

IMPORTANT

WARNING/CAUTION/NOTE

Please read this manual and follow its instructions carefully. To emphasize special information, the words **WARNING**, **CAUTION** and **NOTE** have special meanings. Pay special attention to the messages highlighted by these signal words.

WARNING:

Indicates a potential hazard that could result in death or injury.

CAUTION:

Indicates a potential hazard that could result in vehicle damage.

NOTE:

Indicates special information to make maintenance easier or instructions clearer.

WARNING:

This service manual is intended for authorized Suzuki dealers and qualified service mechanics only. Inexperienced mechanics or mechanics without the proper tools and equipment may not be able to properly perform the services described in this manual.

Improper repair may result in injury to the mechanic and may render the vehicle unsafe for the driver and passengers.

WARNING:

For vehicles equipped with a Supplemental Restraint or Air Bag System:

- Service on and around the air bag system components or wiring must be performed only by an authorized SUZUKI dealer. Refer to “Air Bag System Components and Wiring Location View” under “General Description” in air bag system section in order to confirm whether you are performing service on or near the air bag system components or wiring. Please observe all WARNINGS and “Service Precautions” under “On-Vehicle Service” in air bag system section before performing service on or around the air bag system components or wiring. Failure to follow WARNINGS could result in unintentional activation of the system or could render the system inoperative. Either of these two conditions may result in severe injury.
- If the air bag system and another vehicle system both need repair, Suzuki recommends that the air bag system be repaired first, to help avoid unintended air bag system activation.
- Do not modify the steering wheel, instrument panel or any other air bag system component on or around air bag system components or wiring. Modifications can adversely affect air bag system performance and lead to injury.
- If the vehicle will be exposed to temperatures over 93°C (200°F), for example, during a paint baking process, remove the air bag system components, that is air bag or inflator modules, SDM and/or seat belt with pretensioner, beforehand to avoid component damage or unintended activation.

FOREWORD

This SUPPLEMENTARY SERVICE MANUAL is a supplement to LIANA (RH413/RH416) SERVICE MANUAL. It has been prepared exclusively for the following applicable model.

Applicable model: LIANA (RH413/RH416) vehicles on and after following vehicle identification numbers (VINs).

WAGON

RC11S-200001 ~	ⓧJSAERC11S00200001ⓧ~	
	ⓧJSAERC11S35200001ⓧ~	
	ⓧJSAERC11S45200001ⓧ~	
RC31S-200001 ~	ⓧJSAERC31S00200001ⓧ~	JS2RC31S□35200001~
	ⓧJSAERC31S30200001ⓧ~	
	ⓧJSAERC31S35200001ⓧ~	
	ⓧJSAERC31S45200001ⓧ~	
	ⓧJSAERD31S00200001ⓧ~	

SEDAN

RA11S-150001 ~	ⓧJSAERA11S00150001ⓧ~	
RA31S-150001 ~	ⓧJSAERA31S00150001ⓧ~	JS2RA31S□35150001~
	ⓧJSAERA31S30150001ⓧ~	
	ⓧJSAERA31S35150001ⓧ~	
	ⓧJSAERA31S45150001ⓧ~	
	ⓧJSAERB31S00150001ⓧ~	

This supplementary service manual describes only different service information of the above applicable model as compared with LIANA SERVICE MANUAL. Therefore, whenever servicing the above applicable model, consult this supplement first. And for any section, item or description not found in this supplement, refer to the related service manual below.

When replacing parts or servicing by disassembling, it is recommended to use SUZUKI genuine parts, tools and service materials as specified in each description.

All information, illustrations and specifications contained in this literature are based on the latest product information available at the time of publication approval. And used as the main subject of description is the vehicle of standard specifications among others.

Therefore, note that illustrations may differ from the vehicle being actually serviced.

The right is reserved to make changes at any time without notice.

Related Manuals:

Manual Name	Manual No.
LIANA (RH413/RH416) SERVICE MANUAL	99500-54G00-01E
LIANA (RH413/RH416) SUPPLEMENTARY SERVICE MANUAL	99501-54G00-01E
LIANA (RH413/RH416) WIRING DIAGRAM MANUAL	99512-54G20-015

SUZUKI MOTOR CORPORATION

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NOTE:

For the screen toned sections in the above table, refer to the same section of Service Manual mentioned in FOREWORD of this manual.

SECTION 3

STEERING, SUSPENSION, WHEELS AND TIRES

NOTE:

For the items with asterisk (*) in the "CONTENTS" below, refer to the same section of the Service Manual mentioned in "FOREWORD" of this manual.

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POWER STEERING (P/S) SYSTEM

WARNING:

For vehicles equipped with a Supplemental Restraint (Air Bag) System:

- Service on and around the air bag system components or wiring must be performed only by an authorized SUZUKI dealer. Refer to “Air Bag System Components and Wiring Location View” under “General Description” in air bag system section in order to confirm whether you are performing service on or near the air bag system components or wiring. Please observe all WARNINGS and “Service Precautions” under “On-Vehicle Service” in air bag system section before performing service on or around the air bag system components or wiring. Failure to follow WARNINGS could result in unintentional activation of the system or could render the system inoperative. Either of these two conditions may result in severe injury.
- Technical service work must be started at least 90 seconds after the ignition switch is turned to the “LOCK” position and the negative cable is disconnected from the battery. Otherwise, the system may be activated by reserve energy in the Sensing and Diagnostic Module (SDM).

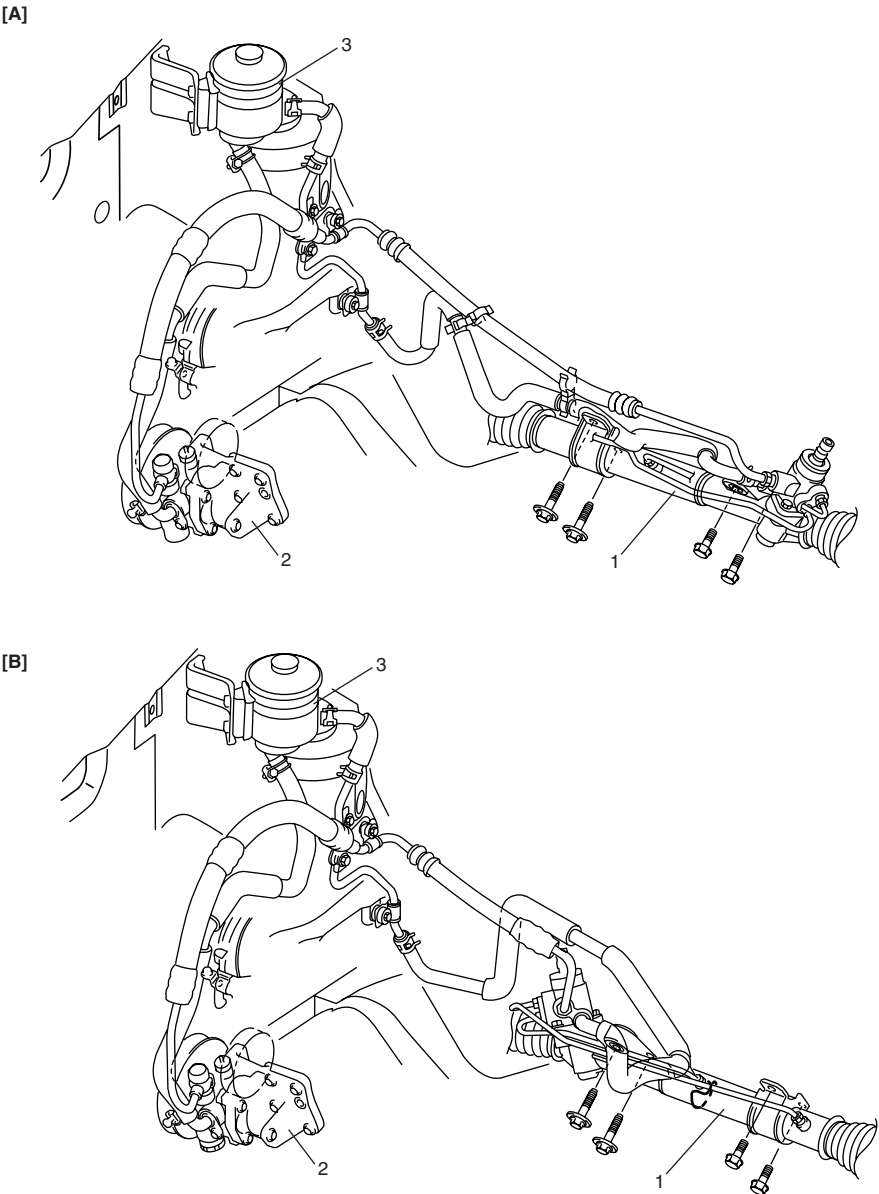
NOTE:

- Some parts in the Power Steering Gear Box cannot be disassembled or adjusted. For detailed information, refer to the description of POWER STEERING GEAR BOX under ON-VEHICLE SERVICE.
- All steering gear fasteners are important attaching parts in that they could affect the performance of vital parts and systems, and/or could result in major repair expense. They must be replaced with one of the same part number or with an equivalent part if replacement becomes necessary. Do not use a replacement part of lesser quality or substitute design. Torque values must be used as specified during reassembly to assure proper retention of these parts.
- Although the figures in this section show only the left-hand steering vehicle, the same work procedure and data apply to the right-hand steering vehicle.

General Description

P/S System Description

The power steering (P/S) system in this vehicle reduces the driver's effort needed in turning the steering wheel by utilizing the hydraulic pressure generated by the power steering (P/S) pump which is driven by the engine. It is an integral type with the rack and pinion gears and the control valve unit, hydraulic pressure cylinder unit all built in the steering gear box. The pump is a vane type and is driven by the V-ribbed belt from the crankshaft.



[A] : For left-hand steering vehicle	1. Power steering gear box	3. P/S fluid reservoir
[B] : For right-hand steering vehicle	2. Power steering pump	

Diagnosis

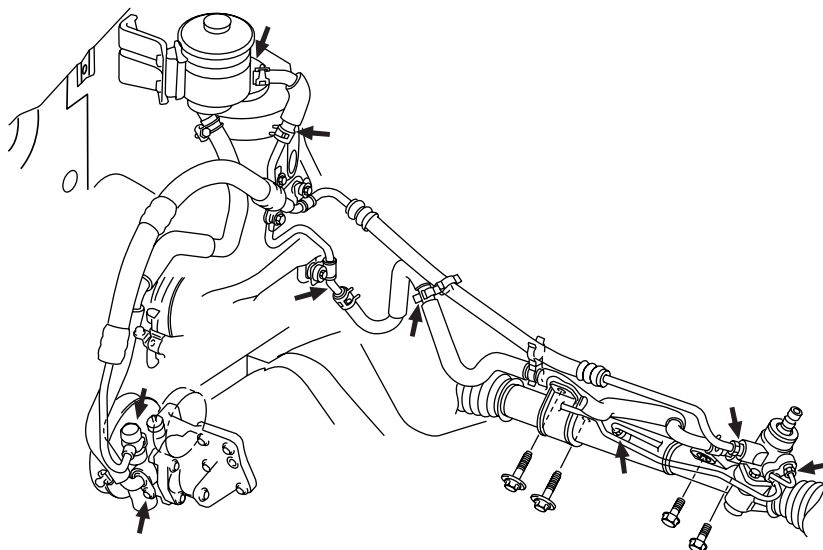
Fluid Leakage Check

Start engine and turn steering wheel fully to the right and left so that maximum hydraulic pressure is provided. Then visually check gear box, P/S pump and P/S fluid reservoir themselves and each joint of their connecting pipes for leakage.

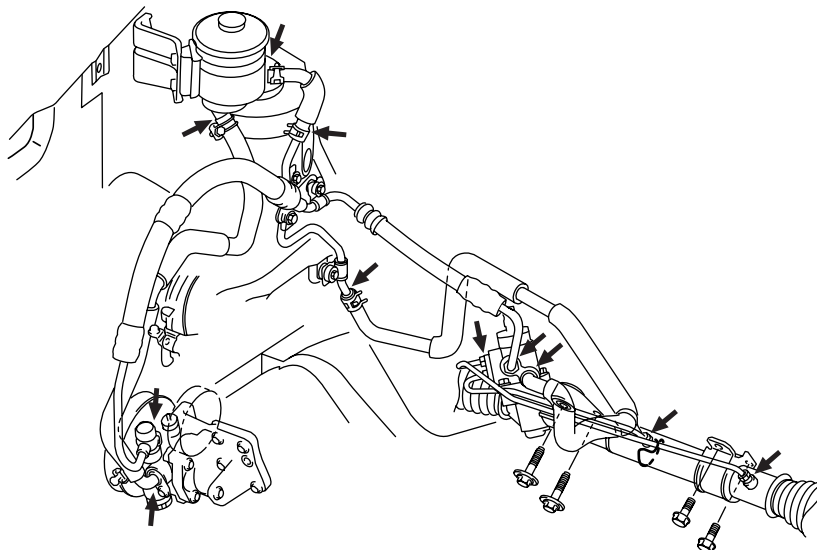
CAUTION:

Never keep steering wheel turned fully for longer than 10 seconds.

