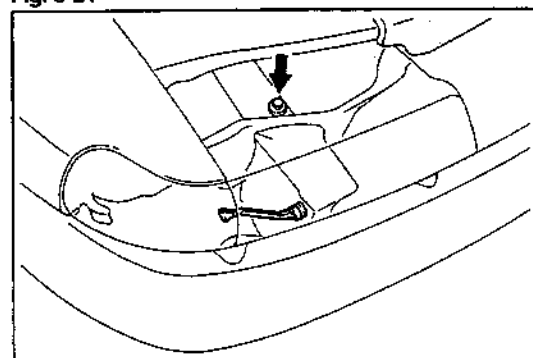


Fig. 9-25

WR-09026

## BODY

4. Remove the coupler for turn signal lamp use. Remove the front bumper assembly from the vehicle.
5. Remove the turn signal lamp assembly from the front bumper subassembly.
6. Remove the front bumper arm subassembly from the front bumper subassembly.
7. Remove the front spoiler cover from the front bumper subassembly. (GTti grade vehicle)

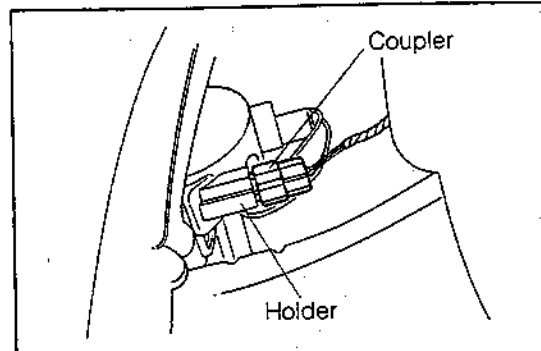


Fig. 9-26

WR-09027

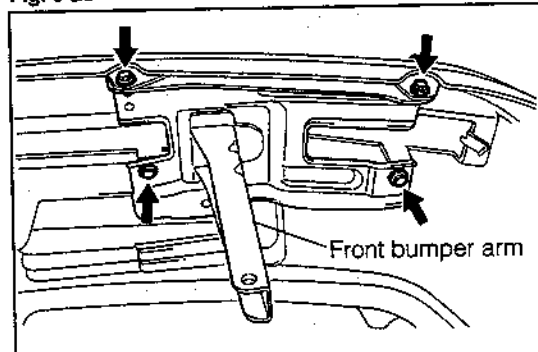


Fig. 9-27

WR-09028

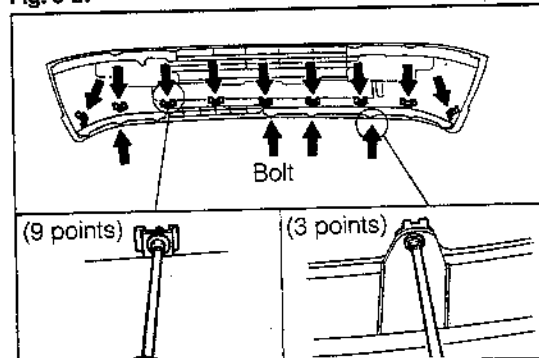


Fig. 9-28

WR-09029

## INSTALLATION

1. Install the front spoiler cover to the front bumper subassembly. (GTti grade vehicle) (See Fig. 9-28.)
2. Install the front bumper arm subassembly to the front bumper subassembly. (See Fig. 9-27.)
3. Install the turn signal lamp assembly to the front bumper subassembly.
4. Connect the coupler for turn signal lamp use. Set it to the holder of the bumper.

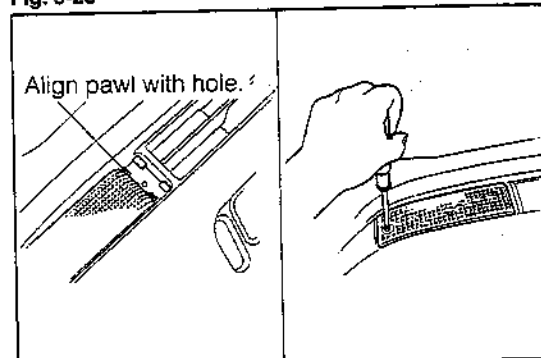


Fig. 9-29

WR-09030

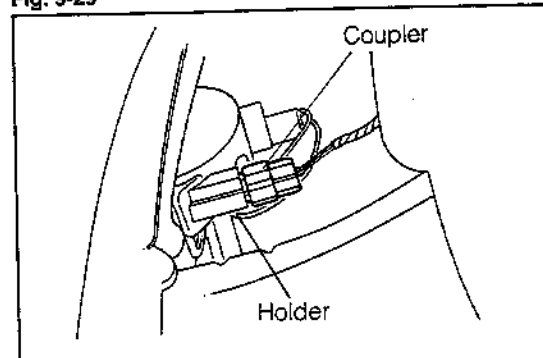
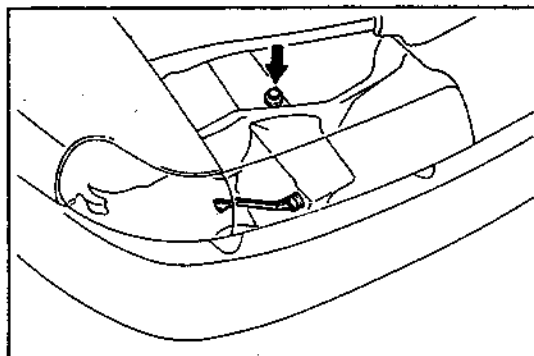


Fig. 9-30

WR-09031

5. Install the front bumper subassembly to the vehicle, as follows:

- (1) Install the attaching bolts of the front bumper arm subassembly temporarily.



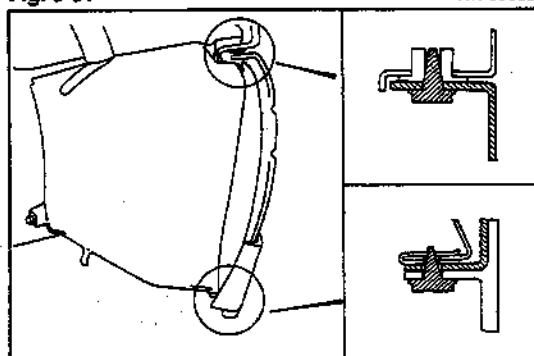
**Fig. 9-31**

WR-09032

- (2) Install the fender liner to the front bumper subassembly with the clip and bolt.

- (3) Install the front fender to the front bumper subassembly with the clip and bolt.

- (4) Tighten the attaching bolts of the front bumper arm subassembly.



**Fig. 9-32**

WR-09033

## BODY

### REAR BUMPER COMPONENTS

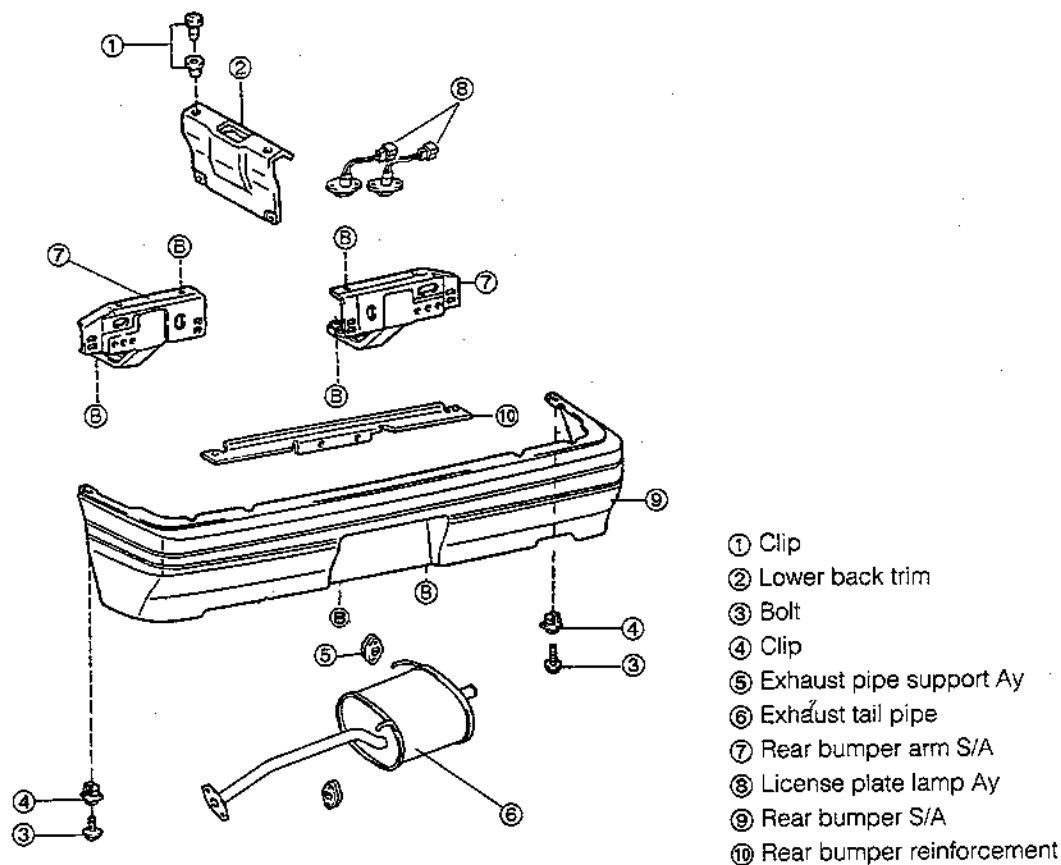


Fig. 9-33

WR-09034

### REMOVAL

#### 1. Lower Back Trim Removal

- (1) Detach the clips at four points by pushing the center section [2.5 mm (0.10 inch)] of each clip.
- (2) Remove the lower back trim.

#### 2. Removal of Rear Bumper Subassembly

- (1) Remove the body attaching bolts located at both sides of the rear bumper subassembly.
- (2) Remove the attaching bolts at the central part of the rear bumper.
- (3) Remove the attaching bolts of the rear bumper arm subassembly.

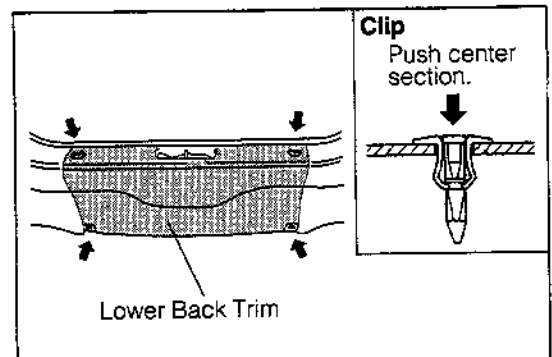


Fig. 9-34

WR-09035

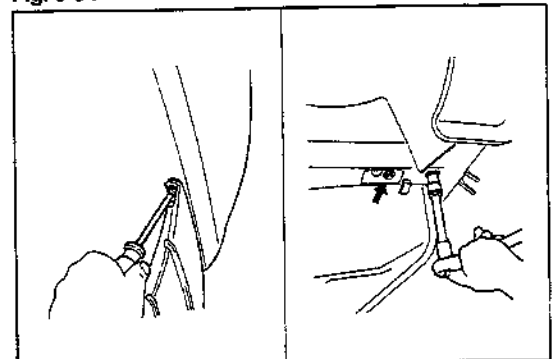


Fig. 9-35

WR-09036



**NOTE:**

Before removing the bolt at the right side, remove the exhaust pipe support assembly.

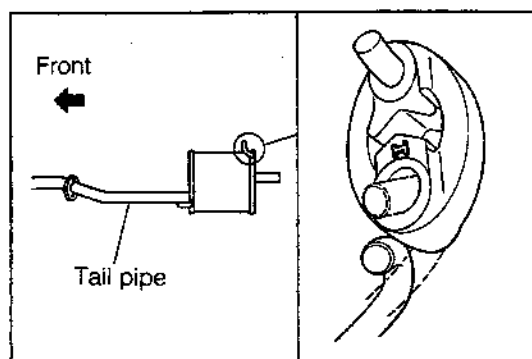
- (3) Move the rear bumper subassembly to the rear. Disconnect the couplers for license plate lamp assembly use. Detach the harness clamp.
- (4) Remove the rear bumper subassembly from the vehicle.

3. Remove the license plate lamps assembly from the rear bumper subassembly.

4. Remove the rear bumper arm subassembly from the rear bumper subassembly.

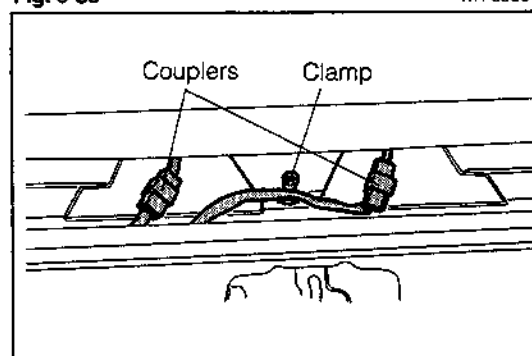
**INSTALLATION**

1. Install the rear bumper arm subassembly to the rear bumper subassembly. (See Fig. 9-39.)
2. Install the license plate lamps assembly to the rear bumper subassembly. (See Fig. 9-38.)
3. Install the rear bumper subassembly to the vehicle, as follows:
  - (1) Connect the couplers for license plate lamp use. Attach the harness clamp.



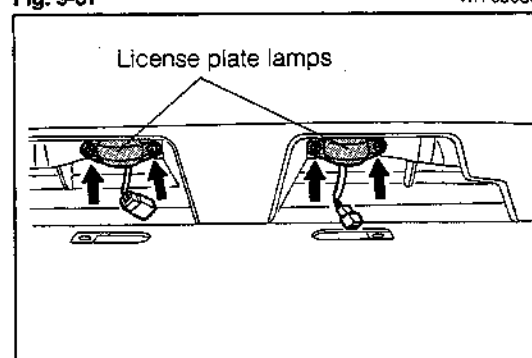
**Fig. 9-36**

WR-09037



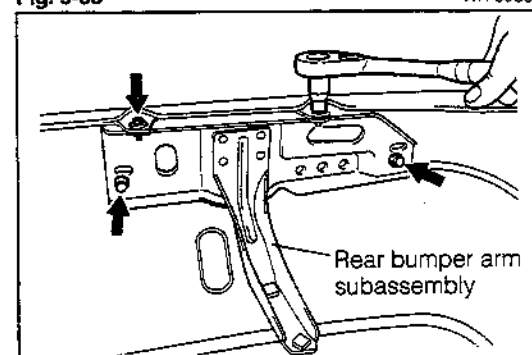
**Fig. 9-37**

WR-09038



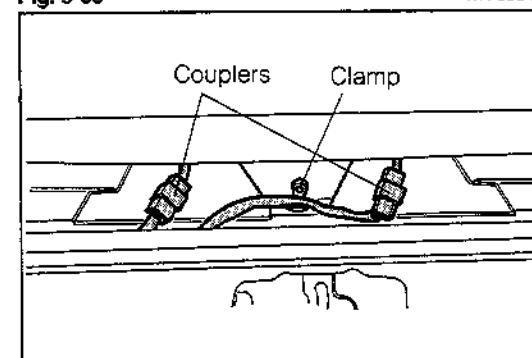
**Fig. 9-38**

WR-09039



**Fig. 9-39**

WR-09040



**Fig. 9-40**

WR-09041

## BODY

- (2) Install the four attaching bolts of the rear bumper arm subassembly.
- (3) Install the rear bumper subassembly at both sides to the body with the bolts.
- (4) Install the attaching bolts at the central part of the rear bumper.
- (5) Install the exhaust pipe support.

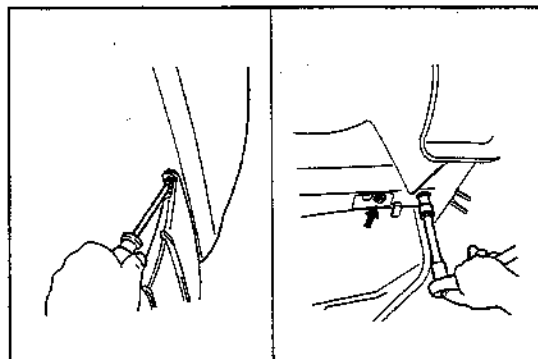
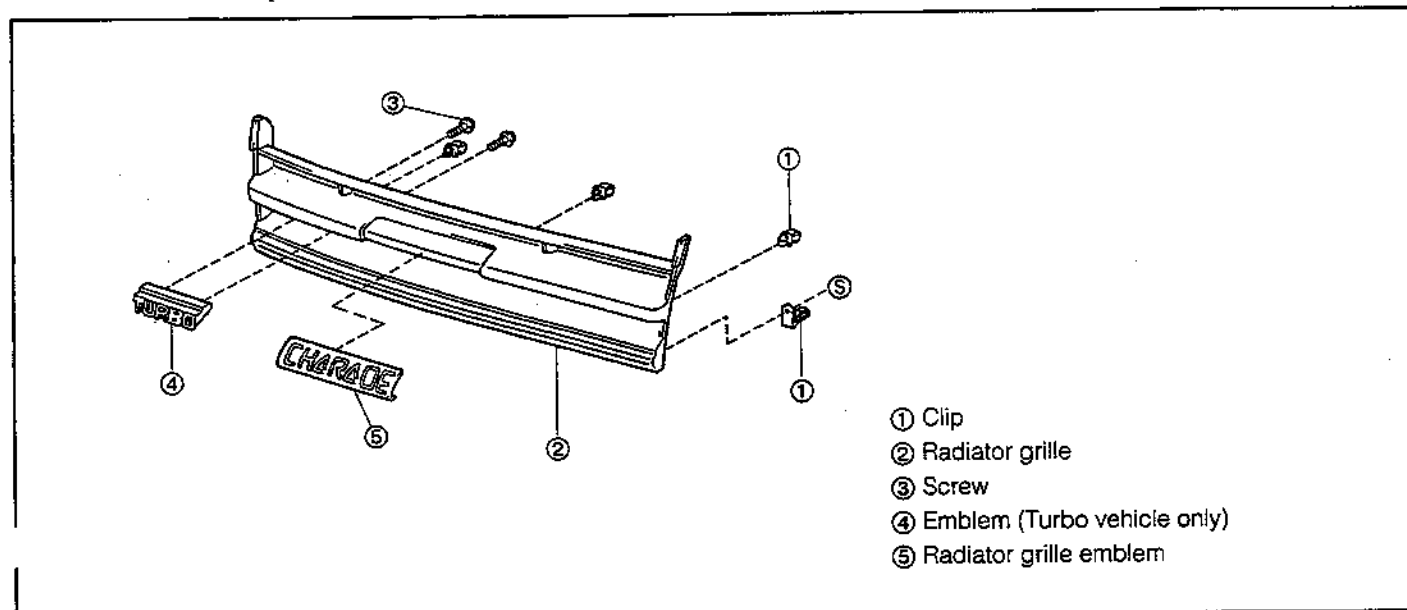


Fig. 9-41

WR-09042

# **RADIATOR GRILLE**

## **COMPONENTS (EXCEPT FOR GTti GRADE)**



**Fig. 9-42**

WR-09043

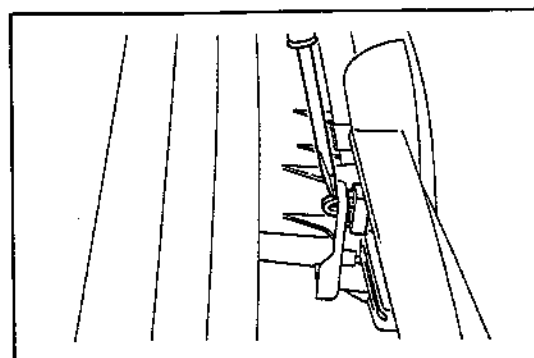
## **REMOVAL**

1. Remove the radiator grille by detaching the clips at five points.  
(Push the pawl section at the upper side of the clip, using a common screwdriver. Then, pull the radiator grille toward your side.)

2. Remove the emblem (TURBO) by loosening the two screws.

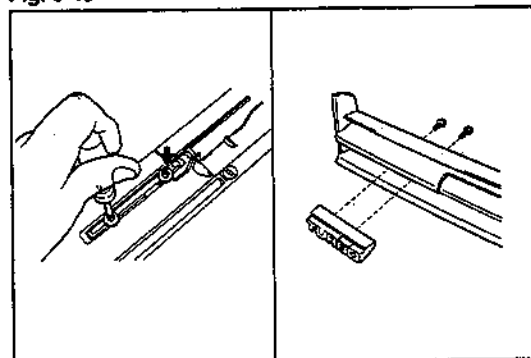
### **NOTE:**

The radiator grille emblem is attached to the radiator grille by means of two-faced adhesive tape.



**Fig. 9-43**

WR-09044

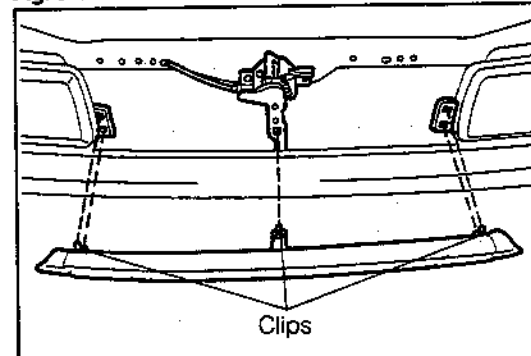


**Fig. 9-44**

WR-09045

## **INSTALLATION**

1. Install the emblem (TURBO) with the two screws. (See Fig. 9-44.)
2. Radiator grille installation
  - (1) Ensure that five clips are attached to the radiator grille.
  - (2) Install the radiator grille to the vehicle.

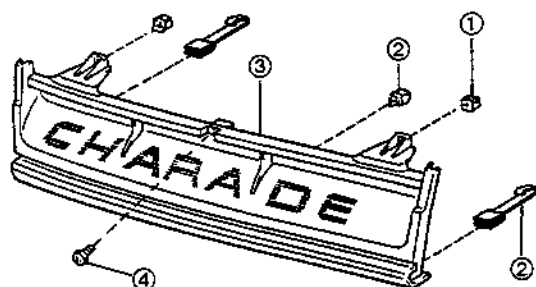


**Fig. 9-45**

WR-09046

## BODY

### COMPONENTS (GTti GRADE)



- ① Clip
- ② Clip
- ③ Radiator grille
- ④ Screw

Fig. 9-46

WR-09047

#### REMOVAL

1. Remove the attaching screw of the radiator grille.
2. Detach the two clips.  
To detach the clip, turn the center section of the clip 90 degrees clockwise, using a cross point screwdriver.
3. Detach the three clips, using a screwdriver.
4. Remove the radiator grille.

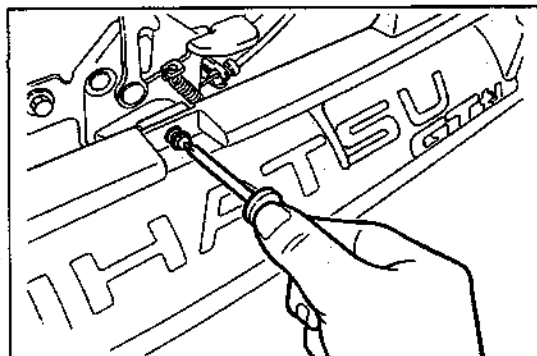


Fig. 9-47

WR-09048

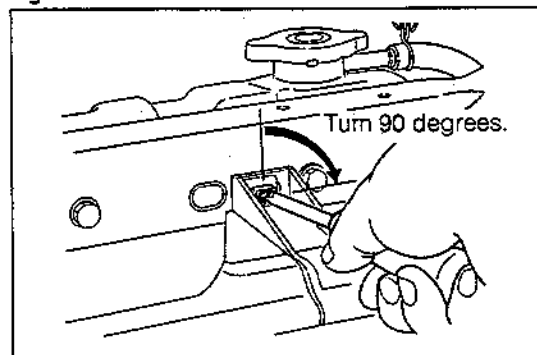


Fig. 9-48

WR-09049

#### INSTALLATION

1. Install the radiator grille, aligning the positions of the three clips.
2. Install the radiator grille to the vehicle. To attach the clip, turn the center section of the clip 90 degrees counter-clockwise, using a cross point screwdriver.
3. Install the screw at the center section of the radiator grille.

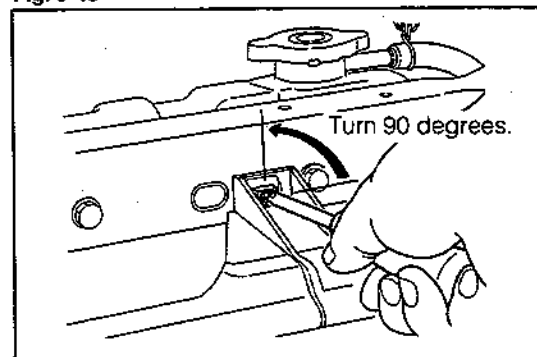
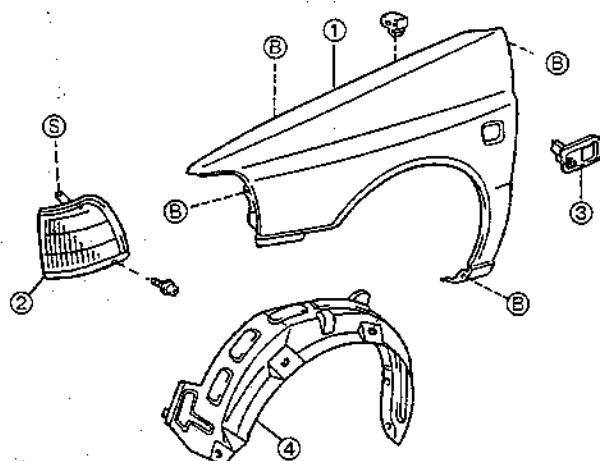


Fig. 9-49

WR-09050

# **FRONT FENDER COMPONENTS**



- ① Front fender
- ② Clearance lamp Ay
- ③ Side turn signal lamp Ay
- ④ Front fender liner

**Fig. 9-50**

WR-09051

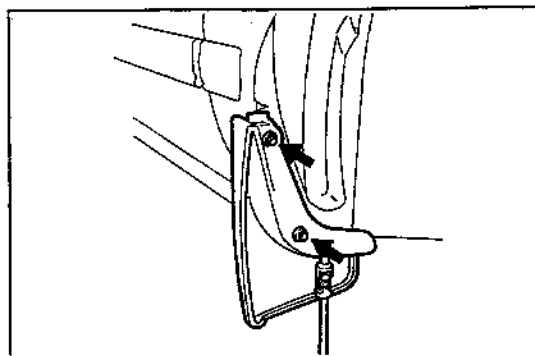
## **REMOVAL**

### 1. Front fender liner

- (1) Remove the three screws at the rear section of the front fender liner.

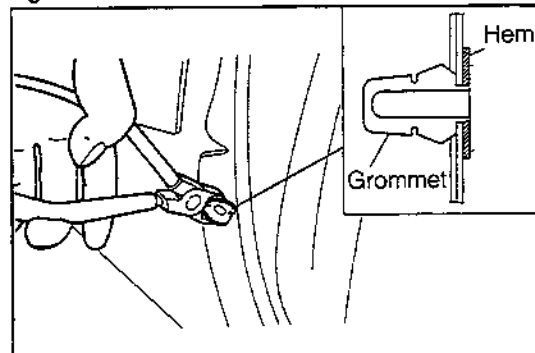
- (2) Cut off the hem of each screw grommet (at three points) at the rear section of the front fender liner.

- (3) Remove the screws attaching the front fender liner to the body and bumper.



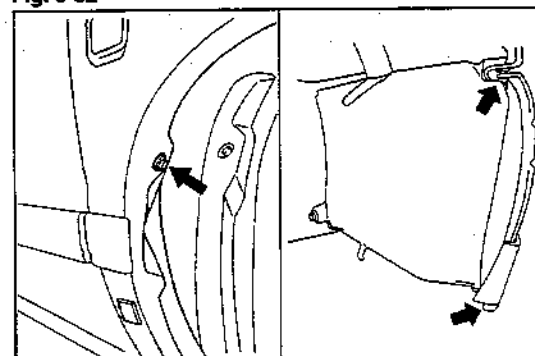
**Fig. 9-51**

WR-09052



**Fig. 9-52**

WR-09053



**Fig. 9-53**

WR-09054

## BODY

- (4) Remove the front fender liner by detaching the three clips, using a cross point screwdriver.

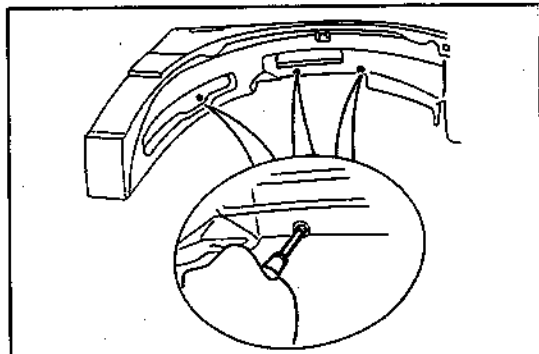


Fig. 9-54

WR-09055

2. Remove the clearance lamp assembly by removing the two screws.

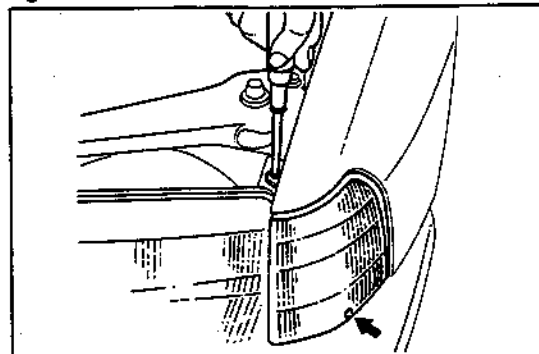


Fig. 9-55

WR-09056

3. Remove the front fender attaching bolts.

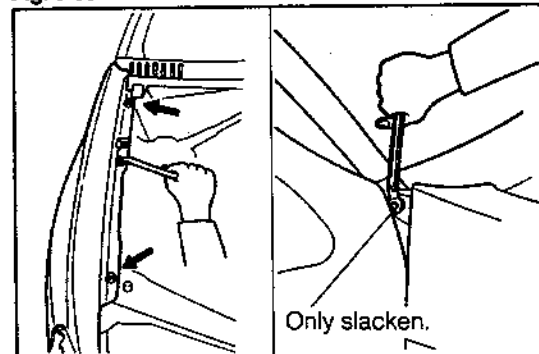


Fig. 9-56

WR-09057

4. Disconnect the coupler for side turn signal lamp use.
5. Remove the side turn signal lamp assembly from the front fender.

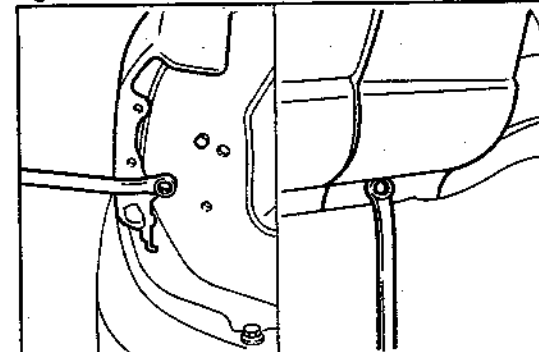


Fig. 9-57

WR-09058

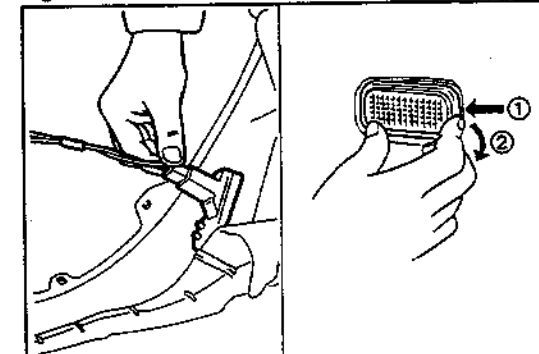


Fig. 9-58

WR-09059

## INSTALLATION

1. Install the side turn signal lamp to the front fender.
2. Connect the coupler for side turn signal lamp use.

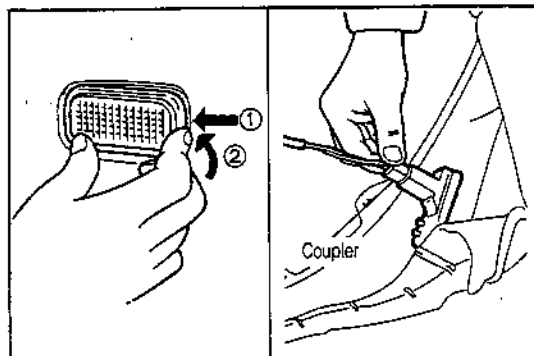


Fig. 9-59

WR-09060

3. Install the front fender.

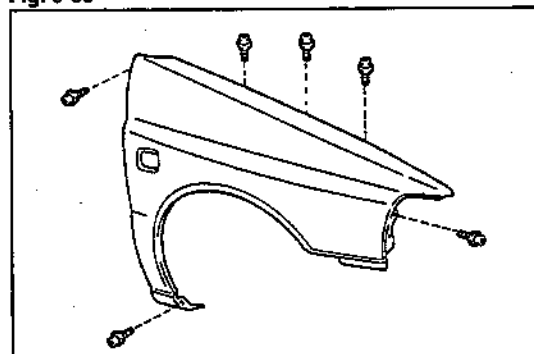


Fig. 9-60

WR-09061

4. Front fender liner installation

- (1) Attach the clips at three points, using a cross point screwdriver.
- (2) Attach the screw at one point, using a cross point screwdriver.

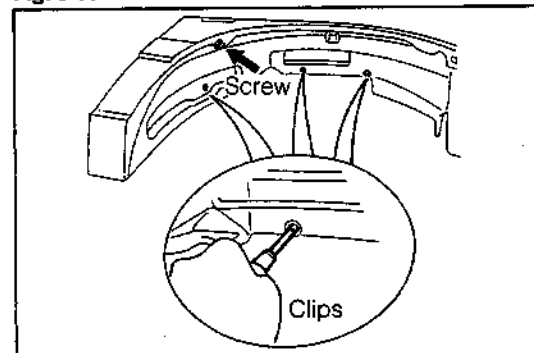


Fig. 9-61

WR-09062

- (3) Attach the three grommets at the rear section of the front fender liner. Install them with the three screws.

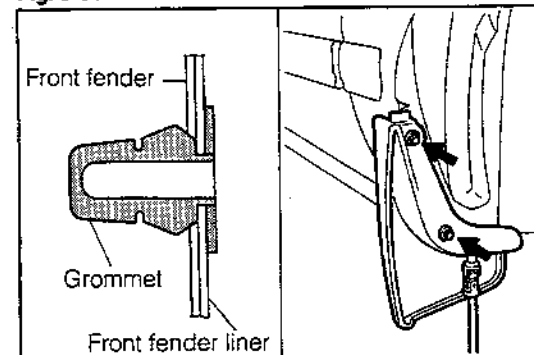


Fig. 9-62

WR-09063

- (4) Install the screws attaching the front fender liner to the body and bumper.

5. Install the clearance lamp with the two screws.  
(See Fig. 9-55.)

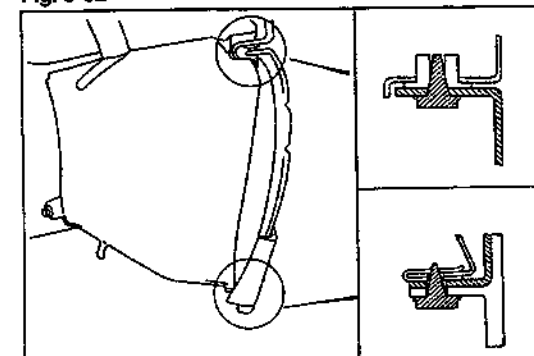
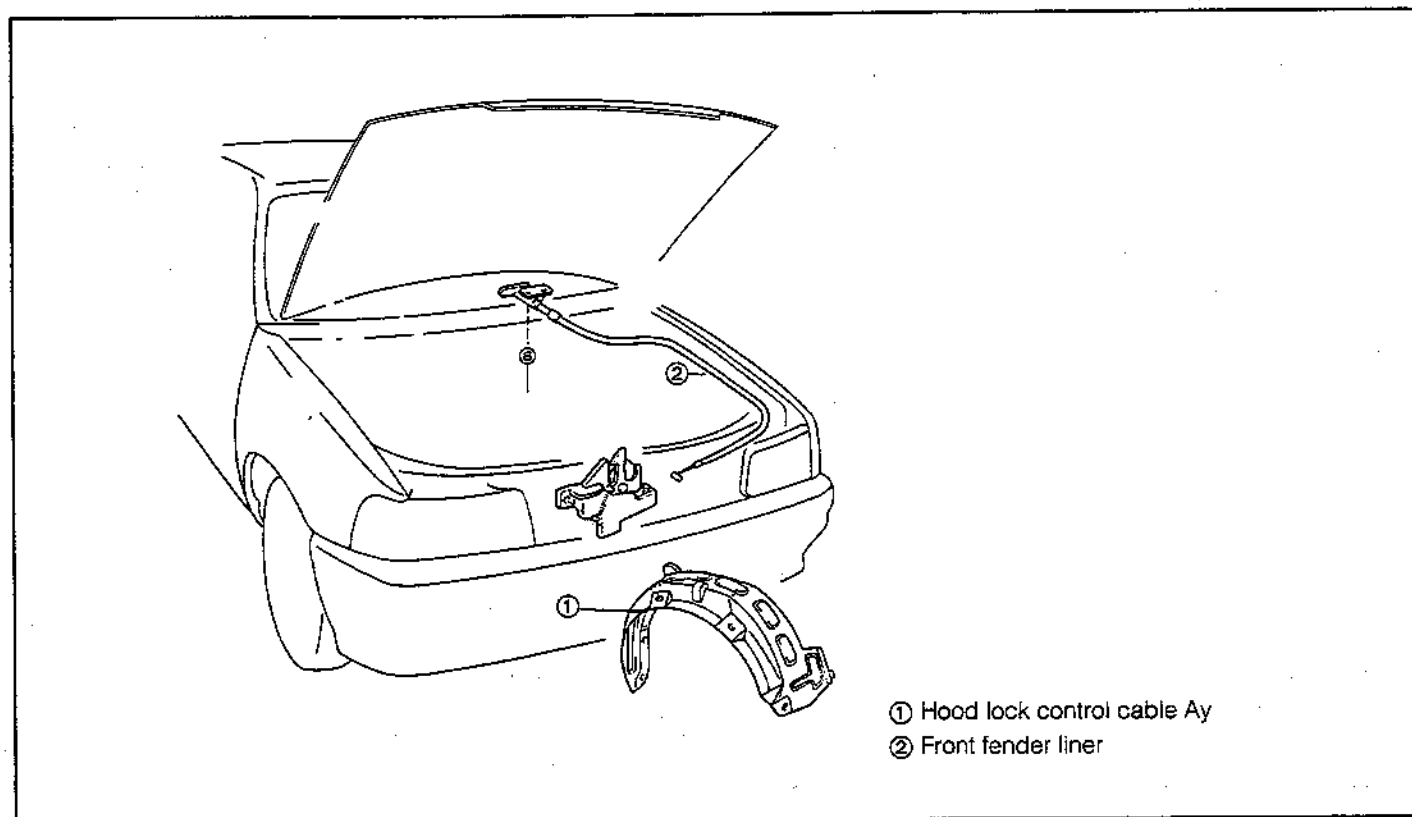


Fig. 9-63

WR-09064

# **HOOD LOCK CONTROL CABLE COMPONENTS**



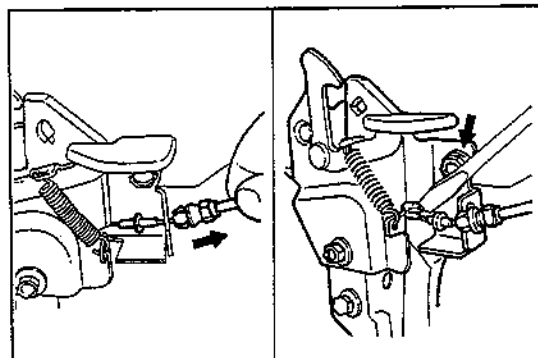
**Fig. 9-64**

WR-09065

## **REMOVAL**

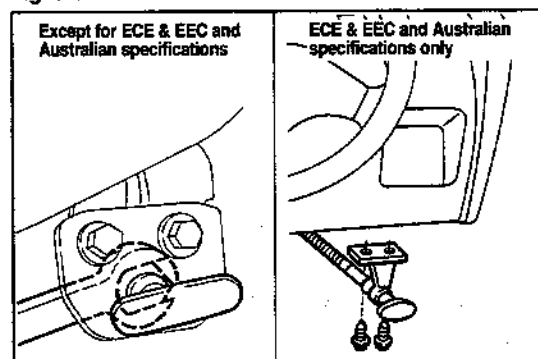
1. Remove the front fender liner. (See page 9-17.)
2. Hood lock control cable assembly
  - (1) Remove the cable at the hood lock side.

- (2) Remove the hood lock control cable at the interior side.



**Fig. 9-65**

WR-09066



**Fig. 9-66**

WR-09067



## INSTALLATION

Install the hood lock control cable assembly, as indicated in the figure below.

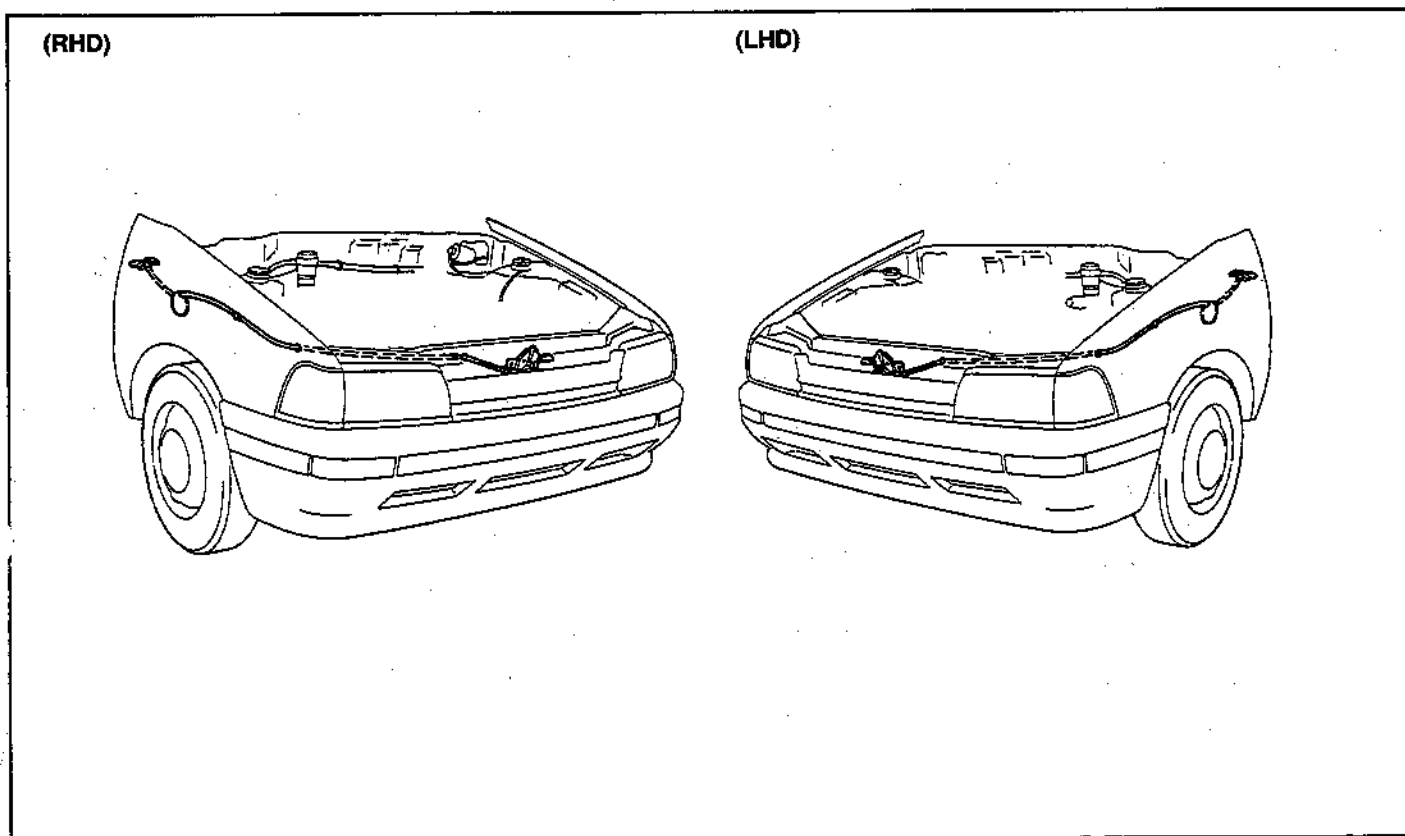


Fig. 9-67

WR-09068

## BODY

## WINDOWS

### FRONT WINDSHIELD

#### ARTICLES TO BE PREPARED

Part nomenclature and item	Use
* Seal set 999-1114-9603-000 (Yokohama Rubber, Co., Ltd.)	For use in installing glass
Non-drying window sealer	For use in filling glass adhesive agent
Wooden piece, etc.	For use in retaining piano wire during glass removal
Sealant gun	For use in applying adhesive agent
Sucking rubber disc	For use in holding glass during glass installation
Solvent (Alcohol or white gasoline)	For use in cleaning adhesion surface
Eyeleteer	For use in making hole at adhesion layer through which piano wire is passed
Cutter knife	For use in removing (cutting) molding For use in cutting adhesion layer surface and in cleaning glass
Spatula	For use in correcting surface after application of adhesive agent
Tape (Cloth tape)	Prevention of damage to paint surface

WR-09069

#### \* Contents of Seal Set

Item	Quantity	Shape
① Adhesive agent (WS100) (300 cc)	1	
② Primer G for glass (20 g)	1	
③ Primer M for body (20 g)	1	
④ Piano wire ( $\phi 0.6 \times 1$ m)	1	
⑤ Gauze for primer application	4	
⑥ Nozzle	2	
⑦ Pin set	1	
⑧ Instruction manual	1	

WR-09070

#### \* Handling Instructions on Seal Set

1. Store the seal set in a dark, cool place. (Be sure to use the seal set before the guarantee date indicated on the box expires.)
2. The adhesive agent and primer will begin curing when they are mixed with or brought into contact with water. Hence, be sure to store them under a sealed condition.
3. Once the adhesive agent and primer are opened, they can not be used again in the future by storing them.
4. If the seal set has been stored at a low temperature, previous to use, be sure to recover the working temperature of the materials.
5. The primer contains a flammable solvent. Hence, keep it away from the fire.

WR-09071

# COMPONENTS

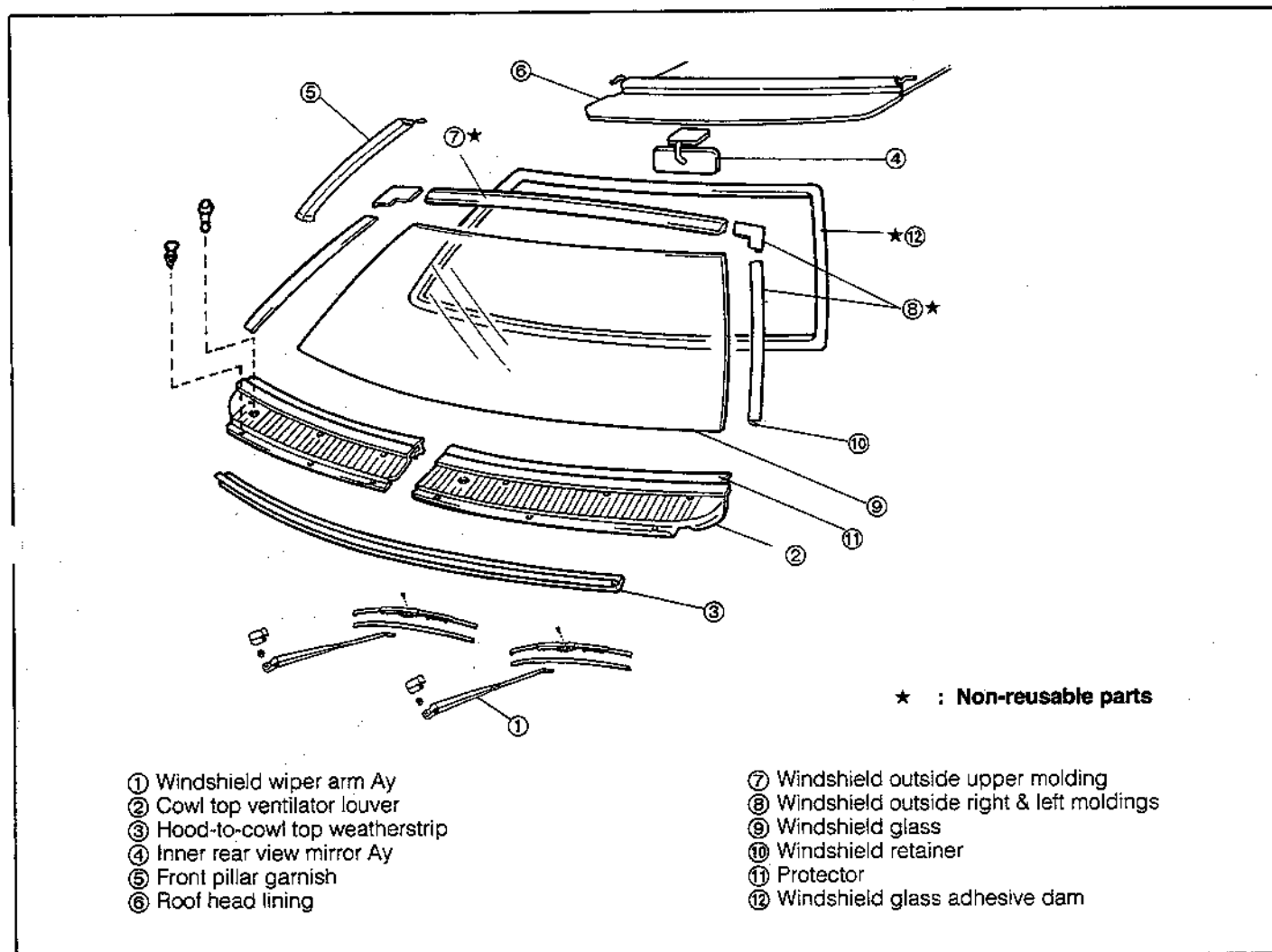


Fig. 9-68

WR-09072

## REMOVAL

1. Affix the protective tape to the body.

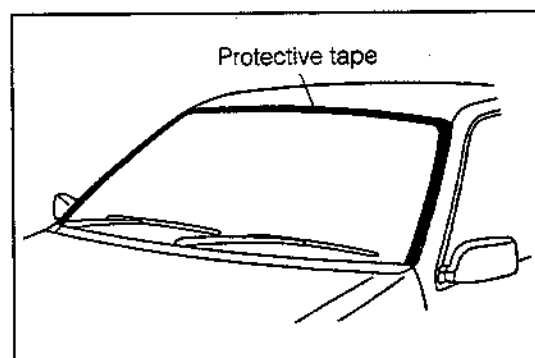


Fig. 9-69

WR-09073

2. Removal of windshield wiper arm assembly

- (1) Remove the front wiper arm cover.
- (2) Remove the windshield wiper arm assembly by removing the attaching nut of the front wiper arm assembly.

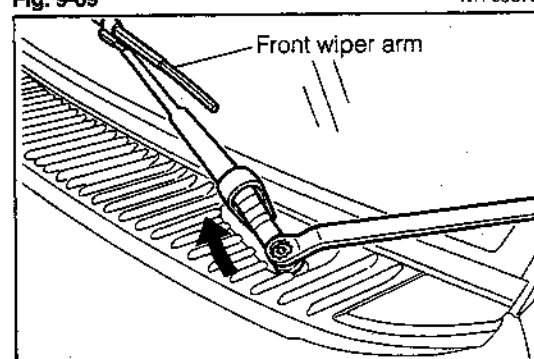


Fig. 9-70

WR-09074

## BODY

3. Detach the clip. Remove the cowl top ventilator louver and the hood-to-cowl top weatherstrip.

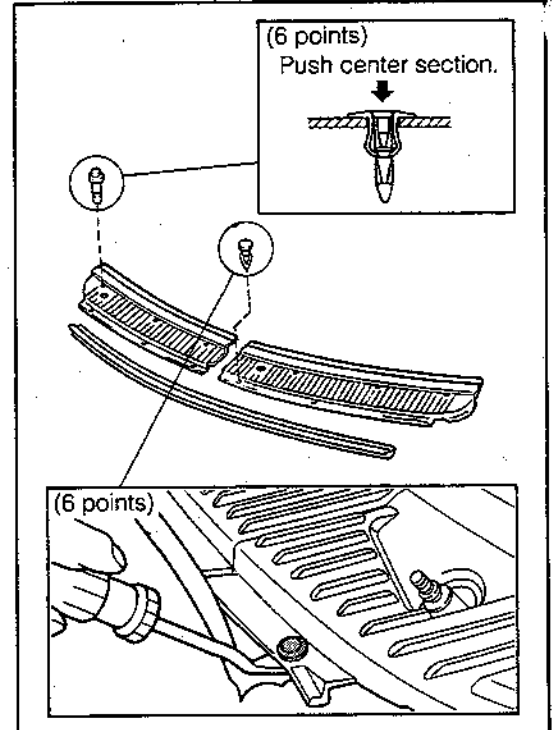


Fig. 9-71

WR-09075

4. Remove the inner rear-view mirror assembly by removing the cover and three screws.

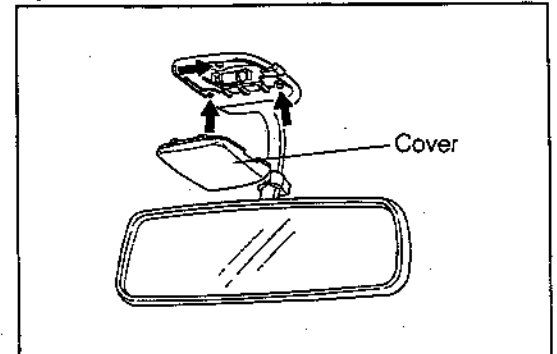


Fig. 9-72

WR-09076

5. Removal of front pillar garnish
  - (1) Disengage the clip by prying its fitting position, using a screwdriver wrapped with a protective tape.
  - (2) Remove the front pillar garnish by pulling it up.

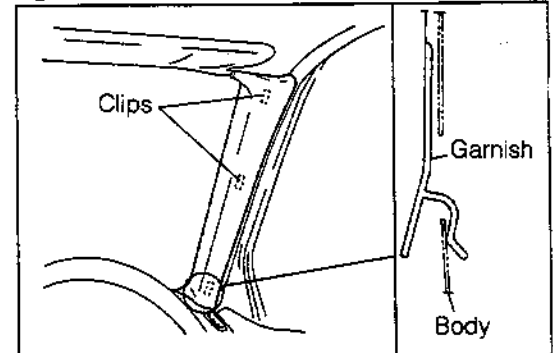


Fig. 9-73

WR-09077

6. Remove the windshield outside upper, right and left moldings.  
Remove the molding by cutting off the leg section of the molding, using a cutter knife.

**NOTE:**

Be very careful not to scratch the paint finish surface of the body.

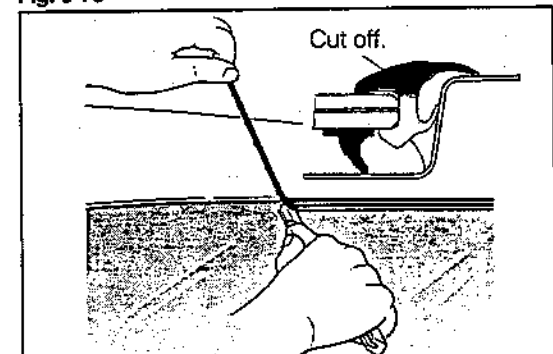


Fig. 9-74

WR-09078

7. Windshield glass removal

- (1) Pass a piano wire through the adhesion layer from the interior. Tie each end of the piano wire to a wooden piece or the like.

**NOTE:**

When passing the piano wire through the adhesion layer, care must be exercised not to scratch the interior or exterior appointment trim.

- (2) Separate the adhesion layer by pulling each end of the piano wire alternately.

**NOTE:**

- Cut the adhesion layer at the glass side whenever possible.
- Care must be exercised not to scratch the interior or exterior appointment trim during the cutting.

- (3) When glass at lower side is separated:

Apply a plastic protective plate, such as B4-sized board for stationery use, on the instrument panel section where the piano wire may contact during the operation.

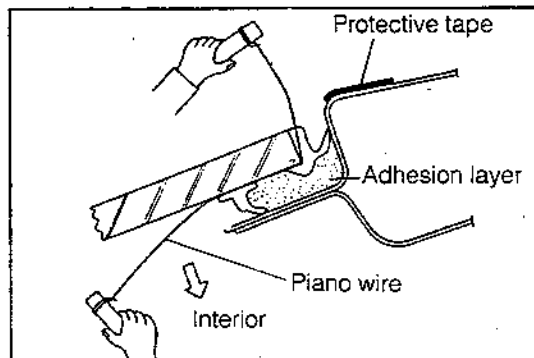


Fig. 9-75

WR-09079

**CHECK AND CLEANING**

**1. Cleaning of Adhesion Surface of Body**

- (1) Smooth any irregularities on the adhesion surface of the body, using a knife or the like. Clean the body surface and adhesion surface with white gasoline.

**NOTE:**

Do not remove the adhesion layer to such an extent that the body may be exposed. After the adhesion layer has been removed, allow the adhesion surface to dry.

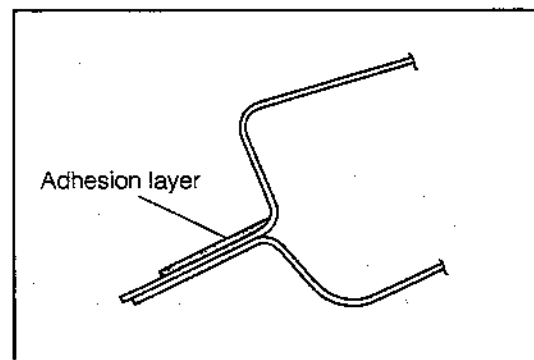


Fig. 9-76

WR-09080

**2. Cleaning of Glass Surface**

- (1) If the glass is reused, scrape away thoroughly any adhesive agent or dirt which may have collected on the glass. Then, clean the adhesion surface with white gasoline.

**NOTE:**

As for the laminated glass, there is a possibility that white gasoline may penetrate into the glass from the edges, affecting the intermediate film. Hence, do not use white gasoline excessively during the cleaning.

- (2) When a new glass is used, clean the glass margin 20 - 30 mm (0.79 - 1.18 inches) from the glass edge with white gasoline.

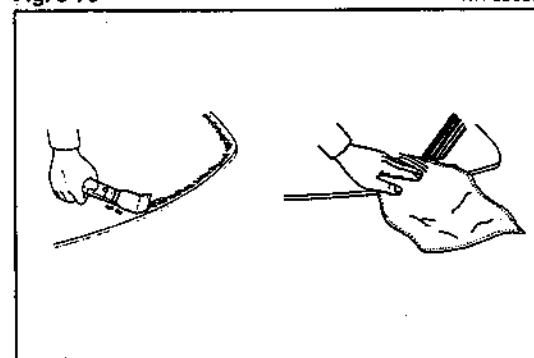


Fig. 9-77

WR-09081

## BODY

### INSTALLATION

1. Windshield retainer installation
2. Window glass adhesive dam installation
  - (1) Affix the dam at the position 8 mm (0.31 inch) from the glass edge.
  - (2) Make cut-out sections at two or three points on the corner, using a cutter knife.

#### NOTE:

When affixing the dam, do not touch the cleaned surface by your hand.

3. Primer application
  - (1) Apply the primer M for paint surface use to the roof pillar section and cowl section, using a clean brush or gauze.
  - (2) Allow these sections to dry at least five minutes after the application.
  - (3) Apply the primer G for glass surface use to the glass adhesion surface and glass side surface, using a sponge or gauze.

- (4) After completion of the primer application, install the glass within the time given below.

#### Specified Time

Primer G: Within 70 Minutes

Primer M: Within 120 Minutes

#### NOTE:

1. The primer application strengthens the adhesive force. Hence, make sure that the primer is applied without any skipped portion. Also, it should be noted that the adhesive force drops if the primer is applied too thickly.
2. The primer once opened should not be reused.

4. Windshield glass installation

- (1) Application of adhesive agent

- Cut the discharge port of the adhesive agent cartridge to the following dimension given in the table below.

Unit: mm (inch)

Presence/nonpresence of adhesion layer at body side	Height of adhesive agent	Discharge port of cartridge
When layer is removed:	8 - 10 (0.31 - 0.39)	10 (0.39)
When layer is not removed:	3.5 - 5 (0.14 - 0.20)	5 (0.20)

- Using a sealant gun or air gun, apply a bead of adhesive agent over the entire periphery of the glass adhesion surface along the dam.

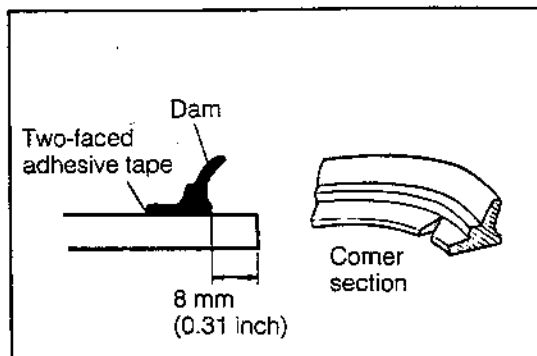


Fig. 9-78

WR-09082

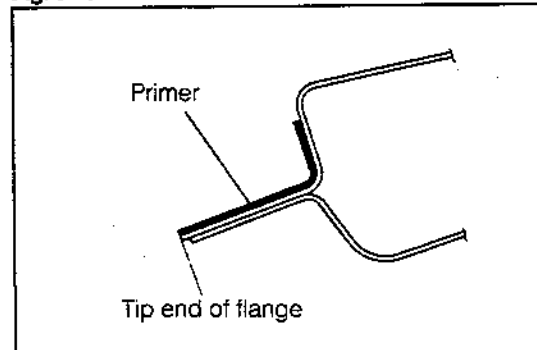


Fig. 9-79

WR-09083

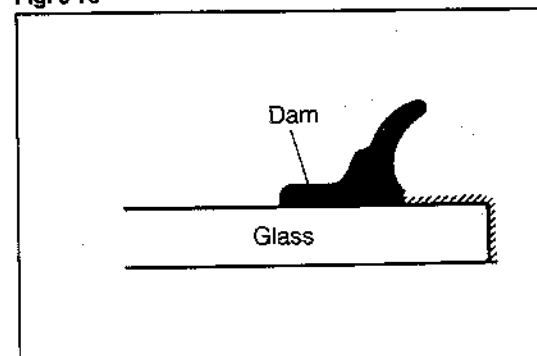


Fig. 9-80

WR-09084

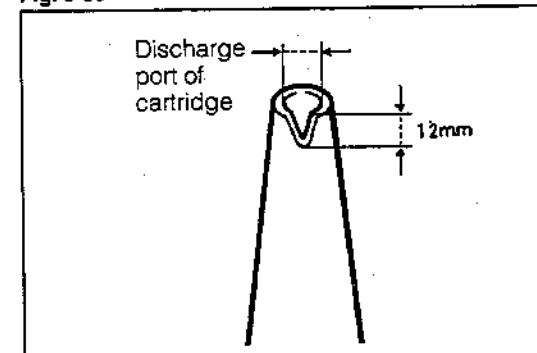


Fig. 9-81

WR-09085

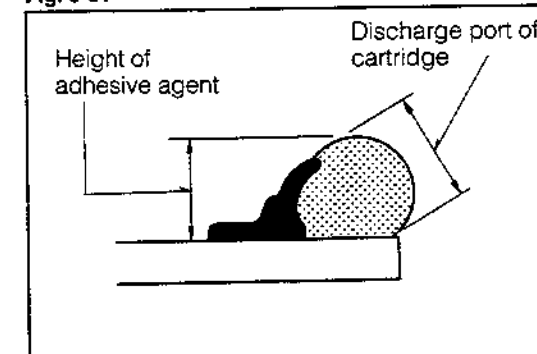


Fig. 9-82

WR-09086

**(2) Glass installation**

While aligning the mating marks of the glass with the windshield retainers, install the glass on the retainers, using a sucking disc or the like.

Press the glass against the opening flange thoroughly, while pushing the entire surface of the glass lightly.

**(3) Using a spatula, remove any excessive adhesive agent or add the adhesive agent where it is lacking.**

**NOTE:**

Be sure to thoroughly apply the adhesive agent up to the glass edge.

**5. Installation of windshield outside moldings**

Attach the side moldings (RH & LH) to the upper molding. Then, install them in place.

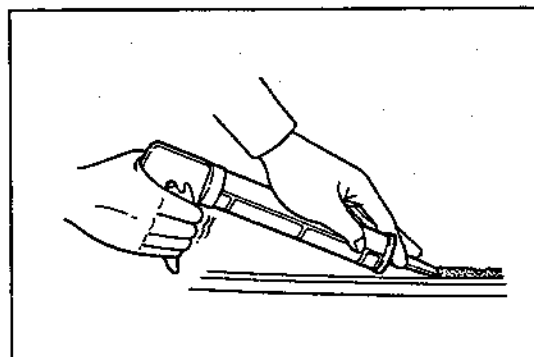
**NOTE:**

Remove any excessive adhesive agent on the paint finish surface with white gasoline.

**6. Water leakage check and repairs**

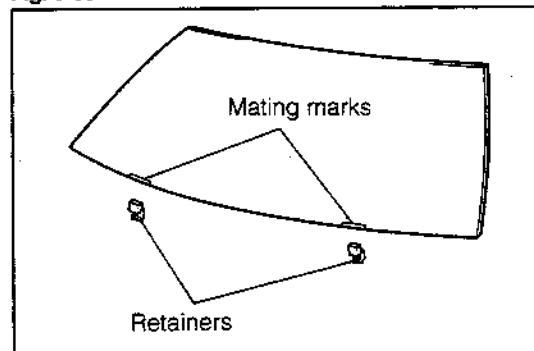
Perform the water leakage check about one hour after the glass installation. If the water leakage exists, dry the leaky point. Then, repair the leaky point with the adhesive agent or non-drying window sealer.

**7. Install the roof headlining.**



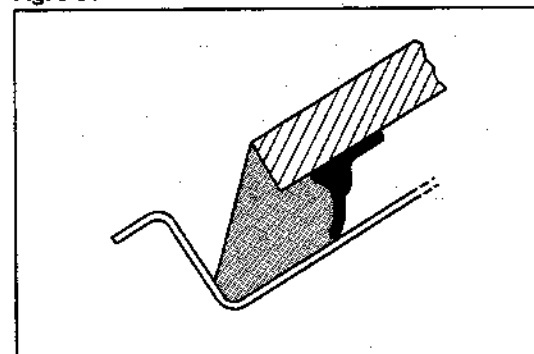
**Fig. 9-83**

WR-09087



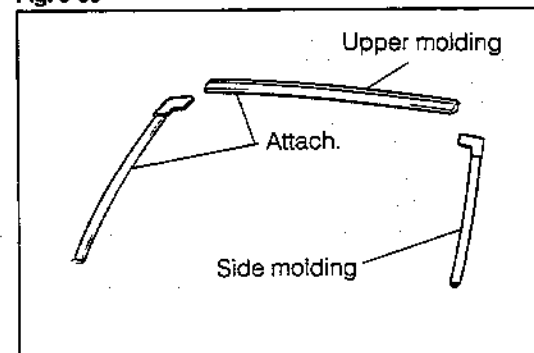
**Fig. 9-84**

WR-09088



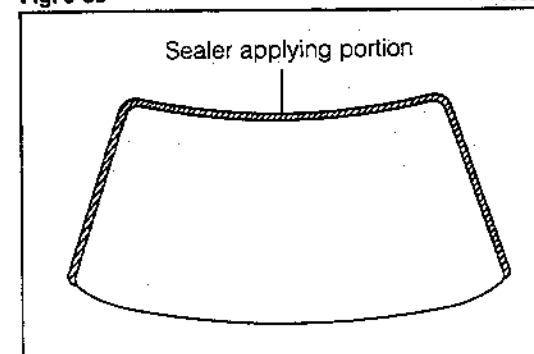
**Fig. 9-85**

WR-09089



**Fig. 9-86**

WR-09090



**Fig. 9-87**

WR-09091

## BODY

8. Install the front pillar garnish.
9. Install the inner rear-view mirror assembly. (See Fig. 9-72.)
10. Install the cowl top ventilator louver and hood-to-cowl top weatherstrip.

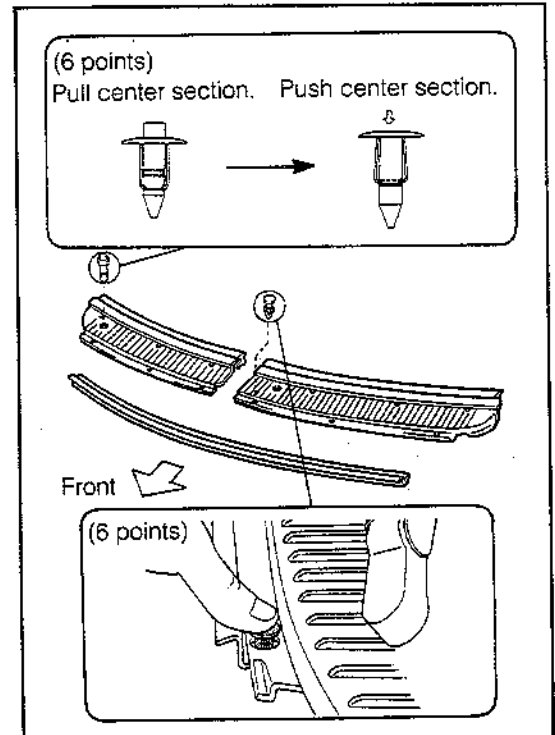


Fig. 9-88

WR-09092

11. Installation of windshield wiper arm assembly
  - (1) Operate the wiper motor, until it assumes the automatic stopping position.
  - (2) Set the wiper arms at the positions indicated in the right figure.
  - (3) Tighten the nut and attach the front wiper arm cover.

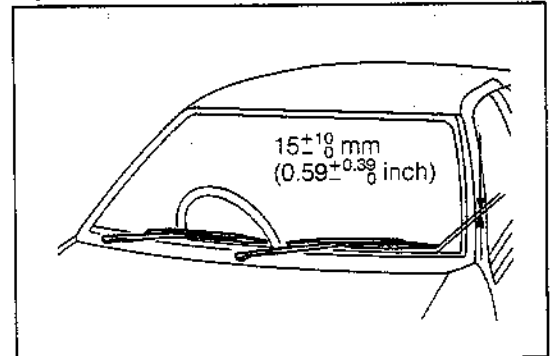


Fig. 9-89

WR-09093

## BACK DOOR GLASS

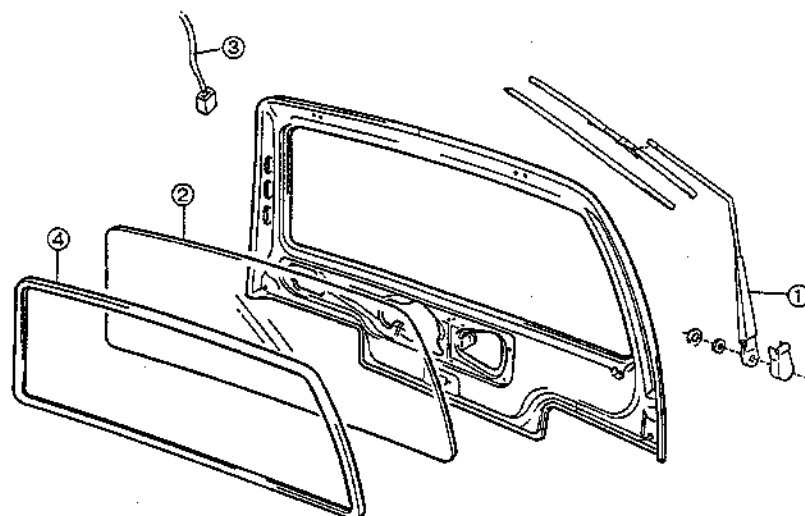
### ARTICLES TO BE PREPARED

Part nomenclature	Use
Non-drying window sealer	For use in filling after glass installation or in repairing water leakage
Tape	Prevention of damage to paint finish surface
Brush	For use in applying soap water
Cutter or knife	For use in cutting molding
Operation rope (approx. 3 - 4 mm dia.)	For use in installing glass
Soap water	For use in installing glass
Solvent (Alcohol, white gasoline)	For use in cleaning adhesion surface

WR-09094



**COMPONENTS**



- ① Rear wiper arm Ay
- ② Coupler (for defogger use)
- ③ Back door glass
- ④ Back door glass weatherstrip

**Fig. 9-90**

WR-09095

**REMOVAL**

- (1) Remove the rear wiper arm assembly. [Rear wiper-equipped vehicle only. (See Fig. 9-166.)]
- (2) Remove the coupler for defogger use. [Defogger-equipped vehicle only.]
- (3) Remove the rear spoiler. [Rear spoiler-equipped vehicle only. (See page 9-36.)]
- (4) Back door glass

Push the lip section of the weatherstrip outward from the body flange, using a common screwdriver or a bamboo spatula. This operation is performed from the vehicle interior.

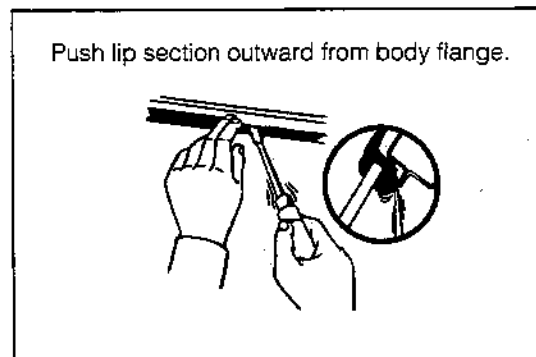
**NOTE:**

Be very careful not to scratch the body paint finish surface.

- (5) Remove the back door weatherstrip from the back door glass.

**INSPECTION AND CLEANING**

Clean the adhesion sections of the glass and body, using a solvent such as alcohol or white gasoline.



**Fig. 9-91**

WR-09096

WR-09097

## BODY

### INSTALLATION

1. Install the back door glass weatherstrip to the back door glass.
2. Install the back door glass, as follows:
  - (1) Set an operation rope to the weatherstrip.

#### NOTE:

Never reuse any weatherstrip which exhibits deterioration. Failure to observe this instruction will cause water leakage.

- (2) Soap water application

Apply soap water to the body flange contact sections of the weatherstrip. Also, apply soap water to the body flange.

- (3) Install the back door glass to the body.

- (4) Hold the one end of the rope that is suspending in the vehicle interior. Pull the rope in such an angle that allows the weatherstrip to cross over the flange. While so doing, pound the surface of the glass at points adjacent to the weatherstrip using one's palm from the vehicle exterior in order that the windshield may be installed into position.
- (5) Pound the surface of the glass using one's palm from the vehicle exterior so that the windshield may be settled in place.
- (6) Application of non-drying window sealer  
Working from the outside, apply the non-drying window sealer between the weatherstrip and the glass as well as between the weatherstrip and the body.

#### NOTE:

Remove any excessive sealer.

- (7) Water leakage check  
If water leakage exists, dry the leaky point thoroughly. Then, fill the leaky point with the non-drying sealer.
3. Connect the coupler for defogger use. [Defogger-equipped vehicle only]
4. Installation of rear wiper arm assembly [Rear wiper-equipped vehicle only]
  - (1) Operate the wiper motor, until it assumes the automatic stopping position.
  - (2) Install the rear wiper arm, aligning the arm with the bottom line of the defogger pattern.

Installation position:  
Bottom line of pattern  $\pm 5$  mm ( $\pm 0.2$  inch)

  - (3) Install the wiper link cap.
5. Install the rear spoiler. [Rear spoiler-equipped vehicle only. (See page 9-37.)]

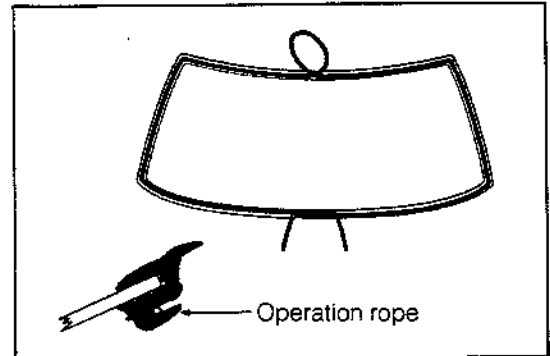


Fig. 9-92

WR-09098

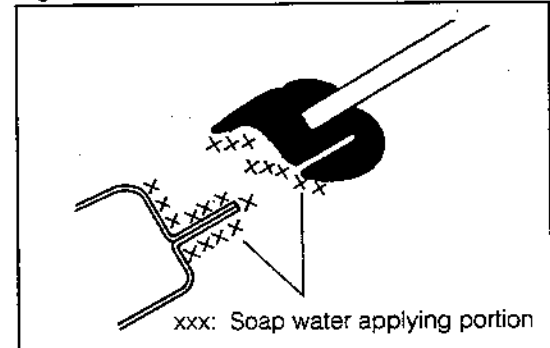


Fig. 9-93

WR-09099

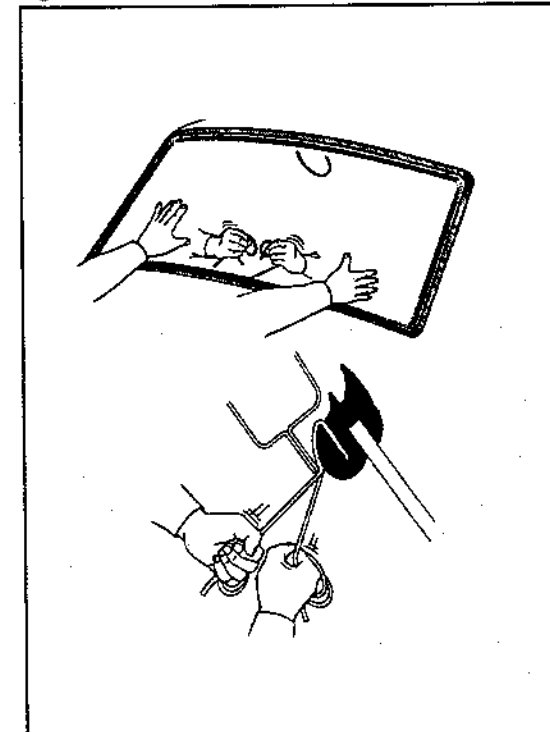


Fig. 9-94

WR-09100

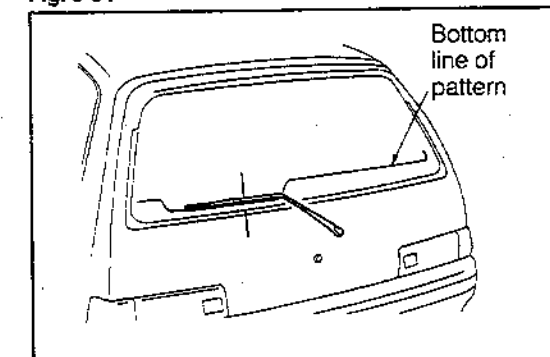


Fig. 9-95

WR-09101

## QUARTER WINDOW GLASS COMPONENTS

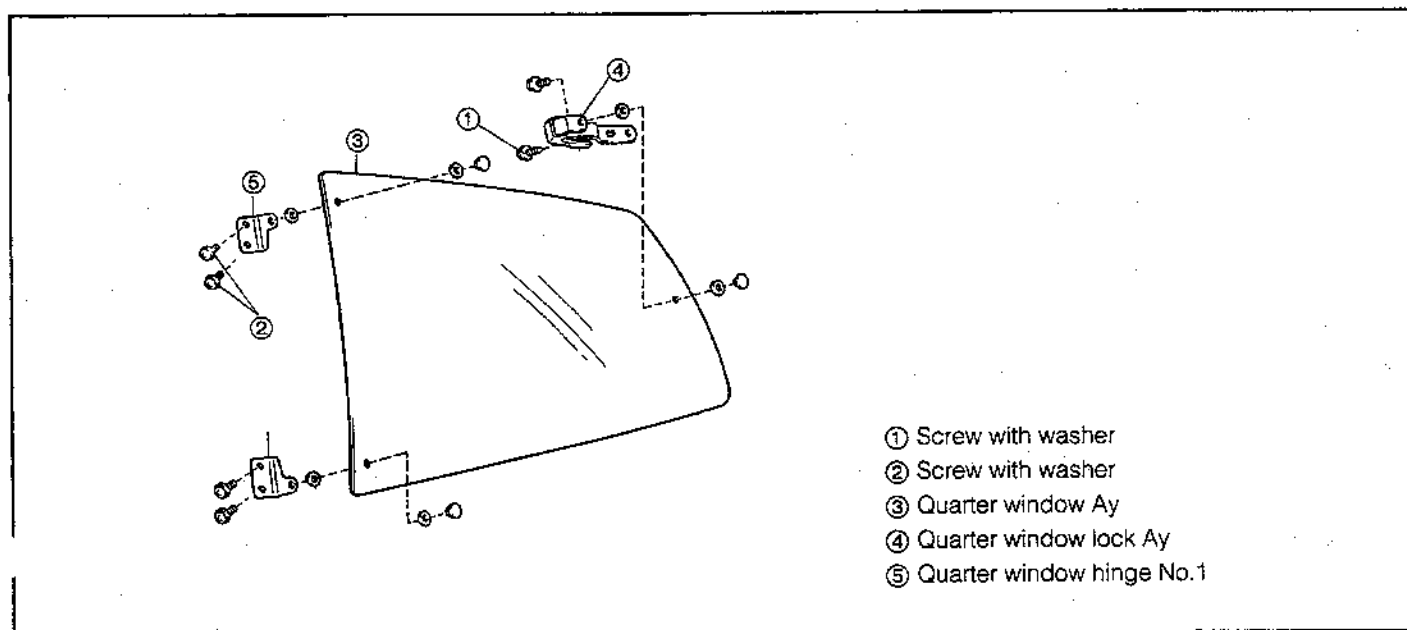


Fig. 9-96

WR-09102

### REMOVAL

1. Removal of quarter window assembly
  - (1) Remove the screws attaching the quarter window lock to the body.
  - (2) Remove the screws attaching the quarter window hinge No.1 to the body.
  - (3) Remove the quarter window assembly from the body.
2. Remove the quarter window lock and quarter window hinge No.1 from the quarter window assembly.

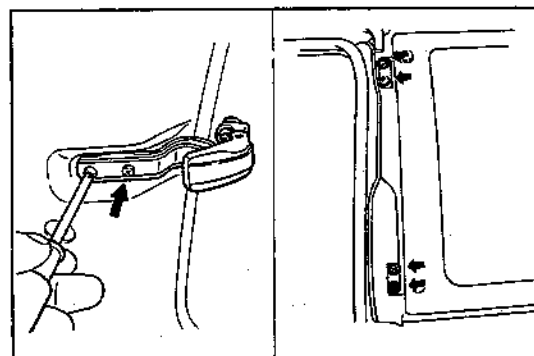


Fig. 9-97

WR-09103

### INSTALLATION

1. Install the quarter window lock and quarter window hinge No.1 to the quarter window assembly.
2. Install the quarter window assembly to the body, as follows:
  - (1) Install the quarter window hinge No.1 to the body with the screws.
  - (2) Install the quarter window lock to the body with the screws.

#### NOTE:

When tightening the screw, fill the nut with an adhesive agent (instantaneous adhesive agent).

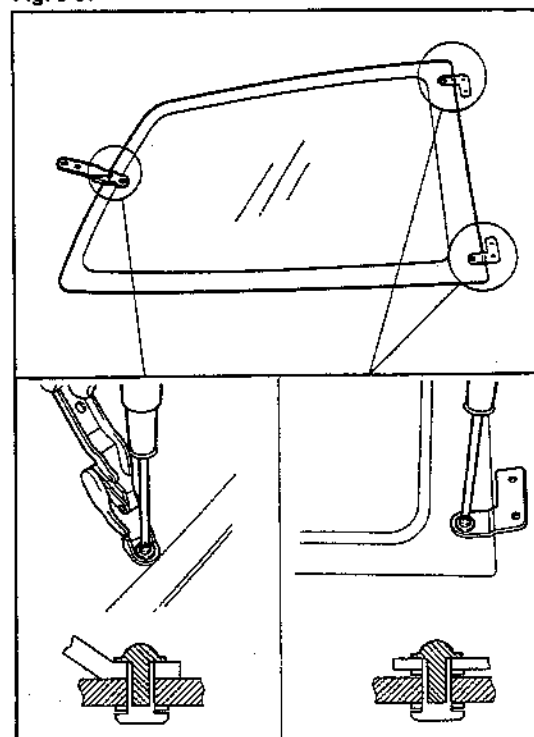


Fig. 9-98

WR-09104

## BODY

### OUTSIDE MOLDINGS

#### ARTICLES TO BE PREPARED

	Shape and nomenclature of item	Use
Lubricants and others	Beta seal 552 (Adhesive agent) (Cartridge capacity: 333 ml)	For use in installing outside moldings
	Solvents (Alcohol, white gasoline)	For use in cleaning body surface and molding surface
	Plastic spatula	For use in removing outside moldings

WR-09105

#### COMPONENTS

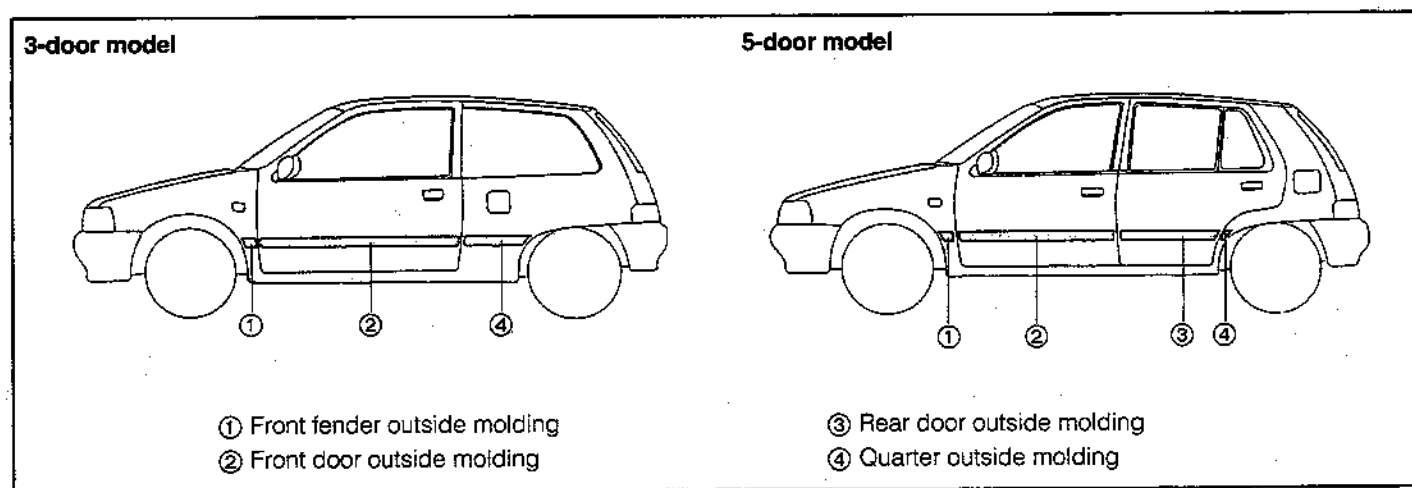


Fig. 9-99

WR-09106

#### REMOVAL

##### 1. Removal of Outside Moldings

- (1) Raise the lower end of the molding. Insert a plastic spatula into that section.

- (2) While raising the lower side of the molding, remove the molding with a plastic spatula.

##### NOTE:

Be very careful not to scratch the body.

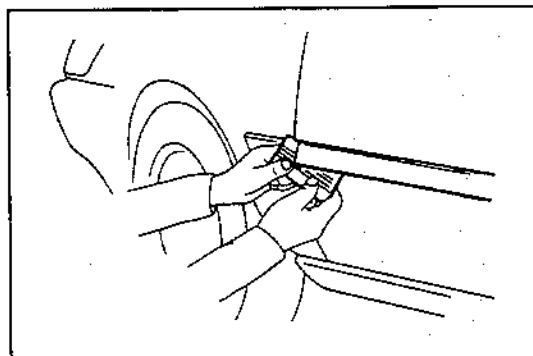


Fig. 9-100

WR-09107

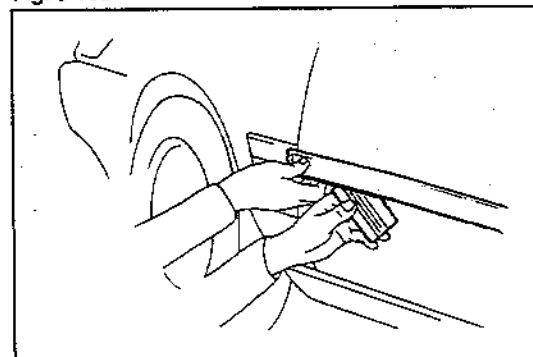


Fig. 9-101

WR-09108

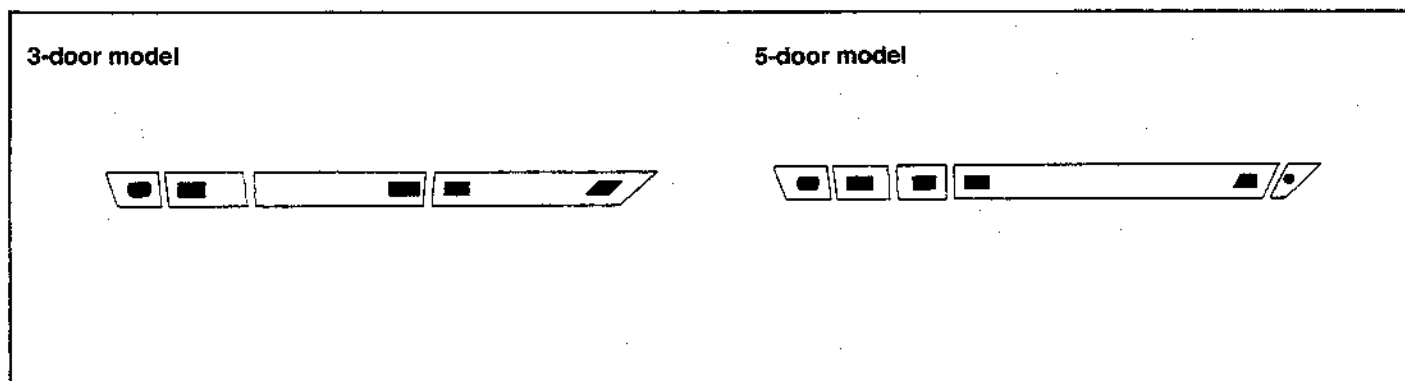
#### INSPECTION AND CLEANING

Remove any adhesive agent remaining on the body surface with a cloth dampened with white gasoline.

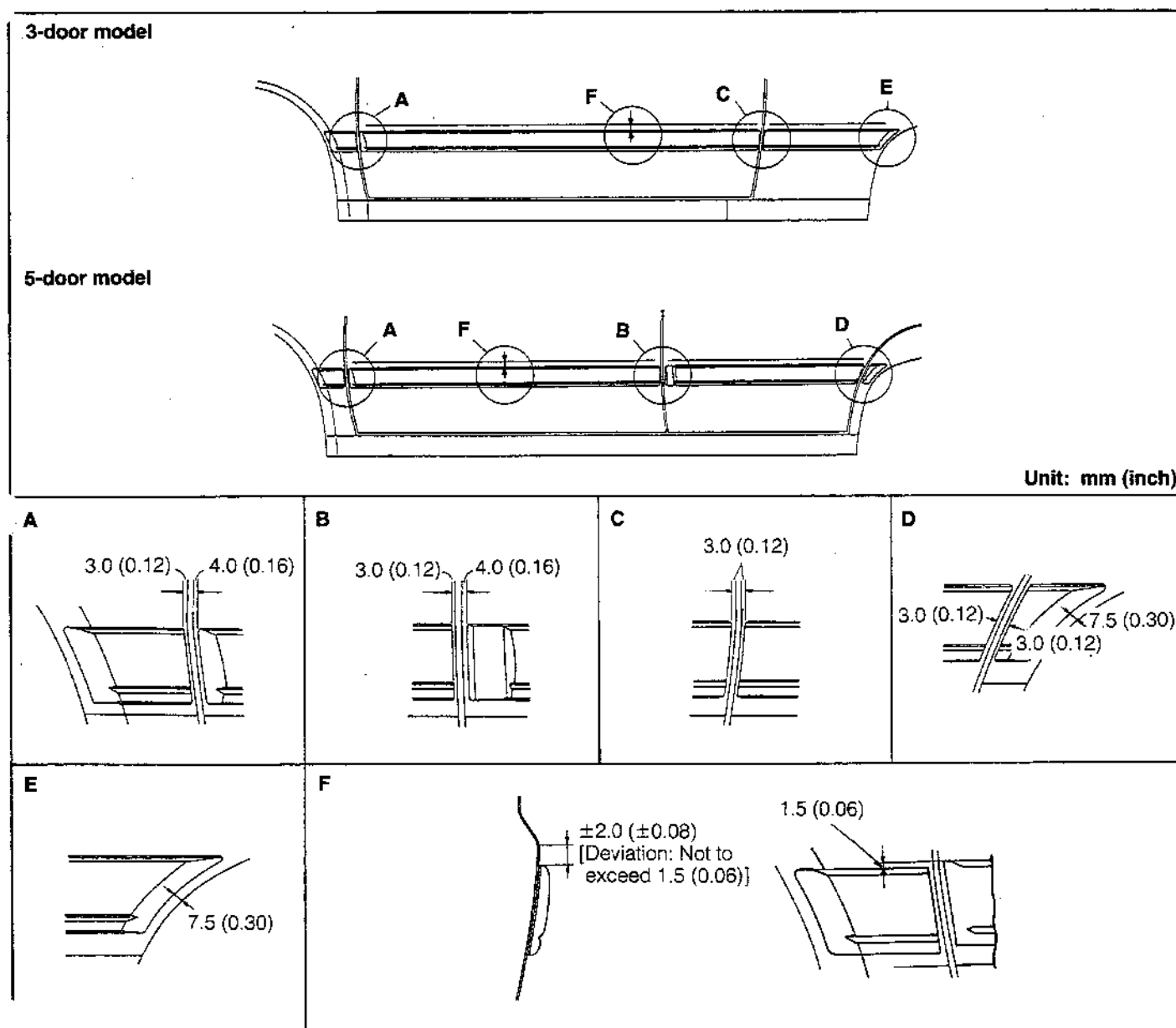
WR-09109

## INSTALLATION

- (1) Heat the outside molding and body with an infrared lamp or the like.
- (2) Remove the liner paper from the molding. Apply the adhesive agent to the points indicated in the figure below.



- (3) Position the molding at the specified points of the body. Press the molding lightly.



## BODY

---

- (4) Press the molding against the body, using a roller or the like. Applying pressure: about 5 kg (11 lb)
- (5) Press the end sections of the molding firmly by your hand.


**NOTE:**

- 1. When removing the liner paper, care must be exercised to ensure that no dirt or the like may get to the surface of the two-faced adhesive tape.
- 2. Never allow the adhesive agent to get to the two-faced adhesive tape.
- 3. Affix the molding within three minutes after the adhesive agent has been applied.

WR-09112

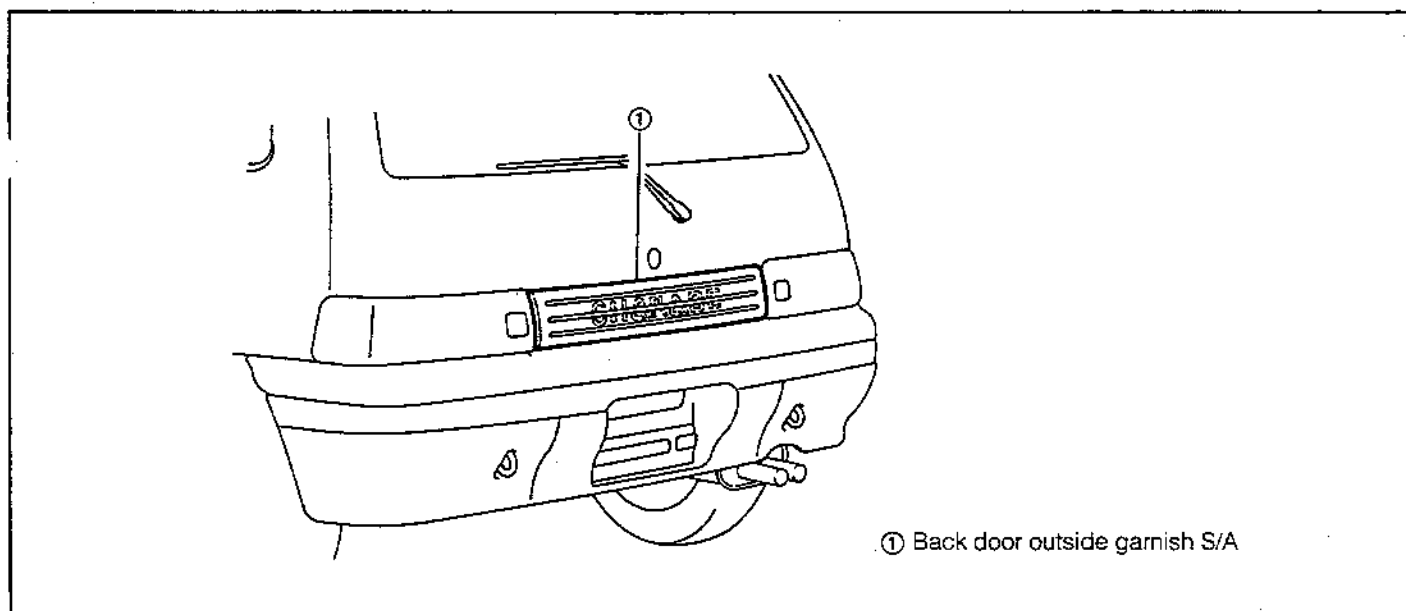
# **BACK DOOR GARNISH**

## **ARTICLES TO BE PREPARED**

	Shape	Nomenclature and part number	Use
Tools		Screwdriver type clip clamping tool by Banzai, Ltd.	For use in removing back door garnish
Lubricants and others	Alcohol, white gasoline		

WR-09113

## **INSTALLATION POSITION**



**Fig. 9-104**

WR-09114

## **REMOVAL**

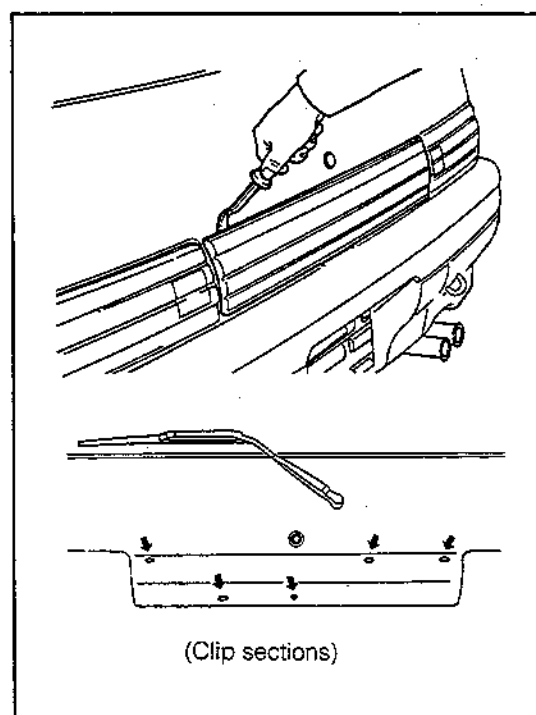
1. Detach the clip sections from the body, using a screwdriver type clip clamping tool wrapped with a protective tape.
2. Remove the garnish slowly, starting from the end of it.

