

SUZUKI

VITARA

SUPPLEMENTARY SERVICE MANUAL FOR 5-DOOR MODEL WITH SLIDING ROOF

USE THIS SUPPLEMENTARY SERVICE
MANUAL WITH MANUALS MENTIONED IN
FOREWORD OF THIS MANUAL

SUZUKI
Caring for Customers

99501-60A60-01E
(英)

FOREWORD

This SUPPLEMENTARY SERVICE MANUAL is a supplement to VITARA SERVICE MANUAL (99500-60A10) and VITARA SUPPLEMENTARY SERVICE MANUAL (99501-60A50).

Applicable model: VITARA 5 DOOR MODEL WITH SLIDING ROOF

It describes only service information of sliding roof.

Therefore, whenever servicing 5 door model with sliding roof, consult this supplement first. And for any section, item or description not found in this supplement, refer to the above mentioned SERVICE MANUAL and SUPPLEMENTARY SERVICE MANUAL.

When replacing parts or servicing by disassembling, it is recommended to use SUZUKI genuine parts, tools and service materials (lubricants, sealants, etc.) 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.

SUZUKI MOTOR CORPORATION

*TECHNICAL DEPARTMENT
AUTOMOBILE SERVICE DIVISION*

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SECTION 8

BODY ELECTRICAL SYSTEM

NOTE:

For the items not found in this section of this manual, refer to SECTION 8 of the service manual mentioned in FOREWORD of this manual.

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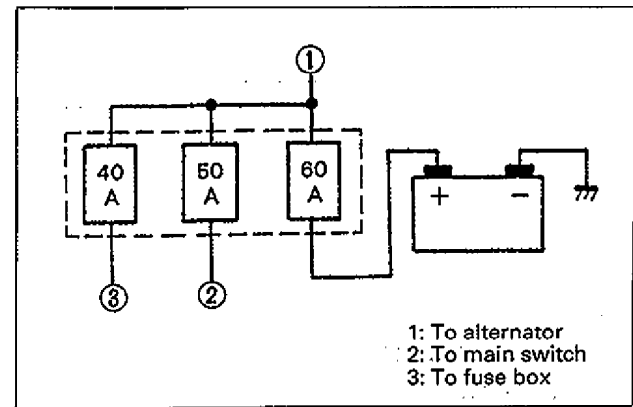
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BODY ELECTRICAL SYSTEM

FUSES (EXCEPT FOR GERMAN MARKET)

The main fuse box is located on the fender apron panel in the engine room and the fuse box is installed to underside of the instrument cover panel. The data and arrangement of each fuse are as shown.

MAIN FUSE BOX CIRCUIT



60A50-8-2-1S

FUSE BOX DESIGNATION

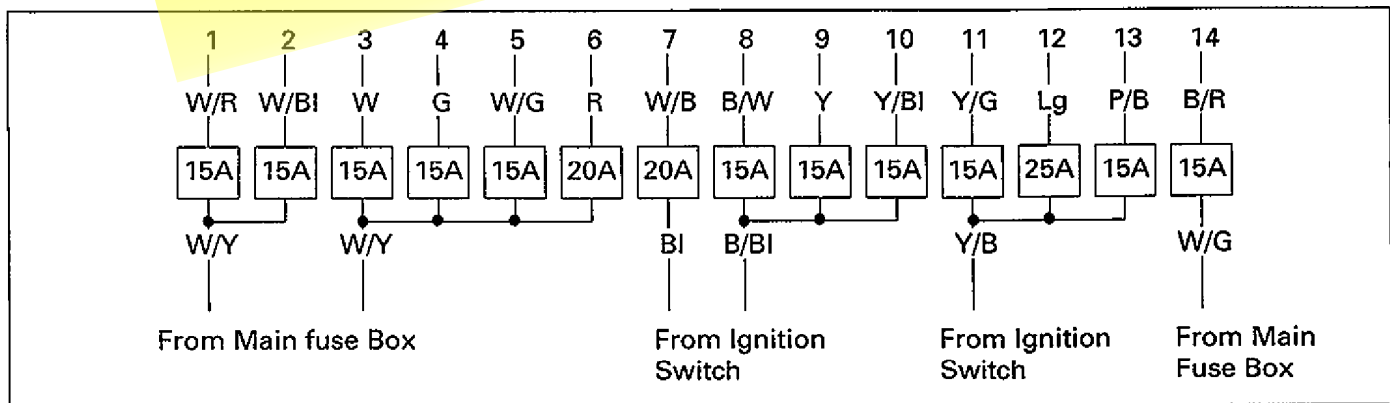
1	2	3	4	5	6	7
15A	15A	15A	15A	15A	20A	20A
HEAD R-L		TAIL DOME	STOP HORN	HAZARD	DOOR LOCK	CIGAR RADIO
8	9	10	11	12	13	14
15A	15A	15A	15A	25A	15A	15A
IG. COIL METER	TURN BACK	WIPER WASHER	REAR DEFG.	HEATER	SUN ROOF	FI