[A]



[B]

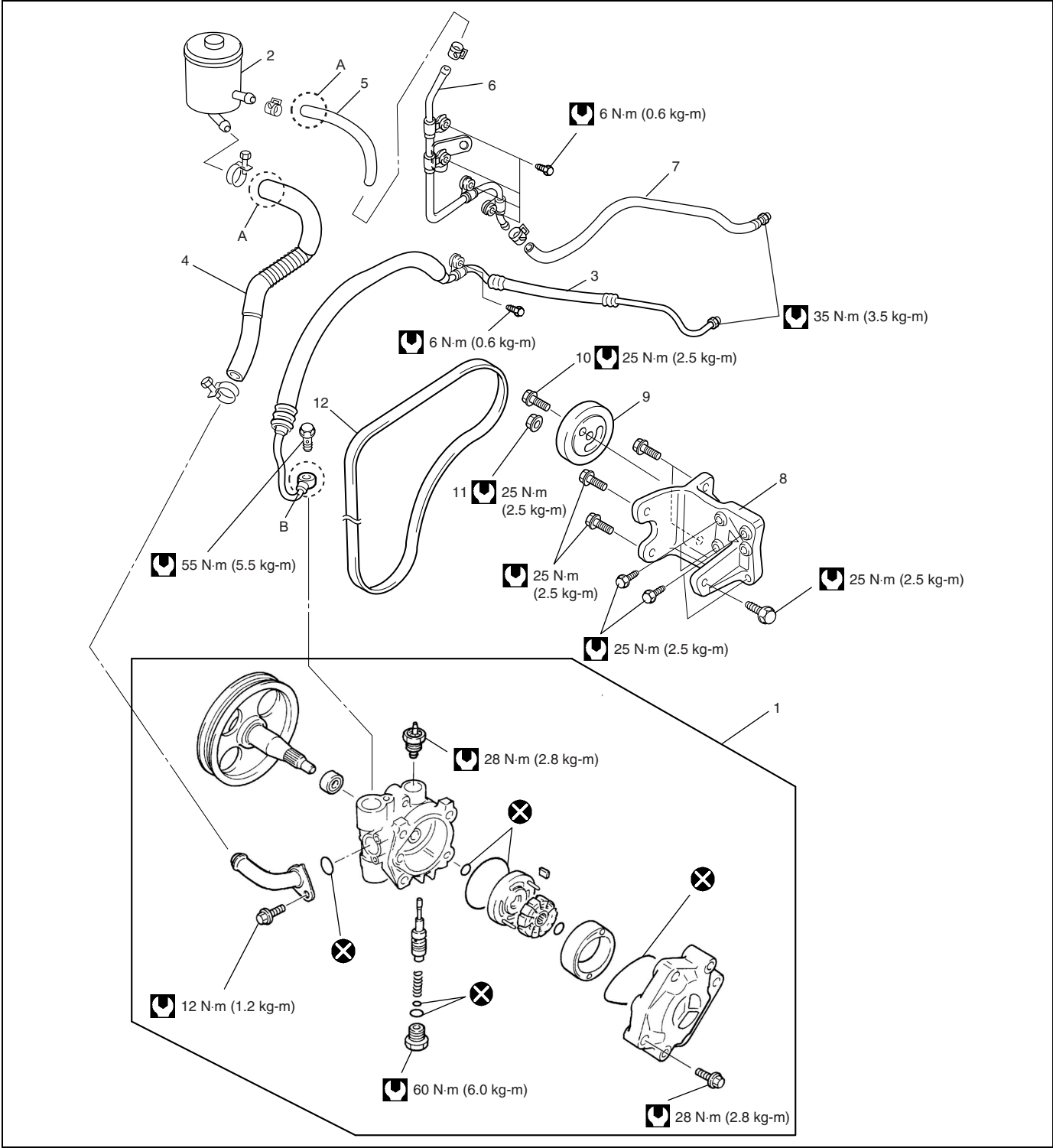


[A] : Left-Hand Steering Vehicle

[B] : Right-Hand Steering Vehicle

On-vehicle Service

Power Steering Pump
COMPONENTS



1. Power steering pump assembly	7. Low pressure return hose & pipe (Gear box side)	Tightening torque
2. Power steering fluid reservoir tank	8. Bracket	Do not reuse.
3. High pressure hoses & pipe	9. Belt tension pulley	"A": Match marking with projection of reservoir tank.
4. Suction hose	10. Belt tension pulley bolt	"B": Tighten bolt with pipe stopper contacted to projection of P/S pump.
5. Low pressure return hose (Reservoir side)	11. Belt tension pulley nut	
6. Low pressure return pipe	12. Power steering belt	

REMOVAL

NOTE:

Be sure to clean each joint of suction and discharge sides thoroughly before removal.

- 1) Remove engine under cover of right side, loosen belt tension pulley and remove P/S belt.
- 2) Disconnect high pressure pipe and suction hose from pump.
As fluid flows out of disconnected joints, put a container under joints or a plug to hose.

CAUTION:

Take care not to cause damage to A/C condenser during service operation, if equipped.

- 3) Disconnect pressure switch lead harness and A/C wire harness.
- 4) Remove A/C compressor from bracket with A/C hose still attached (if equipped).

NOTE:

Hang removed A/C compressor with a wire hook or the like so as to prevent A/C hose from bending and twisting excessively or being pulled.

- 5) Remove oil pump from bracket.

NOTE:

Plug each port of removed pump to prevent dust or any other foreign matter from entering.

INSTALLATION

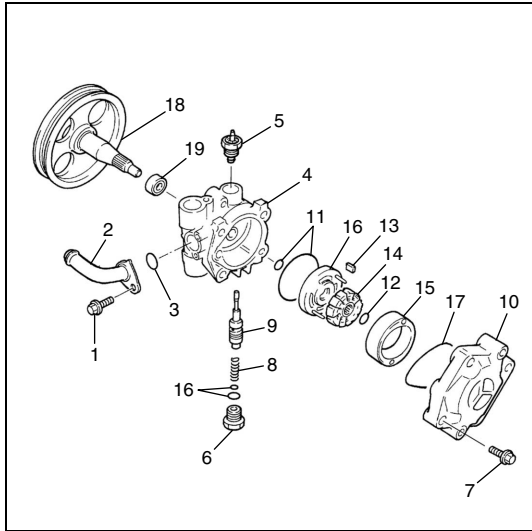
Reverse removal procedure.

NOTE:

- Fill specified power steering fluid after installation and bleed air without failure.
- For tightening torques, refer to components figure.
- Adjust power steering belt tension referring to "POWER STEERING BELT TENSION ADJUSTMENT" in this section.
- Bleed air from P/S system by referring to "AIR BLEEDING PROCEDURE" in this section.

DISASSEMBLY

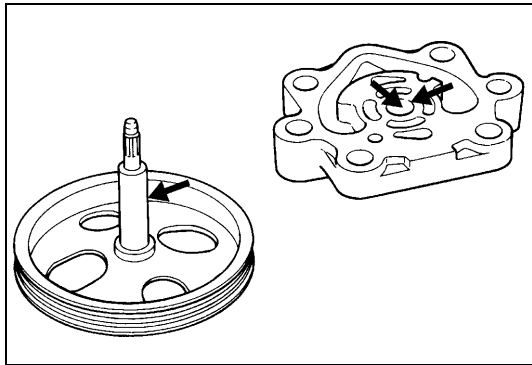
- 1) Clean its exterior thoroughly.
- 2) With aluminum plates placed on vise first, grip pump body with it.



- 3) Remove suction connector bolt (1), suction connector (2) and O-ring (3) from pump body (4).
- 4) Remove power steering pressure switch (terminal set) (5) from pump body.
- 5) Remove plug (6), flow control spring (8) and relief valve (flow control valve) (9) from pump body.
- 6) Remove cover bolts (7), pump cover (10) and O-ring (17) from pump body.
- 7) Remove snap ring (12) from pump shaft.
- 8) Remove vanes (13) from rotor (14).
- 9) Remove cam ring (15), rotor (14), side plate (16) and O-rings (11) from pump body.
- 10) Pull out pulley (18) from pump body.
- 11) Remove oil seal (19) from pump body.

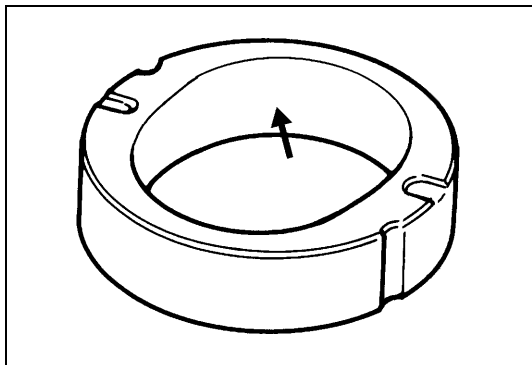
INSPECTION

Pump body, cover, side plate and shaft



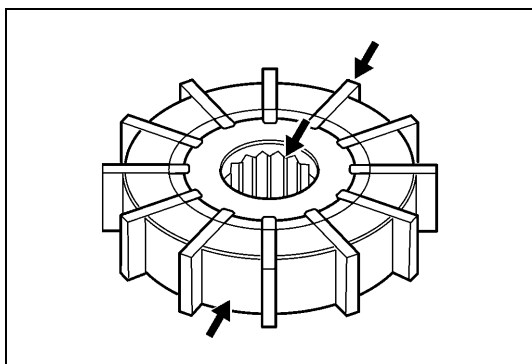
Check sliding surfaces of each part for wear and damage. If any defect is found, replace pump assembly.

Cam ring

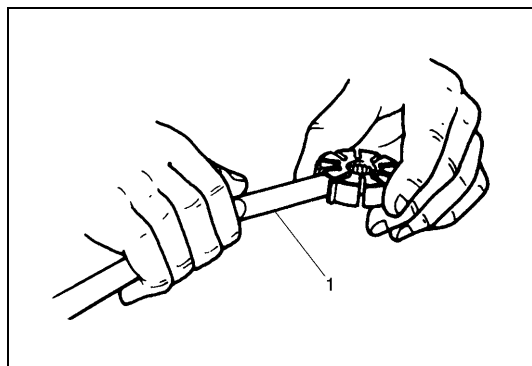


Check vane sliding surface of cam ring for wear and damage. If any defect is found, replace pump assembly.

Rotor and vane



- Check sliding surfaces of rotor and vane for wear and damage.



- Check clearance between rotor and vane.

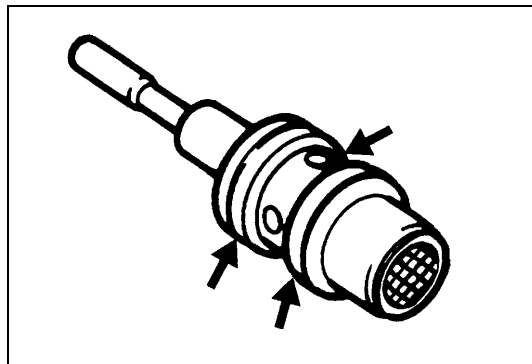
Clearance:

Standard 0.01 mm (0.0004 in.)

Limit 0.06 mm (0.0023 in.)

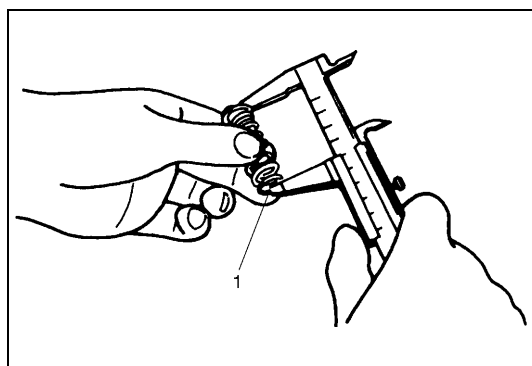
Replace pump assembly if any defect is found in above checks.

1. Thickness gauge



Relief valve (flow control valve) and its spring

- Check fluid passage of relief valve and orifice of connector for obstruction (clogged).
- Check sliding surface of relief valve for wear and damage.



- Check free length of relief valve spring (1).

Free length:

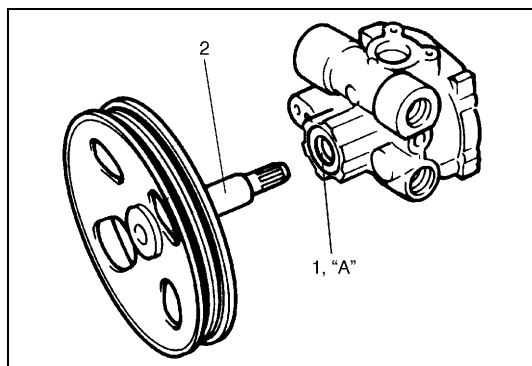
Standard 22.0 mm (0.866 in.)

Limit 19.0 mm (0.748 in.)

Replace if any defective is found.

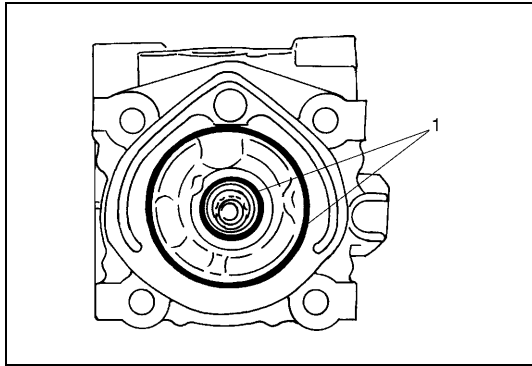
REASSEMBLY

Reverse disassembly procedure for assembly, noting the following.

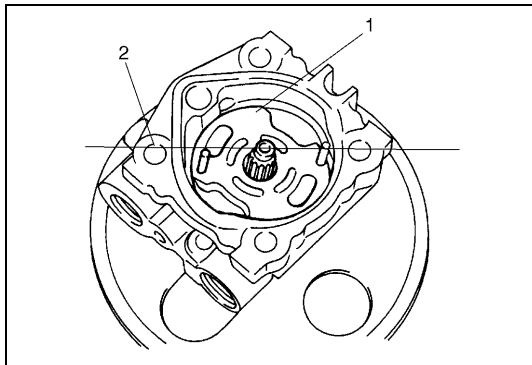


- 1) Apply grease to oil seal lip (1). Apply power steering fluid to sliding surface of the shaft (2) and then insert shaft in the pump body.

“A”: Grease 99000-25010



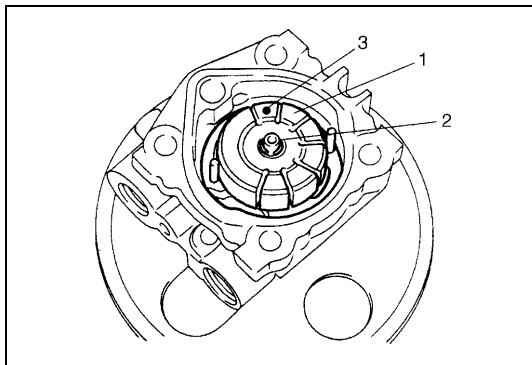
- 2) Apply power steering fluid to O-rings (1) and fit them to pump body.



- 3) Install side plate (1) to pump body.