### **NOTE:**

Remove the garnish slowly, for it has been attached by a two-faced adhesive tape.

## **INSTALLATION**

1. Clean the body surface with alcohol or white gasoline.
2. Install the garnish and press the two-faced adhesive tape section.




**Fig. 9-105**

WR-09115

## BODY

### BACK DOOR OUTSIDE GARNISH NO.2

#### ARTICLES TO BE PREPARED

	Shape	Nomenclature and part number	Use
Tools		Screwdriver type clip clamping tool by Banzai, Ltd.	For use in removing back door garnish
Lubricants and others	Alcohol, white gasoline		

WR-09116

#### COMPONENTS

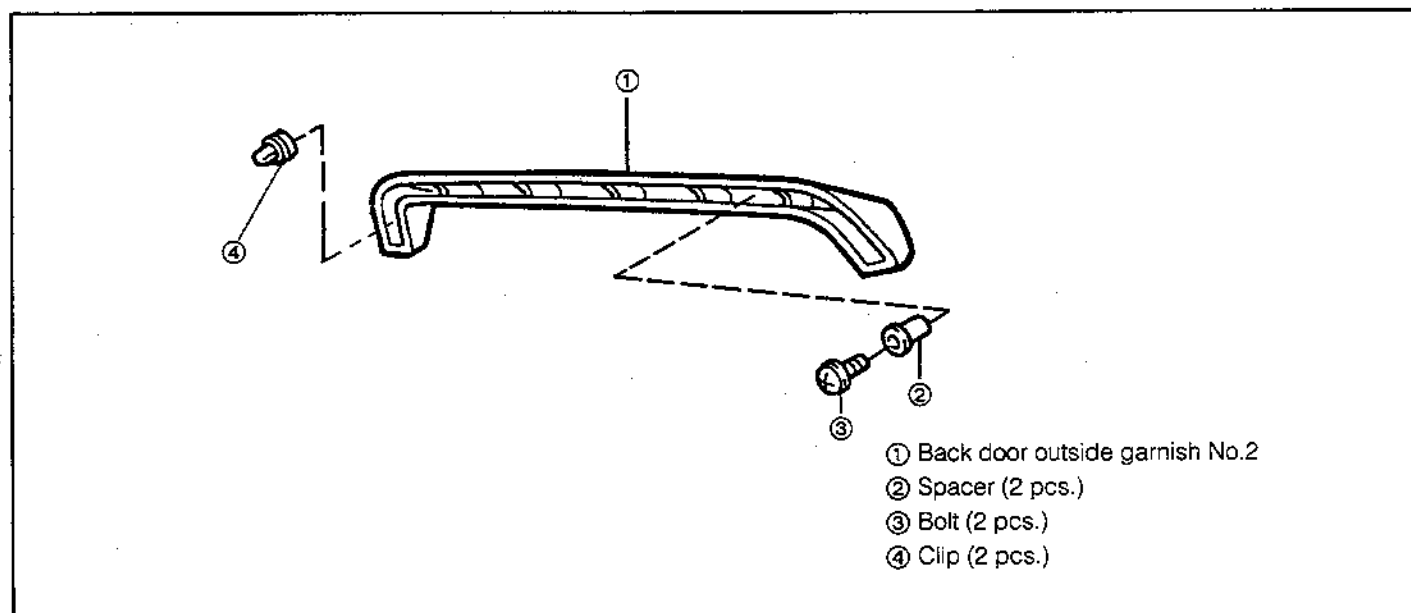


Fig. 9-106

WR-09117

#### REMOVAL

1. Remove the attaching bolt of the back door outside garnish No.2, using a socket wrench.

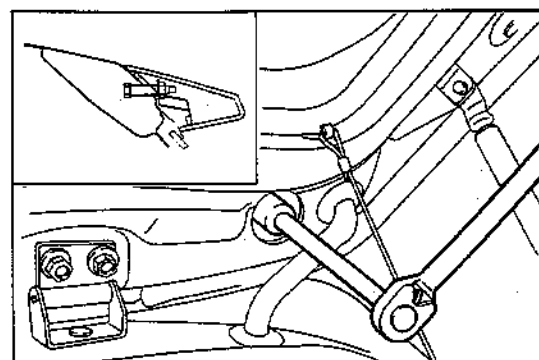


Fig. 9-107

WR-09118

2. Back door outside garnish No.2  
(1) Detach the clip sections from the body, using a screwdriver type clip clamping tool wrapped with a protective tape.

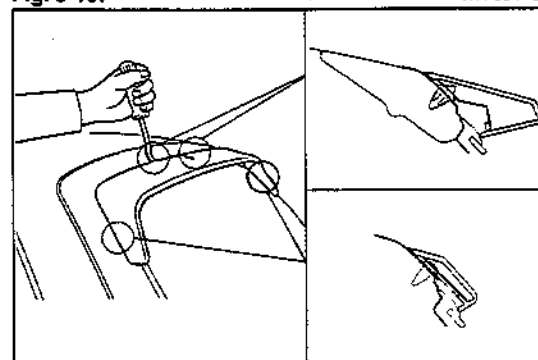


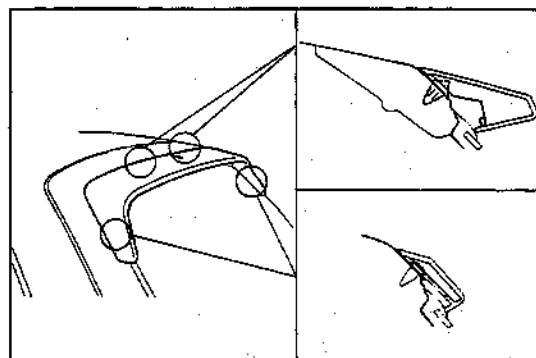
Fig. 9-108

WR-09119



# **INSTALLATION**

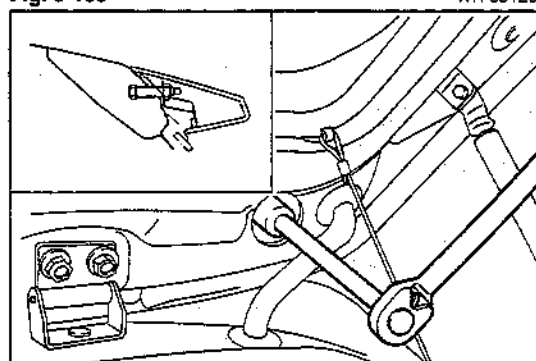
1. Clean the installation surface (body side) of the back door outside garnish No.2 with alcohol or white gasoline.
2. Installation of back door outside garnish No.2
  - (1) Attach the clips to the back door outside garnish No.2. Then, install the garnish to the body.



**Fig. 9-109**

WR-09120

- (2) Secure the back door outside garnish No.2 to the body with the two bolts.




**Fig. 9-110**

WR-09121

## BODY

### FRONT DOOR

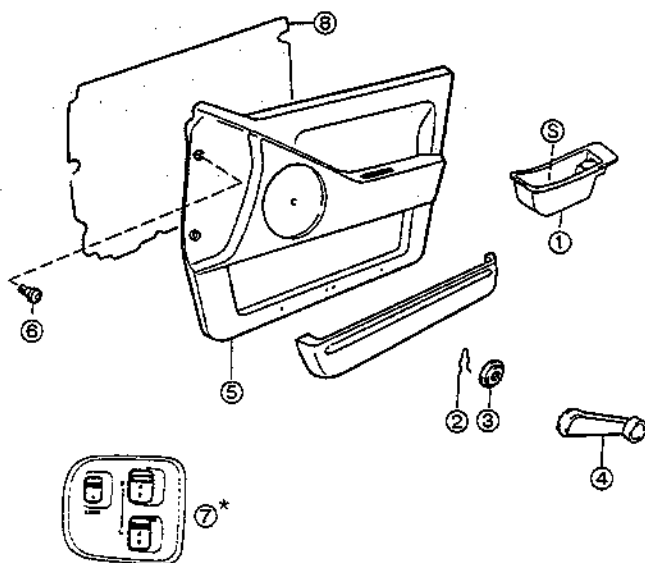
#### ARTICLES TO BE PREPARED

	Shape	Nomenclature and part number	Use
Tools		Screwdriver type clip clamping tool by Banzai, Ltd.	For use in removing door trim
Lubricants and others	MP grease, butyl tape, soap and brush, etc.		

WR-09122

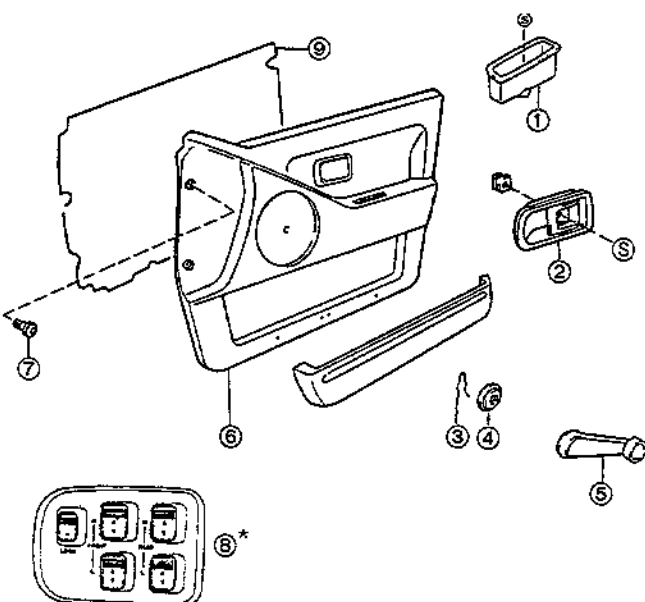
### DOOR TRIM AND SERVICE HOLE COVER COMPONENTS

#### 3-door model



- ① Door pull handle
- ② Shaft snap ring
- ③ Regulator inside handle plate
- ④ Front door window regulator handle Ay
- ⑤ Front door trim panel Ay
- ⑥ Clip
- ⑦ Power window master switch Ay
- ⑧ Front door service hole cover S/A

#### 5-door model



- ① Door pull handle
- ② Door inside handle Ay
- ③ Shaft snap ring
- ④ Regulator inside handle plate
- ⑤ Front door window regulator handle Ay
- ⑥ Front door trim panel Ay
- ⑦ Clip
- ⑧ Power window master switch Ay
- ⑨ Front door service hole cover S/A

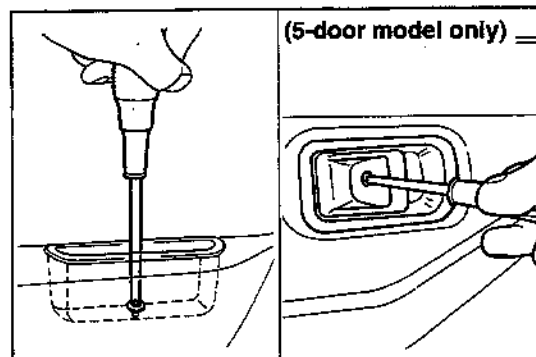
\* : Power window-equipped vehicle only

Fig. 9-111

WR-09123

# **REMOVAL**

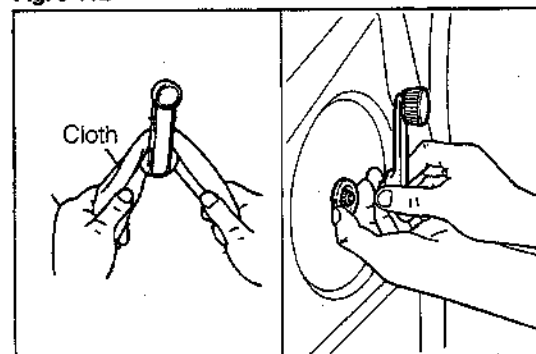
1. Remove the door pull handle.  
(3-door model: two screws, 5-door model: one screw)
2. Remove the one attaching screw of the door inside handle. (5-door model only)



**Fig. 9-112**

WR-09124

3. Removal of front door window regulator handle assembly
  - (1) Detach the shaft snap ring, using a cloth.
  - (2) Remove the front door window regulator handle assembly and regulator inside handle plate.



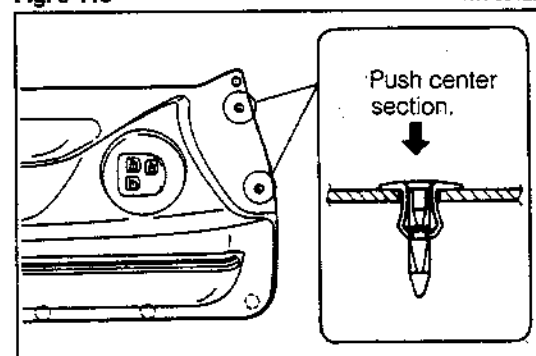
**Fig. 9-113**

WR-09125

4. Detach the two clips by pushing the center section of each clip.

## **NOTE:**

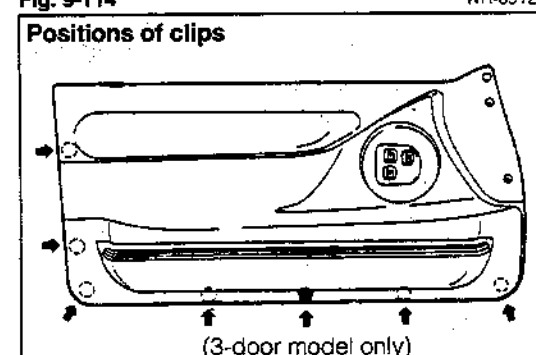
Never push the center section excessively. If pushed excessively, the center section of the clip may fall off.



**Fig. 9-114**

WR-09126

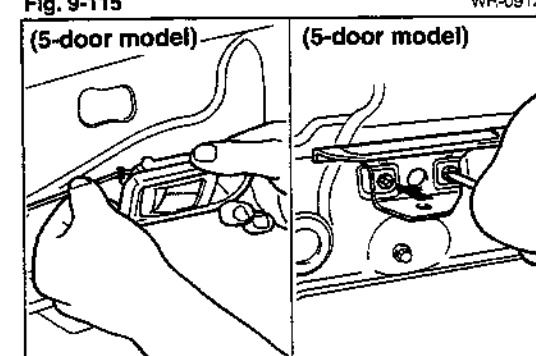
5. Removal of front door trim panel assembly
  - (1) Remove the front door trim panel assembly, using the clip clamping tool.
  - (2) Remove the coupler for power window use. (Power window-equipped vehicle only)
  - (3) Remove the power window master switch assembly from the front door trim panel assembly. (Power window-equipped vehicle only)



**Fig. 9-115**

WR-09127

6. Remove the door inside handle assembly and bracket.



**Fig. 9-116**

WR-09128

## BODY

7. Remove the front door service hole cover subassembly.

### INSTALLATION

1. Installation of front door service hole cover subassembly
  - (1) Affix butyl tape to the points indicated in the right figure.
  - (2) Insert the cover at the lower end into the aperture at the lower side of the door panel. Affix adhesive tape on the holes.

#### NOTE:

1. Never plug the clip hole of the door trim with adhesive tape.
  2. Replace any service hole cover which exhibits rupture.
2. Install the door inside handle assembly and bracket.  
(5-door model: See Fig. 9-116.)  
(3-door model: See Fig. 9-117.)

3. Installation of front door trim panel assembly
  - (1) Ensure that the clips are attached to the front door trim panel assembly.
  - (2) Install the power window master switch assembly to the front door trim panel assembly. (Power window-equipped vehicle only)
  - (3) Connect the coupler for power window use. (Power window-equipped vehicle only)
  - (4) Install the front door trim panel assembly to the front door.

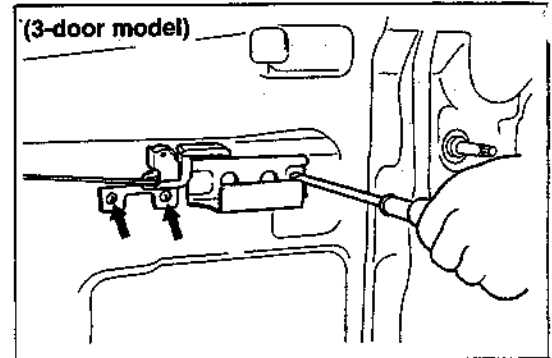
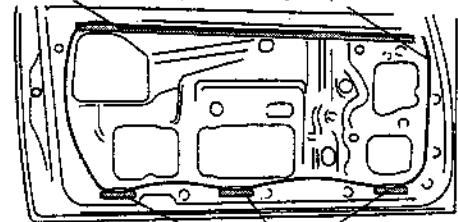


Fig. 9-117

WR-09129

#### 3-door model

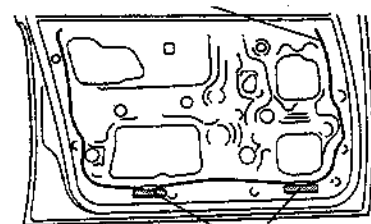
Affix adhesive tape. Butyl tape



Affix adhesive tape.

#### 5-door model

Butyl tape

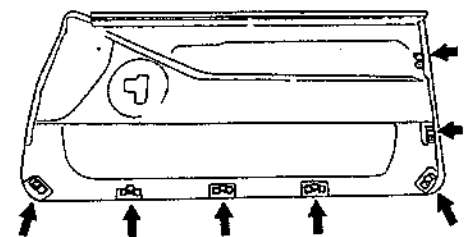


Affix adhesive tape.

Fig. 9-118

WR-09130

#### 3-door model



#### 5-door model

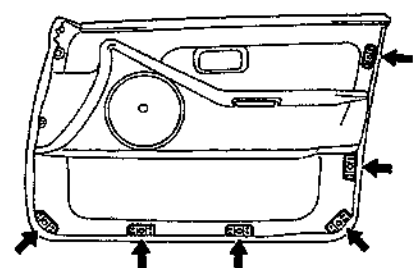


Fig. 9-119

WR-09131

1. Attachment of clips

- (1) Pull up the center section of each clip. Set it to the front door trim panel.
- (2) Push the center section of the clip.

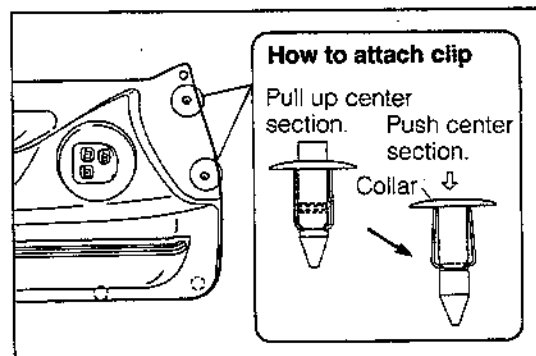


Fig. 9-120

WR-09132

5. Installation of front door window regulator handle assembly

- (1) Close the door glass fully.
- (2) Set the regulator inside handle plate to the trim side.
- (3) Set the shaft snap ring to the front door window regulator handle.

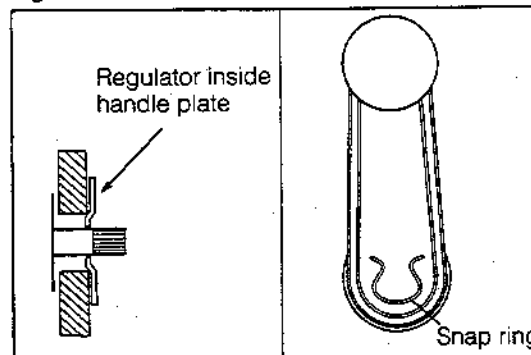


Fig. 9-121

WR-09133

- (4) Install the front door window regulator handle in the angle specified in the right figure.

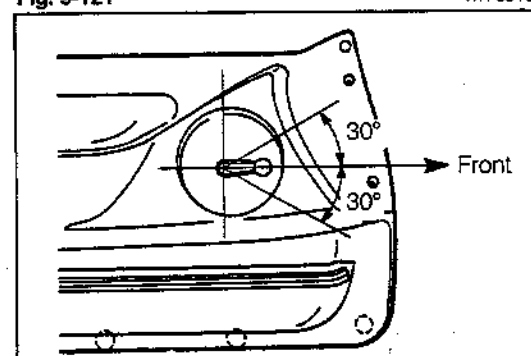


Fig. 9-122

WR-09134

5. Install the door pull handle.

(3-door model: two screws, 5-door model: one screw)

- Install the door inside handle assembly. (5-door model only)

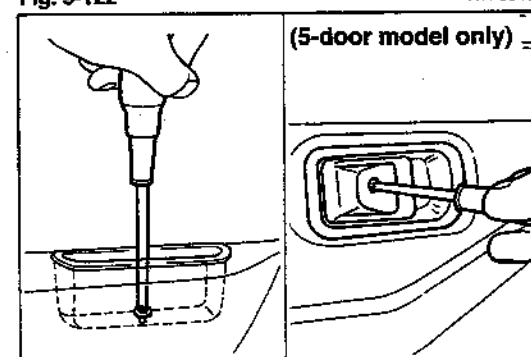


Fig. 9-123

WR-09135

## BODY

### DOOR LOCK AND OUTSIDE DOOR HANDLE COMPONENTS

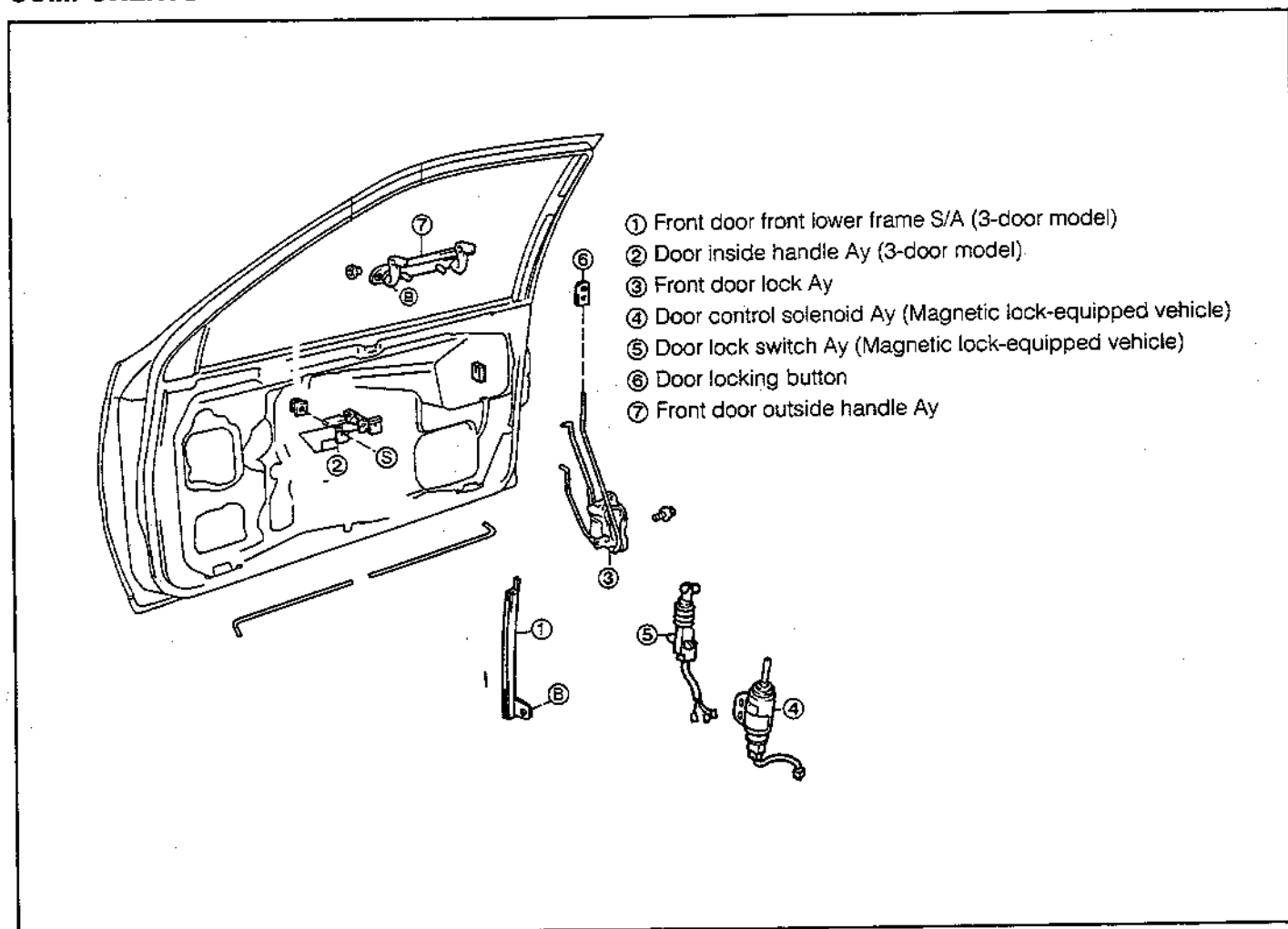


Fig. 9-124

WR-09136

#### REMOVAL

1. Remove the door trim-related parts. (See page 9-39.)
2. Remove the front door front lower frame subassembly. (3-door model only)

3. Removal of front door lock assembly
  - (1) Detach the door locking button from the front door lock assembly.
  - (2) Remove the link-related parts.
  - (3) Remove the three attaching screws of the front door lock assembly. (In the case of the passenger side on the magnetic lock-equipped vehicle, remove the bolt (A).)
  - (4) Take out the front door lock assembly from the front door.

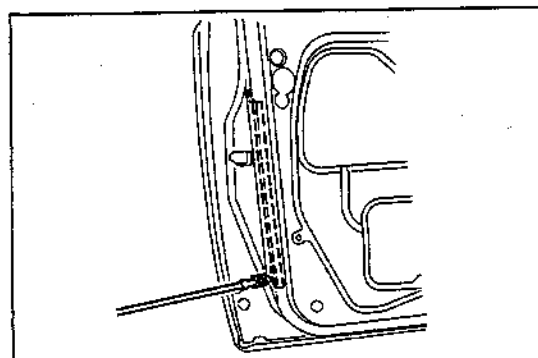


Fig. 9-125

WR-09137

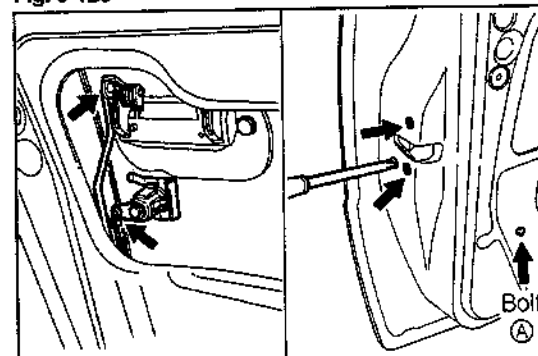


Fig. 9-126

WR-09138

- (5) Remove the door control solenoid assembly from the front door lock assembly. (Sides other than the driver's seat on the magnetic lock-equipped vehicle)
  - (6) Remove the door lock switch assembly from the front door lock assembly. (Driver's seat only on the magnetic lock-equipped vehicle)
4. Detach the front door outside handle assembly by removing the two bolts.
  5. Detach the clip. Remove the key cylinder.

## INSTALLATION

1. Install the front door outside handle assembly with the two bolts. (See Fig. 9-128.)
2. Install the key cylinder into position with the clip. (See Fig. 9-128.)
3. Installation of front door lock assembly
  - (1) Apply MP grease to the sliding sections.
  - (2) Install the door lock switch assembly in the front door lock assembly. (Driver's seat only on the magnetic lock-equipped vehicle)
  - (3) Install the door control solenoid assembly in the front door lock assembly (Sides other than the driver's seat on the magnetic lock-equipped vehicle)
  - (4) Place the solenoid in a locking state. Adjust the solenoid assembly so that the clearance may become zero, as indicated in the right figure. Tighten the solenoid assembly securely. (Magnetic lock-equipped vehicle only)
- (5) Install the front door lock assembly in the front door, using the three screws. (In the case of the passenger side on the magnetic lock-equipped vehicle, install the bolt (A).)

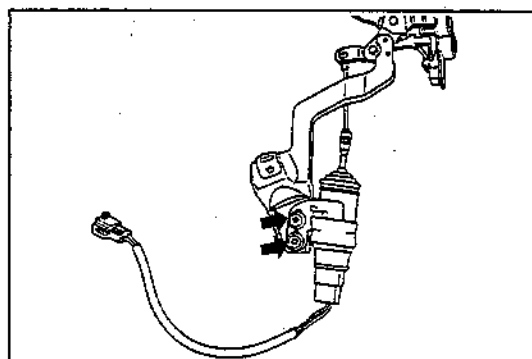


Fig. 9-127

WR-09139

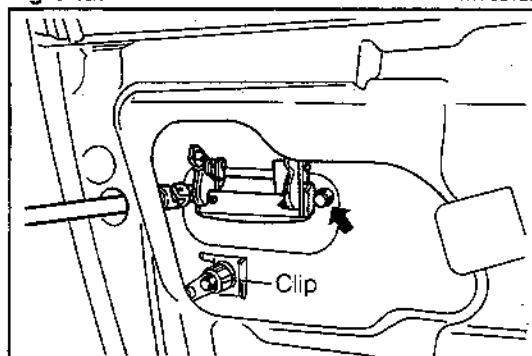


Fig. 9-128

WR-09140

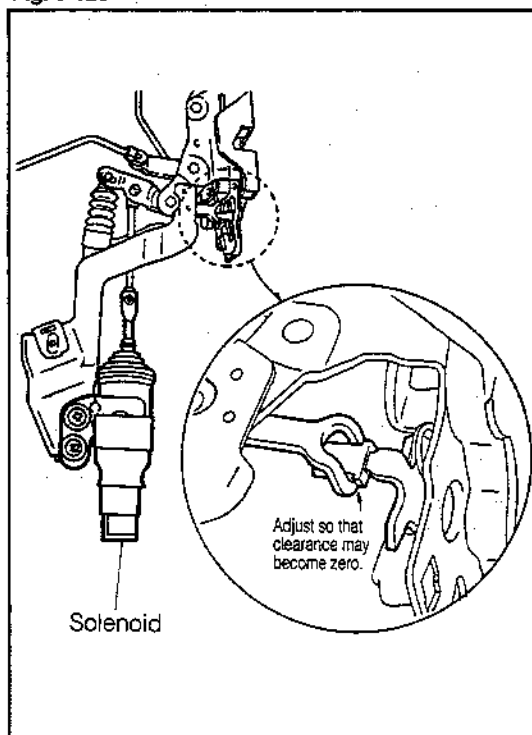


Fig. 9-129

WR-09141

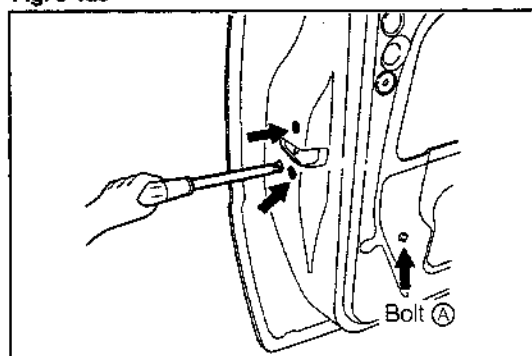


Fig. 9-130

WR-09142

## BODY

- (6) Install the link-related parts.
- (7) Attach the door locking button.
4. Install the front door front low frame subassembly in the front door. (3-door model only)
5. Install the door trim-related parts. (See page 9–40.)

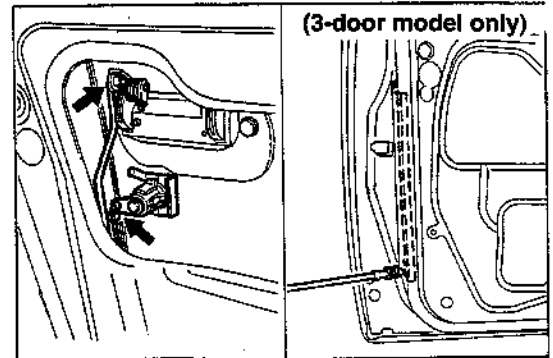


Fig. 9-131

WR-09143

## DOOR GLASS AND REGULATOR COMPONENTS

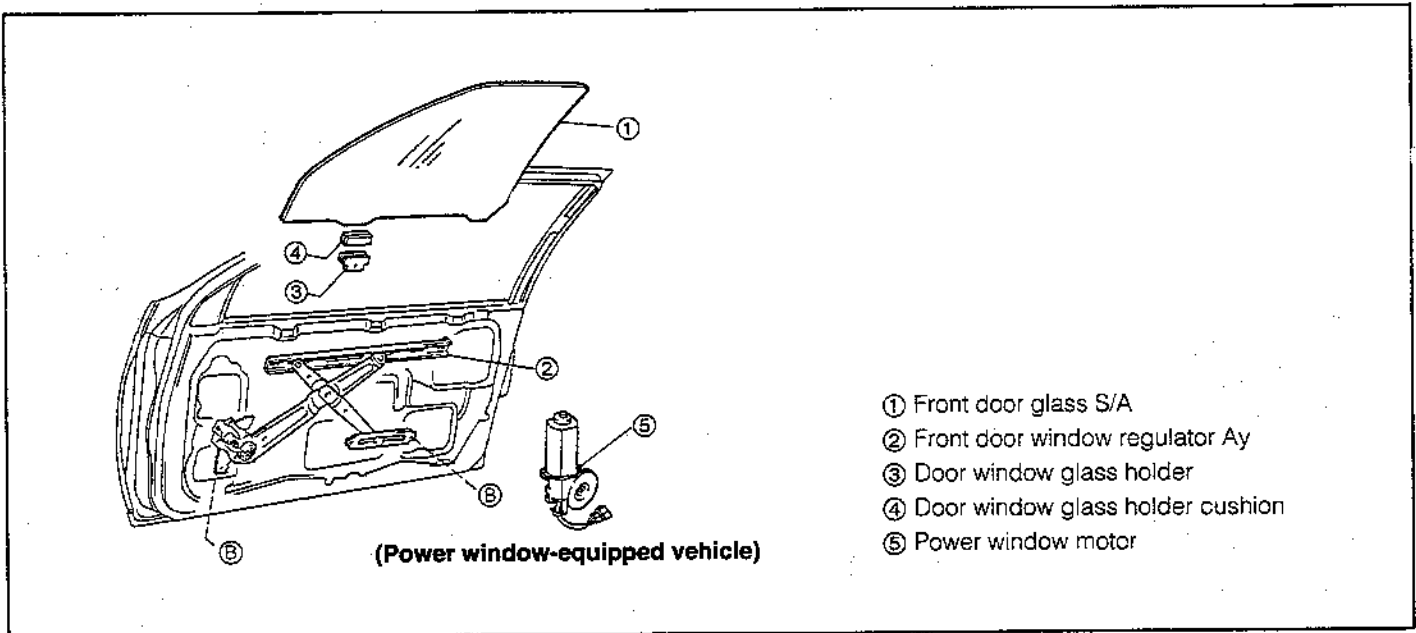


Fig. 9-132

WR-09144

### REMOVAL

1. Remove the door trim-related parts. (See page 9–39.)
2. Remove the two attaching bolts of the front door glass subassembly. Remove the front door glass subassembly from the front door.
3. Remove the door window glass holder & cushion from the front door glass subassembly.

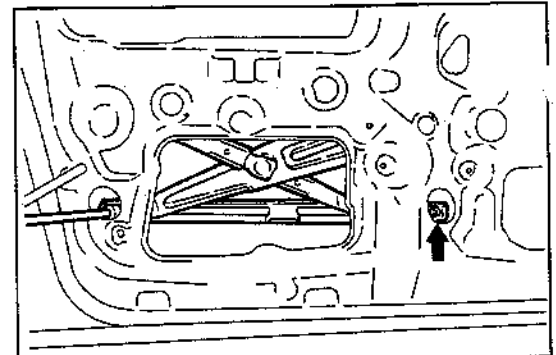


Fig. 9-133

WR-09145

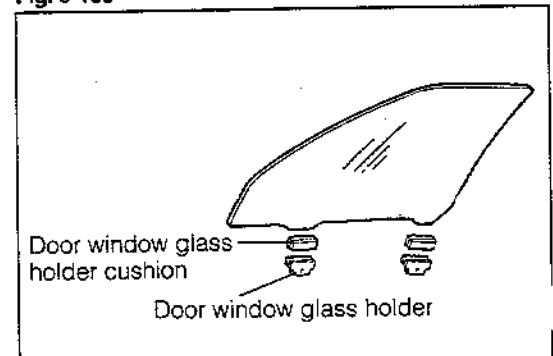


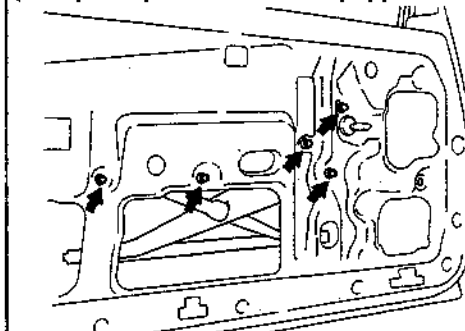
Fig. 9-134

WR-09146



4. Remove the front door window regulator assembly.

(Except for power window-equipped vehicle)



(Power window-equipped vehicle)

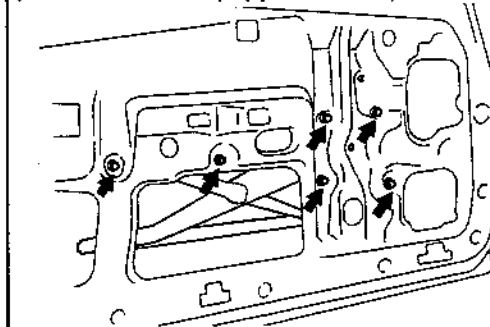


Fig. 9-135

WR-09147

5. Remove the power window motor from the front door window regulator assembly. (Power window-equipped vehicle)
6. Remove the front door glass outer weatherstrip and front door glass run.

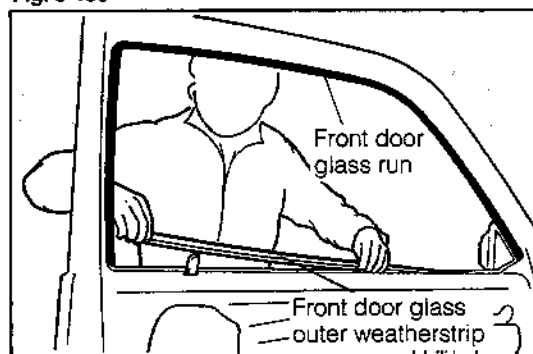


Fig. 9-136

WR-09148

7. Remove the front door front and rear lower frame sub-assembly.

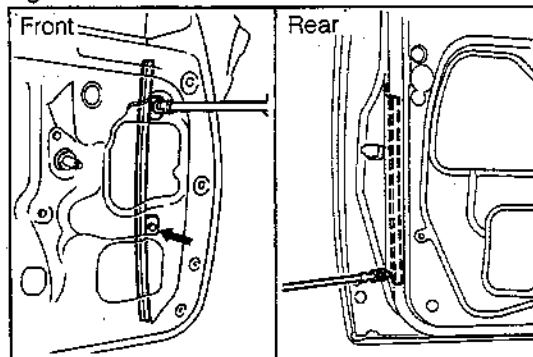


Fig. 9-137

WR-09149

## BODY

### INSTALLATION

1. Install the front door front and rear lower frame sub-assembly.
  2. Install the front door glass outer weatherstrip and front door glass run.
  3. Install the door window glass holder and cushion to the front door glass.
- 
4. Installation of front door window regulator assembly
    - (1) Apply MP grease to the sliding section.
    - (2) Install the power window motor to the front door window regulator assembly. (Power window-equipped vehicle)
  - (3) Install the front door window regulator assembly.  
(Tighten the bolts other than the bolts **A**. Then, tighten the two bolts **A** at the center section of the elongated hole of the door panel.)
  5. Installation of front door glass subassembly
    - (1) Install the front door glass subassembly. (See Fig. 9-133.)
    - (2) Close the front door glass fully. Then, lower the front door glass 40 mm (1.57 inches).
    - (3) First loosen the bolts **A** and then tighten them again.
  6. Install the door trim-related parts. (See page 9-40.)

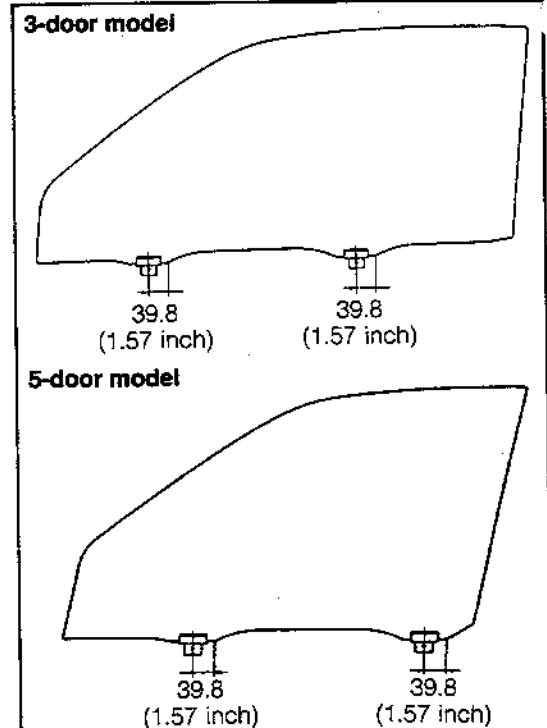


Fig. 9-138

WR-09150

### Grease applying points

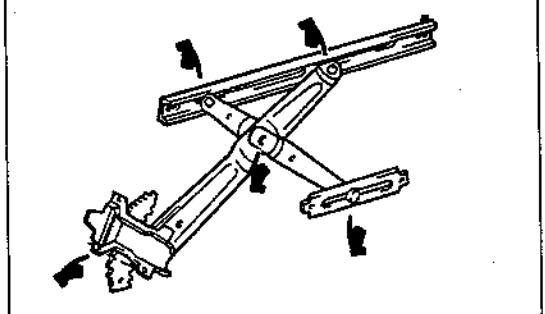
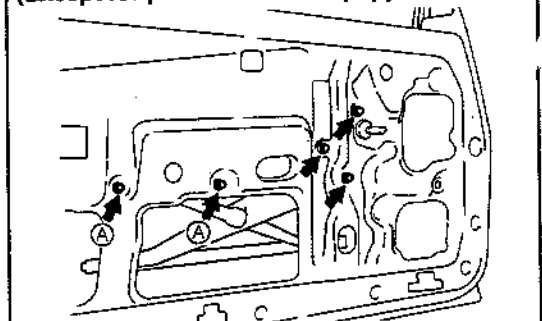


Fig. 9-139

WR-09151

### (Except for power window-equipped vehicle)



### (Power window equipped-vehicle)

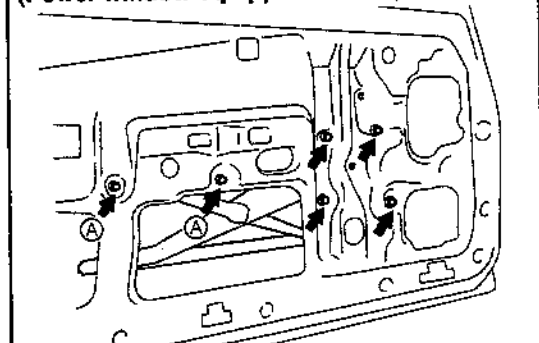



Fig. 9-140

WR-09152

# **REAR DOOR**

## **ARTICLES TO BE PREPARED**

	Shape	Nomenclature and part number	Use
Tools		Screwdriver type clip clamping tool by Banzai, Ltd.	For use in removing door trim
Lubricants and others	MP grease and butyl tape		

WR-09153

## **DOOR TRIM AND SERVICE HOLE COMPONENTS**

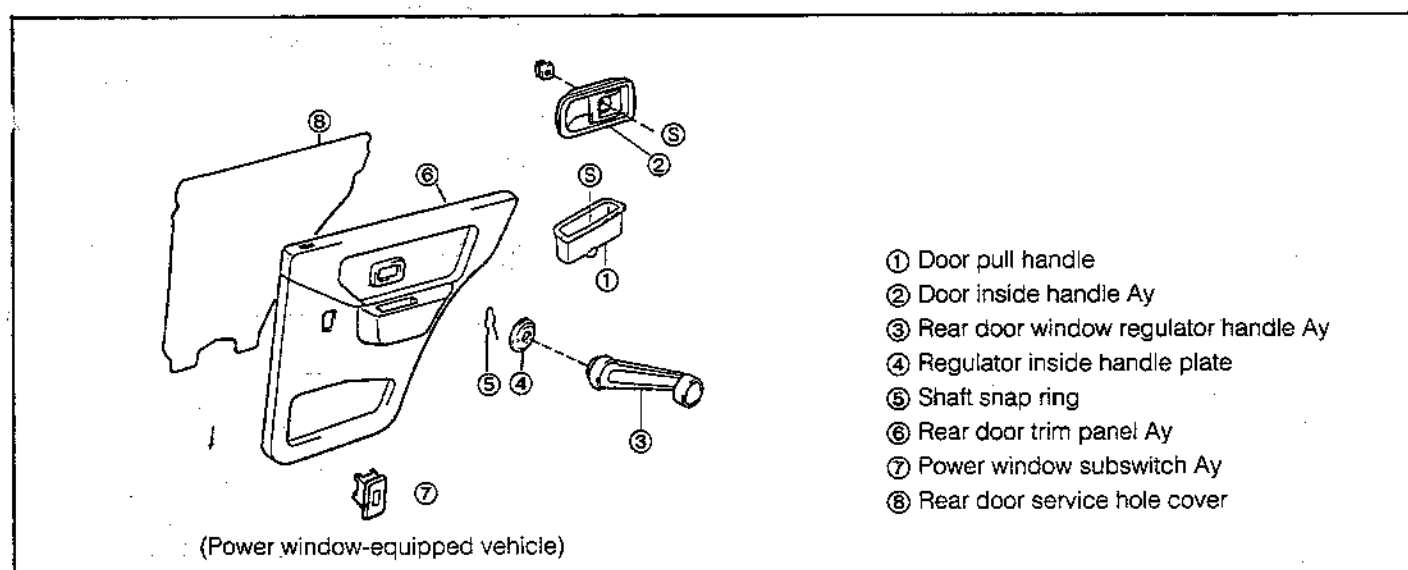


Fig. 9-141

WR-09154

## **REMOVAL**

1. Detach the door pull handle.
2. Remove the door inside handle assembly.
3. Removal of rear door window regulator handle assembly
  - (1) Detach the shaft snap ring, using a cloth.
  - (2) Take out the rear door window regulator handle assembly and regulator inside handle plate.

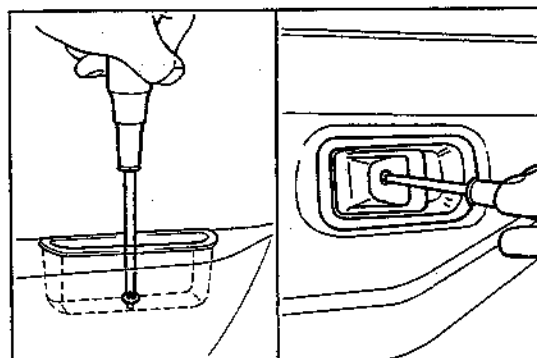


Fig. 9-142

WR-09155

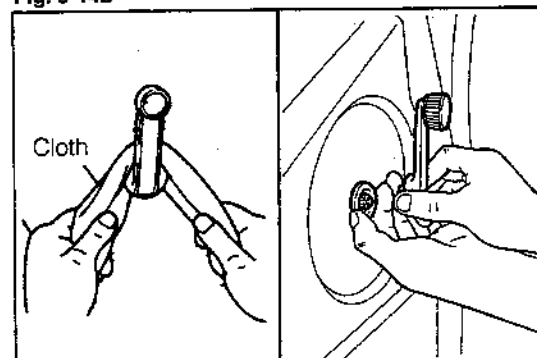


Fig. 9-143

WR-09156

## BODY

4. Removal of rear door trim panel assembly
  - (1) Detach the rear door trim panel assembly, using a clip remover.
  - (2) Remove the coupler for power window use.  
(Power window-equipped vehicle only)
  - (3) Remove the power window subswitch assembly from the rear door trim panel assembly.
5. Remove the door inside handle assembly and bracket.
6. Detach the rear door service hole cover subassembly.

### INSTALLATION

1. Installation of rear door service hole cover subassembly
  - (1) Affix butyl tape on the position specified in the right figure.
  - (2) Place the lower edge of the cover in the aperture provided at the lower part of the door panel. Then, affix adhesive tape on it.

#### NOTE:

1. Be sure not to plug the clip hole with the adhesive tape.
2. Replace the service hole cover if it exhibits rupture.
2. Install the door inside handle assembly and bracket.
3. Installation of rear door trim panel assembly
  - (1) Ensure that the clip is attached to the rear door trim panel assembly.
  - (2) Install the power window subswitch assembly on the rear door trim panel assembly. Connect the coupler.  
(Power window-equipped vehicle only)
  - (3) Attach the rear door trim panel assembly on the rear door.
4. Installation of rear door window regulator handle assembly
  - (1) Close the door glass fully.
  - (2) Set the regulator inside handle plate at the trim side.
  - (3) Set the shaft snap ring in the rear door window regulator handle.

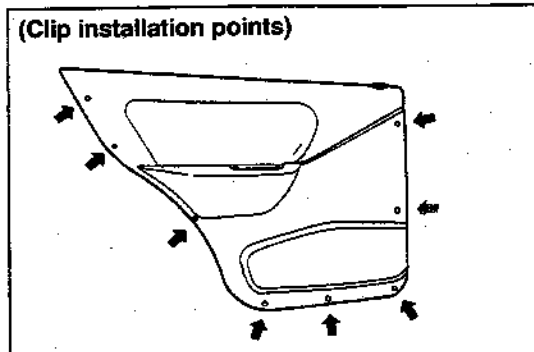


Fig. 9-144

WR-09157

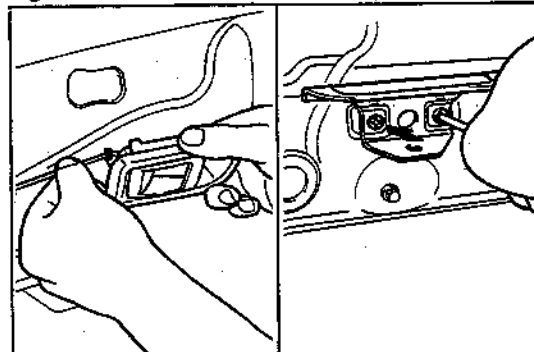


Fig. 9-145

WR-09158

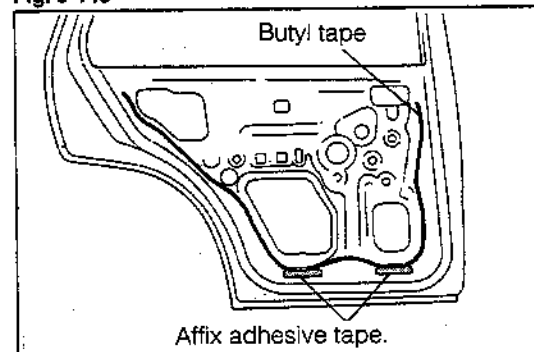


Fig. 9-146

WR-09159

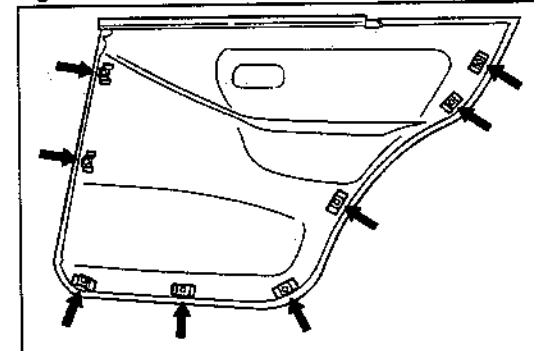


Fig. 9-147

WR-09160

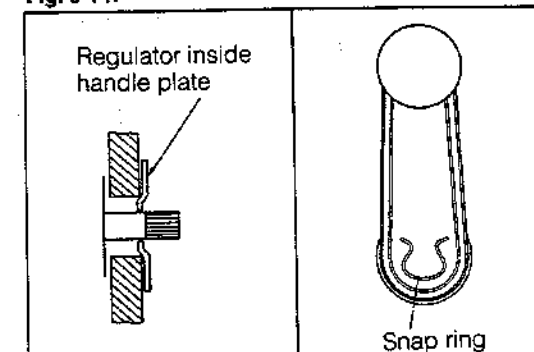
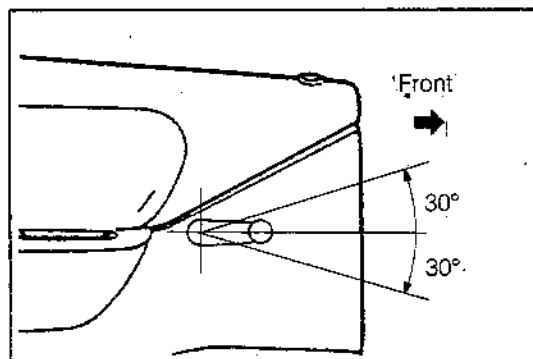


Fig. 9-148

WR-09161

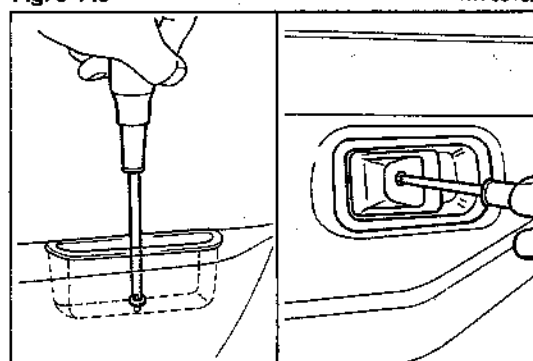
- (4) Install the rear door window regulator handle in such a way that the handle may come within the angle indicated in the right figure.



**Fig. 9-149**

WR-09162

5. Install the door pull handle.  
6. Install the door inside handle assembly.

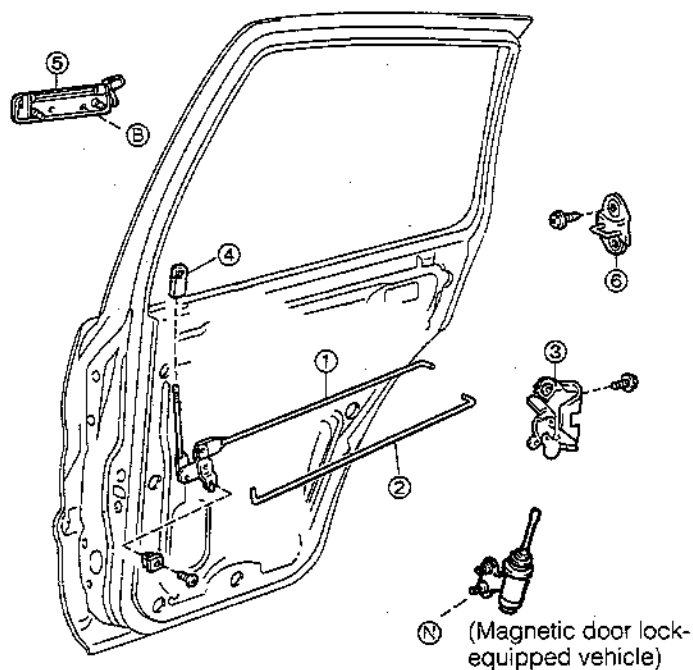


**Fig. 9-150**

WR-09163

## DOOR LOCK AND OUTSIDE DOOR HANDLE

### Components



- ① Rear door locking link S/A
- ② Rear door open control link
- ③ Rear door lock Ay
- ④ Door locking button
- ⑤ Rear door outside handle Ay
- ⑥ Door lock striker plate S/A

**Fig. 9-151**

WR-09164

## BODY

### REMOVAL

1. Remove the door trim-related parts. (See page 9-47.)
2. Remove the door control solenoid assembly by removing the two nuts and coupler.
3. Removal of rear door lock assembly
  - (1) Remove the rear door locking button.
  - (2) Remove the attaching screw of the rear door locking link subassembly.
  - (3) Remove the three attaching screws of the rear door lock assembly.
  - (4) Remove the rear door lock assembly (link-related parts) from the door.
4. Remove the following parts from the rear door lock assembly.
  - (1) Remove the rear door locking link subassembly.
  - (2) Remove the rear door opening control link.
5. Remove the rear door outside handle assembly.

### INSTALLATION

1. Install the rear door outside handle assembly.
2. Install the following parts in the rear door lock assembly.
  - (1) Install the rear door opening control link.
  - (2) Install the rear door locking link subassembly.
3. Install the rear door lock assembly and rear door locking button in the rear door. (See Fig. 9-153.)
4. Install the rear control solenoid assembly. (See Fig. 9-157.)

The solenoid assembly should be installed at such a position that the lock button stroke may become at least 10 mm (0.37 inch).
5. Install the door trim-related parts. (See page 9-48.)

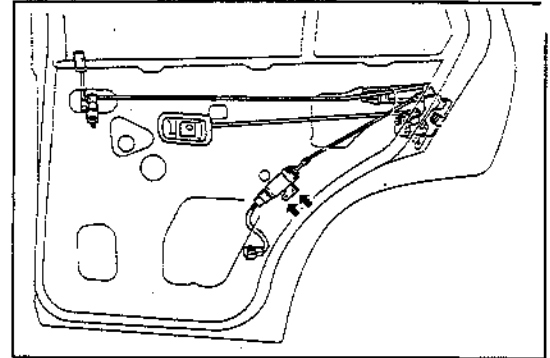


Fig. 9-152

WR-09165

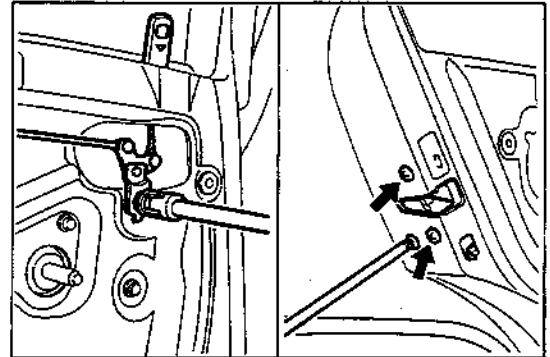


Fig. 9-153

WR-09166

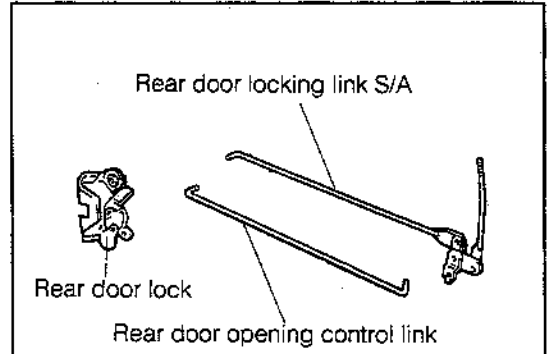


Fig. 9-154

WR-09167

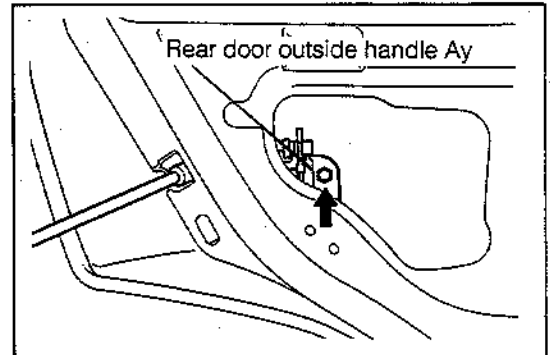


Fig. 9-155

WR-09168

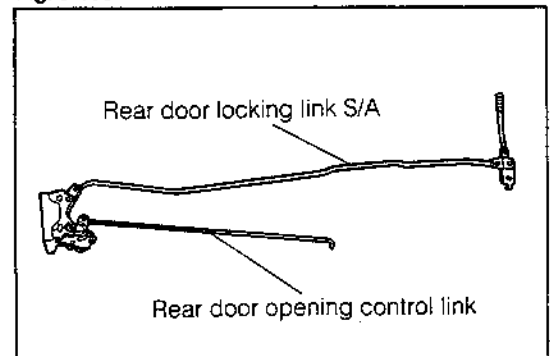
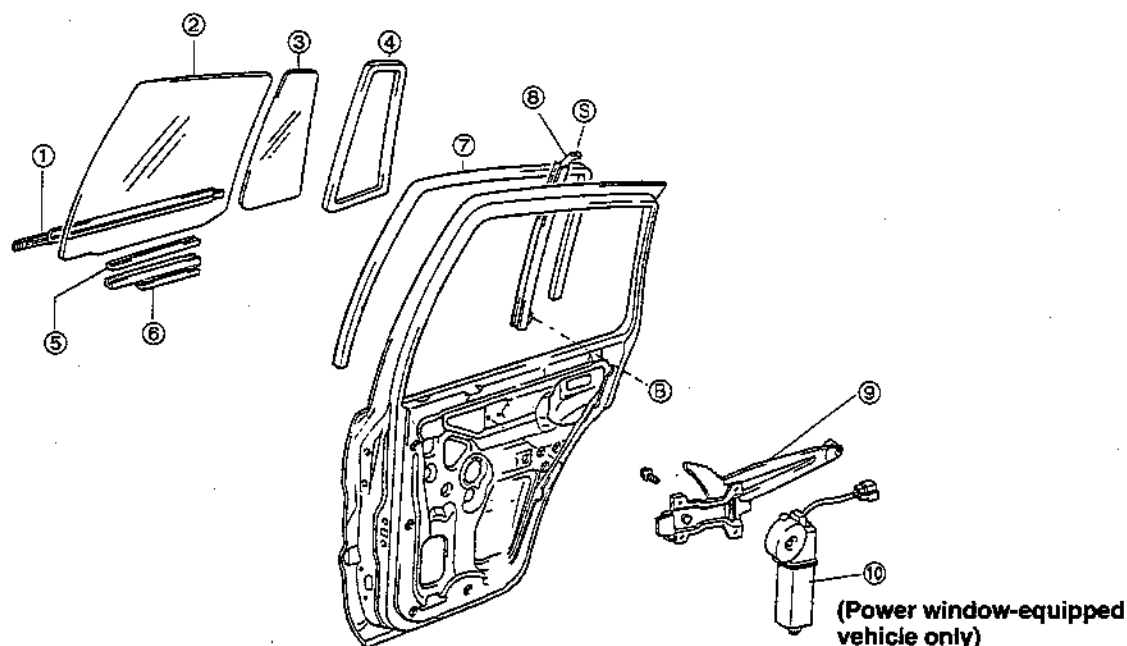


Fig. 9-156

WR-09169

# DOOR GLASS AND REGULATOR COMPONENTS



- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| ① Rear door outer weatherstrip    | ⑥ Rear door glass channel S/A       |
| ② Rear door glass S/A             | ⑦ Rear door glass run               |
| ③ Rear quarter glass              | ⑧ Rear door window division bar S/A |
| ④ Rear quarter glass weatherstrip | ⑨ Rear door window regulator A/y    |
| ⑤ Rear door glass filler          | ⑩ Power window motor                |

Fig. 9-157

WR-09170

## REMOVAL

1. Remove the rear door trim board-related parts. (See page 9-47.)
2. Remove the rear door weatherstrip.
3. Removal of rear door window division bar subassembly
  - (1) Remove the upper attaching screw and lower bolt of the rear door window division bar subassembly.
  - (2) Remove the rear door window division bar subassembly from the rear door.
4. Remove the rear quarter glass and rear quarter glass weatherstrip.

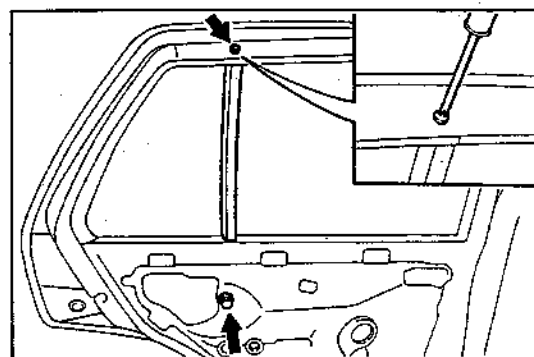


Fig. 9-158

WR-09171

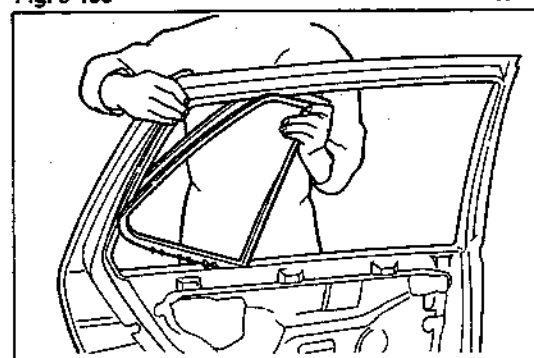


Fig. 9-159

WR-09172

## BODY

5. Removal of rear door glass subassembly
  - (1) Slide the rear door glass subassembly backward. Detach the roller of the rear door window regulator assembly from the rear door glass channel.
  - (2) Remove the rear door glass subassembly from the rear door.
6. Removal of rear door window regulator assembly
  - (1) Remove the rear door window regulator assembly by removing the three bolts.
  - (2) Remove the power window motor from the rear door window regulator assembly. (Power window-equipped vehicle only)
7. Remove the rear door glass outer weatherstrip.

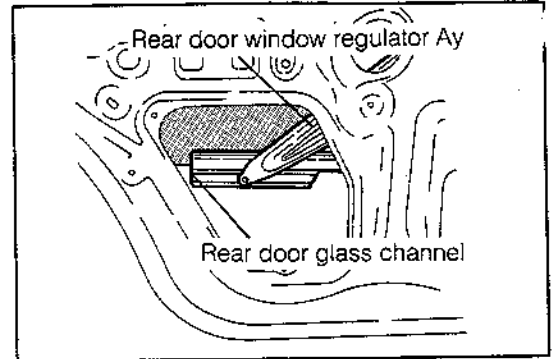


Fig. 9-160

WR-09173

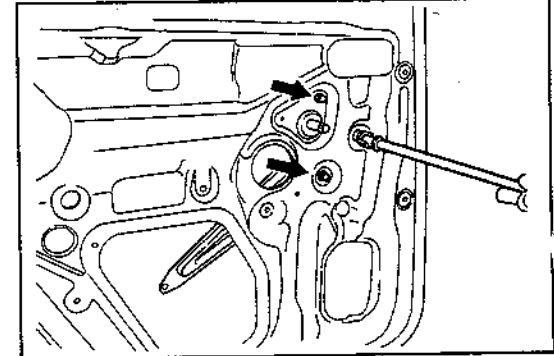


Fig. 9-161

WR-09174

## INSTALLATION

1. Install the rear door glass outer weatherstrip.
2. Installation of rear door window regulator assembly
  - (1) Apply MP grease to the sliding sections.
  - (2) Install the power window motor in the rear door regulator assembly. (Power window-equipped vehicle only)
  - (3) Install the rear door window regulator assembly in the rear door. (See Fig. 9-161.)
3. Installation of rear door glass subassembly
  - (1) Apply soap water, etc. to the inner surface of the rear door glass filler. Install the glass filler in the glass channel.
  - (2) Install the rear door glass filler and channel in the rear door glass subassembly. (Install these parts by tapping them lightly with a wooden hammer or the like.)
4. Install the rear quarter glass and rear quarter glass weatherstrip.
5. Install the rear door window division bar subassembly.
6. Install the rear door glass weatherstrip.
7. Install the rear door trim board-related parts. (See Fig. 9-48.)

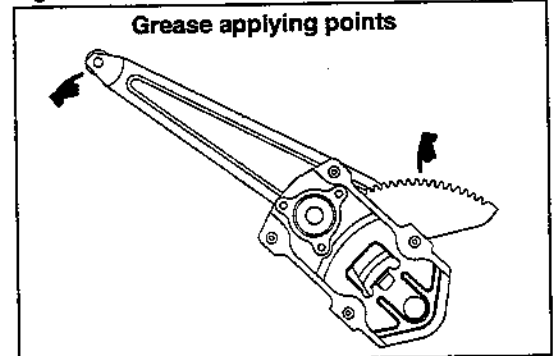


Fig. 9-162

WR-09175

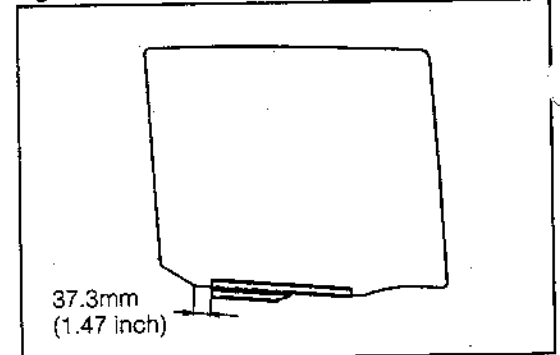


Fig. 9-163

WR-09176

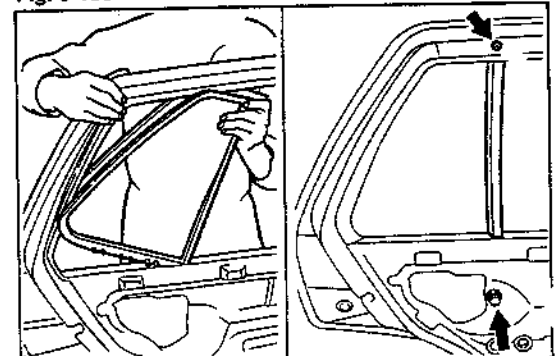


Fig. 9-164

WR-09177



# **BACK DOOR**

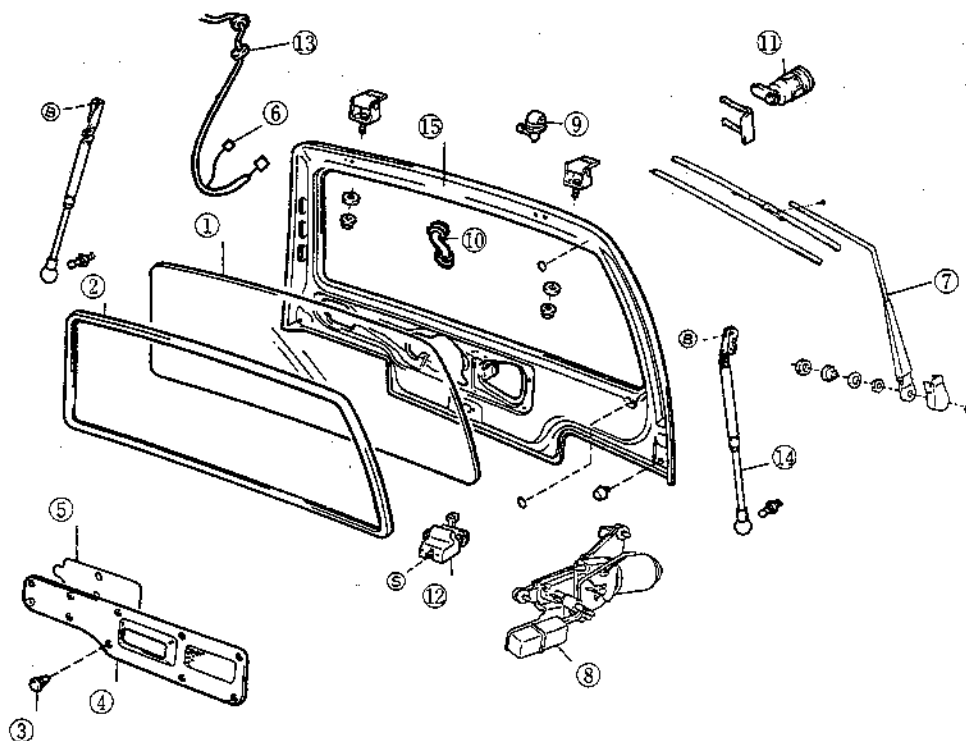
## **ARTICLE TO BE PREPARED**

Lubricants and others

Adhesive tape, operation rope, non-drying window sealer and MP grease

WR-09178

## **COMPONENTS**



- ① Back door glass
- ② Back door glass weatherstrip
- ③ Clip
- ④ Back door trim board
- ⑤ Back door service hole cover S/A
- ⑥ Coupler for defogger  
(Defogger-equipped vehicle only)
- ⑦ Rear wiper arm  
(Rear wiper-equipped vehicle only)

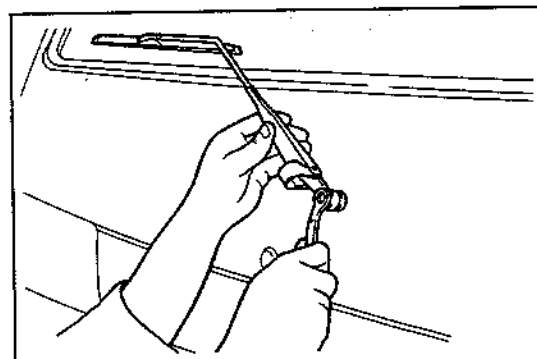
- ⑧ Rear wiper motor & bracket  
(Rear wiper-equipped vehicle only)
- ⑨ Rear washer nozzle A/y
- ⑩ Hose & grommet
- ⑪ Back door lock cylinder
- ⑫ Back door lock A/y
- ⑬ Harness & grommet
- ⑭ Back door stay A/y
- ⑮ Back door panel

**Fig. 9-165**

WR-09179

## **REMOVAL**

1. Remove the rear wiper arm attaching nut. Detach the rear wiper arm. (Rear wiper-equipped vehicle only)
2. Disconnect the couplers for defogger use at two points.
3. Remove the rear spoiler. (See page 9-36.)
4. Remove the back door glass and weatherstrip. (See page 9-29.)



**Fig. 9-166**

WR-09180

## BODY

### 5. Removal of back door trim board

- (1) Detach the back door trim board by removing the 10 clips. To remove the clip, push its central part.

#### NOTE:

Be very careful not to push the central part of the clip too strongly. Application of excessive force may drop the clip.

- (2) Detach the back door service hole cover sub-assembly.

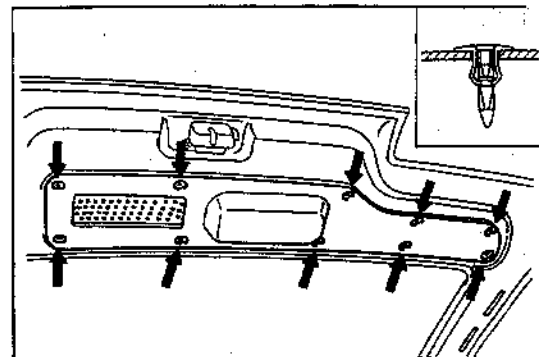


Fig. 9-167

WR-09181

### 6. Remove the rear wiper motor and bracket assembly as follows:

- (1) Working from the outside of the back door, remove the boot, nut, spacer and bush.
- (2) Working from the inside of the back door, disconnect the coupler, using a piece of wire.
- (3) Remove the rear wiper motor and bracket assembly by removing the three bolts.

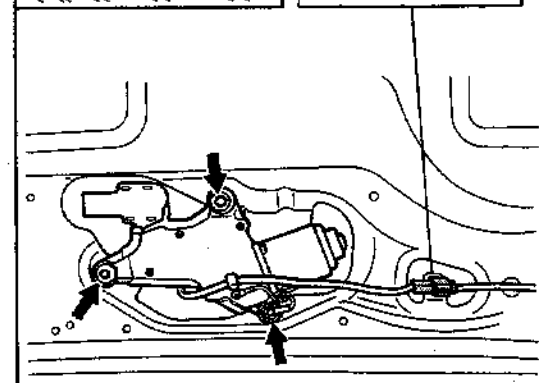
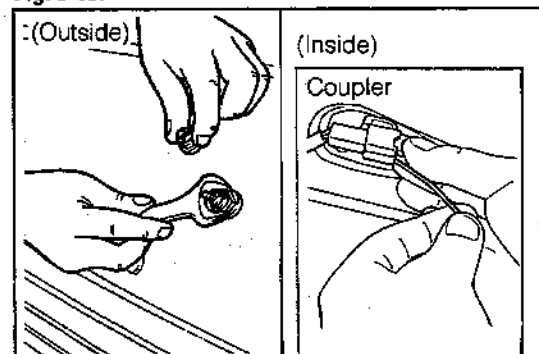


Fig. 9-168

WR-09182

### 7. Removal of rear washer nozzle assembly

- (1) Remove the rear washer nozzle assembly. Detach the hose from the nozzle assembly.
- (2) Remove the hose and grommet from the back door.

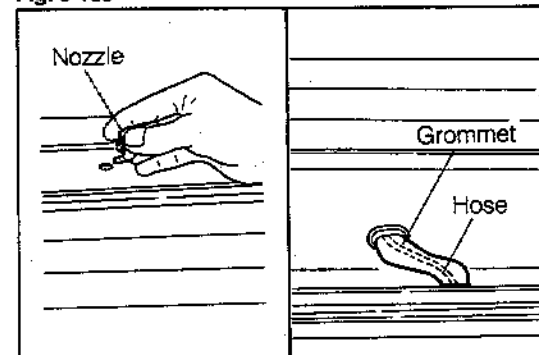


Fig. 9-169

WR-09183

### 8. Detach the clip and remove the back door lock cylinder.

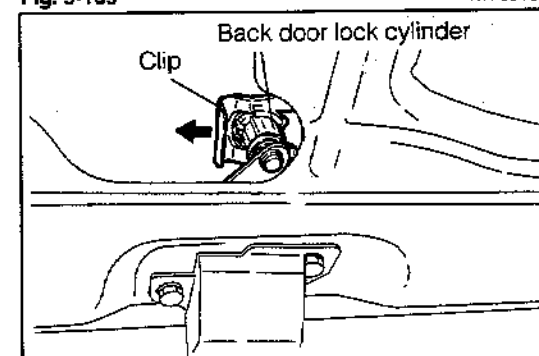


Fig. 9-170

WR-09184

9. Remove the harness and grommet from the back door.

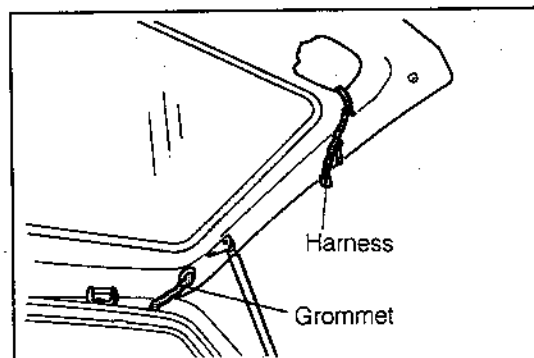


Fig. 9-171

WR-09185

10. Remove the back door lock assembly.

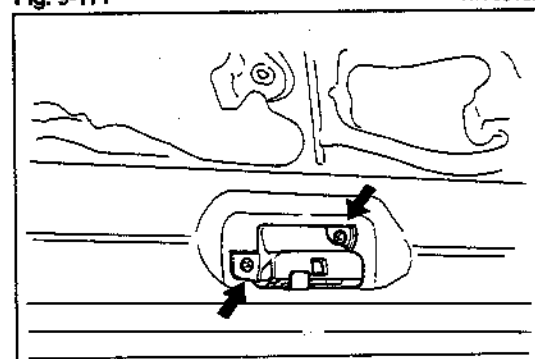


Fig. 9-172

WR-09186

11. Remove the back door stay assembly as follows:
  - (1) Detach the attaching section at the body side.

**NOTE:**

Be sure to protect the body surface by means of adhesive tape or like, as indicated in the right figure.

- (2) Remove the back door stay assembly by removing the two attaching bolts at the back door side.

**NOTE:**

- Never attempt to disassemble the door stay assembly, for the cylinder is filled with high-pressure gas.
- After the damper stay has been replaced, be certain to discharge the high-pressure gas from it, by making a 2 to 3 mm dia. hole at the bottom of the cylinder of the removed damper stay.  
(The discharging gas is colorless, odorless and non-poisonous. However, be very careful as to drilled metal chips being blown off.)
- Utmost caution must be exercised as to the handling of the damper stay. Never let scratch, paint or oil get to the exposed section of the piston rod.
- When the damper stay is in an extended state, be sure not to turn the piston rod or the cylinder.

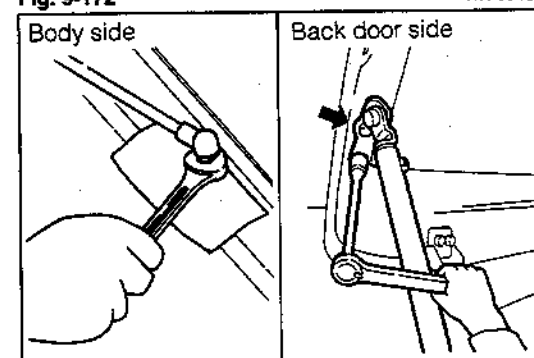


Fig. 9-173

WR-09187

12. Removal of back door panel

- (1) Detach the rear section of the roof headlining.
- (2) Working from the vehicle interior, remove the back door panel from the vehicle by removing the two attaching nuts (a) of the back door panel.

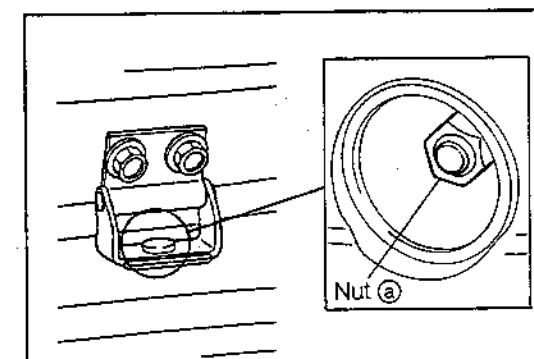


Fig. 9-174

WR-09188

## BODY

### INSTALLATION

1. Install the back door panel on the body.
  2. Install the back door stay.
  3. Install the back door lock assembly.
  4. Install the harness and grommet.
- 
5. Place the back door lock cylinder on the back door. Secure the lock cylinder with the clip.
  6. Installation of rear washer nozzle
    - (1) Attach the washer hose to the rear washer nozzle. Attach the rear washer nozzle to the back door.
    - (2) install the grommet.
- 
7. Install the rear wiper motor and bracket assembly as follows:
    - (1) Install the rear wiper motor and bracket assembly, using the three bolts.
    - (2) Connect the coupler.
    - (3) Working from the outside, install the bush, spacer, nut and boot.
- 
8. Installation of back door trim board
    - (1) Affix butyl tape on the position specified in the right figure. Install the back door service hole cover sub-assembly.

**NOTE:**  
Replace the service hole cover if it exhibits rupture.

    - (2) Attach the back door trim board using the 10 clips. With the central part of the clip pulled out, set the clip on the trim. Push the central part of the clip so that the clip may retain the trim.
- 
9. Install the back door glass and weatherstrip. (See page 9-30.)
  10. Install the rear spoiler. (See page 9-37.)

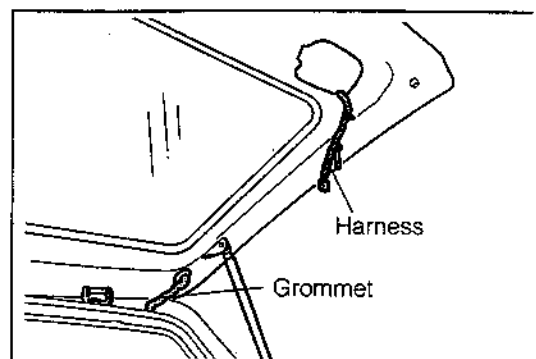


Fig. 9-175

WR-09189

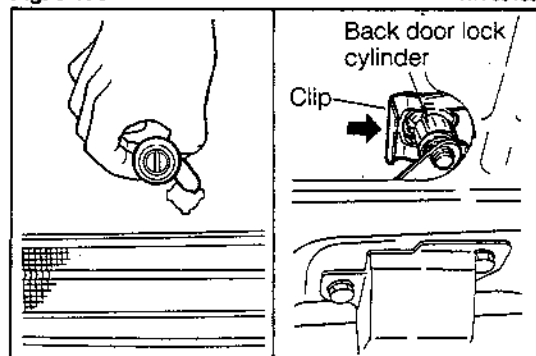


Fig. 9-176

WR-09190

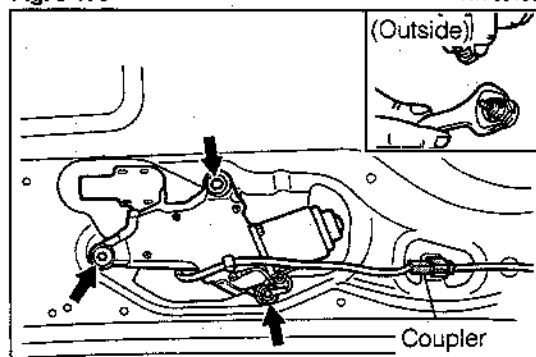


Fig. 9-177

WR-09191

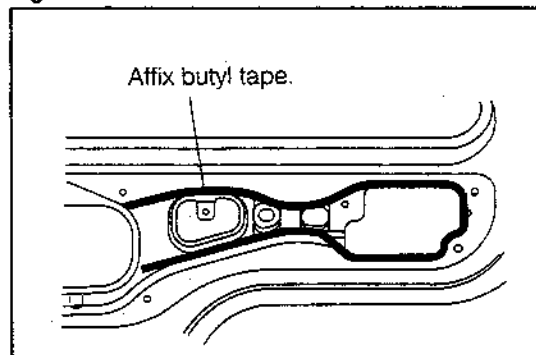


Fig. 9-178

WR-09192

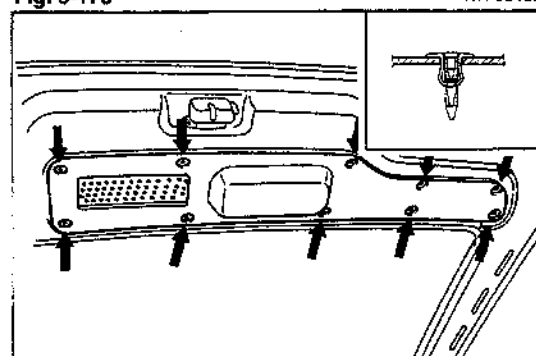


Fig. 9-179

WR-09193

11. Connect the coupler for defogger use at two points.
  12. Installation of rear wiper
    - (1) Install the battery terminals. Operate the wiper motor, until it assumes the automatic stopping position.
    - (2) Attach the rear wiper arm so that it may align with the lowest line of the defogger pattern.
- Installation position:  
 Lowest line of pattern  $\pm 5 \text{ mm}$  ( $\pm 0.2 \text{ inch}$ )
- (3) Install the wiper link cap.

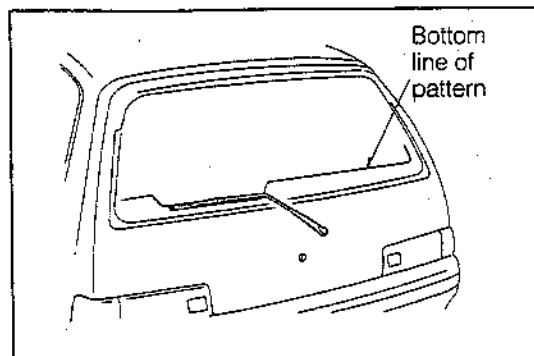
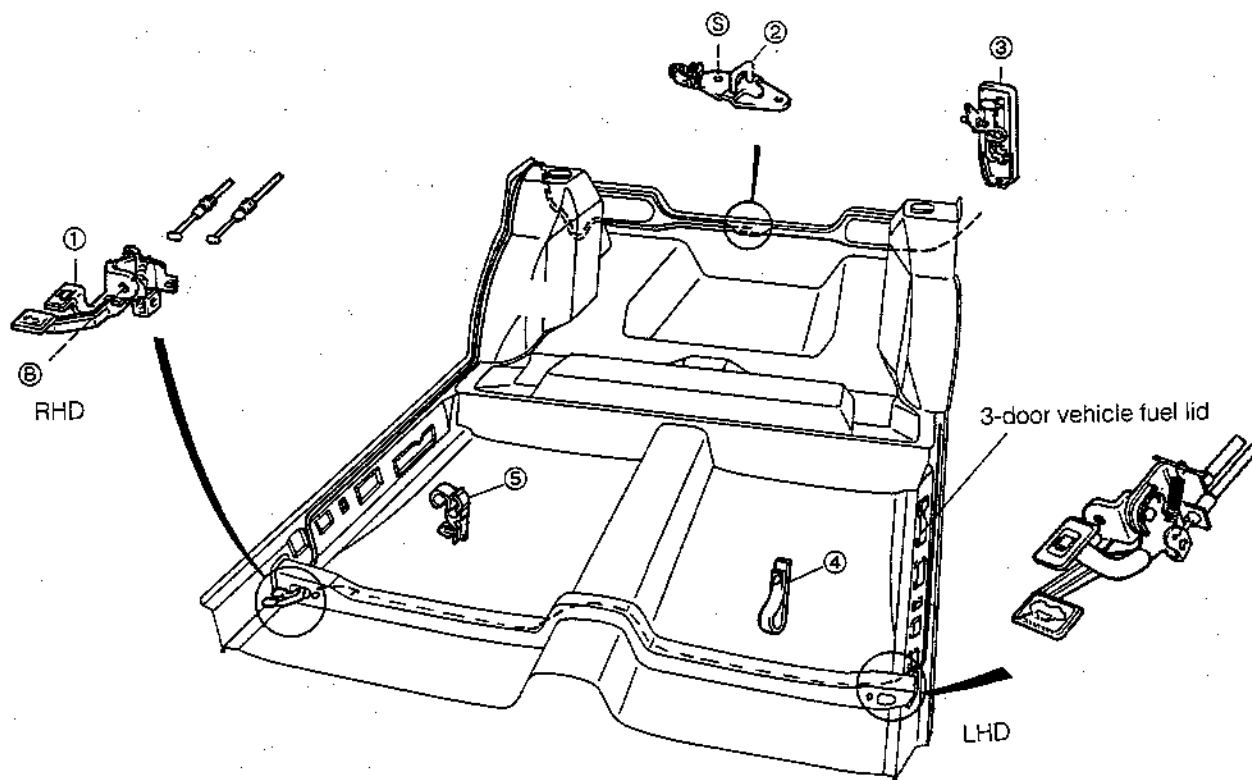


Fig. 9-180

WR-09194

## BACK DOOR OPENER AND FUEL LID OPENER



- ① Back door opener Ay
- ② Back door lock striker Ay
- ③ Fuel filler opening lid lock S/A
- ④ Clamp
- ⑤ Clamp

Fig. 9-181

WR-09195

## BODY

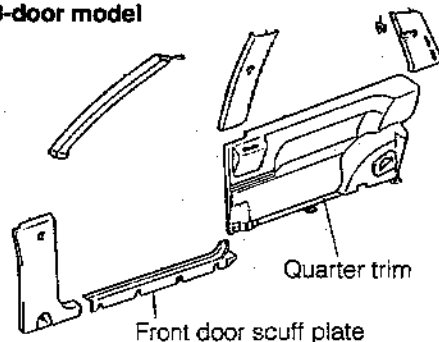
### REMOVAL

1. Remove the front seat.
2. Remove the rear seat.
3. Remove the trim-related parts.  
(3-door model fuel lid opener)  
Remove the front door scuff plate at the left side. Remove the quarter trim at the right side.  
(3-door model back door opener)  
Remove the front door scuff plate at the right side, the package tray side trim at the right side, the quarter trim at the right side, the deck side trim at the right side and lower deck trim.  
(5-door model fuel lid opener)  
Remove the front door scuff plate at the right side, the rear door scuff plate at the right side, the package tray side trim at the right and left sides, the quarter wheel house cover at the right side, the deck side trim at the right and left sides and the lower deck trim.  
(5-door model back door opener)  
Remove the front door scuff plate at the right side, the rear door scuff plate at the right side, the package tray side trim at the right side, the quarter wheel house cover at the right side, the deck side trim at the right side and the lower deck trim.

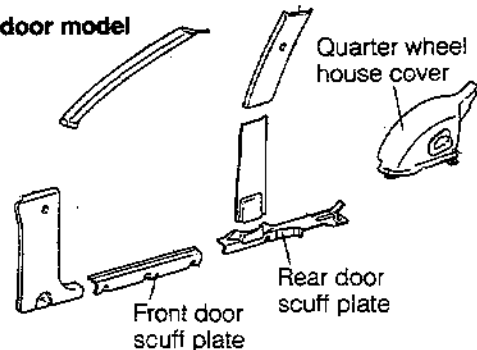
4. Remove the back door opener assembly as follows:  
(1) Remove the attaching bolt. Remove the back door opener assembly.  
(2) Detach the spring. Remove the cable.

5. Removal of fuel filter opening lid lock subassembly  
(1) Remove the fuel filter opening lid lock subassembly.  
(2) Detach the fuel lid cable.

3-door model



5-door model



Luggage compartment

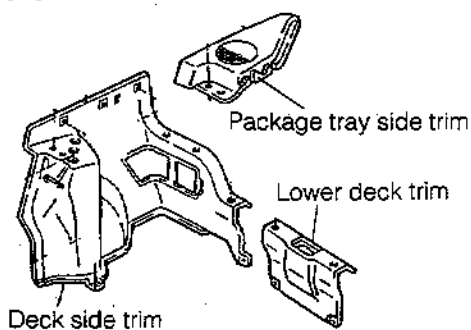


Fig. 9-182

WR-09196

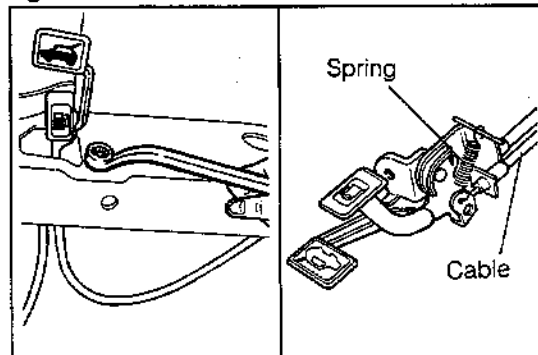


Fig. 9-183

WR-09197

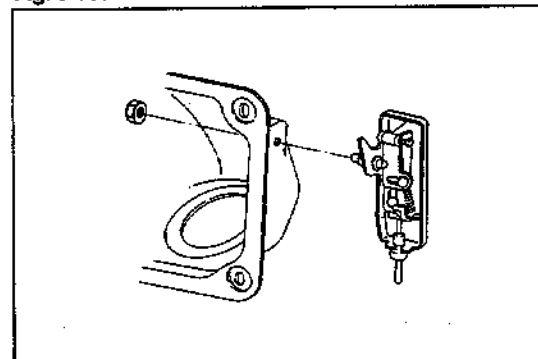
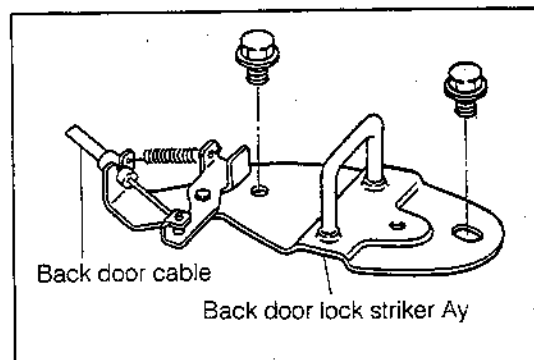


Fig. 9-184

WR-09198

- Removal of back door lock striker assembly
- (1) Remove the back door lock striker assembly by removing the two bolts.
- (2) Detach the back door cable.
- 7. Remove the fuel lid cable and back door cable.