USE DESIGNATED FUSES ONLY

1. Headlight RH
2. Headlight LH, High beam indicator
3. Tail light, dome light
4. Stop light, horn
5. Hazard
6. Door lock controller (If equipped)
7. Cigar lighter, Radio
8. Ignition coil, distributor, meter
9. Turn signal light, back-up light
10. Rear defogger
11. Wiper, washer
12. Heater
13. Sliding roof
14. Electronic fuel injection main relay

60A60-8-2-2S

FUSE CIRCUIT COLOR CODES



30A60-8-2-3S

VEHICLE WIRING COLOR CODES

W/R : White/Red	Y/BI : Yellow/Blue	BI/Y : Blue/Yellow
G : Green	Lg : Light green	B/BI : Black/Blue
B/W : Black/White	BI : Blue	R : Red
Y : Yellow	B : Black	P/B : Pink/Black
W/Y : White/Yellow	B/R : Black/Red	Y/W : Yellow/White
Y/B : Yellow/Black	BI/G : Blue/Green	Y/R : Yellow/Red
G/R : Green/Red	W : White	BI/W : Blue/White
W/BI : White/Blue	W/B : White/Black	
W/G : White/Green	Y/G : Yellow/Green	

CAUTION:

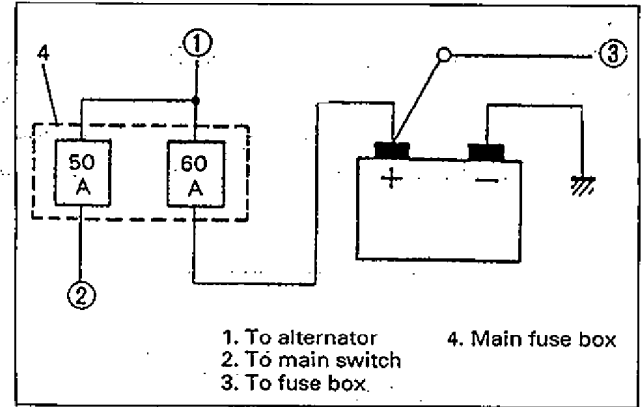
- When replacing a fuse, be sure to use one having a correct rated amperage.
- Before replacing a fuse, turn OFF every switch of electric equipment including main switch.

60A60-8-2-4S

FUSES (FOR GERMAN MARKET ONLY)

The main fuse box is located on the fender apron panel in the engine room and the fuse box is installed to underside of the instrument cover panel. The data and arrangement of each fuse are as shown.

MAIN FUSE BOX CIRCUIT



60A50-8-3-1S

FUSE BOX DESIGNATION

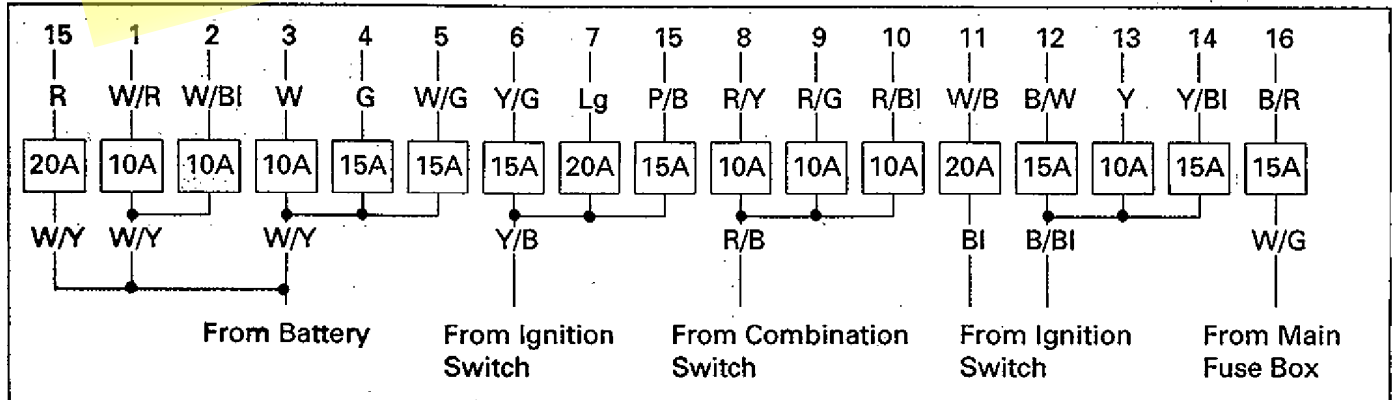
1	2	3	4	5	6	7
10A	10A	10A	15A	15A	15A	20A
HEAD R-L		DOME	STOP HORN	HAZARD	REAR DEFG.	HEATER
8	9	10	11	12	13	14
10A LICENCE	10A TAIL R	10A TAIL L	20A CIGAR RADIO	15A IG. COIL METER	10A TURN BACK	15A WIPER WASHER
USE DESIGNATED FUSES ONLY						