NOTE:

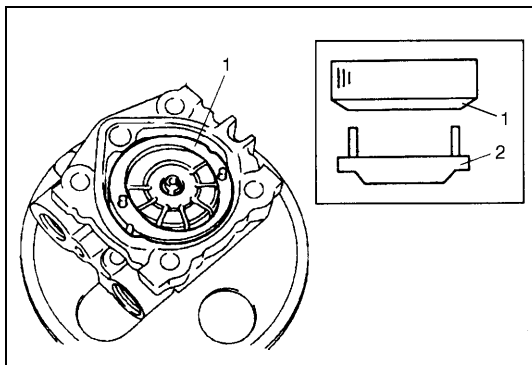
Carefully align the dowel pins on the side plate (1) at bolt hole (2) as shown in figure.



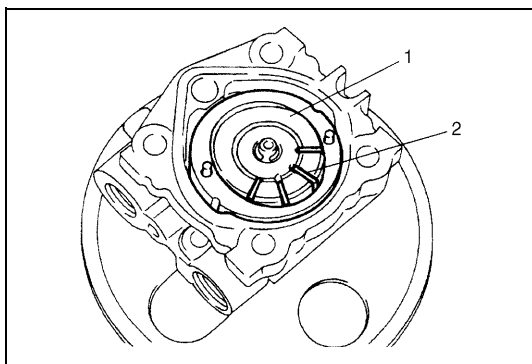
- 4) Apply power steering fluid to sliding surface of rotor (1).
- 5) Install rotor to shaft, directing dot (3) marked side of rotor facing up.
- 6) Install new snap ring (2) to shaft, then make sure to fit snap ring into shaft groove securely.

NOTE:

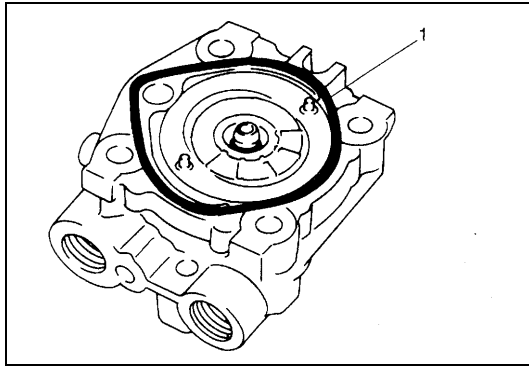
Never reuse the removed snap ring.



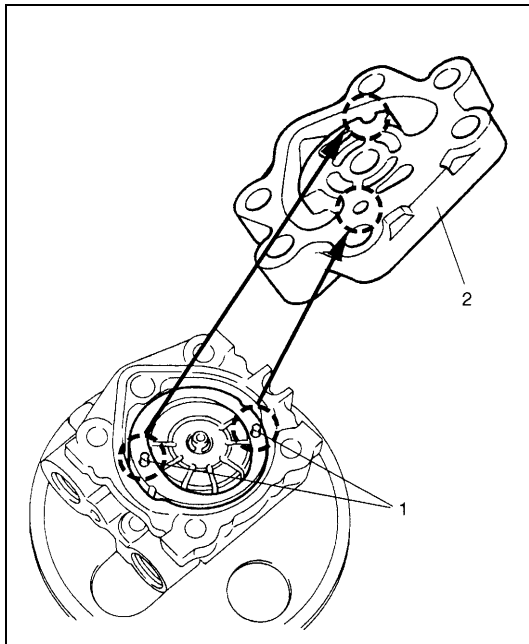
- 7) Apply power steering fluid to sliding surface of cam ring (1).
- 8) Install cam ring to pump body. The tapered end of cam ring (1) should face the side plate (2).



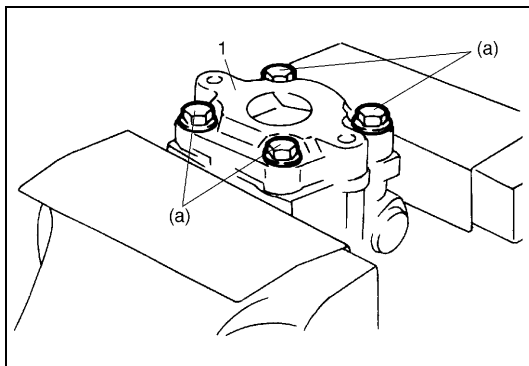
- 9) Apply power steering fluid to each vane (2).
- 10) Install vanes (12 pieces) (2) to rotor (1).



- 11) Apply power steering fluid to O-ring (1).
- 12) Install O-ring (1) to pump body.
- 13) Apply power steering fluid to sliding surface of pump cover and rotor.



- 14) Match the dowel pins (1) to the holes of the cover plate (2) as shown and install pump cover to pump body.



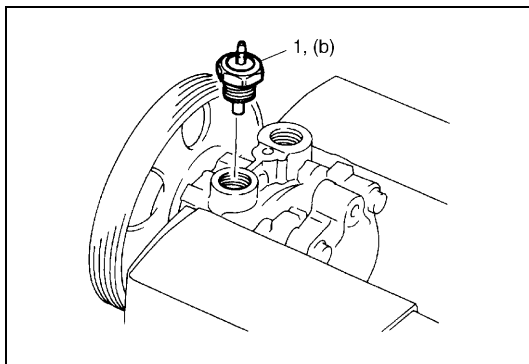
- 15) Gradually tighten pump cover bolts to specified torque.

NOTE:

After installing pump cover (1), check to make sure that shaft can be turned by hand.

Tightening torque

Pump cover bolts (a) : 28 N·m (2.8 kg-m, 20.0 lb-ft)

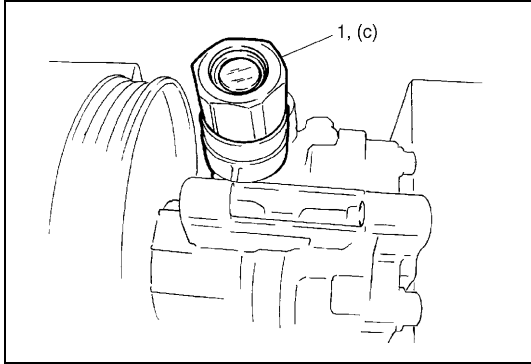


- 16) Apply power steering fluid to O-ring of terminal switch.
- 17) Install pressure switch (1) to pump body.

Tightening torque

Pressure switch (b) : 28 N·m (2.8 kg-m, 20.0 lb-ft)

- 18) Apply power steering fluid to relief valve (flow control valve).
- 19) Install relief valve (flow control valve) to pump body.
- 20) Install flow control spring.
- 21) Apply power steering fluid to O-rings of plug.
- 22) Install O-rings to plug.

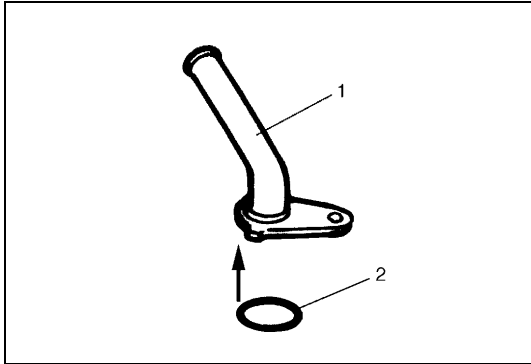


23) Tighten plug (1) to specified torque.

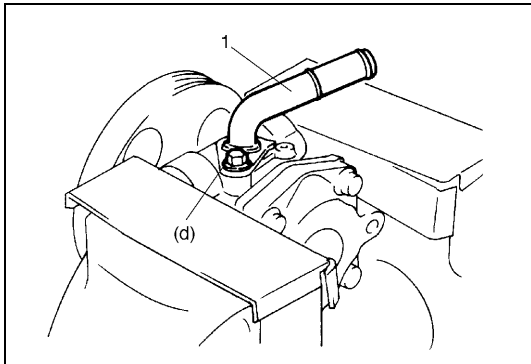
Tightening torque

Plug (c) : 60 N·m (6.0 kg-m, 43.5 lb-ft)

24) Apply power steering fluid to O-ring of suction connector.



25) Install O-ring (2) to suction connector (1).



26) Install suction connector (1) to pump body as shown in figure. Tighten suction connector bolt to specified torque.

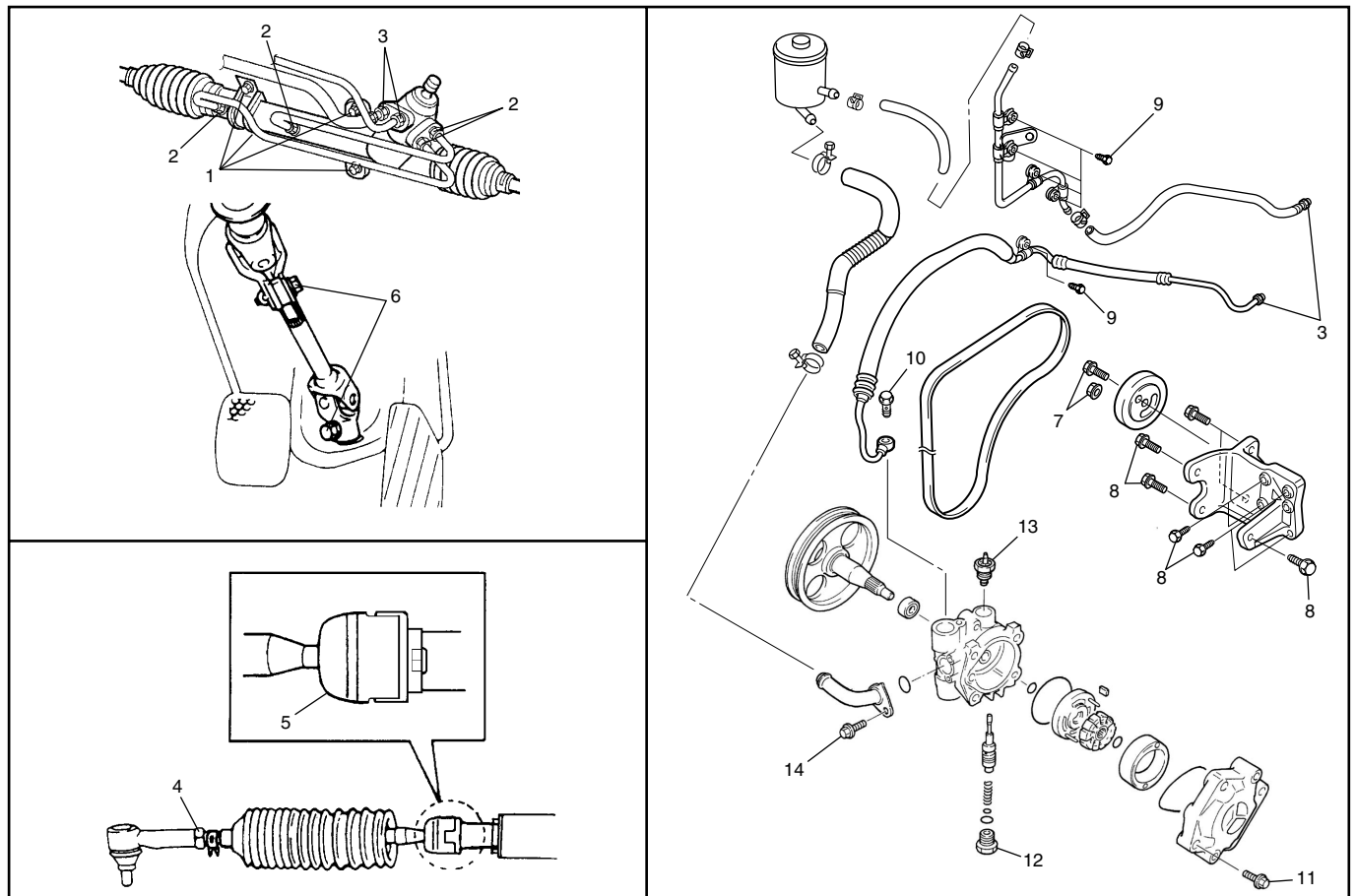
Tightening torque

Suction connector bolt

(d) : 12 N·m (1.2 kg-m, 8.5 lb-ft)

Tightening Torque Specification

Fastening part	Tightening torque		
	N•m	kg-m	lb-ft
Gear box mounting bolts (1)	55	5.5	40.0
Gear box cylinder pipe flare nuts (2)	25	2.5	18.0
Gear box high & low pressure pipe flare nuts (3)	35	3.5	25.0
Tie rod end lock nut (4)	45	4.5	32.5
Tie rod ball nut (5)	70	7.0	50.5
Steering shaft upper and lower joint bolts (6)	25	2.5	18.0
Tension pulley bolt and nut (7)	25	2.5	18.0
P/S pump mount bolts (8)	25	2.5	18.0
Pipe clamp bolt (9)	6	0.6	4.5
High pressure pipe mount bolt (Pipe to pump) (10)	55	5.5	40.0
Pump cover bolts (11)	28	2.8	20.0
Plug (12)	60	6.0	43.5
Pressure switch (Terminal) (13)	28	2.8	20.0
Suction connector bolt (14)	12	1.2	8.5
Tie rod end castle nut	35 – 55	3.5 – 5.5	25.5 – 39.5



SECTION 6K

EXHAUST SYSTEM

NOTE:

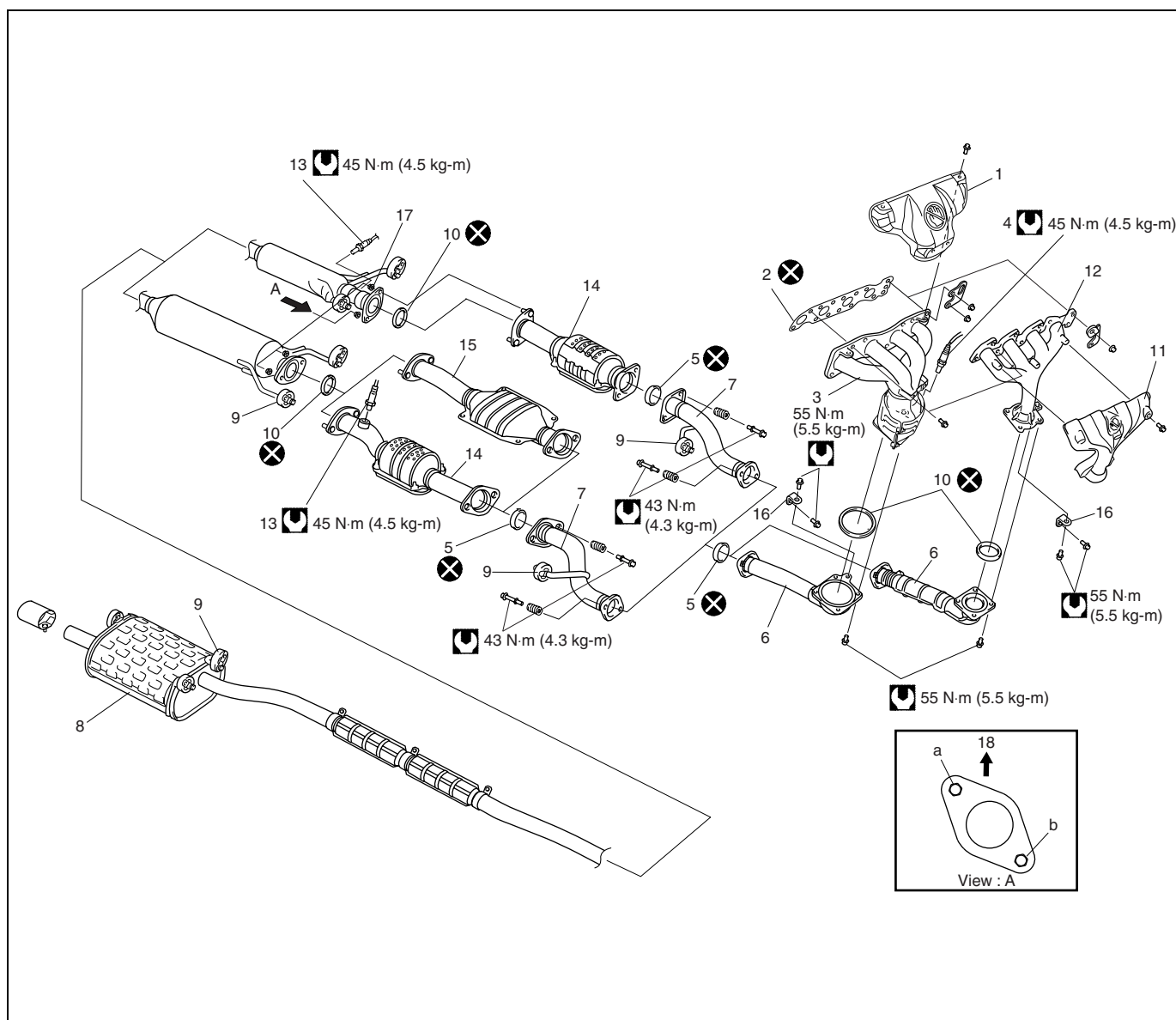
For the items with asterisk (*) in the “CONTENTS” below, refer to the same section of the Service Manual mentioned in “FOREWORD” of this manual.

CONTENTS

General Description	*	Exhaust Manifold	*
On-Vehicle Service	6K-2	Exhaust Pipe	*
Components	6K-2		

On-Vehicle Service

Components



1. Exhaust manifold cover (with oxygen sensor)	8. Muffler	15. Exhaust chamber
2. Gasket	9. Muffler mounting	16. Exhaust manifold stiffener
3. Exhaust manifold (with oxygen sensor)	10. Gasket	 17. Exhaust pipe nut: Tighten exhaust pipe nut (a) first and next (b) as shown in View "A".
4. Heated oxygen sensor-1	11. Exhaust manifold cover (without oxygen sensor)	18. Upper side
5. Seal ring	12. Exhaust manifold (without oxygen sensor)	 Tightening torque
6. Exhaust No.1 pipe	13. Heated oxygen sensor-2 (if equipped)	 Do not reuse.
7. Exhaust No.2 pipe	14. Catalyst case	

WARNING:

To avoid the danger of being burned, do not touch the exhaust system when the system is hot. Any service on the exhaust system should be performed when the system is cool.

SECTION 7B1

AUTOMATIC TRANSAXLE

7B1

WARNING:

For vehicles equipped with Supplemental Restraint (Air Bag) System :

- Service on and around the air bag system components or wiring must be performed only by an authorized SUZUKI dealer. Refer to “Air Bag System Components and Wiring Location View” under “General Description” in air bag system section in order to confirm whether you are performing service on or near the air bag system components or wiring. Please observe all WARNINGS and “Service Precautions” under “On-Vehicle Service” in air bag system section before performing service on or around the air bag system components or wiring. Failure to follow WARNINGS could result in unintentional activation of the system or could render the system inoperative. Either of these two conditions may result in severe injury.
- Technical service work must be started at least 90 seconds after the ignition switch is turned to the “LOCK” position and the negative cable is disconnected from the battery. Otherwise, the system may be activated by reserve energy in the Sensing and Diagnostic Module (SDM).

NOTE:

For the items with asterisk (*) in the “CONTENTS” below, refer to the same section of the Service Manual mentioned in “FOREWORD” of this manual.

CONTENTS

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2 driving cycle detection logic.....	*	Trouble diagnosis table-1	*
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Precaution in Diagnosing Trouble	*	Trouble diagnosis table-3.....	*
Automatic Transaxle Diagnostic Flow Table	*	Road Test	*
Malfunction Indicator Lamp (MIL) Check.....	*	Manual Road Test.....	*
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Diagnostic Trouble Code (DTC) Check.....	*	Stall Test	*
Reading DTC from ECM using SUZUKI		Time Lag Test	*
scan tool – method-1	*	Line Pressure Test.....	*
		“P” Range Test.....	*

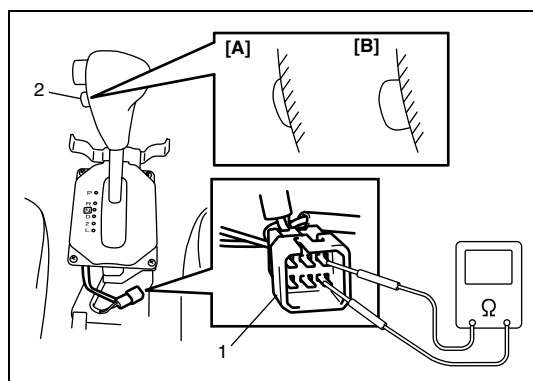
Diagnostic Flow Table A-1: No Gear Shift to O/D	*	Fluid level check at room temperature – Cold check	*
Diagnostic Flow Table A-2: No Lock-Up Occurs.....	*	Fluid change	*
Diagnostic Flow Table A-3: “O/D OFF” Lamp Circuit Check.....	*	A/T fluid cooler hoses	*
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DTC P0715/DTC No.14 Input/Turbine Speed Sensor Circuit Malfunction.....	*	Output Shaft Speed Sensor/VSS.....	*
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DTC P0725/DTC No.35 Engine Speed Input Circuit Malfunction	*	Throttle Position Sensor	*
DTC P0741/DTC No.29 TCC Circuit Performance or Stuck Off	*	Engine Coolant Temperature Sensor	*
DTC P0743/DTC No.25 or No.26 TCC Circuit Electrical	*	O/D OFF Switch.....	*
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DTC P0751/DTC No.17 Shift Solenoid-A/No.1 Performance or Stuck Off.....	*	Pressure Control Solenoid Valve.....	*
DTC P0756/DTC No.28 Shift Solenoid-B/No.2 Performance or Stuck Off.....	*	Transmission Control Module (TCM)	*
DTC P0753/DTC No.21 or No.22 Shift Solenoid-A/No.1 Electrical	*	Learning control initialization.....	*
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		Torque converter housing	*
		Transaxle case.....	*
		Adjustment before unit assembly.....	*
		Unit Assembly	*
		Tightening Torque Specification.....	*
		Special Tool	*
		Required Service Material.....	*

On-Vehicle Service

O/D OFF Switch

INSPECTION

- 1) Remove console box.
- 2) Disconnect O/D off switch connector (1).
- 3) Check continuity between O/D off switch terminals.



O/D off switch (2) position	Pushing	Free
Continuity	Continuity	No continuity

[A] : Pushing position

[B] : Free position

SECTION 8

BODY ELECTRICAL SYSTEM

WARNING:

For vehicles equipped with a Supplemental Restraint (Air Bag) System :

- Service on and around the air bag system components or wiring must be performed only by an authorized SUZUKI dealer. Refer to “Air Bag System Components and Wiring Location View” under “General Description” in air bag system section in order to confirm whether you are performing service on or near the air bag system components or wiring. Please observe all WARNINGS and “Service Precautions” under “On-Vehicle Service” in air bag system section before performing service on or around the air bag system components or wiring. Failure to follow WARNINGS could result in unintentional activation of the system or could render the system inoperative. Either of these two conditions may result in severe injury.
- Technical service work must be started at least 90 seconds after the ignition switch is turned to the “LOCK” position and the negative cable is disconnected from the battery. Otherwise, the system may be activated by reserve energy in the Sensing and Diagnostic Module (SDM).

NOTE:

For the items with asterisk (*) in the “CONTENTS” below, refer to the same section of the Service Manual mentioned in “FOREWORD” of this manual.

CONTENTS

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Diagnosis

Brake Light

Condition	Possible Cause	Correction
Brake lights do not light up	Bulb(s) blown	Replace bulb(s).
	15A fuse (brake light fuse) installed at end of right side in fuse box on engine room blown	Replace fuse to check for short.
	Brake light (stop lamp) switch faulty	Check switch.
	Wiring or grounding faulty	Repair circuit.
Brake lights stay on	Brake light (stop lamp) switch faulty	Check, adjust or replace switch.

Combination Meter

Condition	Possible Cause	Correction
Display and indicator lamps do not light up	"METER" fuse blown	Replace fuse to check for short.
	Power source circuit (between ignition switch and combination meter) open or short	Repair circuit.
	Wiring or grounding faulty	Repair circuit.
	Combination meter faulty	Replace combination meter.

Fuel Meter

Condition	Possible Cause	Correction
Fuel meter all segments blinks	Wiring harness between combination meter and fuel level sensor is short to ground	Repair short.
	Fuel level sensor faulty	Check fuel level sensor.
Fuel meter lowest segments blinks even if fuel is refilled	Fuel level sensor faulty	Check fuel level sensor.
	Wiring harness connected to fuel level sensor is open	Repair open.
	Combination meter faulty	Replace combination meter.
Fuel meter shows no operation or incorrect operation	Fuel level sensor faulty	Check fuel level sensor.
	Combination meter faulty	Replace combination meter.
	"RADIO DOME" fuse blown	Replace fuse to check for short.

Low Fuel Warning Light

NOTE:

- Confirm that fuel meter is in good condition before referring to the following possible causes.
- The low fuel warning light comes ON when the vehicle is in the following insufficient fuel level.

Low fuel warning light operation :

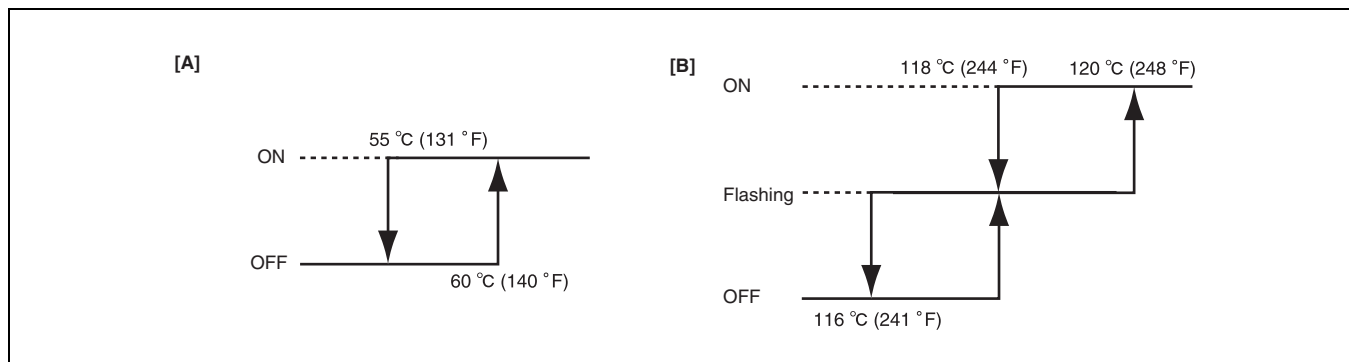
Low fuel warning light operation	Fuel level in fuel tank	Fuel level sensor resistance
OFF	Approx. 7 liter (1.85 gal/US) or more	Approx. 10 - 112 Ω
ON	Approx. 0 – 7 liter (0 – 1.85 gal/US)	Approx. 112 - 130 Ω

Condition	Possible Cause	Check or Correct
Low fuel warning light does not come ON when fuel level is lower than specification	Combination meter internal circuit faulty	Replace combination meter.
Low fuel warning light comes ON steady	Low fuel	Refill fuel.
	Combination meter internal circuit faulty	Replace combination meter.

Low Engine Coolant Temperature Light and High Engine Coolant Temperature Warning Light

NOTE:

The low engine coolant temperature light and the high engine coolant temperature warning light come ON or flash when the specified engine coolant temperature shown below is detected by ECT sensor.



[A] : Low engine coolant temperature light operation

[B] : High engine coolant temperature warning light operation

Condition	Possible Cause	Check or Correct
Low engine coolant temperature light and/or high engine coolant temperature warning light does not come ON after ignition switch turns to ON position	Combination meter internal circuit faulty	Check combination meter.
	Wiring or grounding faulty	Repair.
Low engine coolant temperature light comes ON steady or flashing	Engine coolant is lower than specified temperature	-
	Combination meter internal circuit faulty	Check combination meter.
	ECT sensor faulty	Check ECT sensor.
	ECT signal from ECM faulty	Check "Engine Coolant Temp. Signal for Combination meter" referring to "Inspection of ECM and Its Circuit" in Section 6.
	Wiring or grounding faulty	Repair.
High engine coolant temperature light comes ON steady or flashing	Engine coolant is excessive high temperature	Cool engine off
	Combination meter internal circuit faulty	Check combination meter.
	ECT sensor faulty	Check ECT sensor.
	ECT signal from ECM faulty	Check "Engine Coolant Temp. Signal for Combination meter" referring to "Inspection of ECM and Its Circuit" in Section 6.
	Wiring or grounding faulty	Repair.