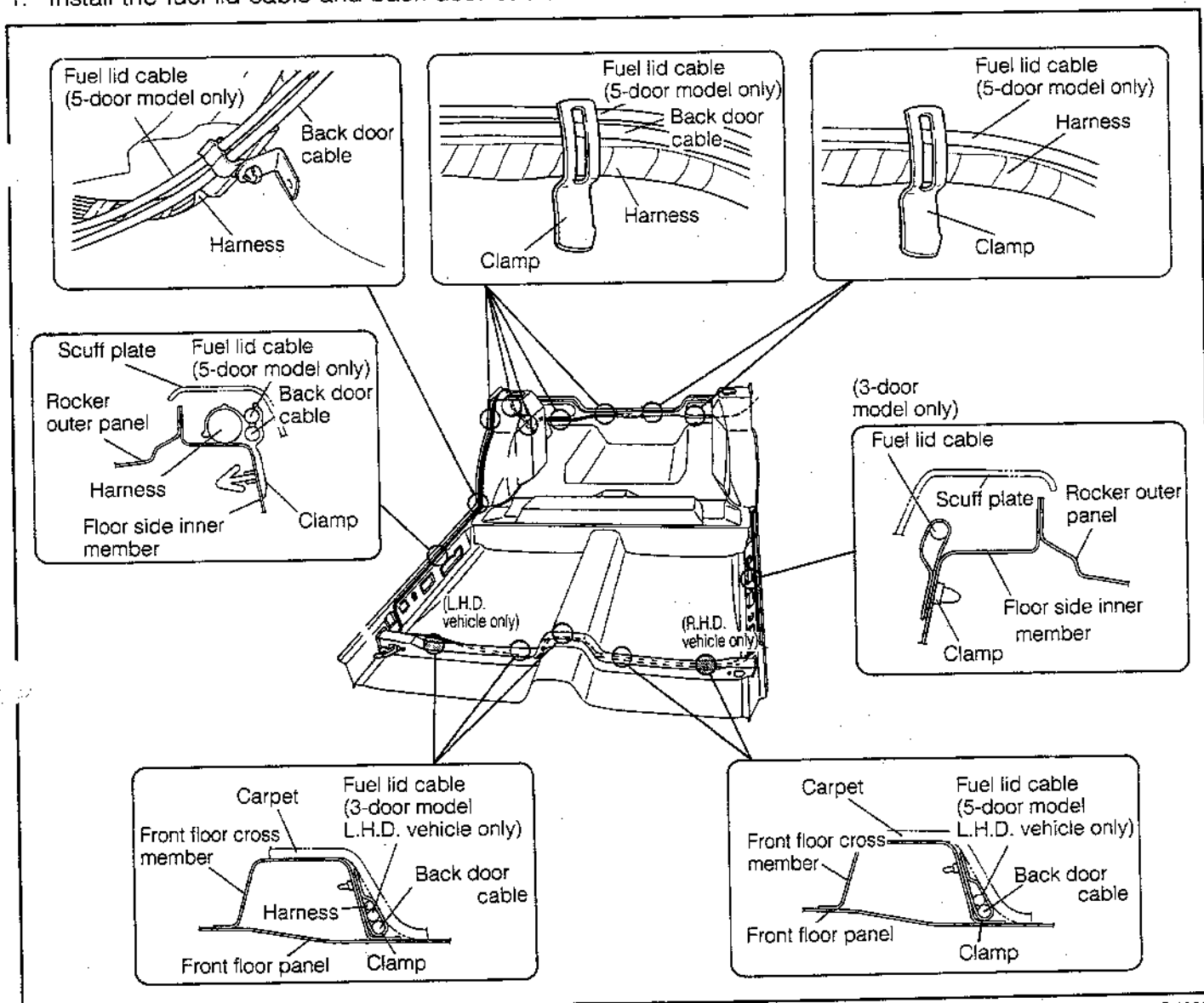


**Fig. 9-185**

WR-09199

## INSTALLATION

1. Install the fuel lid cable and back door cable.



**Fig. 9-186**

WR-09200


2. Install the back door lock striker assembly.
3. Install the fuel filler opening lid lock subassembly. (Perform the operation check.)
4. Install the back door opener assembly. (Perform the operation check.)
5. Install the trim-related parts.
6. Install the rear seat.
7. Install the front seat.

WR-09201

## BODY

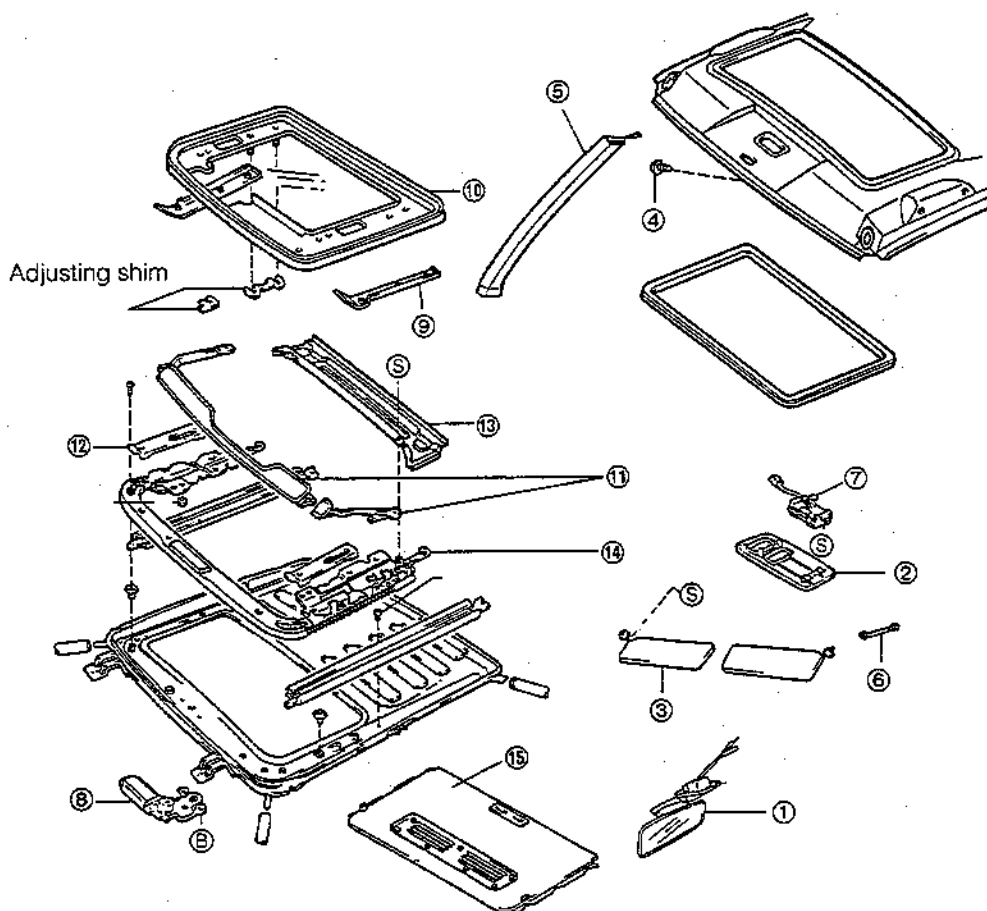
# POWER GLASS SUNROOF WITH TILT-UP MECHANISM

## ARTICLES TO BE PREPARED

	Shape	Nomenclature and part number	Use
Tools		Screwdriver type clip clamping tool by Banzai, Ltd.	For use in removing door trim
Lubricants and others	MP grease and butyl tape		

WR-09202

## COMPONENTS



- ① Inner rear-view mirror W/room lamp
- ② Switch bezel
- ③ Sun visor
- ④ Clip (at front side of roof headlining)
- ⑤ Front pillar garnish
- ⑥ Assist grip Ay (Detach the front section of the roof headlining.)
- ⑦ Sliding roof switch Ay
- ⑧ Sliding roof drive gear Ay

- ⑨ Slide roof garnish (sunroof)
- ⑩ Sliding roof glass S/A
- ⑪ Roof window deflector arm S/A & roof window deflector panel S/A
- ⑫ Guide rail cover
- ⑬ Roof drip rear channel
- ⑭ Sliding roof drive cable S/A
- ⑮ Sun shade trim S/A

Fig. 9-187

WR-09203



# **REMOVAL**

1. Open the sunroof fully.
2. Affix adhesive tape at the front side as well as at the right & left sides of the sunroof aperture.

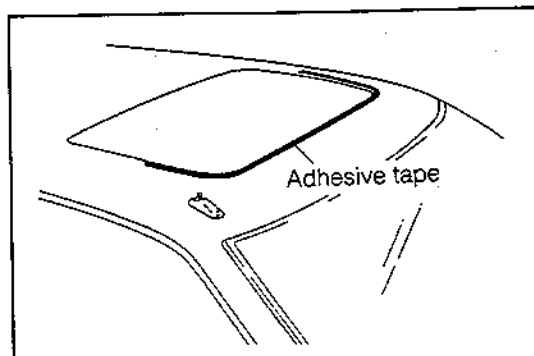


Fig. 9-188

WR-09204

3. Removal of front pillar garnish
  - (1) Disengage the fitting of the garnish by prying the clip section by means of a common screwdriver.
  - (2) Remove the front pillar garnish by pulling it upward.

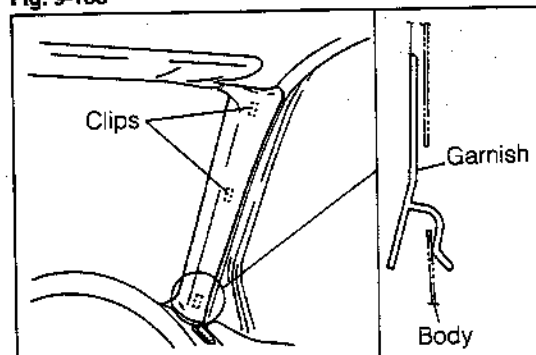


Fig. 9-189

WR-09205

4. Detach the front section of the roof headlining.
  - (1) Prior to the operations given below, disconnect the negative  $\ominus$  terminal of the battery.
  - (2) Remove the sun visor assembly.
  - (3) Remove the inner rear-view mirror with room lamp.
  - (4) Remove the switch bezel.
  - (5) Detach the sunroof opening trim molding.

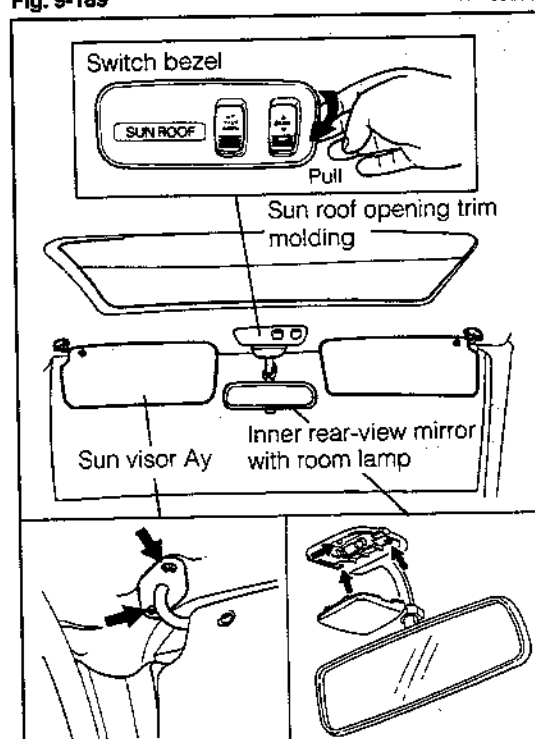


Fig. 9-190

WR-09206

- (6) Remove the assist grip assembly.
- (7) Remove the clip, using the clip removing tool.

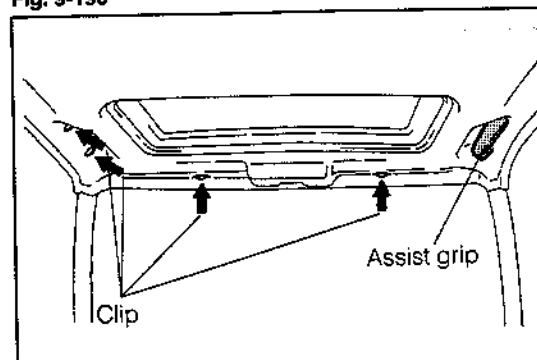


Fig. 9-191

WR-09207

## BODY

5. Remove the sliding roof switch assembly by removing the two screws and coupler.
6. Remove the sliding roof drive gear assembly by removing the two bolts and coupler.

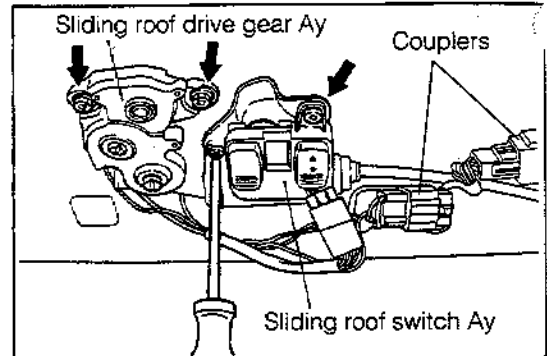


Fig. 9-192

WR-09208

7. Detach the sliding roof glass subassembly from the vehicle by removing the eight attaching nuts of the sliding roof glass subassembly.

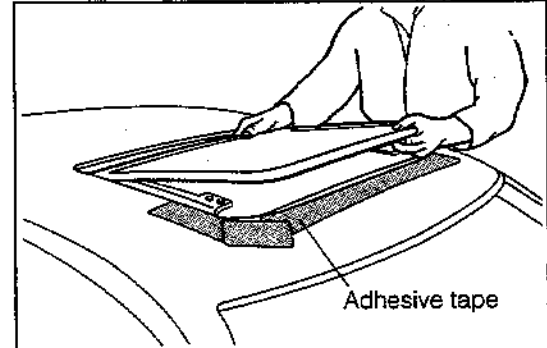


Fig. 9-193

WR-09209

8. Remove the roof window deflector arm subassembly and the roof window deflector panel subassembly by removing the four screws.

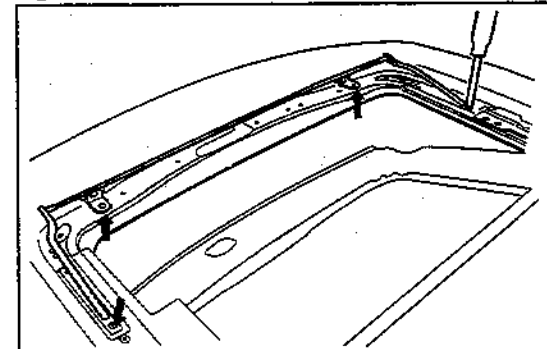


Fig. 9-194

WR-09210

9. Detach the guide rail cover by removing the screws, one each at the right and left sides.

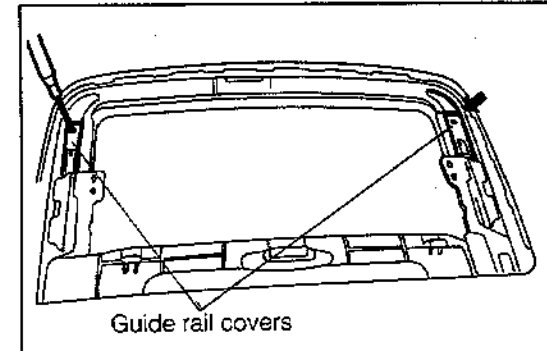


Fig. 9-195

WR-09211

10. Remove the roof drip rear channel by removing the two screws.

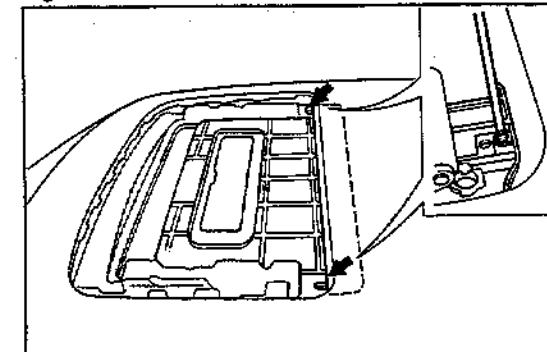


Fig. 9-196

WR-09212

11. Remove the sliding roof drive cable subassembly from the vehicle by removing the three screws.

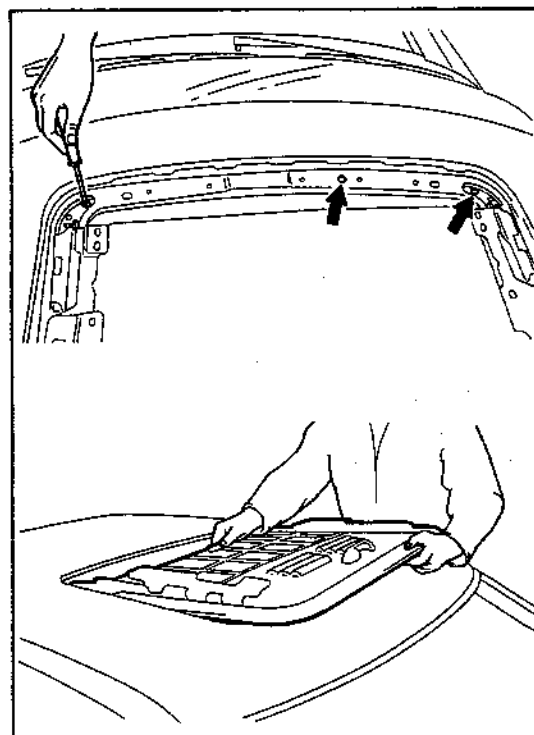


Fig. 9-197

WR-09213

12. Remove the sun shade trim subassembly from the back side of the sliding roof drive cable subassembly.

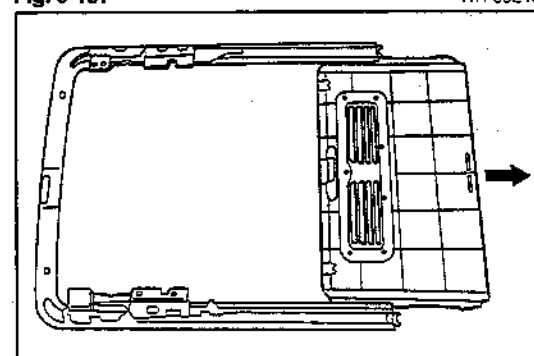


Fig. 9-198

WR-09214

## INSTALLATION

1. Install the sun shade trim from the back side of the sliding roof drive cable subassembly.
2. Installation of sliding roof drive cable subassembly
  - (1) Align the link position with each other by inserting a pin or the like into the reference hole. Set the roof in a fully-closed state.
  - (2) Place the drive cable subassembly into position from the front side of the roof while holding the both sides of the rail by hands.

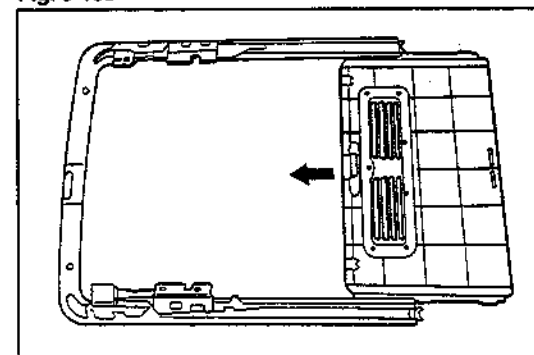


Fig. 9-199

WR-09215

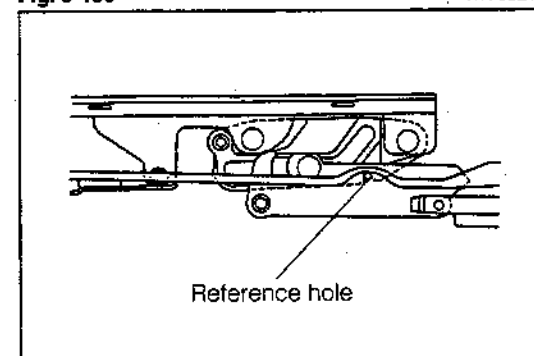


Fig. 9-200

WR-09216

## BODY

- (3) Secure the sliding roof cable subassembly on the vehicle with the three screws.

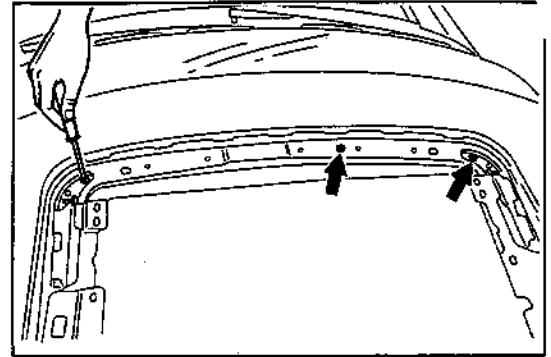


Fig. 9-201

WR-09217

3. Installation of roof drip rear channel
  - (1) Align the channel with the claw section of the rail at the right and left sides.
  - (2) Install the roof drip rear channel with the two screws.

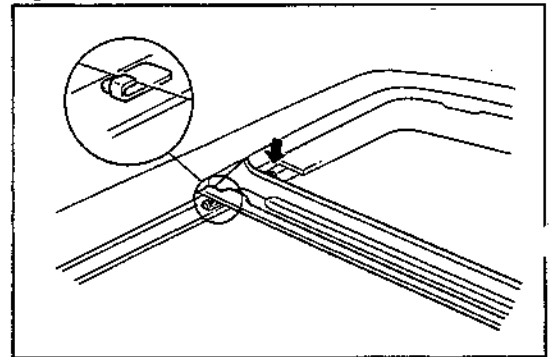


Fig. 9-202

WR-09218

4. Attach the guide rail cover.
5. Install the roof window deflector arm subassembly and the roof window deflector panel subassembly with the four screws.

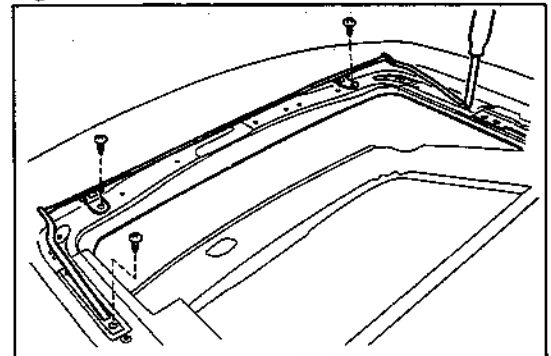


Fig. 9-203

WR-09219

6. Install the sliding roof glass subassembly with the eight nuts.

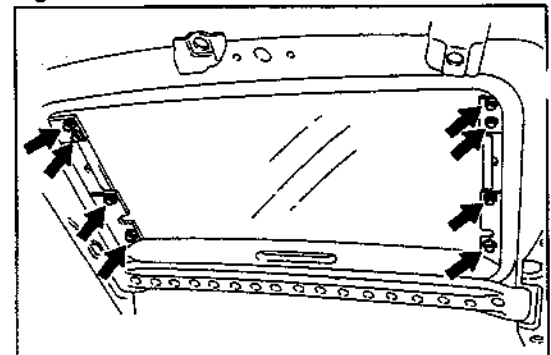


Fig. 9-204

WR-09220

7. Installation of sliding roof drive gear assembly
  - (1) Remove the cover by removing the screws.
  - (2) Turn the cam manually, until the punched marks on the housing and gear are aligned with each other so that the cam may be set to the fully-closed position.
  - (3) Attach the cover.
  - (4) Install the sliding roof drive gear assembly with the two bolts. Connect the coupler.

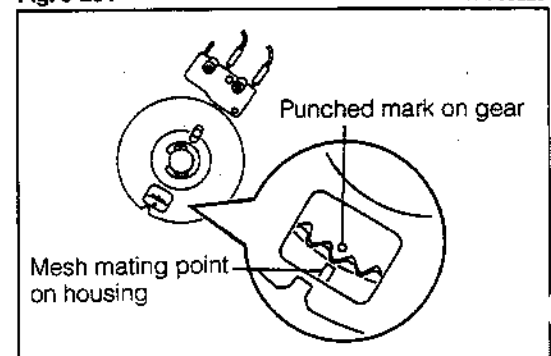


Fig. 9-205

WR-09221

### Installation of sliding roof switch assembly

- (1) Install the sliding roof switch with the two screws.  
Connect the coupler.
- (2) Connect the negative  $\ominus$  terminal of the battery.
- (3) Check the sunroof for proper operation. Perform the alignment adjustment.

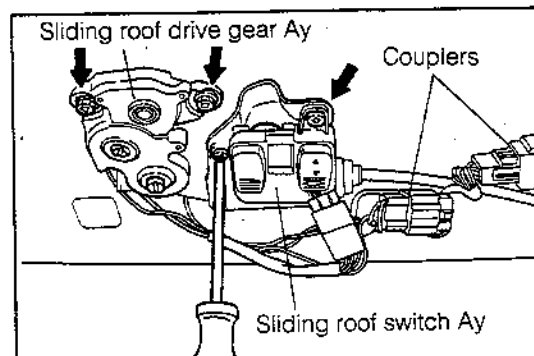


Fig. 9-206

WR-09222

9. Install the front section of the roof headlining.
  - (1) Install the clip and assist grip assembly.

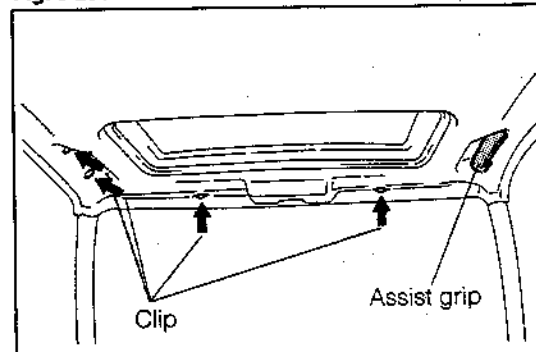


Fig. 9-207

WR-09223

- (2) Install the sun visor.
- (3) Install the inner rear-view mirror with room lamp.
- (4) Install the switch bezel.
- (5) Attach the sunroof opening trim molding.

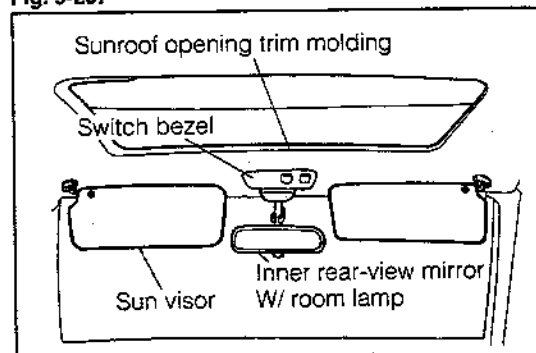


Fig. 9-208

WR-09224

### 10. Installation of front pillar garnish

- (1) Attach the hanger provided at the lower part of the front pillar garnish to the body.
- (2) Align the positions of the two clips. Attach the garnish by tapping the garnish lightly by hands.

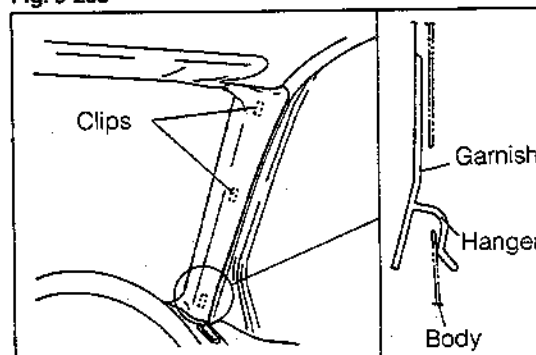


Fig. 9-209

WR-09225

## BODY

### ROOF DRIP MOLDING

#### ARTICLES TO BE PREPARED

	Nomenclature	Use
Lubricants and others	Sealant gun	For use in applying adhesive agent
	Alcohol	For use in cleaning installation surface of roof drip molding
	Cutter knife or the like	For use in separating roof drip molding
	* Beta seal 552 (adhesive agent) (Cartridge capacity 333 ml)	Adhesive agent for roof drip molding

#### \* Handling of Beta seal 552

1. Be sure to store this sealant in a cold, dark place. Avoid moisture, (for it will harden quickly.)
2. Once it is opened (after the nozzle is cut off), it will harden in two or three days. It is, therefore, necessary to open it immediately prior to use.

### INSTALLATION POSITION

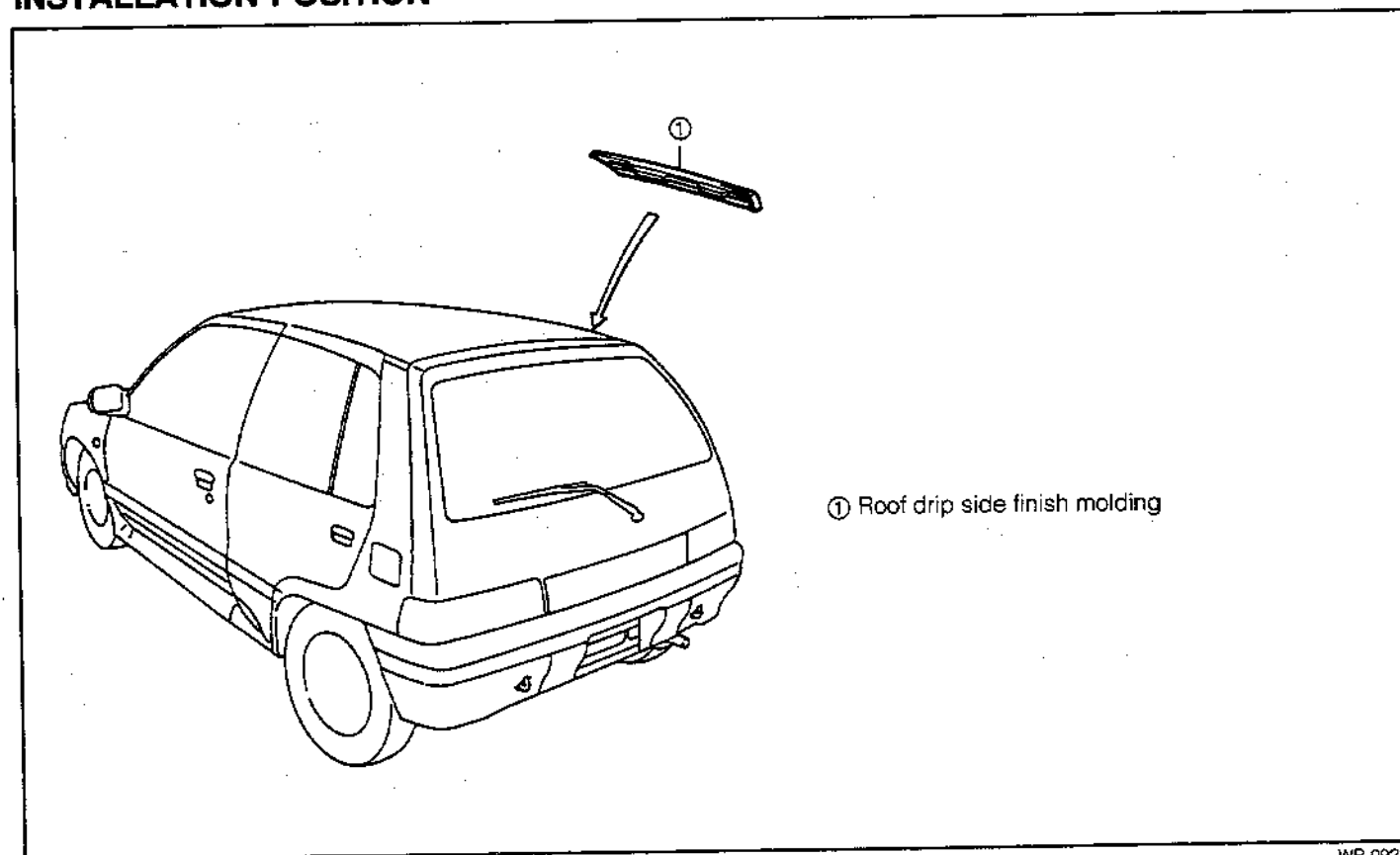


Fig. 9-210

WR-09227

### REMOVAL

1. Detach the roof drip side finish molding by inserting a common screwdriver into the rear end of the molding.

#### NOTE:

When the molding is pried with a screwdriver, be very careful not to scratch the body.

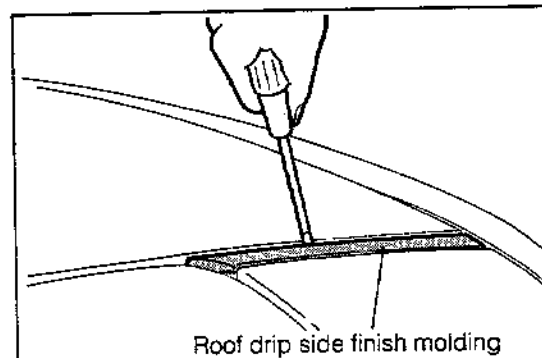
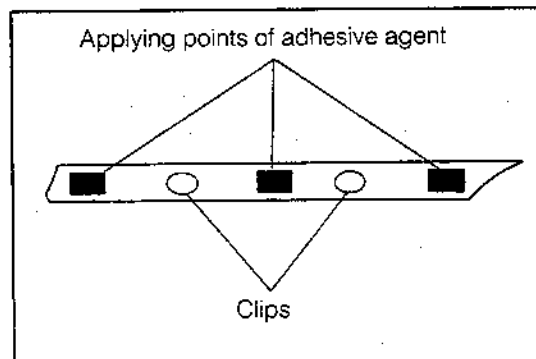


Fig. 9-211

WR-09228

# **INSTALLATION**

1. Install the roof drip side finish molding.
  - (1) When a new finish molding is used, paint the molding to the same color as the vehicle body.
  - (2) Clean the body attaching surface using alcohol or white gasoline.
  - (3) Set the molding and clips in position. Peel off the lining paper.
  - (4) Heat the body attaching surface to 40 to 60°C.
  - (5) Apply the adhesive agent to the points indicated in the right figure. Install the finish molding by aligning it with the body.

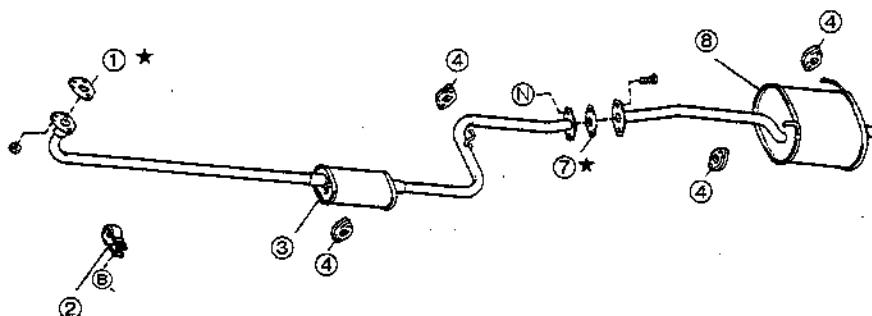


**Fig. 9-212**

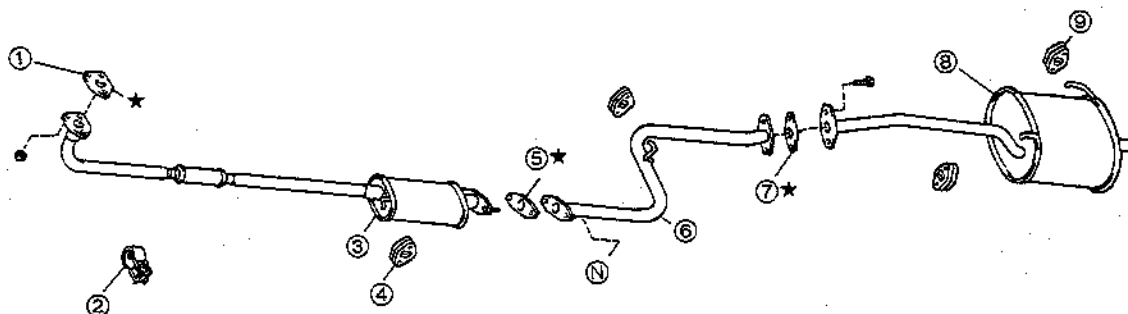
WR-09229

## **EXHAUST PIPE COMPONENTS**

### **Gasoline-fueled vehicle**



### **Diesel-powered vehicle**



★ : Non-reusable parts

- ① Gasket
- ② Clamp
- ③ Exhaust front pipe
- ④ Exhaust pipe support

- ⑤ Gasket
- ⑥ Exhaust center pipe
- ⑦ Gasket
- ⑧ Exhaust tail pipe

**Fig. 9-213**

WR-09230

## BODY

### FRONT PIPE

#### REMOVAL

1. Jack up the vehicle and support it with safety stands.
2. Separate the front pipe from the exhaust manifold by removing the three nuts.
3. Separate the bracket support No.1 by removing one bolt.

4. Separate the tail pipe or the center pipe from the front pipe by removing the two nuts.
5. Separate the exhaust pipe support.  
CB-23, CB-61 and CB-80 engines: Two points  
CL-11 and CL-16 engines: One point

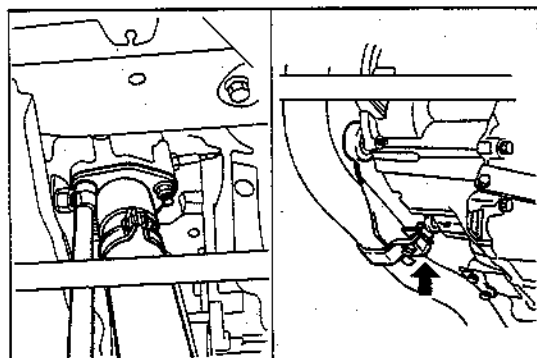


Fig. 9-214

WR-09231

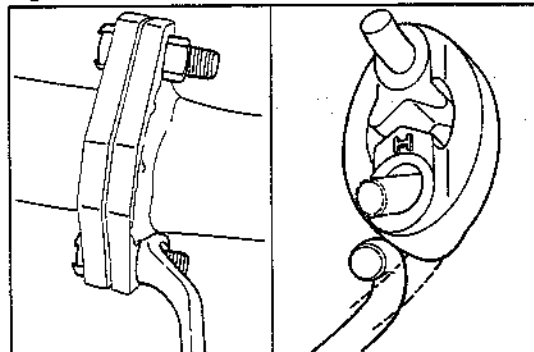


Fig. 9-215

WR-09232

#### INSTALLATION

1. With a new gasket interposed, connect the tail pipe or the center pipe to the front pipe by tightening the two nuts temporarily.
2. With a new gasket interposed, connect the front pipe to the exhaust manifold by tightening the two nuts temporarily.
3. Install the exhaust pipe support.  
CB-23, CB-61 and CB-80 engines: Two points  
CL-11 and CL-16 engines: One point

#### NOTE:

Replace any exhaust pipe support which exhibits damage.

4. Tighten the nuts attaching the tail pipe or the center pipe to the front pipe.  
**Tightening Torque:** 4.0 - 6.0 kg-m (29 - 43 ft-lb)
5. Tighten the nuts attaching the front pipe to the exhaust manifold.  
**Tightening Torque:** 4.0 - 6.0 kg-m (29 - 43 ft-lb)
6. Install the bracket support No.1.  
**Tightening Torque:** 3.5 - 5.0 kg-m (25 - 36 ft-lb)
7. Remove the safety stands and jack down the vehicle.

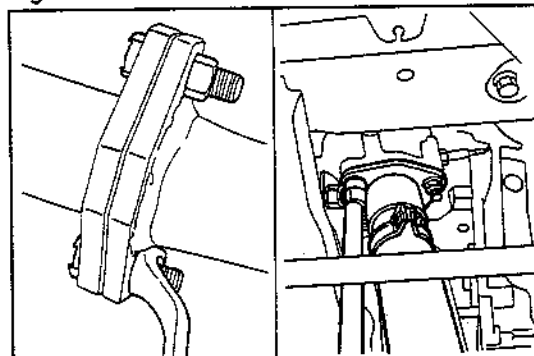


Fig. 9-216

WR-09233

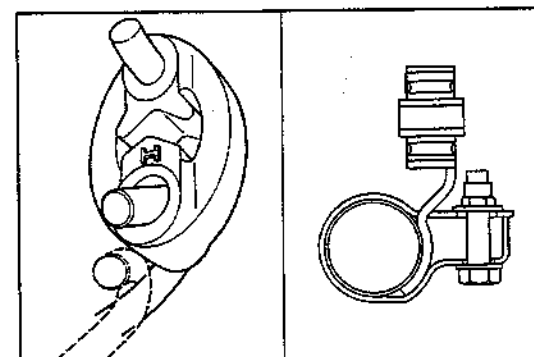


Fig. 9-217

WR-09234



## **CENTER PIPE (CL-11 and CL-61 Engines)**

### **REMOVAL**

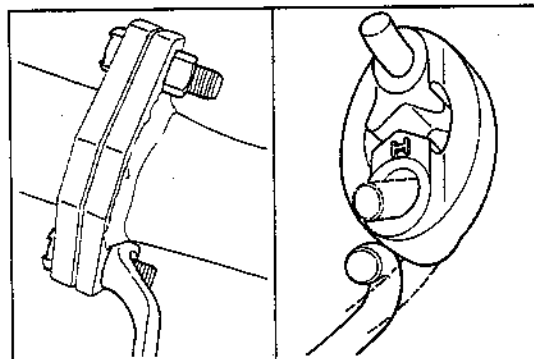
1. Jack up the vehicle and support it with safety stands.
2. Separate the front pipe and tail pipe from the center pipe.
3. Remove the exhaust pipe support and take out the center pipe.

### **INSTALLATION**

1. With new gaskets interposed, connect the front pipe and tail pipe to the center pipe by tightening the nuts temporarily.
2. Install the exhaust pipe support.
3. Tighten the center pipe attaching nuts.

**Tightening Torque:** 4.0 - 6.0 kg-m (39.8 - 43.4 ft-lb)

4. Remove the safety stands and jack down the vehicle.



**Fig. 9-218**

WR-09235

## **TAIL PIPE**

### **REMOVAL**

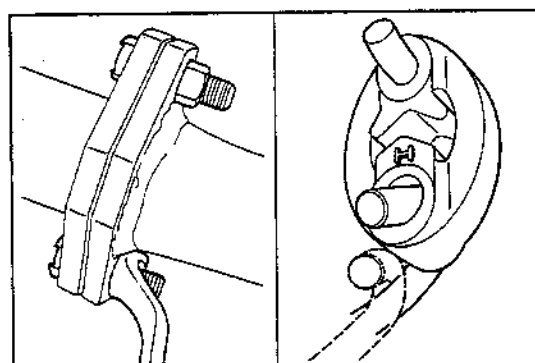
1. Jack up the vehicle and support it with safety stands.
2. Separate the tail pipe from the front pipe or the center pipe.
3. Remove the two exhaust pipe supports.

### **INSTALLATION**

1. With a new gasket interposed, connect the tail pipe to the front pipe or the center pipe by tightening the nuts temporarily.
2. Install the two exhaust pipe supports.
3. Tighten the tail pipe attaching nuts.

**Tightening Torque:** 4.0 - 6.0 kg-m (29 - 43 ft-lb)

4. Remove the safety stands and jack down the vehicle.



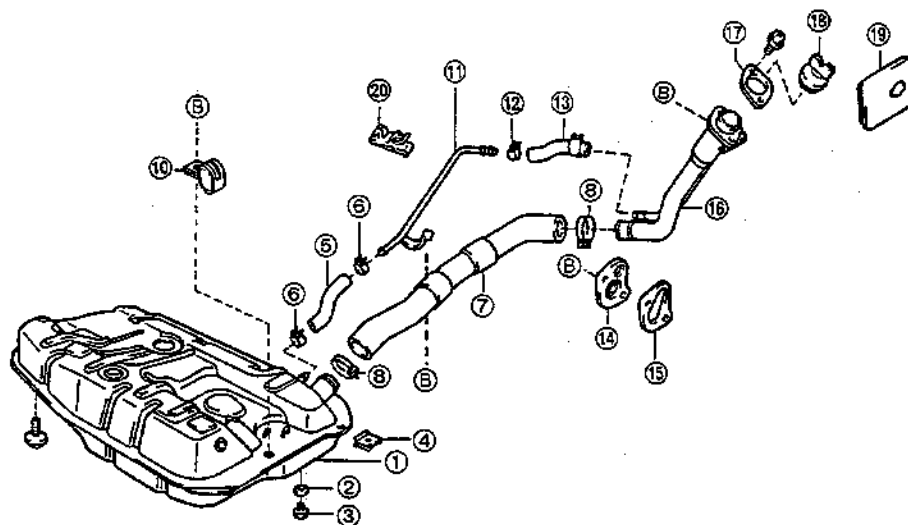
**Fig. 9-219**

WR-09236

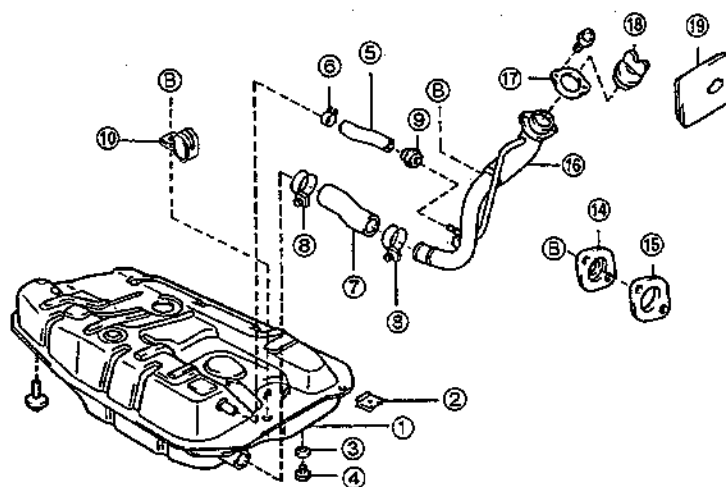
## BODY

### FUEL TANK COMPONENTS

#### 3-door model



#### 5-door model



- |                                  |                                    |
|----------------------------------|------------------------------------|
| ① Fuel tank Ay                   | ⑪ Breather tube                    |
| ② Fuel tank flange reinforcement | ⑫ Clip                             |
| ③ Gasket                         | ⑬ Fuel hose No.4                   |
| ④ Drain plug                     | ⑭ Fuel inlet pipe seal lower plate |
| ⑤ Fuel hose No.5                 | ⑮ Fuel inlet pipe lower plate      |
| ⑥ Clip                           | ⑯ Fuel inlet pipe S/A              |
| ⑦ Fuel tank sub inlet hose       | ⑰ Fuel tank inlet pipe shield      |
| ⑧ Clamp                          | ⑱ Fuel tank cap Ay                 |
| ⑨ Grommet                        | ⑲ Fuel filler opening lid S/A      |
| ⑩ Clamp                          | ⑳ Clamp                            |

Fig. 9-220

WR-09237

# FUEL INLET PIPE

## 3-Door Model

1. Drain the fuel from the fuel tank by removing the drain plug. After the fuel has been drained, install the drain plug.
2. Remove the rear seatback and seat cushion (fixed type only) (See page 9-101.)
3. Remove the quarter trim panel assembly at the left side.

WR-09238

4. Remove the two attaching screws of the fuel inlet pipe.

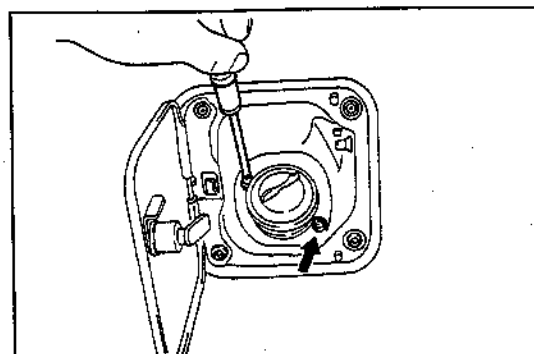


Fig. 9-221

WR-09239

5. Detach the clamp and separate the fuel tank subinlet hose.
6. Remove the fuel inlet pipe seal lower plate and the fuel inlet pipe lower seal by removing the two bolts.
7. Detach the clip and remove the breather hose.

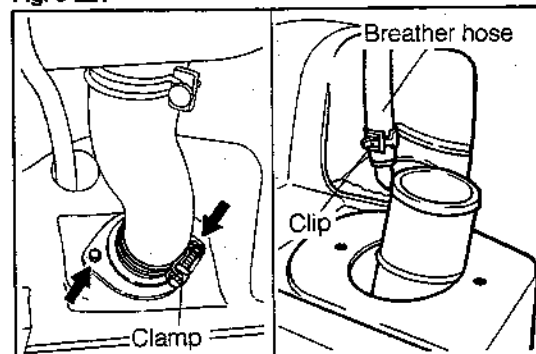


Fig. 9-222

WR-09240

8. Working from the vehicle interior, remove the fuel inlet pipe attaching bolt. Detach the fuel inlet pipe sub-assembly.
9. Detach the boot.

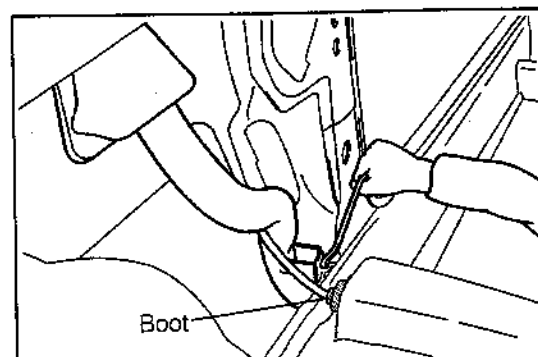


Fig. 9-223

WR-09241

## INSTALLATION

1. Attach the boot. Set the fuel inlet pipe in the vehicle.
2. Install the fuel inlet pipe attaching bolt at the vehicle interior, using the four bolts.
3. Working from the outside, install the fuel inlet pipe, using the two attaching screws.

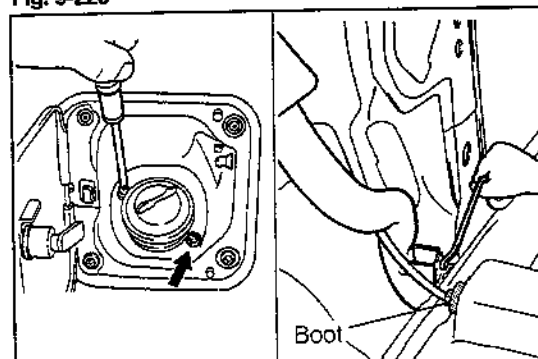


Fig. 9-224

WR-09242

## BODY

4. Attach the breather hose to the fuel inlet pipe. Secure it with the clip.
5. Install the fuel inlet pipe seal lower plate and the fuel inlet pipe lower seal using the two bolts.
6. Attach the fuel tank subinlet hose to the fuel inlet pipe. Secure it with the clamp.
7. Install the quarter trim panel assembly.
8. Install the rear seatback and seat cushion.

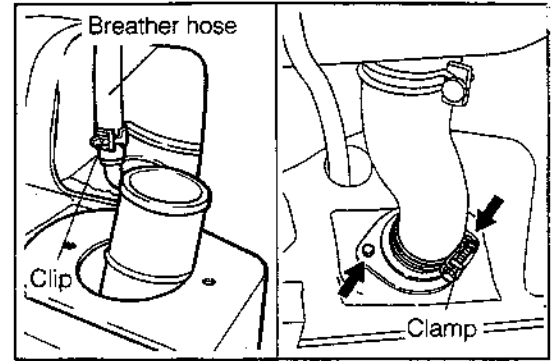


Fig. 9-225

WR-09243

### 5-Door Model

1. Drain the fuel from the fuel tank by removing the drain plug. After the fuel has been drained, install the drain plug.
2. Remove the rear seatback and seat cushion (fixed type only) (See page 9-101.)
3. Remove the package tray, package tray side trim, rear scuff plate, quarter wheel house and cover deck side trim.

WR-09244

4. Remove the fuel inlet box and fuel filler opening lid subassembly by removing the six screws.

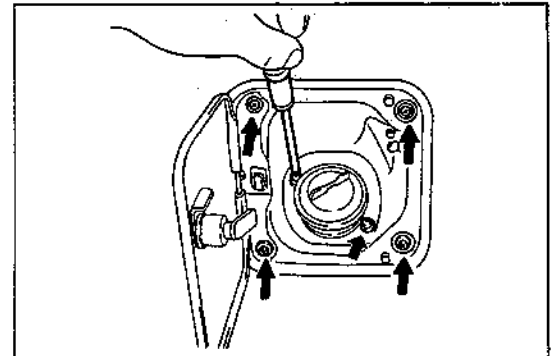


Fig. 9-226

WR-09245

5. Detach the clamp and separate the fuel tank subinlet hose.
6. Detach the clip and remove the breather hose.
7. Remove the fuel inlet pipe seal lower plate and the fuel inlet pipe lower seal by removing the two bolts.

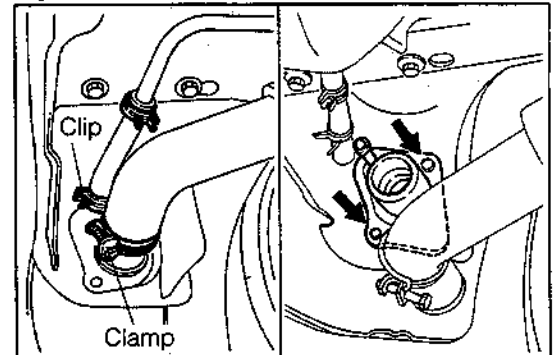


Fig. 9-227

WR-09246

8. Working from the vehicle interior, remove the three attaching bolts of the fuel inlet pipe subassembly. Detach the fuel inlet pipe subassembly.

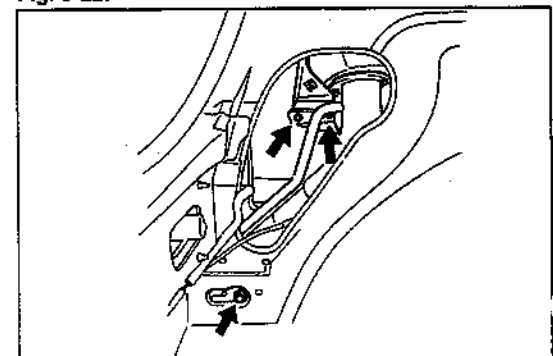


Fig. 9-228

WR-09247

## INSTALLATION

1. Working from the vehicle interior, install the fuel inlet pipe subassembly with the three bolts.
2. Working from the outside, install the fuel inlet box and fuel filler opening lid subassembly with the six screws.
3. Install the fuel inlet pipe seal lower plate and the fuel inlet pipe lower seal, using the two bolts.
4. Attach the breather hose to the fuel inlet pipe subassembly. Secure it with the clip.
5. Install the fuel tank subinlet hose. Secure it with the clamp.
6. Install the cover deck side trim, quarter wheel house, rear scuff plate, package tray side trim and package tray.
7. Install the rear seatback and seat cushion.

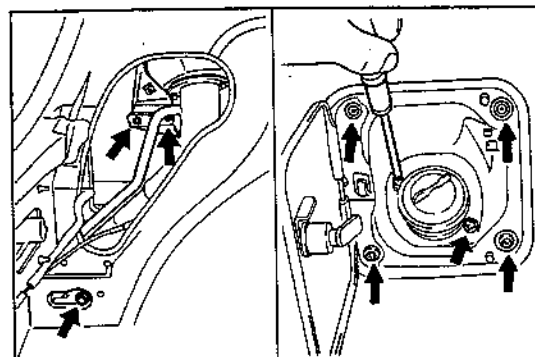


Fig. 9-229

WR-09248

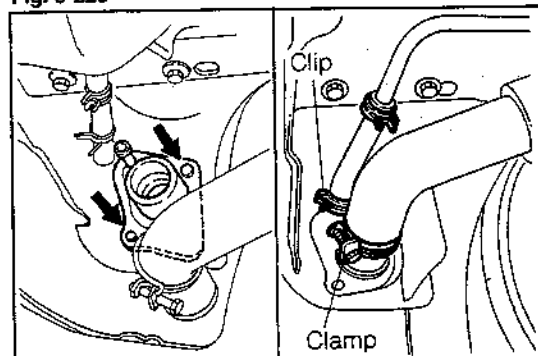


Fig. 9-230

WR-09249

## FUEL TANK

### REMOVAL

1. Jack up the vehicle and support it with safety stands.
2. Drain the fuel from the fuel tank by removing the drain plug. After the fuel has been drained, install the drain plug.
3. Removal of fuel sender gauge and fuel pump connector

WR-09250

- (1) Remove the rear seat.
- (2) Detach the rear quarter trim at the right side. (3-door model)
- (3) Detach the rear scuff plate at the right/rear side. (5-door model)
- (4) Disconnect the connector. Take out the connector together with the grommet to the vehicle exterior.

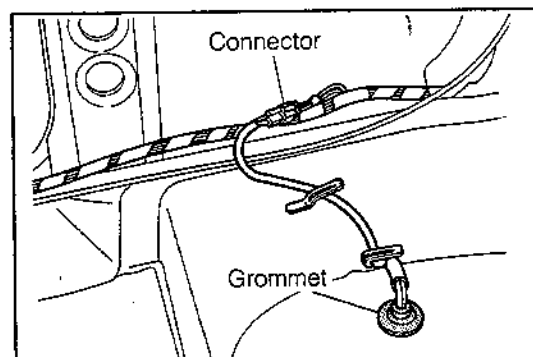


Fig. 9-231

WR-09251

4. Removal of fuel tank subinlet hose and breather hose

### 3-Door Model

- (1) Detach the clamp. Remove the fuel tank subinlet hose.
- (2) Detach the clip. Remove the breather hose.

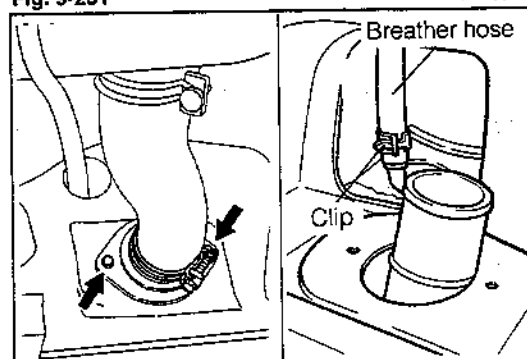


Fig. 9-232

WR-09252

## 5-Door Model

- (1) Detach the clamp. Remove the fuel tank subinlet hose.
- (2) Detach the clip and hose from both ends of the breather pipe.
- (3) Remove the breather pipe by removing its attaching bolt.

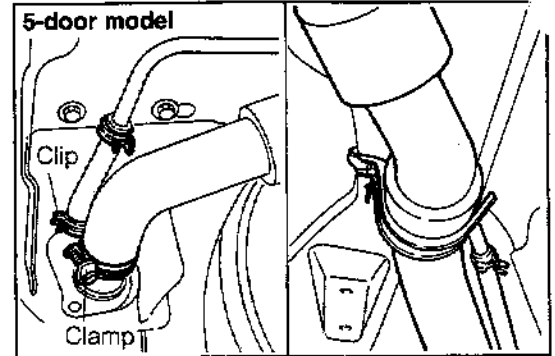


Fig. 9-233

WR-09253

## 5. Removal of fuel hose

- (1) Disconnect the main fuel hose.
- (2) Disconnect the return fuel hose.
- (3) Disconnect the fuel hose for emission control.

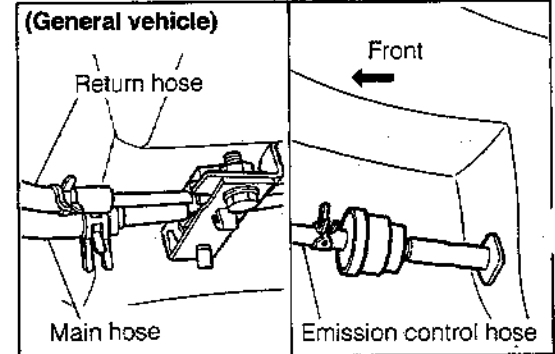


Fig. 9-234

WR-09254

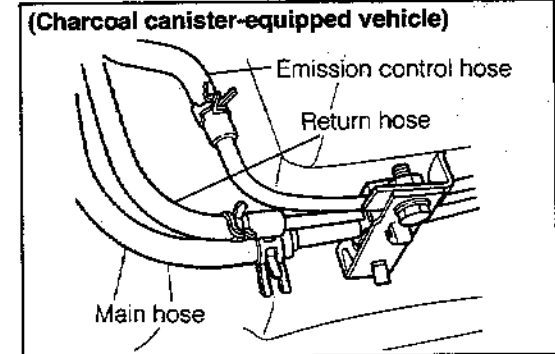


Fig. 9-235

WR-09255

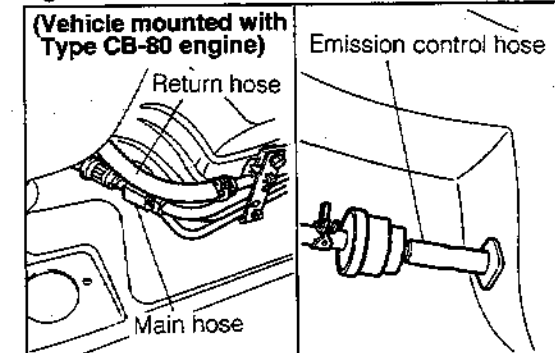


Fig. 9-236

WR-09256

## 6. Removal of fuel tank assembly

- (1) Support the fuel tank assembly with a jack.
- (2) Remove the four attaching bolts of the fuel tank.
- (3) Remove the fuel tank assembly from the vehicle.

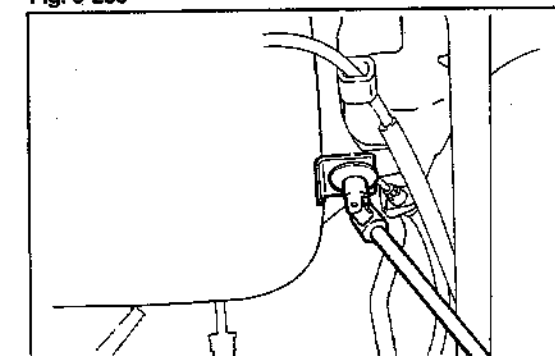


Fig. 9-237

WR-09257

7. Remove the fuel hose and pipe.
8. Remove the fuel sender gauge assembly by removing the coupler and five screws.
9. Remove the fuel pump assembly with bracket by removing the eight screws.

### INSTALLATION

1. Install the fuel pump assembly with bracket and the fuel sender gauge assembly.
2. Install the fuel hose and pipe.
3. Install the fuel tank assembly with the four bolts.

#### NOTE:

Prior to the fuel tank installation, be sure to route the fuel gauge-related harness through the inside.

4. Installation of fuel hose
  - (1) Connect the main fuel hose.
  - (2) Connect the return fuel hose.
  - (3) Connect the emission control fuel hose.

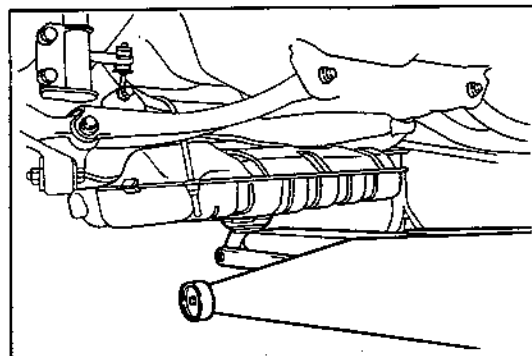


Fig. 9-238

WR-09258

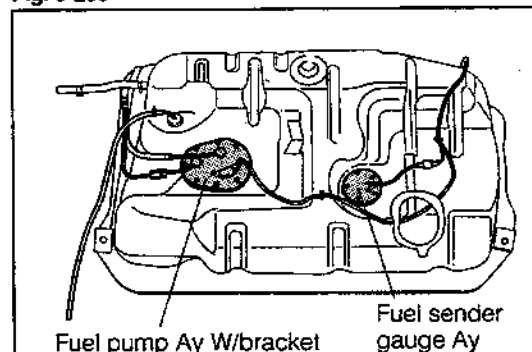


Fig. 9-239

WR-09259

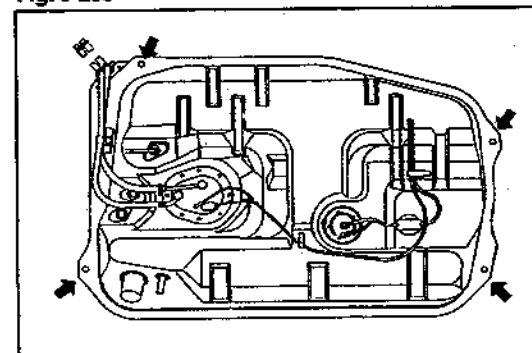


Fig. 9-240

WR-09260

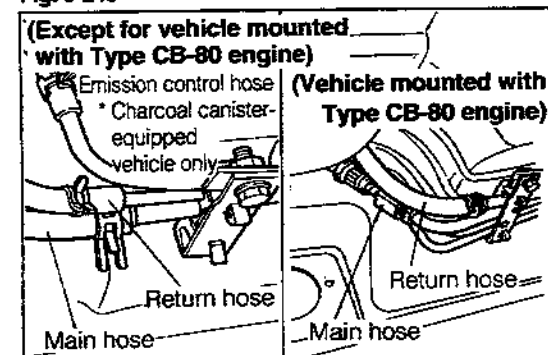


Fig. 9-241

WR-09261

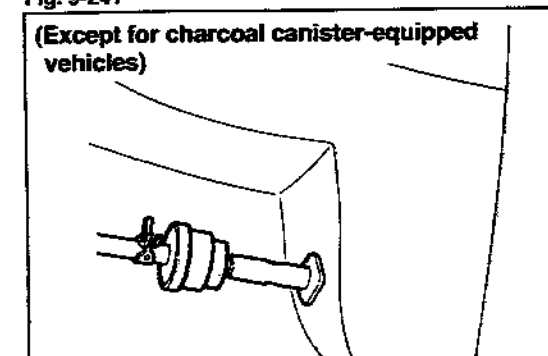


Fig. 9-242

WR-09262

## BODY

5. Install the fuel tank subinlet hose and breather hose.

### 3-door model

- (1) Connect the breather hose. Secure it with the clip.
- (2) Connect the fuel tank subinlet hose. Secure it with the clamp.

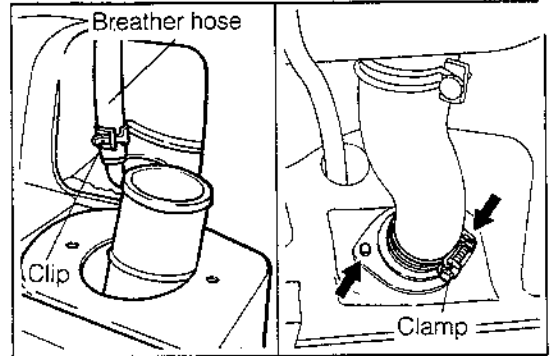


Fig. 9-243

WR-09263

### 5-door model

- (1) Connect the fuel tank subinlet hose. Secure it with the clamp.
- (2) Connect the hoses to both ends of the breather pipe. Secure them with the clips.
- (3) Install the breather pipe with one bolt.

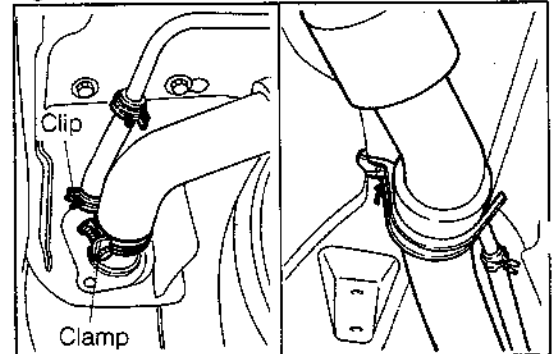


Fig. 9-244

WR-09264

6. Installation of fuel sender gauge and fuel pump connectors

- (1) Connect the connectors and install the grommet.
- (2) Attach the rear quarter trim at the right/rear side. (3-door model)
- (3) Attach the scuff plate at the right/rear side. (5-door model)
- (4) Install the rear seat.

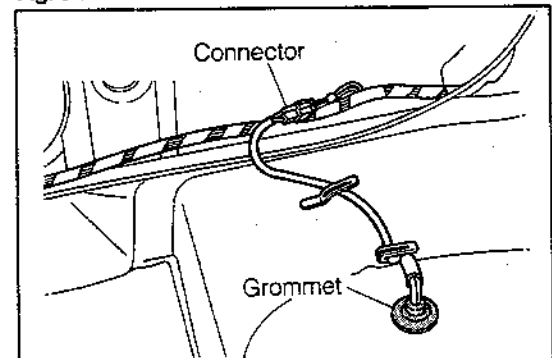
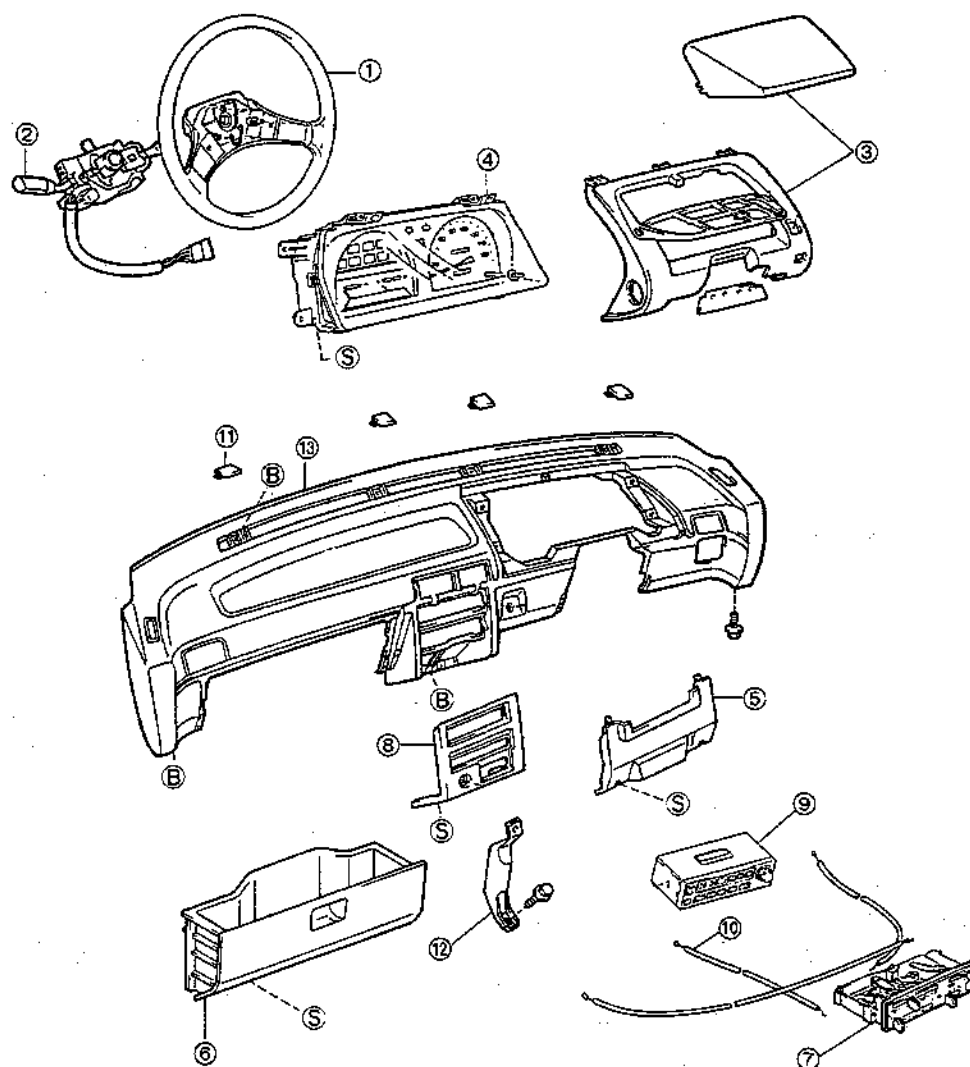


Fig. 9-245

WR-09265



# INSTRUMENT PANEL COMPONENTS



- |                                       |  |
|---------------------------------------|--|
| ① Steering wheel Ay                   | ⑧ Instrument cluster finish center panel |
| ② Turn signal switch Ay               | ⑨ Radio Ay                               |
| ③ Instrument cluster finish panel S/A | ⑩ Heater control cable (3 pcs.)          |
| ④ Combination meter Ay                | ⑪ Instrument panel hole cover            |
| ⑤ Instrument panel finish lower panel | ⑫ Instrument panel-to-floor brace        |
| ⑥ Glove compartment door S/A          | ⑬ Instrument panel Ay                    |
| ⑦ Heater control Ay                   |  |

Fig. 9-246

WR-09266

## BODY

### REMOVAL

1. Disconnect the negative  $\ominus$  terminal of the battery.
2. Remove the instrument lower finish panel by removing the two screws.
3. Remove the instrument panel lower reinforcement by removing the four bolts.
4. Remove the steering column by removing the attaching bolts and nuts of the steering column.
5. Removal of instrument cluster finish panel subassembly
  - (1) Remove the four attaching screws of the instrument cluster finish panel subassembly.
  - (2) Slightly pull out the instrument cluster finish panel subassembly toward your side. Then, disconnect the couplers of the rear window defogger and rear wiper switch.
  - (3) Remove the instrument cluster finish panel subassembly.

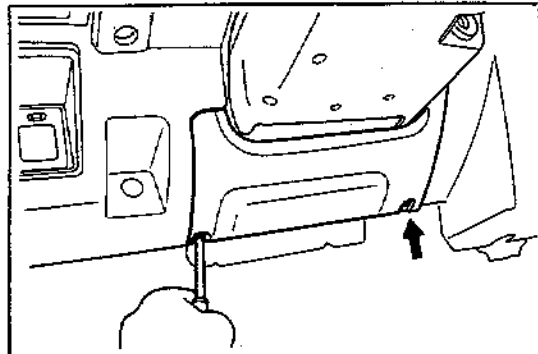


Fig. 9-247

WR-09267

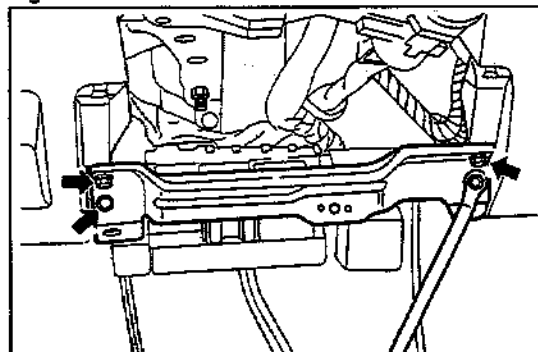


Fig. 9-248

WR-09268

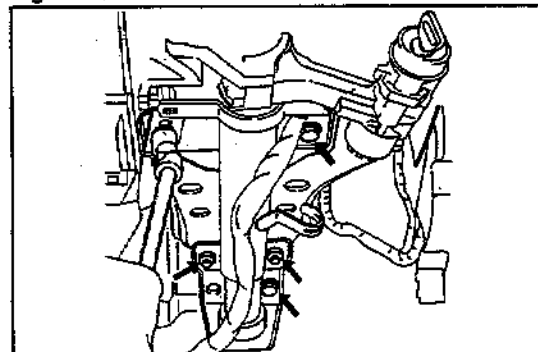


Fig. 9-249

WR-09269

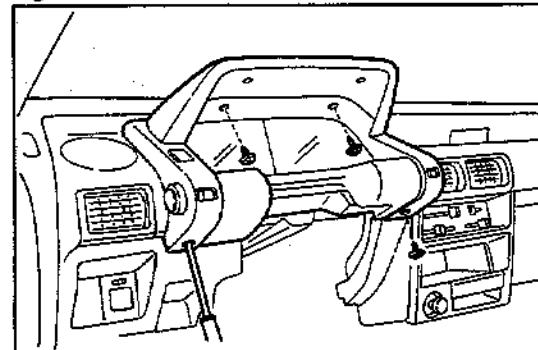


Fig. 9-250

WR-09270

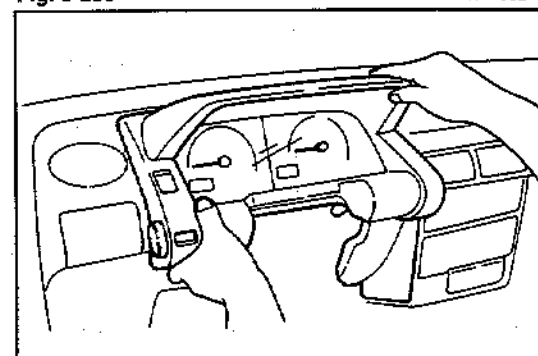


Fig. 9-251

WR-09271

# Removal of combination meter assembly

- (1) Disconnect the speedometer cable at the transmission side.

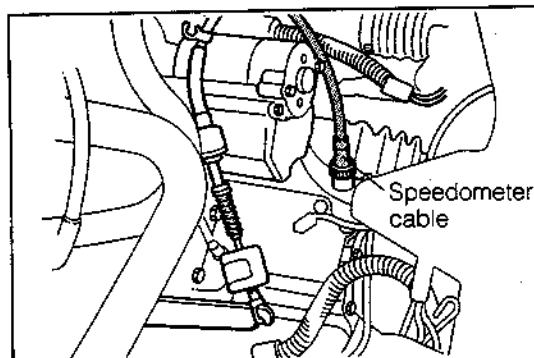


Fig. 9-252

WR-09272

- (2) Remove the four attaching screws of the combination meter assembly.
- (3) Pull out the combination meter assembly toward your side. Disconnect the speedometer cable and the coupler of the wire harness. Remove the combination meter assembly.

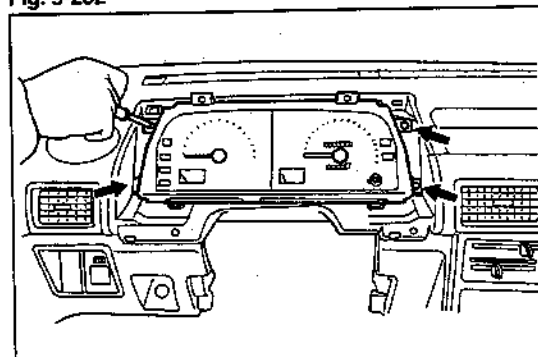


Fig. 9-253

WR-09273

7. Remove the glove compartment door subassembly by removing the two screws.

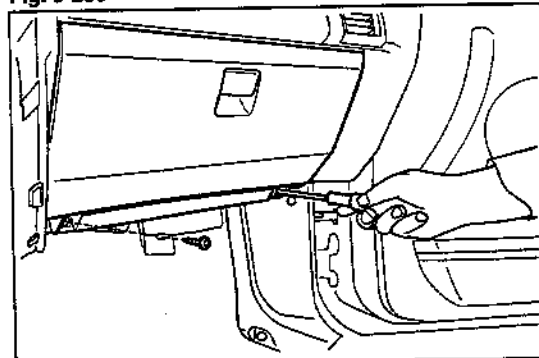


Fig. 9-254

WR-09274

# Removal of instrument cluster finish center panel

- (1) Remove the instrument cluster finish center panel by removing the four screws and pulling out the panel toward your side.
- (2) Disconnect the connectors of the cigar lighter.

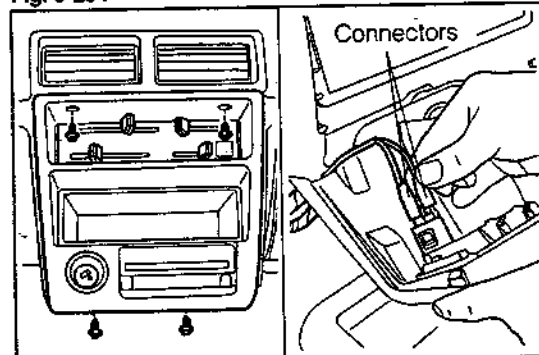


Fig. 9-255

WR-09275

9. Remove the heater control assembly by removing the three screws.

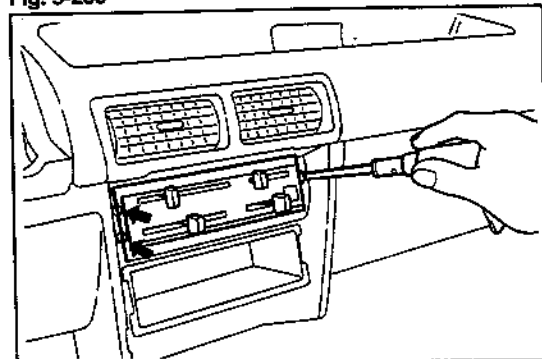


Fig. 9-256

WR-09276

## BODY

10. Disconnect the couplers and the wire harness clamps of the ECU (for EFI or 3-speed A/T use), blower fan motor, clock and remote controlled mirror switch.

### 11. Removal of instrument panel assembly

- (1) Remove the instrument hole covers and bolts at the four points of the upper section of the instrument panel assembly.
- (2) Remove the two attaching bolts at both sides of the instrument panel assembly.
- (3) Remove the two attaching bolts at the center of the instrument panel assembly.
- (4) Remove the instrument panel assembly from the vehicle.

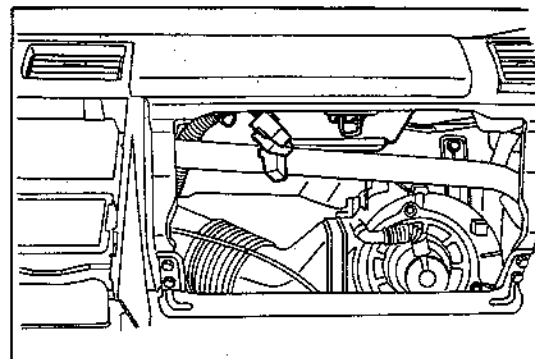


Fig. 9-257

WR-09277

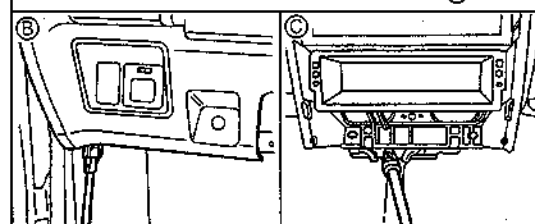
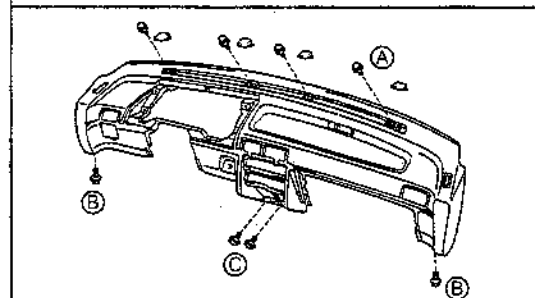
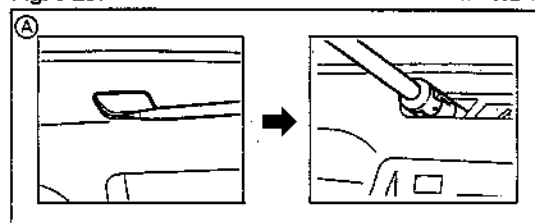


Fig. 9-258

WR-09278

12. Remove the following parts from the instrument panel assembly.

- (1) Remove the defroster nozzle assembly, side defroster nozzle duct, evaporator-to-register duct subassembly and front ventilator duct by removing the six screws.

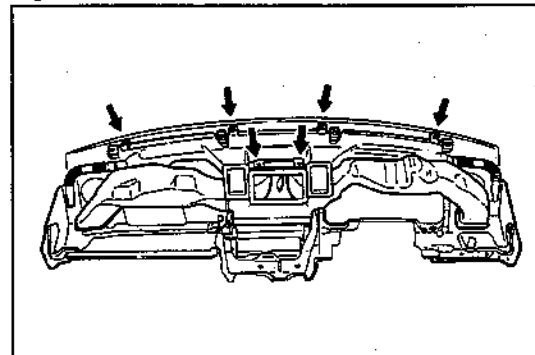


Fig. 9-259

WR-09279

- (2) Remove the ECU together with the bracket by removing the two screws and one bolt.
- (3) Remove the clock by removing the two screws. (LHD vehicle only)

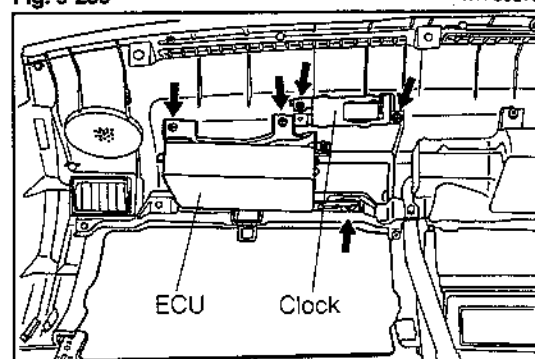


Fig. 9-260

WR-09280

- (4) Remove the glove compartment door lock striker by removing the two screws.
- (5) Remove the instrument panel reinforcement by removing the five screws and one bolt. (A/T-equipped vehicle and GTti grade)
- (6) Remove the instrument panel reinforcement by removing the three screws. (Except for A/T-equipped vehicle and GTti grade)

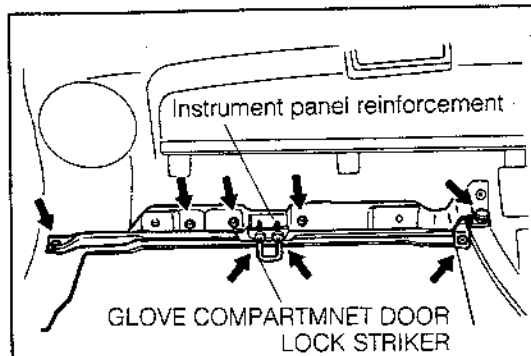


Fig. 9-261

WR-09281

- (7) Remove the instrument panel center stay by removing the three screws.

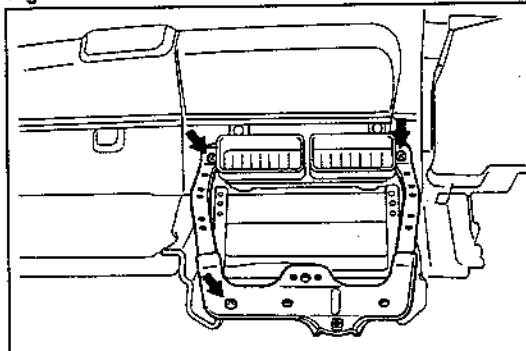


Fig. 9-262

WR-09282

- (8) Detach the clamps by removing the screws. (Two points)
- (9) Remove the instrument box or the remote controlled mirror switch.

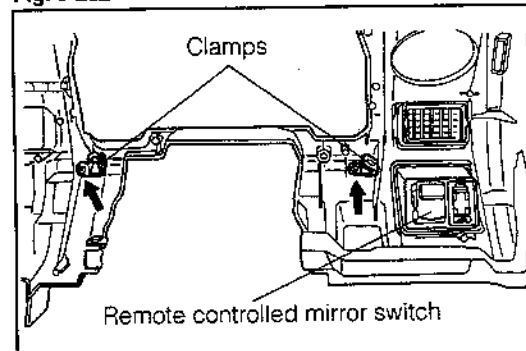


Fig. 9-263

WR-09263

- (10) Remove the instrument panel registers (R & L) and instrument panel center register.
- (11) Remove the instrument panel safety pad by removing the eight screws. (LHD vehicle only)

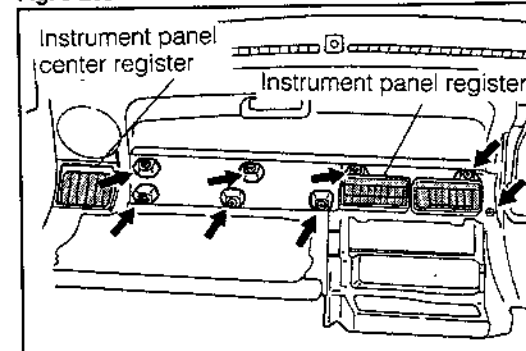


Fig. 9-264

WR-09284

- (12) Remove the radio tuning opening cover by removing the two screws.
- (13) Remove the instrument panel reinforcement No.3 by removing the four bolts.

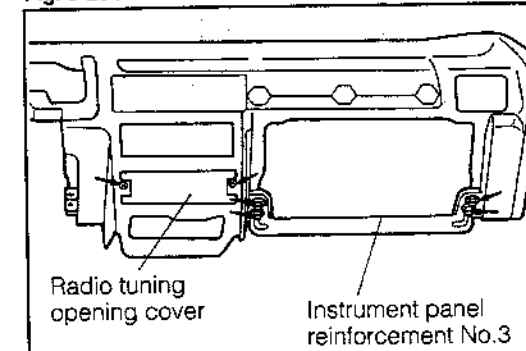


Fig. 9-265

WR-09285

## BODY

- (14) Remove the instrument panel bracket No.2 by removing the four screws.
- (15) Remove the instrument panel bracket No.1 by removing the two screws.

## INSTALLATION

1. Install the following parts to the instrument panel assembly.
  - (1) Install the instrument panel bracket No.1 (two screws) and instrument panel bracket No.2 (four screws).
  - (2) Install the instrument panel reinforcement No.3 with the four bolts.
  - (3) Install the radio tuning opening cover with the two screws.
- (4) Install the instrument panel safety pad with the eight screws. (LHD vehicle only)
- (5) Install the instrument panel registers (R & L) and instrument panel center register.
- (6) Install the instrument box or the remote controlled mirror switch.
- (7) Attach the clamps with the screws. (Two points)
- (8) Install the instrument panel center stay with the three screws.

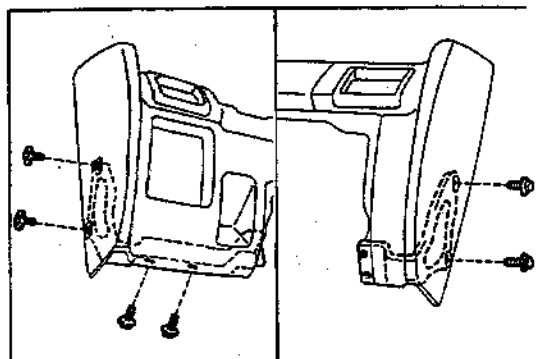


Fig. 9-266

WR-09286

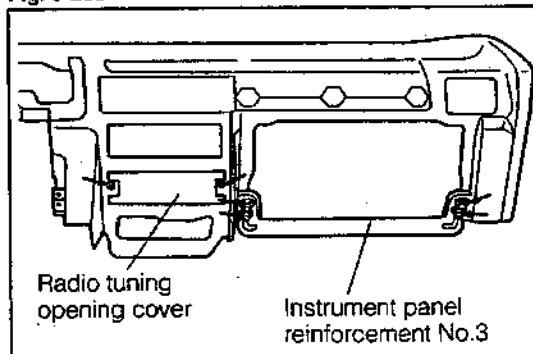


Fig. 9-267

WR-09287

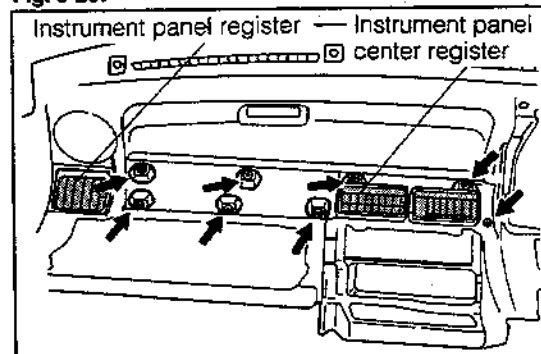


Fig. 9-268

WR-09288

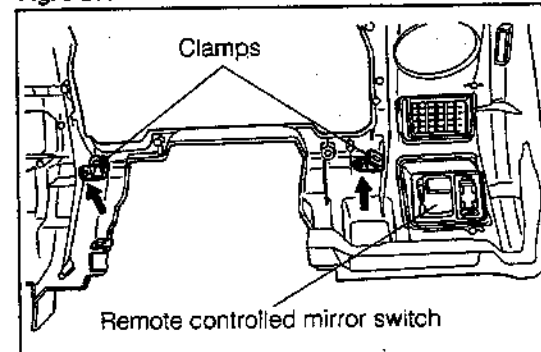


Fig. 9-269

WR-09289

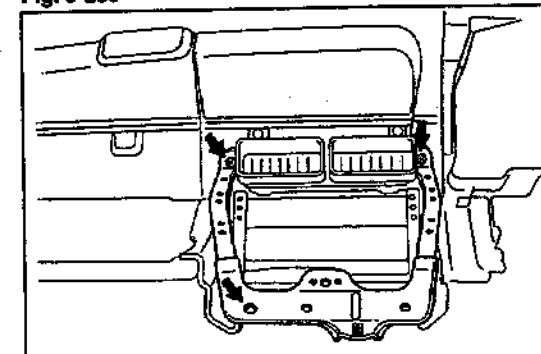


Fig. 9-270

WR-09290

- (9) Install the instrument panel reinforcement with the five screws and one bolt. (A/T-equipped vehicle and GTti grade)
- (10) Install the instrument panel reinforcement with the three screws. (Except for A/T-equipped vehicle and GTti grade)
- (11) Install the glove compartment door lock striker with the two screws.

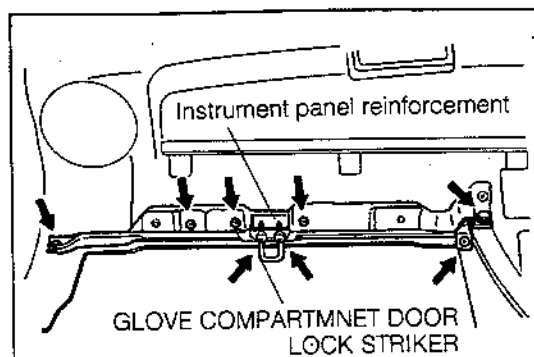


Fig. 9-271

WR-09291

- (12) Install the clock with the two screws. (LHD vehicle only)
- (13) Install the ECU together with the bracket by means of the two screws and one bolt.

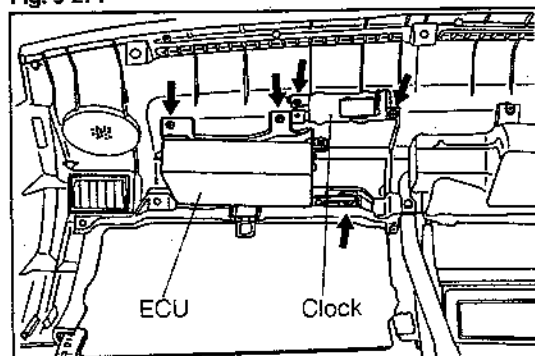


Fig. 9-272

WR-09292

- (14) Install the evaporator-to-register duct subassembly, front ventilator duct, defroster nozzle assembly and side defroster nozzle.

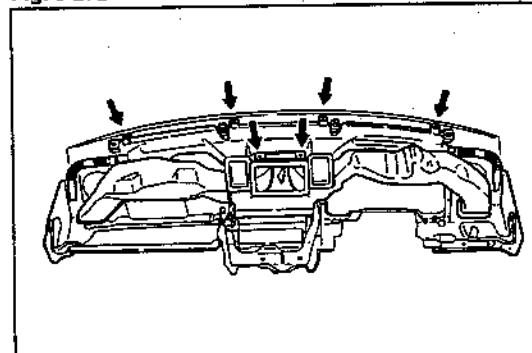


Fig. 9-273

WR-09293

2. Installation of instrument panel assembly
  - (1) Temporarily install the four bolts (A) at the upper side of the instrument panel assembly.
  - (2) Temporarily install the two bolts (B) at both sides of the instrument panel assembly.
  - (3) Temporarily install the two bolts (C) at the center of the instrument panel assembly.
  - (4) Settle the instrument panel assembly and tighten the eight bolts.
  - (5) Install the instrument panel hole covers.

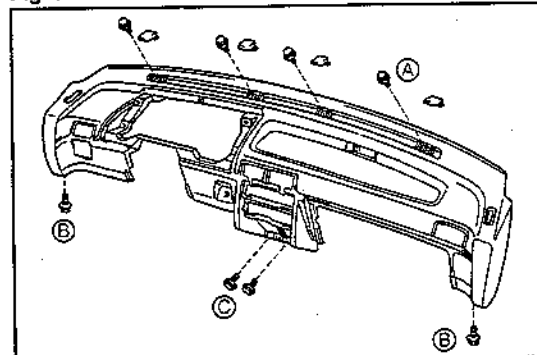


Fig. 9-274

WR-09294

3. Connect the couplers and wire harness clamps of the ECU (for EFI or A/T use), blower fan motor, clock and remote controlled mirror switch.
4. Install the heater control assembly with the three screws.

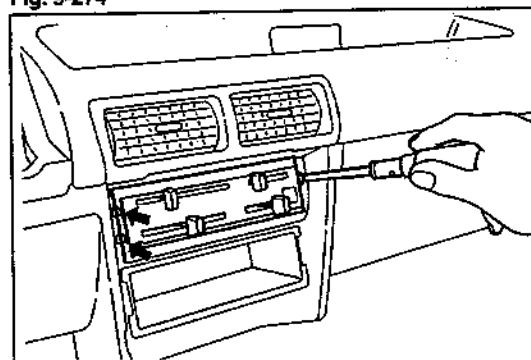


Fig. 9-275

WR-09295

## BODY

5. Installation of instrument cluster finish center panel
  - (1) Connect the connectors of the cigar lighter.
  - (2) Install the instrument cluster finish center panel with the four screws.
6. Install the glove compartment door subassembly with the two screws. (See Fig. 9-254.)

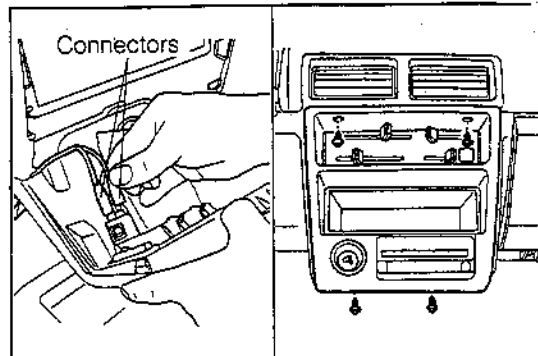


Fig. 9-276

WR-09296

7. Installation of combination meter assembly
  - (1) Connect the coupler of the wire harness and speedometer cable to the combination meter assembly.
  - (2) Install the combination meter assembly with the four screws.
  - (3) Connect the speedometer cable at the transmission side.