1. Headlight RH
2. Headlight LH
3. Dome light
4. Stop light, horn
5. Hazard
6. Rear defogger
7. Heater
8. Licence lamp
9. Tail lamp RH
10. Tail lamp LH
11. Cigar lighter, radio
12. Ignition coil, meter
13. Turn signal light, back-up light
14. Wiper, washer
15. Door lock controller, Sliding roof
16. Electronic fuel injection main relay

16	FI
15	
20A LOCK	15A SUN ROOF

60A60-8-3-2S

FUSE CIRCUIT COLOR CODES



60A60-8-3-3S

VEHICLE WIRING COLOR CODES

W/R : White/Red	Y/BI : Yellow/Blue	Y/G : Yellow/Green
G : Green	Lg : Light green	BI/Y : Blue/Yellow
B/W : Black/White	BI : Blue	B/BI : Black/Blue
Y : Yellow	B : Black	R : Red
W/Y : White/Yellow	B/R : Black/Red	P/B : Pink/Black
Y/B : Yellow/Black	BI/G : Blue/Green	Y/W : Yellow/White
G/R : Green/Red	BI/W : Blue/White	Y/R : Yellow/Red
W/BI : White/Blue	W : White	
W/G : White/Green	W/B : White/Black	

CAUTION:

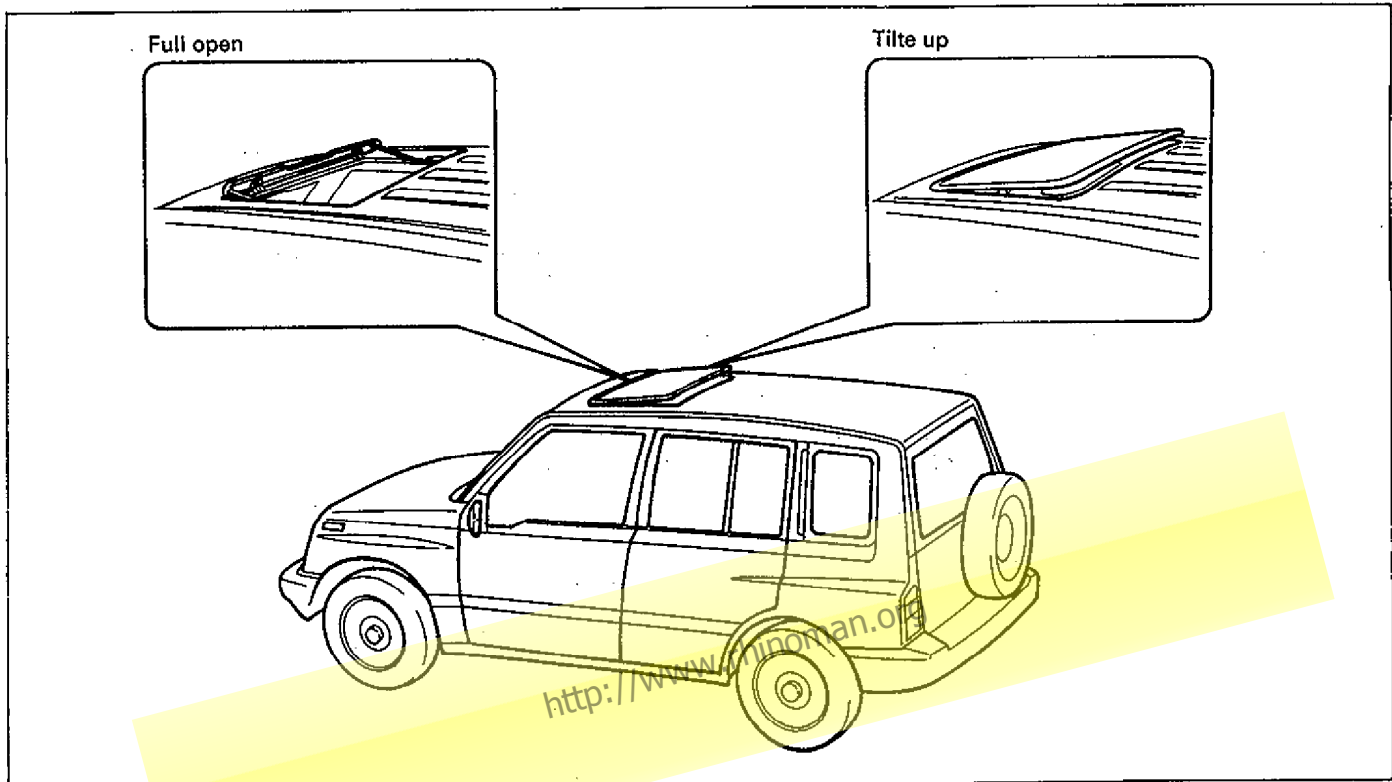
- When replacing a fuse, be sure to use one having a correct rated amperage.
- Before replacing a fuse, turn OFF every switch of electric equipment including main switch.