Wiper and Washer (Rear)

Condition	Possible Cause	Correction
Wiper malfunction	“WIPER/WASHER” fuse blown	Replace fuse to check for short.
	Wiper motor faulty	Check wiper motor.
	Combination switch (wiper switch) faulty	Check wiper switch.
	Rear wiper intermittent relay faulty	Check rear wiper intermittent relay.
	Wiring or grounding faulty	Repair circuit.
Washer malfunction	Washer hose or nozzle clogged	Clean or repair clogged hose or nozzle.
	“WIPER/WASHER” fuse blown	Replace fuse to check for short.
	Washer motor faulty	Check washer motor.
	Combination switch (washer switch) faulty	Check washer motor.
	Wiring or grounding faulty	Repair circuit.

Clock and Thermometer Unit

NOTE:

This thermometer indicates the ambient temperature in front of the radiator. Under any one of the following listed conditions, however, even when the ambient temperature goes up, the thermometer display does not rise so as to correct the rise of the ambient temperature caused by the radiant heat of the engine. When the ambient temperature drops, the thermometer reading follows the change in the temperature.

Be sure to bear this in mind when diagnosing trouble.

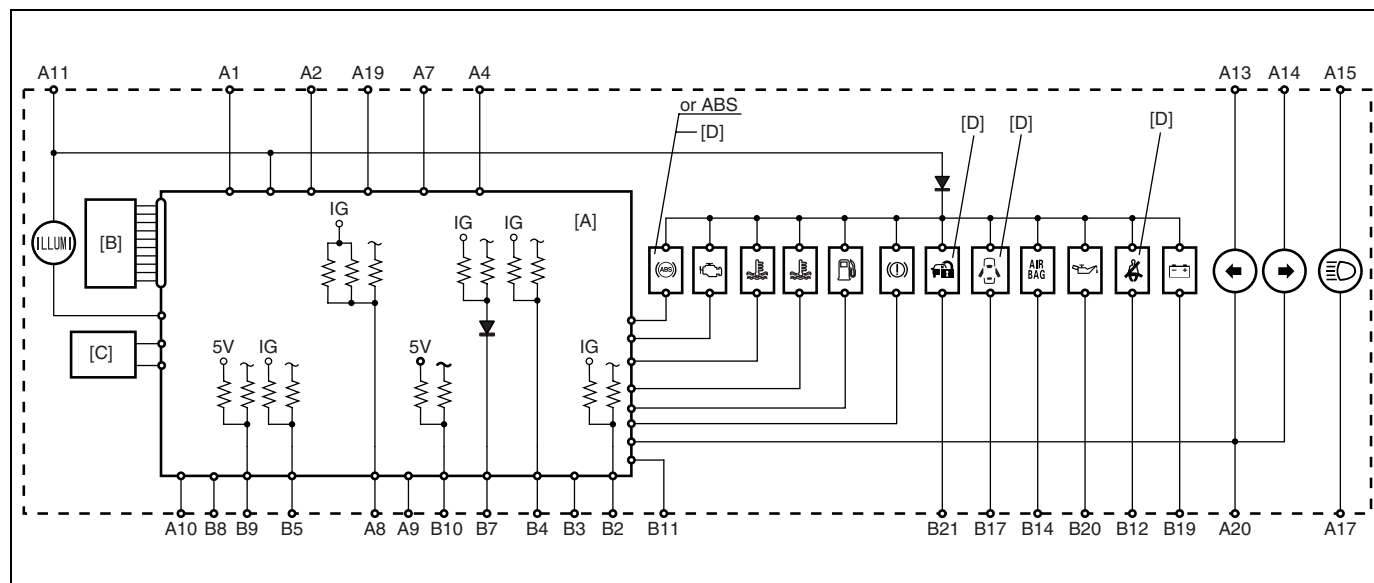
- The vehicle speed is 30 km/h (18 mph) or lower.
- VSS signal is faulty.
- The ignition switch is turned on again within 2 hours.

Condition	Possible Cause	Check or Correct
No displaying of clock and/or thermometer	“ACC” and/or “DOME” fuse Blown	Replace fuse to check for short.
	Wiring and/or grounding faulty	Repair as necessary.
	Clock and thermometer unit faulty	Replace unit.
Incorrect thermometer display	Outside air temperature sensor faulty	Replace outside air temperature sensor.
	VSS signal faulty	Check VSS referring to “DTC P0500 Vehicle Speed Sensor (VSS) Malfunction” in Section 6.
	Wiring and/or grounding faulty	Repair as necessary.
No changing display at -30°C (-22°F)	Outside air temperature is less than -30°C (-22°F)	-
	Outside air temperature sensor faulty	Replace outside air temperature sensor.
	Outside air temperature sensor wiring circuit open circuit and/or short to power circuit	Repair as necessary.
No changing display at 50°C (122°F)	Outside air temperature is more than 50°C (122°F)	-
	Outside air temperature sensor faulty	Replace outside air temperature sensor.
	Outside air temperature sensor wiring circuit short to ground circuit	Repair as necessary.

On-Vehicle Service

Combination Meter

Circuit



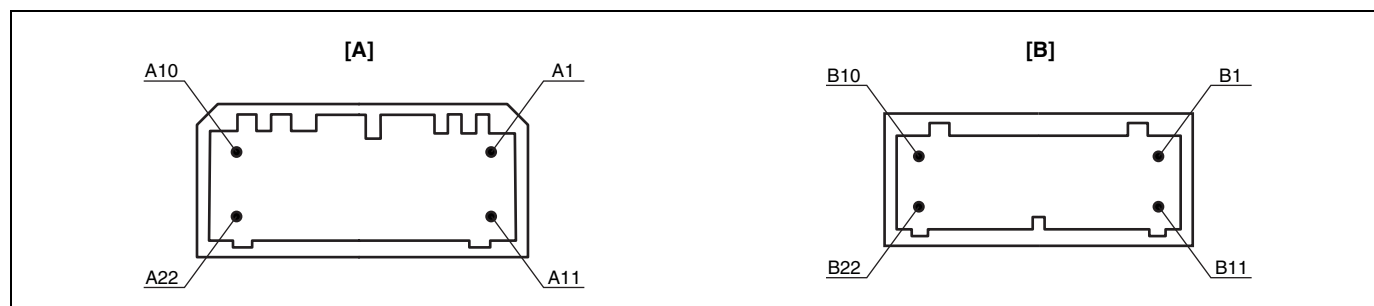
[A]: Computer assembly

[C]: Buzzer unit

[B]: Display (speed/Tacho/Fuel, Shift position indicator (A/T vehicle only), O/D OFF indicator (A/T vehicle only), ODO/TRIP METER, CRUISE ON indicator)

[D]: If equipped

Terminal arrangement of coupler viewed from terminal side



[A]: Connector A

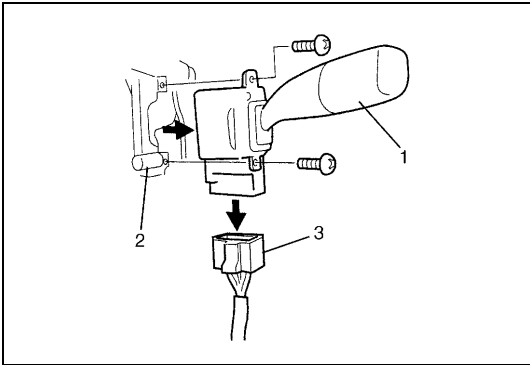
[B]: Connector B

1. To main fuse	WHT/RED	1. Blank	—
2. To headlight relay	RED/YEL	2. To ABS control module (if equipped)	RED/WHT
3. Blank	—	3. To ABS control module (if equipped)	PNK/GRN
4. To ignition switch	BLU/ORN	4. To brake fluid level switch and parking brake switch	RED/BLK
5. Blank	—	5. To ECM	PPL/YEL
6. Blank	—	6. Blank	—
7. To DLC	BLU	7. To VSS	PPL
8. To fuel level gauge	YEL	8. To ECM	LT GRN/BLK
9. To ground of fuel level gauge	BLK/ORN	9. To ECM	YEL/GRN
10. To ground	BLK/ORN	10. To TCM	RED/YEL
11. To ignition switch	BLK/RED	11. To door switch (driver side)	BLK/YEL
12. Blank	—	12. To seat belt switch (if equipped)	BRN/YEL
13. To combination switch (turn L)	GRN/RED	13. Blank	—
14. To combination switch (turn R)	BLU/YEL	14. To air bag control module (if equipped)	YEL/RED
15. To main fuse	WHT/RED	15. Blank	—
16. Blank	—	16. Blank	—
17. To combination switch (dimmer switch)	RED	17. To door switch (Except driver side) (if equipped)	BLK/RED
18. Blank	—	18. Blank	—
19. To illumination lights (if equipped)	BLK	19. To generator	WHT/BLU
20. To ground of illumination	BLK	20. To oil pressure switch	BLU
		21. To ECM (Vehicle with Immobilizer control system)	PNK
		22. Blank	—

Wipers and Washers

Rear wiper and washer switch

REMOVAL



- 1) Disconnect negative cable at battery.
- 2) Remove steering column hole cover.
- 3) Remove steering column covers.
- 4) Remove wiper and washer switch (1) from combination switch (2) and disconnect its coupler (3).

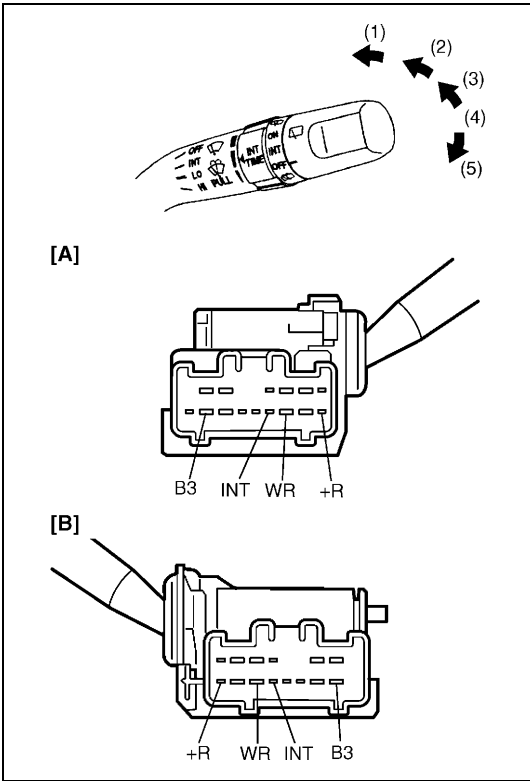
INSPECTION

Check for continuity between terminals at each switch position as shown below. If check result is not as specified, replace.

Position \ Terminal	B3	WR	INT	+R
(1) WIPER and WASHER ON	☐	☐		☐
(2) WIPER ON	☐			☐
(3) INT ON	☐		☐	
(4) OFF				
(5) WASHER and WASHER ON	☐	☐		

[A] : LH steering vehicle

[B] : RH steering vehicle



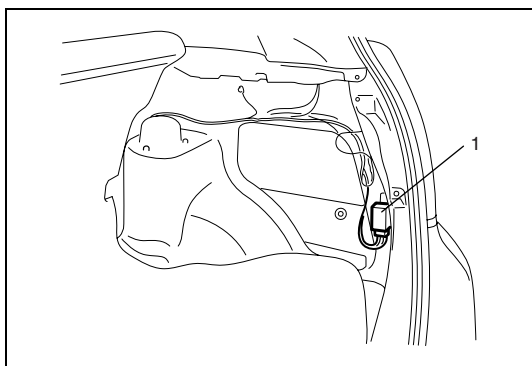
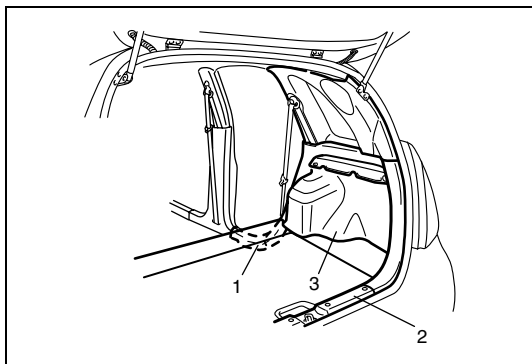
INSTALLATION

Reverse removal procedure for installation.

Rear wiper intermittent relay

REMOVAL

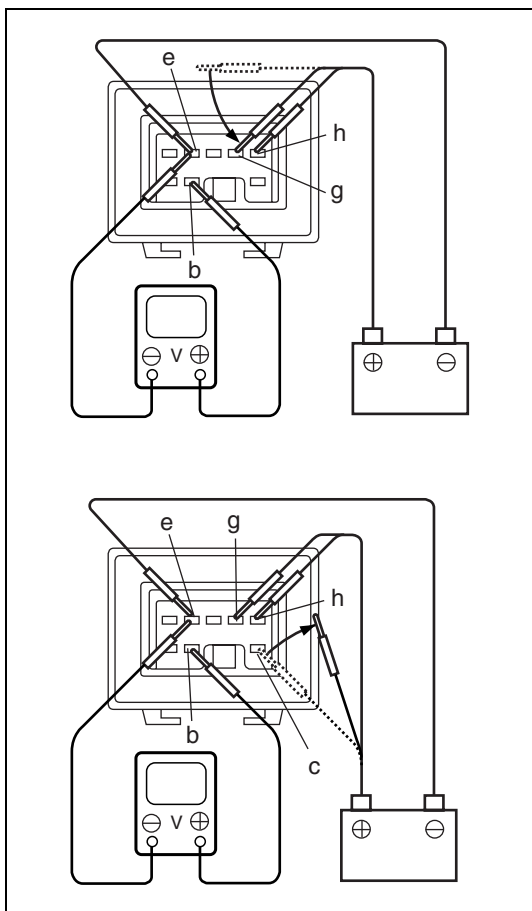
- 1) Disconnect negative (–) cable from battery.
- 2) Remove rear side sill scuff (1), rear luggage end garnish (2) and quarter inner trim (3).