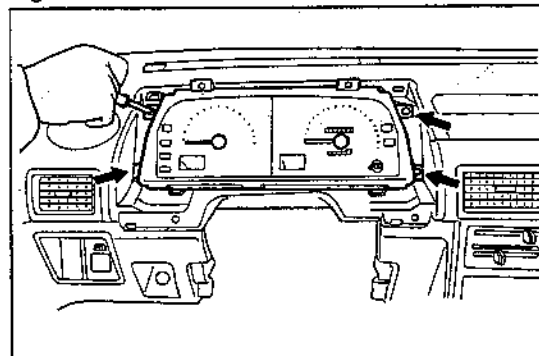


Fig. 9-277

WR-09297

8. Installation of instrument cluster finish panel subassembly
  - (1) Connect the couplers of the rear window defogger and rear wiper switch.
  - (2) Install the instrument cluster finish panel subassembly with the four screws.

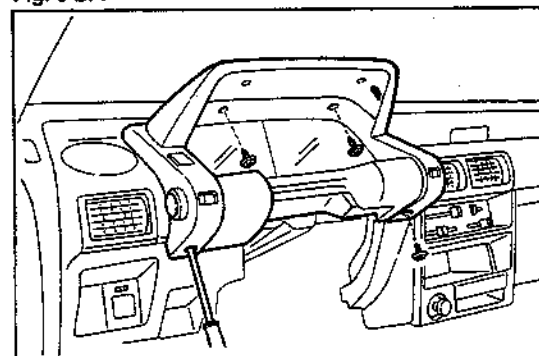


Fig. 9-278

WR-09298

9. Install the steering column with the bolts and nuts.

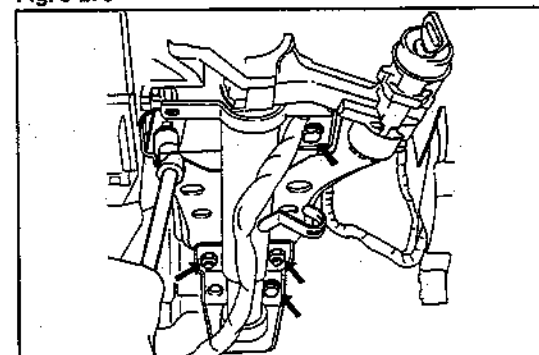


Fig. 9-279

WR-09299

10. Install the instrument panel lower reinforcement with the four bolts.

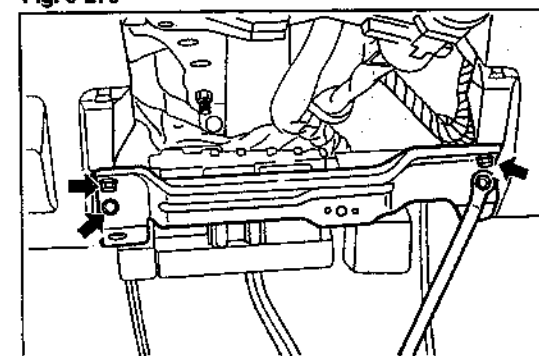
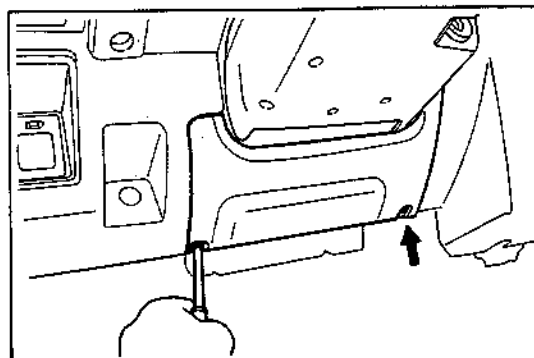


Fig. 9-280

WR-09300



1. Install the instrument lower finish panel with the two screws.
12. Connect the negative  $\ominus$  terminal of the battery.

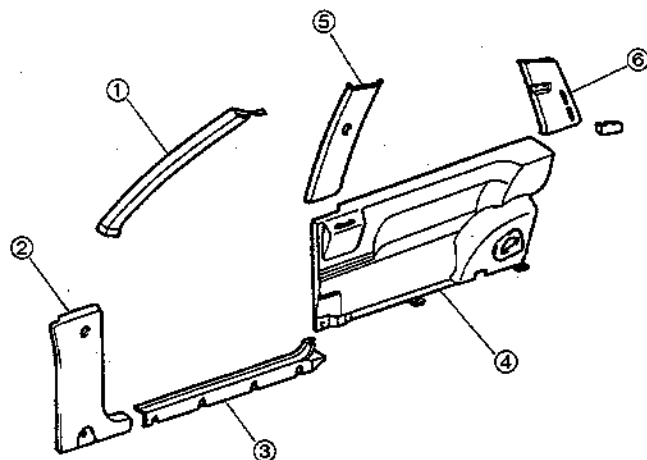
**Fig. 9-281**

WR-09301

## BODY

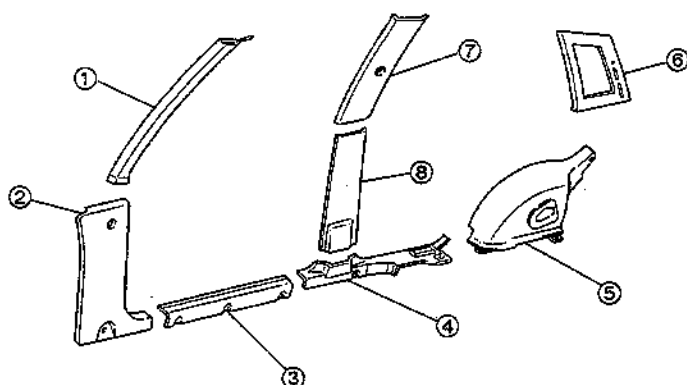
### TRIMS COMPONENTS

#### 3-door model



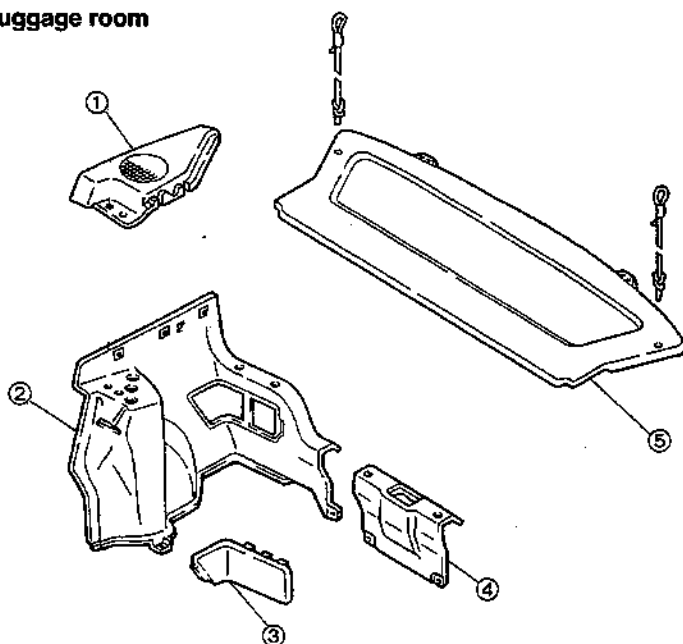
- ① Front pillar garnish
- ② Cowl side trim
- ③ Front door scuff plate
- ④ Quarter trim
- ⑤ Center pillar upper garnish
- ⑥ Roof side inner garnish

#### 5-door model



- ① Front pillar garnish
- ② Cowl side trim
- ③ Front door scuff plate
- ④ Rear door scuff plate
- ⑤ Quarter wheel house cover
- ⑥ Roof side inner garnish
- ⑦ Center pillar upper garnish
- ⑧ Center pillar lower garnish

#### Luggage room



- ① Package tray side trim
- ② Deck side trim
- ③ Rear combination lamp service hole cover
- ④ Lower back trim
- ⑤ Package tray trim

Fig. 9-282

WR-09302

## FRONT PILLAR GARNISH

### Removal

1. Disengage the clip section by prying the clip with a common screwdriver.
2. Remove the front pillar garnish by pulling it upward.

### Installation

1. Hang the hanger located at the lower part of the front pillar garnish to the body.
2. Align the two clips in place. Install the front pillar garnish by tapping it lightly by your hand.

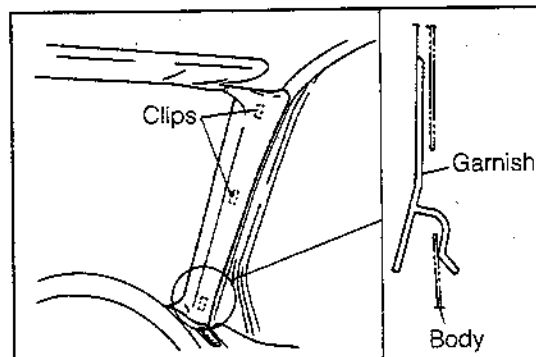


Fig. 9-283

WR-09303

## COWL SIDE TRIM

### Removal

Remove the cowl side trim by detaching the two clips, using a clip clamping tool.

### Installation

Install the cowl side trim with the two clips.

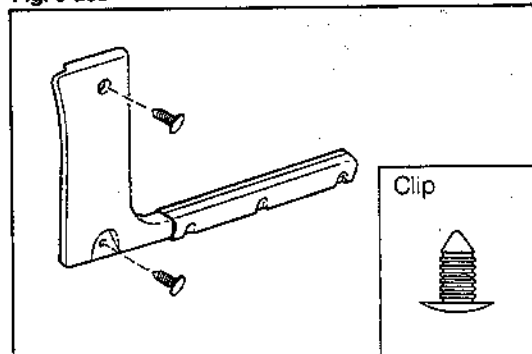


Fig. 9-284

WR-09304

## FRONT DOOR SCUFF PLATE (3-DOOR MODEL)

### Removal

Remove the front door scuff plate by removing the five screws.

### Installation

Install the front door scuff plate with the five screws.

## (5-DOOR MODEL)

### Removal

Remove the front door scuff plate by removing the three screws.

### Installation

Install the front door scuff plate with the three screws.

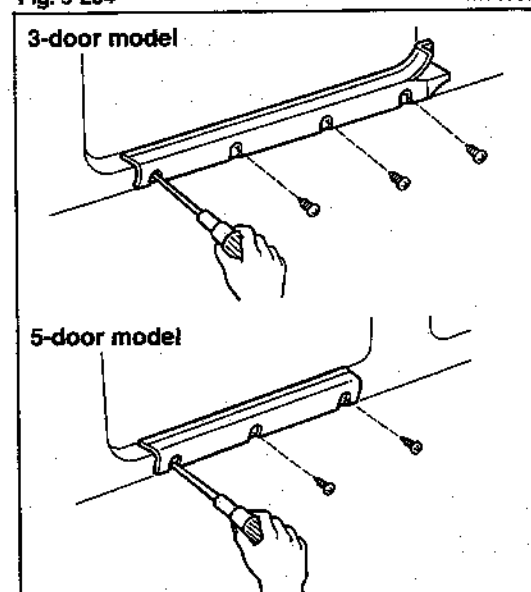


Fig. 9-285

WR-09305

## QUARTER TRIM (3-DOOR MODEL)

### Removal

1. Remove the two screws at the lower end of the trim.
2. Detach the three clips (A) by pushing the center sections of the clips.
3. Detach the clips (B) (at six points), using a common screwdriver.
4. Remove the quarter trim by pulling it toward the front.

### Installation

1. Attach the clip (C).
2. Attach the clips (B) (at six points).
3. Attach the clips (A) (at three points).
4. Install the two screws at the lower end of the trim.

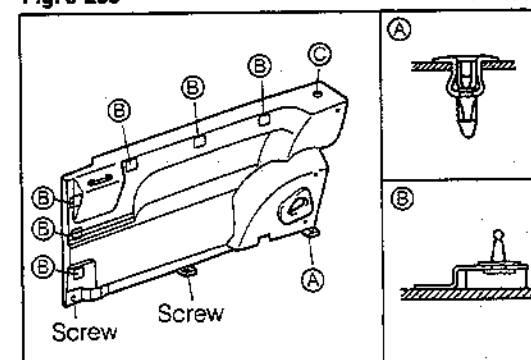


Fig. 9-286

WR-09306

## BODY

### REAR DOOR SCUFF PLATE (5-DOOR MODEL)

#### Removal

Remove the rear door scuff plate by removing the two screws.

#### Installation

Install the rear door scuff plate with the two screws.

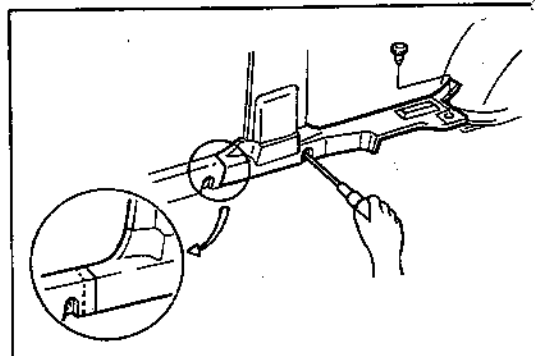


Fig. 9-287

WR-09307

### QUARTER WHEEL HOUSE COVER (5-DOOR MODEL)

#### Removal

1. Remove the rear door scuff plate. (See Fig. 9-287.)
2. Remove the one screw and two clips (A).
3. Detach the four clips (B), using a common screwdriver.

#### Installation

1. Align the clips (B) in place. Install the quarter wheel house cover by lightly tapping around the clips by hand.
2. Install the one screw and two clips (A).
3. Install the rear door scuff plate.

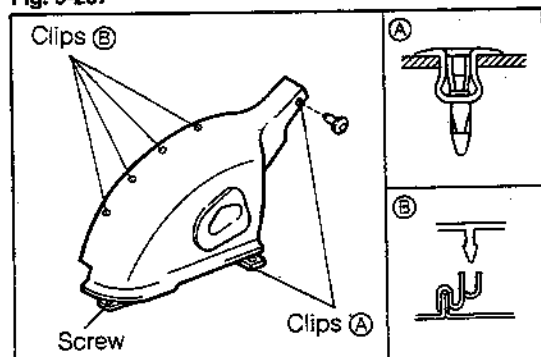


Fig. 9-288

WR-09308

### CENTER PILLAR LOWER GARNISH

#### Removal

1. Disengage the clips (A), using a common screwdriver.
2. Disengage the clips (B), using a common screwdriver.
3. Remove the center pillar lower garnish.

#### Installation

1. Hang the lower end of the center pillar lower garnish to the rear door scuff plate.
2. Align the clips (A) and (B) in place. Install the center pillar lower garnish by lightly tapping around the clips by hand.

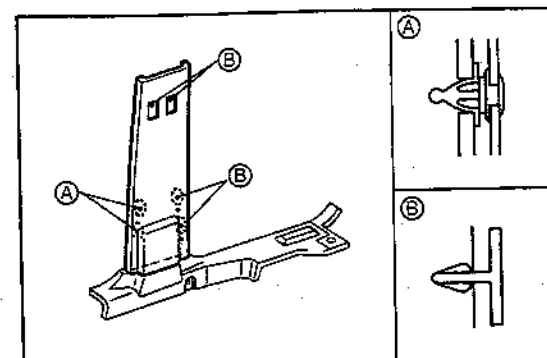


Fig. 9-289

WR-09309

### ROOF SIDE INNER UPPER GARNISH

#### Removal

1. Remove the quarter window lock cover.
2. Remove the two attaching screws of the quarter window lock assembly.
3. Disengage the clips (A), using a common screwdriver.
4. Disengage the clips (B) and (C), using a common screwdriver.
5. Remove the roof side inner upper garnish.

#### Installation

1. Align the clips (A), (B) and (C) in place. Install the roof side inner upper garnish by lightly tapping around the clips by hand.
2. Install the quarter window lock assembly with the two screws.
3. Install the quarter window lock cover.

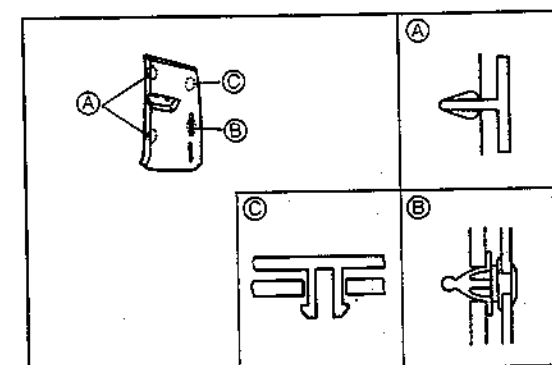


Fig. 9-290

WR-09310

## CENTER PILLAR GARNISH

### Removal

1. Remove the attaching bolt of the front seat outer belt shoulder anchor.
2. Disengage the clips, using a common screwdriver.
3. Remove the center pillar garnish.

### Installation

1. Align the clips in place. Install the center pillar garnish by lightly tapping around the clips by hand.
2. Install the attaching bolt of the front seat outer belt shoulder anchor.

Tightening Torque: 2.9 - 5.4 kg-m (21 - 39 ft-lb)

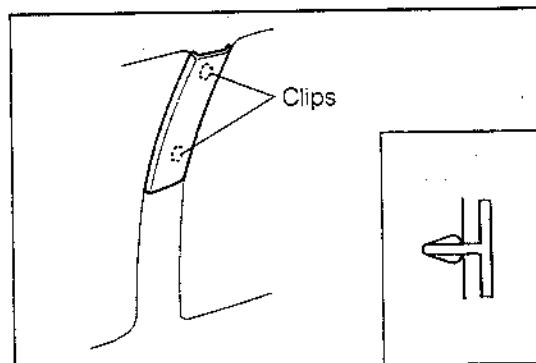


Fig. 9-291

WR-09311

## DECK SIDE TRIM

### Removal

1. Remove the package tray.
2. Remove the quarter trim.

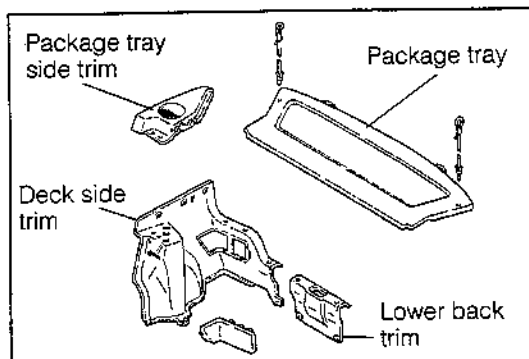


Fig. 9-292

WR-09312

3. Removal of package tray side trim
  - (1) Remove the four bolts.
  - (2) Remove the package tray side trim.

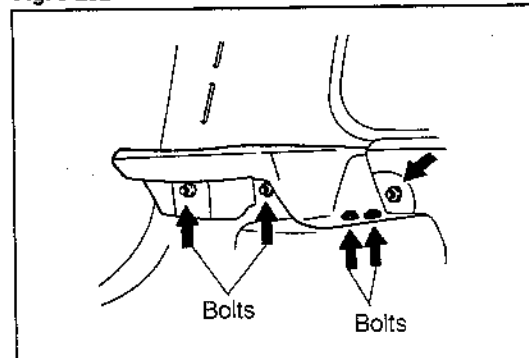


Fig. 9-293

WR-09313

4. Removal of lower back trim
  - (1) Detach the four clips by pushing the center sections of the clips.
  - (2) Remove the lower back trim.

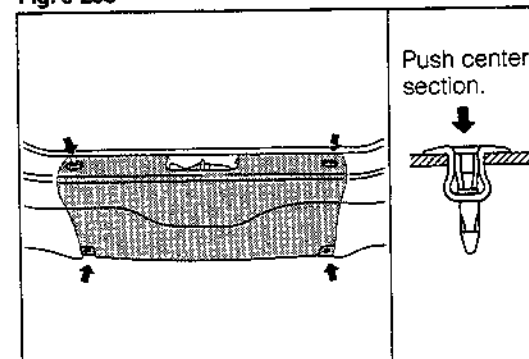


Fig. 9-294

WR-09314

## BODY

### 5. Deck side trim

- (1) Detach the five clips by pushing the center sections of the clips.
- (2) Remove the deck side trim.
- (3) Remove the rear combination lamp service hole cover from the deck side trim.

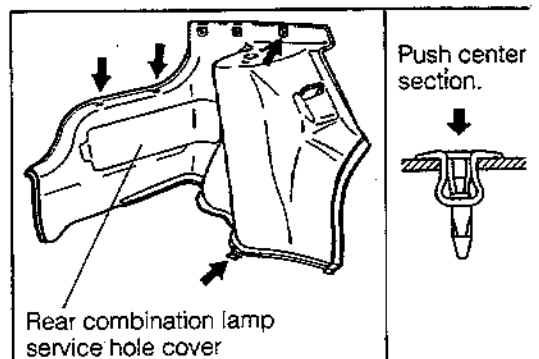


Fig. 9-295

WR-09315

### Installation

#### 1. Installation of deck side trim

- (1) Install the deck side trim with the four clips.
- (2) Install the rear combination lamp service hole cover.

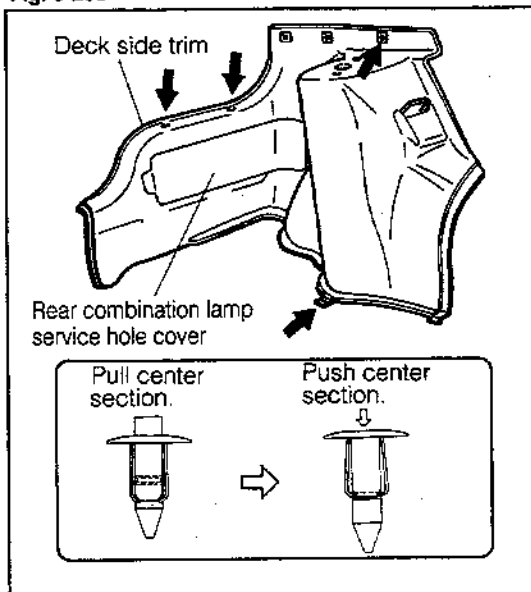


Fig. 9-296

WR-09316

#### 2. Install the lower back trim with the four clips.

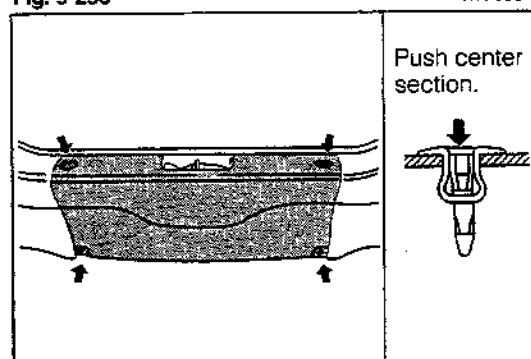


Fig. 9-297

WR-09317

3. Install the package tray side trim with the four bolts.
4. Install the package tray.
5. Install the quarter trim.

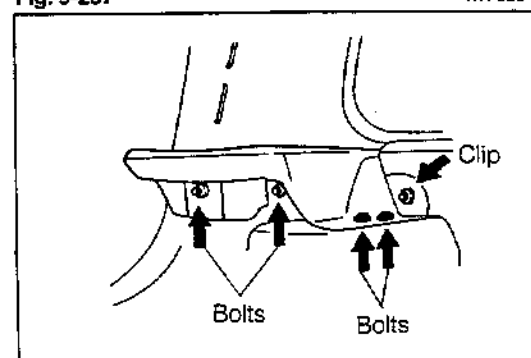


Fig. 9-298

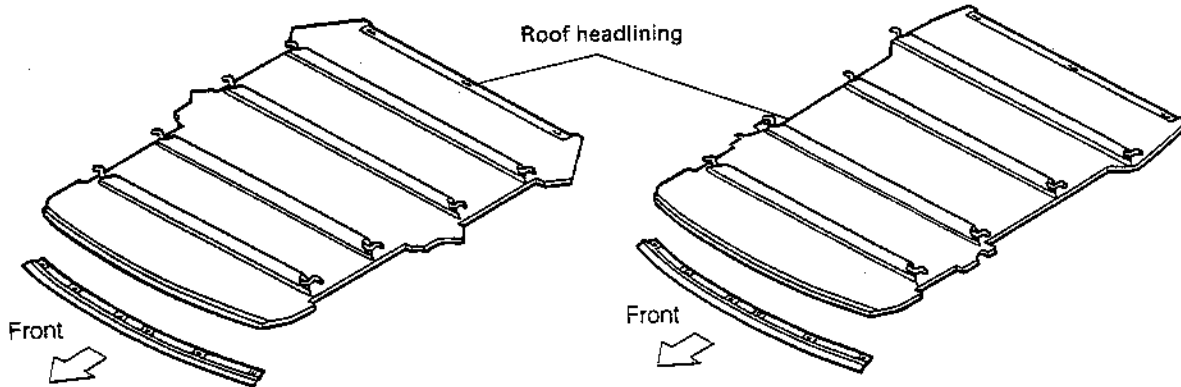
WR-09318

# ROOF HEADLINING

## Suspended ceiling

(3-door model)

(5-door model)



## Molded ceiling

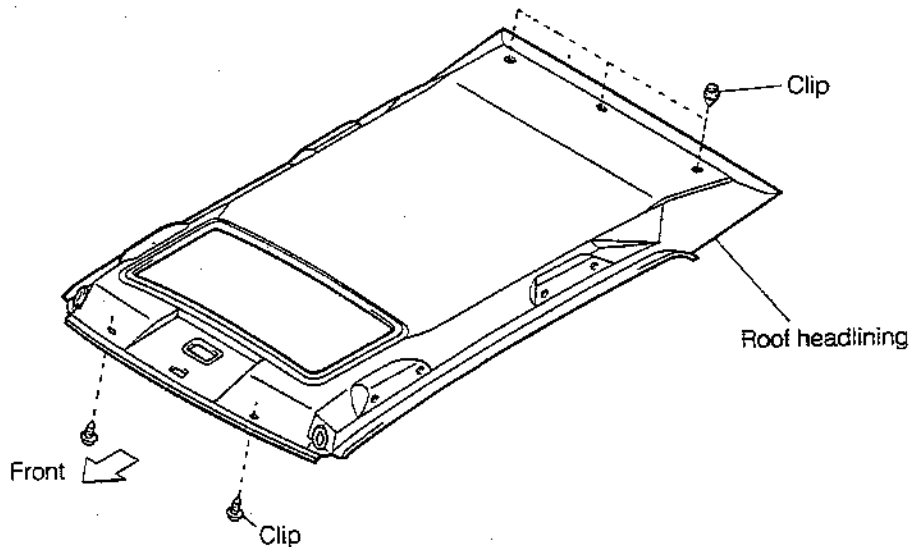


Fig. 9-299

WR-09319

## SUSPENDED CEILING

### Removal

1. Remove the sun visor assembly.
2. Remove the inner rear-view mirror with room lamp.
3. Remove the front pillar garnish, center pillar garnish and roof side inner upper garnish. (Only vehicle equipped with those garnishes)

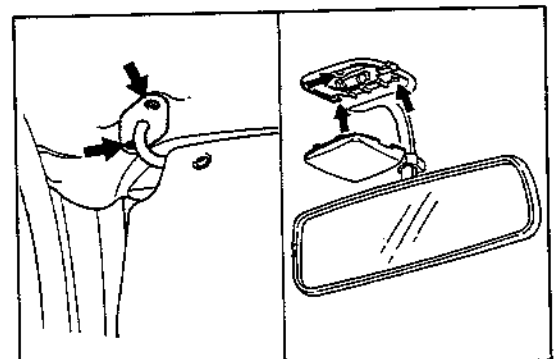


Fig. 9-300

WR-09320

## BODY

4. Remove the upper side of the front and rear door opening trim molding. Proceed to disengage the hook of the roof headlining.
5. Remove the two-faced adhesive tapes at the quarter pillar and center pillar sections. Then, remove the roof headlining.
6. Disengage the three hooks at the rear of the roof headlining.
7. Remove the lifting wires from the body side rail holes one by one, starting from the rear of the roof headlining.
8. Remove the roof headlining retainer and roof headlining by removing the five screws.

### Installation

1. Install the roof headlining retainer by tightening the five screws in the sequence indicated in the right figure.  
**NOTE:**  
Install the roof headlining retainer in such a direction that a cut-out section at the center section of the retainer faces forward.
2. Insert each lifting wire into the body side rail hole one by one, starting from the front of the roof headlining retainer. Each hole should be held at the uppermost position.
3. Attach the three hooks at the rear of the roof headlining.

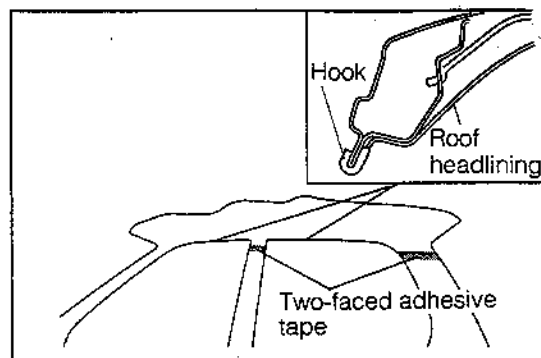


Fig. 9-301

WR-09321

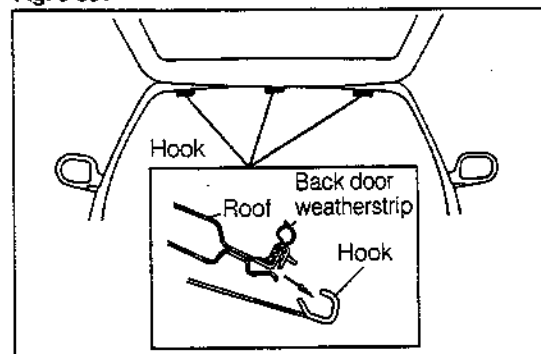


Fig. 9-302

WR-09322

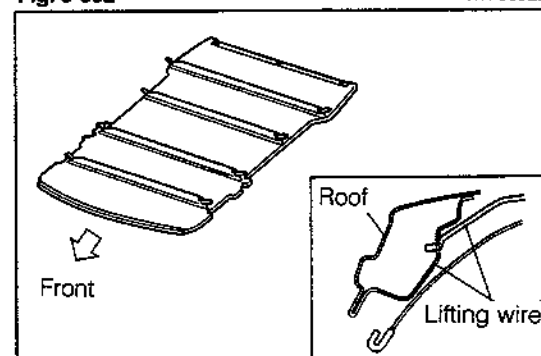


Fig. 9-303

WR-09323

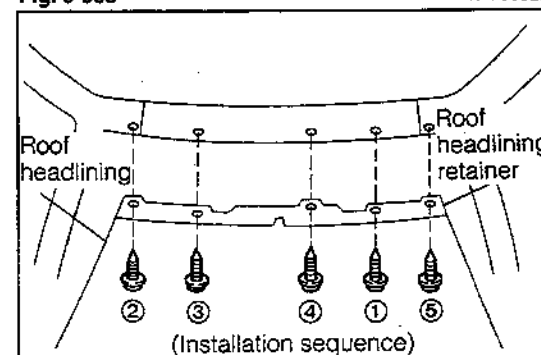


Fig. 9-304

WR-09324

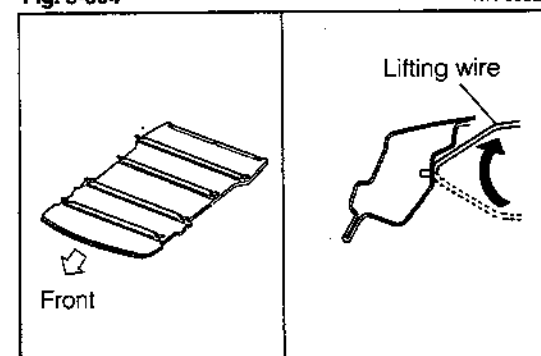


Fig. 9-305

WR-09325



Hang the roof headlining hook at the front and rear door opening section. Install the opening trim molding.

5. Install the roof headlining at the quarter pillar and center pillar sections to the body, using a two-faced adhesive tape.
6. Install the front door garnish, center pillar garnish and roof side inner upper garnish. (Only vehicle equipped with those garnishes)

**NOTE:**

Cut the roof headlining around the clip hole of the center pillar section, using a cutter.

7. Install the inner rear-view mirror with room lamp.
8. Install the sun visor assembly.

## MOLDED CEILING

### Removal

1. Remove the sun visor assembly.
2. Remove the inner rear-view mirror with room lamp.  
Detach the switch bezel.
4. Remove the sunroof opening trim molding.
5. Remove the front pillar garnish, center pillar garnish and roof side inner upper garnish.

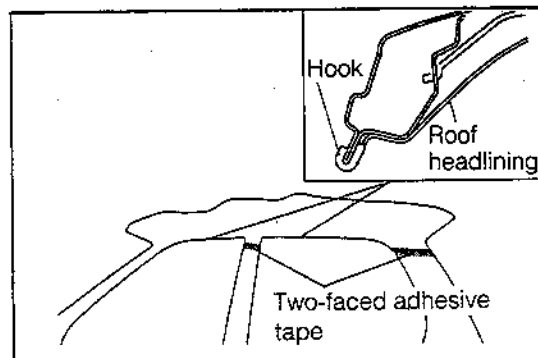


Fig. 9-306

WR-09326

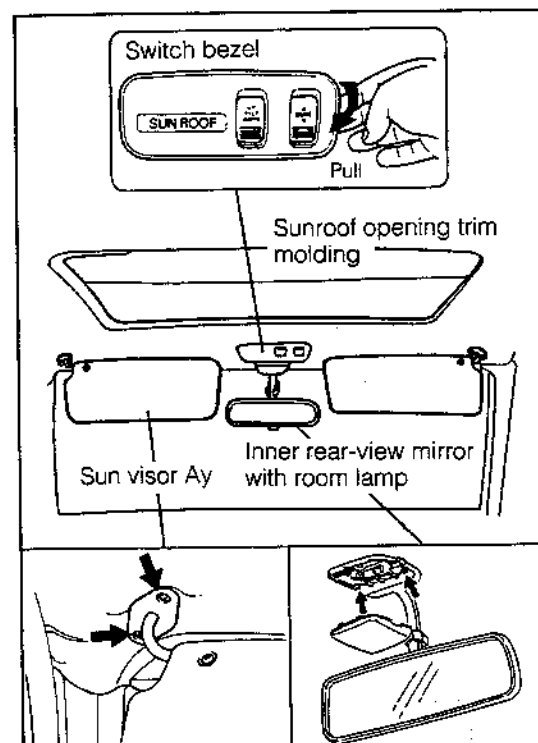


Fig. 9-307

WR-09327

Remove the front and rear door opening trim molding (quarter window weatherstrip). Proceed to remove the roof headlining.

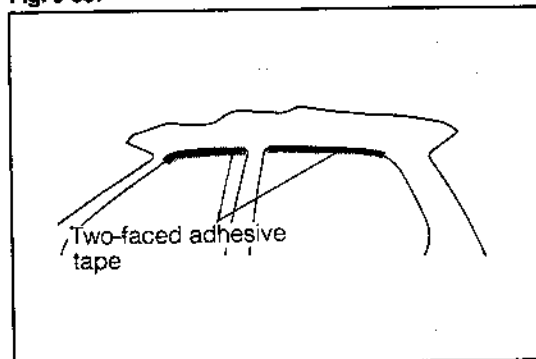


Fig. 9-308

WR-09328

## BODY

### 7. Removal of roof headlining

- (1) Remove the assist grips or clips.

**NOTE:**

Remove the clip, using a clip clamping tool.

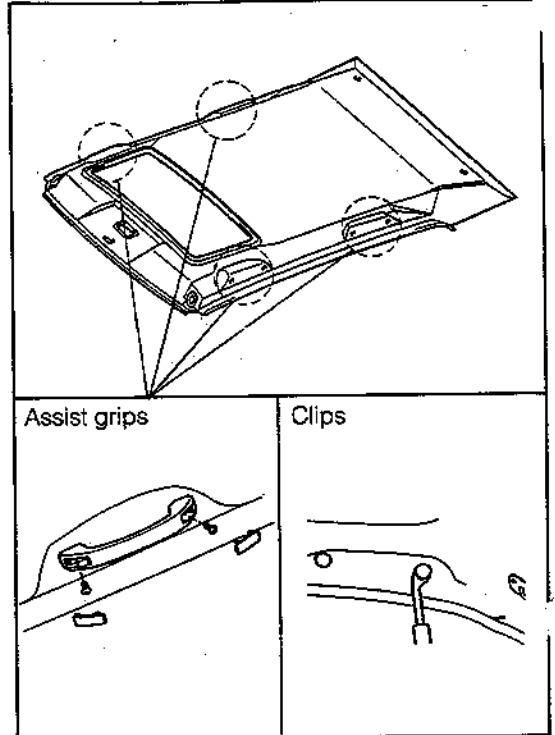


Fig. 9-309

WR-09329

- (2) Detach the three clips at the rear of the roof headlining.

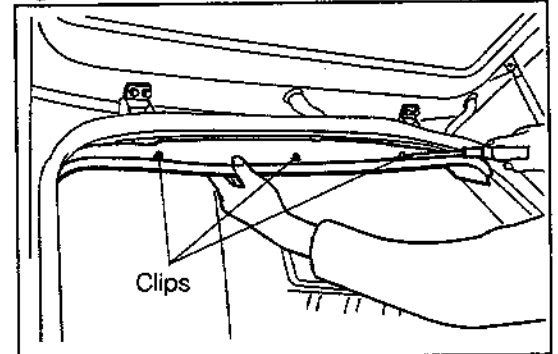


Fig. 9-310

WR-09330

- (3) Detach the two clips at the front of the roof headlining.
- (4) Remove the roof headlining from the vehicle.

### Installation

#### 1. Installation of roof headlining

- (1) Attach the front of the roof headlining with the two clips.

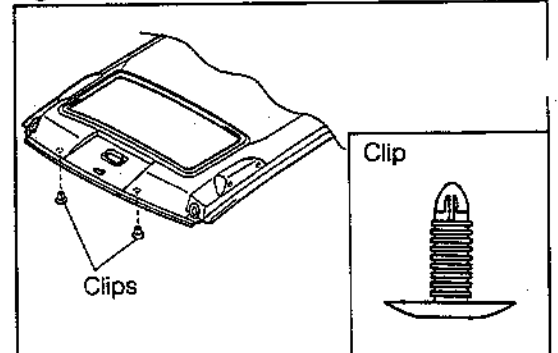


Fig. 9-311

WR-09331

- (2) Attach the rear of the roof headlining with the three clips.

**NOTE:**

Be sure to replace any damaged clip with a new one during the operations (1) and (2).

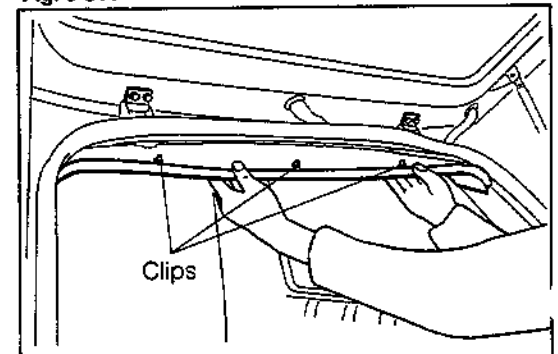
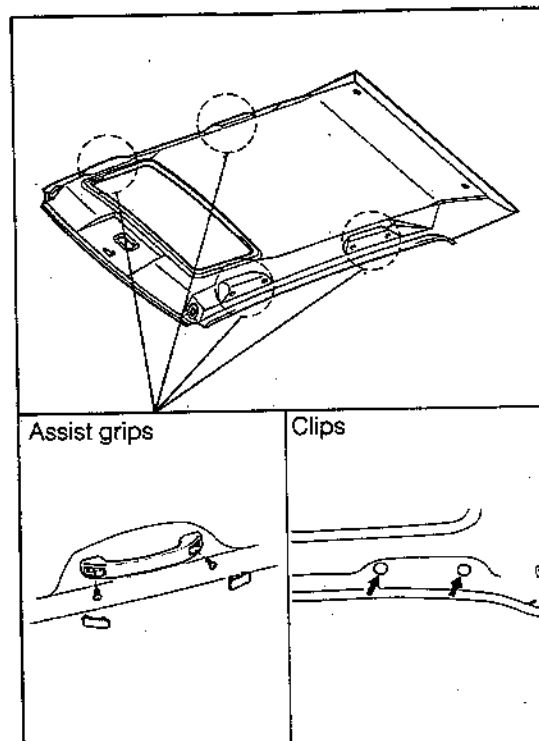


Fig. 9-312

WR-09332

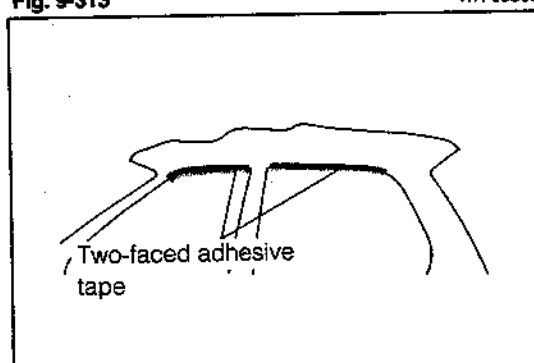
(3) Install the assist grips or clips.



**Fig. 9-313**

WR-09333

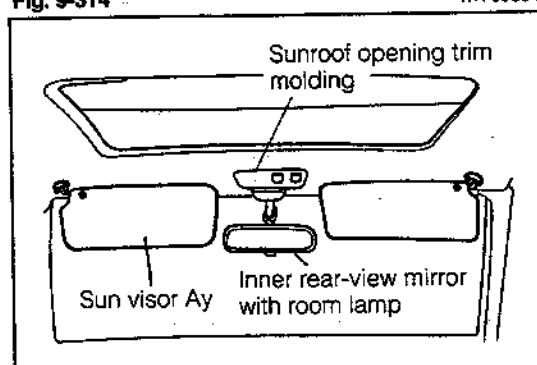
2. Installation of front and rear door opening trim molding (quarter window weatherstrip)
  - (1) Affix the roof headlining at the front and rear door (quarter window) section, using a two-faced adhesive tape.
  - (2) Install the front and rear door opening trim molding (quarter window weatherstrip).



**Fig. 9-314**

WR-09334

3. Install the front pillar garnish, center pillar garnish and roof side inner upper garnish.
  1. Install the sunroof opening trim molding.
  5. Install the switch bezel.
  6. Install the inner rear-view mirror with room lamp.
  7. Install the sun visor assembly.



**Fig. 9-315**

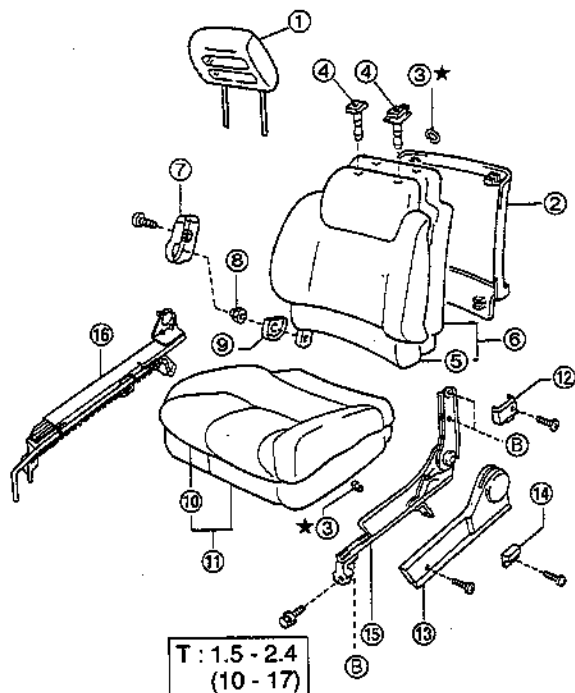
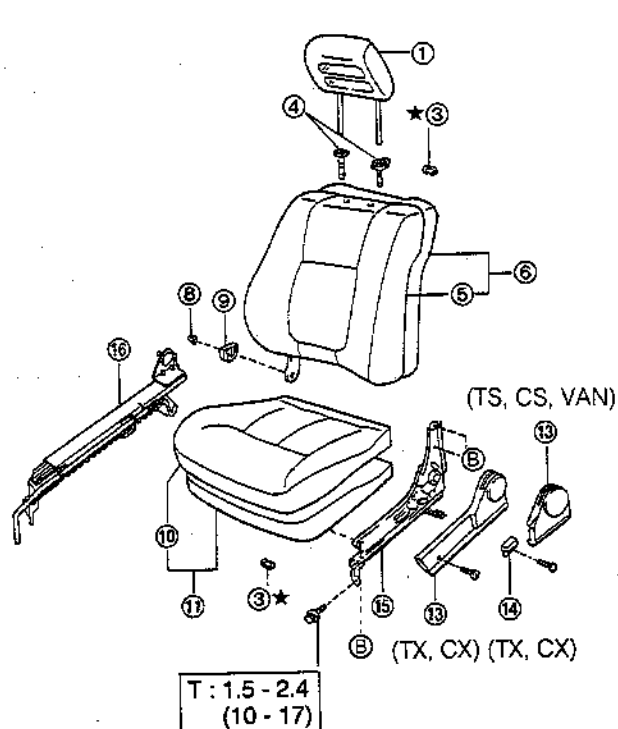
WR-09335

## BODY

### FRONT SEAT COMPONENTS

VAN, TS, TC, TX and CX grades

TURBO and GTti grades



T : Tightening torque  
Unit: kg-m (ft-lb)  
★ : Non-reusable parts

- ① Headrest Ay
- ② Front seatback cover
- ③ Hug snap ring
- ④ Front headrest support
- ⑤ Front seatback cover
- ⑥ Front seatback Ay
- ⑦ Front seat hinge cover
- ⑧ Nut

- ⑨ Front seat hinge cover
- ⑩ Front seat cushion cover
- ⑪ Front seat cushion Ay
- ⑫ Reclining hinge cover
- ⑬ Front seat cushion shield
- ⑭ Adjusting reclining release handle
- ⑮ Reclining seat adjuster Ay
- ⑯ Seat track Ay

Fig. 9-316

WR-09336

### REMOVAL

Remove the front seat from the vehicle by removing the four bolts.

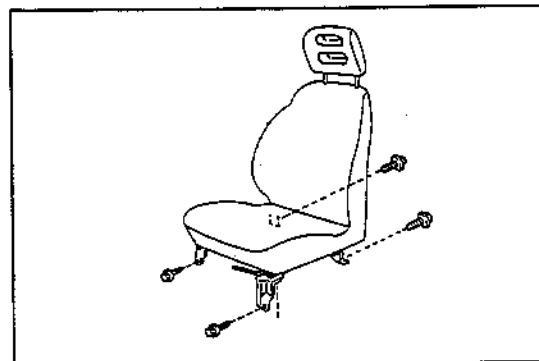
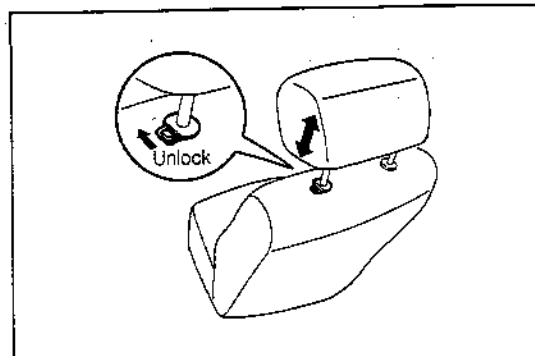


Fig. 9-317

WR-09337

# **DISASSEMBLY**

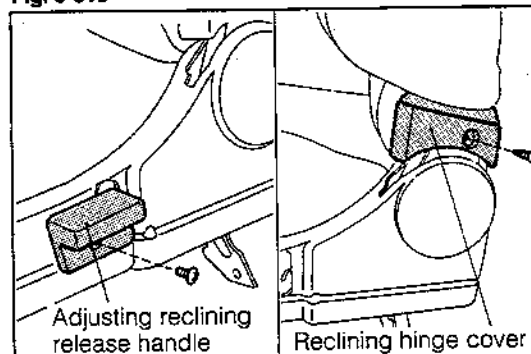
1. Remove the headrest with the stopper pushed toward "Unlock" direction.



**Fig. 9-318**

WR-09338

2. Remove the adjusting reclining release handle by removing the one screw.
3. Remove the reclining hinge cover by removing the one screw. (TURBO and GTti grades only)



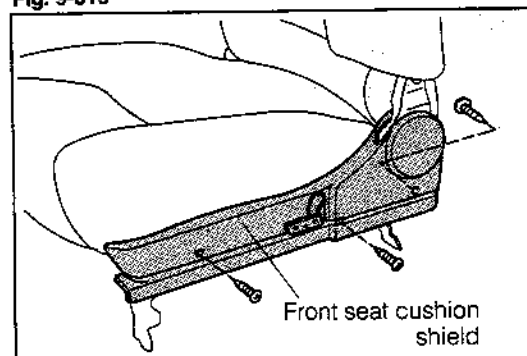
**Fig. 9-319**

WR-09339

4. Remove the front seat cushion shield by removing the attaching screws.

VAN, TX and TC grades: two screws

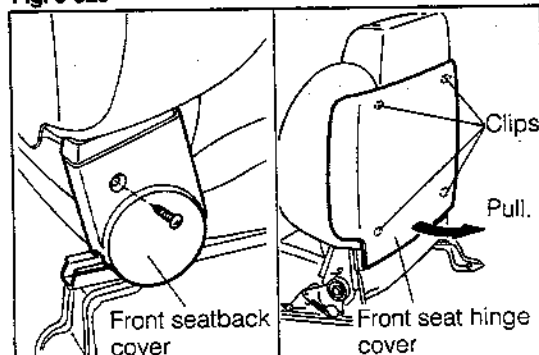
Except for VAN, TX and TC grades: three screws



**Fig. 9-320**

WR-09340

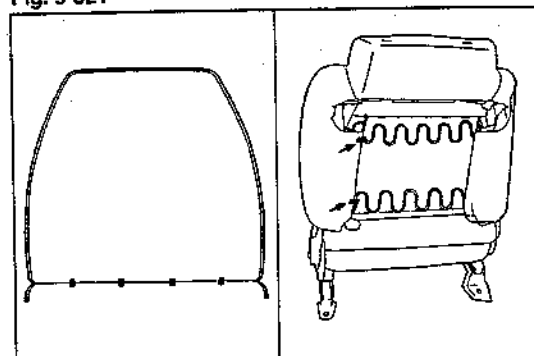
5. Remove the front seat hinge cover by removing the one screw. (TURBO and GTti grades only)
- Remove the front seatback cover by pulling its lower end. (TURBO and GTti grades only)



**Fig. 9-321**

WR-09341

7. Remove the front seatback assembly.
  - (1) Remove the four hug rings at the lower section of the seatback. (Except for TURBO and GTti grades)
  - (2) Remove the two hug rings at the reclining seat adjuster assembly side. (TURBO and GTti grades only)



**Fig. 9-322**

WR-09342

## BODY

- (3) Remove the seatback by removing the one nut and two bolts which are attaching the seatback.
- (4) Remove the front seat hinge cover from the seatback.

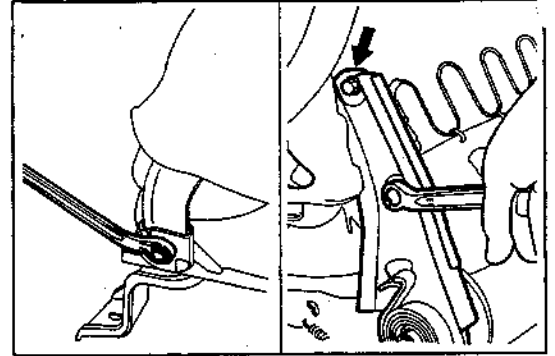


Fig. 9-323

WR-09343

9. Remove the seat cushion, reclining seat adjuster assembly and seat track assembly by removing the four bolts.

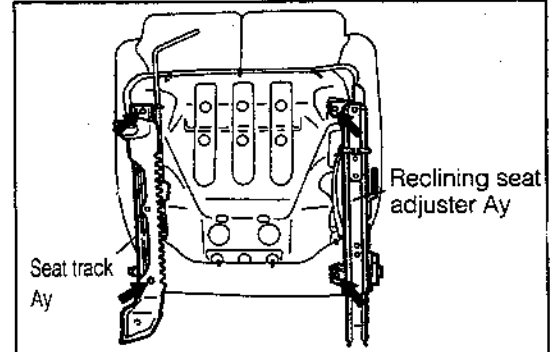


Fig. 9-324

WR-09344

10. Removal of front seatback cover

- (1) Remove the hug rings at the back side of the seatback. (TURBO and GTti grades only)

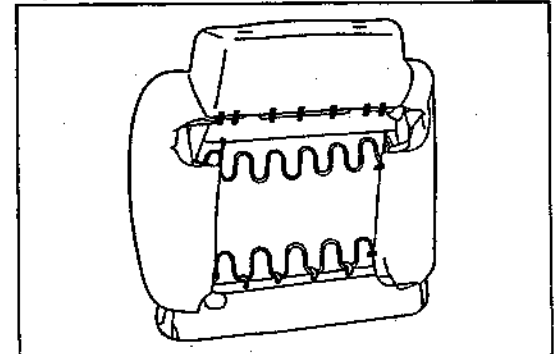


Fig. 9-325

WR-09345

- (2) Remove the front headrest support by compressing the end of the front headrest support and pulling it upward by your fingers.

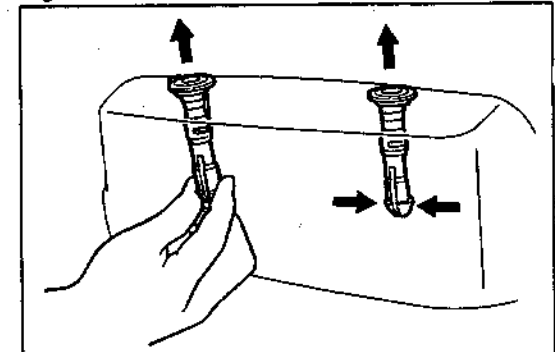


Fig. 9-326

WR-09346

- (3) Turn over the front seatback cover. Remove the front seatback cover by removing the hug rings at the upper section of the seatback.

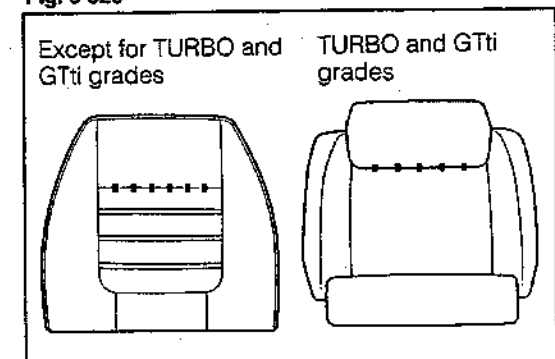


Fig. 9-327

WR-09347

**1. Removal of front seat cushion cover**

- (1) Remove the hug rings at the back side of the front seat cushion.

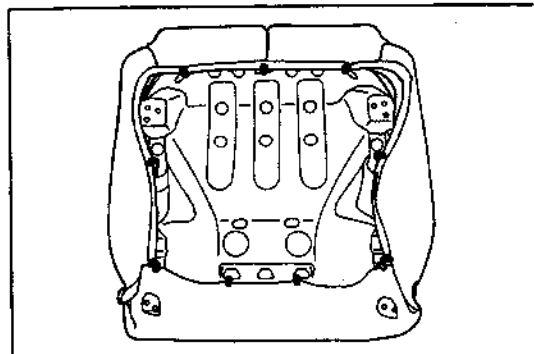


Fig. 9-328

WR-09348

- (2) Turn over the front seat cushion cover. Remove the hug rings at the front side.
- (3) Remove the front seat cushion cover.

Except for TURBO and GTi grades      TURBO and GTi grades

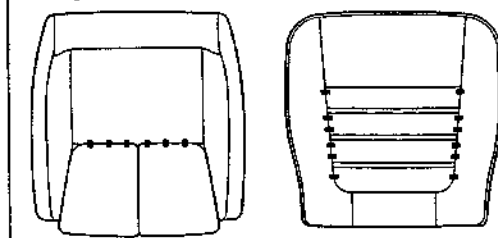


Fig. 9-329

WR-09349

**ASSEMBLY**

**1. Installation of front seat cushion cover**

- (1) Install the hug rings at the front side of the front seat cushion. (See Fig. 9-329.)
- (2) Install the hug rings at the back side of the front seat cushion.

**NOTE:**

- Be very careful not to smear or scratch the seat cover during the assembly.
- When installing the hug rings, make sure that no wrinkle is formed on the front seat cushion cover wherever possible.

**Installation of front seatback cover**

- (1) Install the hug rings at the front side of the front seatback.
- (2) Install the front headrest support.

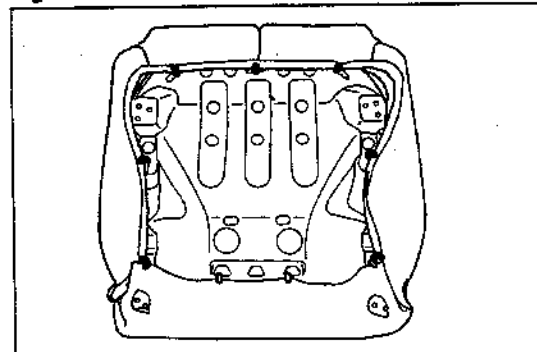


Fig. 9-330

WR-09350

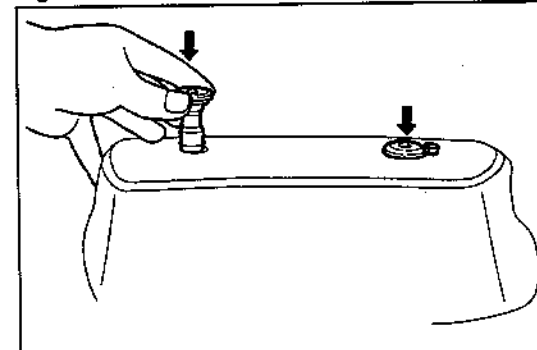


Fig. 9-331

WR-09351

- (3) Install the hug rings at the rear of the seatback at positions indicated in the right figure. (TURBO and GTi grades only)

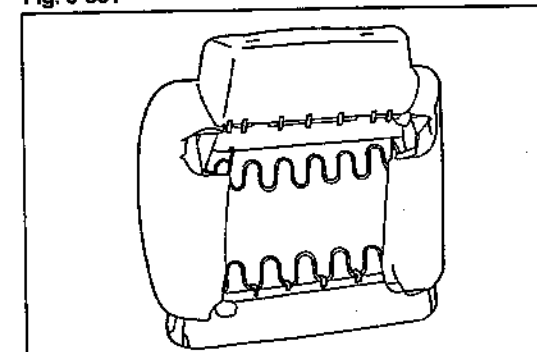


Fig. 9-332

WR-09352

## BODY

3. Install the reclining seat adjuster assembly and seat track assembly to the seat cushion with the four bolts.

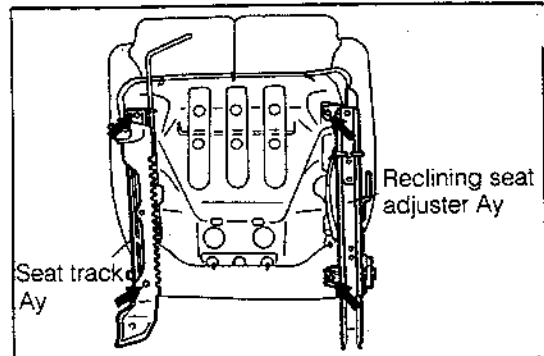


Fig. 9-333

WR-09353

4. Installation of front seatback assembly
  - (1) Install the front seat hinge cover to the front seatback assembly. Then, install them to the seat cushion with the two bolts and one nut.
  - (2) Install the hug rings from the rear of the seatback.

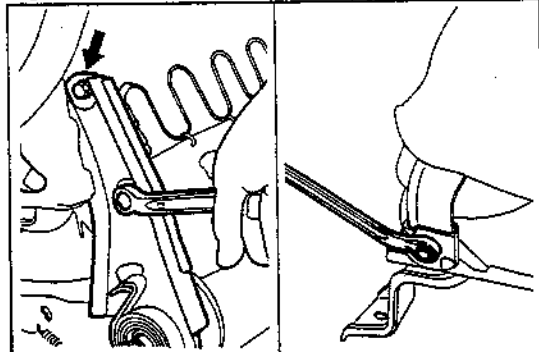


Fig. 9-334

WR-09354

5. Hook the two clips at the upper section of the front seatback cover to the seatback. Then, install the front seatback cover by pushing its lower side. (TURBO and GTti grades only)
6. Install the front seat hinge cover with one screw. (TURBO and GTti grades only)

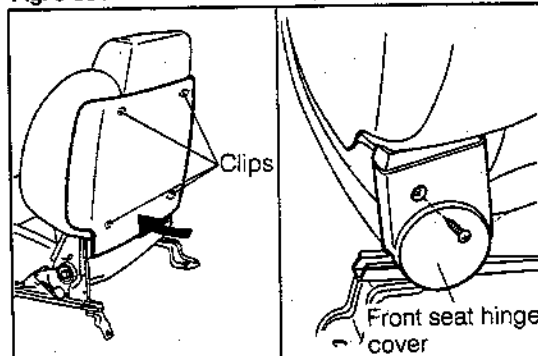


Fig. 9-335

WR-09355

7. Install the front seat cushion shield with the screws.  
VAN, TC and TX grades: Two screws  
Except for VAN, TC and TX grades: Three screws

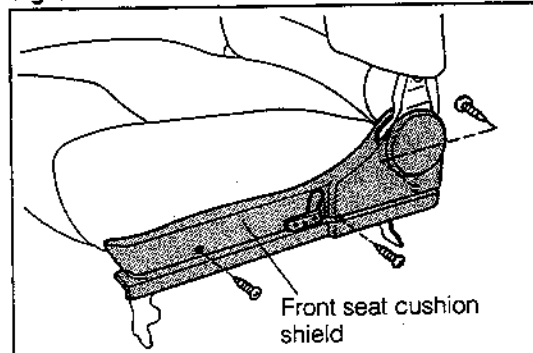


Fig. 9-336

WR-09356

8. Install the reclining hinge cover with the one screw. (TURBO and GTti grades only)
9. Install the adjusting reclining release handle with the one screw.
10. Install the headrest.

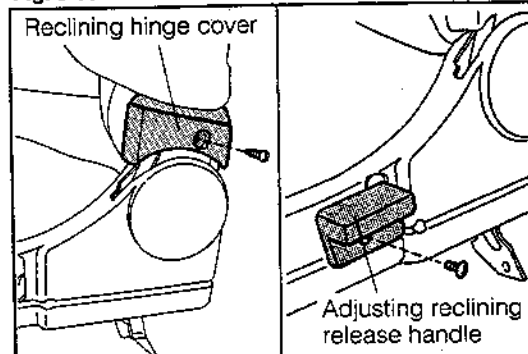


Fig. 9-337

WR-09357

## INSTALLATION

Install the front seat with the four bolts.

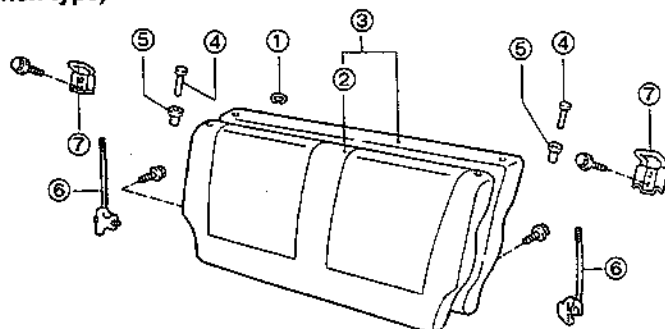
Tightening Torque: 1.5 - 2.4 kg-m (11 - 17 ft-lb)



# **REAR SEAT COMPONENTS**

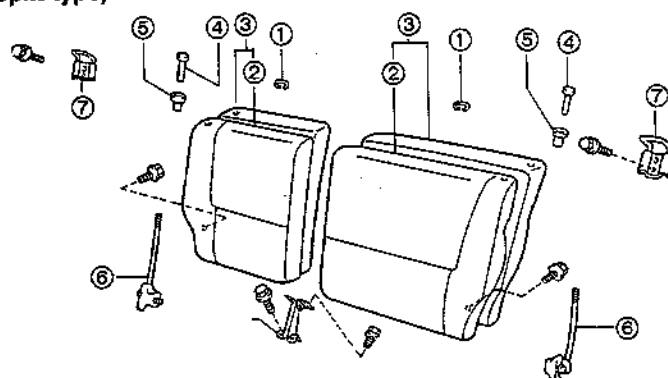
## **Seatback**

### **(Bench type)**



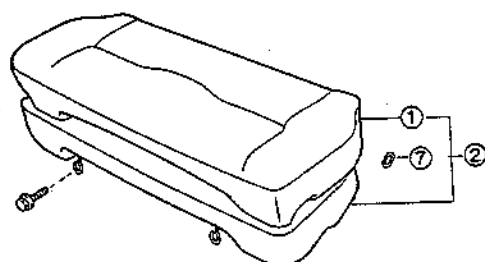
- ① Hug ring
- ② Rear seatback cover
- ③ Rear seatback Ay
- ④ Rear seatback stop release button
- ⑤ Rear seatback stop button grommet
- ⑥ Rear seatback lock Ay
- ⑦ Rear seatback lock striker S/A

### **(Split type)**



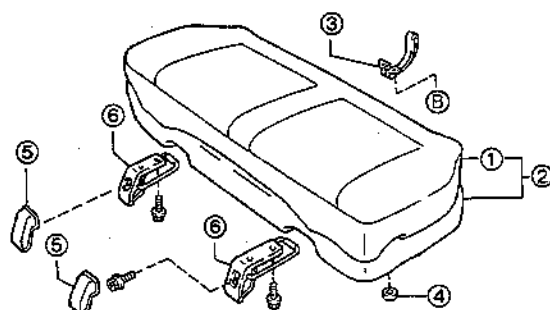
## **Seat Cushion**

### **(Fixed type)**



- ① Rear seat cushion cover
- ② Rear seat cushion Ay
- ③ Rear seat turn lock Ay
- ④ Cushion
- ⑤ Rear seat cushion hinge cover
- ⑥ Rear seat cushion hinge Ay
- ⑦ Hug ring

### **(Rise-up type)**



**Fig. 9-338**

WR-09358

## BODY

### REAR SEATBACK ASSEMBLY

#### Removal

1. Removal of rear seatback assembly
  - (1) Turn over the deck carpet. Remove the attaching bolts of the rear seatback assembly.  
Bench type: Bolts 4 pcs.  
Split type: Bolts 8 pcs.
  - (2) Remove the rear seatback assembly from the vehicle.

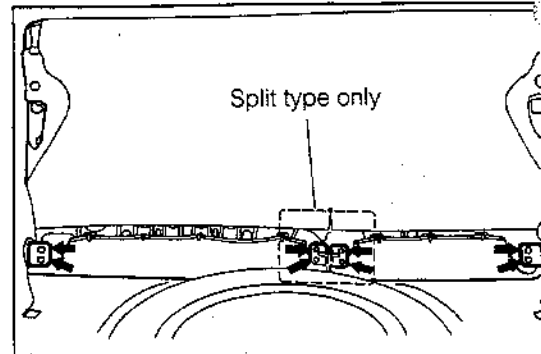


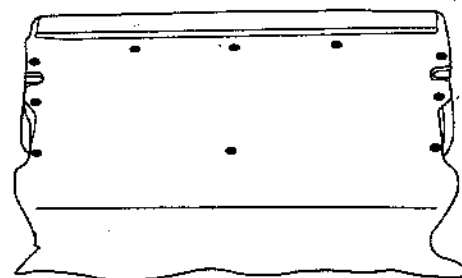
Fig. 9-339

WR-09359

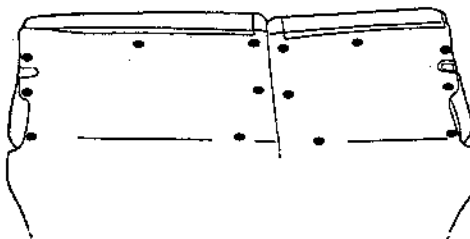
#### Disassembly

1. Remove the deck carpet from the rear seatback assembly by detaching the clips.  
Bench type: Clips 10 pcs.  
Split type: Clips 14 pcs.

#### Bench type



#### Split type



●: Clip positions

Fig. 9-340

WR-09360

2. Detach the rear seatback stop release buttons and rear seatback stop button grommets from the rear seatback assembly.

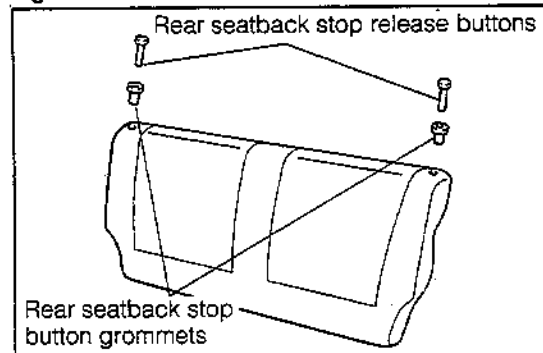


Fig. 9-341

WR-09361

3. Removal of rear seatback cover
  - (1) Detach the hug rings at the back side of the rear seatback.

#### Bench type

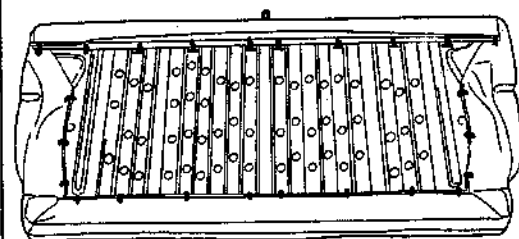


Fig. 9-342

WR-09362

- (2) Turn over the rear seatback cushion cover. Detach the hug rings at the front side.
- (3) Remove the rear seatback cushion cover.

### Assembly

1. Installation of rear seatback cover
  - (1) Install the hug rings at the front side of the rear seatback.
  - (2) Install the hug rings at the back side of the rear seatback.

#### NOTE:

- Be very careful not to smear or scratch the rear seatback cover during the assembly.
- When installing the hug rings, make sure that no wrinkle is formed on the rear seatback cover whenever possible.

2. Install the rear seatback stop button grommets and rear seatback stop release buttons on the rear seatback assembly.

3. Install the deck carpet on the rear seatback assembly with the clips. (See Fig. 9-340.)

Bench type: Clips 10 pcs.

Split type: Clips 14 pcs.

### Installation

1. Installation of rear seatback assembly
  - (1) Temporarily install the rear seatback assembly on the vehicle with the bolts.

Bench type: Bolts 4 pcs.

Split type: Bolts 8 pcs.

#### NOTE:

The rear seatback attaching bolts should be installed at those positions specified in the right figure.

- (2) Tighten the bolts.

Tightening Torque: 0.4 - 0.7 kg-m (2.9 - 5.1 ft-lb)

#### Split type

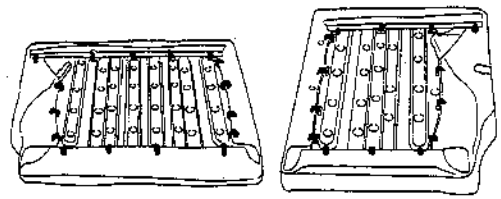
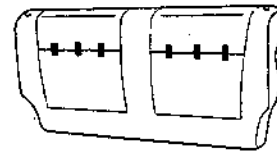


Fig. 9-343

WR-09363

#### Except for TURBO, GTti and VAN grades



#### TURBO and GTti grades

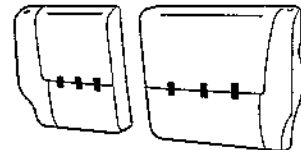
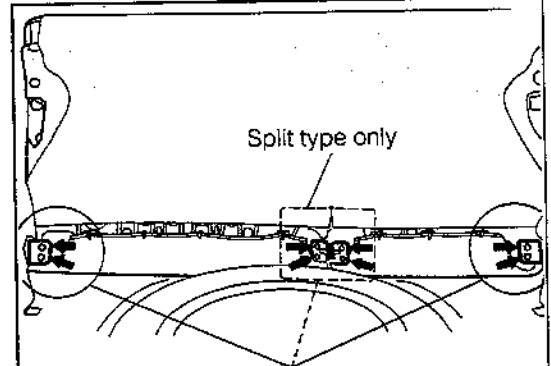
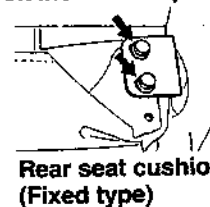


Fig. 9-344

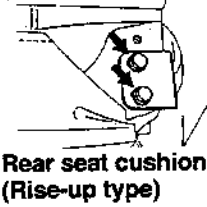
WR-09364



#### Bolt installation position



Rear seat cushion  
(Fixed type)



Rear seat cushion  
(Rise-up type)

Fig. 9-345

WR-09365

## BODY

### REAR SEAT CUSHION ASSEMBLY

#### Removal

1. Removal of fixed type rear seat cushion
  - (1) Remove the rear seatback assembly. (See Fig. 9-339.)
  - (2) Remove the two attaching bolts of the rear seat cushion assembly
  - (3) Slightly raise the forward section of the rear seat cushion assembly and push it backward so as to disengage the hook.
  - (4) Remove the rear seat cushion assembly from the vehicle.
2. Removal of rise-up type rear seat cushion assembly
  - (1) Remove the hinge cover.
  - (2) Remove the rear seat cushion hinge attaching bolts.
  - (3) Pull the belt and disengage the lock.
  - (4) Remove the rear seat cushion assembly from the vehicle.

#### Disassembly

1. Detach the hug rings at the back side of the rear seat cushion assembly. (Fixed type only)
2. Remove the rear seat cushion hinge assembly and rear seat turn lock assembly. (Rise-up type only)
3. Remove the rear seat cushion cover from the rear seat cushion frame. (Rise-up type only)

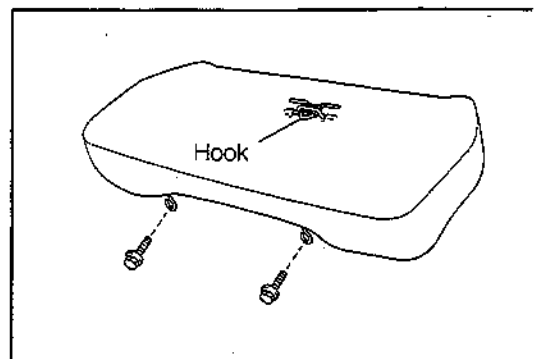


Fig. 9-346

WR-09366

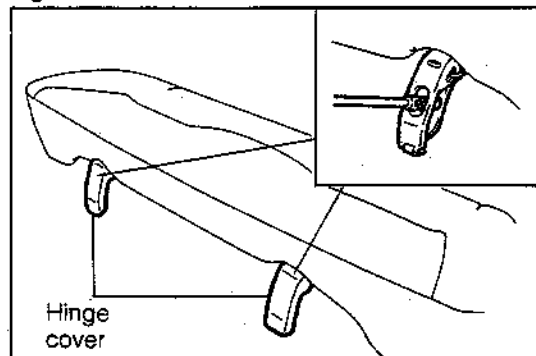


Fig. 9-347

WR-09367

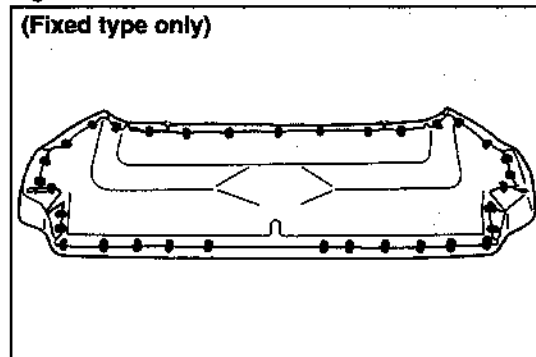


Fig. 9-348

WR-09368

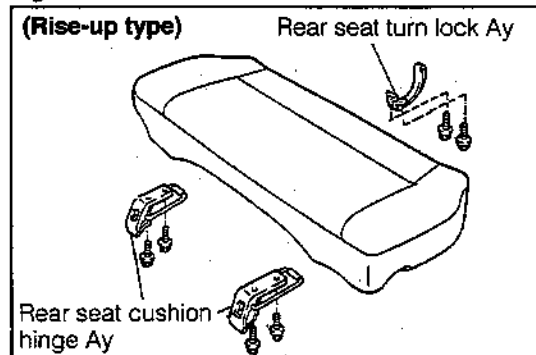


Fig. 9-349

WR-09369

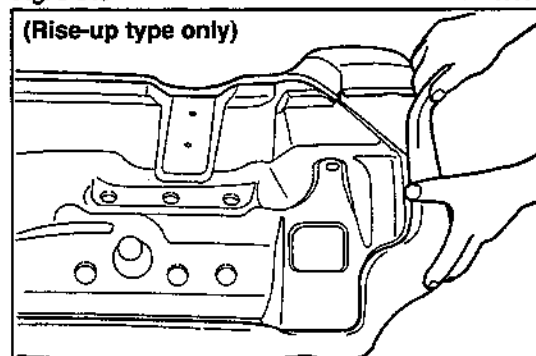


Fig. 9-350

WR-09370

Turn over the rear seat cushion cover. Detach the hug rings at the front side of the cover.

5. Remove the rear seat cushion cover.

### Assembly

1. Install the hug rings at the front side of the rear seat cushion.
2. Install the hug rings at the back side of the rear seat cushion. (Fixed type only)
3. Attach the rear seat cushion cover to the rear seat cushion frame. (Rise-up type only)

#### NOTE:

- Be very careful not to smear or scratch the rear seat cushion cover during the assembly.
- When installing the rear seat cushion cover, make sure that no wrinkle is formed whenever possible.

4. Install the rear seat cushion hinge assembly and rear seat turn lock assembly on the back side of the rear seat cushion. (Rise-up type only)

### Installation

1. Installation of fixed type rear seat cushion assembly
    - (1) Align and engage the hook at the rear seat cushion side with the hook at the floor side, as indicated in the right figure.
    - (2) Install the rear seat cushion assembly with the two bolts.

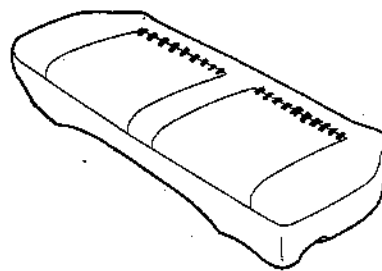
**Tightening Torque:** 1.5 - 2.4 kg-m (11 - 17 ft-lb)

  - (3) Install the rear seatback assembly. (See Fig. 9-345.)
- 
2. Installation of rise-up type rear seat cushion assembly
    - (1) Temporarily install the attaching bolts of the rear seat cushion hinge assembly.
    - (2) Ensure that the rear seat turn lock is functioning properly.
    - (3) Tighten the attaching bolts of the rear seat cushion hinge assembly.

**Tightening Torque:** 1.5 - 2.4 kg-m (11 - 17 ft-lb)

  - (4) Install the hinge cover.

Except for TURBO and GTti grades



TURBO and GTti grades

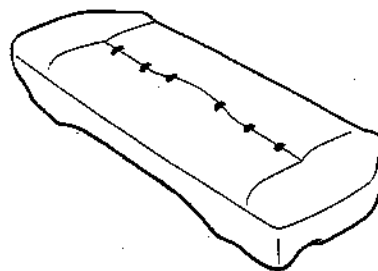
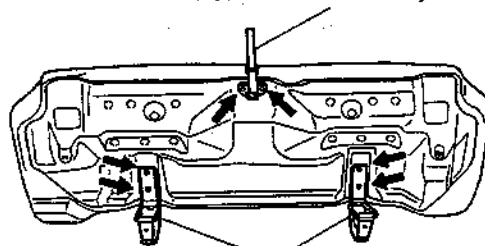


Fig. 9-351

WR-09371

Rear seat turn lock Ay



Rear seat cushion hinge Ay

Fig. 9-352

WR-09372

Hook

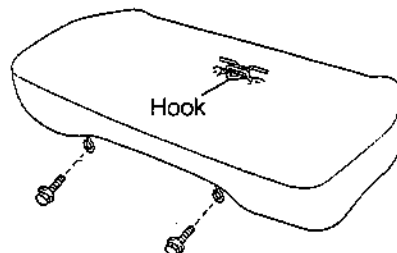
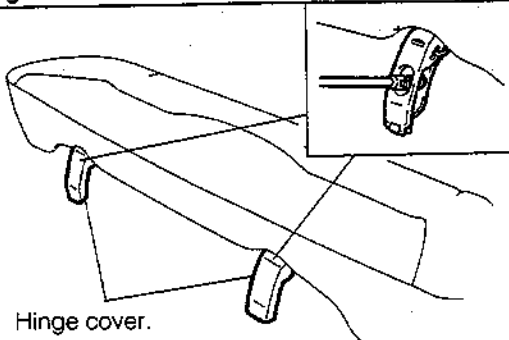


Fig. 9-353

WR-09373



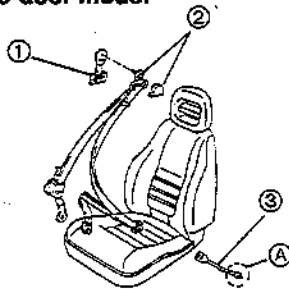
Hinge cover.

Fig. 9-354

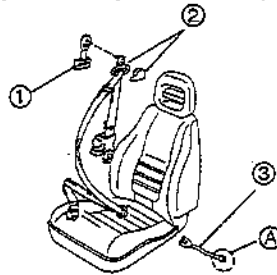
WR-09374

## Front

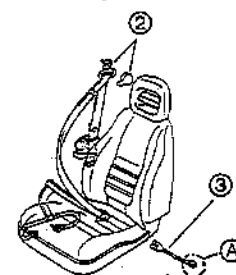
### 5-door model



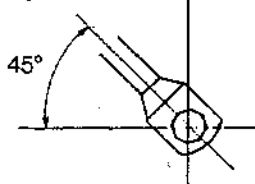
### 3-door model (General specifications)



### (ECE & EEC specifications)



#### A Installing direction of front seat inner belt Ay

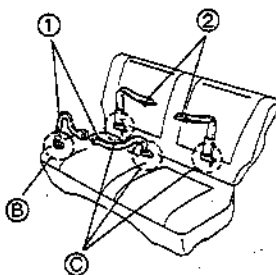


**Bolt Tightening Torque T: 2.9 - 5.4 kg-m  
21 - 39 ft-lb**

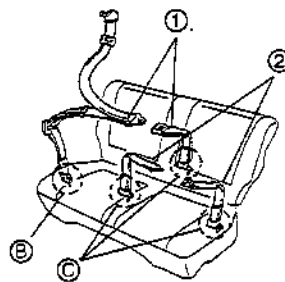
- ① Front seat belt adjuster Ay
- ② Front seat outer belt Ay
- ③ Front seat inner belt Ay

## Rear

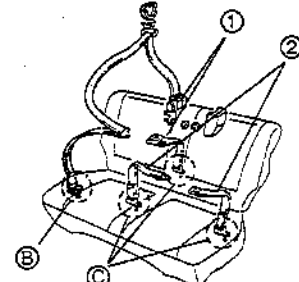
### 2-point (NR) × 3



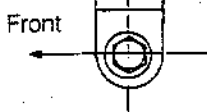
### 3-point (NR) × 2 and 2-point (NR)



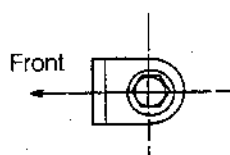
### 3-point (ELR) × 2 and 2-point (NR)



#### B Installing direction of rear seat belt lap outer anchor (Quarter house side)



#### C Installing direction of rear seat belt lap inner anchor



**Bolt Tightening Torque T: 2.9 - 5.4 kg-m  
21 - 39 ft-lb**

- ① Rear seat lap belt Ay
- ② Rear seat lap center belt Ay

Fig. 9-355

WR-09375

## Inspection

### ELR Locking Check

Slowly tilt the retractor from the installation angle. Ensure that no belt locking takes place within 15 degrees in all directions. Also, ensure that the locked state is retained when the retractor is tilted 45 degrees or more.

#### NOTE:

- Never attempt to disassemble the retractor.
- After the anchor bolts have been tightened, make sure that each anchor can move in the bolt's circumferential direction.
- Be sure that the belt in the installed state can be pulled out smoothly and also it can be retracted smoothly into position.

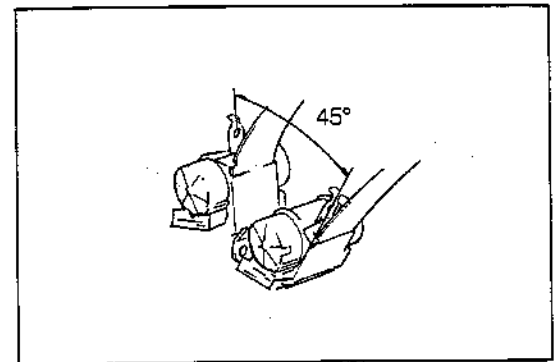


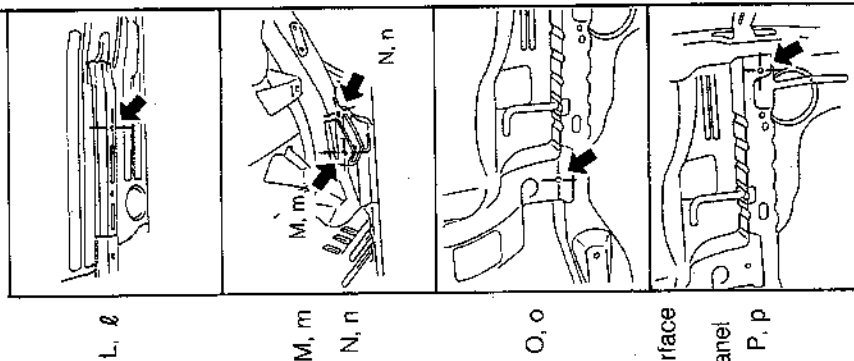
Fig. 9-356

WR-09376

## BODY

Unit: mm (inch)

**[Underbody]**



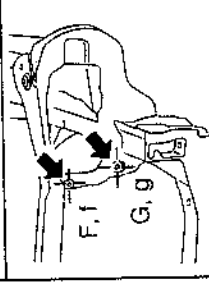
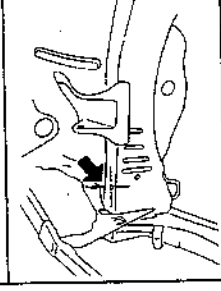
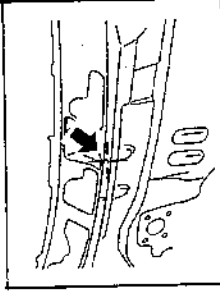
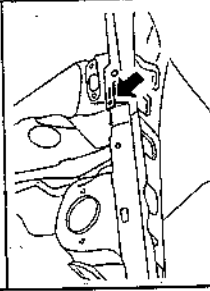
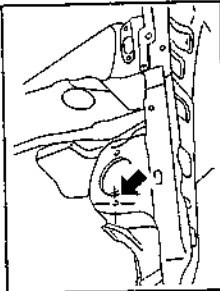
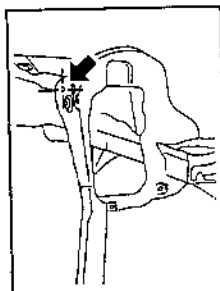
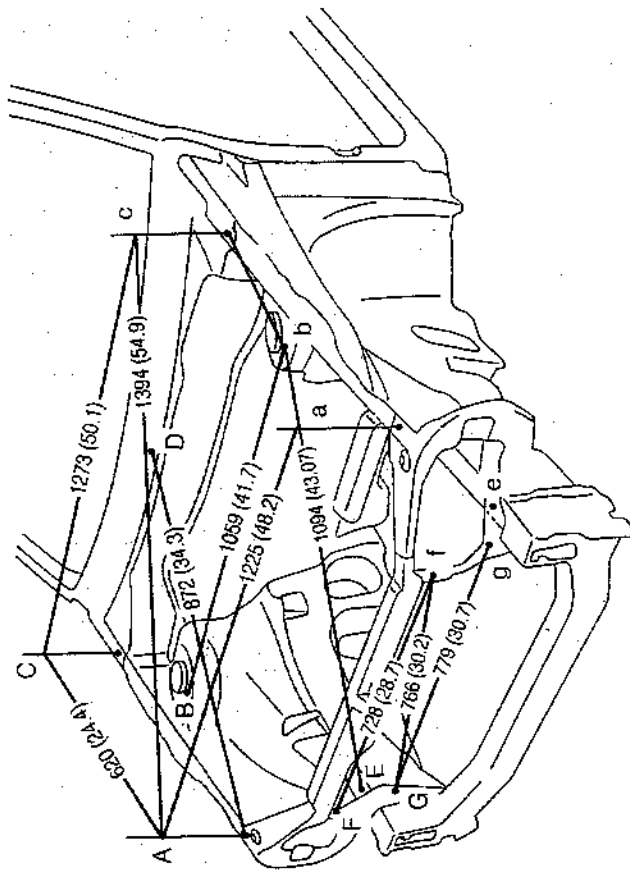
WR-09377

Point code	Measuring point	Diameter
E, e	Front side member bumper installation hole	11 (0.43)
F, f	Headlamp installation hole, upper	9x6.5 (0.35x0.26)
G, g	Headlamp installation hole, lower	9 (0.35)

Point code	Measuring point	Diameter
A, a	Fender installation nut, front	7 (0.28)
B, b	Front spring support hole, front	10 (0.39)
C, c	Fender installation nut, rear	7 (0.28)
D	Hood-to-cowl top seal installation hole (Center of vehicle)	7 (0.28)

Unit: mm (inch)

[Engine compartment]



WR-05378

Fig. 9-358



# DAIHATSU

# CHARADE

## Chassis

## SECTION 10 BODY ELECTRICAL SYSTEM

<b>HANDLING INSTRUCTIONS</b> .....	10- 3	<b>CROSS COIL TYPE GAUGE CIRCUIT</b> .....	10-27
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WR-10001

## HANDLING INSTRUCTIONS OF WITH LOCK TYPE CONNECTOR

### HANDLING AND INSPECTION

#### Removal

To disconnect the connector, simply pull out the connector while the lock lever is being pressed down, as indicated in the right figure.

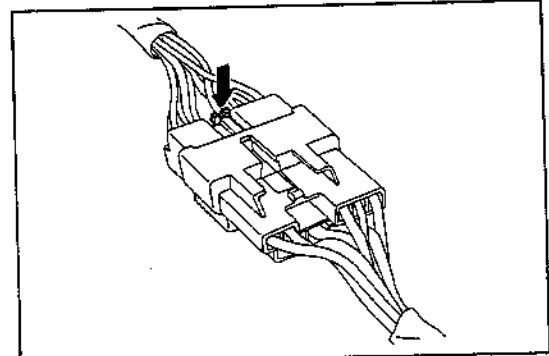


Fig. 10-1

WR-10002

#### Inspection

When you conduct continuity checks or voltage checks using a circuit tester, if you insert a test prod from the connector side, it is impossible to get an adequate fitting. Hence, be sure to positively insert the test prod from the harness side, as indicated in the right figure.

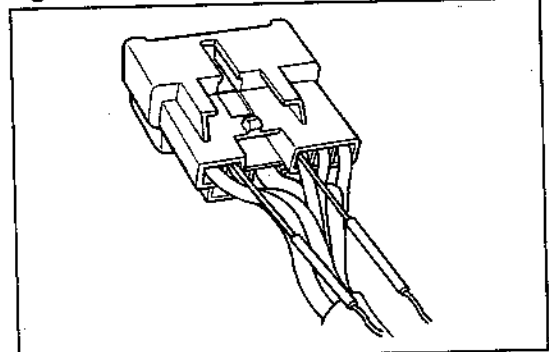


Fig. 10-2

WR-10003

### REPLACEMENT

#### Removal

- (1) From the aperture, insert a miniature type common screwdriver into between the locking lug and the terminal.

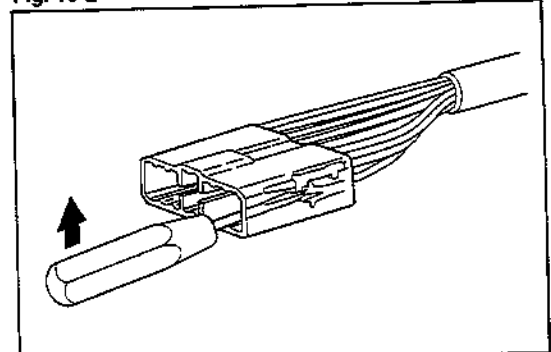


Fig. 10-3

WR-10004

- (2) While the locking lug is being pried upward by means of a screwdriver, pull out the terminal from the backside.

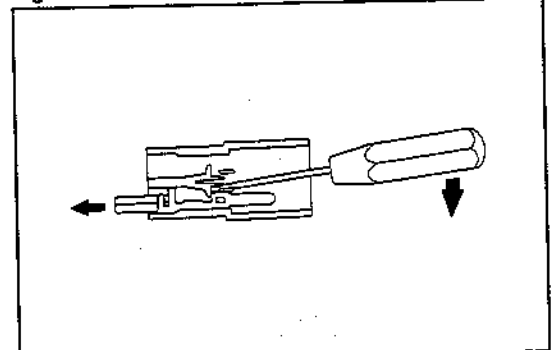


Fig. 10-4

WR-10005

#### Installation

- (1) Insert the terminal, until the locking lug is locked positively.
- (2) Ensure that the locking lug is locked positively by raising the wire.

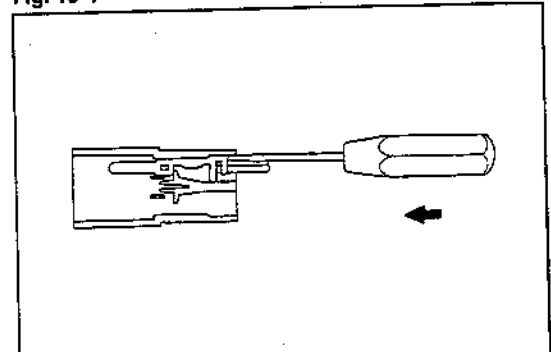


Fig. 10-5

WR-10006

## BODY ELECTRICAL SYSTEM

### WIRING HARNESSSES SCHEMATIC DIAGRAM

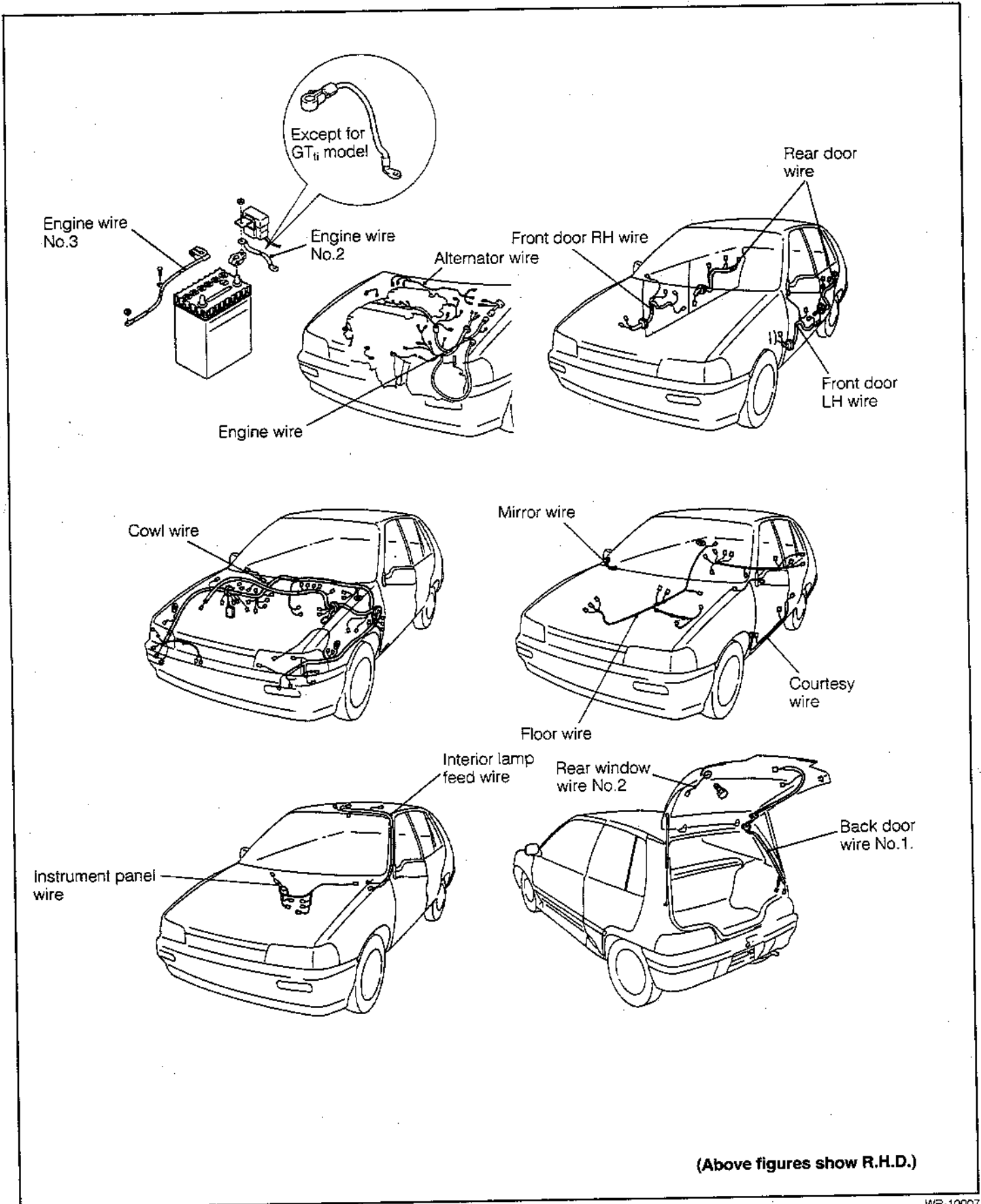


Fig. 10-6

WR-10007

## USES

### Fuse Block

The fuse block is located below the steering post at the driver's seat side.

Detach the cover, as required, by removing the two screws.