60A60-8-3-4S

SLIDING ROOF

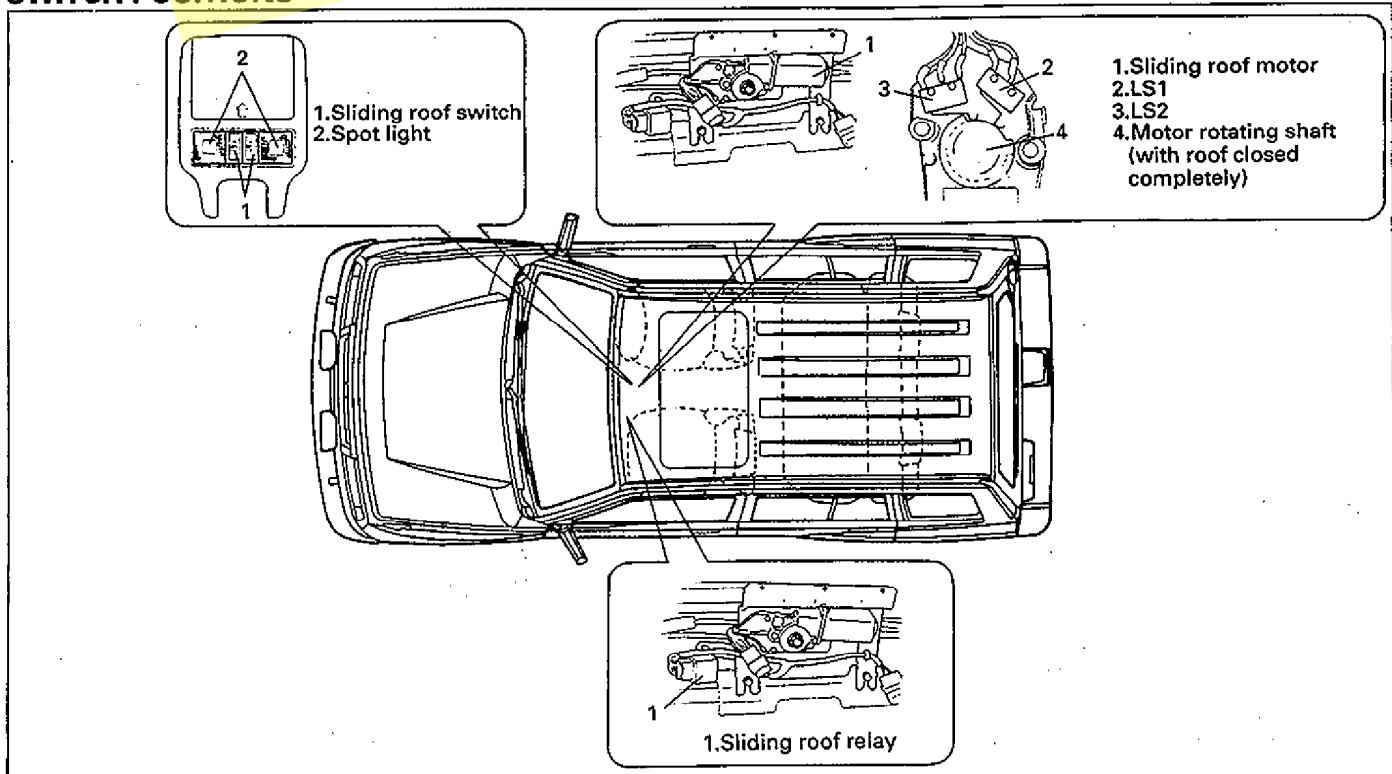
DESCRIPTION

This equipment has two functions to control movement of the sliding roof glass. One is an open/close function and the other is a tilt-up function. The switches to control the operation are incorporated with the spot light. When these switches are operated, the motor runs and through its rotational movement, the wire is moved to open and close the glass and to tilt it up and down.