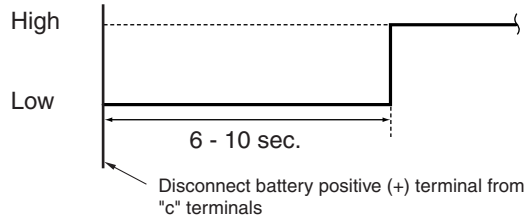
- 3) Remove rear wiper intermittent relay (1) from vehicle.

INSPECTION

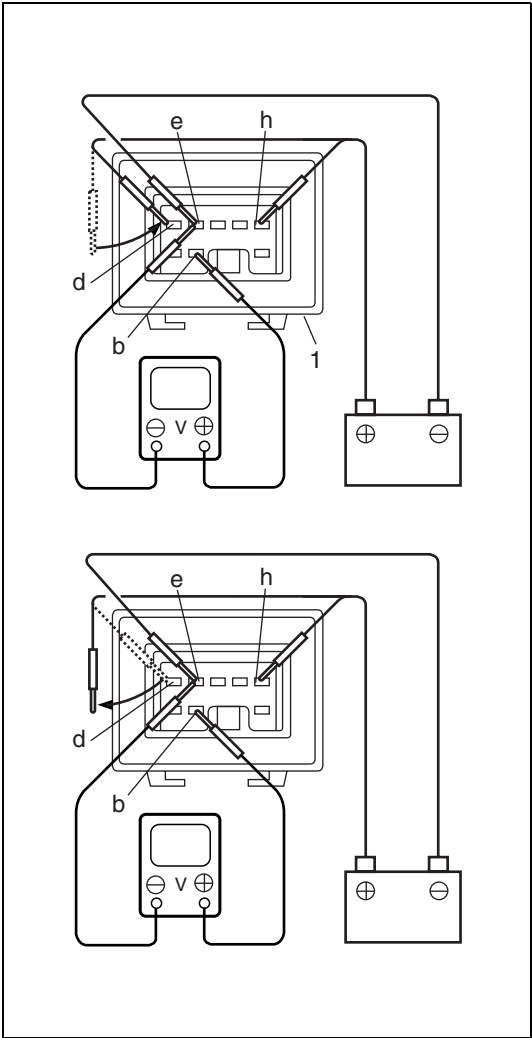
- 1) Check INT circuit as follows.
 - a) Connect battery positive (+) terminal to “h” terminal and battery negative (–) terminal to “e” terminal.
 - b) Check that voltage between “b” terminal and “e” terminal changes from 0 V to battery voltage when connecting battery positive (+) terminal to “g” terminal. If check result is not satisfied, replace relay.
 - c) Connect battery positive (+) terminal to “c” terminal.
 - d) Check that voltage between “b” and “e” terminals changes as in below figure when disconnecting battery positive (+) terminal from “c” terminals. If check result is not satisfied, replace relay.



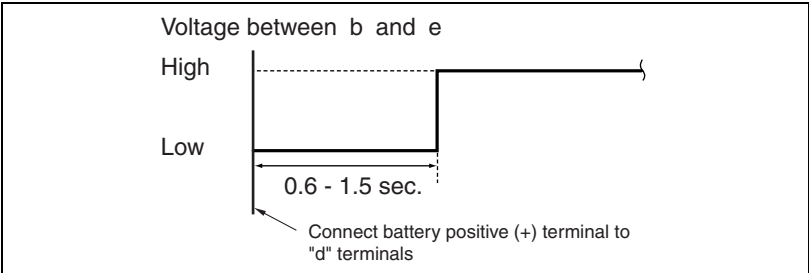
Voltage between “b” and “e” terminals



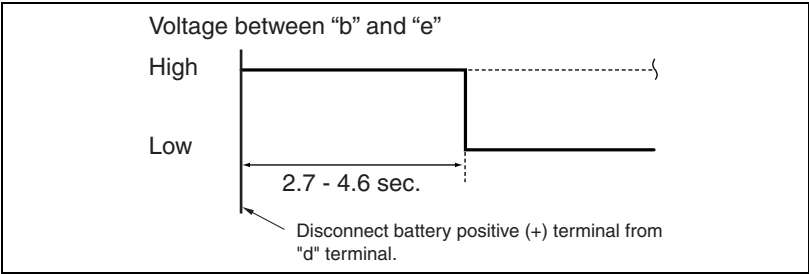
1. Rear wiper intermittent relay



- 2) Check WIPER AND WASH circuit as follows.
- a) Connect battery positive (+) terminal to “h” terminal and battery negative (–) terminal to “e” terminal.
 - b) Check that voltage between “b” terminal and “e” terminal changes as below figure when connecting battery positive (+) terminal to “d”.
- If check result is not satisfied, replace relay.



- c) Check that voltage between “b” terminal and “e” terminal changes as below figure when disconnecting battery positive (+) terminal from “d”.
- If check result is not satisfied, replace relay.



1. Rear wiper intermittent relay

INSTALLATION

Reverse removal procedure to install rear wiper intermittent relay.

Stop (Brake) Lamp

Stop (brake) lamp switch

INSPECTION

Check stop lamp (brake) switch for continuity under each condition below.

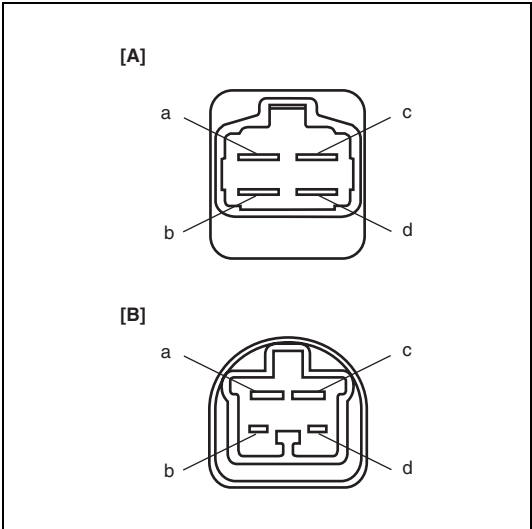
If check result is not as specified, replace switch.

[A]:

Terminal		a	b	c	d
Shaft condition	FREE				
	PUSH				

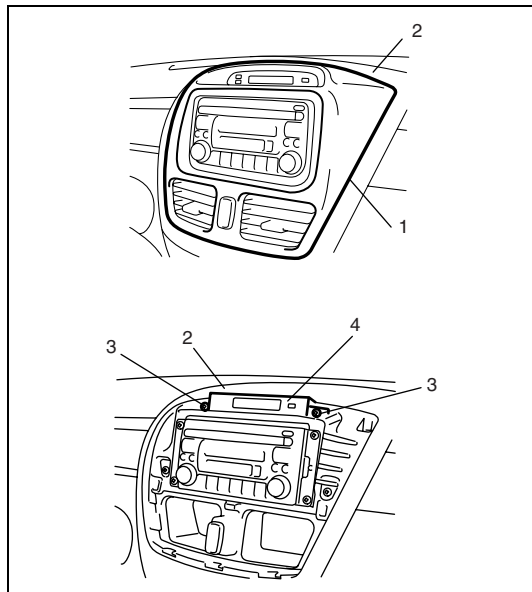
[B]:

Terminal		a	b	c	d
Shaft condition	FREE				
	PUSH				



Clock and Thermometer Unit

Removal



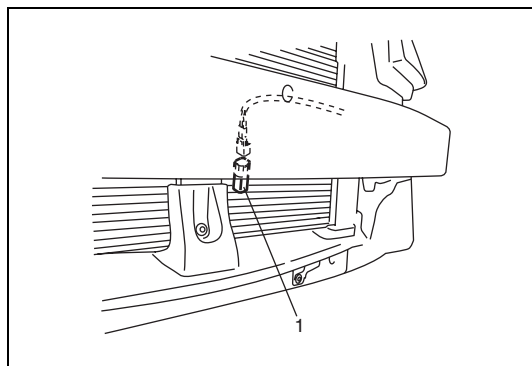
- 1) Remove center garnish upper trim (1) from instrument panel (2).
- 2) Remove 2 mounting screws (3) of clock and thermometer unit.
- 3) Remove clock and thermometer unit (4) from instrument panel (2).
- 4) Disconnect clock and thermometer unit coupler.

Installation

Reverse removal procedure to install clock and thermometer unit.

Outside Air Temperature Sensor

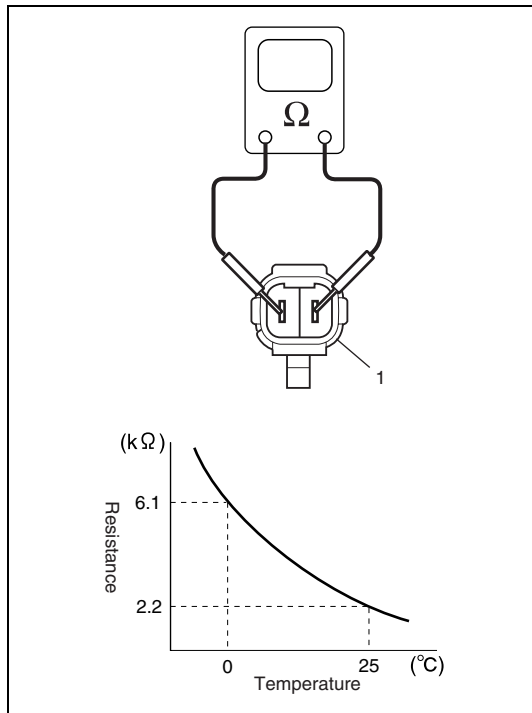
Removal



- 1) Remove front bumper referring to "Front Bumper and Rear Bumper Components" in Section 9.
- 2) Disconnect outside air temperature sensor connector.
- 3) Remove outside air temperature sensor (1) from front bumper cross member.

Inspection

Immerse temperature sensing part of outside air temperature sensor (1) in ice water and measure resistance between sensor terminals while heating water gradually.



Installation

Reverse removal procedure to install outside air temperature sensor.

SECTION 9

BODY SERVICE

WARNING:

For vehicles equipped with a Supplemental Restraint (Air Bag) System:

- Service on and around the air bag system components or wiring must be performed only by an authorized SUZUKI dealer. Refer to “Air Bag System Components and Wiring Location View” under “General Description” in air bag system section in order to confirm whether you are performing service on or near the air bag system components or wiring. Please observe all WARNINGS and “Service Precautions” under “On-Vehicle Service” in air bag system section before performing service on or around the air bag system components or wiring. Failure to follow WARNINGS could result in unintentional activation of the system or could render the system inoperative. Either of these two conditions may result in severe injury.
- Technical service work must be started at least 90 seconds after the ignition switch is turned to the “LOCK” position and the negative cable is disconnected from the battery. Otherwise, the system may be activated by reserve energy in the Sensing and Diagnostic Module (SDM).
- When servicing vehicle body, if shock may be applied to air bag system component parts, remove those parts beforehand. (Refer to Section 10B.)

NOTE:

- For the items with asterisk (*) in the “CONTENTS” below, refer to the same section of the Service Manual mentioned in the “FOREWORD” of this manual.
- Fasteners are important attaching parts in that they could affect the performance of vital components and systems, and/or could result in major repair expense. They must be replaced with one of the same part number or with an equivalent part if replacement becomes necessary.
- Do not use a replacement part of lesser quality or substitute a design. Torque values must be used as specified during reassembly to assure proper retention of these parts.

CONTENTS

Glass, Windows and Mirrors.....*	Body Dimensions.....*
Front Door Glass.....*	Engine room.....*
Front Door Window Regulator.....*	Back door (For Wagon Model).....*
Door Mirror.....*	Trunk room (For Sedan Model).....*
Rear Door Glass.....*	Side body (For Wagon Model).....*
Rear Door Window Regulator.....*	Side body (For Sedan Model).....*
Windshield.....*	Under body.....*
Front Pillar Window.....*	Instrumentation and Driver Information.....*
Quarter Window (For Wagon Model).....*	Instrument Panel.....*
Back Door Glass (For Wagon Model).....*	Seats..... 9-3
Back Window (For Sedan Model).....*	Front Seat.....*
Body Structure.....*	Rear Seat (For Wagon Model)..... 9-3
Front Door Assembly.....*	Rear Seat (For Sedan Model)..... 9-4
Rear Door Assembly.....*	Security and Locks.....*
Back Door Assembly (For Wagon Model).....*	Front Door Lock Assembly.....*
Trunk Lid (For Sedan Model).....*	Rear Door Lock Assembly.....*
Hood.....*	Back Door Lock Assembly
Front Fender.....*	(For Wagon Model).....*
Front Bumper and Rear Bumper.....*	Trunk Lid Lock Assembly (For Sedan Model).....*