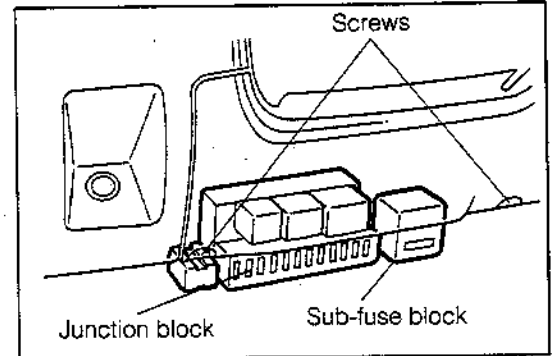


Fig. 10-7

WR-10008

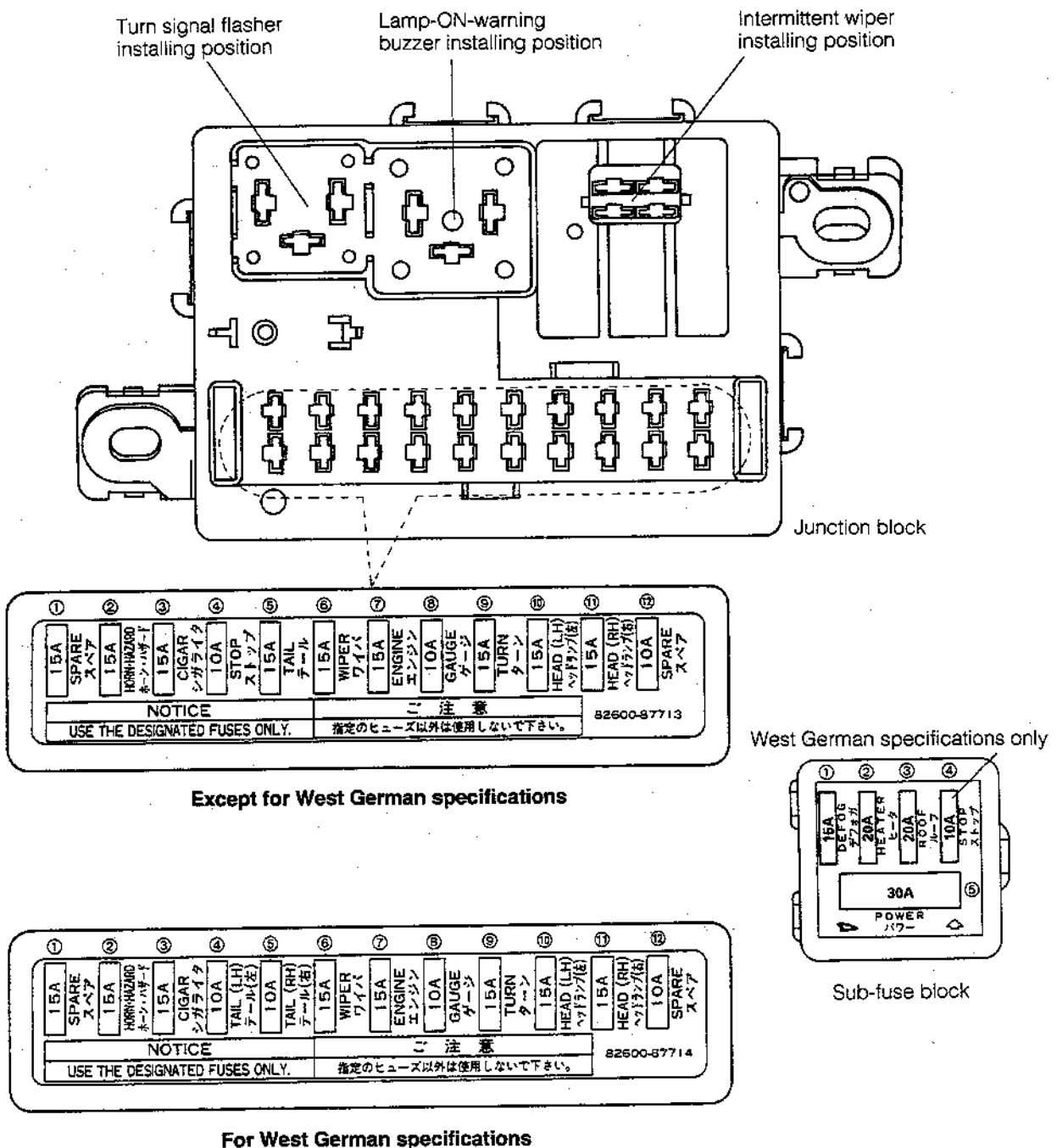


Fig. 10-8

WR-10009

## BODY ELECTRICAL SYSTEM

### Fuse replacement

The fuse replacement must be made at all times by using a new fuse with the correct amperage.

#### NOTE:

- (1) Before any fuse is replaced, be certain to turn OFF all electrical equipment and ignition switch. Never use any fuse in excess of the designated rating.
- (2) Be sure to employ a puller for removing/installing fuses. Also, the removal/installation of fuses must be performed straight.  
If the fuse is removed or installed in a twisted condition, the terminal will be expanded unduly, resulting in poor contact.

If any fuse is blown out repeatedly, the likelihood is that there exists a short in the relevant system. Hence, perform checks for possible systems, referring to Page 10-9 and Section 11 under "Wiring Diagram."

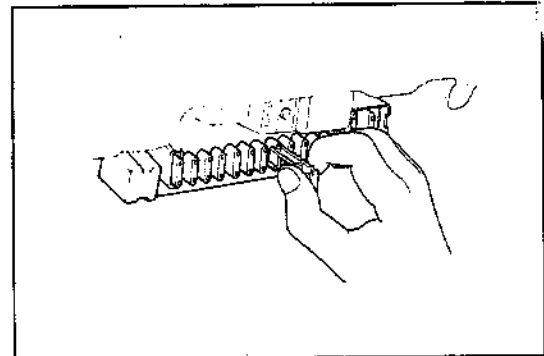


Fig. 10-9

WR-10010

### Relay and fuse block

(Vehicles mounted with Type CB-80 engine)

The relay and fuse block are located next to the battery in the engine compartment.

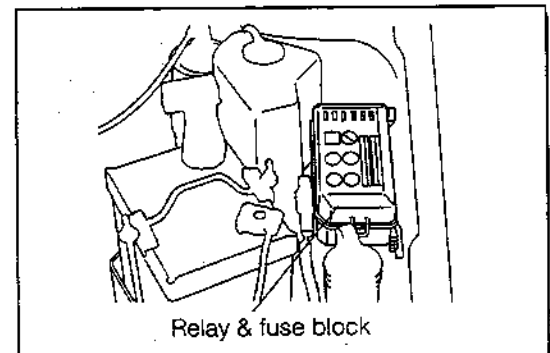


Fig. 10-10

WR-10011

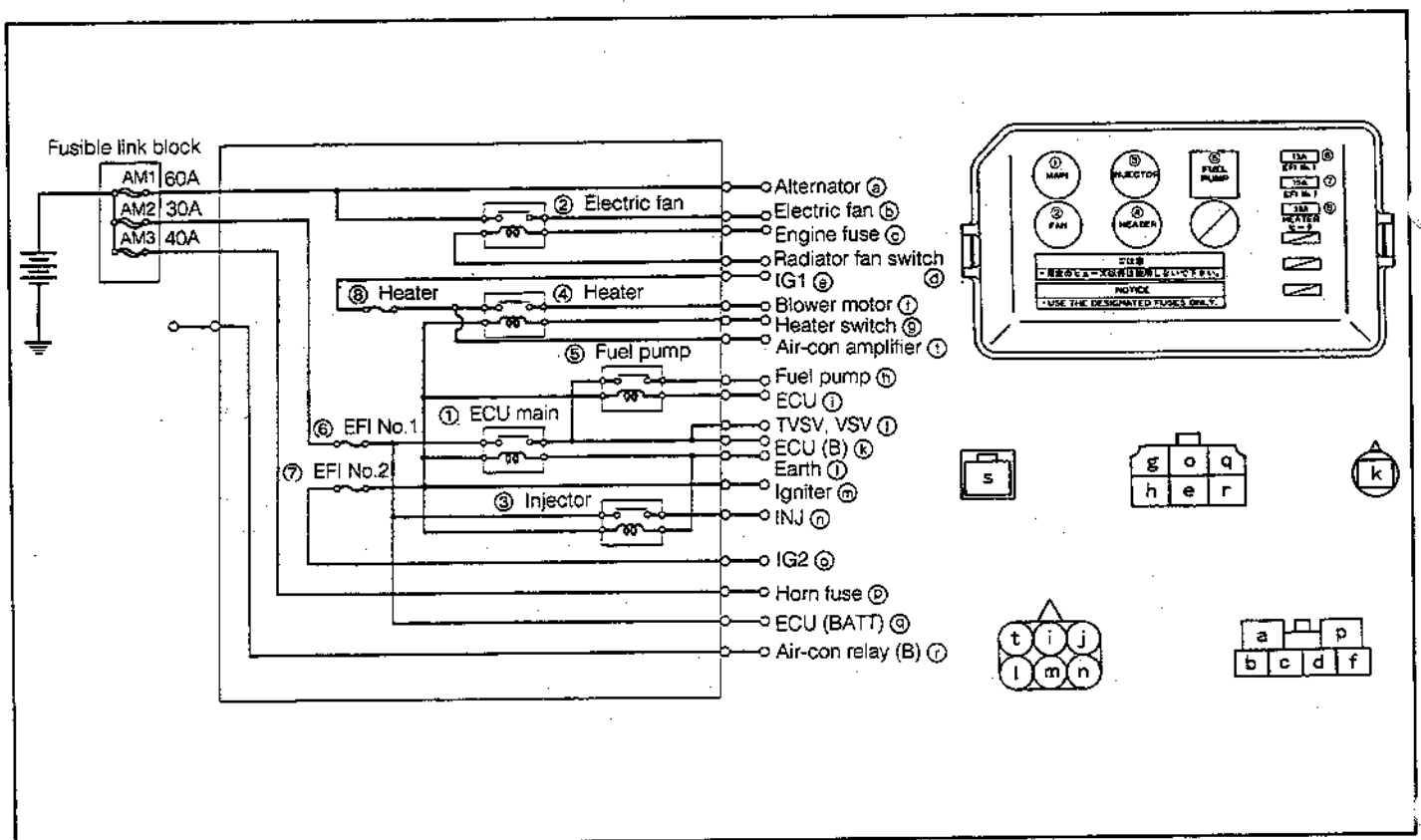


Fig. 10-11

WR-10012

## unction block circuit diagram

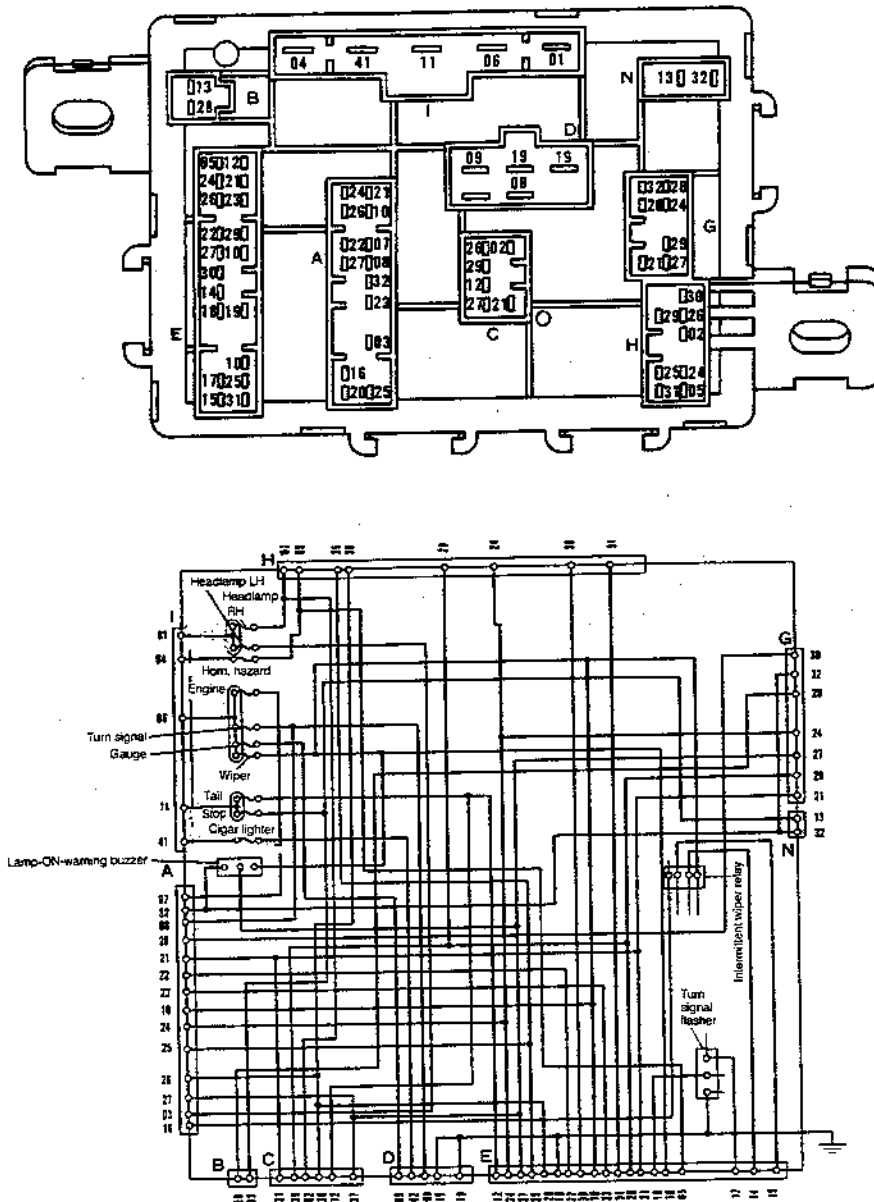


Fig. 10-12

WR-10013

## Connectors

Code	Connected system	Code	Connected system
A	Cowl harness	H	Cowl harness
B	Cowl harness	I	Cowl harness
C	Cowl harness	N	—
D	Cowl harness	K	Intermittent wiper relay
E	Multi-use lever switch harness	L	Lamp-ON-warning buzzer relay
G	—	M	Flasher relay

TR86-08004

## BODY ELECTRICAL SYSTEM

### FUSIBLE LINK BLOCK

#### (Vehicles Mounted with Type CB-80 Engine)

On vehicles mounted with Type CB-80 engine, a cartridge type fusible link block is employed.

#### Replacement

1. If visual inspection reveals that the fusible link is blown out, replace it with a new fusible link with the designated rating.

#### NOTE:

1. Before the fusible link is replaced, be sure to turn OFF the ignition key.
  2. Care must be exercised to ensure that the fusible link is not twisted during the removal/installation. If the fusible link is replaced forcibly, it will cause breakage or poor contact.
- 
2. If the fusible link is blown out repeatedly, the likelihood is that there exists a short in the relevant system. Hence, perform checks for possible systems, referring to Page 10-5 and Section 11 under "Wiring Diagram."

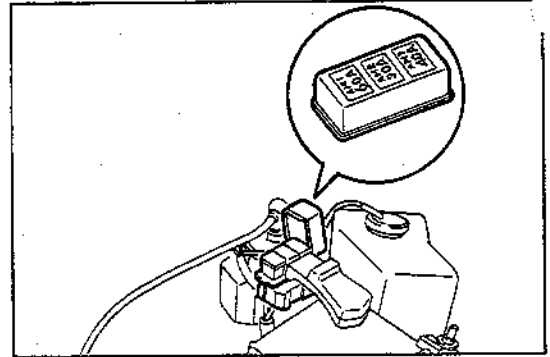


Fig. 10-13

WR-10014

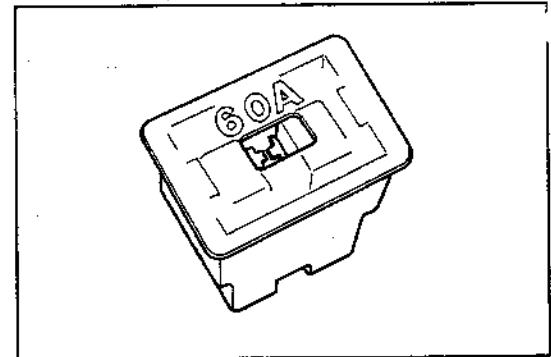


Fig. 10-14

WR-10015



## BODY ELECTRICAL SYSTEM

### use Connecting Circuits

Fuse nomenclature	Capacity (A)	Connecting circuit	Remarks
HORN-HAZARD	15	Horn, Hazard	
CIGAR	15	Cigar lighter, Clock, Electric remote control door mirror	
STOP	10	Stop lamp, Room lamp, Luggage lamp, clock (for West Germany)	
TAIL (LH)	10	Tail lamp (LH), Clearance lamp (LH), License lamp, Rear fog lamp	West German specifications only
TAIL	15	Clock, License lamp, Clearance lamp, Tail lamp, Meter illumination, Heater control illumination, Ashtray illumination, Day-light relay, Dim-dip relay, Rheostat (for AUS), A/T ECU (B)	Except for West German specifications
TAIL (RH)	10	Tail lamp (RH), Clearance lamp (RH), Ashtray illumination, Meter illumination	West German specifications only
WIPER	15	Front wiper, Rear wiper, Headlamp cleaner	
ENGINE	15	Alternator, Radiator fan motor, Fuel pump relay (CB) CSD switch (CL), Fuel cut governor (CL), Outer vent solenoid (CB), Fuel cut solenoid (CB), Vacuum warning relay, Day-light relay, Dim-dip relay	
GAUGE	10	Meter	
TURN	15	Back lamp switch, Lamp-ON-warning buzzer	
HEADLAMP (LH)	15	Headlamp (LH)	
HEADLAMP (RH)	15	Headlamp (RH), High-beam indicator	
DEFOG	15	Rear window defogger	
HEATER	20	Heater, Blower motor	
ROOF	20	Power glass sunroof	
EFI 1	15	EFI main	
EFI 2	15	EFI relay, IG coil	

WR-10016

Circuit breaker nomenclature	Capacity (A)	Connecting circuit	Remarks
POWER	30	Power window	

WR-10017

## BODY ELECTRICAL SYSTEM

### LAMPS

#### TROUBLE SHOOTING

Symptom	Possible causes	Remedies	Page
One headlamp will not glow.	<ul style="list-style-type: none"> <li>● Burnt bulb</li> <li>● Faulty socket</li> <li>● Faulty wiring or earth</li> </ul>	<ul style="list-style-type: none"> <li>● Replace bulb.</li> <li>● Repair, as required.</li> </ul>	10-11
Headlamps will not glow.	<ul style="list-style-type: none"> <li>● Fusible link and/or fuse blown out</li> <li>● Faulty lighting switch</li> <li>● Faulty wiring or earth</li> </ul>	<ul style="list-style-type: none"> <li>● Replace fusible link and/or fuse.</li> <li>● Check switch.</li> <li>● Repair, as required.</li> </ul>	10-6 10-35
High beam or low beam will not glow.	<ul style="list-style-type: none"> <li>● Faulty lighting switch or dimmer switch</li> <li>● Faulty wiring</li> </ul>	<ul style="list-style-type: none"> <li>● Check switch.</li> <li>● Repair, as required.</li> </ul>	10-35
Clearance lamp, tail lamp or license lamp will not glow.	<ul style="list-style-type: none"> <li>● "Tail" fuse blown out</li> <li>● Fusible link blown out</li> <li>● Faulty side lamp switch</li> <li>● Faulty wiring or earth</li> </ul>	<ul style="list-style-type: none"> <li>● Check for short. Replace fuse.</li> <li>● Replace fusible link.</li> <li>● Check switch.</li> <li>● Repair, as required.</li> </ul>	10-6 10-8 10-38
Turn signal lamps at one side will not glow.	<ul style="list-style-type: none"> <li>● Faulty turn signal lamp switch</li> <li>● Faulty wiring or earth</li> </ul>	<ul style="list-style-type: none"> <li>● Check switch.</li> <li>● Repair, as required.</li> </ul>	10-36
Turn signal lamps at both sides will not glow.	<ul style="list-style-type: none"> <li>● "Turn" fuse blown out</li> <li>● Faulty turn signal/hazard switch</li> <li>● Faulty turn signal flasher relay</li> <li>● Faulty wiring or earth</li> </ul>	<ul style="list-style-type: none"> <li>● Check for short. Replace fuse.</li> <li>● Check switch.</li> <li>● Check flasher relay</li> <li>● Repair, as required.</li> </ul>	10-6 10-36 10-37
Stop lamp will not glow.	<ul style="list-style-type: none"> <li>● "Stop" fuse blown out</li> <li>● Faulty stop lamp switch</li> <li>● Faulty wiring or earth</li> </ul>	<ul style="list-style-type: none"> <li>● Check for short. Replace fuse.</li> <li>● Check switch.</li> <li>● Repair, as required.</li> </ul>	10-6 10-47
Stop lamp remains in glow state.	<ul style="list-style-type: none"> <li>● Faulty stop lamp switch.</li> </ul>	<ul style="list-style-type: none"> <li>● Adjust or replace switch.</li> </ul>	10-47
Hazard warning lamp will not glow.	<ul style="list-style-type: none"> <li>● "Horn" fuse blown out</li> <li>● Faulty flasher relay</li> <li>● Faulty hazard switch</li> <li>● Faulty wiring or earth</li> </ul>	<ul style="list-style-type: none"> <li>● Check for short. Replace fuse.</li> <li>● Check flasher.</li> <li>● Check switch.</li> <li>● Repair, as required.</li> </ul>	10-6 10-36

WR-10018

## CLEARANCE LAMP

### Removal

1. Remove the clearance lamp by removing the two screws.
2. Detach the bulb from the socket.

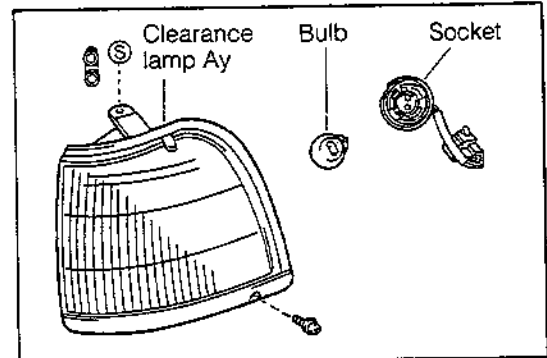


Fig. 10-15

WR-10019

### Installation

1. When the bulb is burnt out, install a new bulb with the designated wattage.
2. Install the clearance lamp with the two screws.

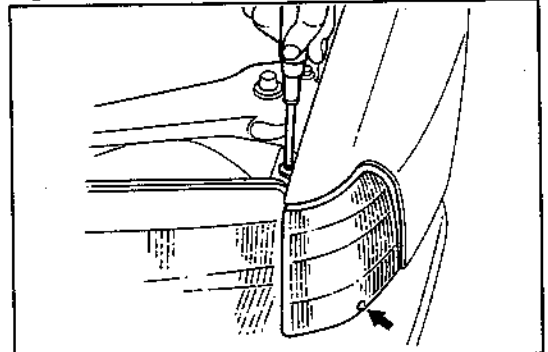


Fig. 10-16

WR-10020

## HEADLAMP

### NOTE:

It should be noted that the bulb replacement can be performed only after socket cover has been detached.

### Removal

1. Remove the radiator grille as follows.  
 Except GT<sub>ii</sub> grade ..... Pull the grille toward you, while the upper part of the claw is being pushed down, using a common screwdriver.  
 GT<sub>ii</sub> grade ..... Detach the grille by turning the central part of the clip 90 degrees, using a cross point screwdriver.
2. Remove the clearance lamp.  
 See the section under "Clearance Lamp" above.
3. Remove the headlamp assembly.
4. Remove the socket cover.
5. Detach the bulb.

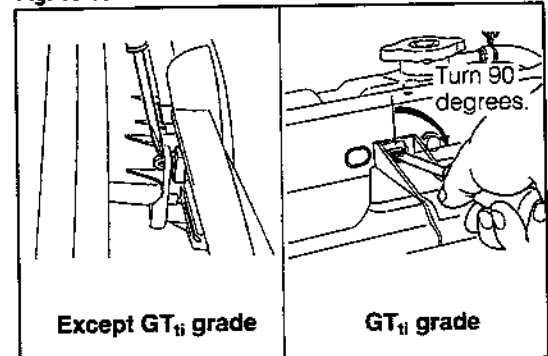


Fig. 10-17

WR-10021

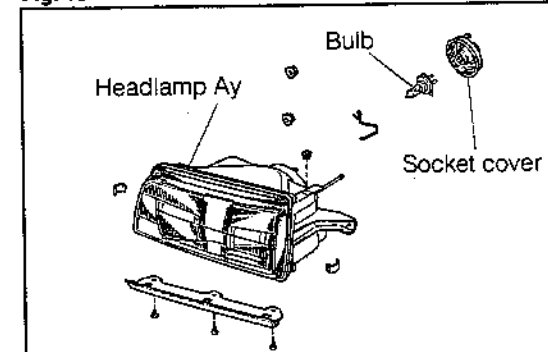


Fig. 10-18

WR-10022

### CAUTION:

The halogen bulb reaches a very high temperature while it is put into use. If any lubricant gets on the bulb surface, it will result in significantly reduced lamp life. Hence, be very careful not allow your fingers, etc. to touch with the glass portion during the replacement. Be sure to hold the flange section to replace the bulb.

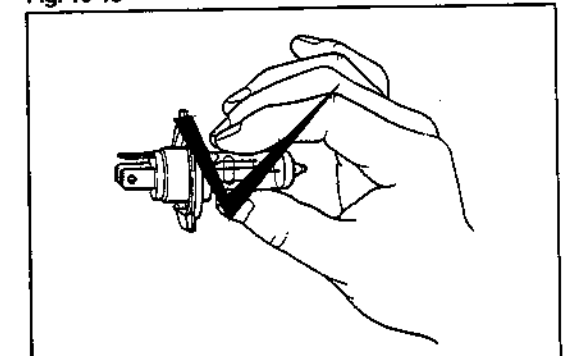


Fig. 10-19

WR-10023

## BODY ELECTRICAL SYSTEM

### Installation

1. When the bulb is burnt out, install a new bulb with the designated wattage.
2. Install the socket cover in place.

#### NOTE:

Make sure that the socket cover is fitted securely.

3. Install the headlamp assembly with one bolt and two nuts.
4. Install the clearance lamps and radiator grille.

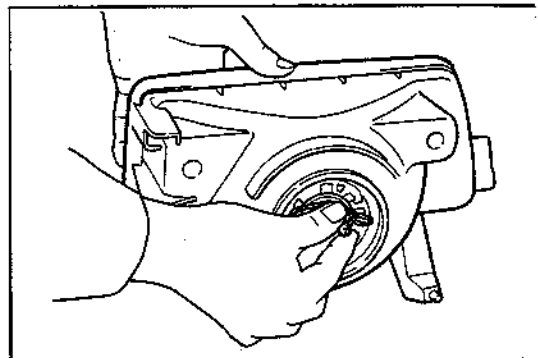


Fig. 10-20

WR-10024

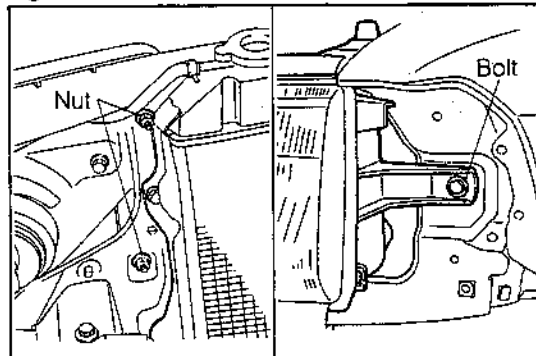


Fig. 10-21

WR-10025

## Headlamp aiming adjustment (Screen type)

Conditions of vehicle during aiming adjustment

1. Perform the aiming adjustment with the tire air inflation pressure set to the specified value and with one person seated at the driver's seat.
2. Rock the vehicle in an up-and-down direction as well as in a right-and-left direction so that the suspensions may be settled in a normal state.
3. Carry out the headlamp aiming adjustment while the engine is running at 1500 rpm or more.  
(If the revolution speed is too low, the lamp terminal voltage drops, thus making it difficult to recognize the hot zone.)

## Halogen headlamps

1. Setting of reference points on screen
  - (1) Measure the center height "H" of the headlamps. Draw an adjustment line on the screen at a height 29 mm (1.14 inches) below the center height "H".
  - (2) Draw a vertical straight line on the screen at each center of the headlamps on both right and left sides. Thus, establish each intersection "F" made by the vertical center line and the adjustment line.
2. Headlamp aiming adjustment
  - (1) Position the vehicle in front of the screen so that the headlamps of the vehicle come at a distance of 3 m (9.84 ft). Also, ensure that the vehicle is positioned normal to the screen.
  - (2) When the headlamps are turned ON with the lower beam selected, you can get a light distribution pattern as indicated in the right figure. Therefore, the aiming adjustment can be carried out at an intersection made by the line "a" and the line "b" of cut-off lines.
  - (3) Turn ON the headlamps with the low beam selected. Perform the adjustment using the adjusting screws in such a way that each intersection of the cut-off lines comes at the respective intersection "F" on the screen.

## Tire size & air pressure

kg/cm<sup>2</sup> (psi)

Tire size		Front		Rear	
(JATMA)	(ISO)	Petrol vehicle	Diesel vehicle	Petrol vehicle	Diesel vehicle
6.00-12-4PR	6.00-12-4PR	1.9 (27)	1.9 (27)	1.9 (27)	1.9 (27)
145SR13	145/80R13 74S	1.8 (26)	2.0 (29)	1.8 (26)	2.0 (29)
155SR13	155/80R13 78S	1.8 (26)	2.0 (29)	1.8 (26)	2.0 (29)
165/70SR13	165/70R13 79S	1.8 (26)	2.0 (29)	1.8 (26)	2.0 (29)
—	175/60R14 78H	1.8 (26)	—	1.8 (26)	—
—	185/60R14 82H (Pref. P6)	1.8 (26)	—	1.8 (26)	—

WR-10026

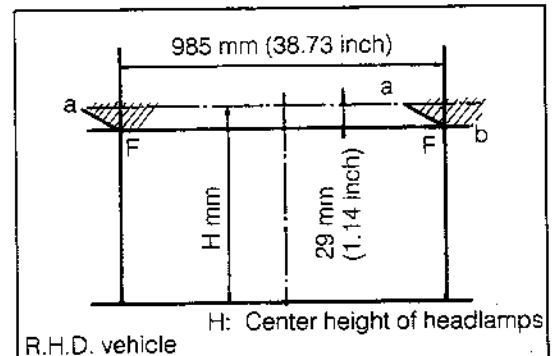


Fig. 10-22

WR-10029

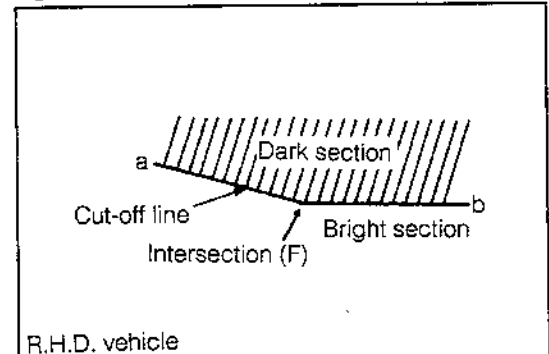


Fig. 10-23

WR-10030

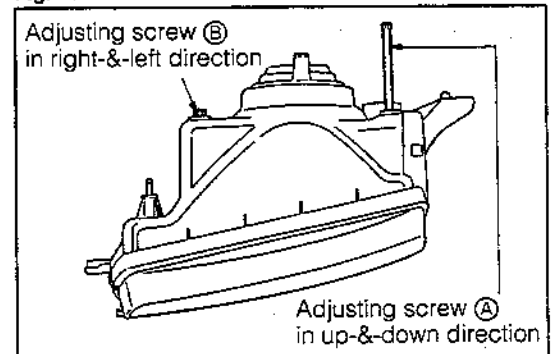


Fig. 10-24

WR-10028

## BODY ELECTRICAL SYSTEM

- (4) Upon completion of the headlamp aiming adjustment, switch the low beam to the high beam. Ensure that each main beam is directed downward and it is aiming straight toward the forward direction of the vehicle.

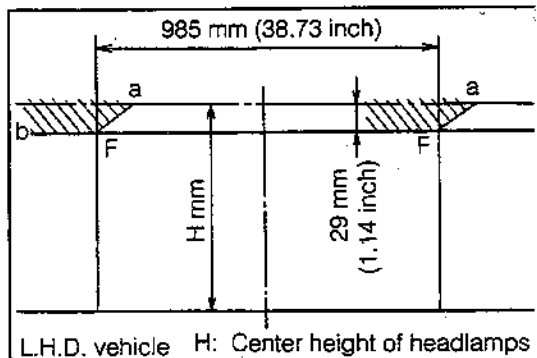


Fig. 10-25

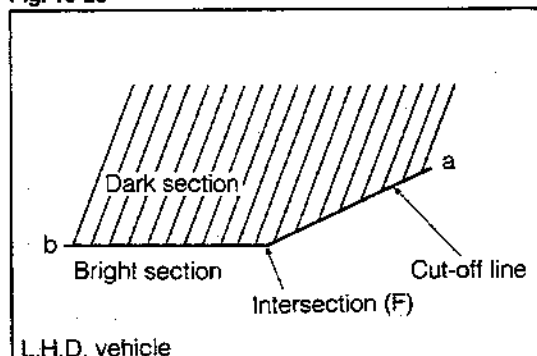


Fig. 10-26

WR-10031

## FRONT TURN SIGNAL LAMP

### Removal

1. Remove the front turn signal lamp by removing one screw.
2. After detaching the lens, remove the bulb.

### Installation

1. When the bulb is burnt out, install a new bulb with the designated wattage.
2. Install the lens. Secure the front turn signal lamp assembly with the screw.

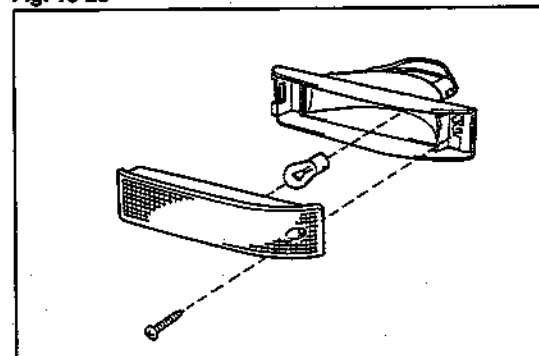


Fig. 10-27

WR-10032

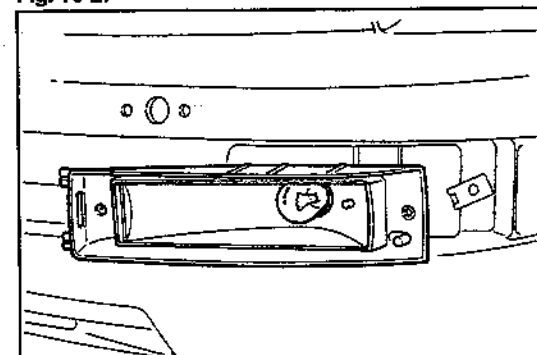


Fig. 10-28

WR-10033

## SIDE TURN SIGNAL LAMP

### Removal

1. Using a common screwdriver, remove the side turn signal lamp assembly by pushing it toward the front part of the vehicle. This removal must be performed carefully with a cloth or the like placed on the body that no scratch may be made to the paint finish surface.
2. After detaching the lens, remove the bulb.

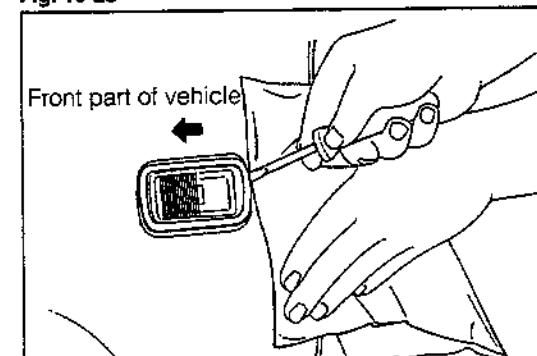


Fig. 10-29

WR-10034

## Installation

1. When the bulb is burnt out, install a new bulb with the designated wattage.
2. Install the lens on the side turn signal lamp assembly.
3. Attach the side turn signal lamp assembly to the fender section.

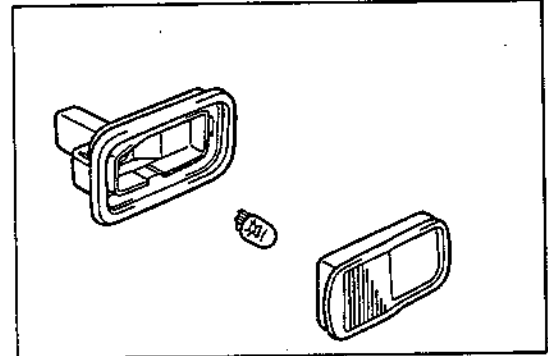


Fig. 10-30

WR-10035

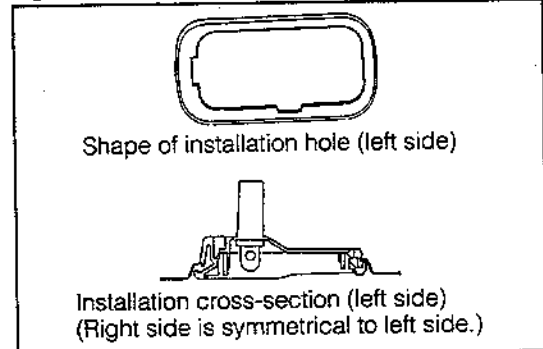


Fig. 10-31

WR-10036

## LICENSE PLATE LAMP

### Removal

1. Detach the clip. Remove the lower back trim.  
**NOTE:**  
It should be noted that the bulb replacement can be carried out without removing the lower back trim.
2. Disconnect the coupler.
3. Remove the license plate assembly and lens by removing the two tapping screws.  
Take out the bulb.

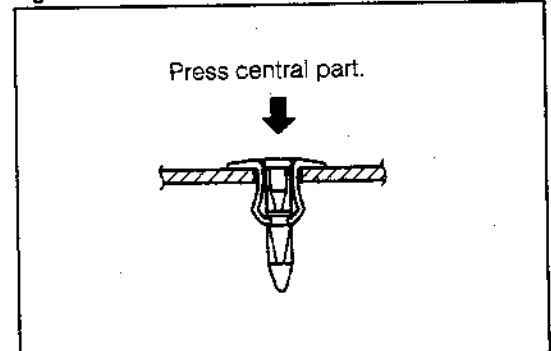


Fig. 10-32

WR-10037

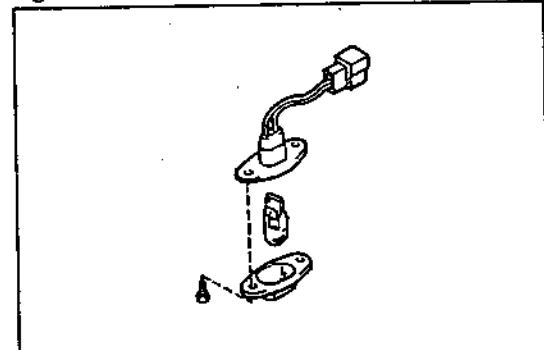


Fig. 10-33

WR-10038

### Installation

1. When the bulb is burnt out, install a new bulb with the designated wattage.
2. Ensure that the spring nut is mounted properly on the bumper rib.

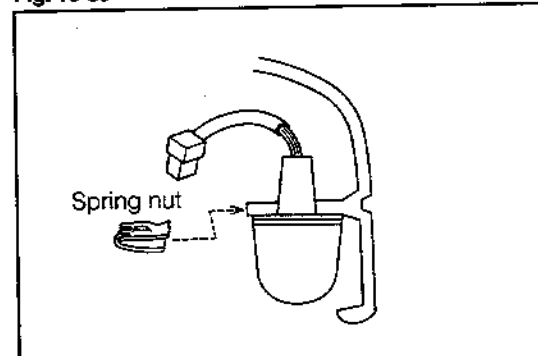


Fig. 10-34

WR-10039

## BODY ELECTRICAL SYSTEM

3. Install the lens. Secure the lens with the tapping screws.
  4. Connect the coupler.
- 
5. Attach the lower back trim.  
As for the clip, install it with the central part in a pulled-out state. Then, push the central part, until the part becomes flush with the other part.

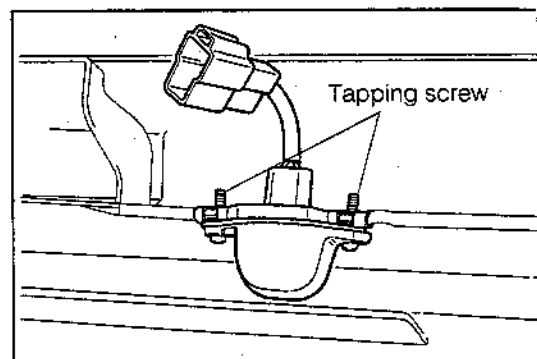


Fig. 10-35

WR-10040

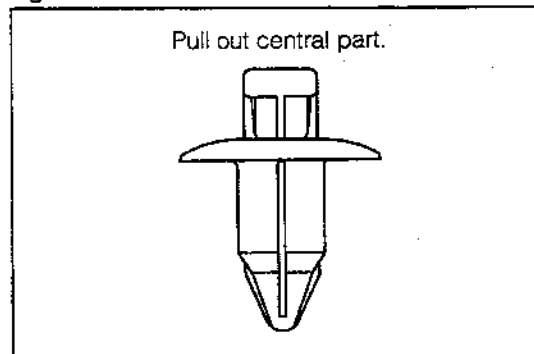


Fig. 10-36

WR-10041

## REAR COMBINATION LAMP

### NOTE:

It should be noted that the bulb replacement can be performed only after the rear combination lamp service cover has been detached.

### Removal

1. Remove the rear bumper. (Refer to page 9-12.)
  2. Detach the rear combination lamp service cover.
- 
3. Remove the rear combination lamp assembly from the body.
  4. Detach the socket and bulb.

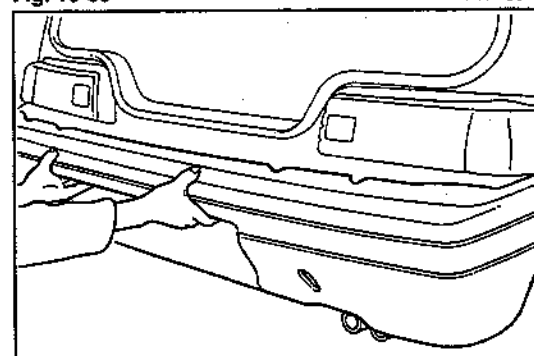


Fig. 10-37

WR-10042

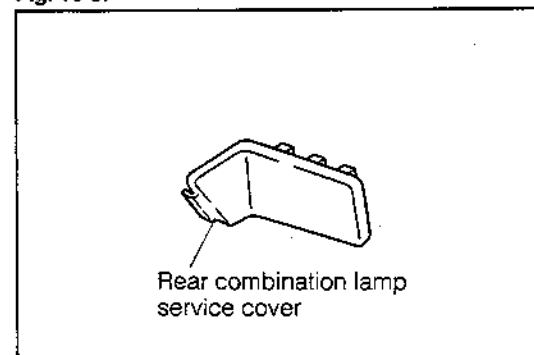


Fig. 10-38

WR-10043

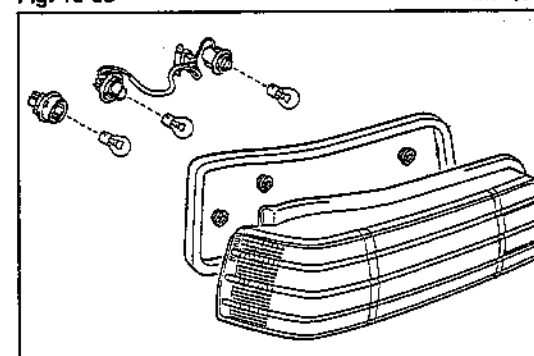


Fig. 10-39

WR-10044



## Installation

1. Install the bulb and socket in the rear combination lamp assembly.
  2. Install the rear combination lamp assembly.
    - (1) Remove any remaining butyl tape (body gasket) from the body surface as well as from the gasket surface of the rear combination lamp.
    - (2) Affix the butyl tape exclusively for this application onto the rear combination lamp.
- NOTE:**
1. Make sure that the application of butyl is limited only within the marked area.
  2. Be sure that the application of butyl is started at around the mid-point of the inner side of the rear combination lamp.
  3. Be certain that the ends of the butyl tape are overlapped about 10 mm (0.39 inch).
3. Attach the rear combination lamp service cover.
  4. Install the rear bumper.

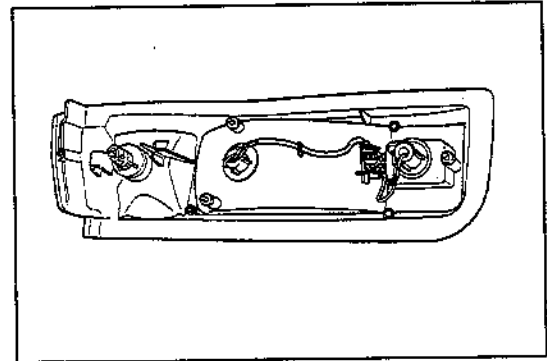


Fig. 10-40

WR-10045

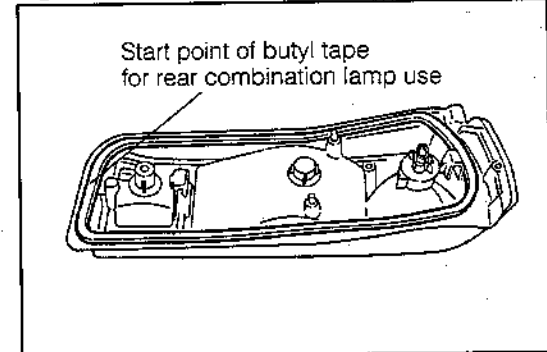


Fig. 10-41

WR-10046

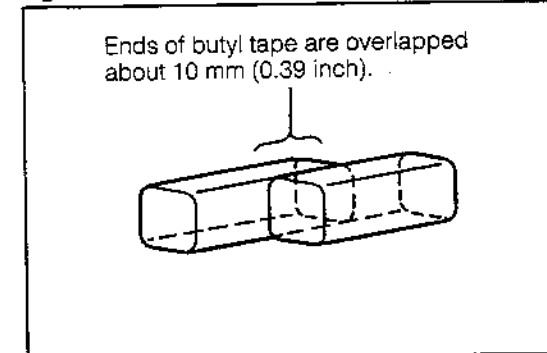


Fig. 10-42

WR-10047

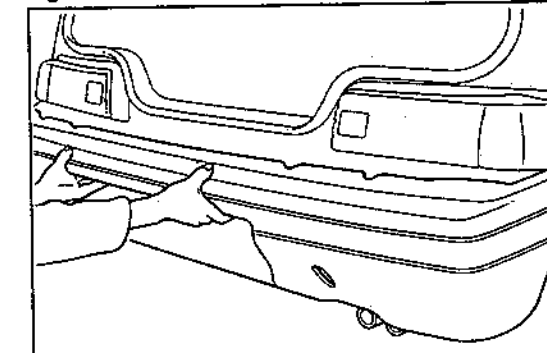


Fig. 10-43

WR-10048

## ROOM LAMP

### Removal

1. Detach the room lamp cover. Remove the bulb.

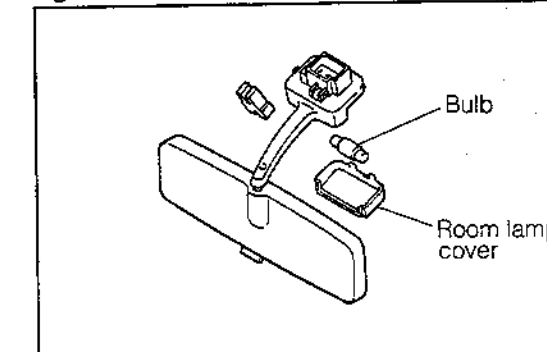


Fig. 10-44

WR-10049

## BODY ELECTRICAL SYSTEM

### Installation

1. When the bulb is burnt out, install a new bulb with the designated wattage.
2. Install the room lamp cover.

WR-10050

### LUGGAGE ROOM LAMP

#### NOTE:

It should be noted that the bulb replacement can be performed only after the lens has been detached.

### Removal

1. Detach the rear combination lamp service cover.
2. Disconnect the connector. Tie a string to the connector section. Working from above, remove the luggage room lamp assembly.
3. Remove the lens and bulb.

### Installation

1. When the bulb is burnt out, install a new bulb with the designated wattage.
2. Attach the lens to the luggage room lamp assembly.
3. Install the luggage room lamp assembly.  
For easier operation, install the lamp assembly by tying the string which was used during the removal to the connector section.
4. Connect the connector. Attach the rear combination lamp service cover.

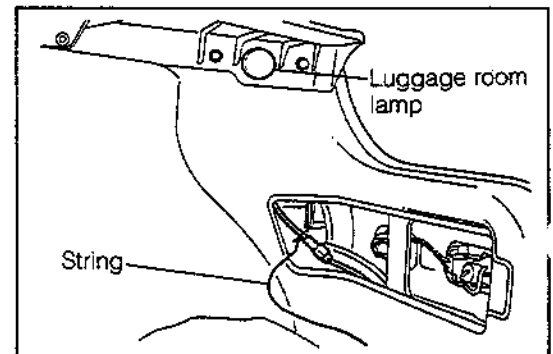


Fig. 10-45

WR-10051

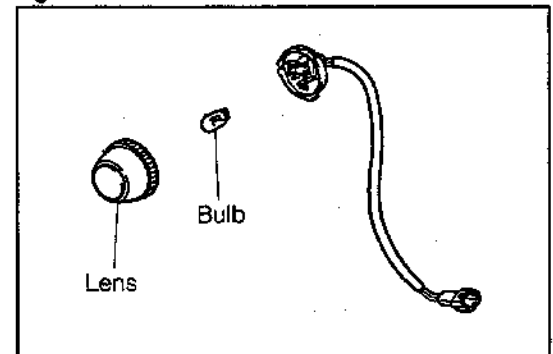


Fig. 10-46

WR-10052

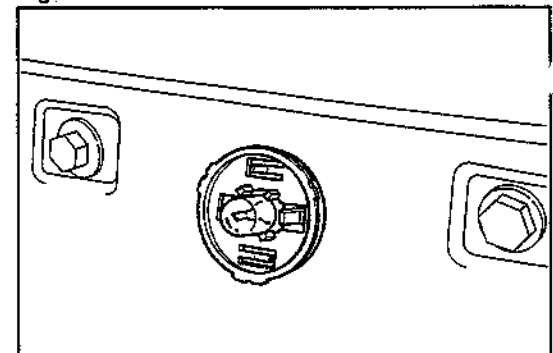


Fig. 10-47

WR-10053

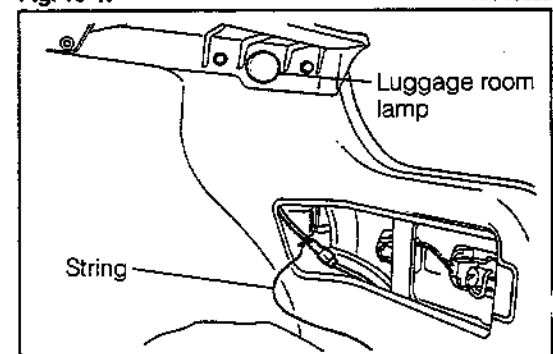


Fig. 10-48

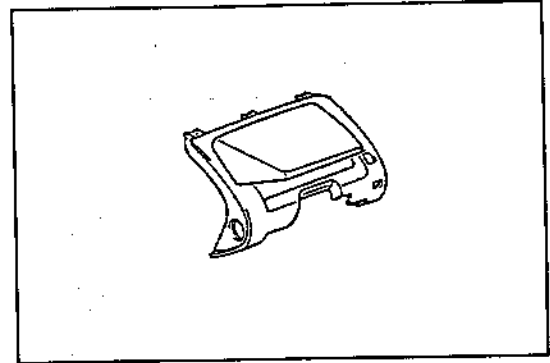
WR-10054

**COMBINATION METER****Removal**

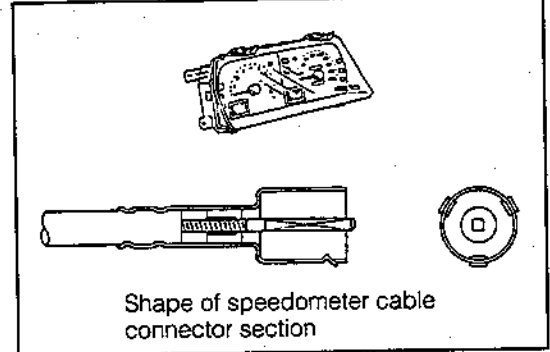
1. Remove the instrument cluster panel finish panel sub-assembly from the instrument panel. (See page 9-78.)
2. Disconnect each connector. Remove the combination meter assembly from the instrument panel.

**Installation**

1. Connect each connector.  
Install the combination meter Ay to the instrument panel.
2. Install the instrument cluster panel finish panel S/A to the instrument panel.  
(See page 9-82.)

**Fig. 10-49**

WR-10055

**Fig. 10-50**

WR-10056

# BODY ELECTRICAL SYSTEM

## COMPONENTS

### Single-meter type standard

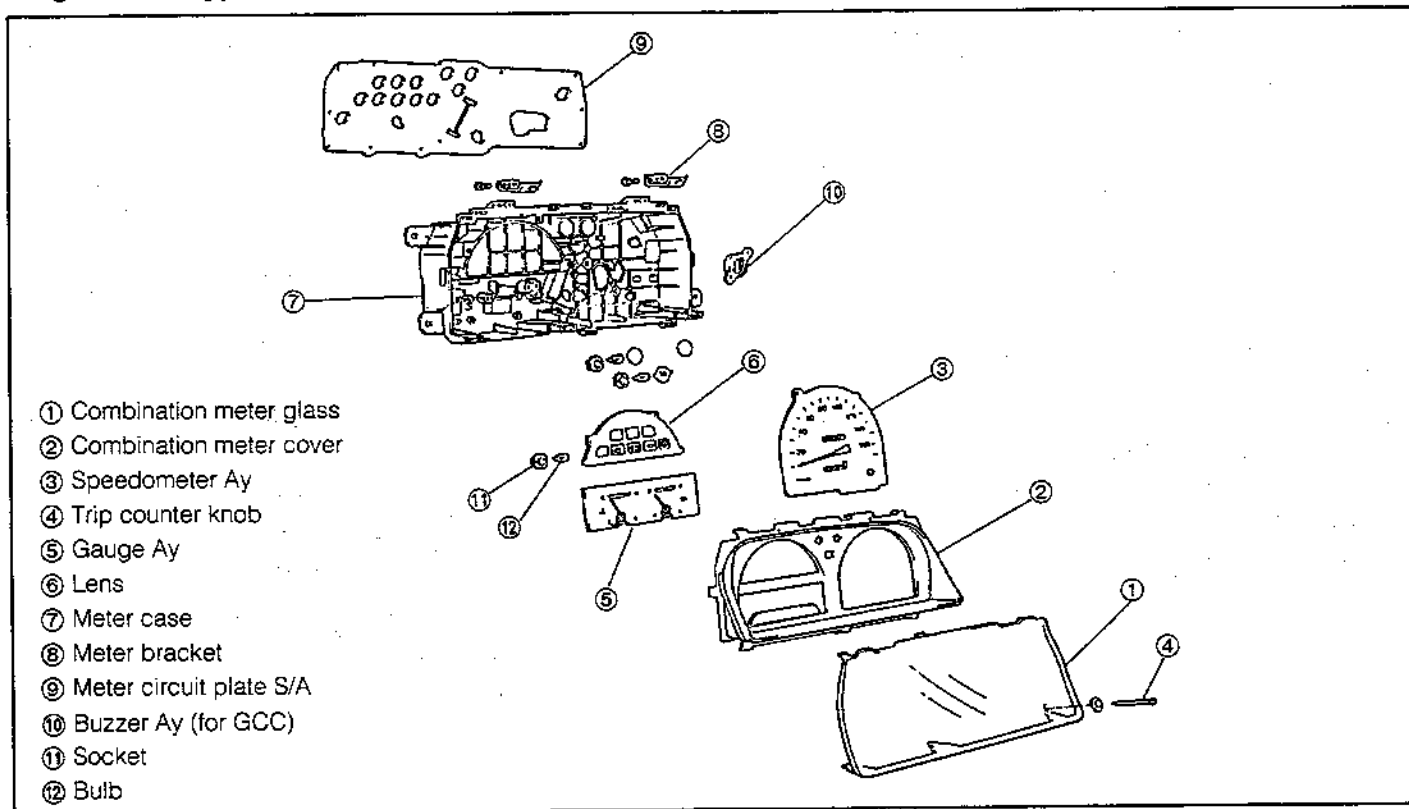


Fig. 10-51

WR-10057

### Two-meter type standard

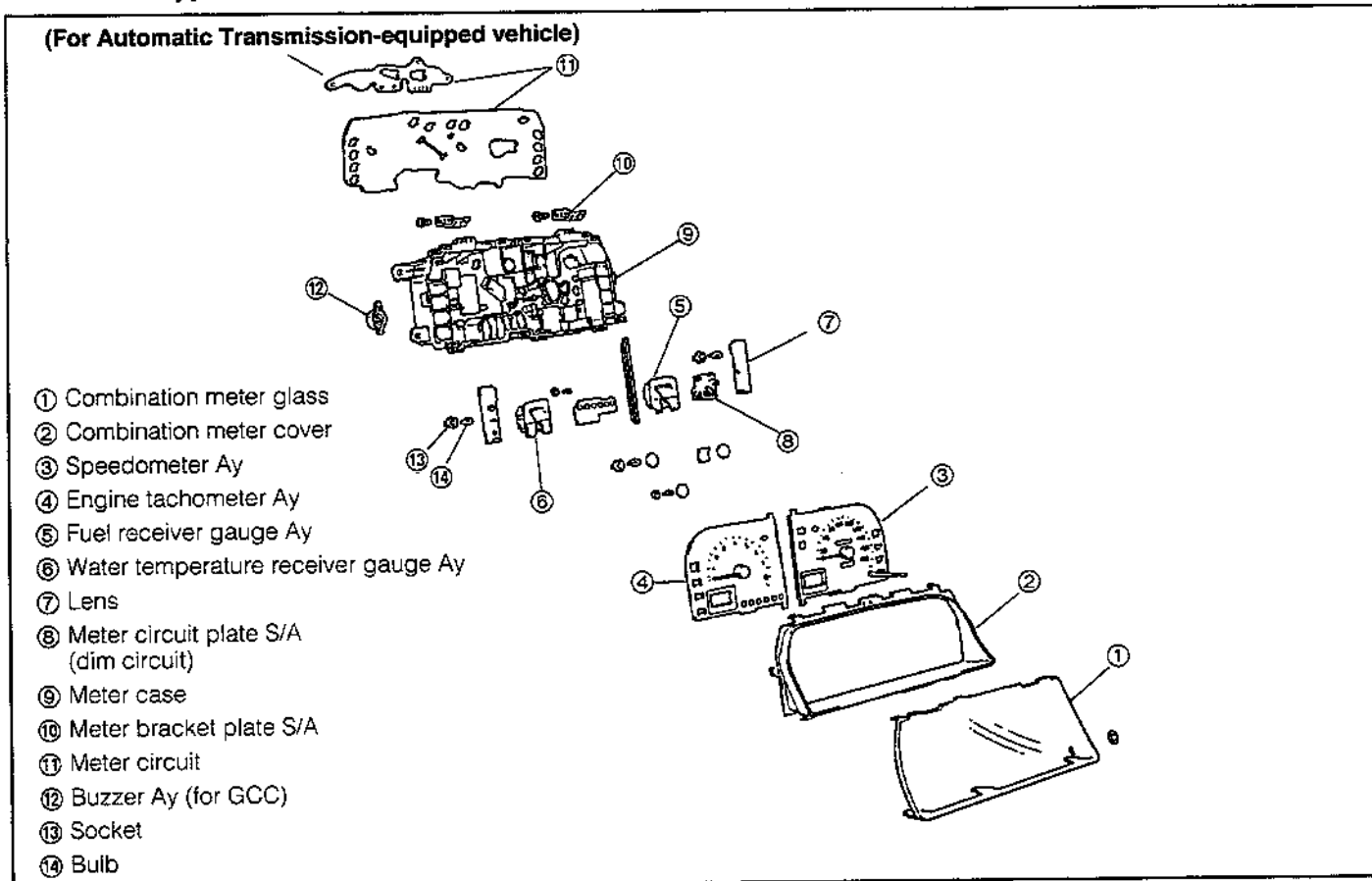


Fig. 10-52

WR-10058

## NGLE-METER TYPE

### Circuit panel

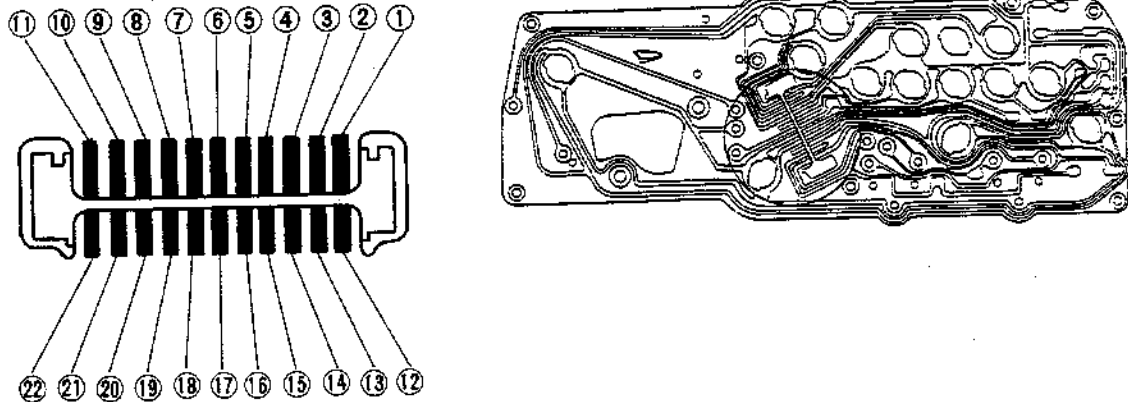


Fig. 10-53

WR-10059

### Circuit diagram

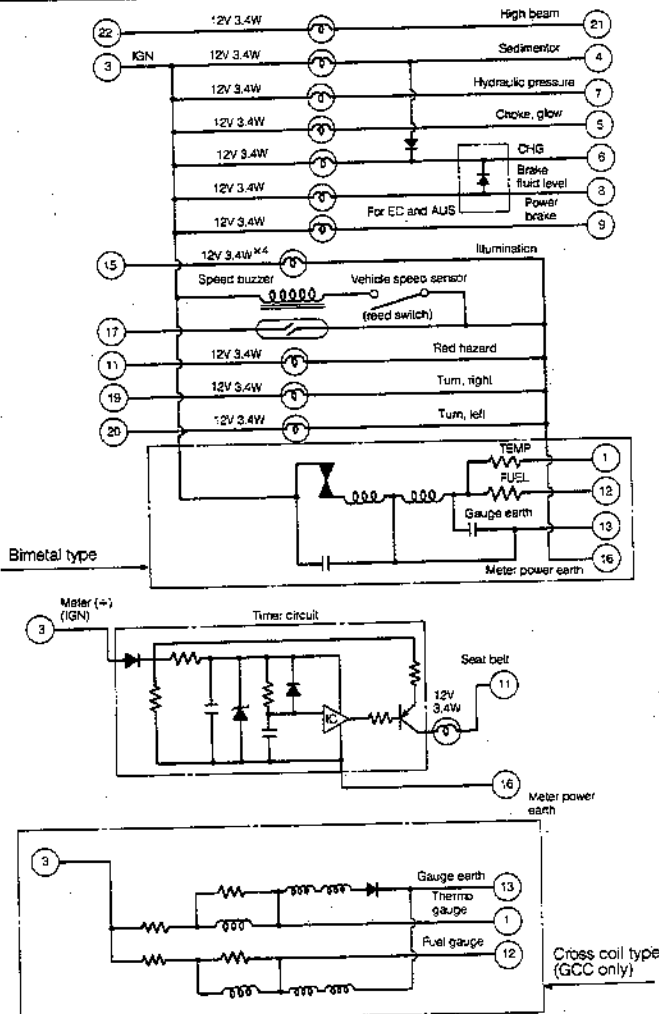


Fig. 10-54

WR-10060

No.	Connecting terminal at vehicle side
1	Thermo gauge
2	Blank
3	Meter (+) terminal (IGN)
4	Fuel sedimentor
5	Glow or choke
6	Charge (-) terminal
7	Oil pressure switch
8	Brake fluid level switch, parking brake switch (except for ECE & EEC, Australian and New Zealand specifications)
9	Parking brake switch (ECE & EEC, Australian and New Zealand specifications only)
10	Blank
11	Seat belt switch (GCC only) or red hazard (-) terminal
12	Fuel sender gauge
13	Gauge earth
14	Blank
15	Illumination (+) terminal
16	Meter power earth
17	Vehicle speed sensor (+) terminal (A/T only)
18	Blank
19	Turn signal switch, right
20	Turn signal switch, left
21	Headlamp (-) terminal
22	Headlamp (+) terminal

# BODY ELECTRICAL SYSTEM

## TWO-METER TYPE

### Circuit panel

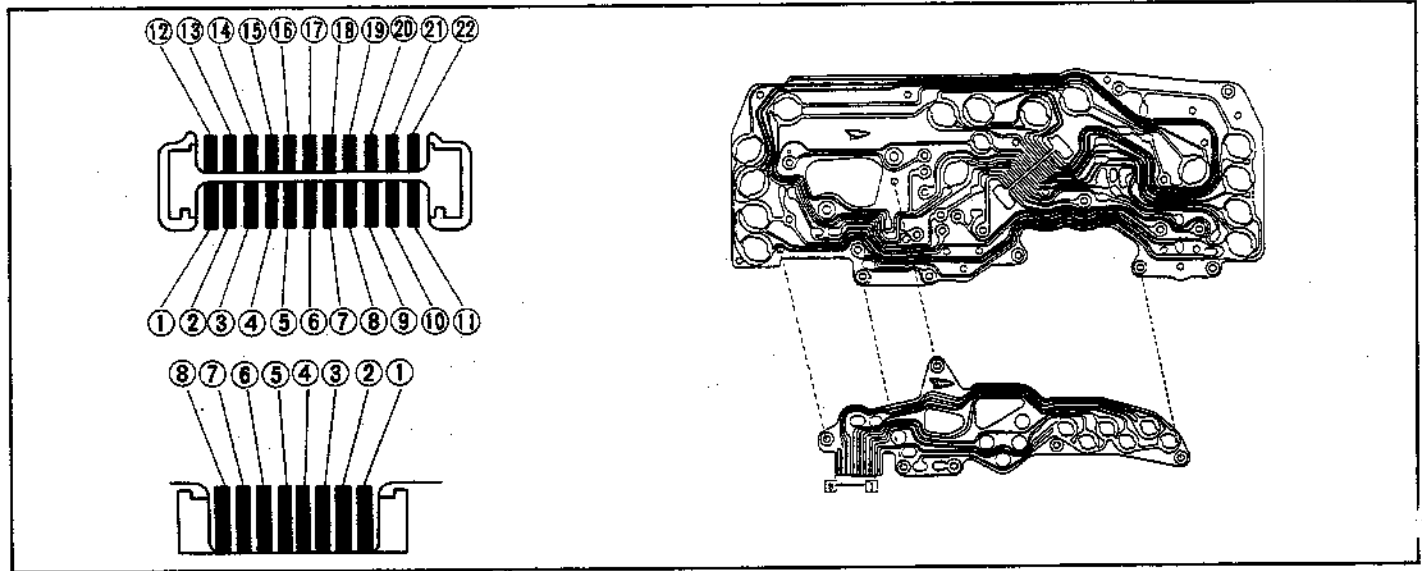


Fig. 10-55

WR-10061

### Circuit diagram

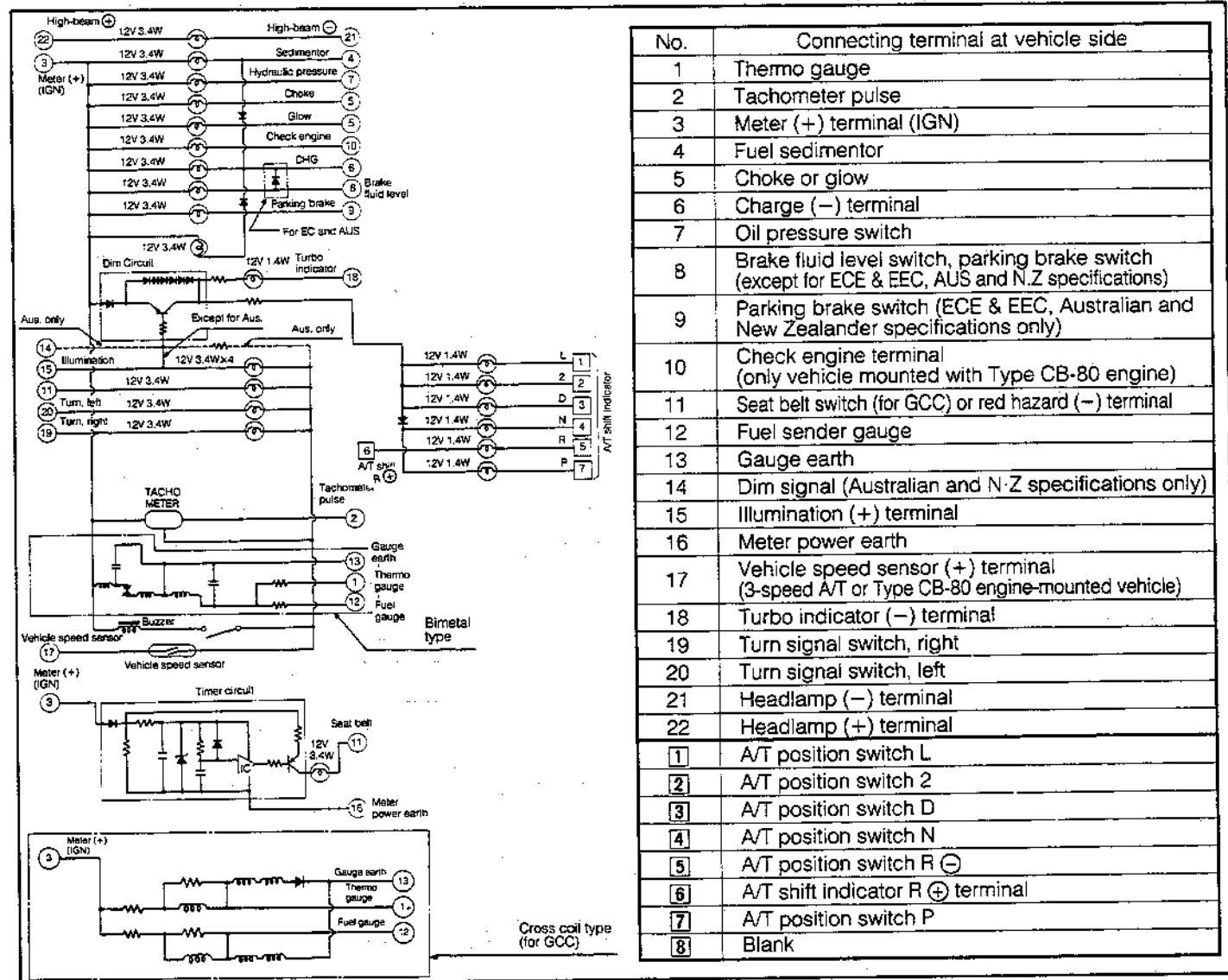


Fig. 10-56

WR-10062

## PEEDOMETER

### 1. In-vehicle check

Using a speedometer tester, check the speedometer for any indication error, pointer fluctuation and abnormal noise. Furthermore, check to see if the odometer and speed warning device (GCC specifications only) are functioning properly.

#### NOTE:

1. It should be noted that excessive tire wear, over-inflation or under-inflation will cause indication errors of the speedometer.
2. Fluctuations of the meter pointer are often attributable to a faulty meter cable.
3. The meter contains a mechanism using contact points. Hence, there will be instances where the pointer slightly fluctuates in the neighborhood of operating points of contacts points (changeover points between ON and OFF). However, this does not constitute any malfunction.

Item	Meter indication	Remarks
Indication error	For Australia within +10% - -10% For ECE & EEC within +10% - 0%	Relative to tester reading at a time when the actual vehicle speed is 35 km/h (22 mph) or more
Pointer fluctuation	Within $\pm 1$ km/h (0.6 mph)	—
Speed warning device operating speed	$124 \pm 4$ km/h	GCC specifications only

### 2. Speed warning buzzer check (GCC specifications only)

Apply the battery voltage across the terminals of the buzzer unit. Ensure that the buzzer is set off.

#### NOTE:

Be sure to connect the buzzer's side having a (+) mark to the positive (+) terminal of the battery.

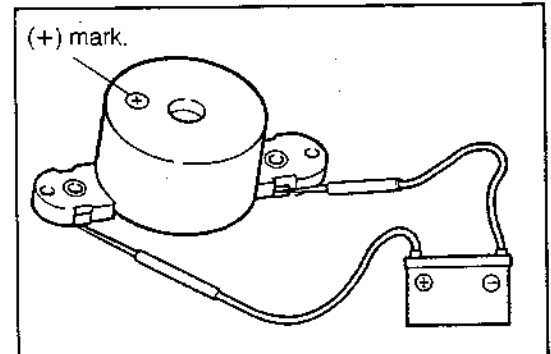


Fig. 10-57

WR-10063

WR-10064

### 3. Checking of reed switch for vehicle speed sensor use (Only vehicles mounted with 3-speed A/T or Type CB-80 engine)

- (1) Remove the combination meter.
- (2) Ensure that continuity occurs four times at the reed switch (between Ⓑ and Ⓒ) while the speedometer drive shaft completes a turn.

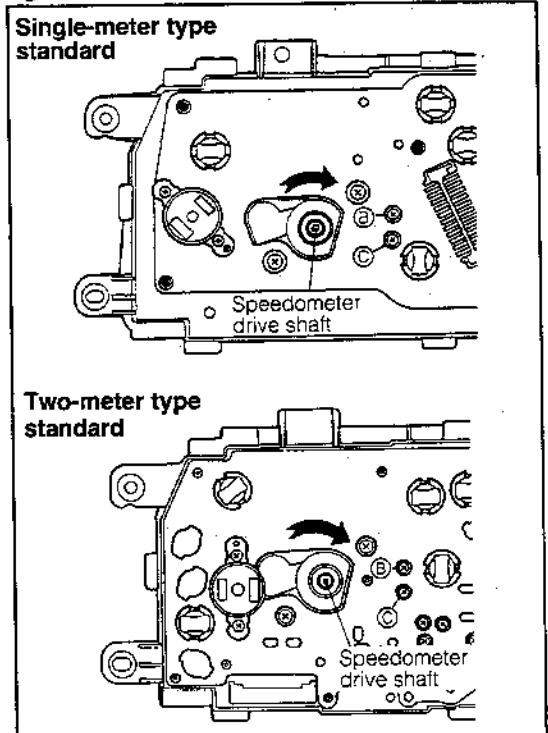
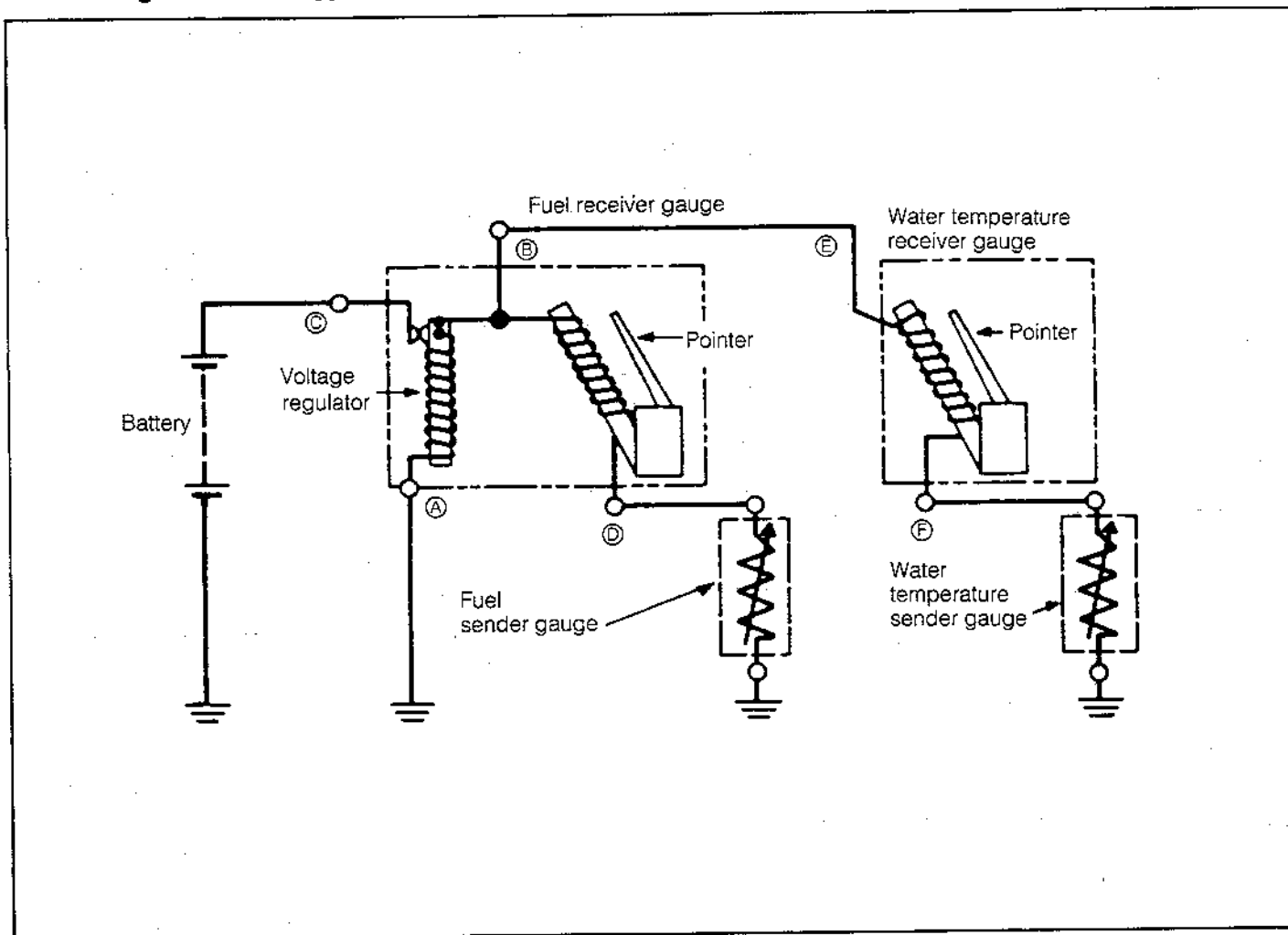


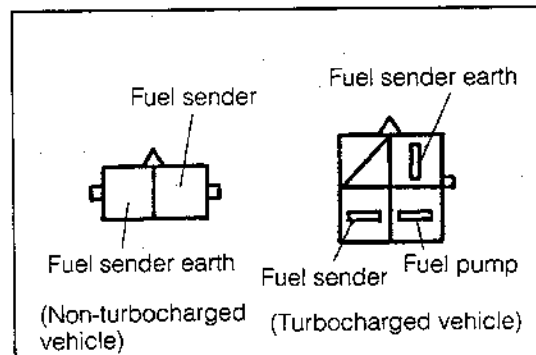
Fig. 10-58

WR-10065

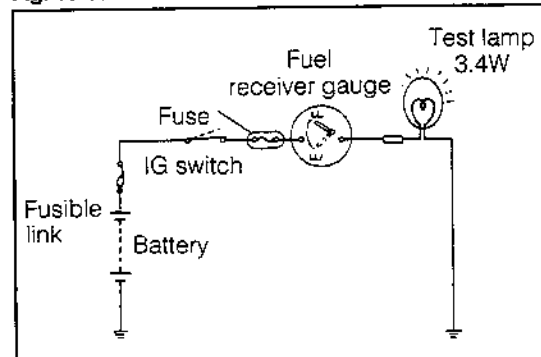


WB-10066

In case that the fuel sender earth terminal is used, in advance, make sure that it has continuity with the body earth.



WR-10067



WB-10068



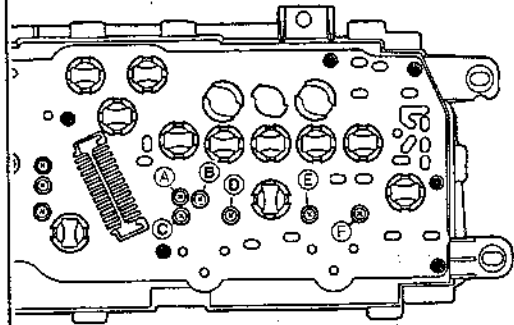
## Unit Check

- (1) Remove the combination meter.
- (2) Measure the resistance between the terminals ⑧ and ⑩.

Specified Value: 55  $\Omega$

- (3) Connect the multi-pole connector to the combination meter. Turn ON the engine key. Ensure that the battery voltage is applied between the terminal ⑨ and the body earth.
- (4) Under the conditions in the step (3), ensure that a voltage varying approximately from 2 to 7 V is applied between the terminal ⑧ and the body earth.

Single-meter type standard



Two-meter type standard

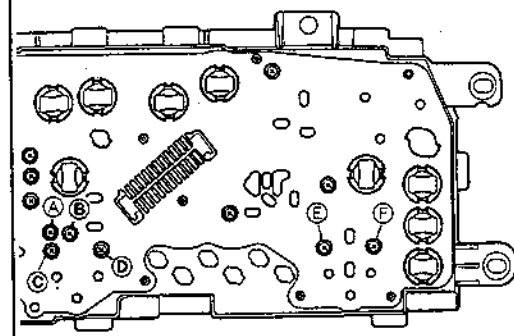


Fig. 10-62

WR-10069

## FUEL SENDER GAUGE

The fuel sender gauge is located at the upper part of the fuel tank.

### 1. Measurement of Resistance of Fuel Sender Gauge

- (1) Ensure that the resistance varies when the float is moved from the upper position to the lower position.
- (2) Measure the resistance between the fuel terminal and the body at each float level.

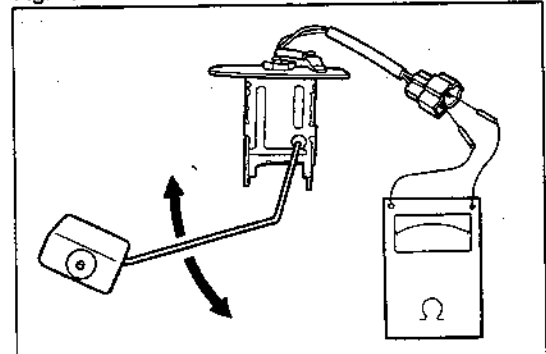


Fig. 10-63

WR-10070

Float position	Resistance ( $\Omega$ )	Reference dimension mm (inch)	
		Type CB-23, CL-11 and CL-61 engines	Type CB-61 and CB-80 engines
F	1 - 5	40 (1.56)	28 (1.1)
1/2	28.5 - 36.5	91 (3.58)	86 (3.4)
E	103 - 117	129 (5.08)	133 (5.2)

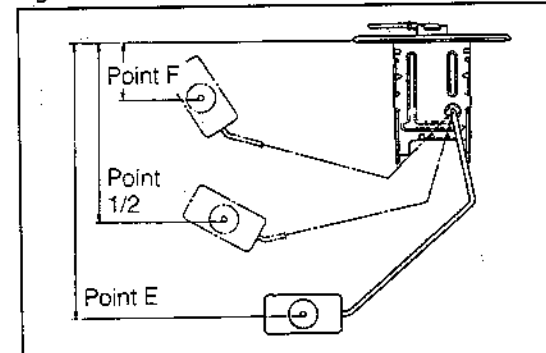


Fig. 10-64

WR-10071

## BODY ELECTRICAL SYSTEM

### WATER TEMPERATURE RECEIVER GAUGE

#### 1. In-Vehicle Inspection

- (1) Disconnect the connector from the harness of the water temperature sender gauge. Ground the gauge to the connector at the harness through a test lamp (12 V - 3.4 W).
- (2) Turn ON the engine switch. Ensure that the test lamp goes on and, several seconds later, the test lamp starts flashing.
- (3) Ensure that the pointer of the receiver gauge starts to rise gradually.

#### 2. Unit Check

- (1) Remove the combination meter.
- (2) Measure the resistance between the terminals ⑤ and ⑥.  
Specified Value: Approx. 25  $\Omega$
- (3) Connect the multi-pole connector to the combination meter. Turn ON the engine key. Ensure that the battery voltage is applied between the terminal ③ and the body earth.
- (4) Under the conditions in the step (3), ensure that a voltage varying approximately from 2 to 7 V is applied between the terminal ⑤ and the body earth.

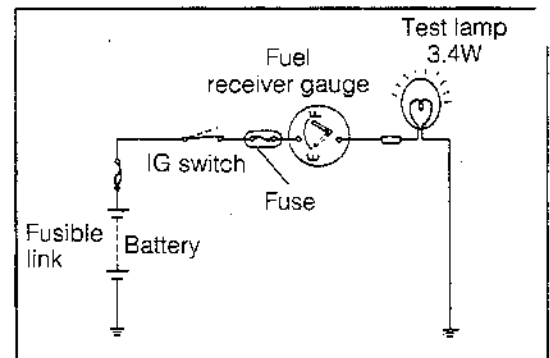


Fig. 10-65

WR-10072

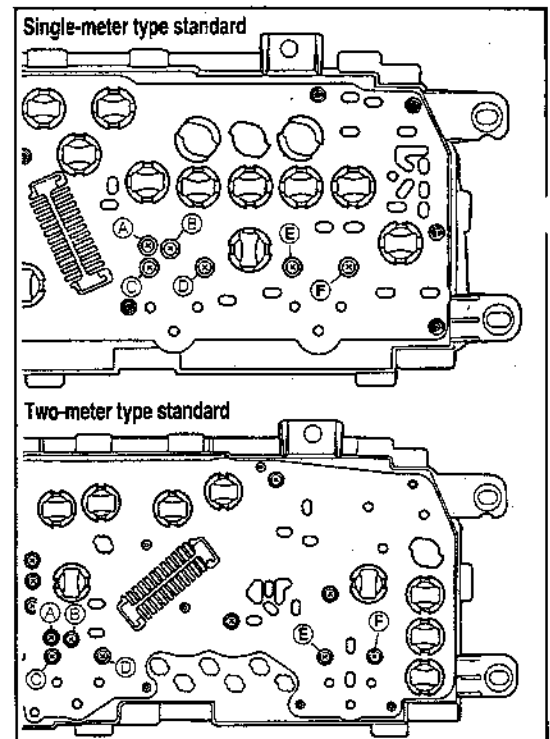


Fig. 10-66

WR-10073

### WATER TEMPERATURE SENDER GAUGE

The water temperature sensor gauge is located at the following points given below:

- Type CB engine ... Rear end of cylinder head
- Type CL engine ... Left/rear section of cylinder head

#### Unit Inspection

Measure the resistance between the terminal and the earth, as indicated in the right figure.

Temperature (°C)	Resistance ( $\Omega$ )
50	$226 \pm \frac{34}{37}$
115	$26.4 \pm \frac{1.71}{2.20}$

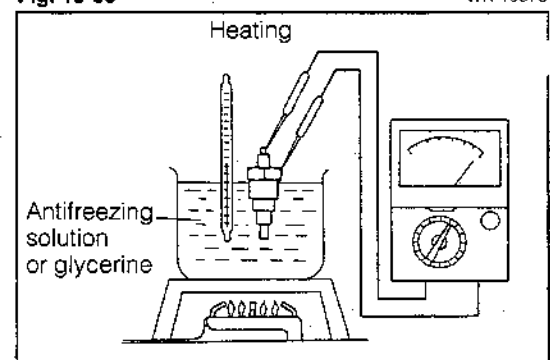


Fig. 10-67

WR-10074

# CROSS COIL TYPE GAUGE CIRCUIT (GCC SPECIFICATIONS ONLY)

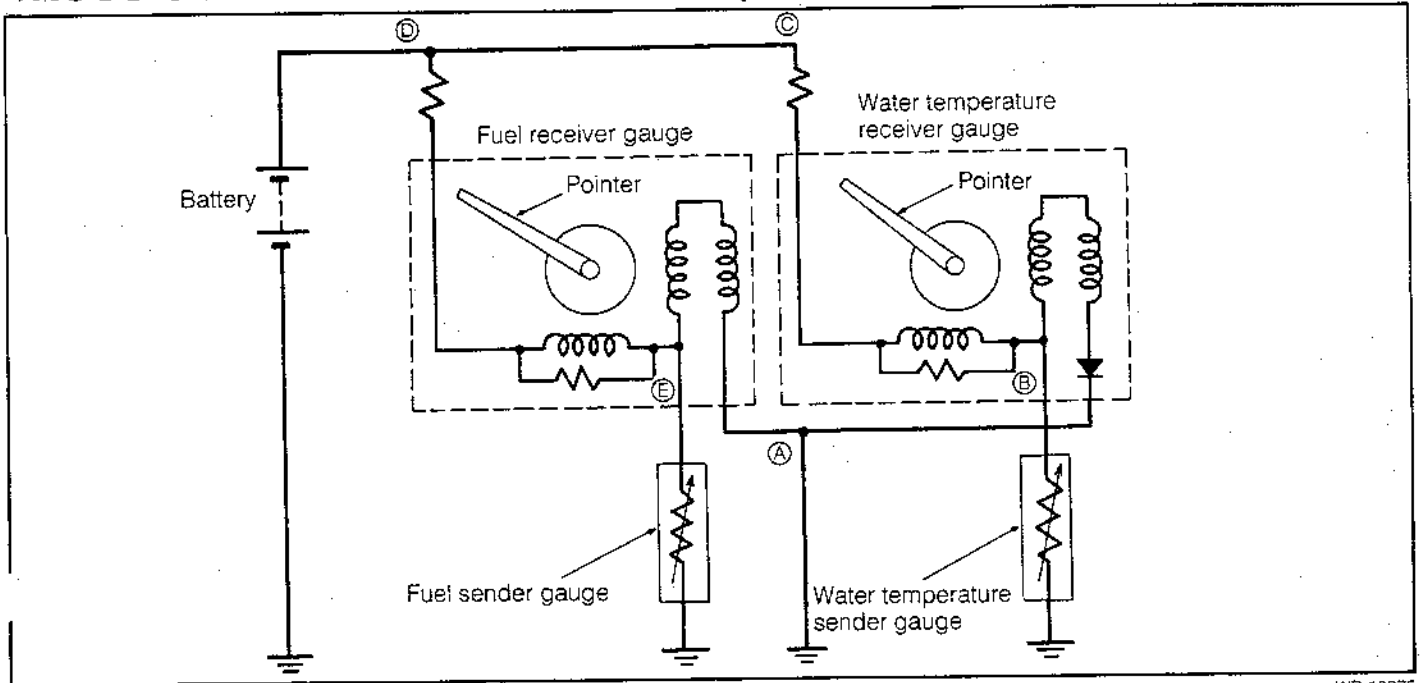


Fig. 10-68

WR-10075

## FUEL RECEIVER GAUGE (POINTER REMAINING TYPE)

### 1. In-Vehicle Inspection

- (1) Disconnect the connector of the fuel sender gauge located at the upper part of the fuel tank. Under this condition, turn ON the engine switch. Ensure that the pointer of the receiver gauge returns to the position "E".
- (2) Turn OFF the engine switch. Ground the harness connector of the fuel sender gauge. Under this condition, turn ON the engine switch. Ensure that the pointer of the receiver gauge rises gradually and registers the position "F".
- (3) Turn OFF the engine switch. Ensure that the pointer of the receiver gauge remains stationary and registers the position "F".

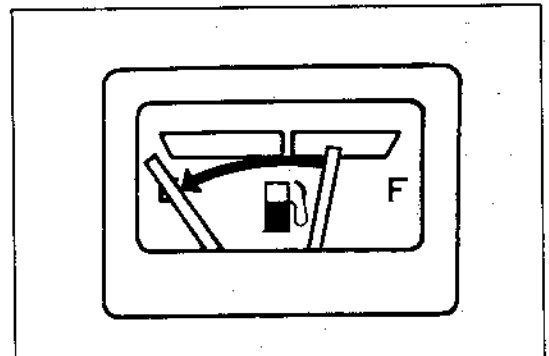


Fig. 10-69

WR-10076

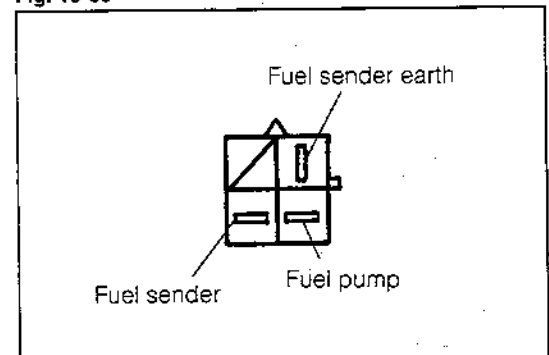


Fig. 10-70

WR-10077

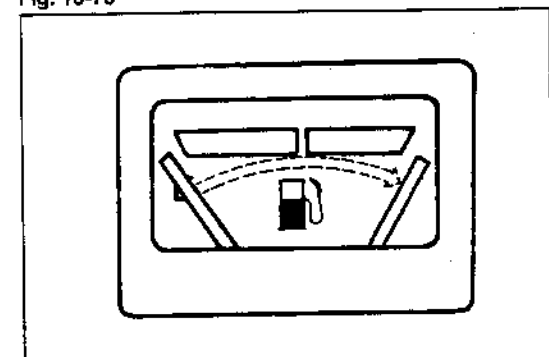


Fig. 10-71

WR-10078

## BODY ELECTRICAL SYSTEM

### 2. Unit Check

- (1) Remove the combination meter. Measure the resistance between the terminals ① and ②.  
Specified Value: Approx. 82  $\Omega$
- (2) Connect the multi-pole connector to the combination meter. Turn ON the engine switch. Ensure that the battery voltage is applied between the terminal ③ and the body earth.

## FUEL SENDER GAUGE

### Inspection

Remove the sender gauge located at the upper part of the fuel tank. Measure the resistance between the terminal and the body at each float level.

Float position	Resistance ( $\Omega$ )	Reference dimension mm (inch)
F	1 - 5	28 $\pm$ 3 (1.1 $\pm$ 0.12)
1/2	28.5 - 36.5	86.4 (3.40)
E	103 - 117	133 $\pm$ 3 (5.24 $\pm$ 0.12)

## WATER TEMPERATURE RECEIVER GAUGE

### 1. In-Vehicle Inspection

- (1) Disconnect the connector from the harness of the water temperature sender gauge. Ground the gauge through a test lamp (12 V - 3.4 W).
- (2) Turn ON the engine switch. Ensure that the test lamp goes on and the pointer of the receiver gauge starts to rise gradually.

### 2. Unit Check

- (1) Remove the combination meter. Measure the resistance between the terminals ③ and ④.  
Specified Value: Approx. 134  $\Omega$
- (2) Connect the multi-pole connector to the combination meter. Turn ON the engine switch. Ensure that the battery voltage is applied between the terminal ④ and the body earth.

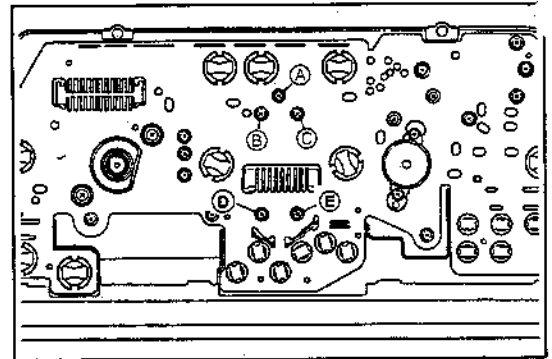


Fig. 10-72

WR-10079

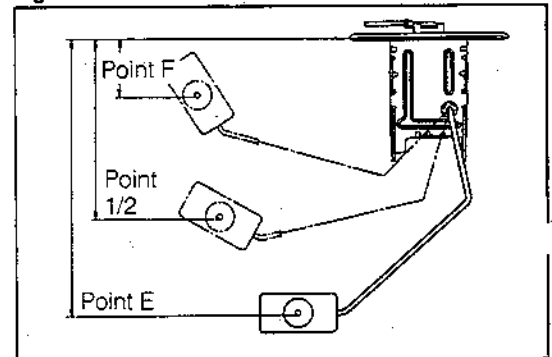


Fig. 10-73

WR-10080

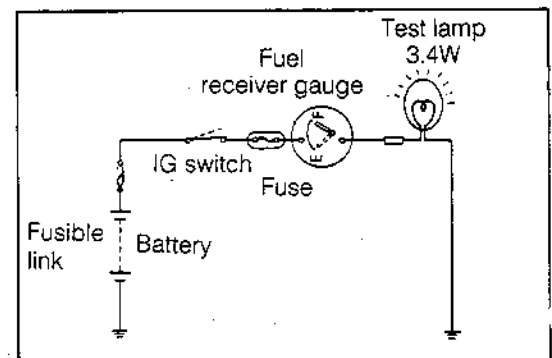


Fig. 10-74

WR-10081

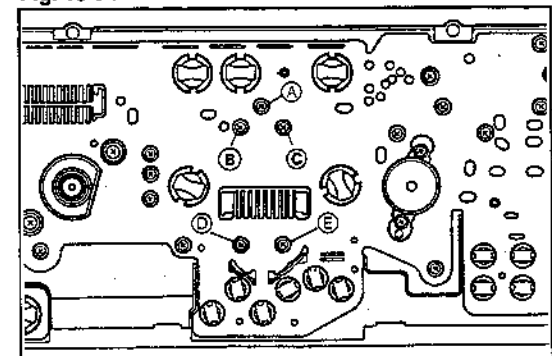


Fig. 10-75

WR-10082

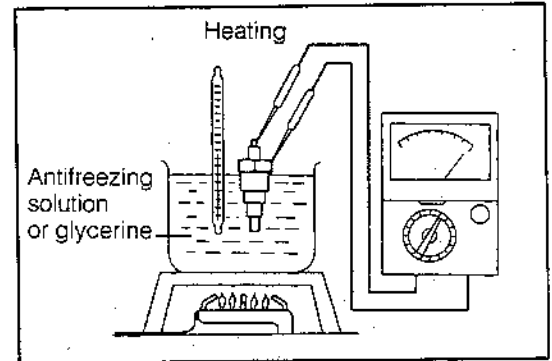
# **WATER TEMPERATURE SENDER GAUGE**

The water temperature sensor gauge is located at the rear end of the cylinder head.