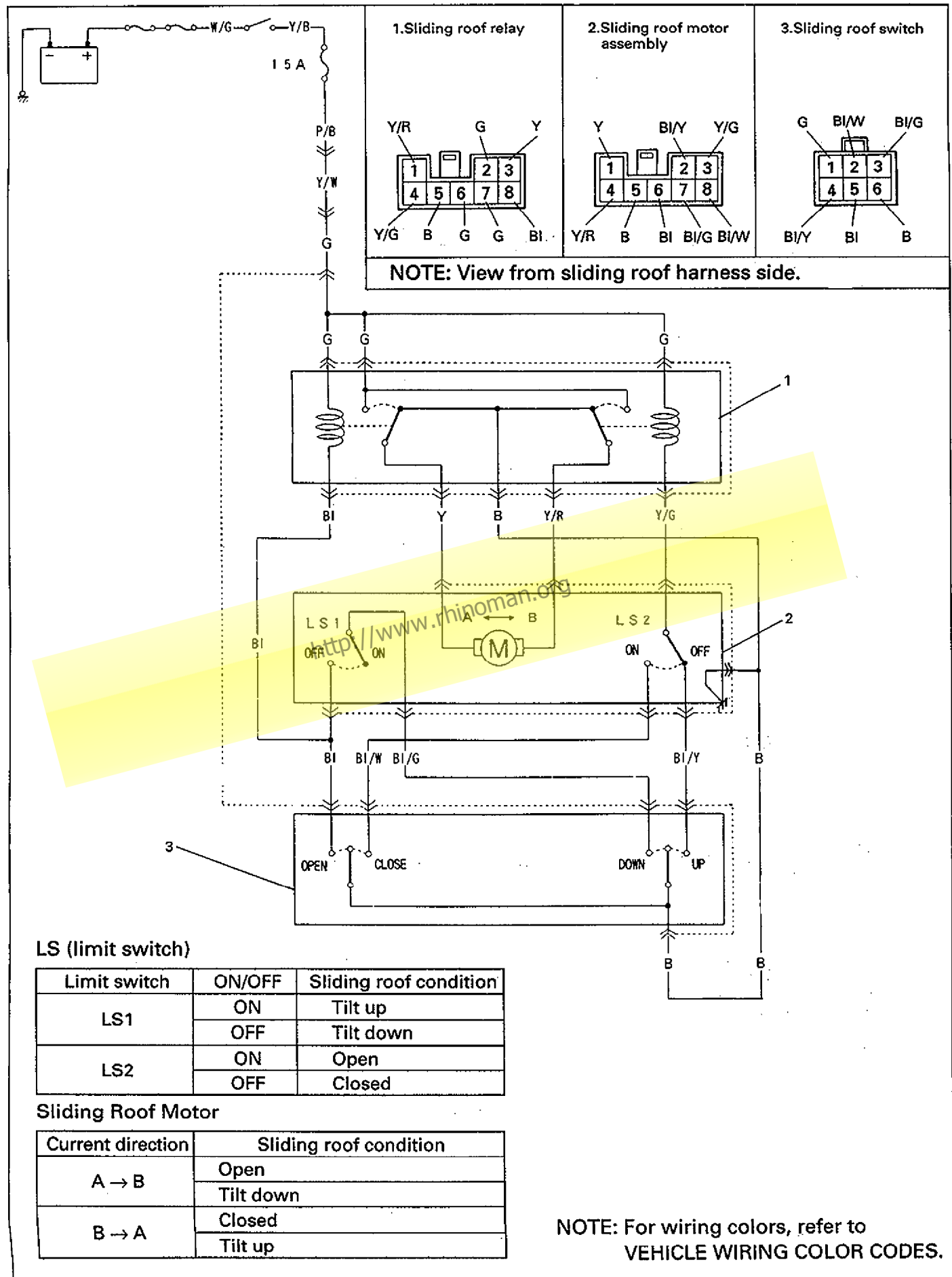
60A60-8-4-1S

SWITCH POSITIONS



60A60-8-4-3S

SLIDING ROOF CIRCUIT



LS (limit switch)

Limit switch	ON/OFF	Sliding roof condition
LS1	ON	Tilt up
	OFF	Tilt down
LS2	ON	Open
	OFF	Closed