Key Coding *

Key usage and identification *

Ignition switch lock cylinder..... *

Exterior and Interior Trim..... 9-5

Floor Carpet *

Head Lining..... 9-5

Roof Molding..... *

Paint and Coatings *

Anti-Corrosion Treatment..... *

Sealant Application Areas
(For Wagon Model) *

Sealant Application Areas (For Sedan Model)..... *

Under Coating Application Areas..... *

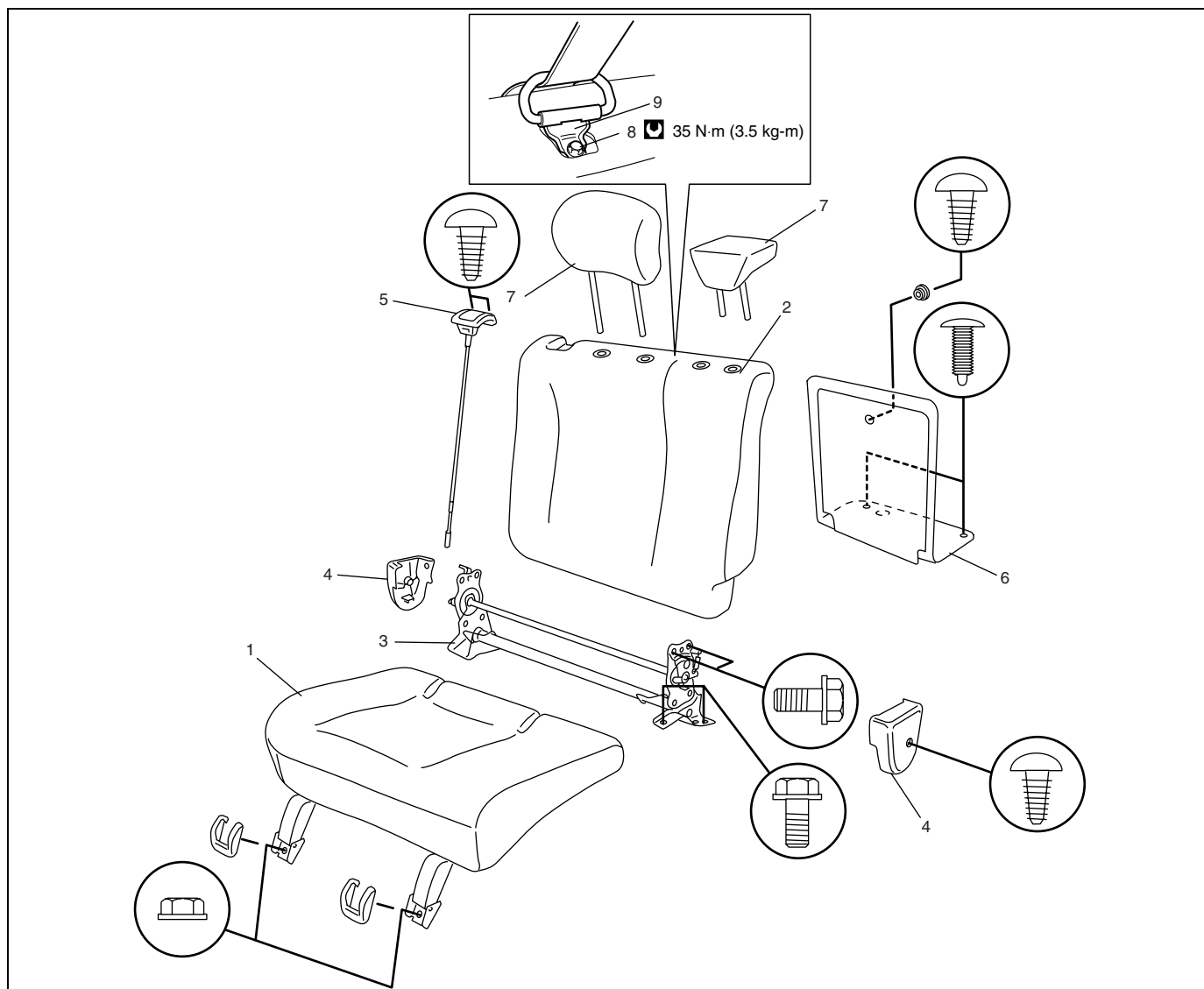
Anti-Corrosion Compound Application Area
(For Wagon Model) *

Anti-Corrosion Compound Application Area
(For Sedan Model)..... *

Required Service Material..... *

Seats

Rear Seat (For Wagon Model)



1. Seat cushion	4. Reclining assembly cover	7. Headrest (if equipped)	Tightening torque
2. Seat back	5. Rear back knob	8. Seat belt guide mounting bolt	
3. Reclining assembly	6. Seat back board	9. Seat belt guide	

REMOVAL

- 1) Remove 2 seat cushion nuts to remove seat cushion.
- 2) Remove 4 seat back bolts to remove seat back.
- 3) Disassemble and repair seat as necessary.

INSTALLATION

Reverse removal procedure to install rear seat noting the following.

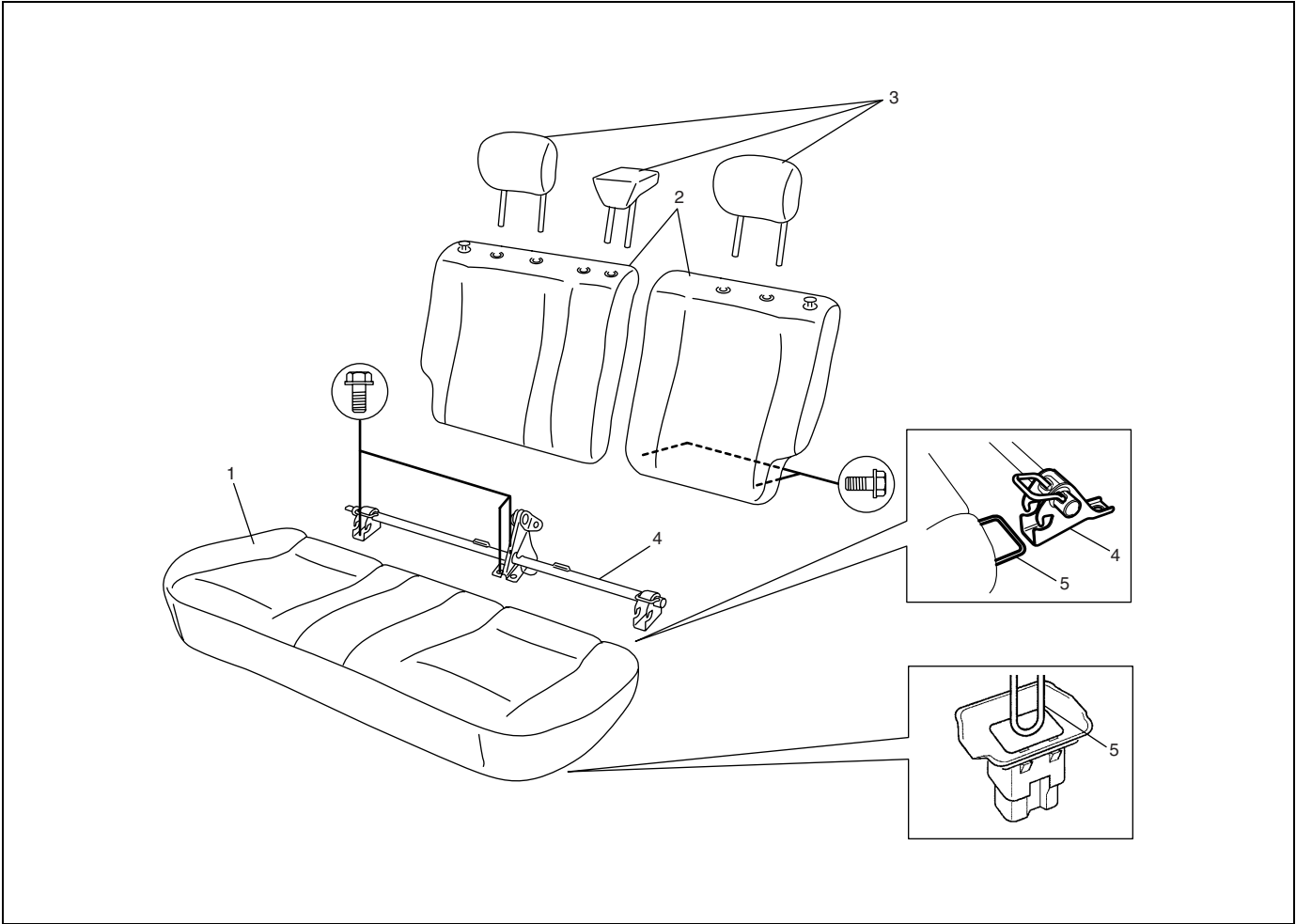
- Tighten seat belt guide mounting bolt to specified torque.

Tightening torque

Seat belt guide mounting bolt :

35 N·m (3.5 kg-m, 25.5 lb-ft)

Rear Seat (For Sedan Model)



1. Seat cushion	4. Seat back bracket
2. Seat back	5. Seat cushion hook
3. Headrest	

REMOVAL

- 1) Fold rear seat back forward.
- 2) Remove 2 seat back bolts to remove seat back.
- 3) Remove seat cushion.
- 4) Disassemble and repair seat as necessary.

INSTALLATION

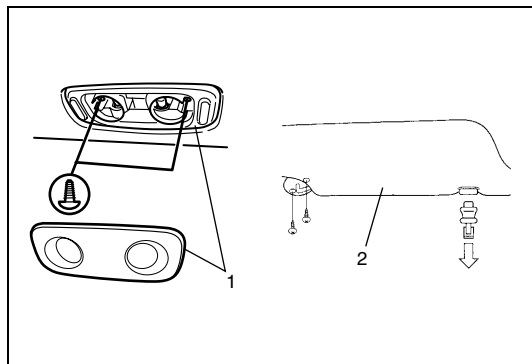
Reverse removal procedure to install rear seat noting the following instruction.

- When installing seat cushion, align seat cushion hook with seat back bracket.

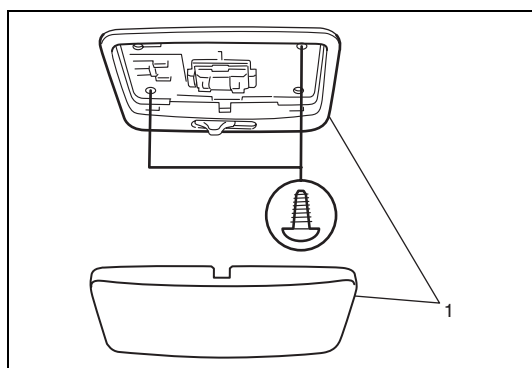
Exterior and Interior Trim

Head Lining

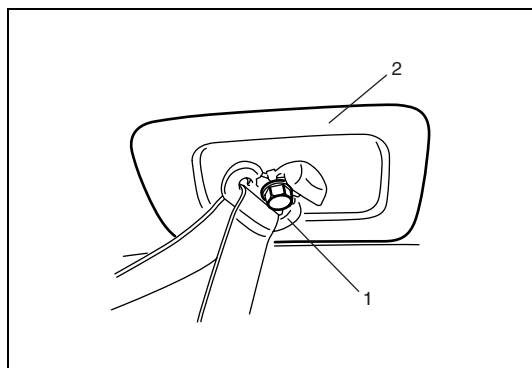
REMOVAL



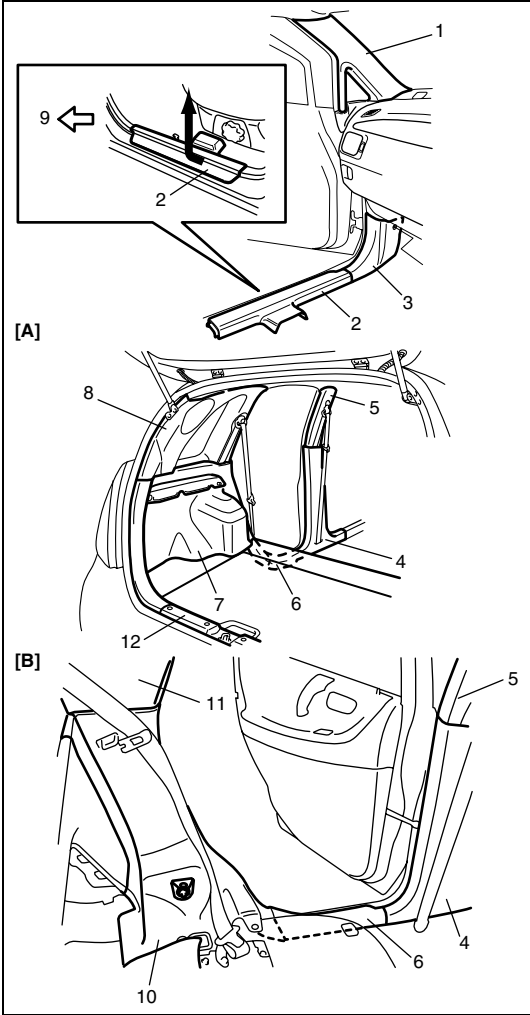
- 1) Remove spot light assembly (1), if equipped.
- 2) Remove sun visor (2).



- 3) Remove dome light assembly (1).



- 4) For wagon model, remove rear center seat belt upper anchor (1) and its cover (2).



5) Remove the following parts in alphabetic order.

- a) Front pillar trim (1)
- b) Dash side panel (3)
- c) Front side sill scuff (2)
- d) Center pillar inner lower trim (4)
- e) Center pillar inner upper trim (5)
- f) Rear side sill scuff (6)

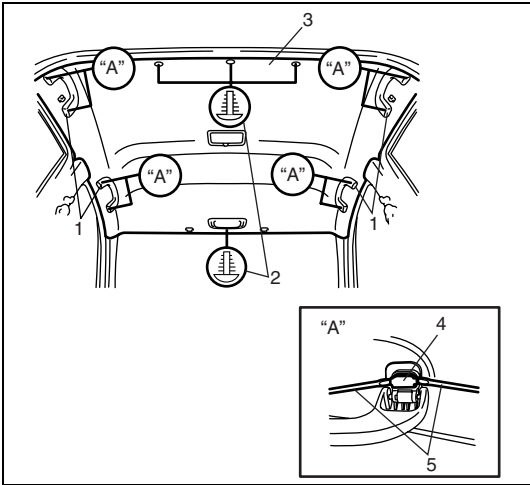
For wagon model:

- g) Back panel trim (12)
- h) Quarter inner trim (7)
- i) Quarter window trim (8)

For sedan model:

- g) Rear side lower trim (10)
- h) Rear side upper trim (11).

9. Forward
[A]: For Wagon model
[B]: For Sedan model



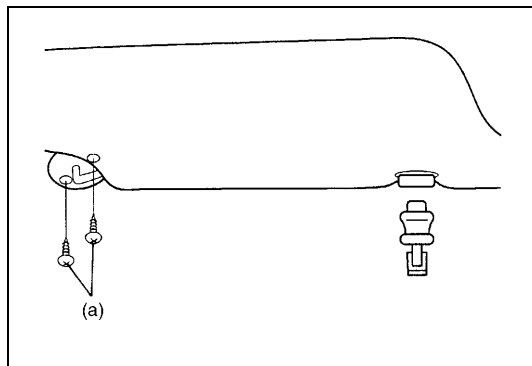
6) Remove assistant grip (1).

7) Remove head lining clips (2), and then remove head lining (3).