## **Unit Inspection**

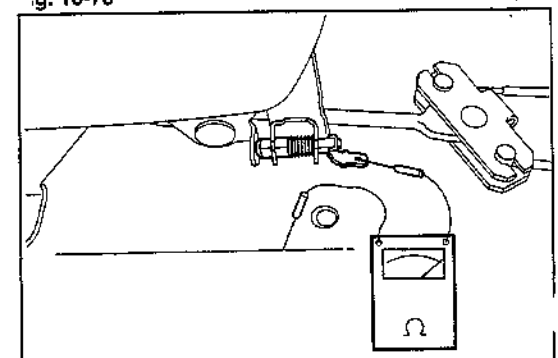
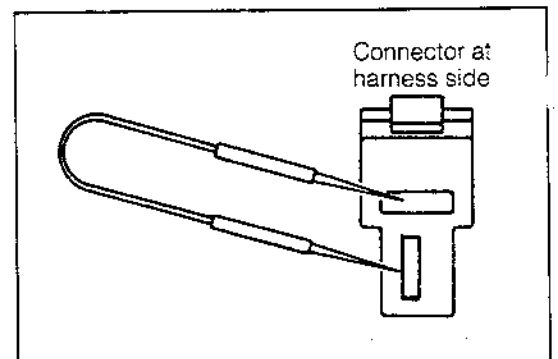
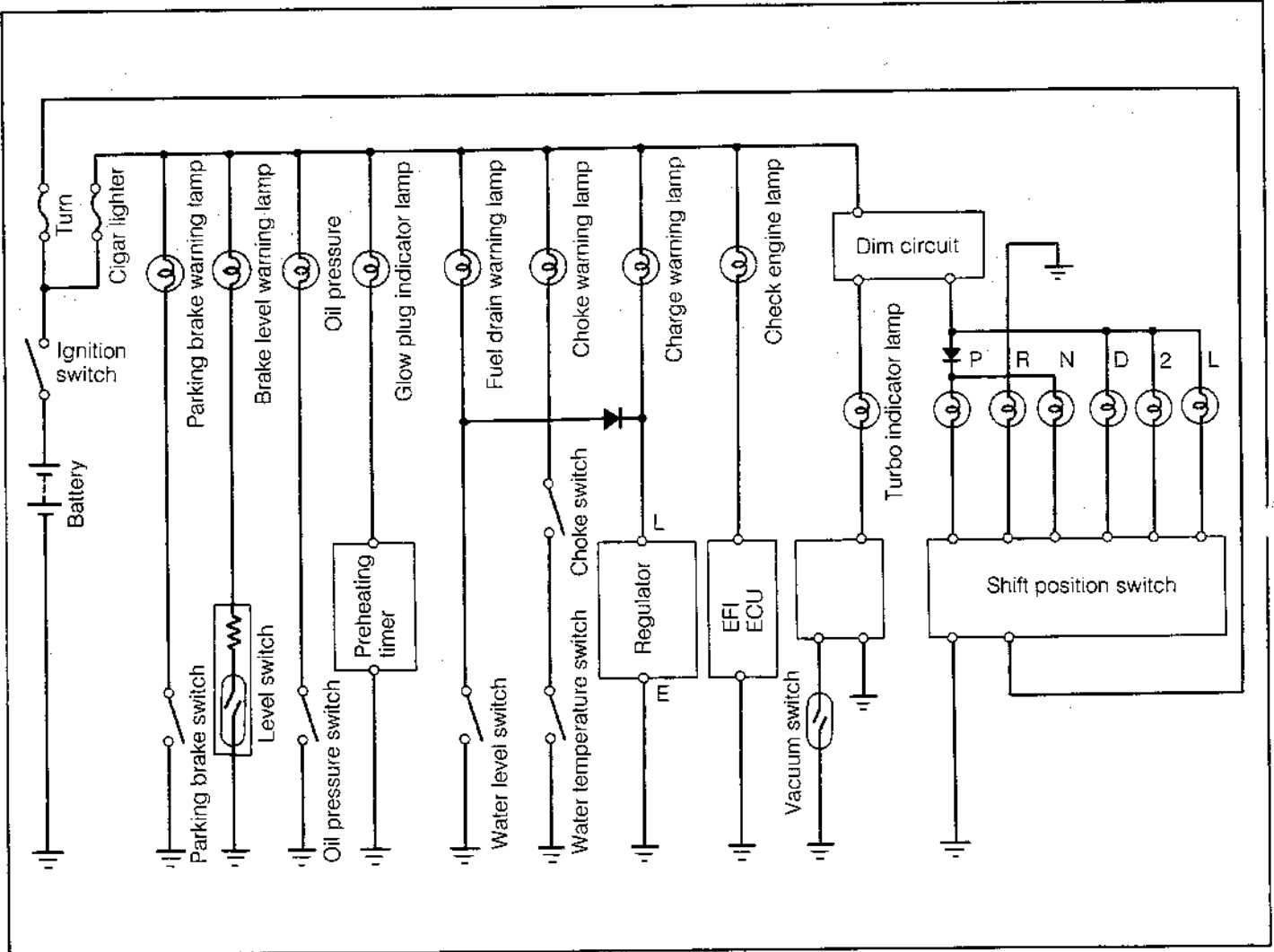
Measure the resistance between the terminal and the earth, as indicated in the right figure.

Temperature (°C)	Resistance (Ω)
50	$226 \pm \begin{smallmatrix} 34 \\ 37 \end{smallmatrix}$
115	$26.4 \pm \begin{smallmatrix} 1.7 \\ 2.2 \end{smallmatrix}$



**Fig. 10-76**

WR-10083



## RAKE LEVEL WARNING SWITCH

### Inspection

1. Pull out the connector of the brake fluid level warning switch and connect a tester.

2. Press down the brake fluid level warning switch (float) with a rod. Ensure that continuity exists between the connector terminals.

### NOTE:

As for a rod to be used for pressing down the float, be sure to thoroughly clean it. Special care must be exercised to ensure that no dust nor water gets into the reservoir.

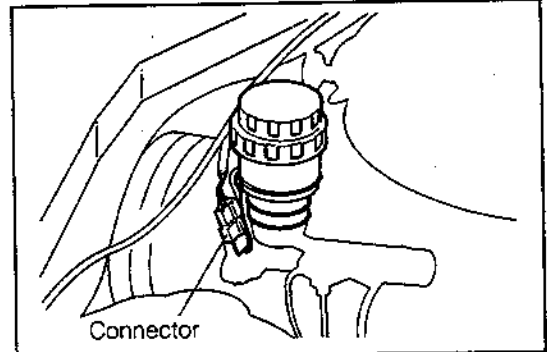


Fig. 10-80

WR-10087

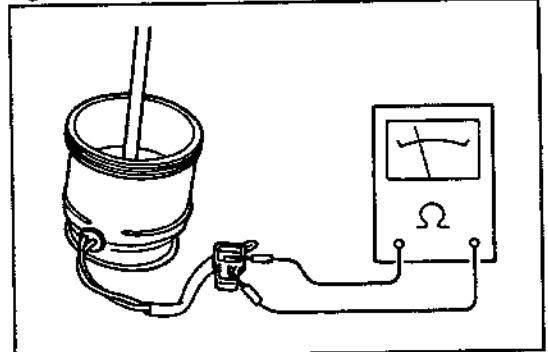


Fig. 10-81

WR-10088

## OIL PRESSURE WARNING LAMP

### Inspection

1. Pull out the connector located at the right/rear part of the cylinder block. Ground the connector at the harness side.
2. Ensure that the oil pressure warning lamp glows when the engine switch is turned ON.

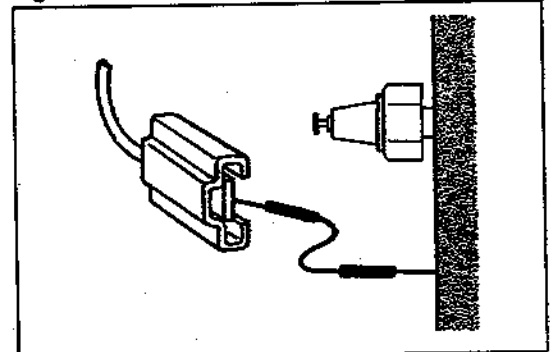


Fig. 10-82

WR-10089

## OIL PRESSURE SWITCH

### Inspection

1. Pull out the connector located at the right/rear part of the cylinder block.
2. Ensure that continuity exists between the oil pressure switch terminal and the earth.

### NOTE:

It should be noted that continuity exists while the engine is stopped, whereas no continuity exists while the engine is running.

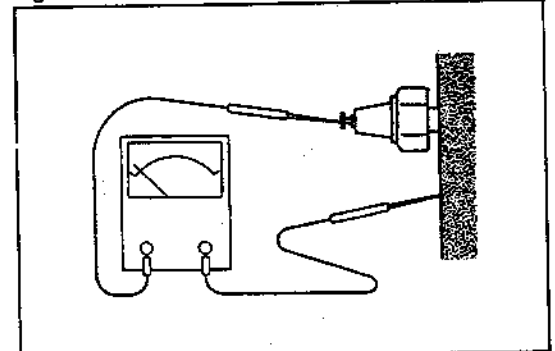


Fig. 10-83

WR-10090

## FUEL DRAIN WARNING LAMP (DIESEL-POWERED VEHICLES ONLY)

### Inspection

1. Start the engine. Disconnect the connector of the sedimentor.
2. Ensure that the warning lamp glows when short is made between the terminals of the connector at the harness side.

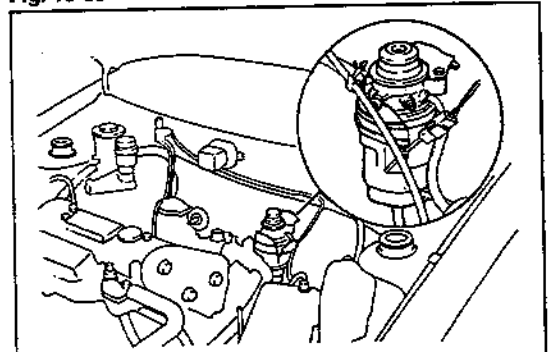


Fig. 10-84

WR-10091

## BODY ELECTRICAL SYSTEM

### Water level sensor

1. Remove the water level sensor from the sedimentor. Pull out the connector.
2. Connect a circuit tester to the connector. Ensure that continuity exists between the connector terminals when the float is lifted (when the switch is turned ON).

#### NOTE:

After the water level sensor has been installed, be certain to fill the fuel filter with fuel, using the priming pump.

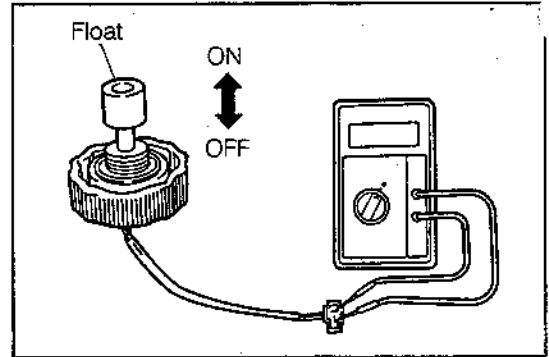


Fig. 10-85

WR-10092

### SHIFT INDICATOR LAMP (3-SPEED A/T VEHICLE)

#### Inspection

1. Remove the combination meter. Disconnect the connector (8-pole) for shift indicator use.
  - (1) Ensure that continuity exists between ⑤ and the body earth.
  - (2) Ensure that continuity exists between ① and ⑤ when the range [L] is selected.
  - (3) Ensure that continuity exists between ② and ⑤ when the range [2] is selected.
  - (4) Ensure that continuity exists between ③ and ⑤ when the range [D] is selected.
  - (5) Ensure that continuity exists between ④ and ⑤ when the range [N] is selected.
  - (6) Ensure that continuity exists between ⑦ and ⑤ when the range [P] is selected.
  - (7) Turn ON the ignition switch. Ensure that the battery voltage is applied between ⑥ and the body earth when the range [R] is selected.
3. Under conditions where the connector for shift indicator use and other connectors are installed, turn ON the ignition switch. Ensure that the indicator lamp goes on in accordance with each relevant shift position.

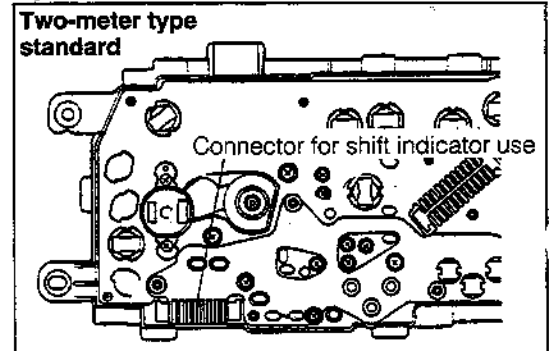


Fig. 10-86

WR-10093

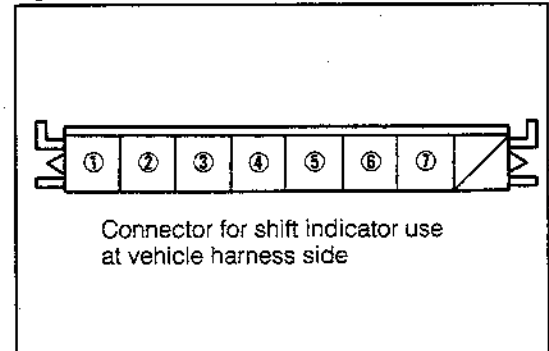


Fig. 10-87

WR-10094

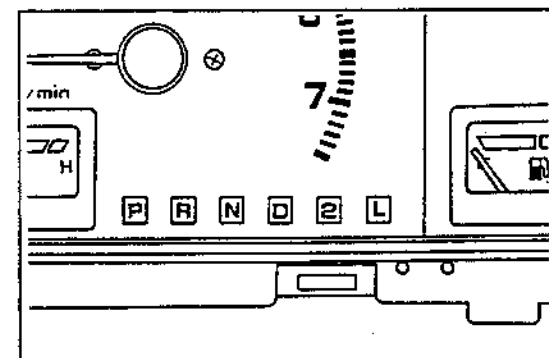


Fig. 10-88

WR-10095



## IMMER DEVICE FOR TURBO AND A/T INDICATORS

(Vehicles Mounted with Type CB-61, CB-80 Engines and 3-speed A/T)

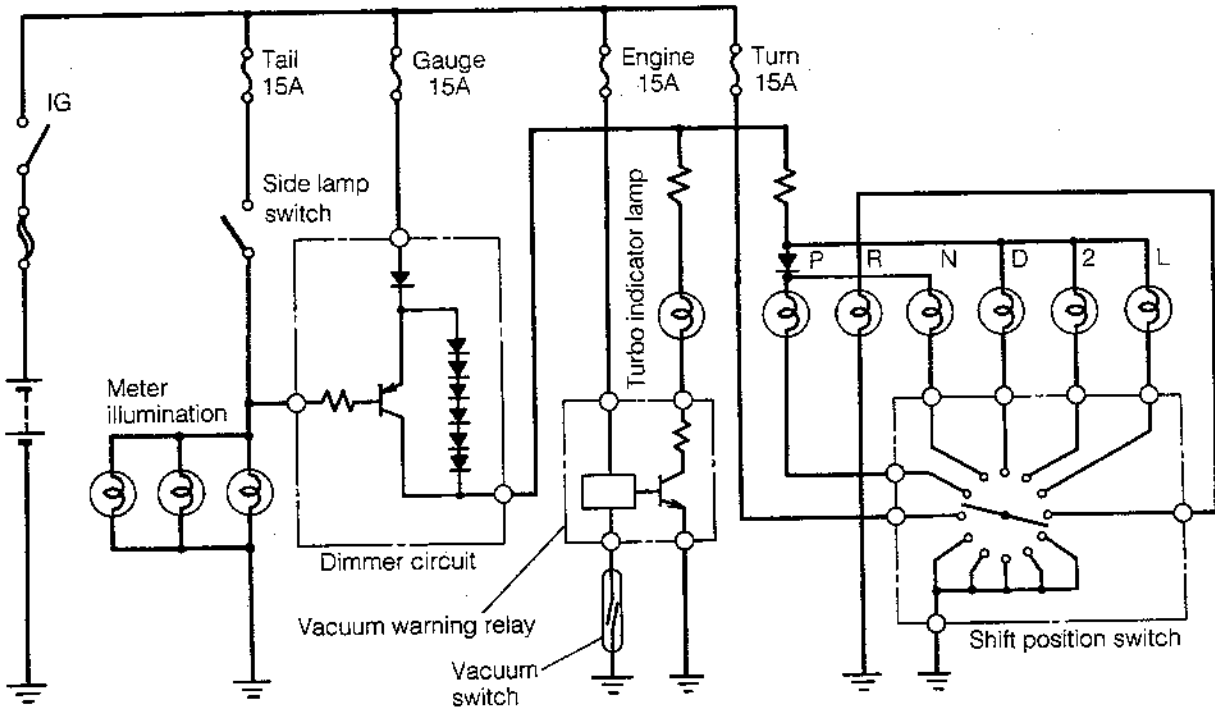


Fig. 10-89

WR-10096

### In-Vehicle Check

1. Remove the combination meter (with the connector in a connected state) and turn ON the ignition switch. Ensure that the battery voltage is applied between the terminal ① and the body earth.
2. Ensure that a voltage of 10.5 to 11.5 V is applied between the terminal ② and the body earth when the turbo indicator terminal (multi-pole connector section) is grounded in the case of the turbocharged vehicle. Also, ensure that the same voltage is applied between the terminal ③ and the body earth when the shift switch is turned ON (L, 2, D, N and P) in the case of the automatic transmission-equipped vehicle.  
At this point, the indicator should be illuminated normally.
3. Under the conditions described above, turn ON the side lamp switch. Ensure that a voltage of 6.0 to 6.5 V is applied between the terminal ④ and the body earth.  
At this point, the indicator should be illuminated dimly.

### NOTE:

For the turbo indicator terminal at the connector section, see page 10-22.

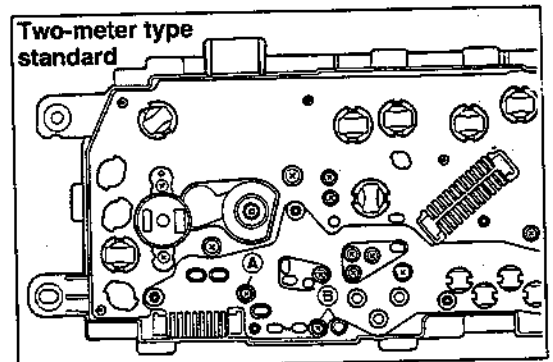


Fig. 10-90

WR-10097

## BODY ELECTRICAL SYSTEM

### MULTI-USE LEVER SWITCH

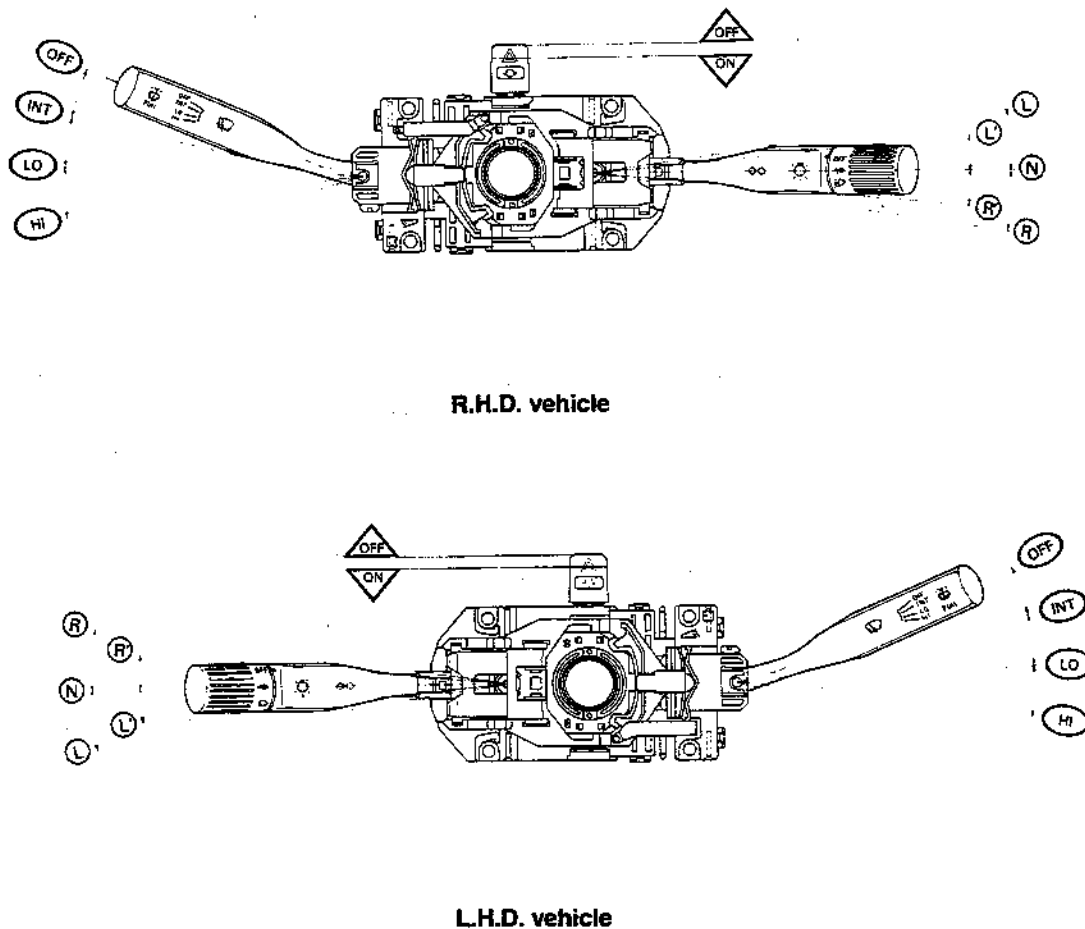


Fig. 10-91

WR-10098

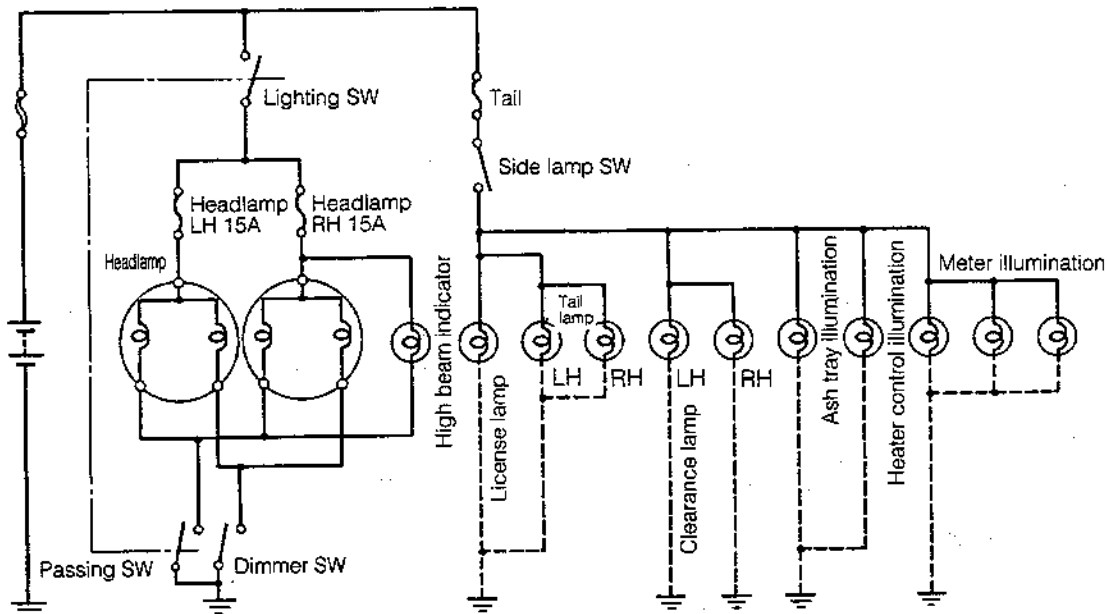
#### INSPECTION

1. Ensure that each of the turn signal, dimmer, lighting, hazard warning and front wiper switches is functioning smoothly with a positive dent feeling.
2. Disconnect the connector for multi-use lever switch. Ensure that continuity exists between the respective terminals in accordance with the continuity table in pages 10-38 through 10-46.

Code	Kind of wires
TB	0.5 R (2W in case of West German specifications)
L	0.5GY
+2	0.5L
R	0.5GW
WB	0.5LW
E	1.25WB
HS	0.85RY
HO	0.3G
B <sub>1</sub>	0.5GR
HM	0.85RW
+1	0.5LY
S	0.5 RG (2WG in case of West German specifications)
W	0.3LG
WS	0.5LR
F	0.5GO
F <sub>1</sub>	0.5GB
INT	0.5LB
DM	0.5GL
M	0.5G
RF	0.5Lg
B <sub>2</sub>	0.5GL
D1	2RW
D2	2R

WR-10099

## LIGHTING SWITCH



Standard specifications

Fig. 10-92

WR-10100

○—○ Continuity exists.

R.H.D. vehicles with general specifications and Australian specifications (without intermittent wiper)

L.H.D. vehicles with general specifications

(L.H.D.) (R.H.D)

Light & Dimmer Passing Switch

Terminal	HM	HS	E	TB	S	D1	D2
Light							
Dimmer passing							
OFF	HF						
	HL						
	HU						
I	HF						
	HL						
	HU						
II	HF						
	HL						
	HU						

TB B1	L	+2 HM	R +1	WB S	W	WS	E F	HS F1	HO INT
B2	D1	D2							

R.H.D. vehicles with ECE & EEC and Australian specifications (with intermittent wiper)

L.H.D. vehicles with ECE & EEC Specifications (except for West Germany)

Light & Dimmer Passing Switch

Terminal	HM	HS	E	TB	S	RF	D1	D2
Light								
Dimmer passing								
OFF	HF							
	HL							
	HU							
I	HF							
	HL							
	HU							
II	HF							
	HL							
	HU							

TB B1	L	+2 HM	R +1	WB S	W	WS	E F	HS F1	HO INT
RF	D1	D2							

West German specifications

Light & Dimmer Passing Switch

Terminal	HM	HS	E	TB	S	D1	D2	DM	RF
Light									
Dimmer passing									
OFF	HF								
	HL								
	HU								
I	HF								
	HL								
	HU								
II	HF								
	HL								
	HU								

B1	L	+2 HM	R +1	WB S	W	WS	E F	HS F1	HO INT
DM D1	M TB	RF S	B2 D2						

L.H.D. vehicles with day-light feature

Light & Dimmer Passing Switch

Terminal	HM	HS	E	TB	S	RF	D1	D2
Light								
Dimmer passing								
OFF	HF							
	HL							
	HU							
I	HF							
	HL							
	HU							
II	HF							
	HL							
	HU							

TB B1	L	+2 HM	R +1	WB S	W	WS	E F	HS F1	HO INT
DM D1	M TB	RF S	B2 D2						

Fig. 10-93

WR-10101

# BODY ELECTRICAL SYSTEM

## TURN SIGNAL AND HAZARD SWITCH

### Circuit diagram

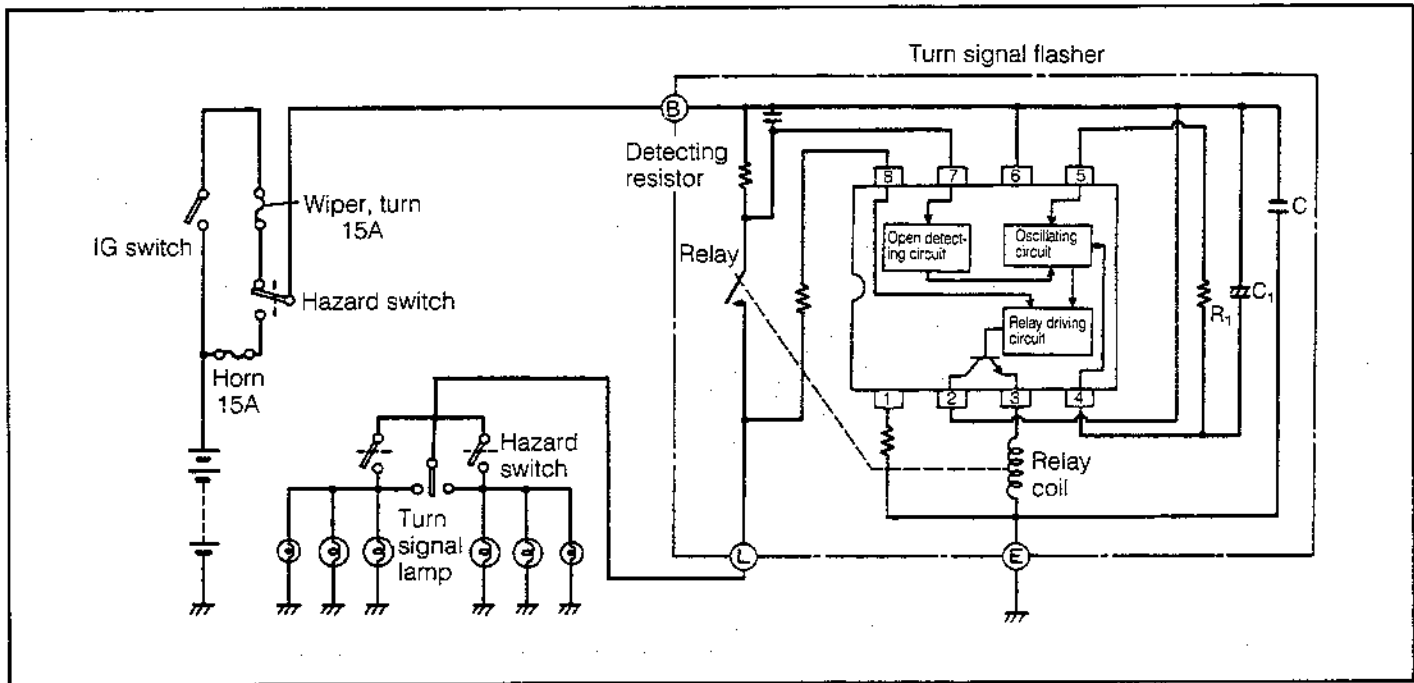


Fig. 10-94

WR-10102

### INSPECTION

Disconnect the multi-pole connector. Ensure that continuity exists between the respective terminals as indicated in the continuity table below.

#### NOTE:

Upon completion of the inspection, make sure that each connector is connected positively.

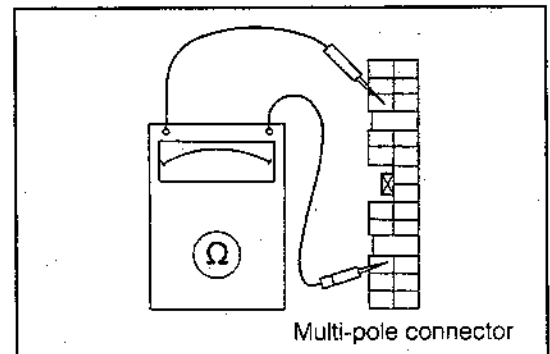


Fig. 10-95

WR-10103

### L.H.D. Vehicles with General Specifications

○—○ Continuity exists.

Hazard	Turn signal	Terminal					
		F	L	R	B <sub>2</sub>	B <sub>1</sub>	F <sub>1</sub>
OFF	L L	○—○			○—○	○—○	
	N				○—○	○—○	
	R R	○—○		○—○	○—○	○—○	
ON	L N R	○—○	○—○	○—○		○—○	

Code	Kind of wires
F	0.5GO
L	0.5GY
R	0.5GW
M	0.5G
B <sub>2</sub>	0.5GL
B <sub>1</sub>	0.5GR
F <sub>1</sub>	0.5GB

WR-10104

### Vehicles Other Than L.H.D. with General Specifications

Hazard	Turn signal	Terminal						
		F	L	R	M	B <sub>2</sub>	B <sub>1</sub>	F <sub>1</sub>
OFF	L L	○—○				○—○	○—○	
	N					○—○	○—○	
	R R	○—○		○—○		○—○	○—○	
ON	L N R	○—○	○—○	○—○	○—○		○—○	

## TURN SIGNAL FLASHER

The turn signal flasher is located at the upper part of the fuse block.

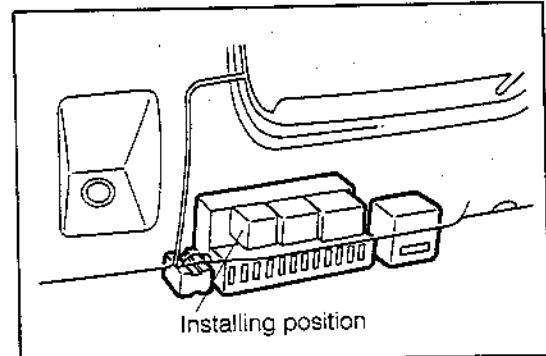


Fig. 10-96

WR-10105

## INSPECTION

Check the flashing speed of the turn signal lamp.

Specified Flashing Speed:  $85 \pm 10$  times/min.

### NOTE:

If any of the front or rear turn signal lamps has open wire, the flashing speed will exceed 120 times /min.

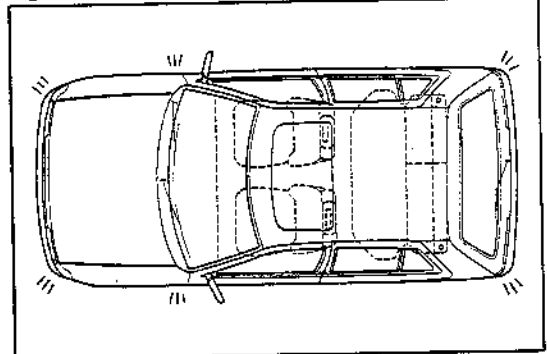


Fig. 10-97

WR-10106

## FRONT WIPER AND WASHER SWITCH

### INSPECTION

Disconnect the multi-pole connector. Ensure that continuity exists between the respective terminals as indicated in the continuity table below.

### Switch with Intermittent Wiper

○—○ Continuity exists.

Lever position	Terminal	WS	+1	+2	INT	E	WB	W
Wiper switch	OFF	○—○						
	INT	○—○			○—○			
	LO		○—○				○—○	
	HI			○—○			○—○	
Washer switch	OFF							
	ON					○—○		○—○

Code	Kind of wires
WS	0.5LR
+1	0.5LY
+2	0.5L
INT	0.5LB
E	1.25WB
WB	0.5LW
W	0.3LG

WR-10107

### Switch without Intermittent Wiper

○—○ Continuity exists.

Lever position	Terminal	WS	+1	+2	E	WB	W
Wiper switch	OFF	○—○					
	LO		○—○			○—○	
	HI			○—○		○—○	
Washer switch	OFF						
	ON				○—○		○—○

BODY ELECTRICAL SYSTEM

CONTINUITY TABLE OF MULTI-USE LEVER SWITCH BY DESTINATION

L.H.D. Vehicles with General Specifications (Two-speed Wiper)

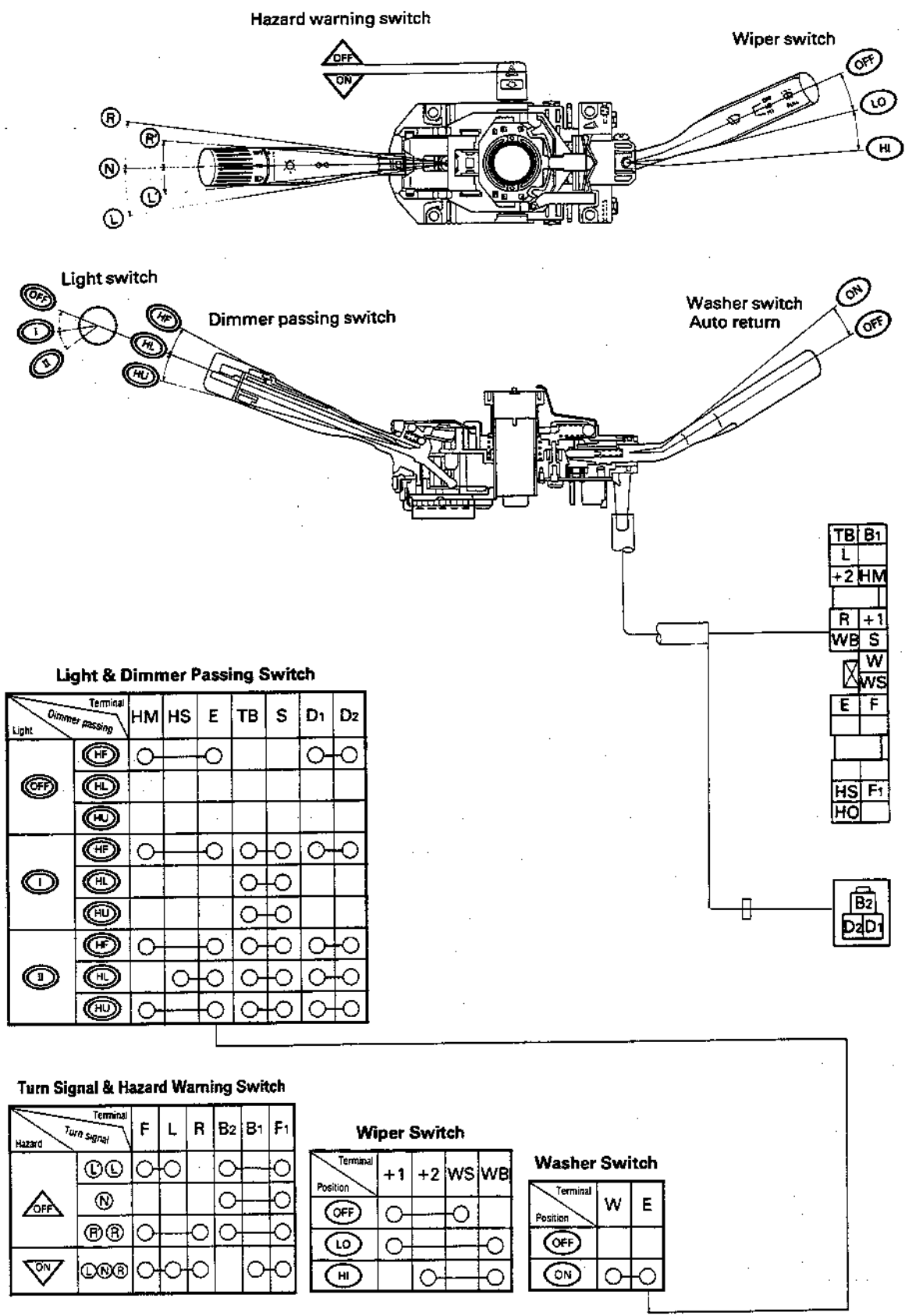


Fig. 10-98

TR86-08019

## H.D. Vehicles with General Specifications (Two-speed, Intermittent Wiper)

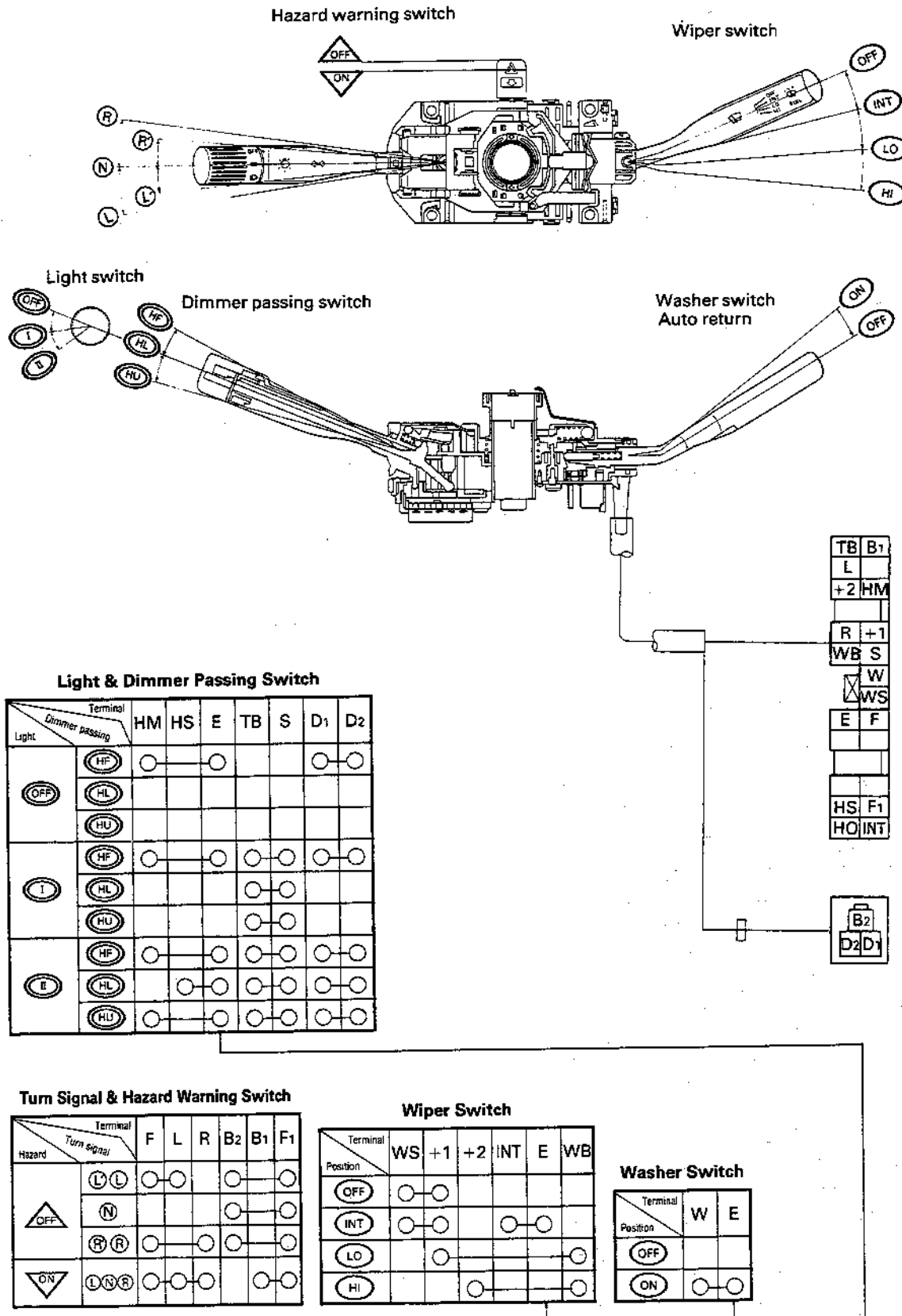


Fig. 10-99

TR86-08020

# BODY ELECTRICAL SYSTEM

R.H.D. Vehicles with ECE & EEC, General and Australian Specifications  
(Two-speed, Intermittent Wiper)

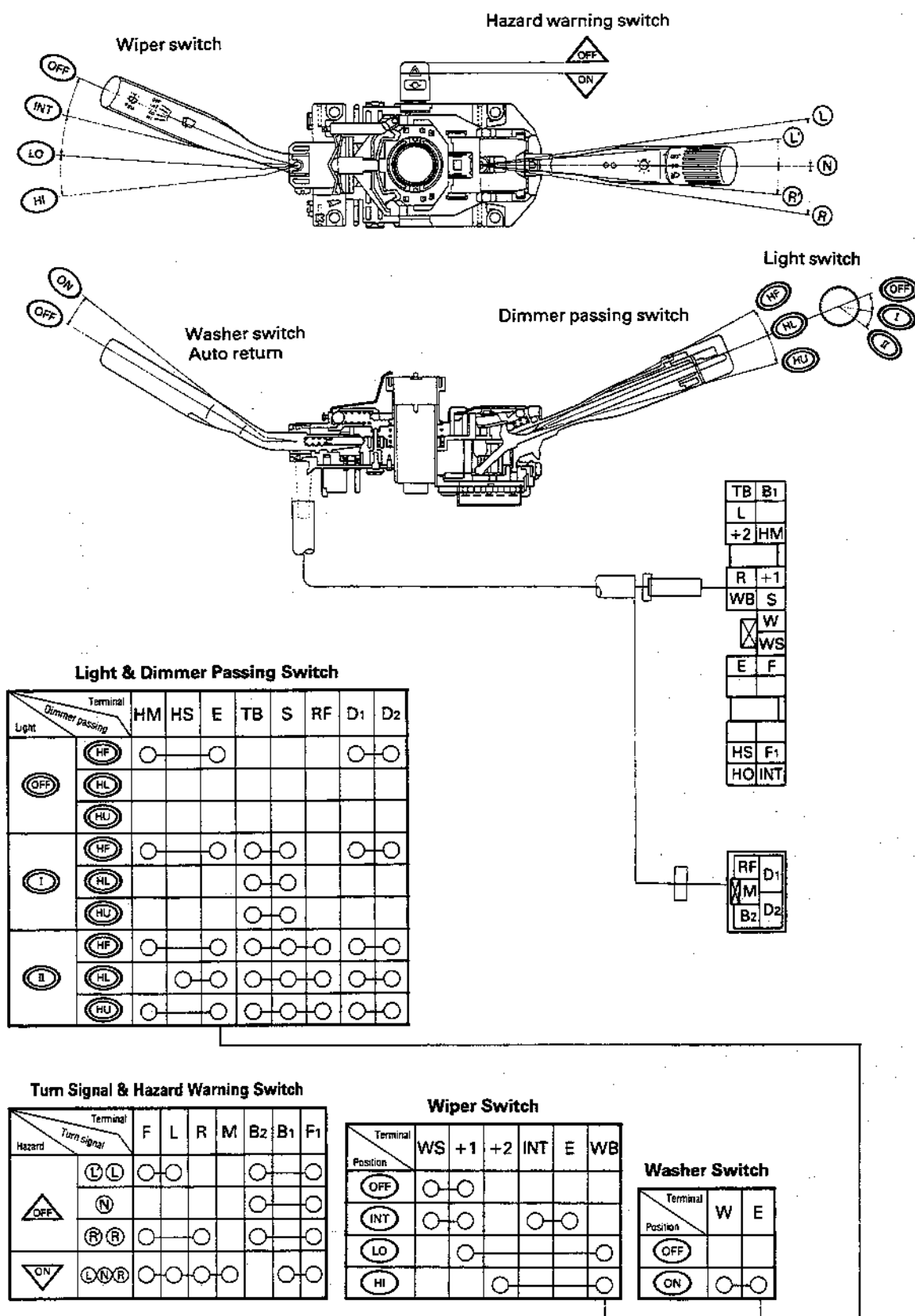


Fig. 10-100

TR86-08021



# BODY ELECTRICAL SYSTEM

H.D. Vehicles with ECE & EEC Specifications, Except for West Germany (Two-speed Wiper)

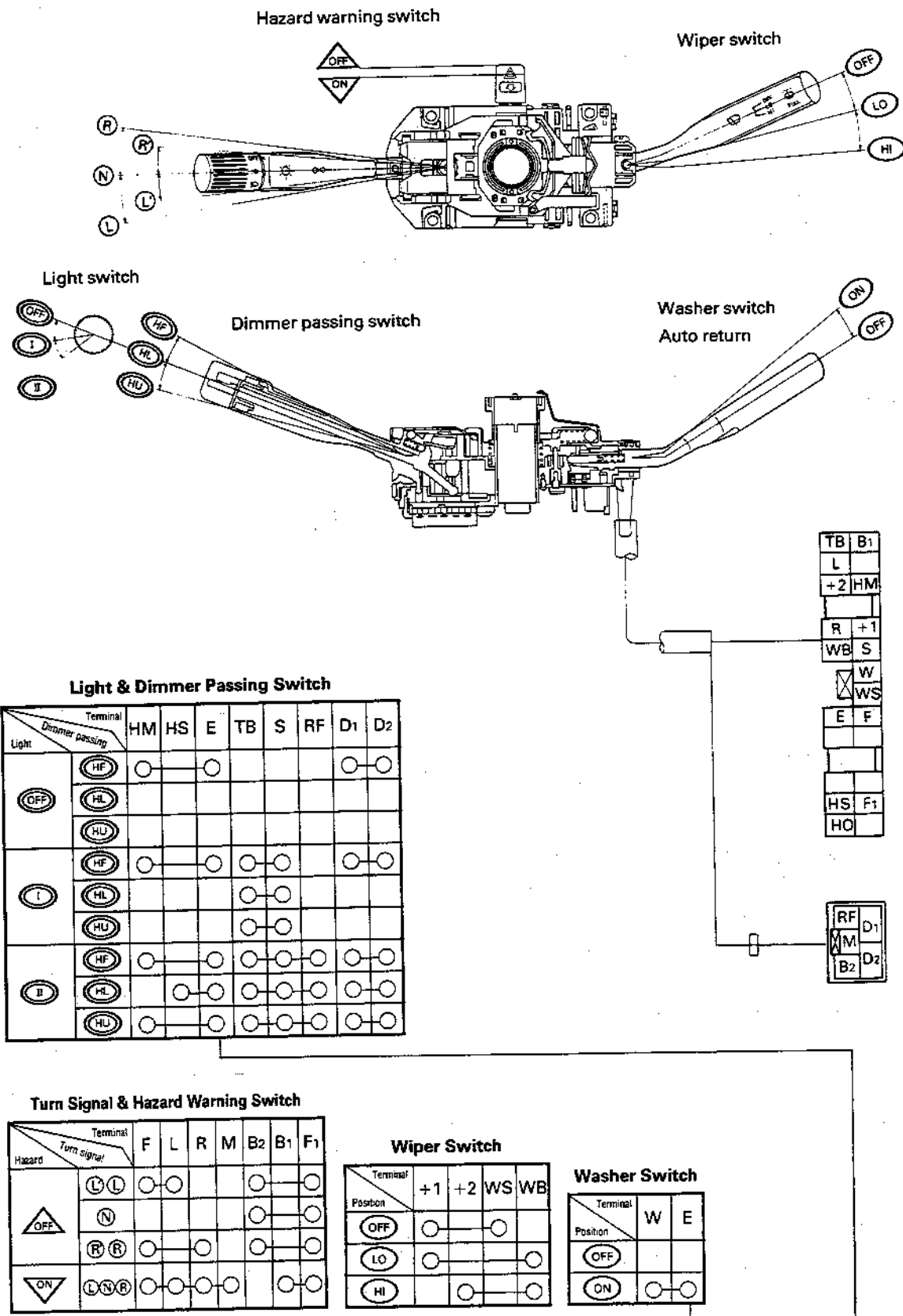
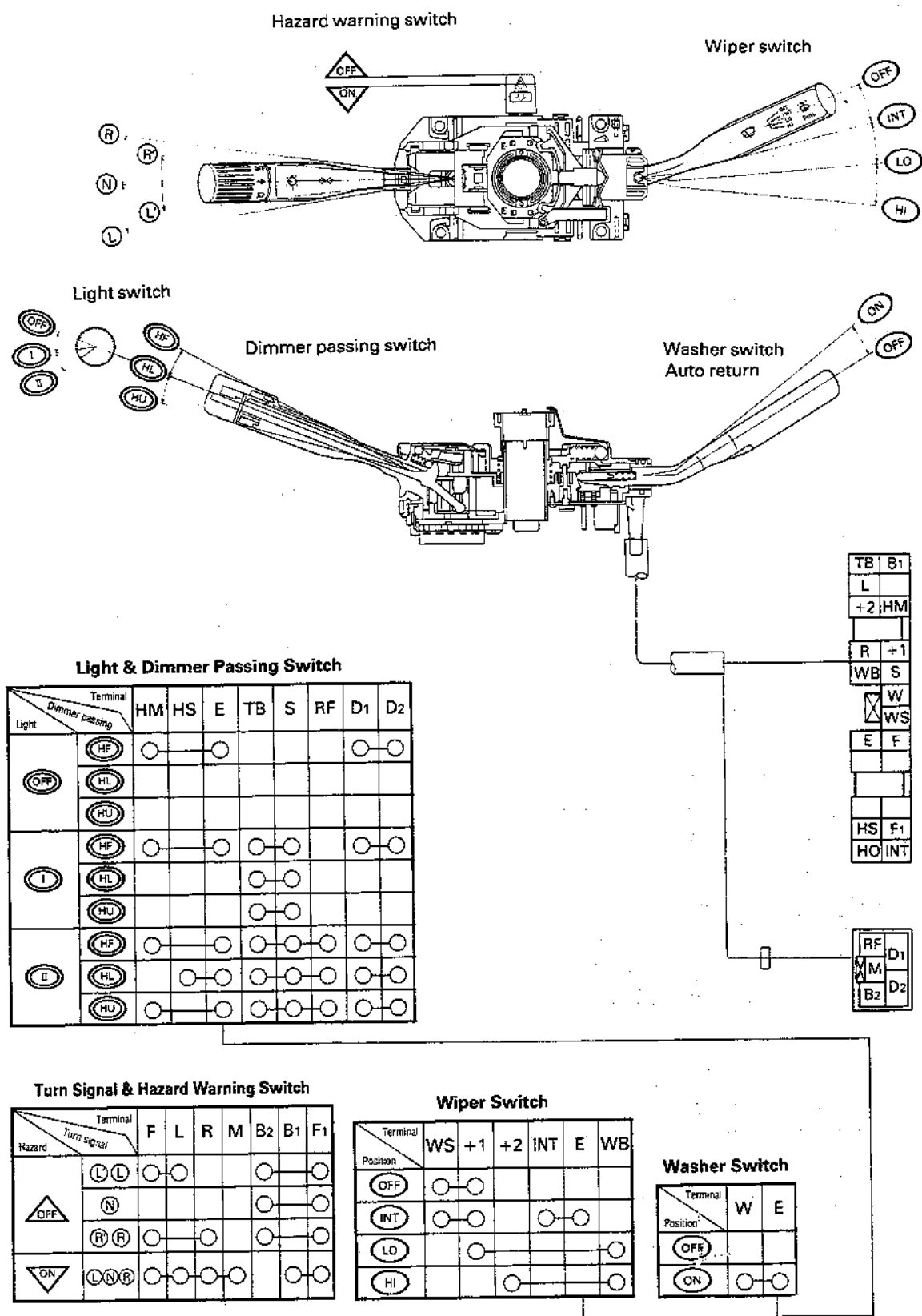


Fig. 10-101

TR86-08022

BODY ELECTRICAL SYSTEM

L.H.D. Vehicles with ECE & EEC Specifications, Except for West Germany  
(Two-speed, Intermittent Wiper)



## ehicles with West German Specifications (Two-speed Wiper)

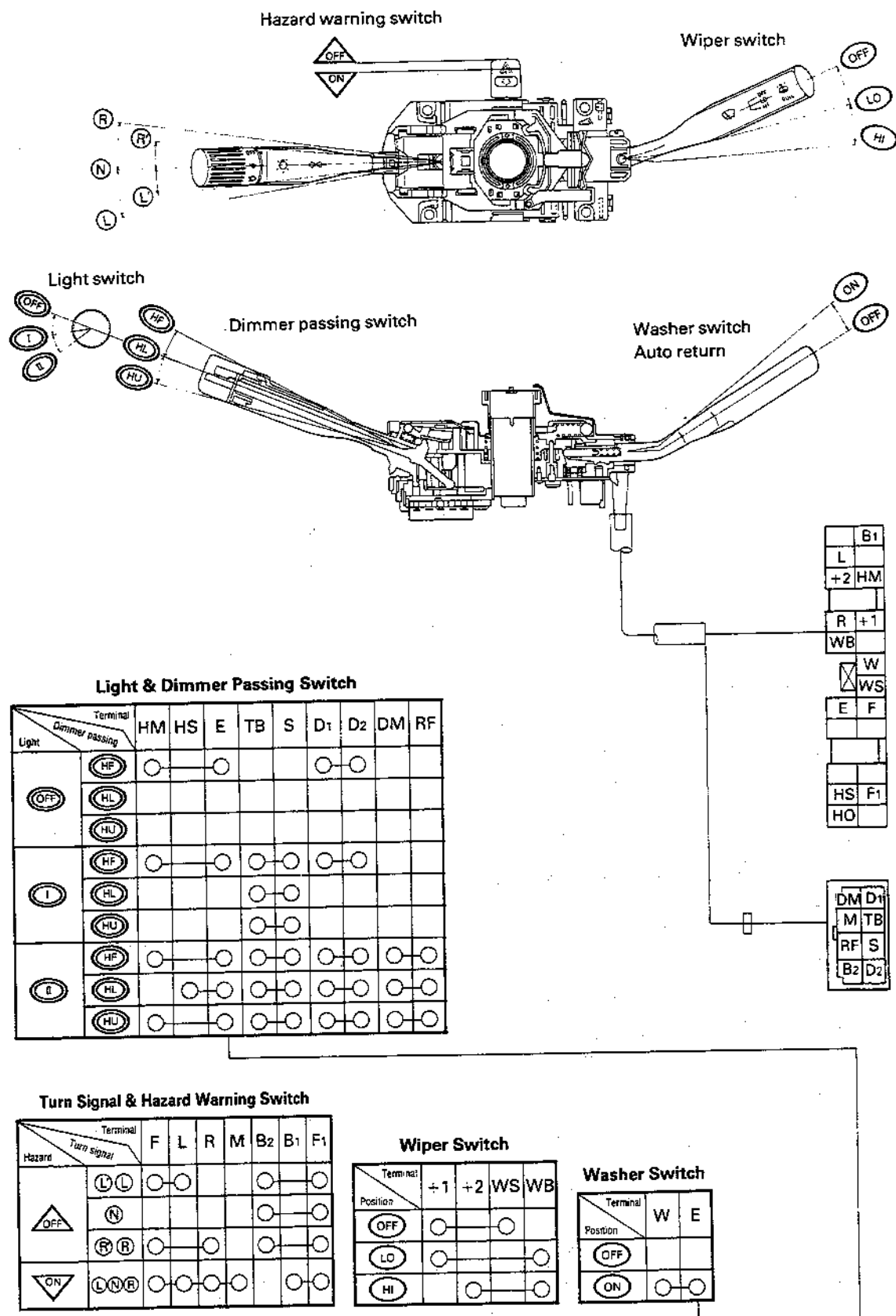


Fig. 10-103

TR86-0824

# BODY ELECTRICAL SYSTEM

## Vehicles with West German Specifications (Two-speed, Intermittent Wiper)

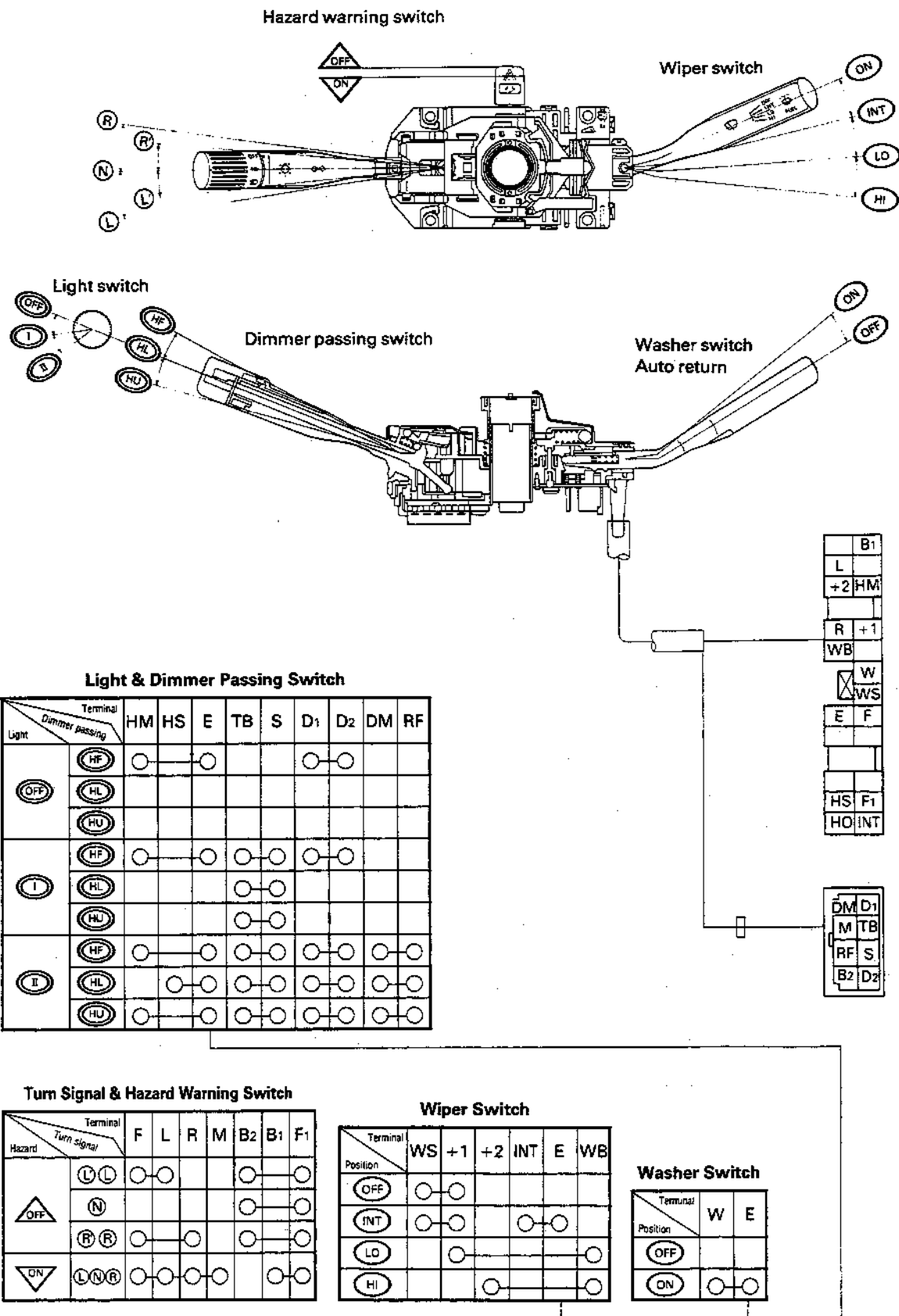


Fig. 10-104

TR86-0825

H.D. Vehicles with Day-light Specifications (Two-speed, Intermittent Wiper)

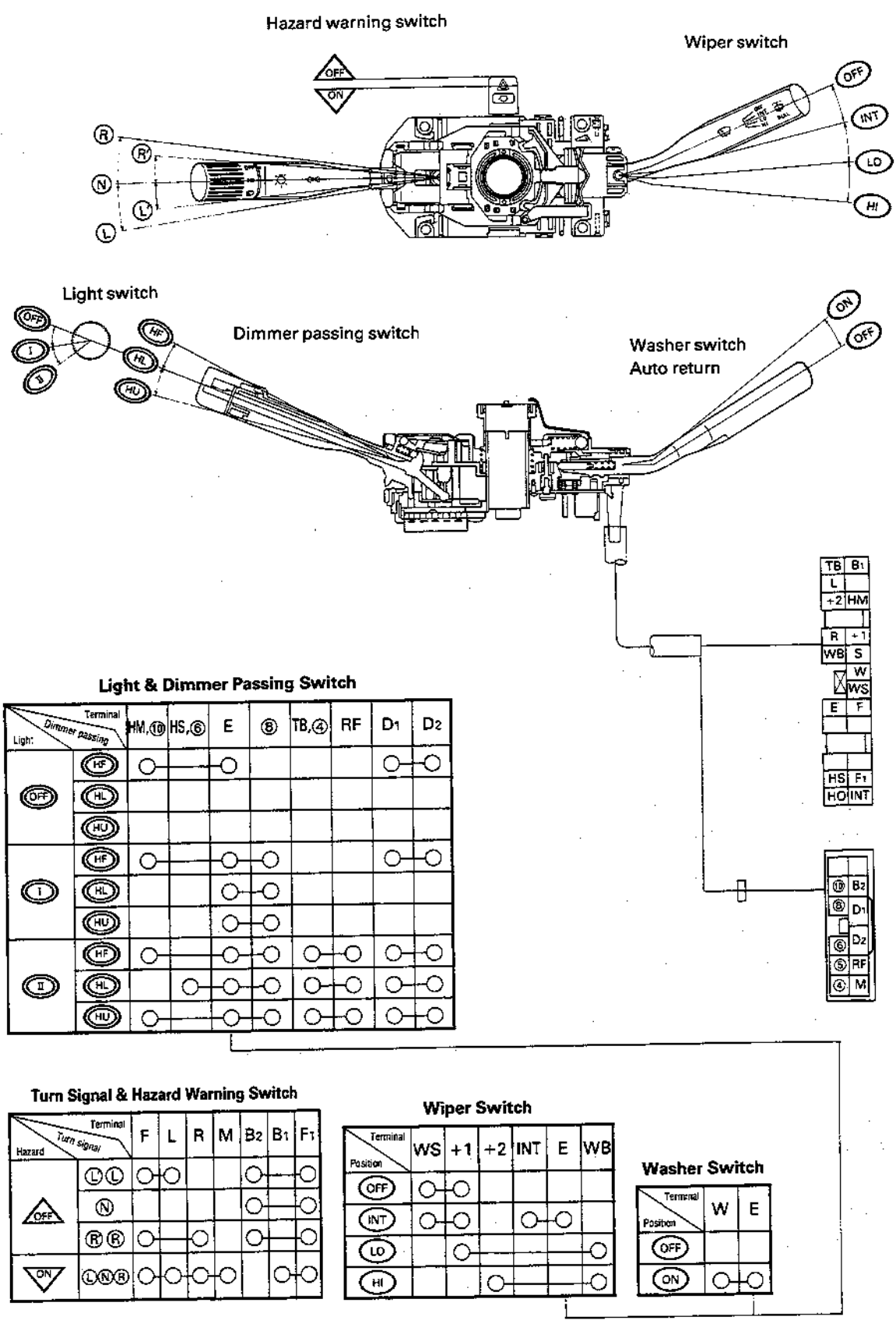
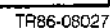


Fig. 10-105

TR86-0826

### **R.H.D. Vehicles with General Specifications and Australian Specifications (Two-speed, Wiper)**



## SWITCHES

### IGNITION KEY SWITCH

For the removal/installation procedure for the ignition key switch lock cylinder assembly, see page 7-5.

#### INSPECTION

Disconnect the connector of the ignition key switch. Ensure that continuity exists between the respective terminals as indicated in the continuity table.

**Continuity Table (Except for GT<sub>ii</sub>)**

	AM	ACC	IG	ST
LOCK				
ACC	○	○		
ON	○	○	○	
START	○		○	○

**Continuity Table (For GT<sub>ii</sub>)**

	AM	ACC	IG <sub>1</sub>	IG <sub>2</sub>	ST
LOCK					
↕					
ACC	○	○			
↕	○	○			
ON	○	○	○	○	
↕	○		○	○	
START	○		○	○	○

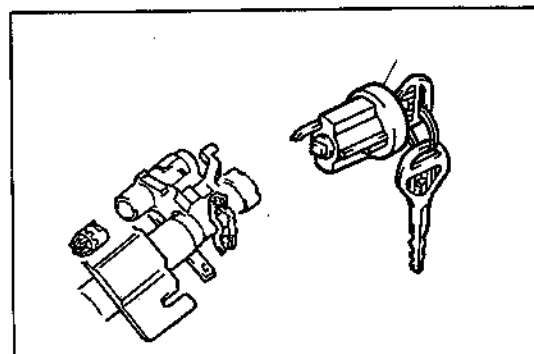


Fig. 10-107

WR-10108

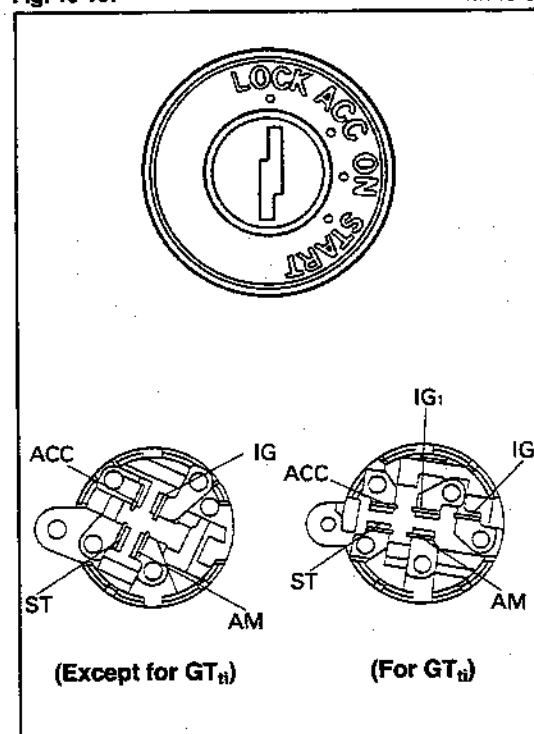


Fig. 10-108

WR-10109

### STOP LAMP SWITCH

The stop lamp switch is located at the pedal bracket section.

#### INSPECTION

1. Disconnect the connector of the stop lamp switch.
2. Ensure that continuity exists between the terminals when the brake pedal is depressed.

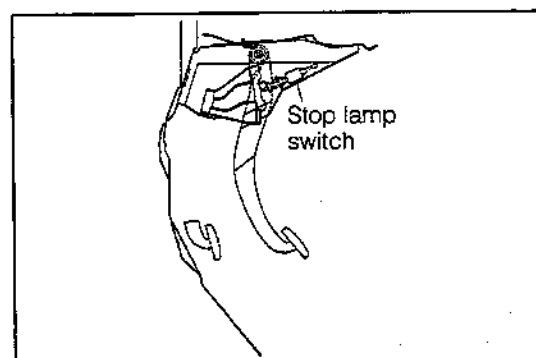


Fig. 10-109

WR-10110

## BODY ELECTRICAL SYSTEM

3. Ensure that no continuity exists between the terminals when the brake pedal is not depressed.

### REAR WINDOW DEFOGGER SWITCH

On the R.H.D. vehicles, the rear window defogger switch is located at the right side of the instrument cluster finish panel. On the L.H.D. vehicles, this switch is located at the left side of the instrument cluster finish panel.

#### Removal

1. Remove the four screws. Pull the instrument cluster finish panel assembly toward your side.
2. Remove the switch by removing the connector and two screws.

#### INSPECTION

Disconnect the connector. Ensure that continuity exists between the respective terminals as indicated in the continuity table below.

#### Continuity Table

○—●: Bulb in installed state

Knob position \ Terminal	B	D	E
OFF		○—●	○—●
ON	○—●	○—●	○—●

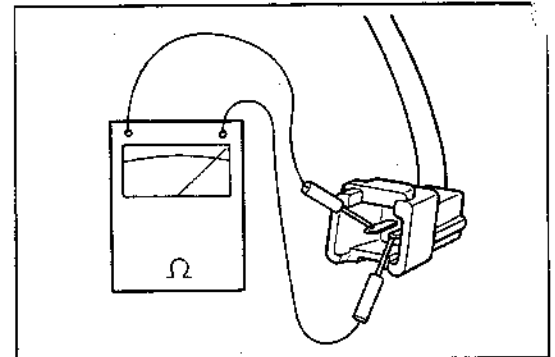


Fig. 10-110

WR-10111

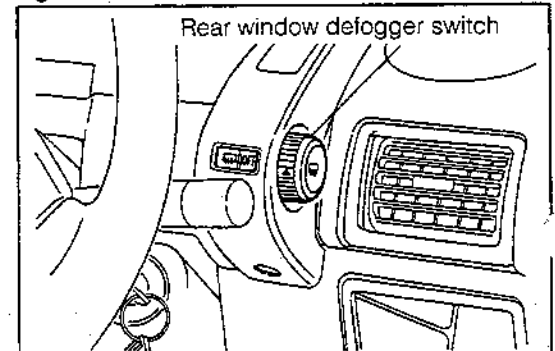


Fig. 10-111

WR-10112

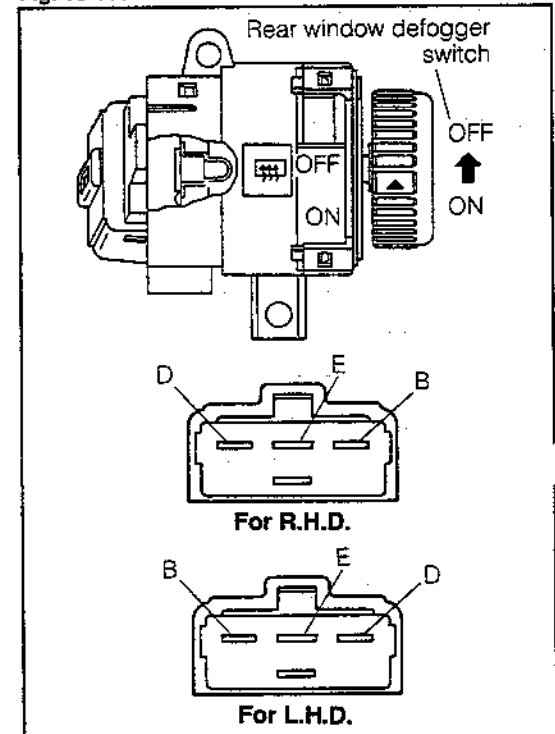


Fig. 10-112

WR-10113

#### INSTALLATION

1. Install the defogger switch to the cluster finish panel with the two screws.
2. Connect the connector securely.
3. Attach the cluster finish panel to the instrument panel by tightening the two screws.

WR-10114



## EAR WINDOW DEFOGGER WIRE

### NOTE:

- (1) When wiping the glass surface, use a soft, dry cloth. Move the cloth along the wire. Be careful not to damage the wire.
- (2) Never use washing agent or glass cleaner which contains abrasive compound.
- (3) Wrap the tip end of the tester probe with foil strip so that the tester probe causes no damage on the heat wire during the voltage measurement. Check the voltage by pushing the foil strip against the heat wire by your finger, as shown in the figure.

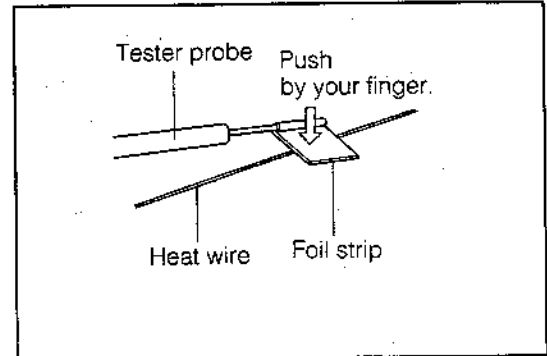


Fig. 10-113

WR-10115

### 1. Open wire check

- (1) Turn ON the ignition key switch.
- (2) Turn ON the defogger switch so as to energize the defogger wire.
- (3) Check the voltage at the center section of each heat wire.

Voltage	Judgement criteria
Approx. 5 V	Good (No open wire)
Approx. 10 V or 0 V	Open wire

#### Reference:

If the voltage is 10 V, it means that open wire exists between the center of the wire and the end of the positive  $\oplus$  side. If the voltage is 0 V, it means that open wire exists between the center of the wire and the end of the earth side.

### 2. Locating Point of Open Wire

- (1) Connect the positive  $\oplus$  terminal of the voltmeter to the positive  $\oplus$  side of the defogger wire.
- (2) Slide the voltmeter's negative  $\ominus$  terminal wrapped with foil strip on the defogger wire from its positive  $\oplus$  side to its negative  $\ominus$  side.
- (3) The voltmeter reading changes from 0 V to several volts at the point where open wire exists.

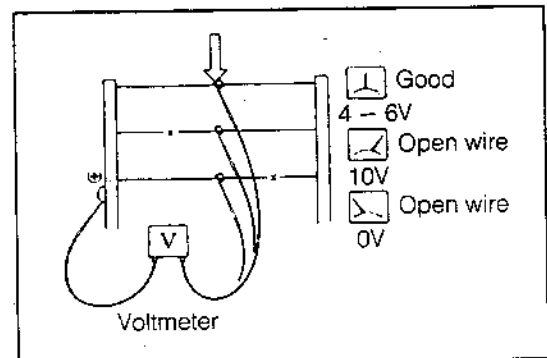


Fig. 10-114

WR-10116

### 3. Repairing Point of Open Wire

- (1) Clean the point of open wire with white gasoline.
- (2) Affix masking tapes to both upper and lower portions of the point to be repaired.
- (3) Stir repair agent (Du Pont Paste No. 4817) thoroughly. Apply a small amount of the repair agent to the repairing point, using a fine brush.
- (4) Two to three minutes later, peel off the masking tapes.
- (5) Do not energize the defogger wire within 24 hours after the repair.

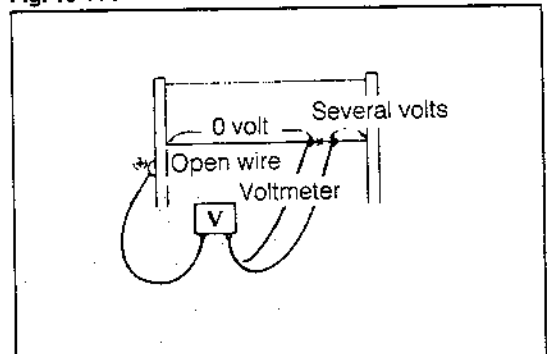


Fig. 10-115

WR-10117

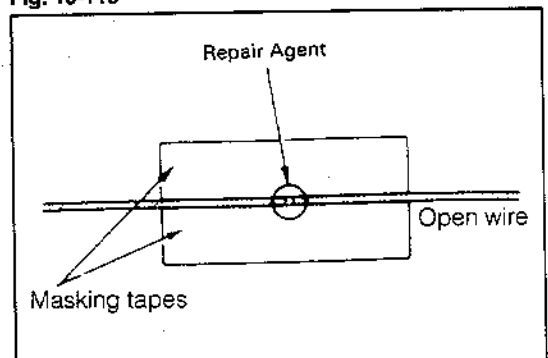


Fig. 10-116

WR-10118

## BODY ELECTRICAL SYSTEM

### FRONT WIPER AND WASHER

#### FRONT WIPER CIRCUIT DIAGRAM

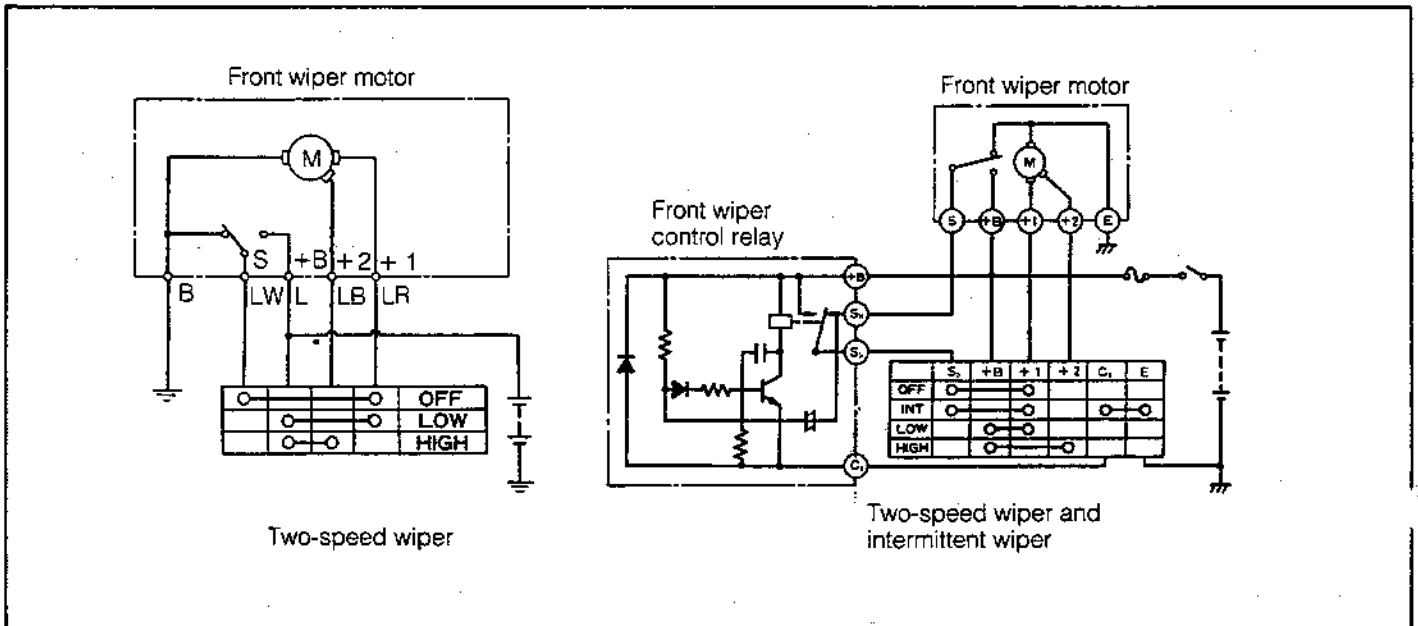


Fig. 10-117

WR-10119

### FRONT WIPER AND BLADES COMPONENTS

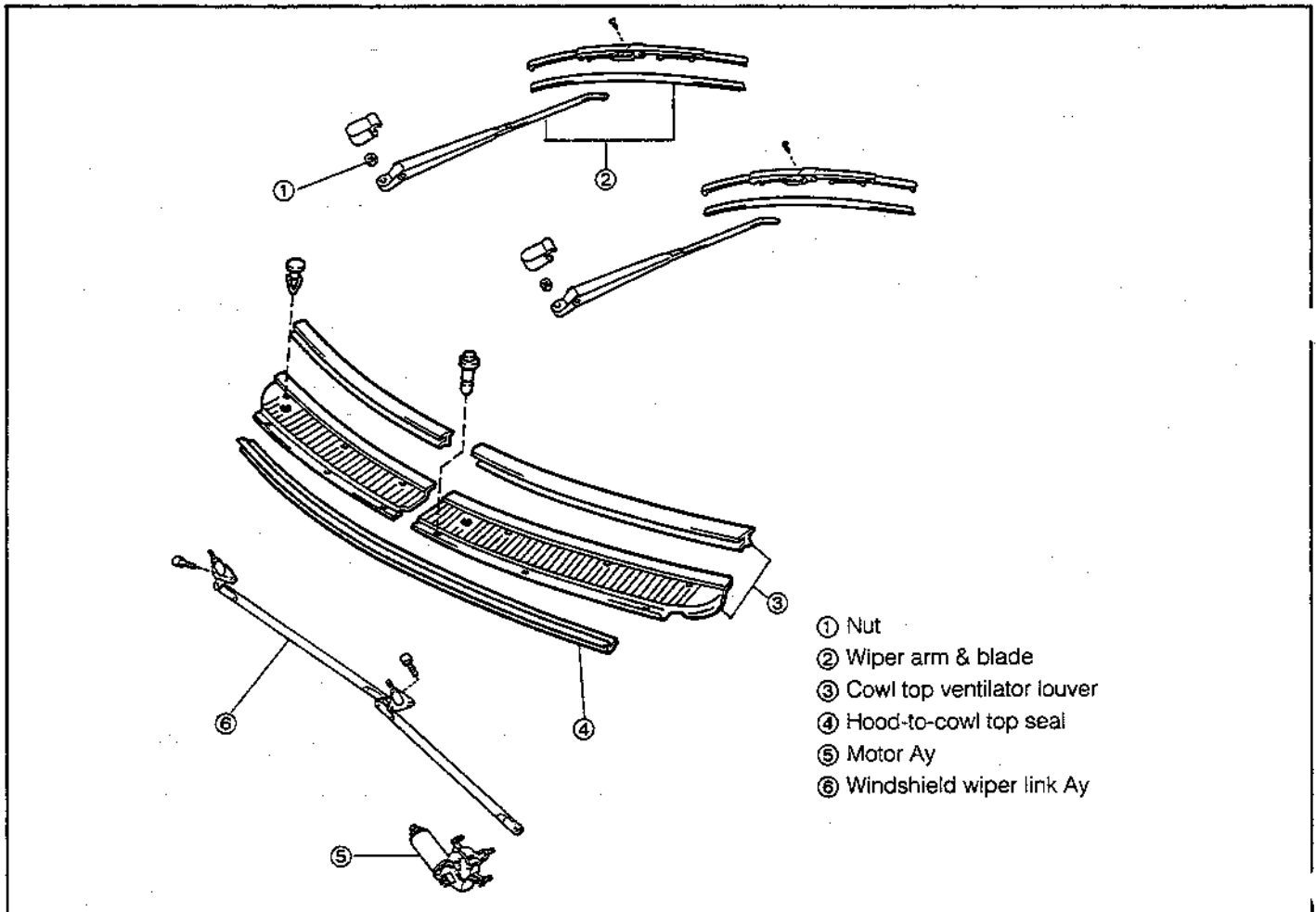


Fig. 10-118

WR-10120

## REMOVAL

1. Remove the front wiper arm cover. Remove the nut.  
**NOTE:**  
 Care must be exercised to ensure that no scratch is made to the engine hood.

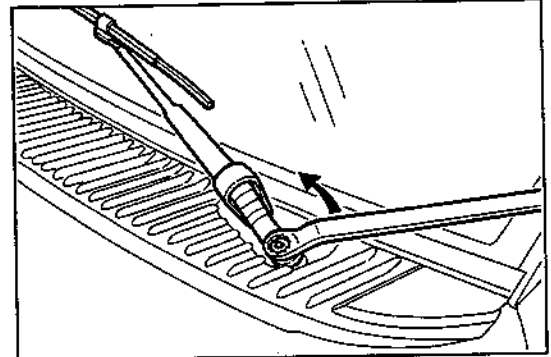


Fig. 10-119

WR-10121

2. Remove the wiper arm and blades.

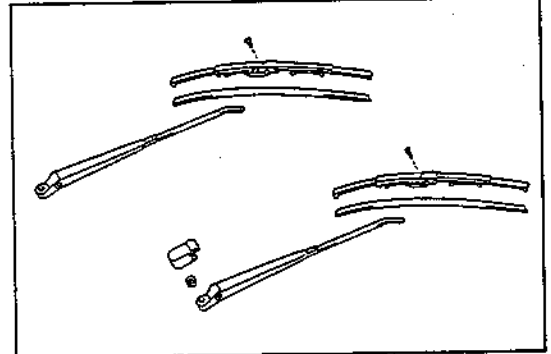


Fig. 10-120

WR-10122

3. Remove the cowl top ventilator louver.
4. Remove the hood-to-cowl top seal.

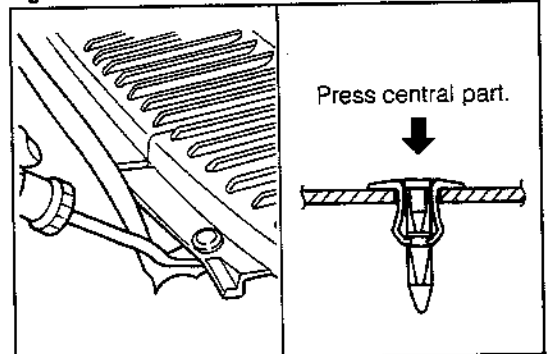


Fig. 10-121

WR-10123

5. Remove the wiper motor assembly.
  - (1) Disconnect the connector.
  - (2) Remove the set bolt.
  - (3) Disconnect the motor from the link. Remove the motor.

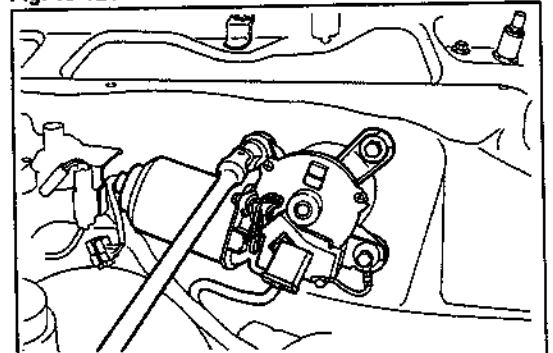


Fig. 10-122

WR-10124

6. Remove the wiper link assembly.
  - (1) Remove the set bolt.

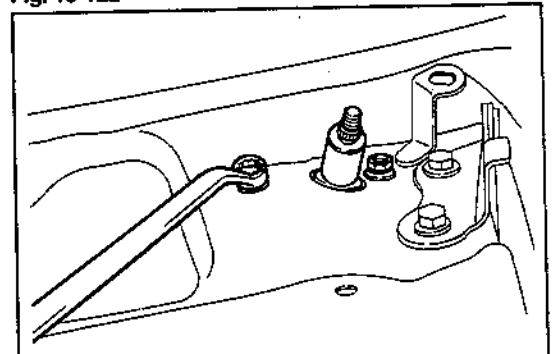


Fig. 10-123

WR-10125

## BODY ELECTRICAL SYSTEM

- (2) Take out the wiper link assembly from the cowl louver hole.

### Checking of Front Wiper Motor Unit

#### 1. Low Speed Operation Check

- (1) Connect the terminal +1 to the positive  $\oplus$  terminal of the battery; the body to the negative  $\ominus$  terminal of the battery. Ensure that the wiper operates at the low speed.

#### 2. High Speed Operation Check

- (1) Connect the terminal +2 to the positive  $\oplus$  terminal of the battery; the body to the negative  $\ominus$  terminal of the battery. Ensure that the wiper operates at the high speed.

#### 3. OFF Operation Check

With the wiper motor body connected to the negative  $\ominus$  terminal of the battery, perform the following checks.

- (1) Connect the terminal B to the positive  $\oplus$  terminal of the battery.
- (2) Operate the wiper at the low speed by connecting the terminal +1 to the positive  $\oplus$  terminal of the battery.
- (3) Under the operating conditions in the step (2), disconnect the terminal +1 so as to interrupt the wiper motor operation.

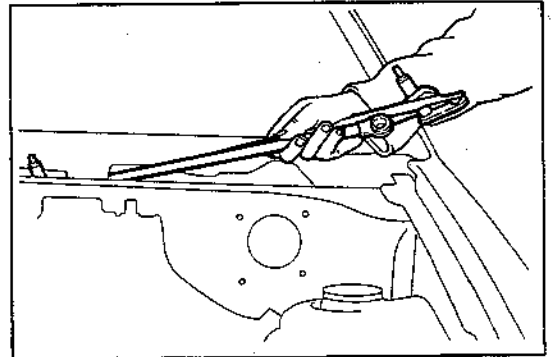


Fig. 10-124

WR-10126

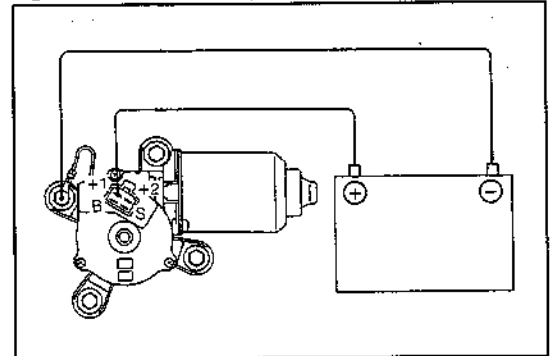


Fig. 10-125

WR-10127

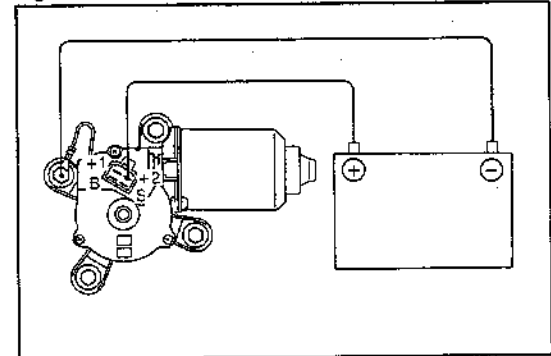


Fig. 10-126

WR-10128

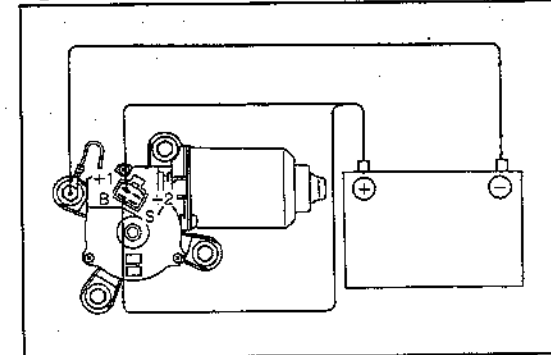


Fig. 10-127

WR-10129

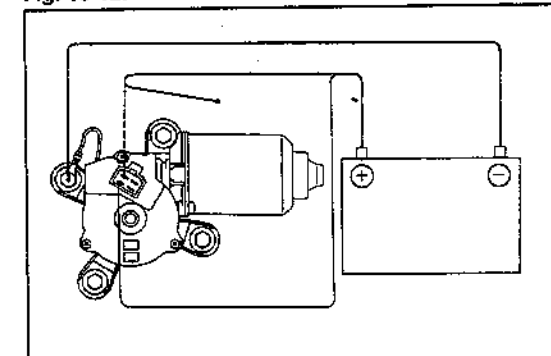


Fig. 10-128

WR-10130

- (4) Connect the terminal +1 to the terminal S. Ensure that the wiper operates and stops at the automatic stopping position.

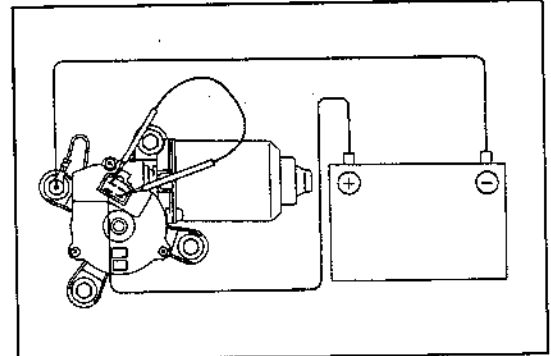


Fig. 10-129

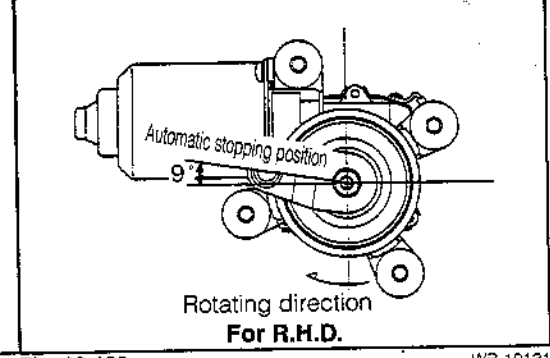
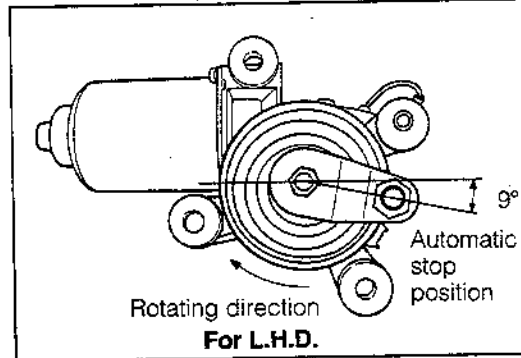


Fig. 10-130

WR-10131

## INSTALLATION

1. Install the windshield wiper link assembly.
  2. Install the motor assembly.
- NOTE:**  
Connect the motor assembly with the link securely.

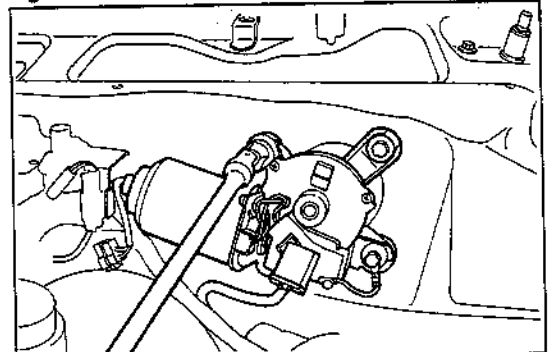


Fig. 10-131

WR-10132

3. Install the hood-to-cowl top seal. Install the cowl top ventilator louver.

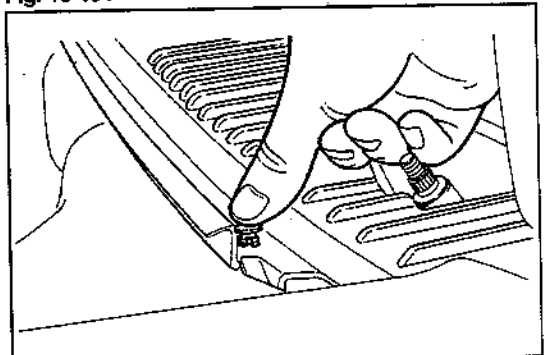


Fig. 10-132

WR-10133

4. Install the wiper arm and blade.
  - (1) Operate the wiper arm and set it to the automatic stopping position.
  - (2) Set the wiper arm to the position as indicated in the right figure.
5. Install the front wiper arm cover.

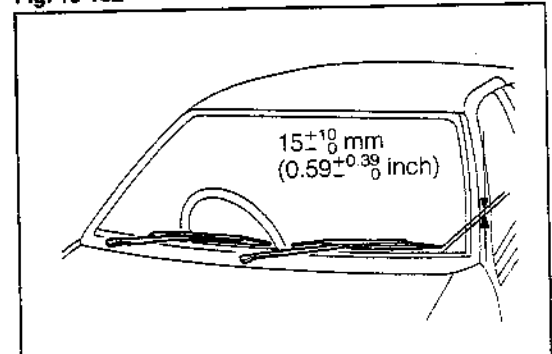


Fig. 10-133

WR-10134

## BODY ELECTRICAL SYSTEM

### FRONT WASHER TANK

#### INSTALLATION POSITION

1. Standard vehicle (1.2ℓ) ... Right side of engine compartment
2. Vehicles mounted with turbocharged engine or ECE & EEC specifications (2.5ℓ)  
... Inside of left front fender

#### REMOVAL (VEHICLES MOUNTED WITH TURBOCHARGED ENGINE OR ECE & EEC SPECIFICATIONS)

1. Remove the front part of the left front fender liner.
2. Remove the left headlamp assembly.
3. Remove the left clearance lamp.
4. Remove the washer tank assembly.  
(1) Remove the connector, hose, two bolts (one is to be removed during the fender liner removal) and nut.