Sliding Roof Motor

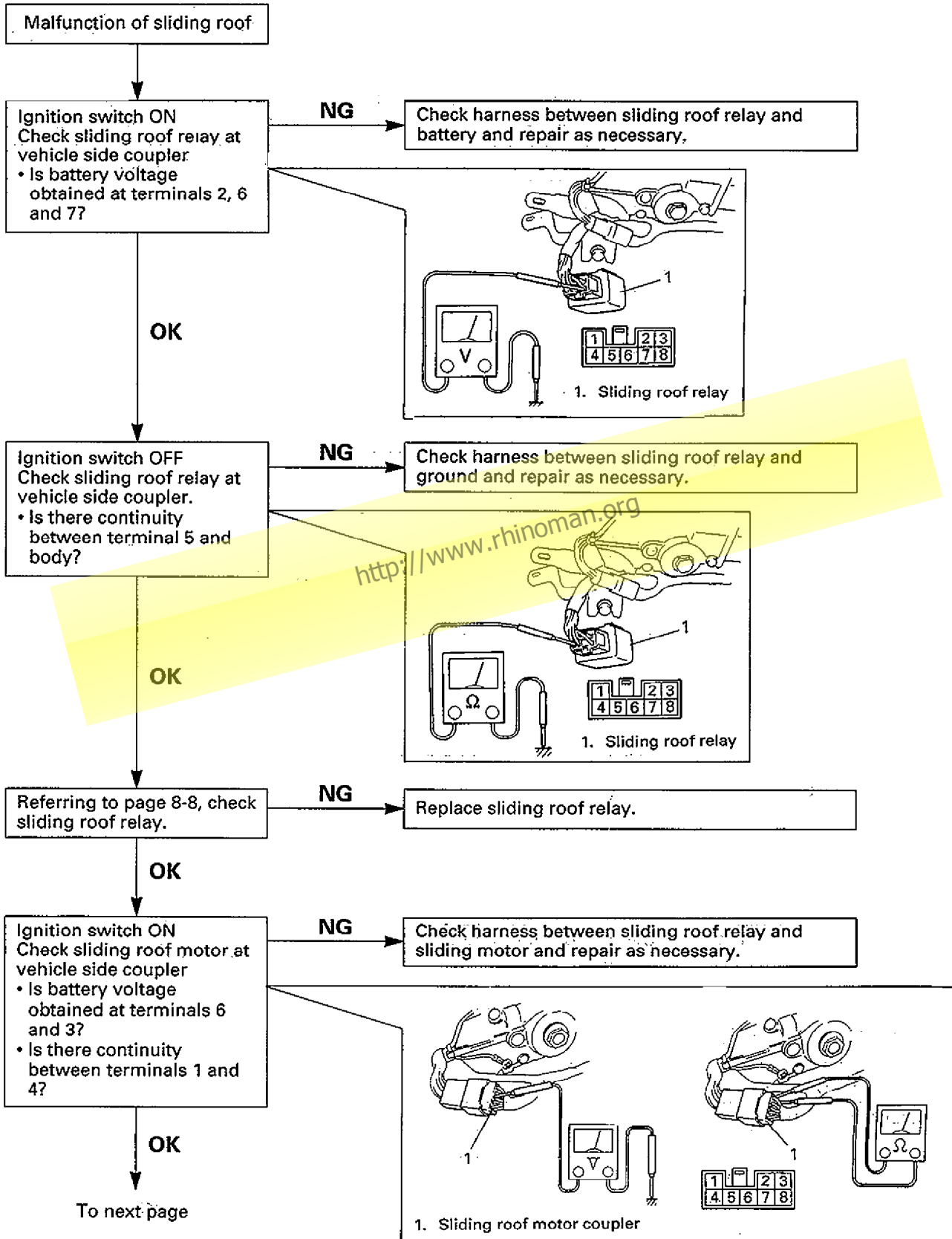
Current direction	Sliding roof condition
A → B	Open
	Tilt down
B → A	Closed
	Tilt up

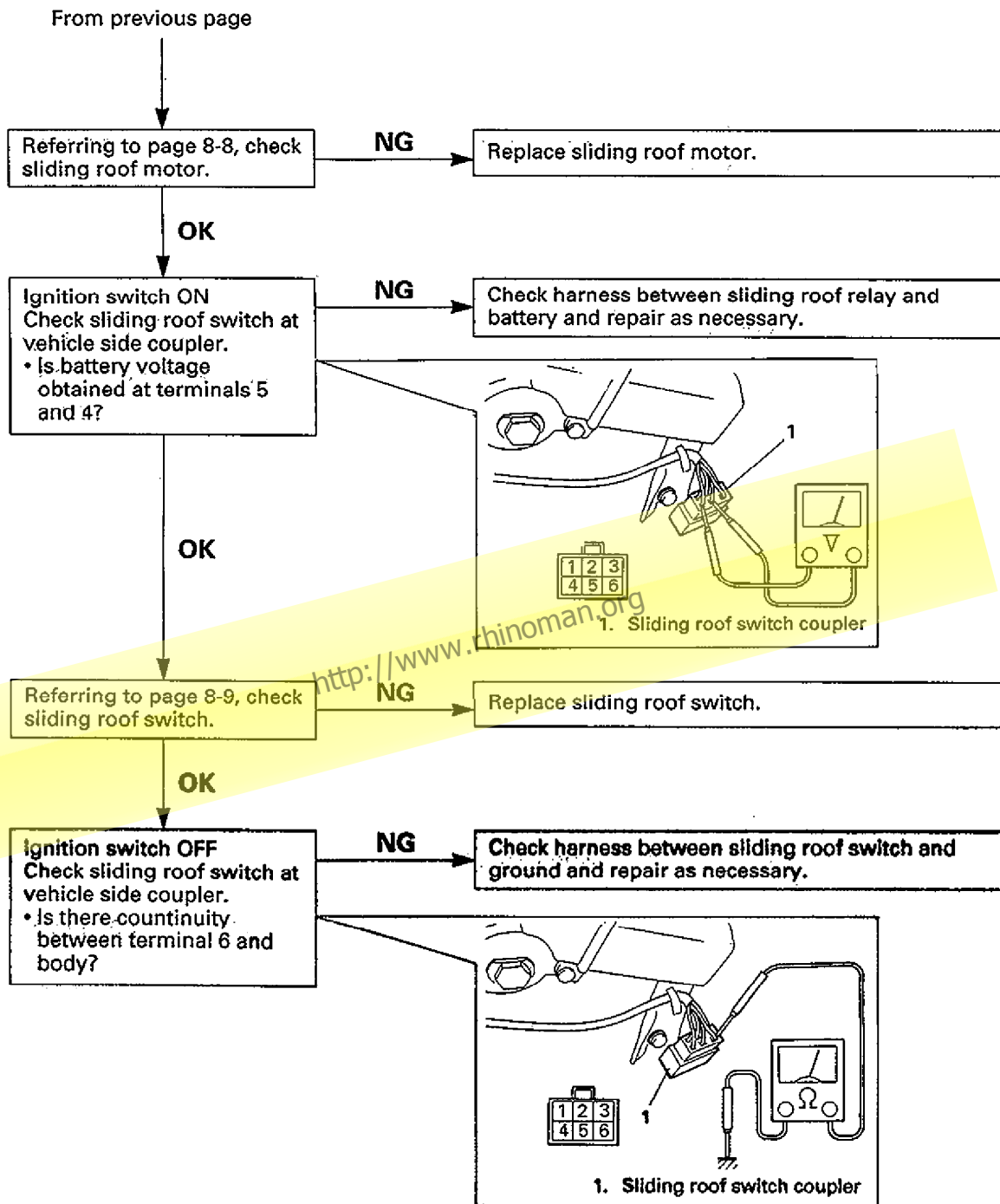
NOTE: For wiring colors, refer to VEHICLE WIRING COLOR CODES.