4. Clip
5. Flat head driver

INSTALLATION

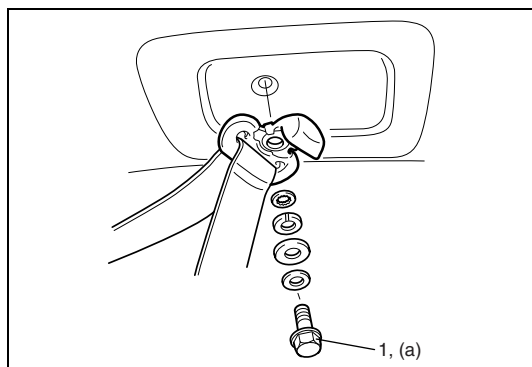
Reverse removal procedure to install head lining noting the following instructions.



- Tighten sun visor mounting bolts to specified torque.

Tightening torque

Sun visor mounting bolt (a) : 4 N·m (0.4 kg-m, 2.8 lb-ft)



- For wagon model, tighten rear center seat belt upper anchor bolt (1) to specified torque.

Tightening torque

**Rear center seat belt upper anchor bolt (a) :
35 N·m (3.5 kg-m, 25.5 lb-ft)**

SECTION 10

RESTRAINT SYSTEM

WARNING:

For vehicles equipped with a Supplemental Restraint (Air Bag) System:

- Service on or around the air bag system components or wiring must be performed only by an authorized SUZUKI dealer. Please observe all WARNINGS and “Service Precautions” under “On-Vehicle Service” in air bag system section before performing service on or around the air bag system components or wiring. Failure to follow WARNINGS could result in unintentional activation of the system or could render the system inoperative. Either of these two conditions may result in severe injury.
- The procedures in this section must be followed in the order listed to disable the air bag system temporarily and prevent false diagnostic trouble codes from setting. Failure to follow procedures could result in possible activation of the air bag system, personal injury or otherwise unneeded air bag system repairs.

10**CAUTION:**

When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread-locking compound, will be called out. The correct torque value must be used when installing fasteners that require it. If the above procedures are not followed, parts or system damage could result.

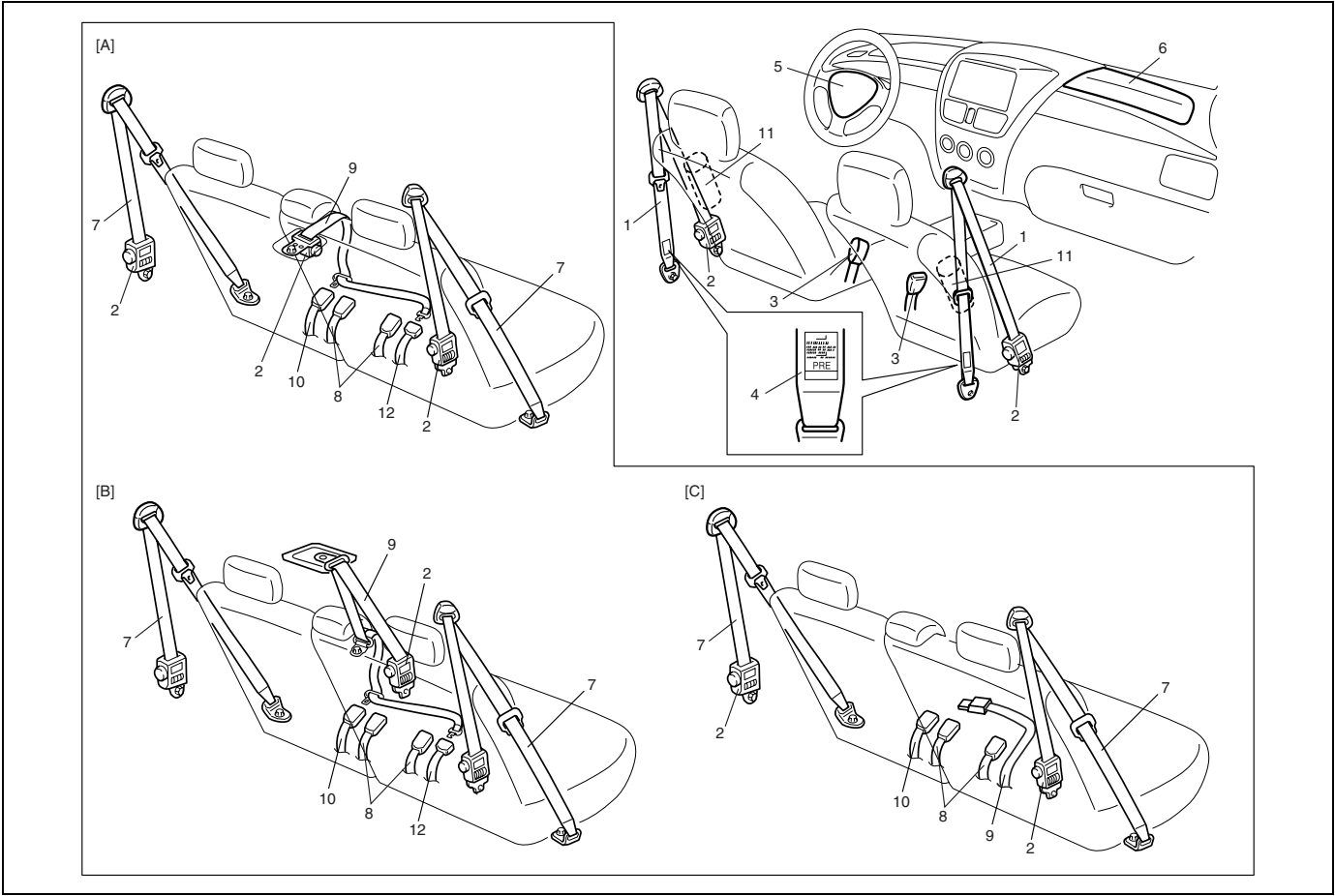
NOTE:

For the items with asterisk (*) in the “CONTENTS” below, refer to the same section of the Service Manual mentioned in “FOREWORD” of this manual.

CONTENTS

General Description	10-2	Service and diagnosis	*
System Specification	10-3	Disabling air bag system	*
Seat Belt Pretensioner (If Equipped)	*	Enabling air bag system	*
Diagnosis	*	Handling and storage	*
Inspection and Repair Required after		Disposal	*
Accident	*	Front Seat Belt	*
On-Vehicle Service	10-4	Rear Seat Belt	10-4
Service Precautions	*	Tightening Torque Specification	10-5

General Description



[A]: For sedan model with 3-point rear center seat belt	3. Buckle for front seat belt	8. Buckle for rear seat belt
[B]: For wagon model with 3-point rear center seat belt	4. Label for seat belt pretensioner	9. Rear center seat belt
[C]: For all model with 2-point rear center seat belt	5. Driver air bag module (if equipped)	10. Buckle for rear center seat belt
1. Front seat belt	6. Passenger air bag module (if equipped)	11. Side air bag (if equipped)
2. Retractor assembly	7. Rear seat belt	12. Connector for rear center seat belt

Seat belt with ELR

The seat belt with emergency locking retractor (ELR) is designed so that it locks immediately (to prevent the webbing from being pulled out of the retractor any further) when any of the following items is detected as exceeding each set value;

- Speed at which the webbing is pulled out of the retractor.
- Acceleration or deceleration of the vehicle speed.
- Inclination.

Seat belt with A-ELR

The automatic and emergency locking retractor (A-ELR) works as an Emergency Locking Retractor (ELR) till its webbing is pulled all the way out and then on as an Automatic Locking Retractor (ALR) till it is retracted fully.
ALR: Automatically locks when the webbing is pulled out from the retractor and allowed to retract even a little. Then the webbing can not be pulled out any further, unless it is wound all the way back into the retractor, which releases the lock and allows the webbing to be pulled out.

Seat belt with ELR and pretensioner

The seat belt with ELR and a pretensioner has a pretensioner mechanism which operates in linkage with the air bag in addition to the above described ELR. The pretensioner takes up the sag of the seat belt in occurrence of a front collision with an impact larger than a certain set value, thereby enhancing restraint performance.

System Specification

There are three types of restraint system for this vehicle.

	Type 1	Type 2	
Front seat belt	• Seat belt with ELR	• Seat belt with ELR	• Seat belt with ELR
Rear seat belt	• Seat belt with A-ELR • Center seat belt	• Seat belt with A-ELR • Center seat belt	• Seat belt with A-ELR • Center seat belt
Supplemental restraint system	—	• Driver and front passenger air bags	• Driver and front passenger air bags
	—	• Driver and front passenger pretensioners	• Driver and front passenger pretensioners • Driver and front passenger side air bags

NOTE:

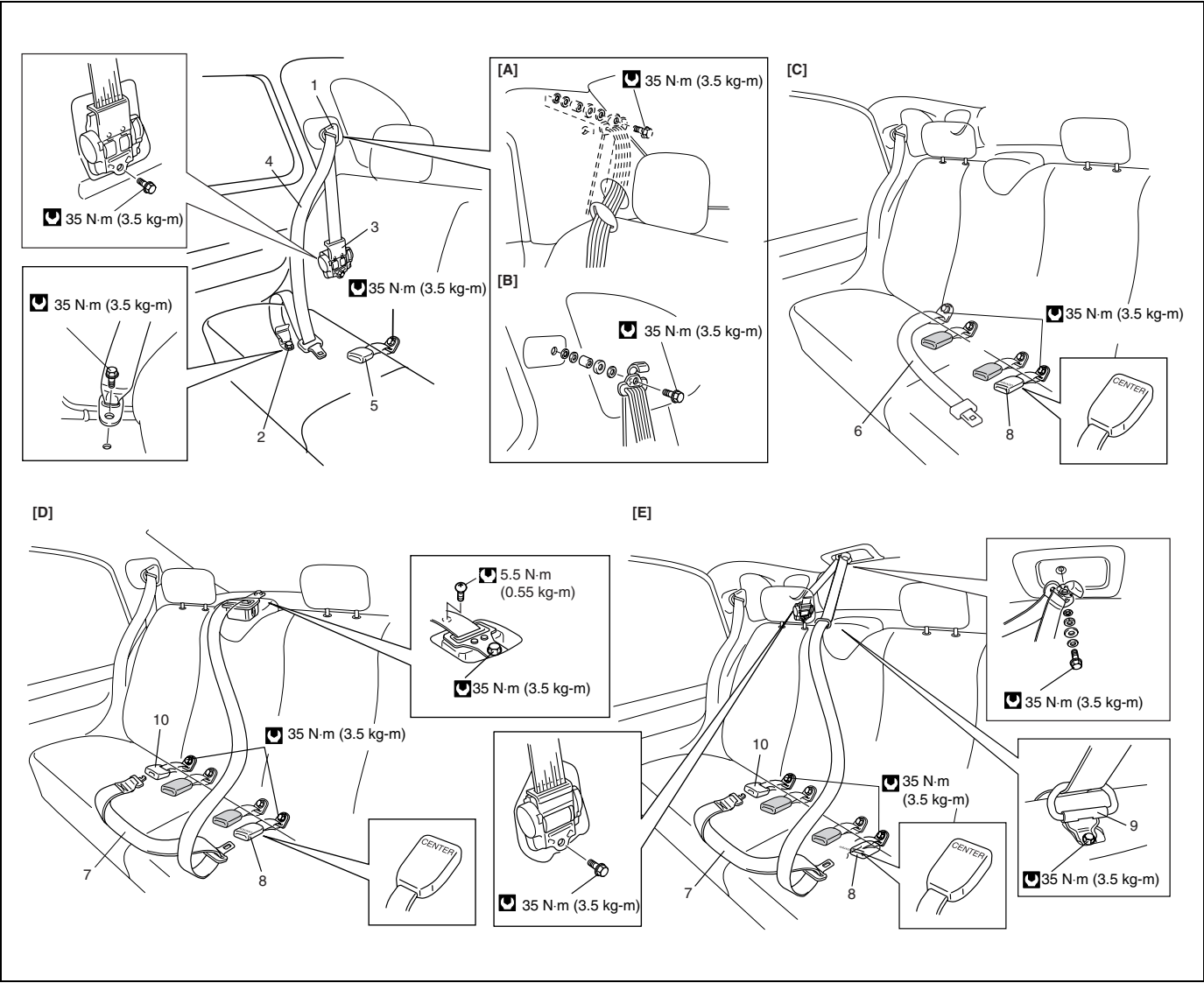
3-point rear center seat belt is equipped with ELR but 2-point rear center seat belt is not equipped with ELR.

On-Vehicle Service

Rear Seat Belt

WARNING:
Be sure to read “SERVICE PRECAUTIONS” before starting to work and observe every precaution during work.

COMPONENT



[A]: For sedan model	[E]: For wagon model equipped with 3-point rear center seat belt	4. Rear seat belt with A-ELR	8. Buckle for rear center seat belt
[B]: For wagon model	1. Upper anchor	5. Buckle for rear seat belt	9. Rear center seat belt guide
[C]: For all model equipped with 2-point rear center seat belt	2. Lower anchor	6. 2-point rear center seat belt	10. Connector for rear center seat belt
[D]: For sedan model equipped with 3-point rear center seat belt	3. Retractor assembly	7. 3-point rear center seat belt with ELR	Tightening torque

REMOVAL

Remove rear seat belts referring to figure of component.

INSPECTION

- Check the rear seat belt in the same way as “INSPECTION” of “FRONT SEAT BELT”.
- As to seat belts with A-ELR, check them as follows in addition to above check.
 - With vehicle at stop, pull seat belt all the way out, let it retract a little and try to pull it. It should not be pulled out, that is, it should be locked where retracted.
 - Let seat belt retract to its original state. Next, pull it half way out, let it retract a little and try to pull it again. It should be pulled out smoothly, that is it should not be locked at this time.

INSTALLATION

Install in reverse order of removal, noting the following.

- Seat belt anchor bolts should have an unified fine thread (7/16-20 UNF). Under no circumstances should any different sized or metric screw threads be used.

Tightening Torque Specification

Fastening part	Tightening torque		
	N•m	kg-m	lb-ft
Upper and lower anchor bolt	35	3.5	25.5
Retractor assembly bolt	35	3.5	25.5
Retractor assembly screw	5.5	0.55	4.0
Front seat belt, rear seat belt, rear center seat belt mounting bolts	35	3.5	25.5
Rear center seat belt guide mounting bolt	35	3.5	25.5
Rear center seat belt connector mounting bolt	35	3.5	25.5

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