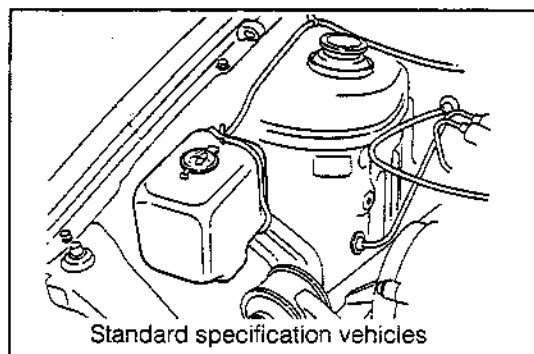


Fig. 10-134

WR-10135

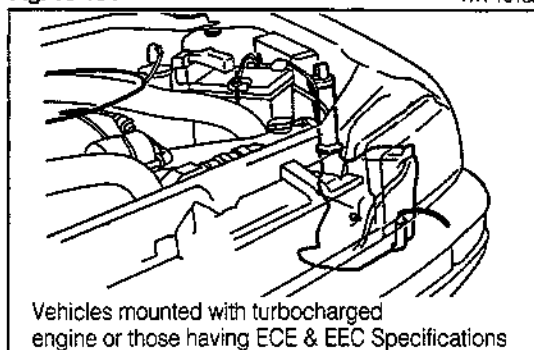


Fig. 10-135

WR-10136

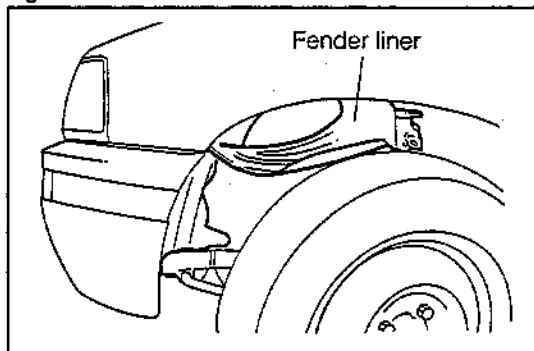


Fig. 10-136

WR-10137

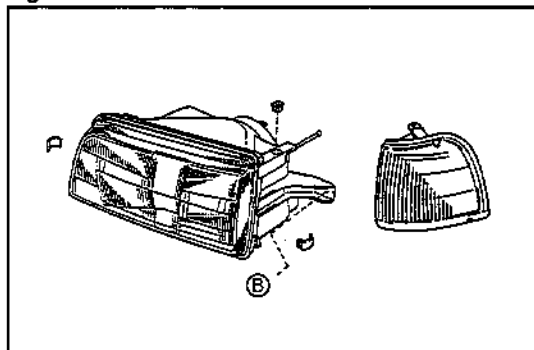


Fig. 10-137

WR-10138

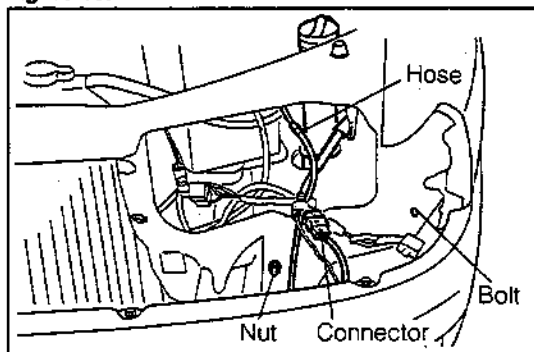


Fig. 10-138

WR-10139

- (2) Remove the washer tank assembly from the back side of the fender.

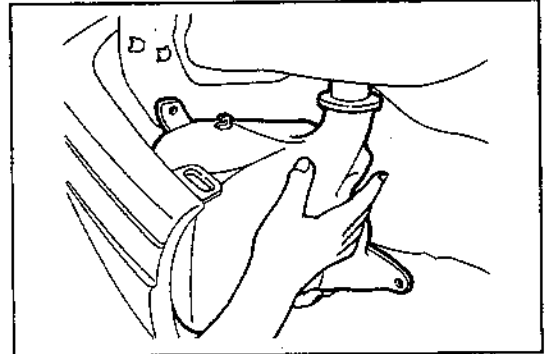


Fig. 10-139

WR-10140

## INSTALLATION

1. Install the washer tank assembly.
2. Install the left headlamp assembly.
3. Install the left clearance lamp.
4. Install the left front fender liner.

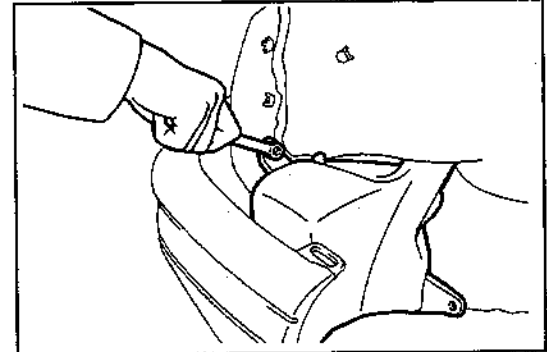


Fig. 10-140

WR-10141

## FRONT WIPER CONTROL RELAY

The front wiper control relay is located at the upper side of the fuse block.

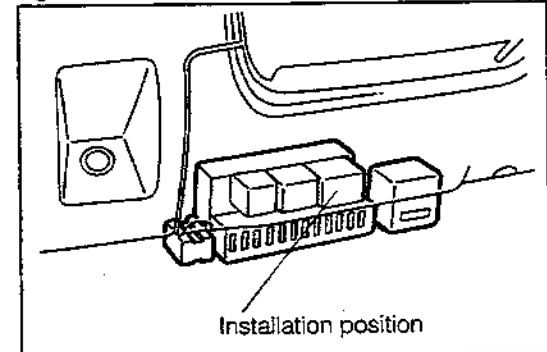


Fig. 10-141

WR-10142

## INSPECTION

1. Perform continuity checks between terminals given below.

- (1) Between terminals ② and ③ ... Continuity exists.
- (2) Between terminals ② and ④ ... No continuity exists.

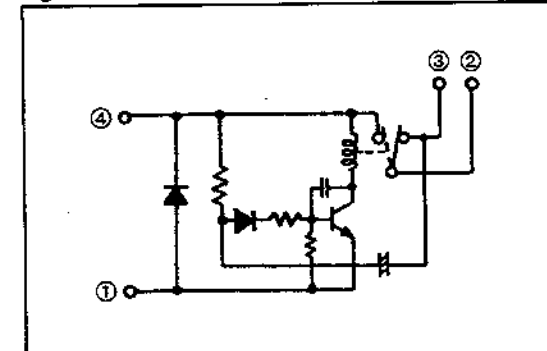


Fig. 10-142

WR-10143

2. Relay operation check

Connect the terminal ④ to the positive  $\oplus$  terminal of the battery; terminal ① to the negative  $\ominus$  terminal of the battery. Ensure that the relay emits an operating sound (clicking sound).

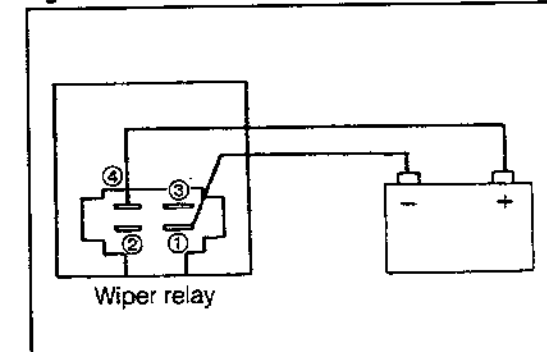


Fig. 10-143

WR-10144

## BODY ELECTRICAL SYSTEM

### 3. Intermittent operation check

- (1) Connect the terminal ④ to the positive ⊕ terminal of the battery; terminal ① to the negative ⊖ terminal of the battery.

(At this time, the relay emits an operating sound.): The relay is turned ON.

- (2) Connect the terminal ③ to the positive ⊕ terminal of the battery for about one second. Then, ground the terminal ③.

(The relay emits an operating sound.): The relay is turned OFF.

- (3) Ensure that, about four seconds later, the relay emits an operating sound (intermittent operation).

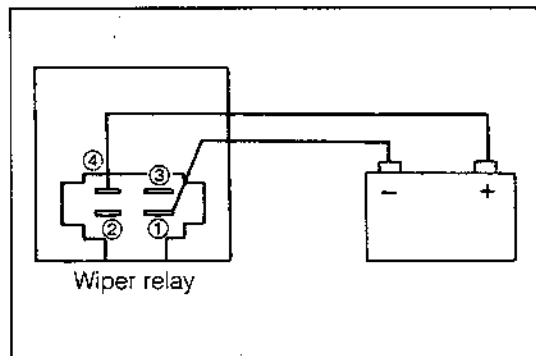


Fig. 10-144

WR-10145

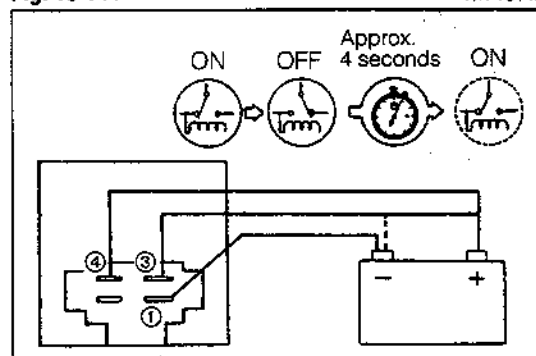


Fig. 10-145

WR-10146



# REAR WIPER AND WASHER

## REAR WIPER CIRCUIT DIAGRAM

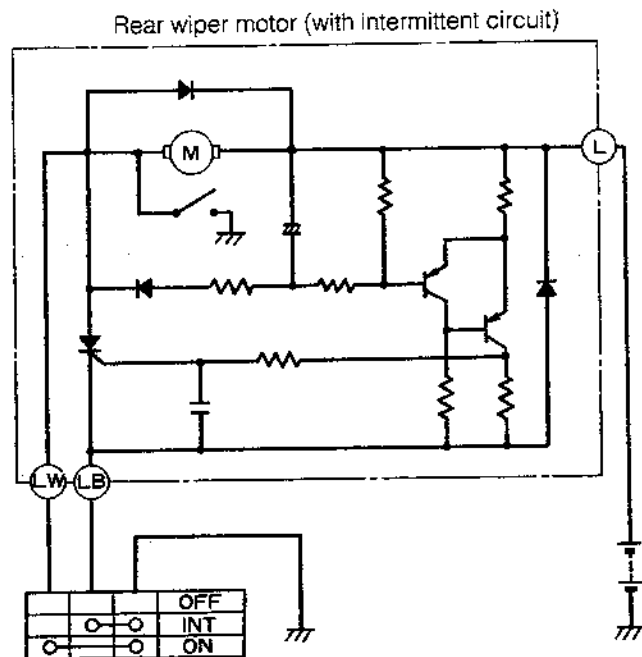


Fig. 10-146

WR-10147

## REAR WIPER MOTOR AND BLADE COMPONENTS

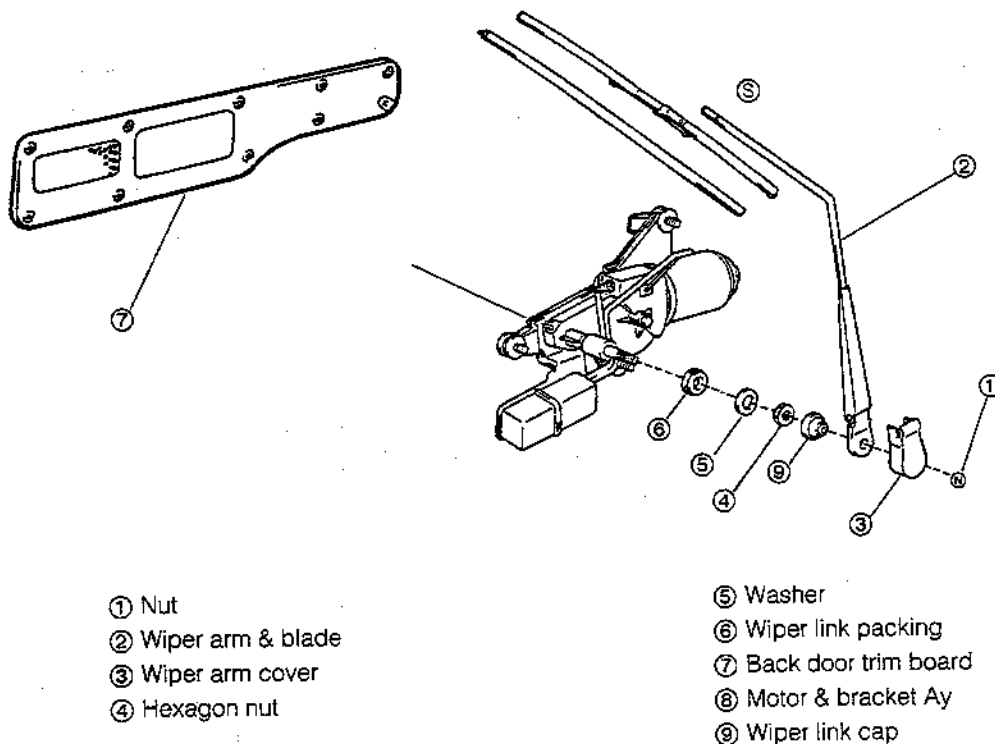


Fig. 10-147

WR-10148

## BODY ELECTRICAL SYSTEM

### REMOVAL

1. Remove the wiper arm cover.
2. Remove the wiper arm and blade by removing the nut.
3. Remove the wiper link cap.  
Remove the washer and wiper link packing by removing the hexagon nut.
4. Remove the back door trim board, as follows:
  - (1) Release the lock by pushing the center section of the clip. Then, detach the clip.
  - (2) Remove the back door trim board (10 pieces of clips).
5. Disconnect the connector. Remove the rear wiper motor assembly.

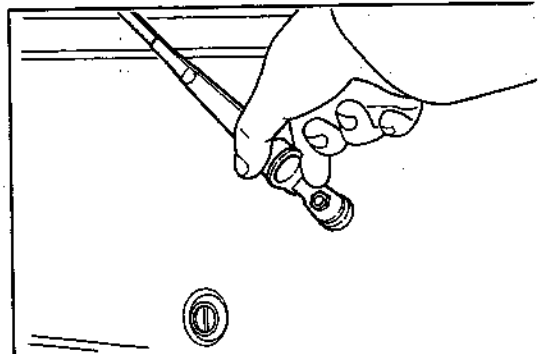


Fig. 10-148

WR-10149

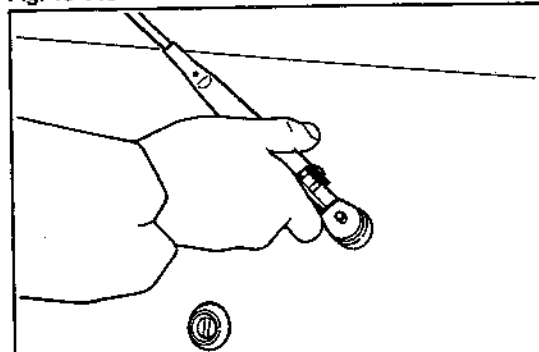


Fig. 10-149

WR-10150

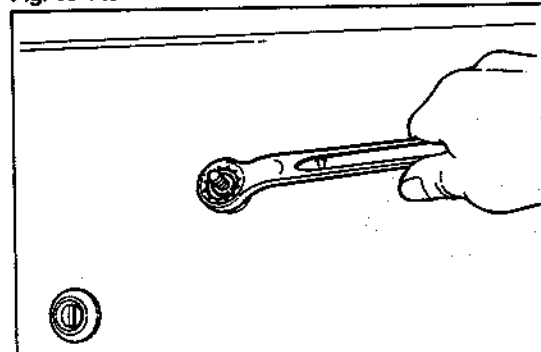


Fig. 10-150

WR-10151

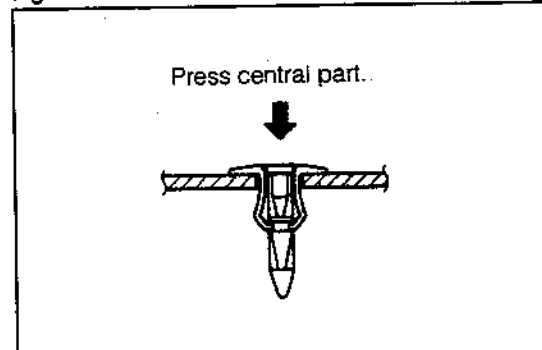


Fig. 10-151

WR-10152

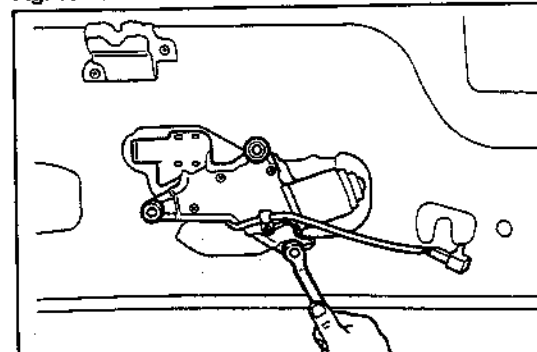


Fig. 10-152

WR-10153

## REAR WIPER MOTOR CHECK

Ensure that the wiper motor is grounded to the body properly. Proceed to the following checks.

1. Connect the terminal L of the connector to the positive  $\oplus$  terminal of the battery; terminal LW to the negative  $\ominus$  terminal of the battery. Ensure that the wiper operates.
2. Disconnect the terminal LW from the negative  $\ominus$  terminal of the battery. Ensure that the wiper stops at the automatic stopping position.
3. Connect the terminal L to the positive  $\oplus$  terminal of the battery; terminal LB to the negative  $\ominus$  terminal of the battery. Ensure that the wiper operates intermittently.
4. Disconnect the terminal LB from the negative  $\ominus$  terminal of the battery. Ensure that the wiper stops at the automatic stopping position.

## INSTALLATION

1. Install the rear wiper motor assembly, as follows:
  - (1) Install the rear wiper motor assembly by tightening the set bolt.

### NOTE:

Make sure that the body earth is provided properly.

- (2) Connect the connector.

2. Install the back door trim, as follows:
  - (1) Pull out the center section of the clip. Attach the clip to the trim. Push the center section so as to lock the clip.
  - (2) Install the back door trim boards (10 pieces).

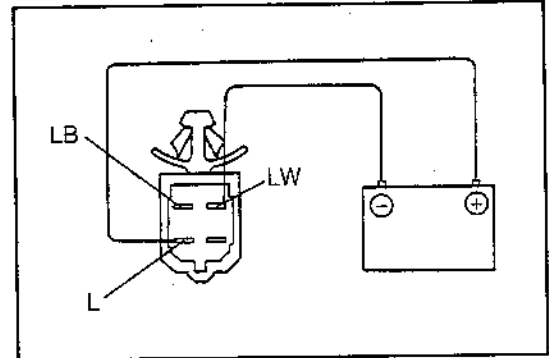


Fig. 10-153

WR-10154

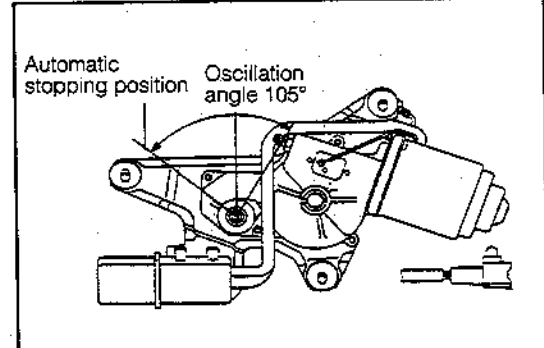


Fig. 10-154

WR-10155

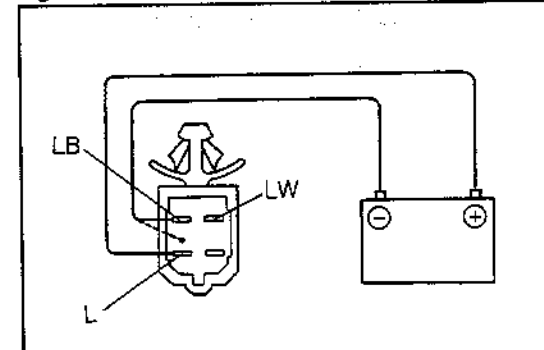


Fig. 10-155

WR-10156

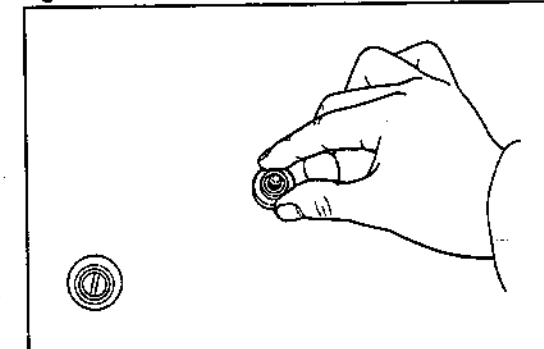


Fig. 10-156

WR-10157

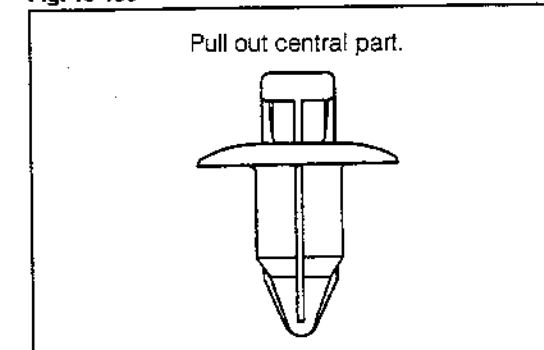


Fig. 10-157

WR-10158

## BODY ELECTRICAL SYSTEM

3. Install the wiper link packing and washer by tightening the hexagon nut.  
Install the wiper link cap.

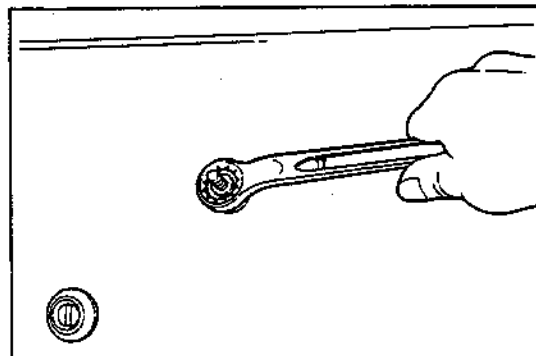


Fig. 10-158

WR-10159

4. Install the wiper arm and blade, as follows:
  - (1) Operate the wiper motor and set the wiper arm to the automatic stopping position.
  - (2) Align the blade with the bottom line of the defogger pattern.

Installation position:

Bottom line of pattern  $\pm 5$  mm ( $\pm 0.2$  inch)

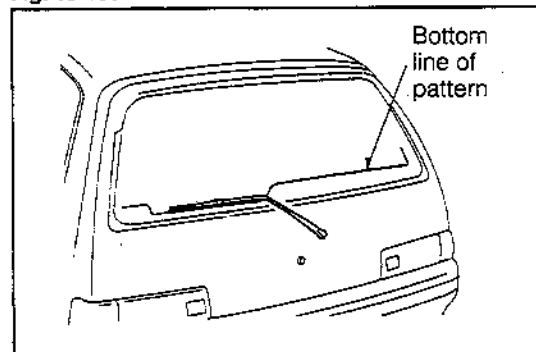


Fig. 10-159

WR-10160

5. Tighten the nut. Install the wiper arm cover.

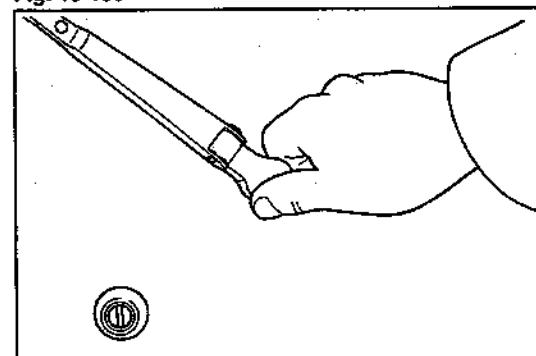


Fig. 10-160

WR-10161

## EAR WASHER TANK COMPONENTS

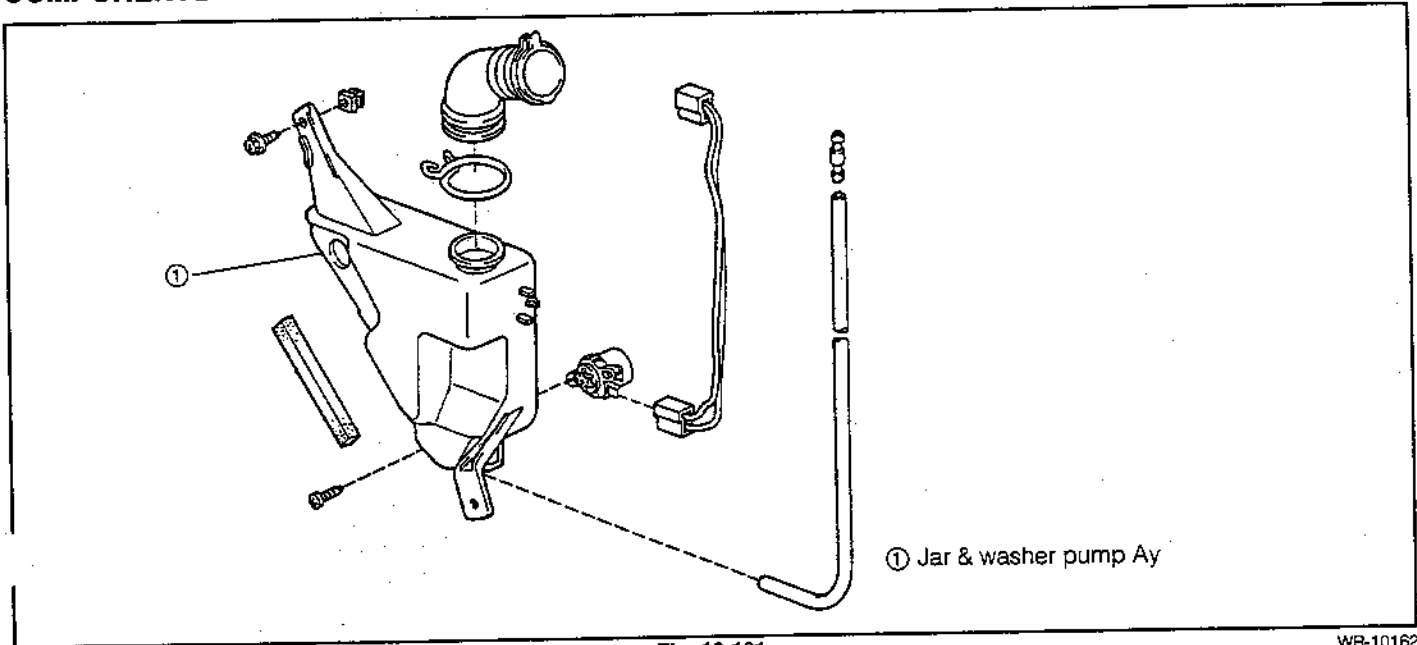


Fig. 10-161

WR-10162

### REMOVAL

1. Remove the deck side trim RH.
2. Disconnect the connector and water hose. Remove the washer tank assembly.

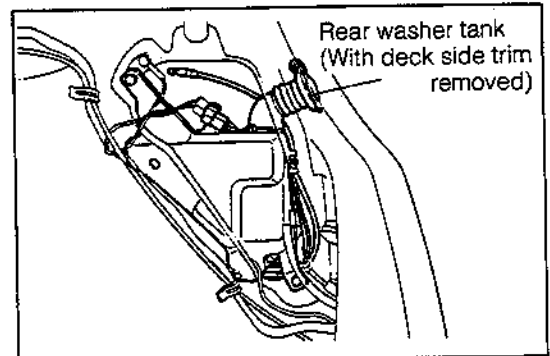


Fig. 10-162

WR-10163

### INSTALLATION

1. Install the washer tank assembly by tightening the screws (2 pcs.).
2. Connect the connector and water hose.

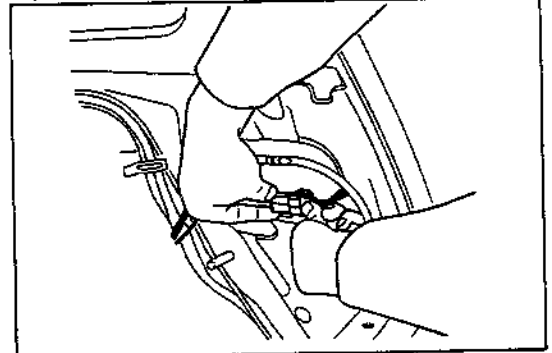


Fig. 10-163

WR-10164

3. Install the deck side trim RH.

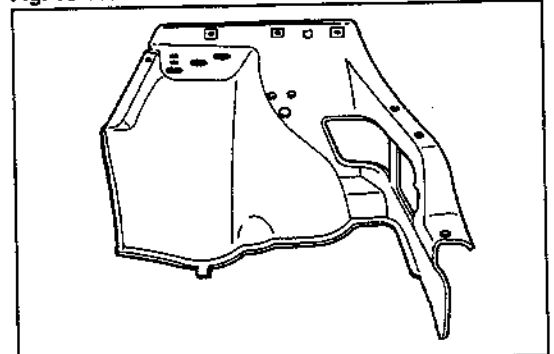


Fig. 10-164

WR-10165

# BODY ELECTRICAL SYSTEM

## REAR WIPER AND WASHER SWITCH

### INSTALLATION POSITION

R.H.D. vehicles ... Left side of instrument cluster finish panel  
L.H.D. vehicles ... Right side of instrument cluster finish panel

### INSPECTION

Ensure that continuity exists between the respective terminals as indicated in the continuity table.

○—○ Continuity exists.

Knob position \ Terminal		R+1	RINT	E <sub>3</sub>	RW
Wiper switch	OFF				
	INT		○—○		
	ON	○—○		○—○	
Washer switch	OFF				
	ON			○—○	○—○

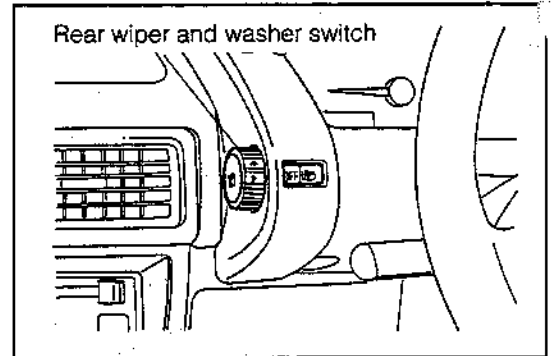


Fig. 10-165

WR-10166

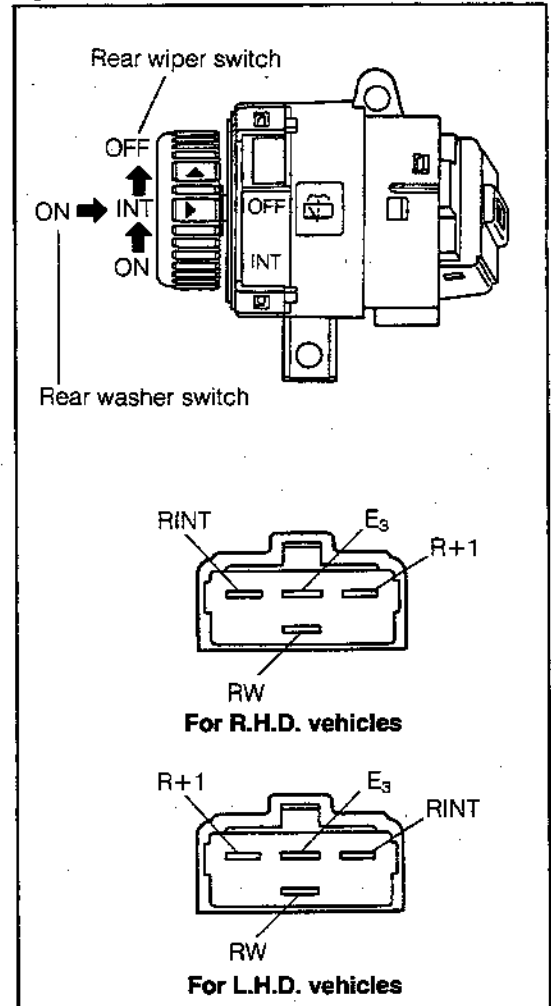


Fig. 10-166

WR-10167

# ELECTRICAL REMOTE CONTROL DOOR MIRROR

## CIRCUIT DIAGRAM

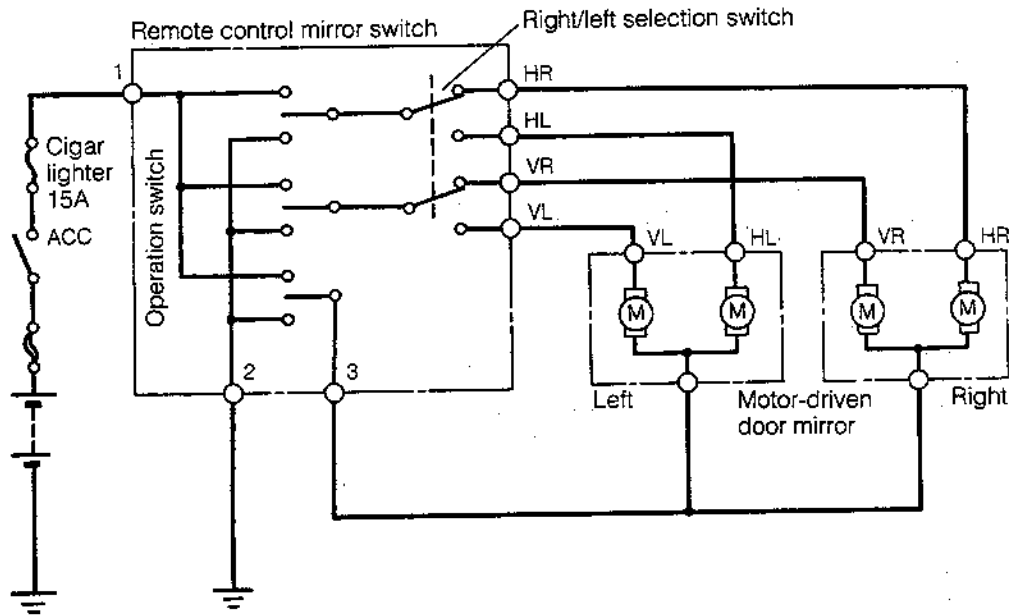


Fig. 10-167

WR-10168

## DOOR MIRROR SWITCH

### INSTALLATION POSITION

H.D. vehicles ... Right side of steering post  
L.H.D. vehicles ... Left side of steering post

## REMOVAL

Working from the back side of the instrument panel, push the switch toward your side.

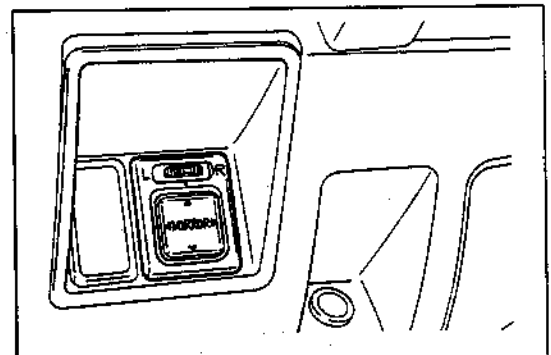


Fig. 10-168

WR-10169

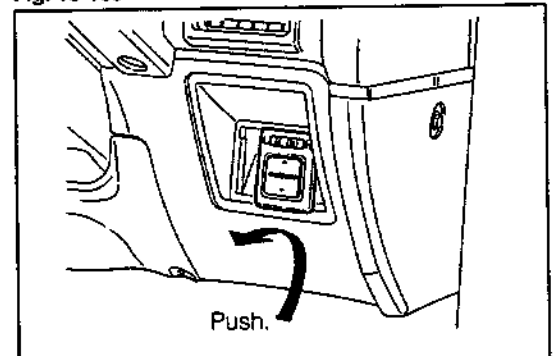


Fig. 10-169

WR-10170

## BODY ELECTRICAL SYSTEM

### INSPECTION

Ensure that continuity exists between the respective terminals as indicated in the continuity table.

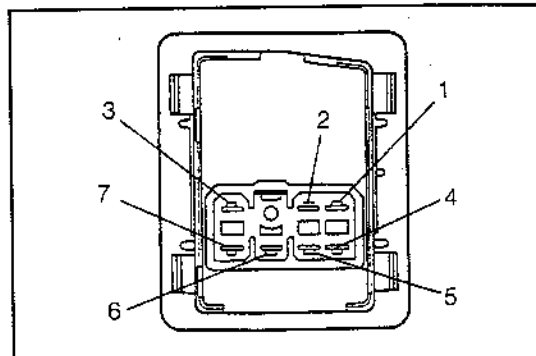


Fig. 10-170

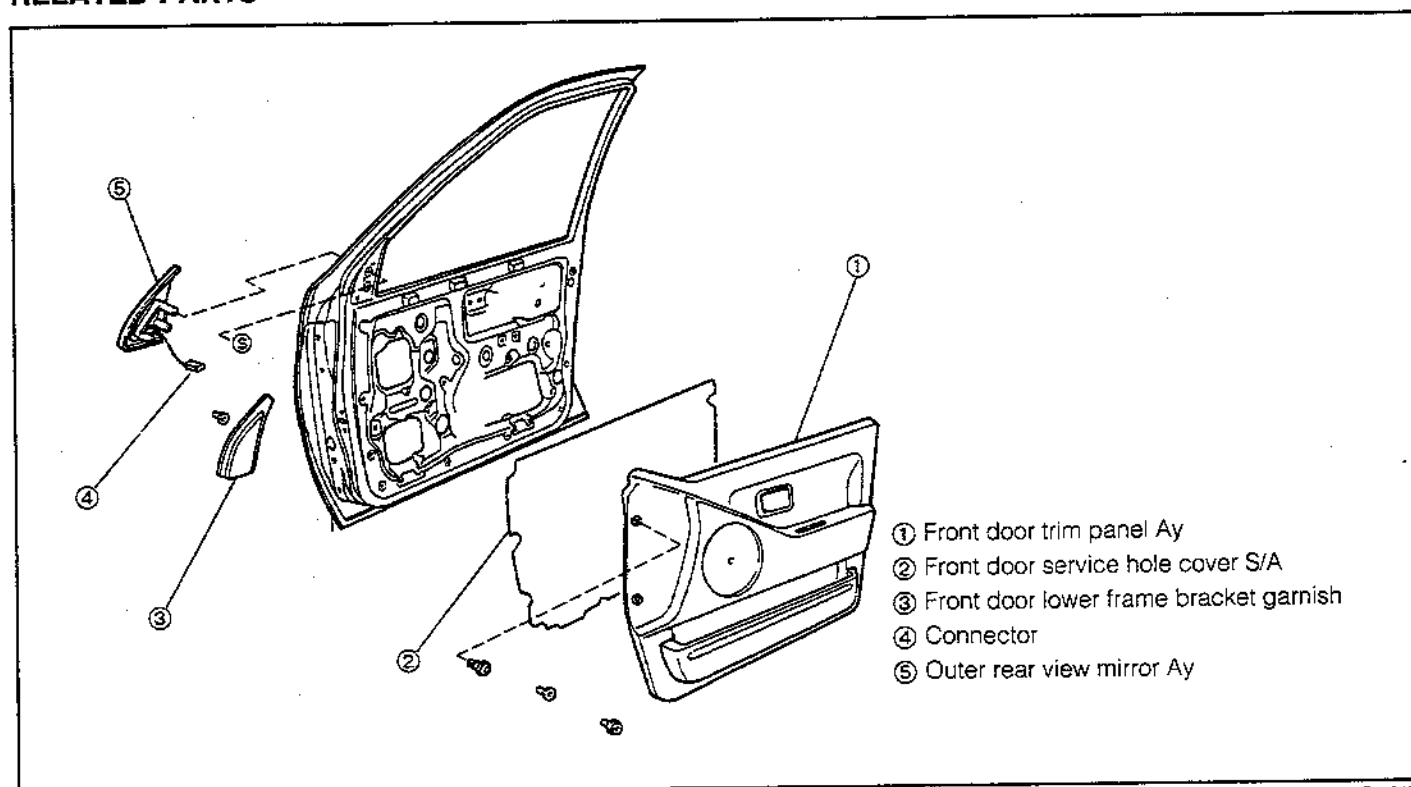
WR-10171

### Continuity Table

Mirror	Left					Right			
Terminal Switch position	7	6	1	2	3	2	1	5	4
UP	○	—	○	○	—	○	—	○	○
DOWN	○	—	○	○	—	○	—	○	○
LEFT		○	○	○	—	○	—	○	○
RIGHT		○	○	○	—	○	—	○	○

WR-10172

## ELECTRICAL REMOTE CONTROL DOOR MIRROR RELATED PARTS



- ① Front door trim panel Ay
- ② Front door service hole cover S/A
- ③ Front door lower frame bracket garnish
- ④ Connector
- ⑤ Outer rear view mirror Ay

Fig. 10-171

WR-10173



## REMOVAL

1. Remove the front door trim assembly.
  - (1) Release the lock by pushing the center section of the clip. Detach the clip.
  - (2) Remove the front door trim assembly.
2. Remove the front door service hole cover.
3. Remove the lower frame bracket garnish by pulling it toward you.
4. Disconnect the door mirror connector. Remove the outer rear view mirror assembly by removing the attaching bolt.

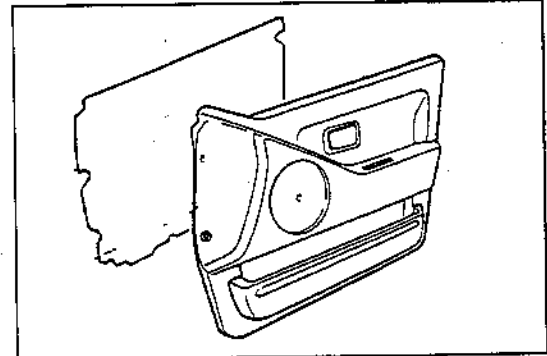


Fig. 10-172

WR-10174

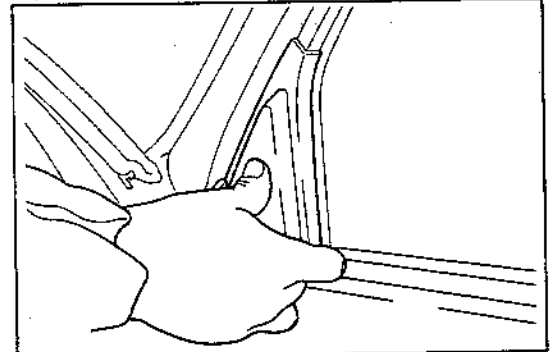


Fig. 10-173

WR-10175

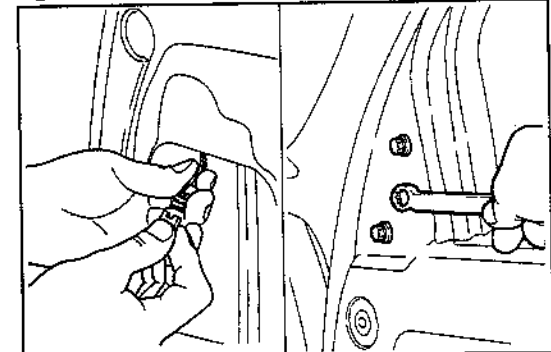


Fig. 10-174

WR-10176

## INSPECTION

1. Apply the battery voltage to each terminal, as indicated in the table below. Ensure that the mirror operates properly.

Terminal	Right door mirror	COM	MVR	MHR	Operation direction
	Left door mirror	COM	MVL	MHL	
Connection		⊖	⊕		UP
		⊕	⊖		Down
		⊖		⊕	Left
		⊕		⊖	Right

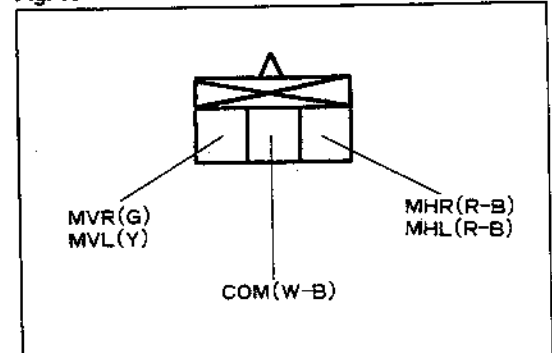


Fig. 10-175

WR-10177

## BODY ELECTRICAL SYSTEM

### INSTALLATION

1. Connect the connector. Install the outer rear view mirror.
2. Install the lower frame bracket garnish.

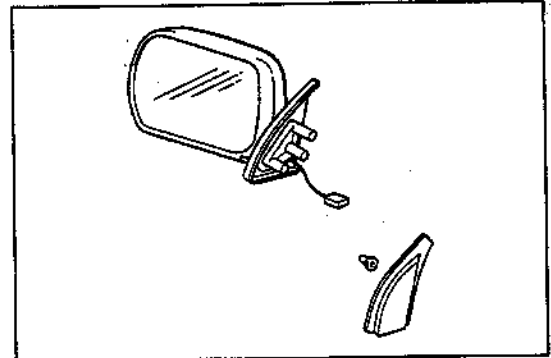


Fig. 10-176

WR-10178

3. Install the front service hole cover subassembly.
4. Install the front door trim assembly.

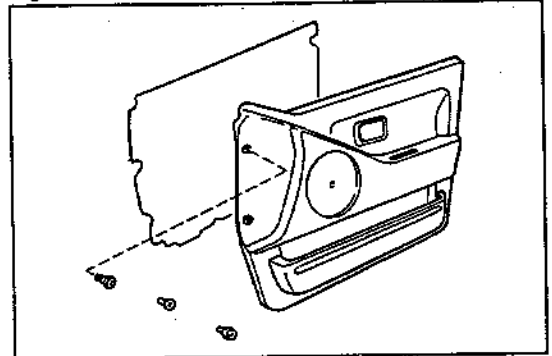


Fig. 10-177

WR-10179

# CENTRAL DOOR LOCK

## CIRCUIT DIAGRAM

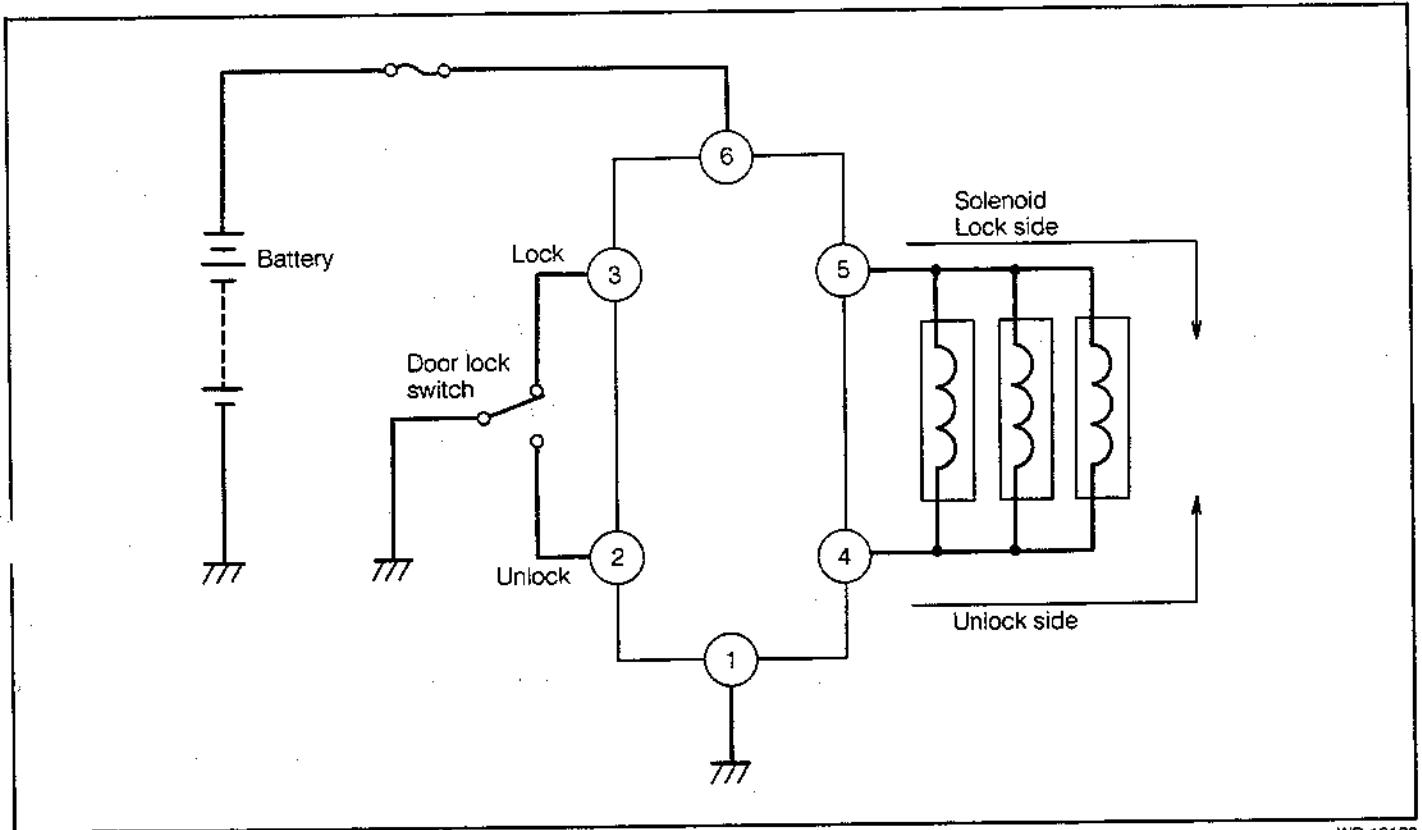


Fig. 10-178

WR-10180

## DOOR LOCK SWITCH AND SOLENOID RELATED PARTS

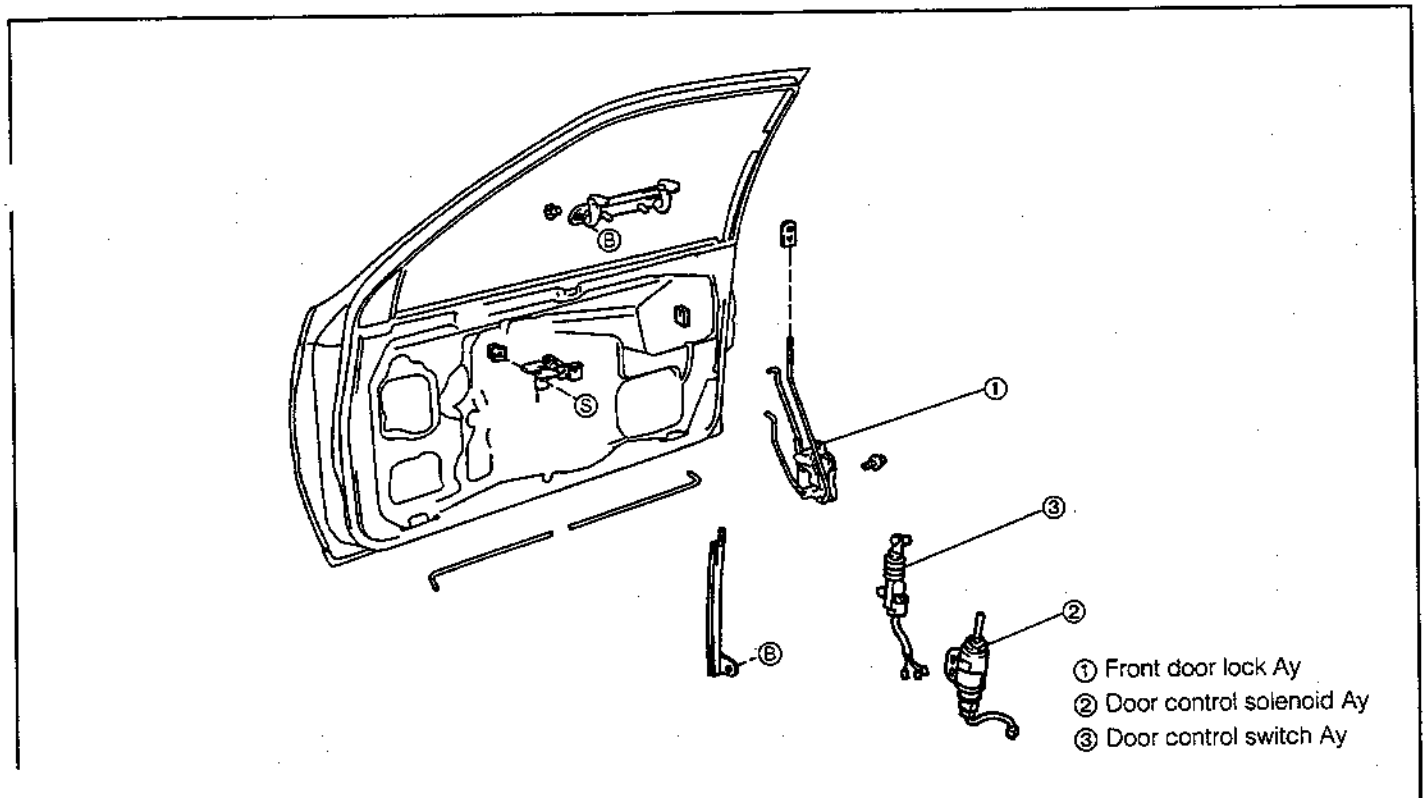


Fig. 10-179

WR-10181

# BODY ELECTRICAL SYSTEM

## REMOVAL

1. Remove the front door trim panel assembly and service hole cover subassembly.
2. Disconnect the lock knob from the link section. Remove the front door lock assembly by removing the attaching bolt.
3. Disconnect the connector. Remove the door control solenoid assembly or switch assembly by removing the attaching bolt.

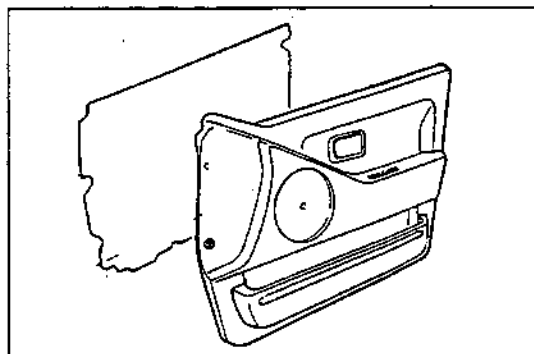


Fig. 10-180

WR-10182

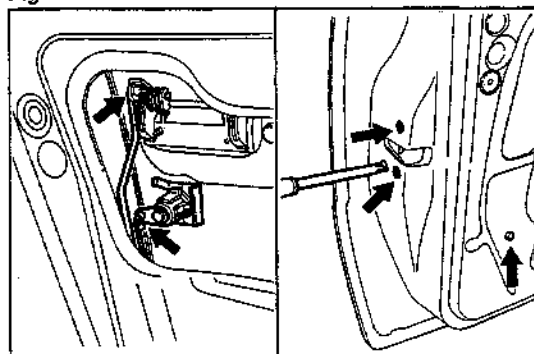


Fig. 10-181

WR-10183

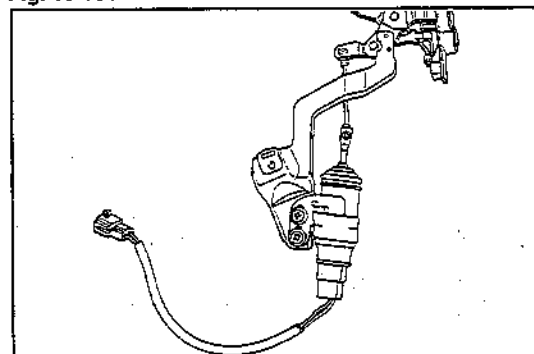


Fig. 10-182

WR-10184

## INSPECTION

### Solenoid Assembly

#### (Front Doors on 3-Door Vehicles and 5-Door Vehicles)

Apply a voltage of 12 V between the following two terminals. Ensure that the plunger operates in accordance with the table below.

Operation direction \ Terminal	①	②
UNLOCK	+	-
LOCK	-	+

#### (Rear Doors on 5-Door Vehicles)

Apply a voltage of 12 V between the following two terminals. Ensure that the plunger operates in accordance with the table below.

Operation direction \ Terminal	①	②
LOCK	+	-
UNLOCK	-	+

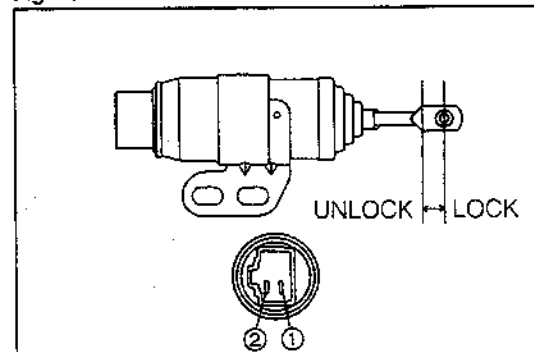


Fig. 10-183

WR-10185

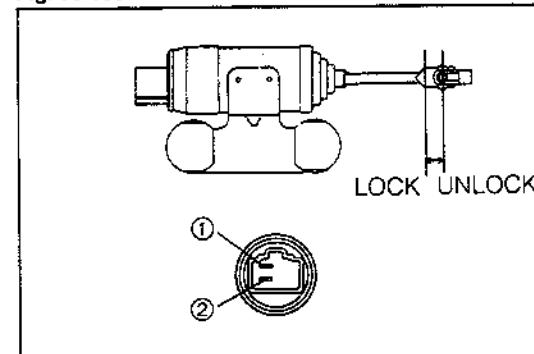


Fig. 10-184

WR-10186

## DOOR LOCK SWITCH

	Lg	WB	LgR
LOCK	○	○	
UNLOCK		○	○

## INSTALLATION

1. Install the door control switch assembly.
2. Install the door control solenoid assembly.

3. Install the front door lock assembly. Install the link and lock knob.
4. Install the service hole cover subassembly and front door trim panel assembly.  
(See page 9-39.)

### NOTE:

Before connecting the battery, make sure that the lock knob is in an unlocked state.

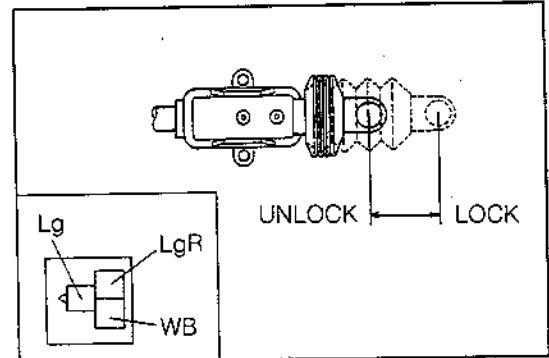


Fig. 10-185

WR-10187

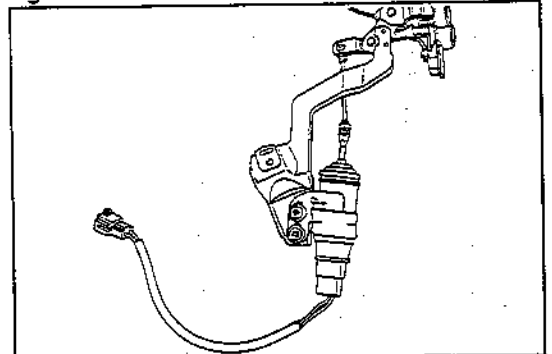


Fig. 10-186

WR-10188

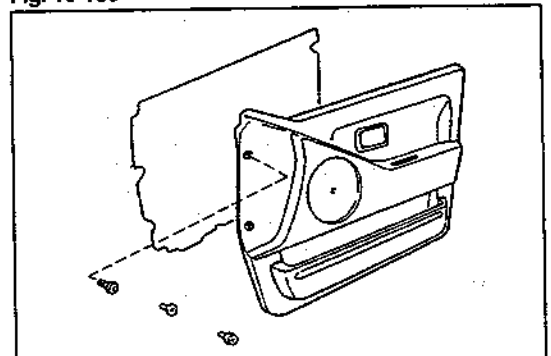


Fig. 10-187

WR-10189

## DOOR CONTROL RELAY

### CIRCUIT DIAGRAM

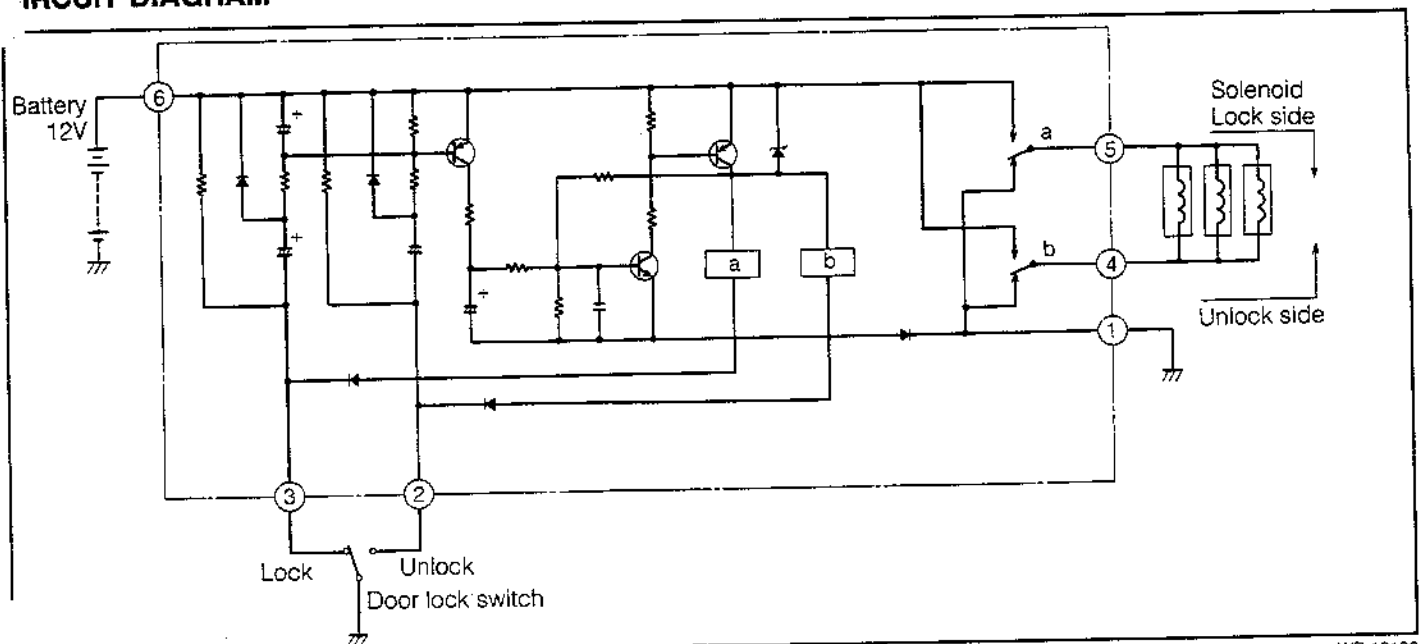


Fig. 10-188

WR-10190

## BODY ELECTRICAL SYSTEM

### INSTALLATION POSITION

R.H.D. vehicles ... Right cowl side

L.H.D. vehicles ... Left cowl side

### INSPECTION

Connect the terminal ⑥ to the positive  $\oplus$  terminal of the battery; terminal ① to the negative  $\ominus$  terminal. Perform the following checks.

1. When the negative  $\ominus$  terminal is connected to the terminal ③, ensure that the relay operates as follows: The relay "a" is turned ON, accompanying an operating sound. A voltage of 12 V is applied to the terminal ⑤. Immediately after this (about 0.2 seconds later), the relay is turned OFF, accompanying an operating sound. Then, the voltage at the terminal ⑤ drops to 0 V.
2. When the negative  $\ominus$  terminal is connected to the terminal ②, ensure that the relay operates as follows: The relay "b" is turned ON, accompanying an operating sound. A voltage of 12 V is applied to the terminal ④. Immediately after this (about 0.2 seconds later), the relay is turned OFF, accompanying an operating sound. Then, the voltage at the terminal ④ drops to 0 V.

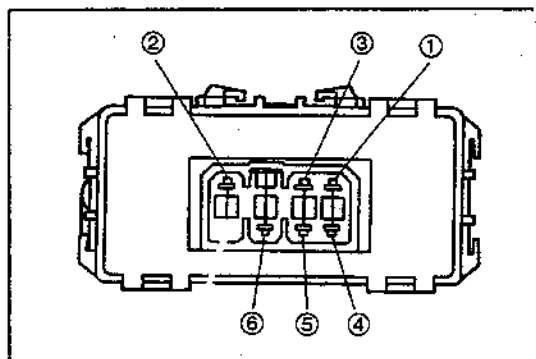


Fig. 10-189

WR-10191

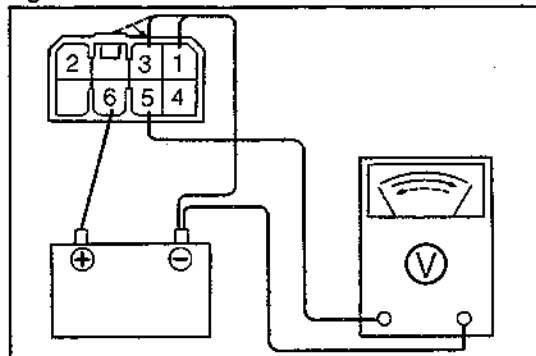


Fig. 10-190

WR-10192

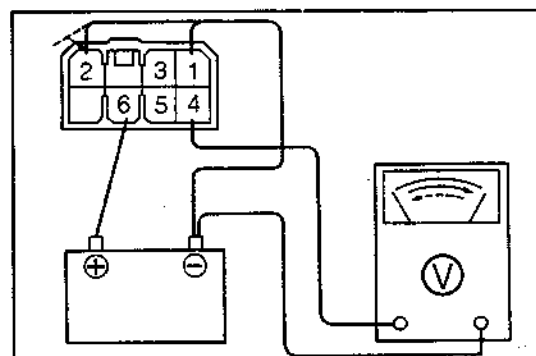
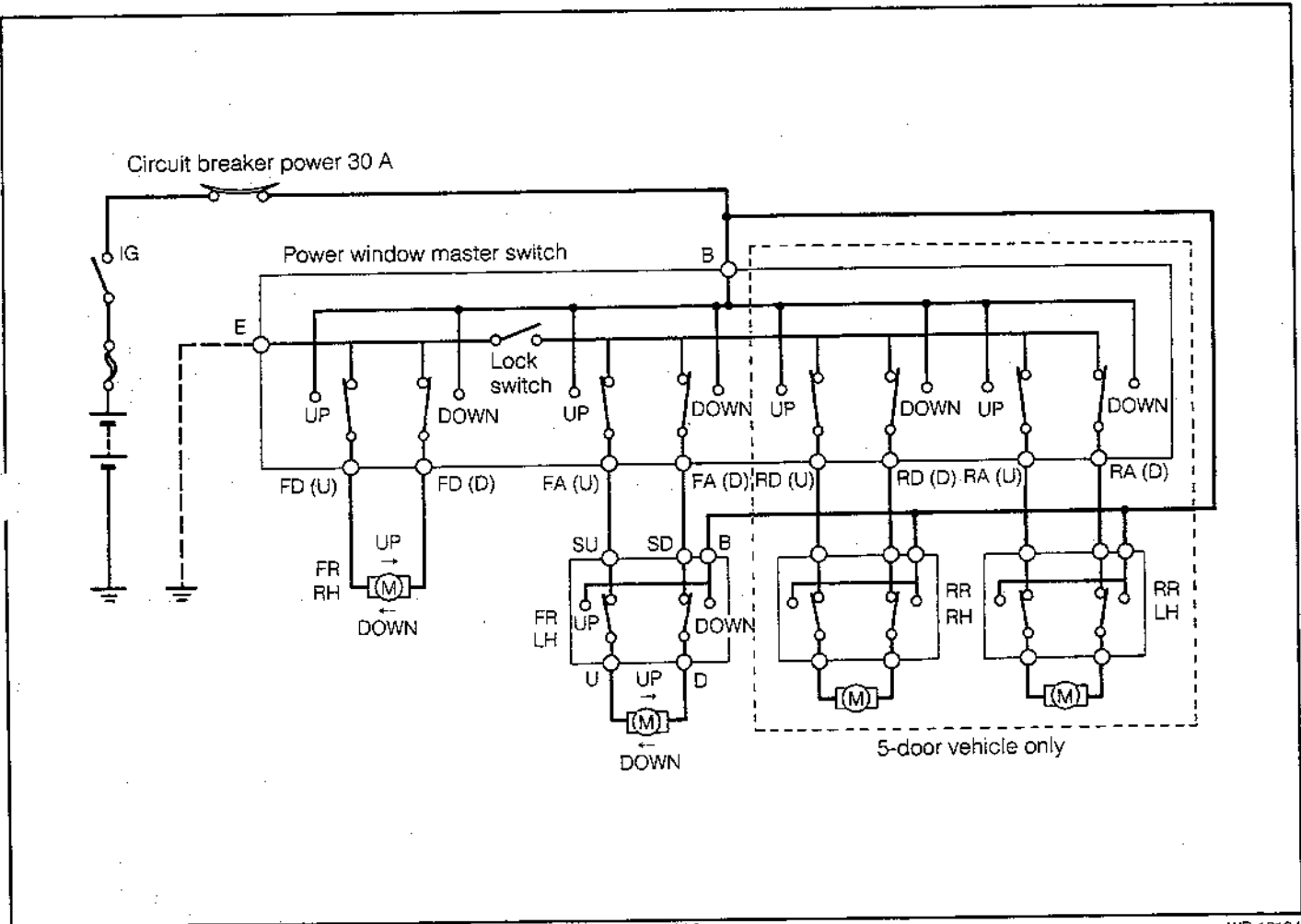


Fig. 10-191

WR-10193

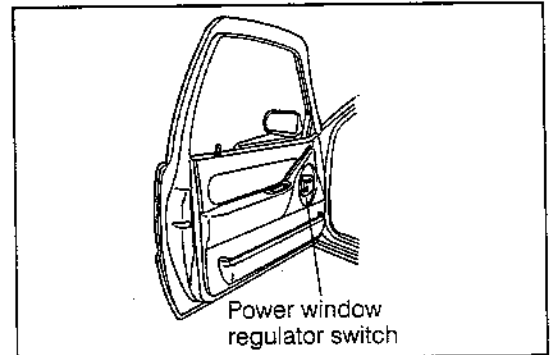
# POWER WINDOW CIRCUIT DIAGRAM



WR-10194

## POWER WINDOW MASTER SWITCH

The power window master switch is located at the door trim at the driver's seat side.



WR-10195

## BODY ELECTRICAL SYSTEM

		Connector	Master switch														
			R.H.D.	L.H.D.													
3-door		<table><tr><td colspan="3">B</td><td colspan="3">E</td></tr><tr><td>FA(U)</td><td>FA(D)</td><td>Blank</td><td>Blank</td><td>FD(U)</td><td>FD(D)</td></tr></table>	B			E			FA(U)	FA(D)	Blank	Blank	FD(U)	FD(D)			
	B			E													
FA(U)	FA(D)	Blank	Blank	FD(U)	FD(D)												
5-door	R.H.D.	<table><tr><td>FA(U)</td><td>FD(U)</td><td>Blank</td><td>Blank</td><td>RA(U)</td><td>RD(U)</td></tr><tr><td>FA(D)</td><td>FD(D)</td><td>B</td><td>Blank</td><td>E</td><td>RA(D)</td><td>RD(D)</td></tr></table>	FA(U)	FD(U)	Blank	Blank	RA(U)	RD(U)	FA(D)	FD(D)	B	Blank	E	RA(D)	RD(D)		
	FA(U)	FD(U)	Blank	Blank	RA(U)	RD(U)											
FA(D)	FD(D)	B	Blank	E	RA(D)	RD(D)											
	L.H.D.	<table><tr><td>FA(U)</td><td>FD(U)</td><td>Blank</td><td>Blank</td><td>RD(U)</td><td>RA(U)</td></tr><tr><td>FA(D)</td><td>FD(D)</td><td>B</td><td>Blank</td><td>E</td><td>RD(D)</td><td>RA(D)</td></tr></table>	FA(U)	FD(U)	Blank	Blank	RD(U)	RA(U)	FA(D)	FD(D)	B	Blank	E	RD(D)	RA(D)		
FA(U)	FD(U)	Blank	Blank	RD(U)	RA(U)												
FA(D)	FD(D)	B	Blank	E	RD(D)	RA(D)											

Fig. 10-194

WR-10196

### REMOVAL

- Remove the front door trim panel Ay.  
See page 9-39.
- Remove the power window master switch from the door trim, as follows:
  - Disconnect the connector.
  - Remove the master switch from the door trim.

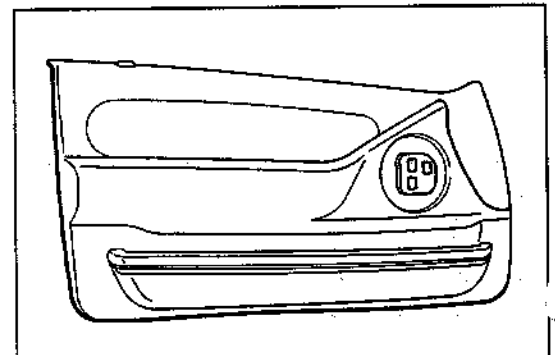


Fig. 10-195

WR-10197

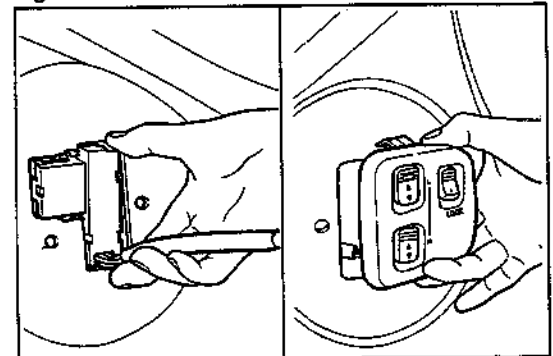


Fig. 10-196

WR-10198



## INSPECTION

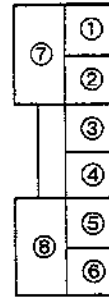
Ensure that continuity exists between the respective terminals of the power window master switch connector.

### 1. 3-Door Vehicle

○—○ Continuity exists.

Switch Terminal Selection	F.D				F.A			
	⑧	⑦	②	①	⑧	⑦*	⑥	⑤
UP	○	○	○	○	○	○	○	○
OFF	○	○	○	○	○	○	○	○
DOWN	○	○	○	○	○	○	○	○

\*: Make sure that the lock switch is in the lock state.



Connector

No.	Terminal	Kind of wire
①	F.D (D)	2 R
②	F.D (U)	2 G
③		Blank
④		Blank
⑤	F.A (D)	2 RL
⑥	F.A (U)	2 GL
⑦	E	2 WB
⑧	B	2 L

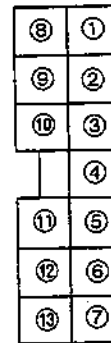
WR-10199

### 2. 5-Door Vehicle (R.H.D. vehicles)

○—○ Continuity exists.

Switch Terminal Selection	F.D				F.A				R.D				R.A			
	⑤	③	⑫	⑥	⑤	③*	⑬	⑦	⑤	③*	⑧	①	⑤	③*	⑨	②
UP	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
OFF	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
DOWN	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

\*: Make sure that the lock switch is in the lock state.



Connector

No.	Terminal	Kind of wire
①	R.D (D)	2 RB
②	R.A (D)	2 RY
③	E	2 WB
④		Blank
⑤	B	2 L
⑥	F.D (D)	2 R
⑦	F.A (D)	2 RL
⑧	R.D (U)	2 LB
⑨	R.A (U)	2 GY
⑩		Blank
⑪		Blank
⑫	F.D (U)	2 G
⑬	F.A (U)	2 LW

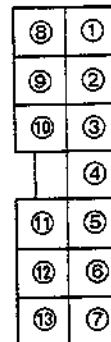
WR-10200

### 3. 5-Door Vehicle (L.H.D. vehicles)

○—○ Continuity exists.

Switch Terminal Selection	F.D				F.A				R.D				R.A			
	⑤	③	⑫	⑥	⑤	③*	⑬	⑦	⑤	③*	⑨	②	⑤	③*	⑧	①
UP	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
OFF	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
DOWN	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

\*: Make sure that the lock switch is in the lock state.



Connector

No.	Terminal	Kind of wire
①	R.A (D)	2 RY
②	R.D (D)	2 RB
③	E	2 WB
④		Blank
⑤	B	2 L
⑥	F.D (D)	2 R
⑦	F.A (D)	2 RL
⑧	R.A (U)	2 GY
⑨	R.D (U)	2 LB
⑩		Blank
⑪		Blank
⑫	F.D (U)	2 G
⑬	F.A (U)	2 LW

WR-10201

## BODY ELECTRICAL SYSTEM

### 4. Checking of Operation of Window Lock Switch

○—○ Continuity exists.

Selection	Terminal	Window lock switch			
		3-door	5-door	3-door	5-door
		⑦	③	⑥	⑬
NORMAL			○—○		○—○
LOCK					

\*: Perform the checks with the power window master switch in an inoperative state.

### POWER WINDOW SWITCHES

The power window switch is located at each door trim except for that at the driver's seat side.

#### NOTE:

For the removal/installation procedure for the door trim, see page 9-39.

### INSPECTION

Ensure that continuity exists between the respective terminals as indicated in the continuity table.

Selection	Terminal	B	SU	SD	U	D
UP		○—○			○—○	
OFF			○—○	○—○	○—○	
DOWN		○—○	○—○	○—○	○—○	○—○

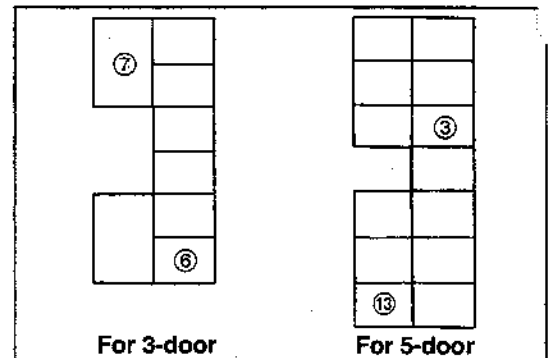


Fig. 10-197

WR-10202

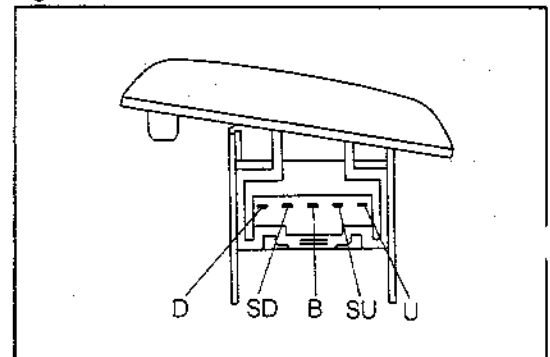


Fig. 10-198

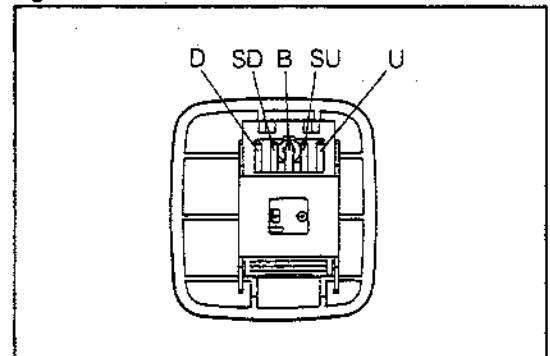


Fig. 10-199

WR-10203

### POWER WINDOW REGULATOR MOTOR RELATED PARTS

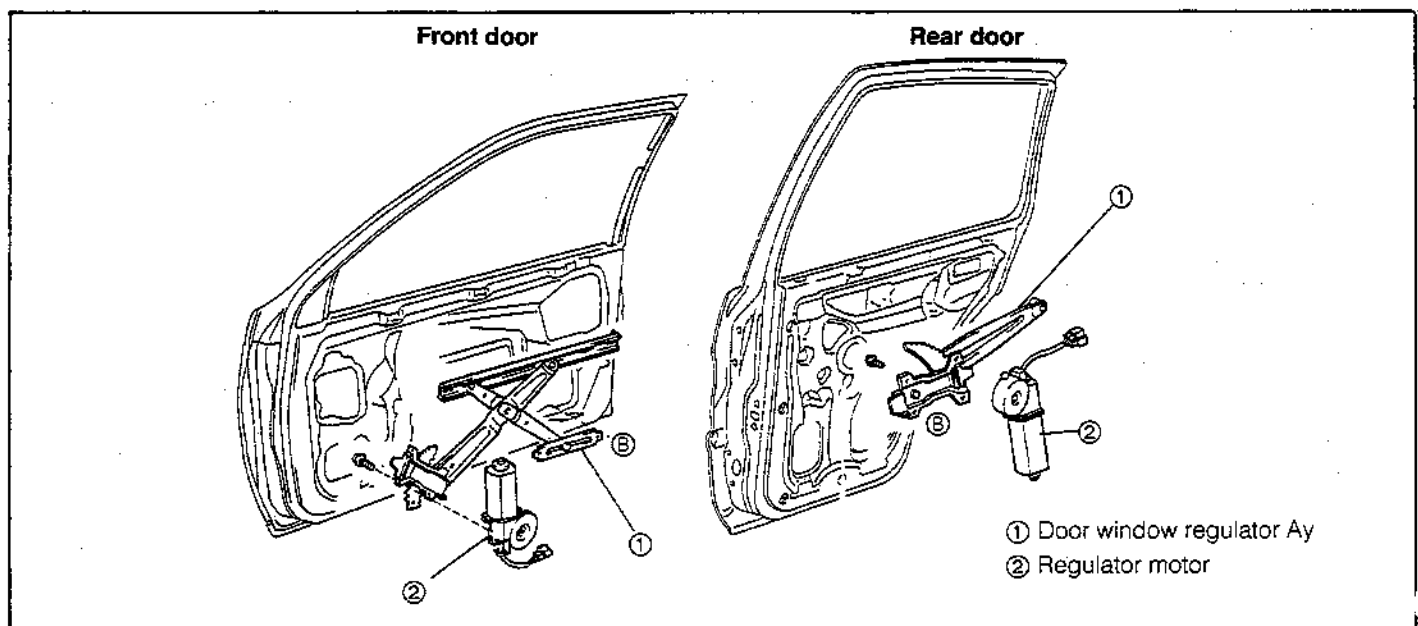


Fig. 10-200

WR-10204

## NOTE:

For the removal/installation procedure of the regulator motor, see page 9-52.

## INSPECTION

### (For Left side door)

1. Connect the terminal R to the positive  $\oplus$  terminal of the battery; the terminal G to the negative  $\ominus$  terminal of the battery. Ensure that the motor makes right rotation, as viewed from the driving shaft.
2. Connect the terminal R to the negative  $\ominus$  terminal of the battery; the terminal G to the positive  $\oplus$  terminal of the battery. Ensure that the motor makes left rotation, as viewed from the driving shaft.

### (For Right side door)

The motor rotates opposite direction of the left side door motor.

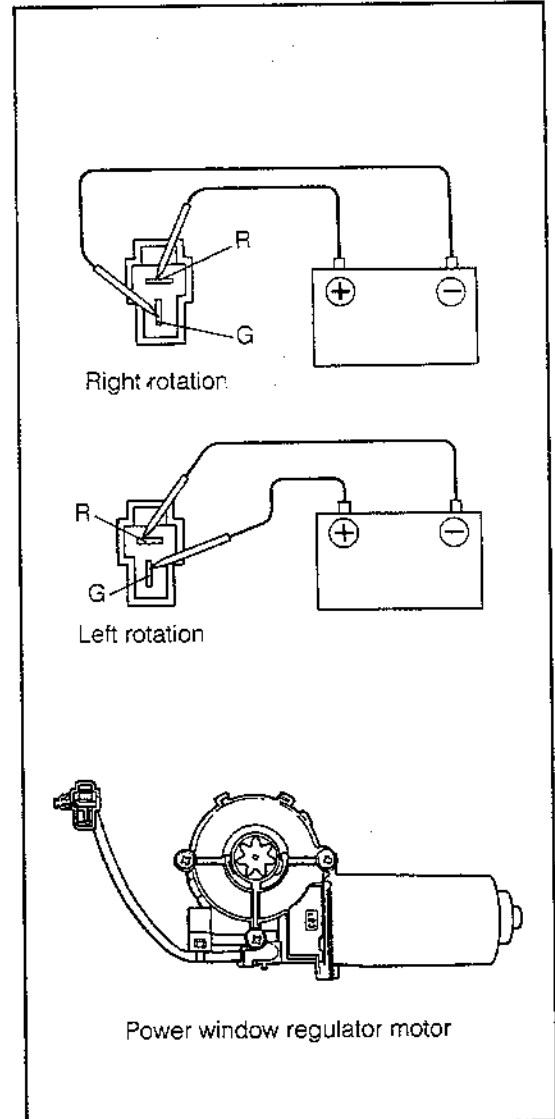


Fig. 10-201

WR-10205

## CIRCUIT BREAKER

The circuit breaker is located inside of the sub-fuse block.

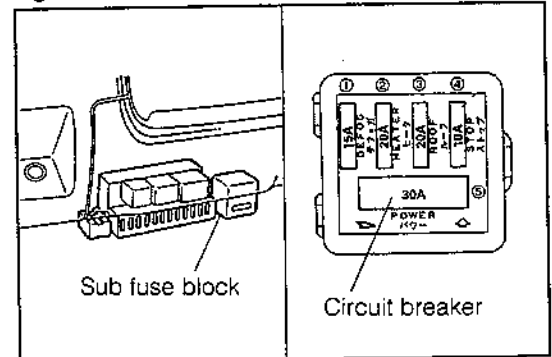


Fig. 10-202

WR-10206

## BODY ELECTRICAL SYSTEM

### INSPECTION

With the circuit breaker turned ON, ensure that continuity exists between the terminals.

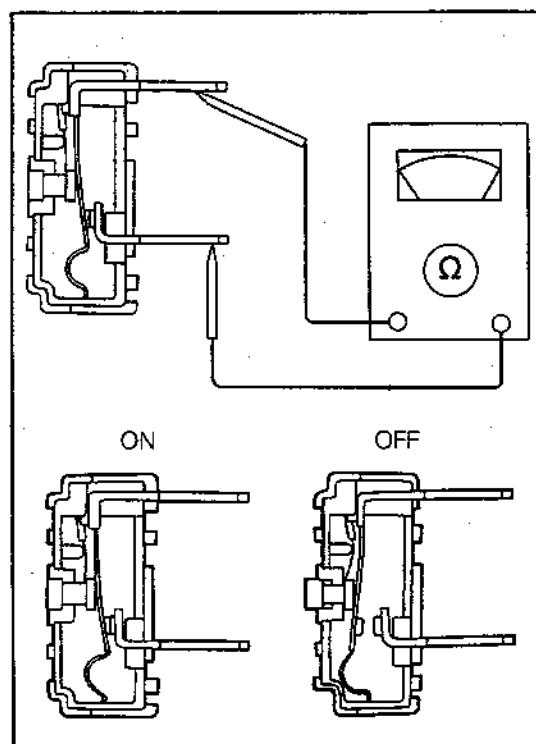


Fig. 10-203

WR-10207

# OWER GLASS SUN ROOF (TILT-UP AND SLIDING) CIRCUIT DIAGRAM

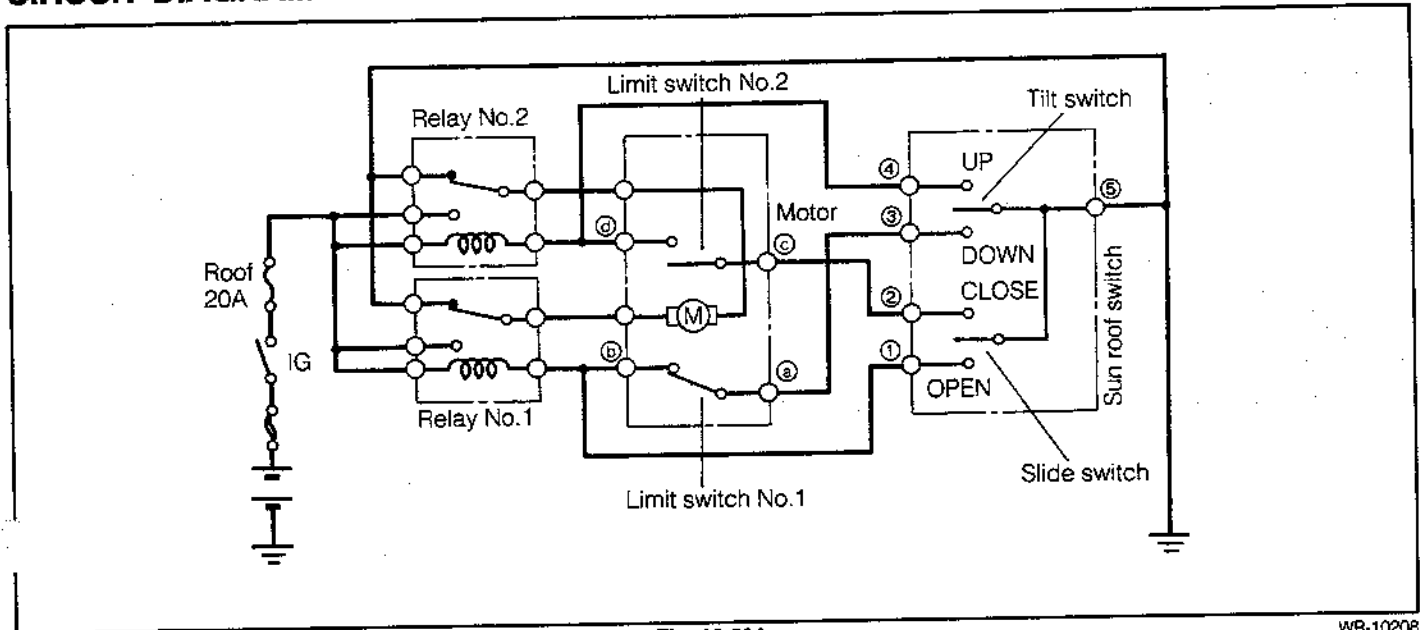


Fig. 10-204

WR-10208

## SUN ROOF SWITCH

The sun roof switch is located at the front end of the roof.

### NOTE:

For the removal/installation procedure for the sun roof switch, see page 9-61.

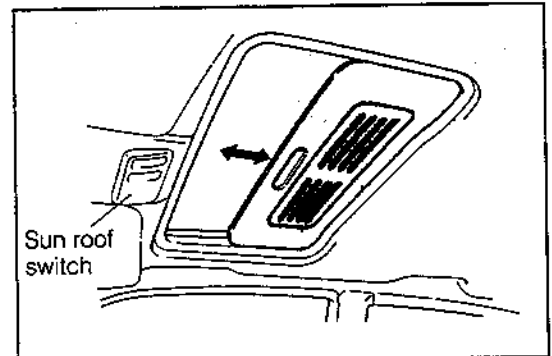


Fig. 10-205

WR-10209

## INSPECTION

When the tilt switch and slide switch are operated, ensure that continuity exists between the respective terminals as indicated in the continuity table.

Terminal		①	②	③	④	⑤
Slide switch	Operation					
	OPEN	○				○
	OFF					
Tilt switch	Operation					
	CLOSE		○			○
	UP				○	○
Tilt switch	Operation					
	DOWN			○		○

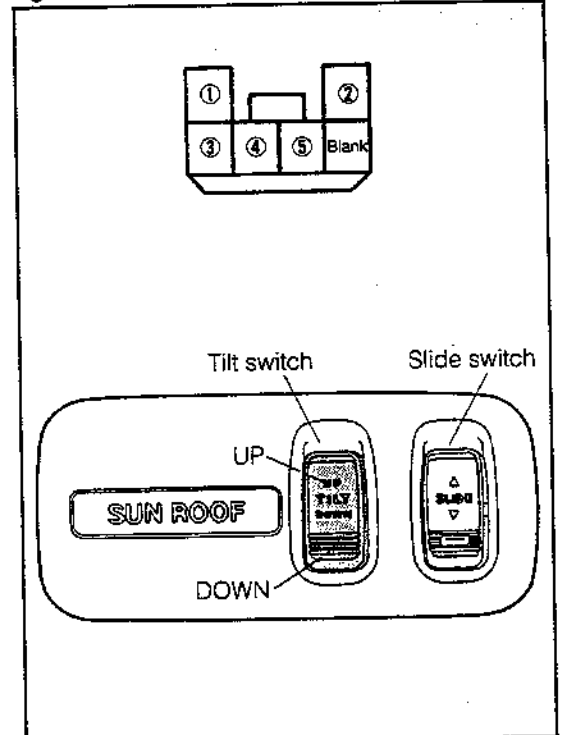


Fig. 10-206

WR-10210

## BODY ELECTRICAL SYSTEM

### SUN ROOF MOTOR

The sun roof motor is located at the back side of the sun roof switch.

#### NOTE:

For the removal/installation procedure for the sun roof motor, see page 9-62.

#### Motor Operation Check

1. Connect the terminal ① to the positive  $\oplus$  terminal of the battery; the terminal ② to the negative  $\ominus$  terminal of the battery. Ensure that the drive gear rotates to the right.
2. Connect the terminal ① to the negative  $\ominus$  terminal of the battery; the terminal ② to the positive  $\oplus$  terminal of the battery. Ensure that the drive gear rotates to the left.

#### Limit Switch Check

Remove the limit switch from the motor.

1. Limit switch No.1  
Ensure that no continuity exists between (a) and (b) when the switch is turned ON. Ensure that continuity exists between (a) and (b) when the switch is turned OFF.
2. Limit switch No.2  
Ensure that continuity exists between (c) and (d) when the switch is turned ON. Ensure that no continuity exists between (c) and (d) when the switch is turned OFF.