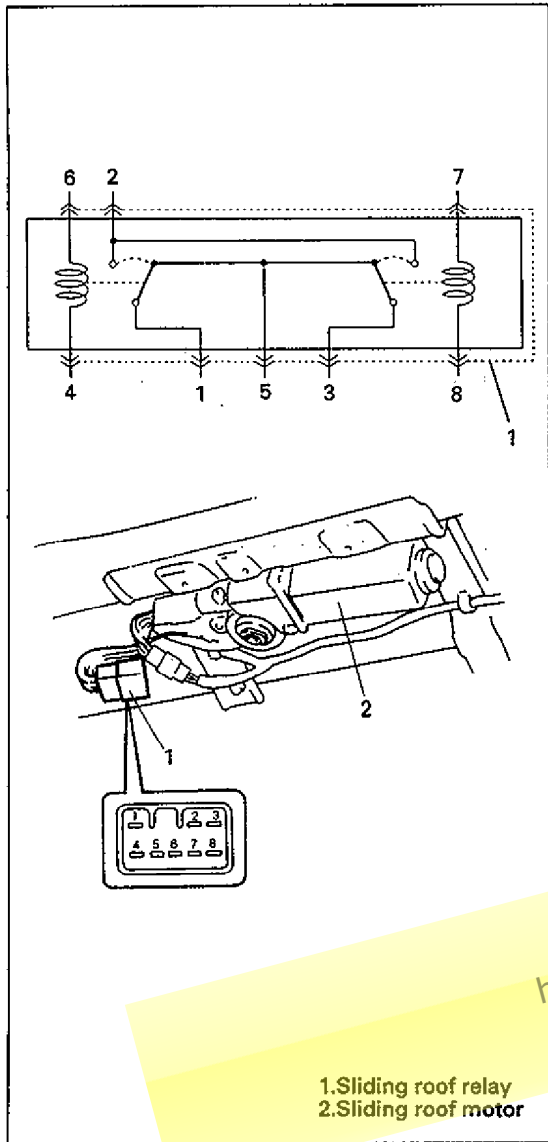
DIAGNOSES

FLOW CHART

Checks should be done with sliding roof closed completely.

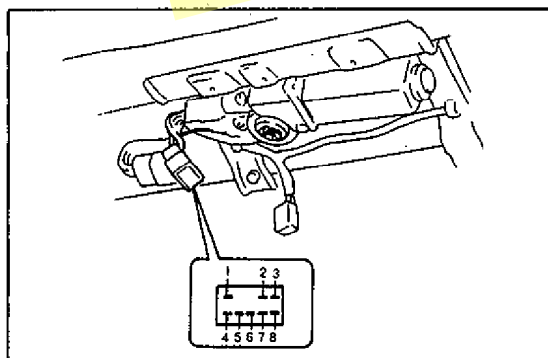






1.Sliding roof relay
2.Sliding roof motor

60A60-8-8-1S



60A60-8-8-4S

ON-VEHICLE SERVICE

INSPECTION

Sliding Roof Relay

- 1) Remove head lining (Refer to SECTION 9 in this manual.).
- 2) Remove sliding roof relay.
- 3) Using ohmmeter, check continuity between relay terminals as follows.

Terminals							
1	2	3	4	5	6	7	8
			○—○		○	○	○
○		○	○	○			

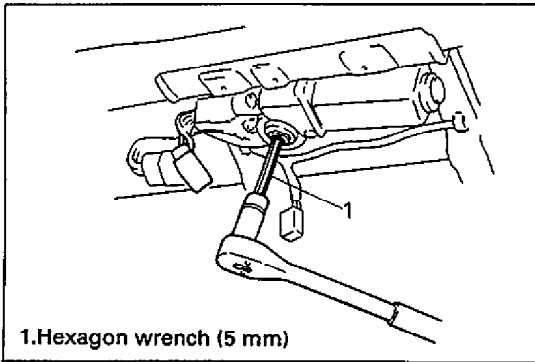
○—○ : indicates that there is continuity.