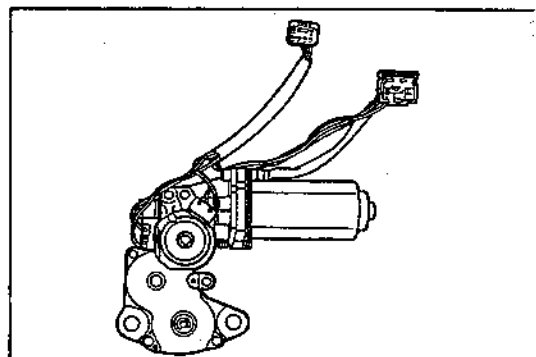


Fig. 10-207

WR-10211

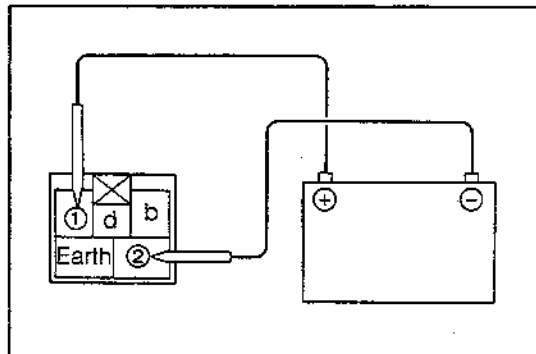


Fig. 10-208

WR-10212

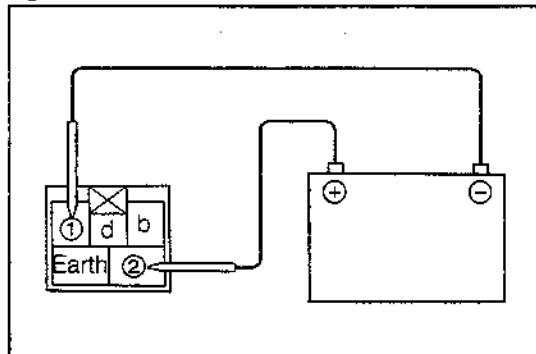


Fig. 10-209

WR-10213

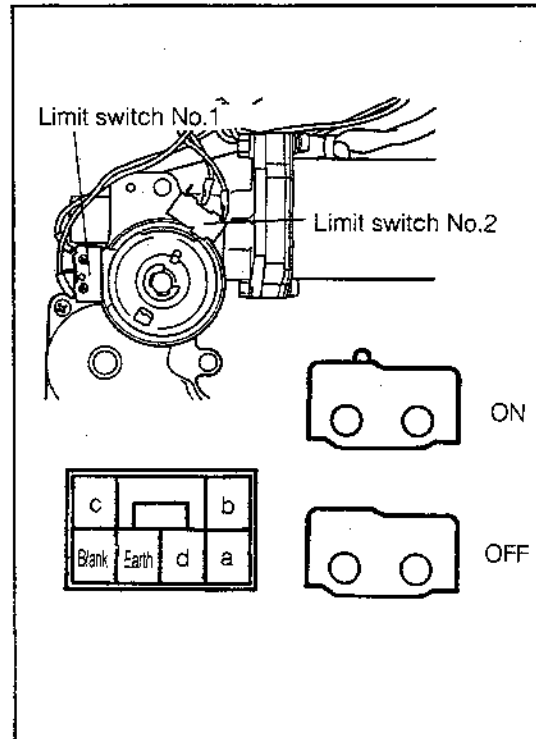


Fig. 10-210

WR-10214

## HEATER HEATER UNIT RELATED PARTS

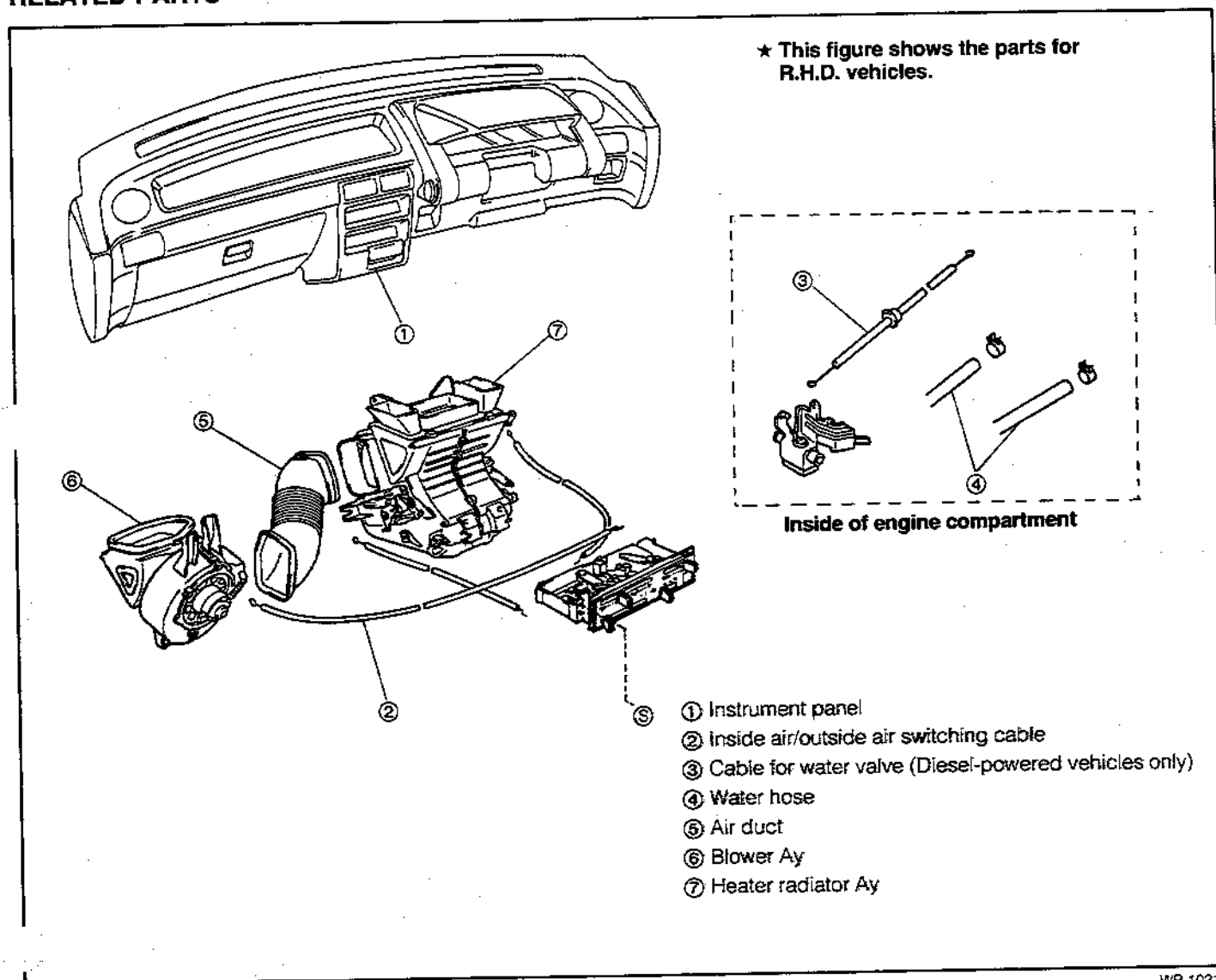


Fig. 10-211

WR-10215

### OPERATION PRIOR TO REMOVAL

1. Disconnect the negative  $\ominus$  terminal of the battery.
2. Drain the cooling water from the radiator. (As for the diesel-powered vehicles, perform this operation with the temperature regulating lever of the heater control set to the **WARM** side.)

WR-10216

### REMOVAL

1. Remove the instrument panel.  
See page 9-78.

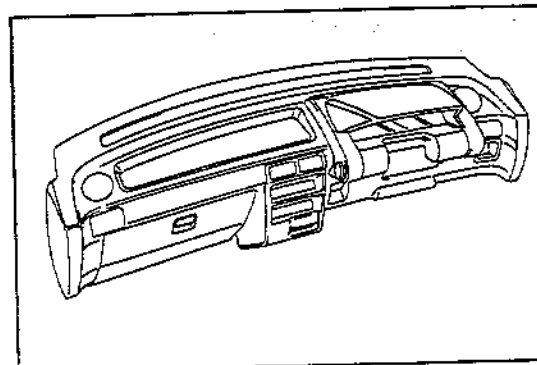


Fig. 10-212

WR-10217

## BODY ELECTRICAL SYSTEM

2. Disconnect the inside air/outside air switching cable from the blower assembly.
3. Disconnect the cable for the water valve in the engine compartment. (Diesel-powered vehicles only)
4. Disconnect the two water hoses from the heater assembly.
5. Remove the air duct.
6. Remove the blower assembly by removing the two nuts, bolt and connector.

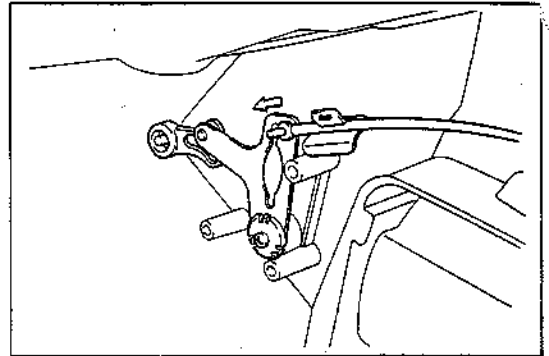


Fig. 10-213

WR-10218

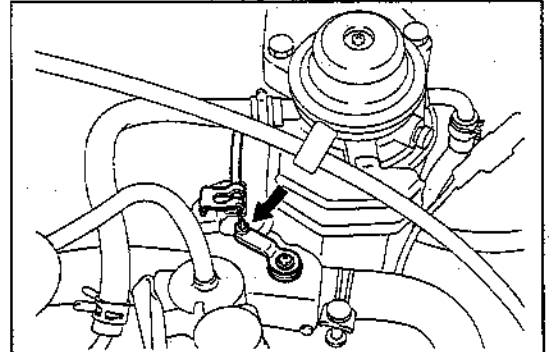


Fig. 10-214

WR-10219

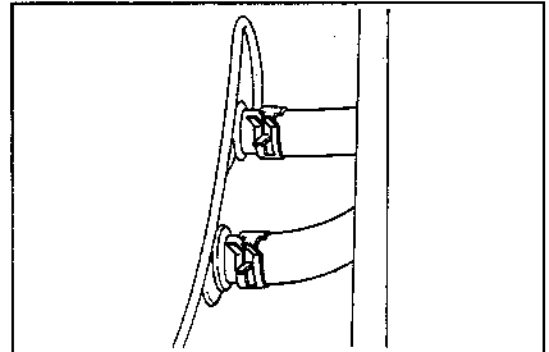


Fig. 10-215

WR-10220

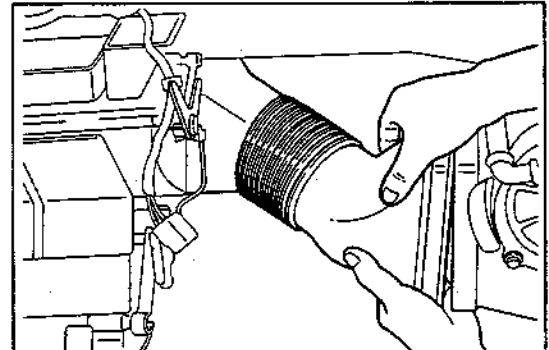


Fig. 10-216

WR-10221

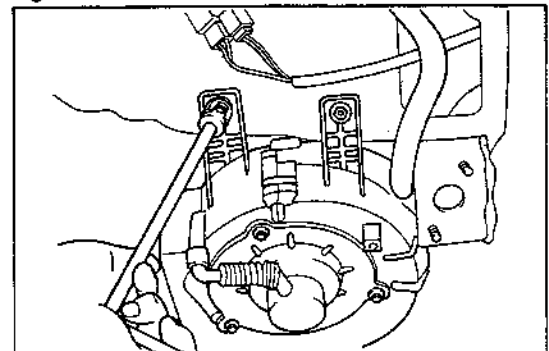


Fig. 10-217

WR-10222



Remove the heater radiator assembly by removing the two nuts and two bolts.

## INSPECTION

### 1. Blower Register

Ensure that the resistance between the respective terminals conforms to the specifications below.

Specified Values:

- Between Terminals (L) and (M<sub>1</sub>): 1.37Ω
- Between Terminals (L) and (M<sub>2</sub>): 2.10Ω
- Between Terminals (H) and (M<sub>2</sub>): 0Ω

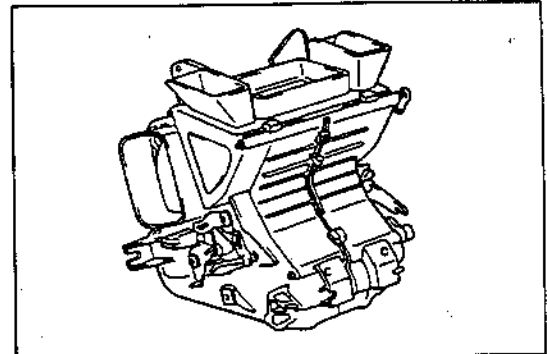


Fig. 10-218

WR-10223

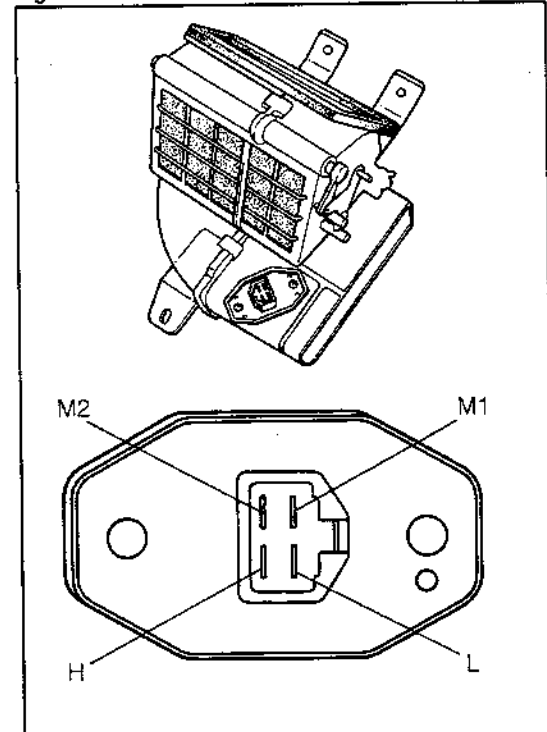


Fig. 10-219

WR-10224

### 2. Blower Motor

Connect the connector positive ⊕ terminal of the blower motor to the positive ⊕ terminal of the battery; the negative ⊖ terminal of the blower motor to the negative ⊖ terminal of the battery. Ensure that the motor rotates.

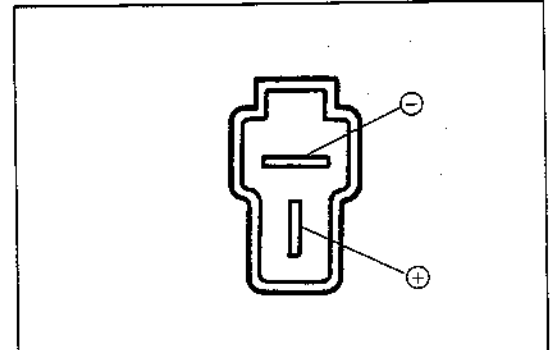


Fig. 10-220

WR-10225

## BODY ELECTRICAL SYSTEM

### 3. Blower Switch

When the blower switch is set to each stage, ensure that continuity exists between the respective terminals as indicated in the continuity table.

○—○ Continuity exists.

Switch \ Terminal	①	②	③	④	⑤	⑥	⑦	⑧
OFF								
I		○—○	○—○	○—○				
II		○—○	○—○	○—○	○—○			
III	○—○	○—○	○—○	○—○				
Always		○—○		○—○	○—○		○—○	

○—(M)—○ Bulb in installed state

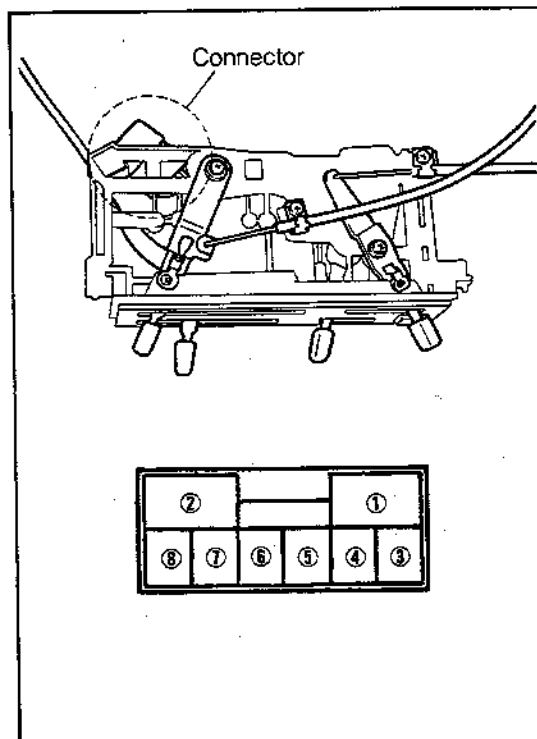


Fig. 10-221

WR-10226

### INSTALLATION

1. Install the radiator heater assembly to the dash panel.
2. Install the blower register and blower motor connector to the blower assembly.
3. Install the blower assembly by tightening the two nuts and one bolt.
4. Install the air duct. Connect the water hose at the engine compartment side to the heater assembly.  
**NOTE:**  
Connect the hose securely and clamp it.
5. Install the cable for the water valve, as follows:  
(Diesel-powered vehicle only)  
Set the water valve in the engine compartment to the close mode; the mode switching lever of the heater unit to the COOL side. Then, insert and clamp the cable.

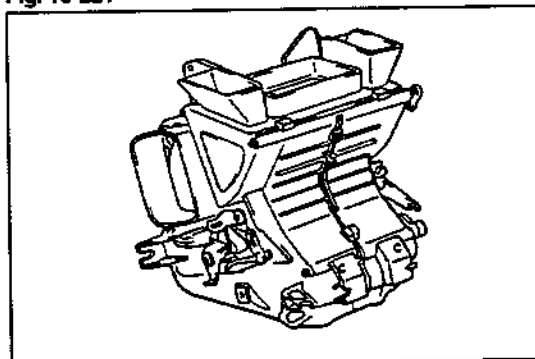


Fig. 10-222

WR-10227

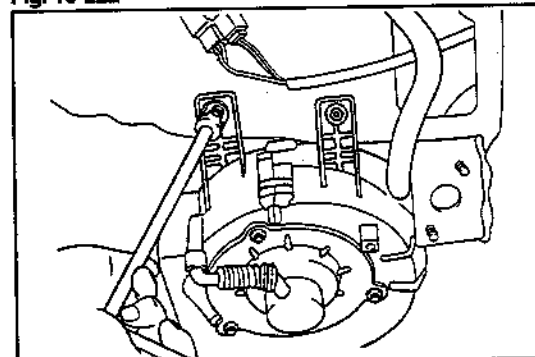


Fig. 10-223

WR-10228

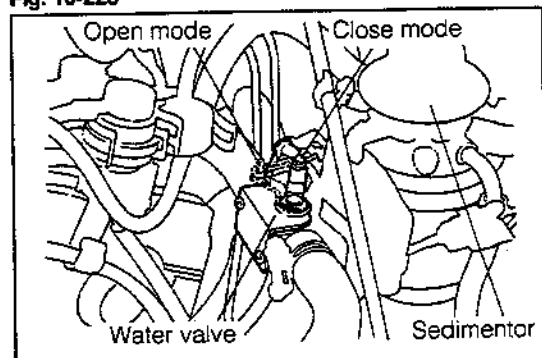



Fig. 10-224

WR-10229

Install the inside air/outside air switching cable to the blower assembly, as follows:

- (1) Set the inside air/outside air switching lever of the heater control to the  (RECIRC) side; the inside air/outside air switching lever of the blower assembly to the RECIRC side.
- (2) Insert and clamp the cable securely.

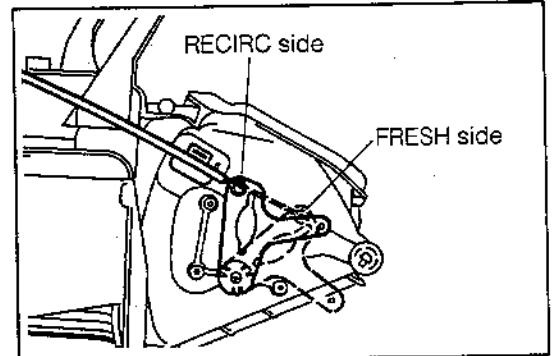


Fig. 10-225

WR-10230

## **Operation After Installation**

1. Fill the cooling water. (For the diesel-powered vehicles, perform this operation with the temperature regulating lever of the heater control set to the WARM side.)
2. Install the negative terminal  $\ominus$  of the battery.
3. As for the vehicle equipped with a clock, set the time.

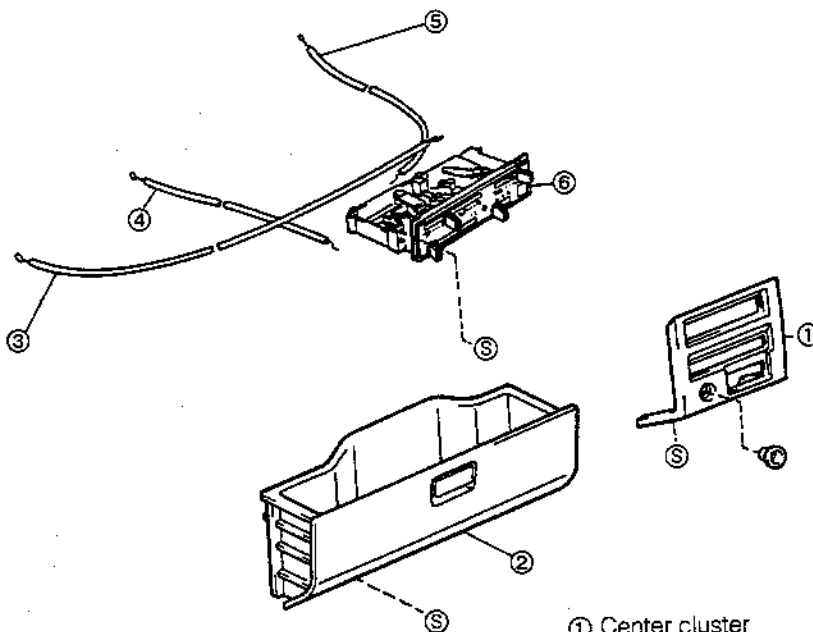
## **Inspection After Installation**

Ensure that the air amount and air flowing direction vary correctly in accordance with the position of the heater control lever.

WR-10231

## **HEATER CONTROL ASSEMBLY RELATED PARTS**

\* This figure shows the parts for R.H.D. vehicles.



- ① Center cluster
- ② Glove compartment door S/A
- ③ Inside air/outside air switching cable
- ④ Temperature regulating cable
- ⑤ Mode switching cable
- ⑥ Heater control indicator

Fig. 10-226

WR-10232

## BODY ELECTRICAL SYSTEM

### REMOVAL

1. Remove the four tapping screws and take out the center cluster.
2. Remove the glove compartment door subassembly by removing the two screws at the lower side.
3. Disconnect the inside air/outside air switching cable from the blower assembly.
4. Disconnect the temperature regulating cable and mode switching cable from the heater assembly.
5. Remove the heater control indicator, as follows:
  - (1) Remove the three screws. Remove the heater control indicator toward the back side of the instrument panel.
  - (2) Take out the heater control indicator from the glove compartment door section.

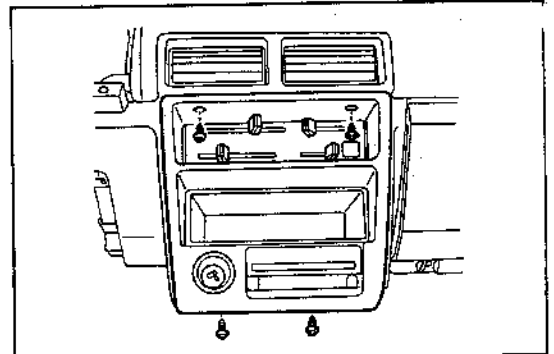


Fig. 10-227

WR-10233

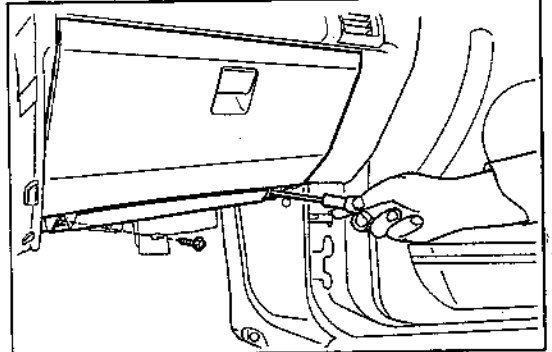


Fig. 10-228

WR-10234

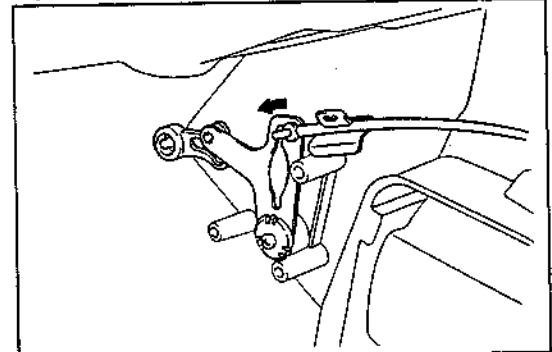


Fig. 10-229

WR-10235

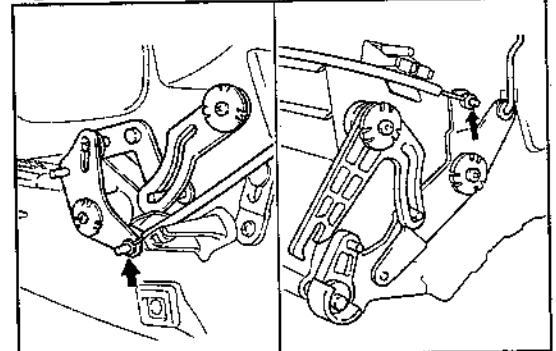


Fig. 10-230

WR-10236

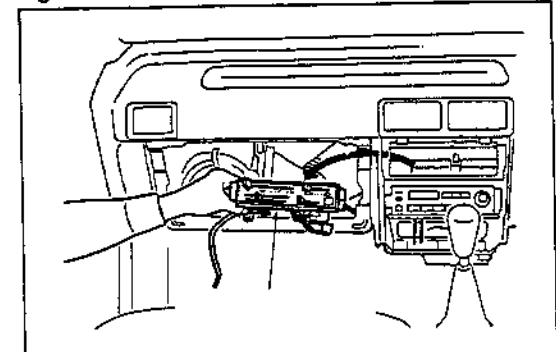


Fig. 10-231

WR-10237


## ISPECTION

### Blower switch

With the blower switch set to each stage, ensure that continuity exists between the respective terminals as indicated in the continuity table.

○—○ Continuity exists.

Switch \ Terminal	①	②	③	④	⑤	⑥	⑦	⑧
OFF								
I		○—○						
II		○—○	○—○	○—○	○—○			
III	○—○	○—○	○—○	○—○				
Always		○—○		○—○	○—○	○—○	○—○	○—○

○——○: Bulb in installed state

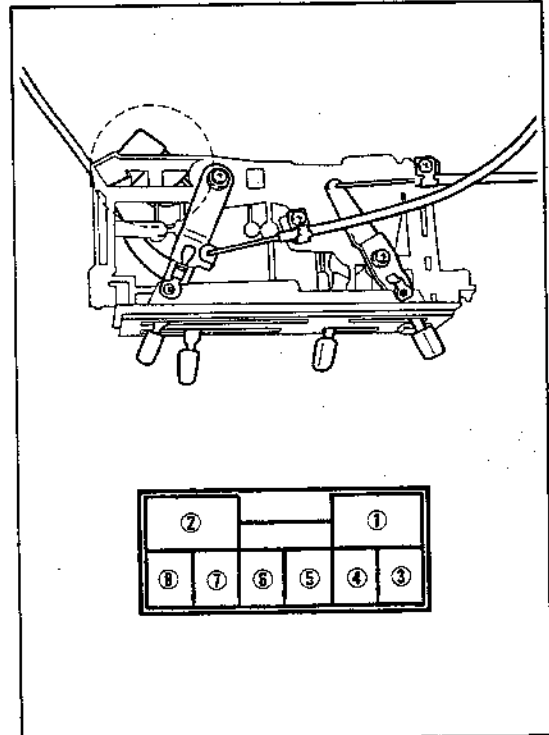


Fig. 10-232

WR-10238

## INSTALLATION

1. Install the heater control indicator by tightening the three screws.

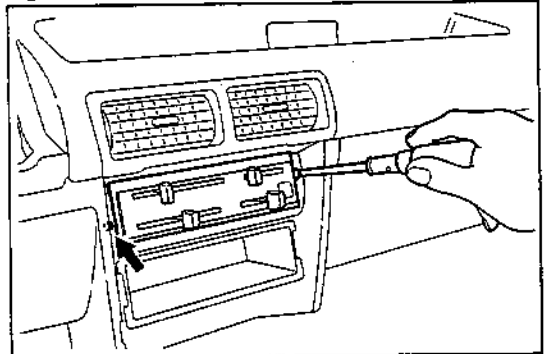



Fig. 10-233

WR-10239

2. Install the mode switching cable, as follows:
  - (1) Set the mode switching lever of the heater control to the  (DEF) side; the mode switching lever of the heater unit to the DEF side.
  - (2) Connect the mode switching cable. Insert it into the clamp securely.

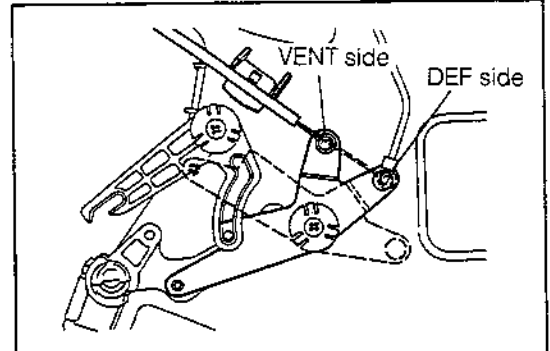



Fig. 10-234

WR-10240

3. Install the temperature regulating cable, as follows:
  - (1) Set the temperature regulating lever of the heater control to the  (COOL) side; the temperature regulating lever of the heater unit to the COOL side.
  - (2) Connect the temperature regulating cable. Insert it into the clamp securely.

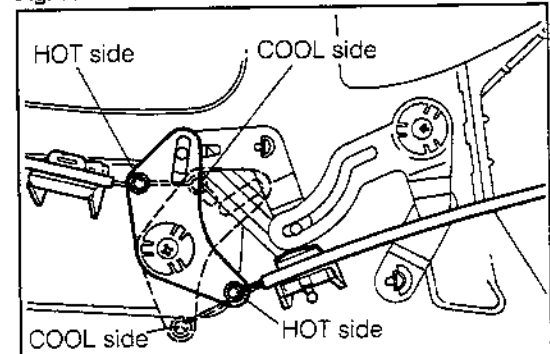



Fig. 10-235

WR-10241

## BODY ELECTRICAL SYSTEM

4. Install the inside air/outside air switching cable, as follows:
  - (1) Set the inside air/outside air switching lever of the heater control to the  (RECIRC) side; the inside air/outside air switching lever of the blower assembly to the RECIRC side.
  - (2) Connect the inside air/outside air switching cable. Insert it to the clamp securely.
5. Install the glove compartment door subassembly by tightening the two screws.
6. Install the center cluster by tightening the four screws.

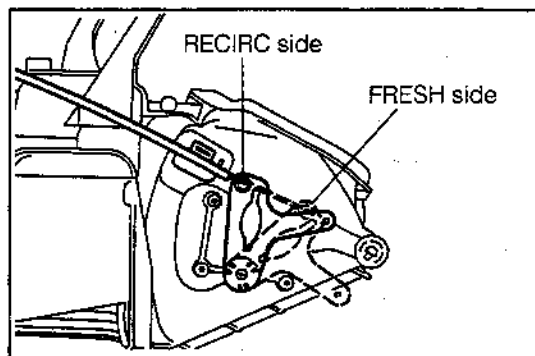


Fig. 10-236

WR-10242

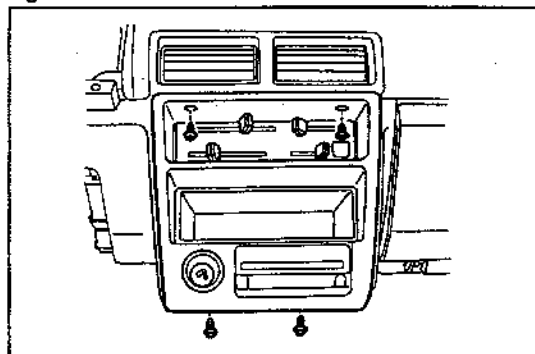


Fig. 10-237

WR-10243

### Inspection After Installation

Ensure that the air amount and air flowing direction vary correctly in accordance with the position of the heater control lever.

WR-10244

## RADIO RELATED PARTS

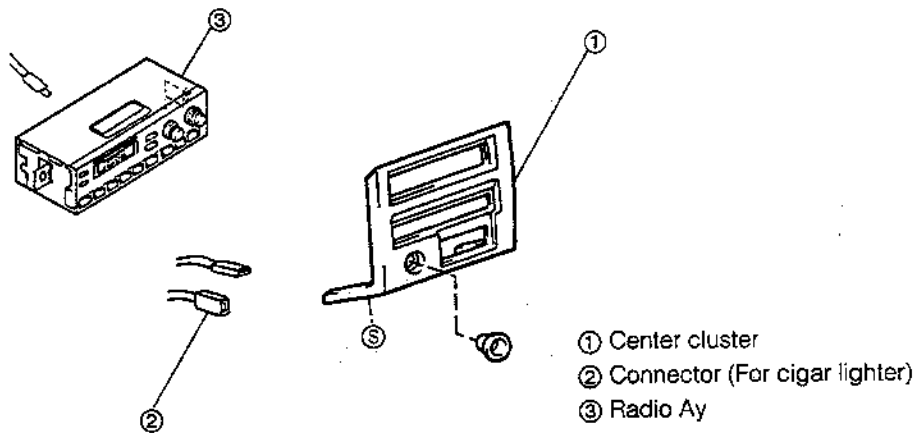


Fig. 10-238

WR-10245

### REMOVAL

1. Remove the center cluster by removing the four screws.
2. Disconnect the connector for the cigar lighter.
3. Remove the radio assembly.

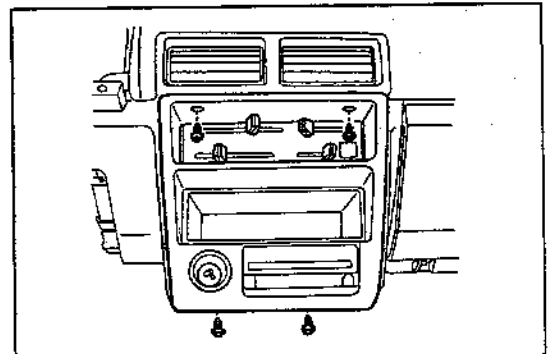


Fig. 10-239

WR-10246

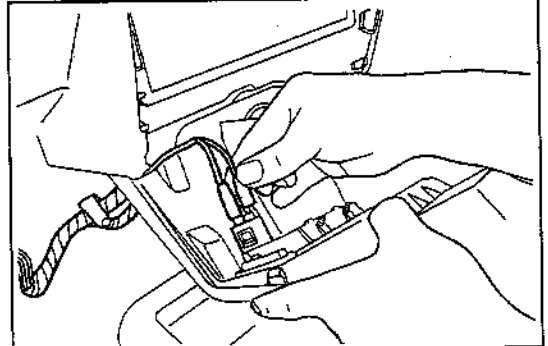


Fig. 10-240

WR-10247

### INSTALLATION

1. Install the radio assembly.
2. Connect the connector for the cigar lighter.
3. Install the center cluster by tightening the four screws.

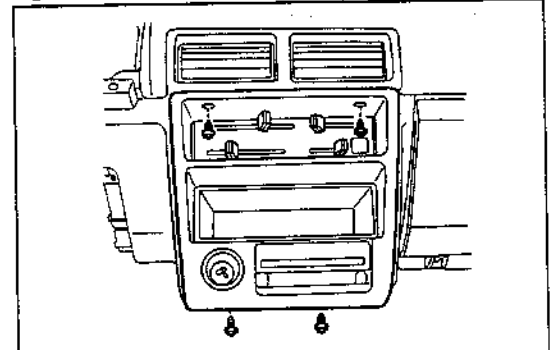


Fig. 10-241

WR-10248

### SPEAKER ASSEMBLY AND ANTENNA ASSEMBLY RELATED PARTS

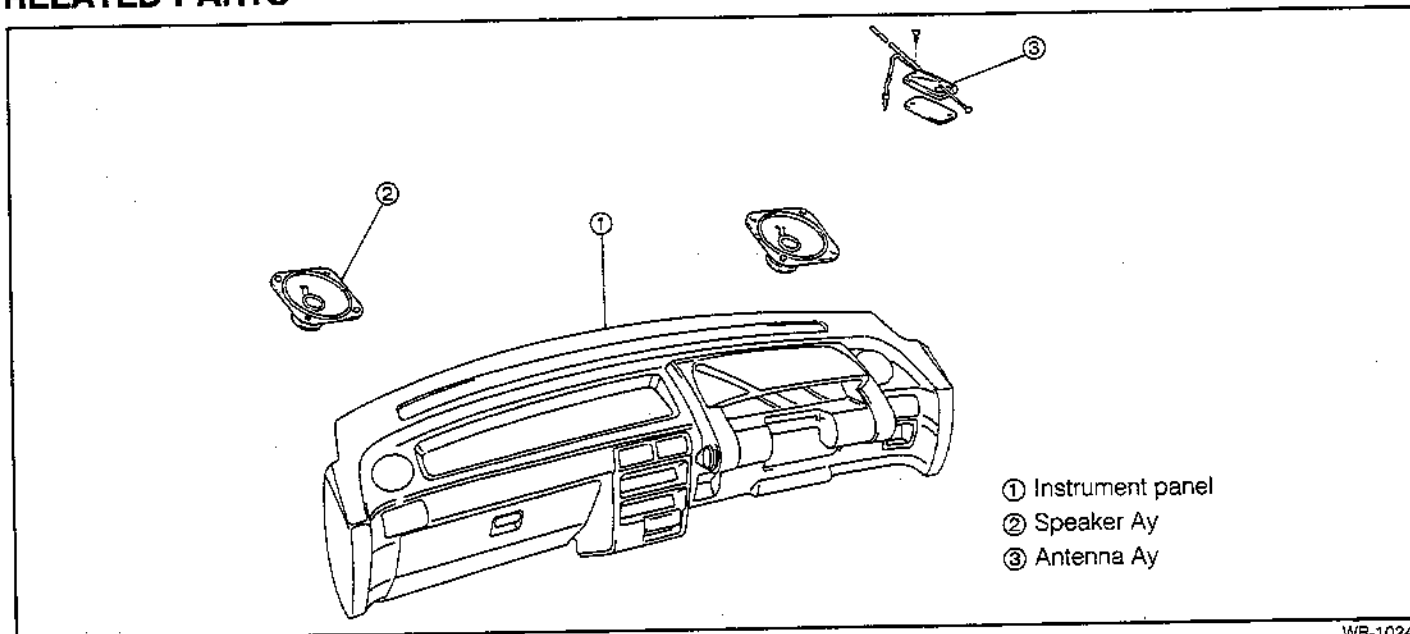


Fig. 10-242

WR-10249

#### SPEAKER REMOVAL

1. Remove the instrument panel.  
See page 9-78.
2. Disconnect the connector of the speaker. Remove the speaker assembly.

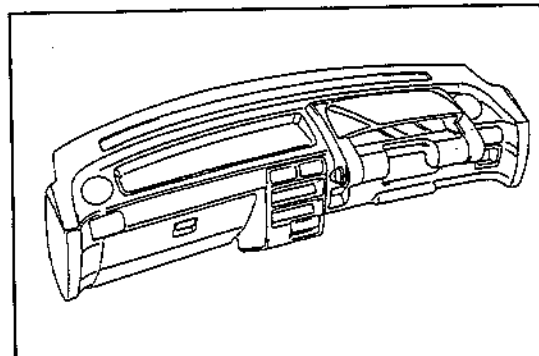


Fig. 10-243

WR-10250

#### ANTENNA REMOVAL

1. Disconnect the feeder cord connector.

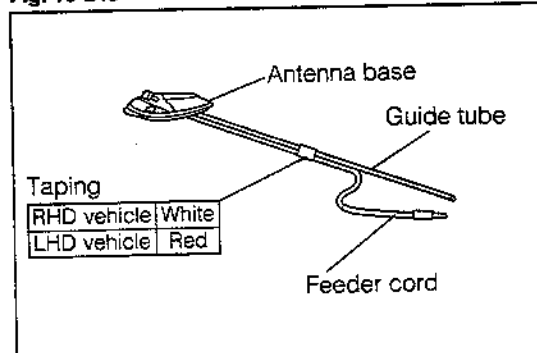


Fig. 10-244

WR-10251

2. Remove the antenna base, using a Torx bit.

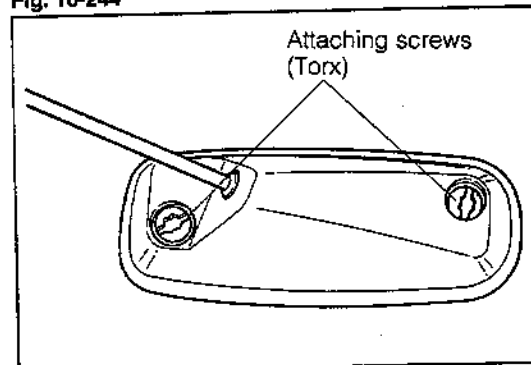


Fig. 10-245

WR-10252



## ANTENNA INSTALLATION

1. Insert the guide tube and feeder cord into the roof opening section.

### NOTE:

Insert the guide tube in such a way that it comes to the vehicle front section.

2. Connect the antenna cord to the radio proper.

### NOTE:

1. As for the intersection of the feeder wire and the vehicle harness section, route wiring in such a way that the feeder wire comes under the harness section. ... ①
2. As for the heater unit section, make sure that the link does not interfere with other parts when it is moved. .... ②

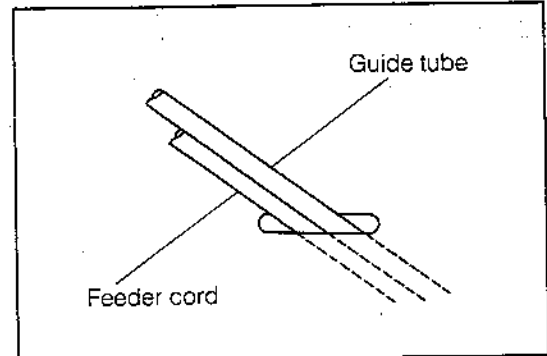


Fig. 10-246

WR-10253

### R.H.D. vehicles

When radio is not equipped, clamp this cord to the heater.

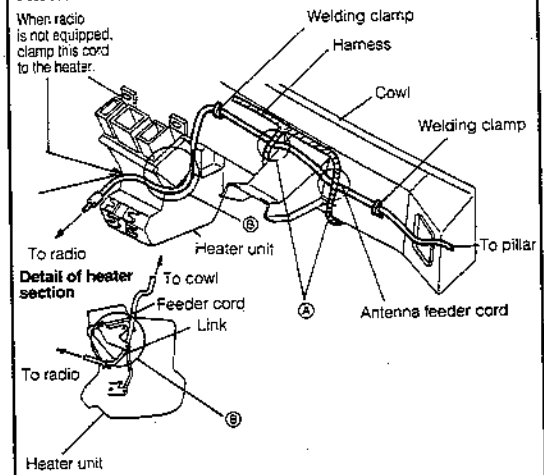


Fig. 10-247

### L.H.D. vehicles

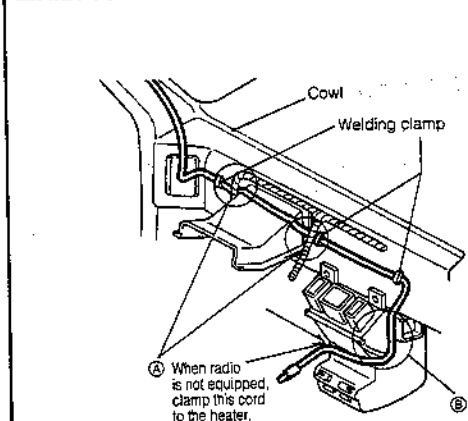


Fig. 10-248

WR-10254

## SPEAKER INSTALLATION

1. Connect the connector for the speaker. Install the speaker to the instrument panel.
2. Install the instrument panel.  
See page 9-82.

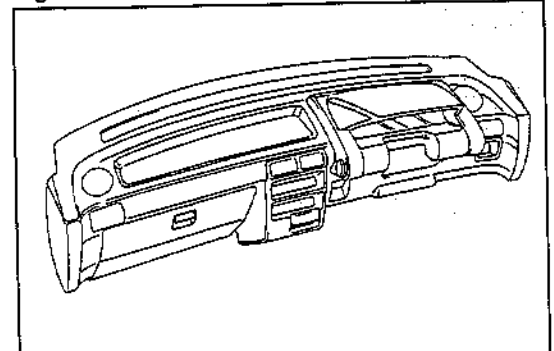


Fig. 10-249

WR-10255

### HEADLAMP CLEANER

(Option for Finland and Swedish Specifications)

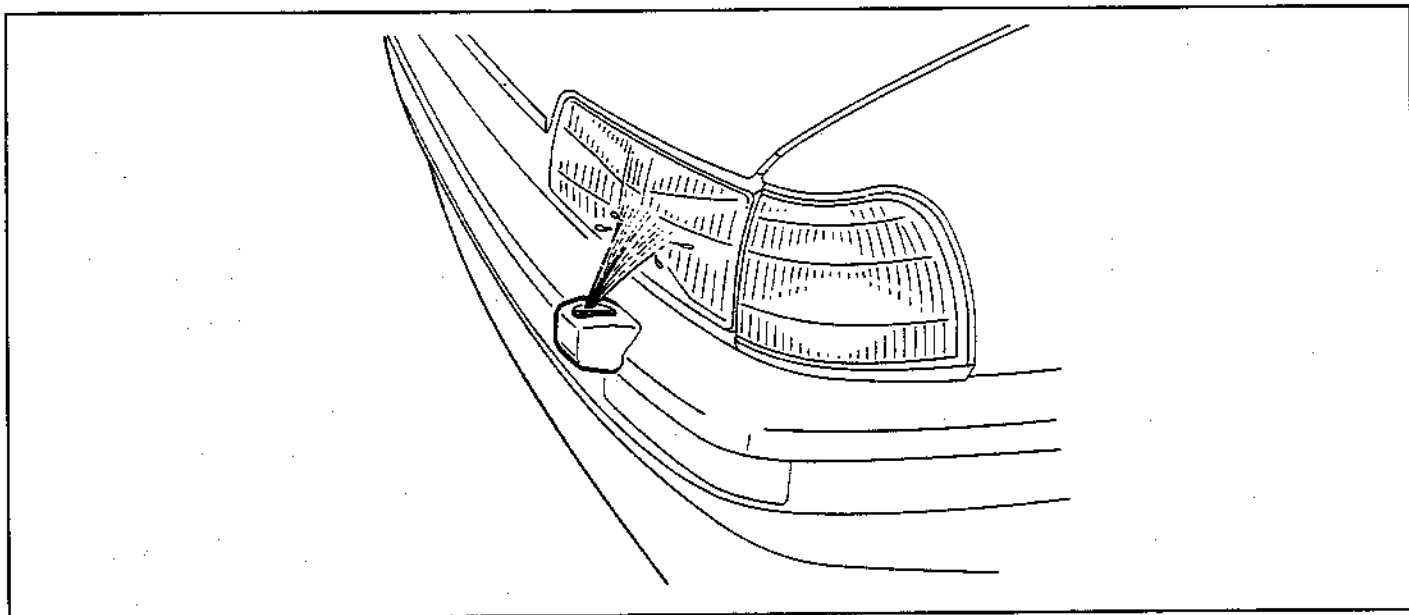


Fig. 10-250

WR-10256

#### OPERATION CHECK

##### 1. Vehicles with Day-Light Feature

While the engine is running, carry out the following check. Operate the washer switch one time. Within about 0.8 second, operate the washer switch again. Ensure that the cleaner motor operates for about 0.5 second, regardless of the position of the lighting switch.

##### 2. Vehicles without Day-Light Feature

While the ignition switch is turned ON, carry out the following check: Operate the washer switch one time. Within about 0.8 second, operate the washer switch again. Ensure that the cleaner motor operates for about 0.5 second.

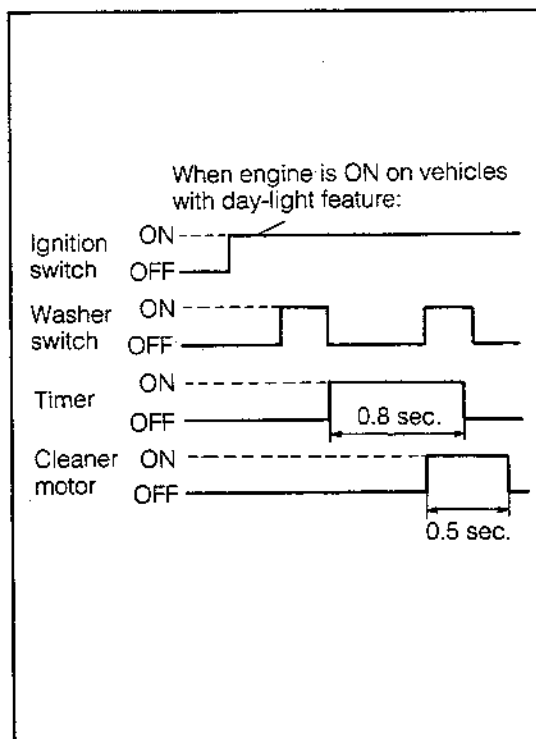


Fig. 10-251

WR-10257

#### NOZZLE

##### Removal

1. Remove the front bumper. (See page 9-9.)
2. Disconnect the water hose joint section located at the back side of the bumper.
3. Remove the nozzle assembly by slackening the two nuts.

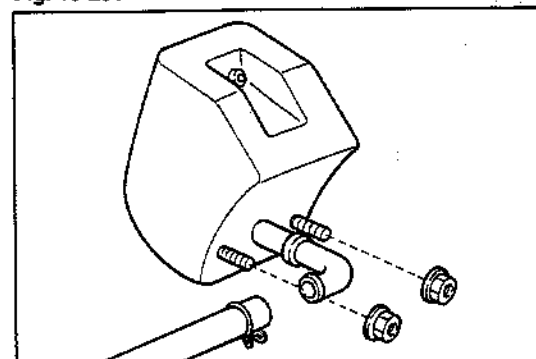


Fig. 10-252

WR-10258

## Installation

1. Insert the nozzle into the bumper cover from the joint side, while rotating the nozzle 90 degrees.
2. Install the nozzle proper with the two nuts. Connect the water hose.

### NOTE:

Clamp the water hose securely.

3. Install the front bumper. (See page 9–10.)

## ADJUSTING PROCEDURE FOR NOZZLE INJECTION ANGLE

### Operation Prior to Adjustment

1. Perform the headlamp aiming operation. (See page 10–13.)

### Adjustment

1. Set the nozzle so that the center of squirt comes to the bulb installation position of the headlamp. (Bulb center: point a)
2. Ensure that the variation in the squirting angle is within the allowable range.

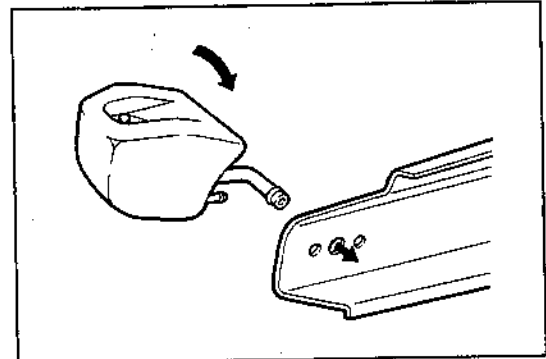


Fig. 10-253

WR-10259

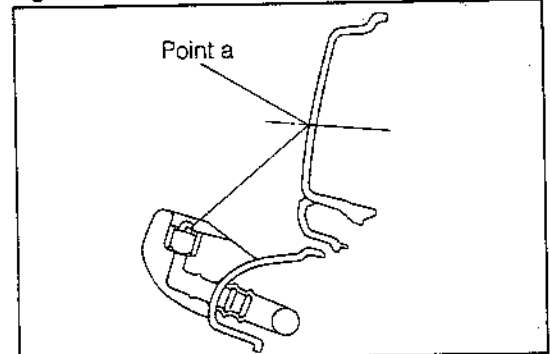


Fig. 10-254

WR-10260

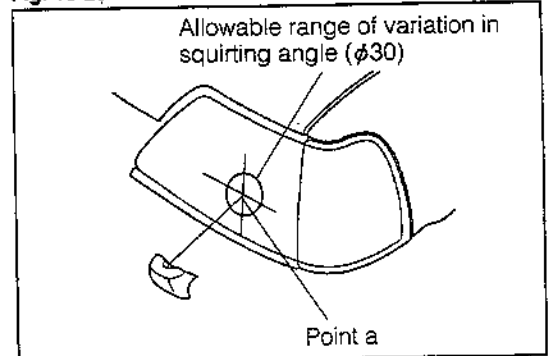


Fig. 10-255

WR-10261

## BODY ELECTRICAL SYSTEM

### HEADLAMP WASHER TANK

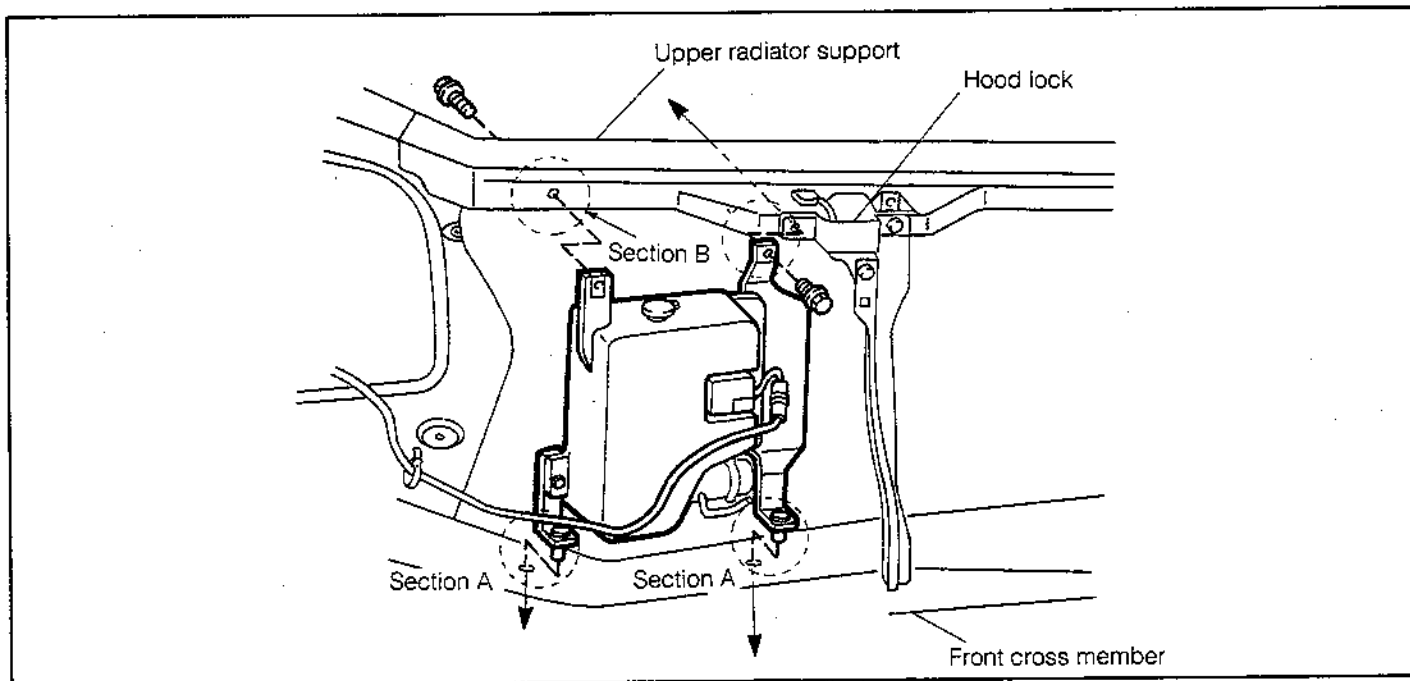


Fig. 10-256

WR-10262

#### Removal

1. Remove the front grille and front bumper. See page 9-78.
2. Disconnect the water hose from the washer motor. Disconnect the harness clamp.
3. Remove the washer tank assembly by removing the two bolts.

#### Installation

1. Insert the washer tank into the front cross member (at two points).
2. Working from the engine compartment, tighten the bolt at the vehicle outside. Working from the front of the vehicle, tighten the bolt at the vehicle inside together with the hood lock.

3. Connect the water hose to the washer motor. Connect the harness connector.

#### NOTE:

Tighten the clamp securely.

4. Install the front bumper and front grille. See page 9-10.

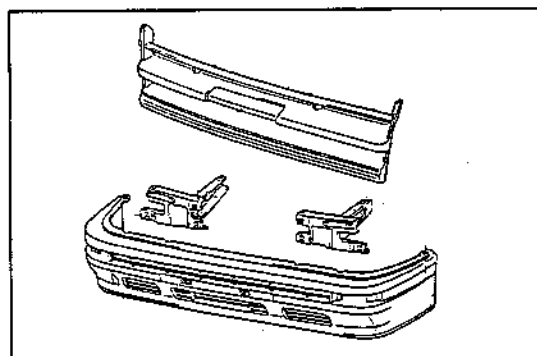


Fig. 10-257

WR-10263

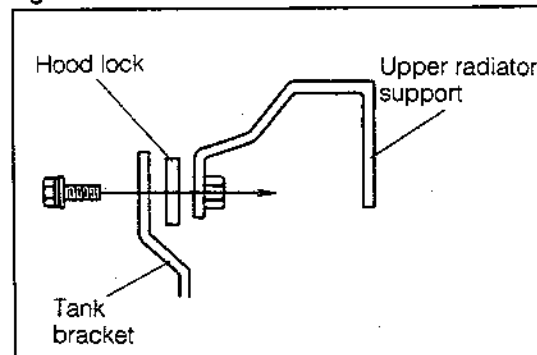


Fig. 10-258

WR-10264

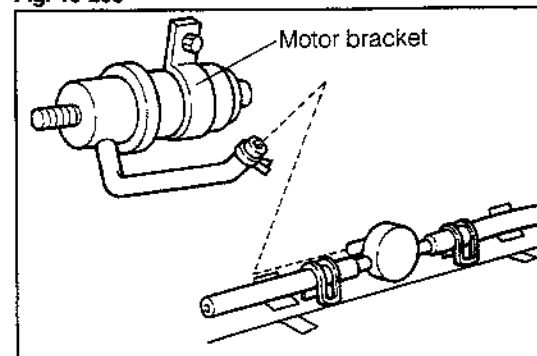


Fig. 10-259

WR-10265

# IM-DIP LAMP CIRCUIT DIAGRAM

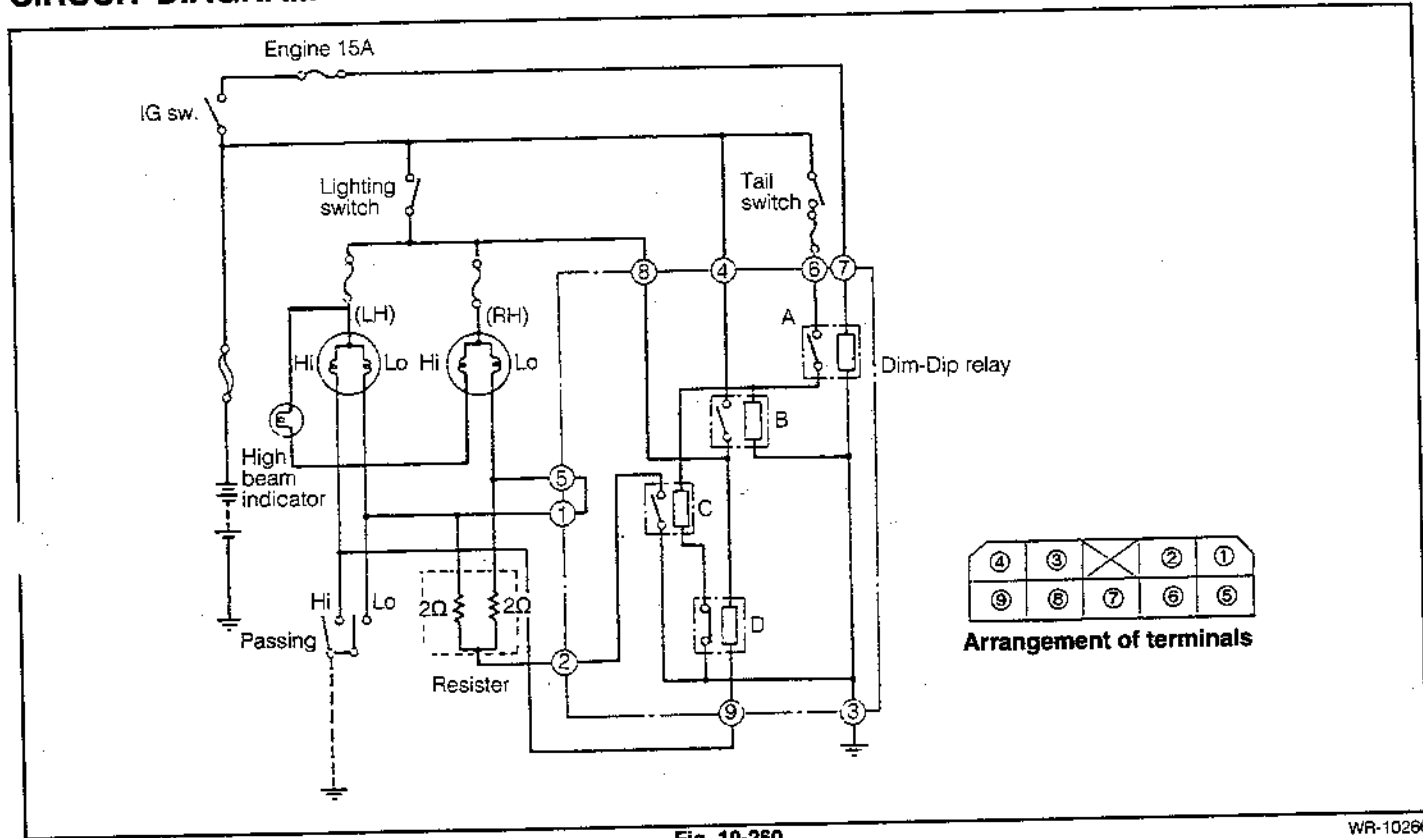


Fig. 10-260

WR-10266

## OPERATION CHECK

Under the conditions given below, ensure that the luminous intensity of the dim-dip lamp is reduced 10% compared with the normal operation.

Switch condition				Headlamp condition	Remarks
Ignition switch	Tail switch	Lighting switch L	Lighting switch H		
OFF	OFF	OFF	OFF	OFF	
	ON	OFF	OFF	OFF	Tail lamp only goes on.
	ON	ON	OFF	Lo	
	ON	OFF	ON	Hi	
	OFF	OFF	ON	Hi	Passing
ON	OFF	OFF	OFF	OFF	
	ON	OFF	OFF	Dim-dip	
	ON	ON	OFF	Lo	
	ON	OFF	ON	Hi	
	OFF	OFF	ON	Hi	Passing

WR-10267

BODY ELECTRICAL SYSTEM

DAY-LIGHT RELAY  
CIRCUIT DIAGRAM

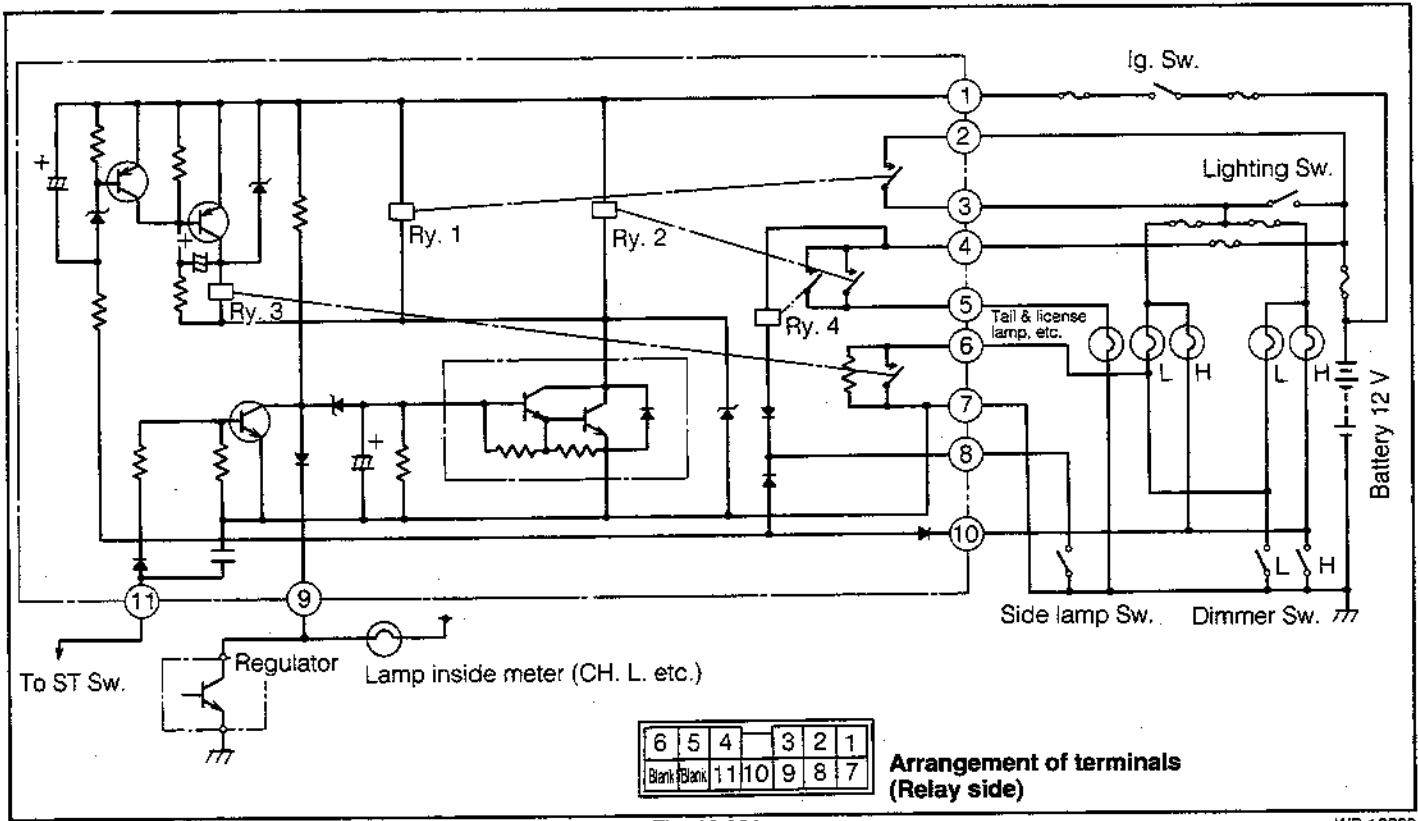


Fig. 10-261

WR-10268

OPERATION CHECK

While the engine is rotating, ensure that the day-light goes on under the conditions given below.

○ ... Goes on  
× ... Goes off.

Engine	Ignition switch	Side lamp switch	Lighting switch	Dimmer switch	Tail & license lamp	Headlamp	
						Lo	Hi
STOP	ON	Normal glowing mode					
	OFF						
RUN	ON	OFF	OFF	OFF	○	○	×
	ON	ON	OFF	OFF	○	×	×
	ON	ON	ON	Lo	○	○	×
	ON	ON	ON	Hi	○	×	○
	ON	ON	Passing	Passing	○	×	○

WR-10269

# DAIHATSU

# CHARADE

## Chassis



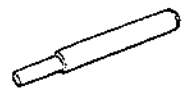
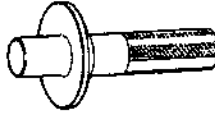


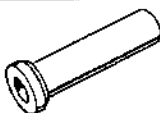
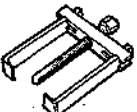

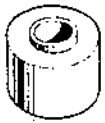
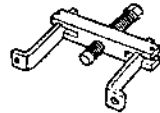
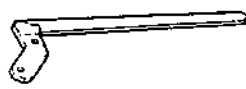

## SECTION 11 APPENDIX

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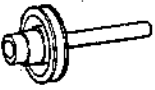
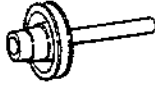
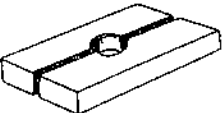
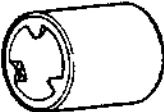

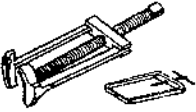

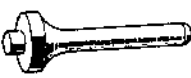
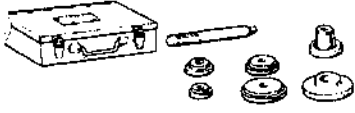
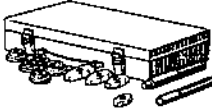

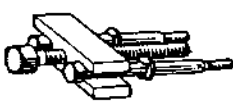
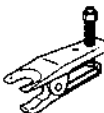
WR-11001

# APPENDIX

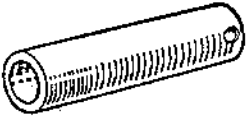
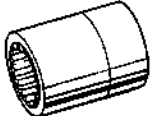


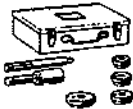


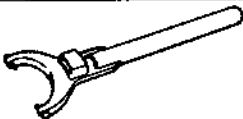



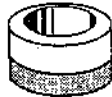

## SST (Special Service Tools)

Shape	Part No. & Part Name	Section	Clutch	Manual Transmission	Automatic Transmission	Front axle & suspension	Rear axle & suspension	Steering	Brakes	Body
	09201-60011-000 Valve guide bush remover & replacer			○						
	09301-87701-000 Clutch guide tool					○				
	09301-87202-000 Clutch guide tool		○	○						
	<del>09302-87701-000</del> 09302-87701-000 Clutch diaphragm spring height No.4 gauge		○							
	09306-87302-000 Counter gear front bearing puller			○						
	09308-00010-000 Oil seal puller			○						
	09309-87201-000 Transmission bearing replacer			○				○		
	09334-87201-000 Transmission bearing puller					○				
	09506-30011-000 Differential rear bearing cone replacer					○				
	09506-87302-000 Differential drive pinion bearing cone replacer					○				
	09510-87301-000 Front hub & drum puller					○	○		○	
	09511-87202-000 Brake drum stopper					○				
	09515-87201-000 Rear axle shaft bearing replacer			○						


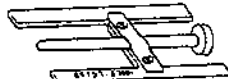
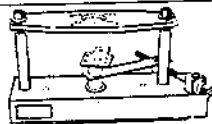




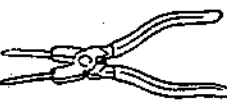

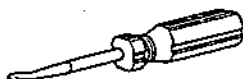





Shape	Part No. & Part Name	Section	Clutch	Manual Transmission	Automatic Transmission	Front axle & suspension	Rear axle & suspension	Steering	Brakes	Body
	09517-87701-000 Oil seal replacer (Transmission case side)			○						
	09517-87702-000 Oil seal replacer (Clutch housing side)			○						
	09527-87301-000 Rear axle shaft bearing remover					○				
	09547-87301-000 Differential drive pinion bearing cone remover					○				
	09547-87501-000 Differential drive pinion bearing cone remover					○				
	09602-87301-000 Counter gear bearing puller			○						
	09550-10012-000 Replacer set "B"					○				
	09606-87201-000 Front hub bearing remover & replacer			○						
	09608-12010-000 Front hub & drive pinion bearing replacer set					○	○			
	09608-30011-000 Front hub & drive pinion bearing tool set				○					
	09608-87501-000 Axle hub & drive pinion bearing tool set					○				
	09609-20011-000 Steering wheel puller							○		
	09611-87701-000 Tie rod end puller			○		○		○		

# APPENDIX

Shape	Part No. & Part Name	Section	Clutch	Manual Transmission	Automatic Transmission	Front axle & suspension	Rear axle & suspension	Steering	Brakes	Body
	09612-10061-000 Steering pinion bearing replacer							<input type="radio"/>		
	09616-87701-000 Steering pinion bearing adjusting socket wrench							<input type="radio"/>		
	09617-22030-000 Worm bearing adjusting screw lock nut wrench							<input type="radio"/>		
	09618-87301-000 Transmission bearing replacer			<input type="radio"/>		<input type="radio"/>				
	09620-30010-000 Steering gear box replacer set					<input type="radio"/>				
	09628-10020-000 Ball joint lock nut wrench					<input type="radio"/>				
	09636-20010-000 Differential replacer					<input type="radio"/>				
	09648-87201-000 Drive shaft replacer		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
	09703-30010-000 Brake shoe tension spring								<input type="radio"/>	
	09718-87701-000 Front disc brake dust cover replacer					<input type="radio"/>				
	09720-00010-000 Shock absorber overhaul tool set					<input type="radio"/>				
	09722-87702-000 Camber caster kingpin gauge attachment					<input type="radio"/>				
	09727-87701-000 Front coil spring compressor					<input type="radio"/>	<input type="radio"/>			

WR-11004

Shape	Part No. & Part Name	Section							Steering	Brakes	Body
		Clutch	Manual Transmission	Automatic Transmission	Front axle & suspension	Rear axle & suspension					
	09737-22011-000 Brake booster push rod gauge									○	
	09737-87001-000 Brake booster push rod gauge									○	
	09753-87701-000 Brake booster overhaul tool S/A									○	
	09812-30010-000 Door hinge set bolt wrench set										○
	09842-87702-000 Transmission control computer check subharness			○							
	09843-87702-000 ATX computer check lamp			○							
	09905-00012-000 Snap ring expander		○								
	09905-87701-000 Snap ring plier									○	
	09912-87501-000 Slide hammer puller			○							
	09921-00010-000 Spring tension tool		○								
	09950-20014-000 Universal puller				○				○		
	09992-00092-000 Oil pressure gauge for AT			○							
	09350-87702-000 Automatic transmission tool set			○							

# APPENDIX

## SERVICE SPECIFICATIONS

### CLUTCH

Unit: mm (inch)

Item			Specified value	Allowable limit	Remarks
Clutch pedal	Installation height	R.H.D.	189.5 - 194.5 (7.46 - 7.66)	—	
		L.H.D.	181.5 - 186.5 (7.15 - 7.34)	—	
	Free travel		15 - 30 (0.59 - 1.18)	—	
Clutch disc	Thickness		7.3 - 7.9 (0.29 - 0.31)	—	
	Runout		—	1.34 (0.053)	
	Lining wear		—	0.3 (0.012)	Rivet depth
Clutch cover	Deviation in height		—	0.7 (0.028)	

WR-11006

## MANUAL TRANSMISSION AND DIFFERENTIAL

Unit: mm (inch)

Item		Specified value	Allowable limit	Remarks
2nd gear bush	Inner diameter	28.870 - 28.885 (1.1366 - 1.1372)	28.840 (1.1354)	
	Outer diameter	36.920 - 36.960 (1.4535 - 1.4551)	36.890 (1.4524)	
	Overall length	32.470 - 32.530 (1.2783 - 1.2807)	32.470 (1.2783)	
4th and 5th gear bush	Inner diameter	25.027 - 25.042 (0.9853 - 0.9859)	25.020 (0.9850)	
	Outer diameter	36.920 - 36.960 (1.4535 - 1.4551)	36.890 (1.4524)	
	Overall length	28.970 - 29.030 (1.1405 - 1.1429)	28.970 (1.1405)	
	Thickness	2.940 - 3.060 (0.1157 - 0.1205)	2.940 (0.1157)	Flange section
End play	1st gear	0.10 - 0.37 (0.0039 - 0.0146)	0.5 (0.0197)	
	2nd gear	0.10 - 0.23 (0.0039 - 0.0091)	0.4 (0.0157)	
	3rd gear	0.10 - 0.37 (0.0039 - 0.0146)	0.5 (0.0197)	
	4th gear	0.10 - 0.23 (0.0039 - 0.0091)	0.4 (0.0157)	
	5th gear	0.10 - 0.23 (0.0039 - 0.0091)	0.4 (0.0157)	
Gear oil clearance		0.040 - 0.105 (0.0016 - 0.0041)	0.160 (0.0063)	
Gear width	1st gear	32.23 - 32.30 (1.2689 - 1.2717)	32.20 (1.2677)	Except for GTti model
		30.23 - 30.30 (1.1902 - 1.1930)	30.20 (1.1890)	GTti model
	2nd gear	32.30 - 32.37 (1.2717 - 1.2744)	32.20 (1.2677)	
	3rd gear	27.23 - 27.30 (1.0720 - 1.0748)	27.20 (1.0709)	
	4th gear	25.80 - 25.87 (1.0157 - 1.0185)	25.70 (1.0118)	
	5th gear	25.80 - 25.87 (1.0157 - 1.0185)	25.70 (1.0118)	

WR-11007

# ANUAL TRANSMISSION AND DIFFERENTIAL (Cont'd)

Unit: mm (inch)

Item		Specified value	Allowable limit	Remarks
Reverse idler gear and shaft	Bush inner diameter	17.000 - 17.027 (0.6693 - 0.6704)	17.050 (0.6713)	
	Shaft outer diameter	16.941 - 16.968 (0.6670 - 0.6680)	16.900 (0.6654)	
	Bush-to-shaft clearance	0.032 - 0.086 (0.0013 - 0.0034)	0.150 (0.0059)	
Input shaft outer diameter		25.002 - 25.017 (0.9843 - 0.9849)	24.990 (0.9839)	Bush installing position
Output shaft outer diameter	Front	29.979 - 30.000 (1.1803 - 1.1811)	29.960 (1.1795)	
	Rear	31.971 - 31.991 (1.2587 - 1.2595)	31.960 (1.2583)	
Synchronizer ring-to-gear clearance		0.85 - 1.45 (0.0335 - 0.0571)	0.5 (0.0197)	
Differential pinion	Gear inner diameter	15.003 - 15.008 (0.5907 - 0.0571)	15.03 (0.5917)	
	Shaft outer diameter	14.950 - 14.968 (0.5886 - 0.5893)	14.97 (0.5894)	
	Gear-to-shaft clearance	0.035 - 0.053 (0.0014 - 0.0021)	0.06 (0.0024)	
Differential side gear-to-pinion backlash		0.02 - 0.20 (0.0008 - 0.0079)	—	
Shift fork	Fork tip end section thickness	7.0 (0.276)	6.3 (0.248)	
	Shift inner lever contact groove width	12.1 - 12.2 (0.476 - 0.480)	12.7 (0.500)	
	Reverse shift arm pin contact groove width	14.957 - 15.000 (0.5889 - 0.5906)	15.100 (0.5945)	
Reverse shift arm	Pin diameter	14.907 - 14.950 (0.5869 - 0.5886)	14.850 (0.5846)	
	Tip end section width	7.884 - 7.920 (0.3104 - 0.3118)	7.800 (0.3071)	

WR-11008

## AUTOMATIC TRANSMISSION

Item		Specified value	Allowable limit	Remarks
Stall revolution speed	rpm	2100 - 2300	—	
Time lag N→D	second	1.0 or less	—	
Time lag N→R	second	1.4 or less	—	
Line pressure [at 2000rpm] kg/cm <sup>2</sup> (psi)		7 - 8 (100 - 114)	—	'L', 'D' and 'R' line pressure of each range

WR-11009

## APPENDIX

### AUTOMATIC TRANSMISSION (Cont'd)

Unit: mm (inch)

Position & Item		Specified value	Allowable limit	Remarks
Oil pump	Side clearance	0.02 - 0.05 (0.0008 - 0.0019)	0.1 (0.0039)	
	Body clearance	0.07 - 0.15 (0.0028 - 0.0059)	0.30 (0.011)	
	Tip clearance	0.11 - 0.14 (0.0043 - 0.0055)	0.30 (0.011)	
Clutch & Brake	2nd brake piston stroke	1.5 - 3.0 (0.059 - 0.118)	—	
	Direct clutch clearance	0.89 - 1.46 (0.035 - 0.057)	—	
	Forward clutch clearance	0.41 - 1.08 (0.016 - 0.043)	—	
	1st & reverse brake clearance	0.58 - 1.92 (0.023 - 0.075)	—	
Gear	Counter gear backlash	0.1 or less (0.0039)	0.1 or less (0.0039)	
Input shaft	End play	0.3 - 0.9 (0.012 - 0.035)	—	
Planetary gear	Side clearance	0.20 - 0.50 (0.0079 - 0.020)	0.7 (0.028)	
Drive plate	Drive plate runout	—	0.2 (0.008)	
Clutch	Clutch disc thickness	2.5 (0.098)	2.3 (0.091)	
	Clutch plate thickness	1.6 (0.063)	—	

WR-11010

### STEERING

Item			Specified value	Allowable limit	Remarks
Front wheel alignment	Camber		0°20' ± 1° $\begin{matrix} +4.0' \\ -2.0' \end{matrix}$	Pos. —	Difference between RH & LH — 1°
	Caster		2°55' ± 1°	Pos. —	Difference between RH & LH — 1°
	Kingpin inclination angle		12°00' ± 30'	—	Difference between RH & LH — 1°
	Turning angle	Inner	39°55' ± 2°	—	Difference between RH & LH — 2°
		Outer	35°00' ± 2°	—	Difference between RH & LH — 2°
	Toe-in	mm (inch)	-1 - +3 (-0.039 - +0.118)	$\begin{matrix} \text{max} \\ + - 2 \text{ mm} \end{matrix}$	
	Sideslip	mm (inch)	-3 - +3 (-0.118 - +0.118)	—	
Rear wheel alignment	Camber		-0°40' ± 35'	—	
	Toe-in	mm (inch)	5 (0.197) $\begin{matrix} \pm 3 \\ \pm 1 \end{matrix}$	—	
	Sideslip	mm (inch)	+1 - +7 (+0.039 - +0.276)	—	
Steering wheel play		mm (inch)	Within 10 (0.39)	—	

WR-11011

## IAKE PEDAL

Item			Specified value	Allowable limit	Remarks
Brake pedal mm (inch)	Free travel	6-inch booster	3 - 7 (0.1 - 0.3)	—	When engine is stopped
		7-inch booster	0.5 - 2 (0.02 - 0.08)	—	
	Height		176 - 181 (6.93 - 7.13)	—	
	Reserve travel		Not less than 102 (4.0)	—	Distance between center of pedal pad upper sur- face and dash panel

WR-11012

## FRONT BRAKE

FRONT BRAKE

Item			Specified value	Allowable limit	Remarks
Wheel cylinder inner diameter or caliper bore mm (inch)	General specifications mounted with Type CB-23, CL-11, 61 engines		48.1 (1.89)	—	
	Except for vehicles above		50.8 (2.0)	—	
Pad thickness mm (inch)			10 (0.394)	1 (0.039)	Effective disc diameter: 179 (7.05)
			9 (0.354)	1 (0.039)	Effective disc diameter: 189 (7.44)
Disc mm (inch)	Thickness	Solid type	11 (0.433)	10 (0.394)	
		Ventilated type	18 (0.709)	17 (0.669)	

WP-110

WR-11013

## REAR BRAKE

Item			Specified value	Allowable limit	Remarks
Wheel cylinder inner diameter mm (inch)			15.87 (0.62)	—	General specifications mounted with Type CB-23, CL-11, 61 engines
			17.46 (0.69)	—	Except for vehicles above
Brake drum inner diameter mm (inch)			180 (7.09)	181 (7.126)	
Brake lining thickness mm (inch)			4.0 (0.16)	1.0 (0.039)	
Disc brake	Wheel cylinder inner diameter mm (inch)		30.16 (1.187)	—	
	Pad thickness mm (inch)		9 (0.35)	1 (0.039)	Effective disc diameter: 202 (7.95)
	Disc	Thickness mm (inch)	10 (0.39)	9 (0.354)	
		Runout mm (inch)	—	0.08 (0.003)	Position 108 mm from center
	Parking brake lever working travel Notch		5 - 9	—	Pulling force: 20 kg

WR-11014

## APPENDIX

### SUSPENSION

Item				Specified value	Allowable limit	Remarks
Free length of front coil spring mm (inch)	Standard and European standard	CB-23	M/T	339 (13.3)	—	Identification color: White
		CB-23	A/T	348 (13.7)	—	Identification color: Brown
		CL-11	M/T			
		CL-61	M/T	358 (14.1)	—	Identification color: Green
	Hard	CB-61	M/T	325 (12.8)	—	Identification color: Pink
		CB-80	M/T	338 (13.3)	—	Identification color: Red
Free length of rear coil spring mm (inch)	Standard			331 (13.0)	—	Identification color: Green
	European standard			331 (13.0)	—	Identification color: Yellow
	Hard			331 (13.0)	—	Identification color: Red

WR-11015




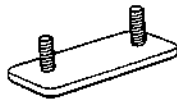





## TIGHTENING TORQUE FOR MAIN COMPONENTS

1. When you want to find out a suitable tightening torque for a bolt, first determine the strength division of the said bolt, using the table below. Then, locate suitable tightening torque in the tightening torque table described later.
2. As for the tightening torque for a nut, find out suitable tightening torque in the same way as with the paragraph 1 above, based on the mating bolt.
3. Tightening torque posted in the workshop manual is a standard value for steel fasteners. It is, therefore, necessary to modify these tightening torque when you tighten fasteners made of materials other than steel. This rule also applies to such instances where bolts are undergoing heat or other stress, such as vibratory loads and so forth.

WT-13025

## METHOD TO IDENTIFY STRENGTH DIVISION OF BOLTS

### 1. Identification Method by Checking Bolts Themselves

1. Identification Method by Checking Bolts Themselves							
	Configuration and how to determine strength division		Strength division		Configuration and how to determine strength division		Strength division
Hexagon bolt		Bolt having an embossed or stamped figure at its head section	4 = 4T 5 = 5T 6 = 6T 7 = 7T	Welded bolt			4T
		No mark	4T	Stud bolt		No mark	4T
		Bolt having two embossed lines at its head section	5T 6T			Bolt having about 2 mm deep recess at one end or both ends	6T
		Bolt having three embossed lines at its head section	7T				

WT-13026

## 2. Identification Method by Part Numbers


### 2. Identification Method by Part Numbers

#### Hexagon Bolt

Part number example: 9 1 1 1 1 - 4 0 6 2 0

Labels for 9 1 1 1 1 - 4 0 6 2 0:

- 9: Strength division
- 1 1 1 1: Nominal diameter (mm)
- 4: Nominal length (mm)
- 0 6 2 0: Nominal length (mm)




#### Stud Bolt

Part number example: 9 2 1 3 2 - 4 0 6 2 0

Labels for 9 2 1 3 2 - 4 0 6 2 0:

- 9: Strength division
- 2 1 3 2: Nominal diameter (mm)
- 4: Nominal length (mm)
- 0 6 2 0: Nominal length (mm)



# APPENDIX

[Tightening Torque Table for General Standard Bolts]

Category	Nominal diameter	Pitch	Standard tightening torque kg-m (ft-lb)	
			Standard torque	Tightening range
<b>4T</b> (Bolt having a mark of "4" at its head section) Example of part number (910000 - 400000)	6	1	0.47 ( 3.4)	0.4 - 0.7 ( 2.9 - 5.1)
	8	1.25	1.11 ( 8.0)	1.0 - 1.6 ( 7.2 - 11.6)
	10	1.25	2.25 (16.3)	1.9 - 3.1 ( 14 - 22.5)
	10	1.5	2.14 (15.5)	1.8 - 3.0 ( 13 - 22 )
	12	1.25 (ISO)	4.40 (31.8)	3.5 - 5.5 (25 - 40)
	12	1.5	3.89 (28.1)	3.5 - 5.5 (25 - 40)
	12	1.75	3.74 (27.1)	3.0 - 5.0 (22 - 36)
	13	1.5	5.08 (36.7)	4.5 - 7.0 (33 - 51)
	14	1.5	6.33 (45.8)	5.0 - 8.0 (36 - 58)
	14	2	5.93 (42.9)	4.7 - 7.7 (34 - 56)
<b>5T</b> (Bolt having a mark of "5" at its head section) Example of part number (910000 - 500000)	16	1.5	9.57 (69.2)	7.5 - 11.0 (54 - 80)
	16	2	9.10 (65.8)	7.1 - 10.6 (51 - 77.5)
	6	1	0.71 ( 5.1)	0.6 - 0.9 ( 4.3 - 6.5)
	8	1.25	1.66 (12.0)	1.5 - 2.2 ( 11 - 16 )
	10	1.25	3.37 (24.4)	3.0 - 4.5 (22 - 33)
	10	1.5	3.20 (23.1)	2.7 - 4.2 (19.5 - 30.5)
	12	1.25 (ISO)	5.84 (42.2)	5.0 - 7.0 (36 - 51)
	12	1.5	5.84 (42.2)	5.0 - 7.0 (36 - 51)
	12	1.75	5.60 (40.5)	4.8 - 6.8 (34 - 49)
	13	1.5	7.63 (55.2)	6.5 - 9.0 (47 - 65)
<b>6T</b> (Bolt having a mark of "6" at its head section) Example of part number (910000 - 600000)	14	1.5	9.50 (68.7)	7.5 - 11.0 (54 - 79.5)
	14	2	8.90 (64.4)	7.0 - 10.5 (51 - 76)
	16	1.5	14.36 (103.9)	12.0 - 17.0 (87 - 123)
	16	2	13.58 (98.2)	11.5 - 16.5 (83 - 119)
	6	1	0.71 ( 5.1)	0.6 - 0.9 ( 4.3 - 6.5)
	8	1.25	1.66 (12.0)	1.5 - 2.2 ( 11 - 16 )
<b>7T</b> (Bolt having a mark of "7" at its head section) Example of part number (910000 - 700000)	10	1.25	3.37 (24.4)	3.0 - 4.5 (22 - 33)
	10	1.5	3.20 (23.1)	2.7 - 4.2 (19.5 - 30.5)
	12	1.25 (ISO)	5.84 (42.2)	5.0 - 7.0 (36 - 51)
	12	1.5	5.84 (42.2)	5.0 - 7.0 (36 - 51)
	12	1.75	5.61 (40.6)	4.8 - 6.8 (35 - 49)
	12	1.5	0.95 ( 6.87)	0.8 - 1.2 ( 5.8 - 8.7)
<b>7T</b> (Bolt having a mark of "7" at its head section) Example of part number (910000 - 700000)	8	1.25	2.20 (15.9)	2.0 - 3.0 (14.5 - 22)
	10	1.25	4.50 (32.5)	4.0 - 5.5 (29 - 40)
	10	1.5	4.30 (31.1)	3.7 - 5.2 (27 - 38)
	12	1.25 (ISO)	7.78 (56.3)	7.0 - 9.0 (51 - 65)
	12	1.5	7.78 (56.3)	7.0 - 9.0 (51 - 65)
	12	1.75	7.48 (54.1)	6.0 - 8.5 (43 - 61.5)
	13	1.5	10.17 (73.6)	8.0 - 12.0 (58 - 88)
	14	1.5	12.67 (91.6)	10.0 - 15.0 (72 - 108)
	14	2	11.86 (85.8)	9.5 - 14.0 (69 - 101)
	16	1.5	19.15 (138.5)	15.0 - 23.0 (108 - 166)
	16	2	18.11 (131.0)	14.9 - 22.0 (108 - 159)

WT-13028

Unit: kg-m (ft-lb)

## CLUTCH, MANUAL TRANSMISSION

Tightening component	Tightening torque
Transmission × Cylinder block	5.0 - 7.0 (36 - 51 )
Output shaft hexagon nut	10.0 - 14.0 (72 - 101 )
Input shaft hexagon nut	10.0 - 14.0 (72 - 101 )
Transmission case × Clutch housing	1.5 - 2.2 (11 - 16 )
Transmission case cover × Case	1.5 - 2.2 (11 - 16 )
Drain plug	3.0 - 5.0 (22 - 36 )
Back-up lamp switch	3.0 - 5.0 (22 - 36 )
Speedometer sleeve lock plate	0.7 - 1.0 ( 5.1 - 7.2 )
Breather plug	1.0 - 1.3 ( 7.2 - 9.4 )
Differential ring gear	4.5 - 5.5 (33 - 29 )
Clutch cover	0.7 - 1.0 ( 5.1 - 7.2 )
Clutch release lever × Preload lever yoke	3.0 - 4.0 (22 - 29 )
Shift & selector shaft × Shift inner lever	Bolt 4.0 - 5.0 (29 - 36) Nut 2.0 - 3.0 (14.5 - 22)
Shift & selector shaft × Transmission case	2.0 - 3.0 (14.5 - 22 )
Differential case × Differential ring gear	8.0 - 9.0 (58 - 65 )

WR-11016

## AUTOMATIC TRANSMISSION

Unit: kg-m (ft-lb)

Tightening component	Tightening torque
Transmission case × Torque converter housing	1.6 - 2.3 (12 - 16 )
Transmission case × Oil pan	0.4 - 0.6 ( 3.0 - 4.3 )
Transmission case × Oil filler tube	0.3 - 0.7 ( 2.4 - 5.1 )
Transmission case × Valve body Ay	0.80 - 1.20 ( 6.0 - 8.5 )
Transmission case × Side cover	0.7 - 0.9 ( 5.1 - 6.5 )
Transmission case × Rear cover Bolt	1.6 - 2.3 (12 - 16 )
Transmission case × Rear cover Nut	1.1 - 1.5 ( 8 - 10 )
Transmission case × Oil pump Ay	1.8 - 2.7 (14 - 19 )
Transmission case × Neutral start switch	1.6 - 2.3 (12 - 16 )
Transmission case × Test plug	0.6 - 0.9 ( 4.3 - 6.5 )
Transmission case × Lower left mounting bracket	3.0 - 4.5 (22 - 33 )
Valve body × Valve body cover	0.5 - 0.6 ( 3.6 - 4.3 )
Valve body × Throttle valve cam	0.6 - 0.9 ( 4.3 - 6.5 )
Valve body × Solenoid Ay	0.64 - 0.96 ( 4.6 - 6.9 )
Valve body × Oil strainer	0.4 - 0.6 ( 3.0 - 4.3 )
Upper valve body × Lower valve body	0.50 - 0.60 ( 3.6 - 4.3 )
Oil pan × Drain bolt (plug)	1.8 - 2.3 (13 - 17 )
Oil pump body × Stator shaft	0.8 - 1.2 ( 6.0 - 8.5 )
Torque converter × Drive plate	1.5 - 2.2 (11 - 16 )
Torque converter housing × Cylinder block	5.0 - 7.0 (36 - 51 )
Manual shift shaft × Manual valve outer lever	2.7 - 3.3 (20 - 24 )
Reduction driven gear × Counter shaft	11 - 15 (80 - 108 )

WR-11017

## APPENDIX

### DRIVE SHAFT, FRONT SUSPENSION

Unit: kg-m (ft-lb)

Tightening component	Tightening torque
Lower arm bracket × Body	7.5 - 10.5 ( 54 - 76)
Lower arm × Lower arm bracket	7.0 - 10.0 ( 51 - 72)
Stabilizer bracket × Front stabilizer lower bracket	4.0 - 6.0 ( 29 - 43)
Lower arm × Stabilizer	7.5 - 10.5 ( 54 - 76)
Lower arm ball joint × Steering knuckle	8.0 - 10.5 ( 58 - 76)
Front shock absorber piston rod × Suspension support	3.5 - 5.5 ( 25 - 40)
Suspension support × Body	2.0 - 3.0 ( 14.5 - 22)
Front shock absorber × Steering knuckle	9.0 - 13.0 ( 65 - 94)
Drive shaft × Front axle hub	18.0 - 23.0 (130 - 166)
Disc wheel × Front axle hub	9.0 - 12.0 ( 65 - 87)
Front drive bearing shaft × Bracket	3.0 - 4.5 ( 22 - 32)

WR-11018

### REAR AXLE, REAR SUSPENSION

Unit: kg-m (ft-lb)

Tightening Component	Tightening torque
Rear stabilizer × Stabilizer link	1.0 - 1.6 ( 7.2 - 11.6)
Stabilizer bracket × Rear suspension arm	1.0 - 1.6 ( 7.2 - 11.6)
Stabilizer bracket × Stabilizer bracket No.2	1.9 - 3.1 (14 - 22 )
Rear suspension arm No.1 × Body	7.5 - 10.5 (54 - 76 )
Rear suspension arm No.1 × Rear axle carrier	7.5 - 10.5 (54 - 76 )
Rear suspension arm No.2 × Body	7.1 - 8.8 (51 - 64 )
Rear suspension arm No.2 × Rear axle carrier	7.5 - 10.5 (54 - 76 )
Rear strut rod × Body	7.5 - 10.5 (54 - 76 )
Rear strut rod × Rear axle carrier	7.5 - 10.5 (54 - 76 )
Rear axle carrier × Rear shock absorber	9.0 - 12.0 (65 - 87 )
Suspension support × Body	1.0 - 1.6 ( 7.2 - 11.6)
Rear axle shaft × Brake drum (disc)	6.0 - 10.0 (43 - 72 )
Rear brake hub × Disc wheel	9.0 - 12.0 (65 - 87 )
Rear axle carrier × Rear brake backing plate	4.0 - 5.5 (29 - 40 )

WR-11019

**TEERING**

Unit: kg-m (ft-lb)

Tightening component	Tightening torque
Steering wheel × Steering main shaft	3.5 - 5.5 (25 - 40 )
Steering column tube × steering joint dust cover × Body	0.4 - 0.7 ( 2.9 - 5.0)
Steering rack end × Tie rod end	3.0 - 5.2 (22 - 38 )
Steering rack housing × Rack guide lock nut	3.5 - 4.5 (25 - 32.5)
Steering rack housing × Body	4.0 - 5.5 (29 - 40 )
Tie rod end × Steering knuckle	3.0 - 4.5 (22 - 32.5)
Steering rack end × Steering rack	5.0 - 6.5 (36 - 47 )

WR-11020

**BRAKE**

Unit: kg-m (ft-lb)

Tightening component	Tightening torque
Master cylinder × Brake booster	1.2 - 1.8 ( 8.7 - 13.0)
Brake booster × Body × Pedal support	1.0 - 1.6 ( 7.2 - 11.6)
Disc brake caliper × Knuckle	3.2 - 4.2 (23 - 30 )
Caliper × Bleeder plug	0.7 - 1.0 ( 5.1 - 7.2)
Rear wheel cylinder Backing plate	1.0 - 1.3 ( 7.2 - 9.4)
Rear wheel cylinder × Bleeder plug	0.7 - 1.0 ( 5.1 - 7.2)
Brake tube each union nut	1.3 - 1.8 ( 9.4 - 13.0)

**BODY AND OTHERS**

Unit: kg-m (ft-lb)

Tightening component	Tightening torque
Back door hinge × Body	2.5 - 3.0 (18 - 22 )
Back door stay × Quarter panel	1.8 - 2.3 (13 - 16.6)
Back door stay × Back door	1.6 - 2.3 (11.6 - 16.6)
Engine lower mounting × Body	1.2 - 2.2 ( 8.7 - 16 )
Exhaust manifold × Exhaust front pipe	3.0 - 5.0 (22 - 36 )
Exhaust front pipe × Exhaust tail pipe	3.0 - 5.0 (22 - 36 )

WR-11021

# APPENDIX

## WIRING DIAGRAM SYSTEM INDEX

SYSTEMS	LOCATION		SYSTEMS	LOCATION	
	TYPE CB E/G	TYPE CL E/G		TYPE CB E/G	TYPE CL E/G
Air Conditioner	1-5	1-3	Luggage Room Lamp	3-6	3-4
Alternator & Regulator	1-2	1-1	Light-on-Warning Buzzer	3-5	3-3
Automatic Transmission ECU	4-2	—	Power Window	2-6	2-4
Battery	1-1	1-1	Preheating Timer	—	1-2
Central Door Lock	2-7	2-4	Radiator Fan Motor	1-6	1-4
Cigar Lighter	2-5	2-3	Radio	2-5	2-2
Clock	2-5	2-2	Rear Window Defogger	3-6	3-4
Combination Meter	3-2	2-6	Rear Wiper & Washer	3-7	3-6
Daylight Relay	2-3	2-1	Room Lamp	3-5	3-3
Dim-dip Relay	2-4	1-7	Side Lamp	2-1	1-5
Distributor	1-1	—	Sun Roof	3-1	2-5
EFI ECU (CB-80)	4-5	—	Starter	1-1	1-1
Electronic Door Mirror	2-6	2-3	Stop Lamp	3-6	3-4
Fuel Pump (Turbo)	1-3	—	Turn Signal & Hazard Lamp	3-4	3-1
Front Wiper & Washer	3-7	3-5			
Glow Plug	—	1-2			
Headlamp	2-3	1-7, 2-1			
Headlamp Cleaner	3-7	3-5			
Heater	1-7	1-5			
Horn	3-5	3-2			
Ignition Coil	1-1, 4-3	—			

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