- 4) Check that continuity occurs between terminals 2 and 1 when 12V is applied to terminal 6 and ground is connected to terminal 4.
- 5) Check that continuity occurs between terminals 2 and 3 when 12V is applied to terminal 7 and ground is connected to terminal 8.

Sliding Roof Motor

1. MOTOR

- 1) Remove head lining (Refer to SECTION 9 in this manual.).
- 2) Disconnect sliding roof motor coupler.
- 3) Check that motor runs when 12V is applied to terminal 1 and ground is connected to terminal 4 of sliding roof motor side coupler.
- 4) Check that motor runs in opposite direction when application of 12V and connection of ground are reversed.

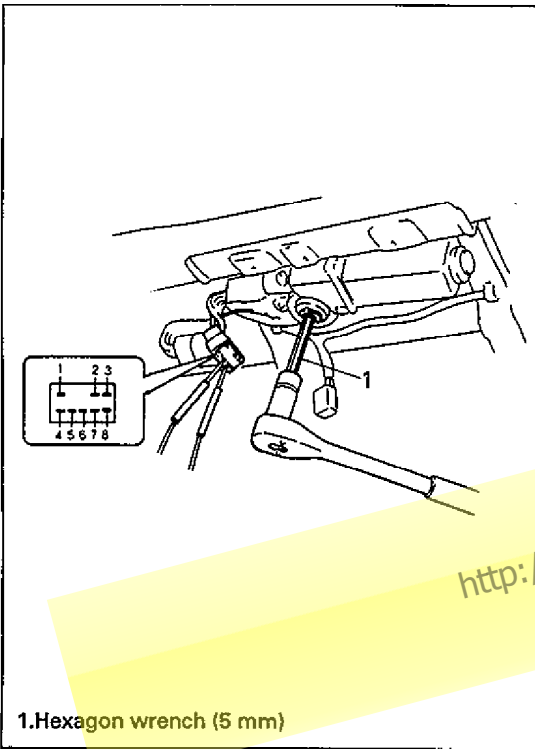


1.Hexagon wrench (5 mm)

60A60-8-9-1S

2. LIMIT SWITCH

- 1) Remove head lining (Refer to SECTION 9 in this manual.).
- 2) Disconnect coupler of sliding roof motor.



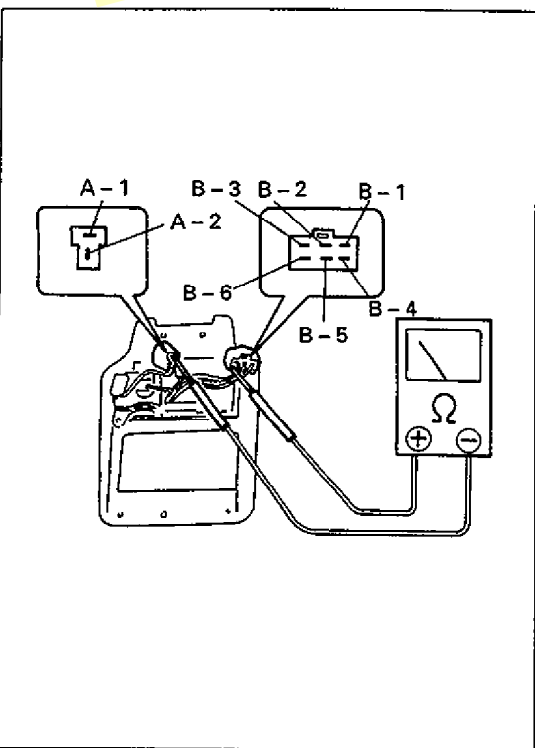
1.Hexagon wrench (5 mm)

60A60-8-9-2S

- 3) Using either ohmmeter and hexagon wrench (5 mm) or ohmmeter and sliding roof handle, check continuity between terminals of sliding roof motor coupler at each position.

	LS1 (limit switch 1)		LS2 (limit switch2)		
	2	7	2	3	8
Tilt-up	○—○				
Open				○—○	
Closed			○—○		

○—○ : indicates that there is continuity.



60A60-8-9-4S

Sliding Roof Switch Assembly

1. Disconnect coupler of sliding roof switch.
2. Using ohmmeter, check continuity between terminals of sliding roof switch coupler at each operation position.

		A1	A2	B1	B2	B3	B4	B5	B6
OFF		○	—	○					
Slide switch	OPEN	○	—	○				○—○	
	CLOSE	○	—	○	○				○
Tilt switch	UP	○	—	○			○—○		
	DOWN	○	—	○		○—○			
Spot lamp	ON		○						○

○—○ : indicates that there is continuity.

SECTION 9

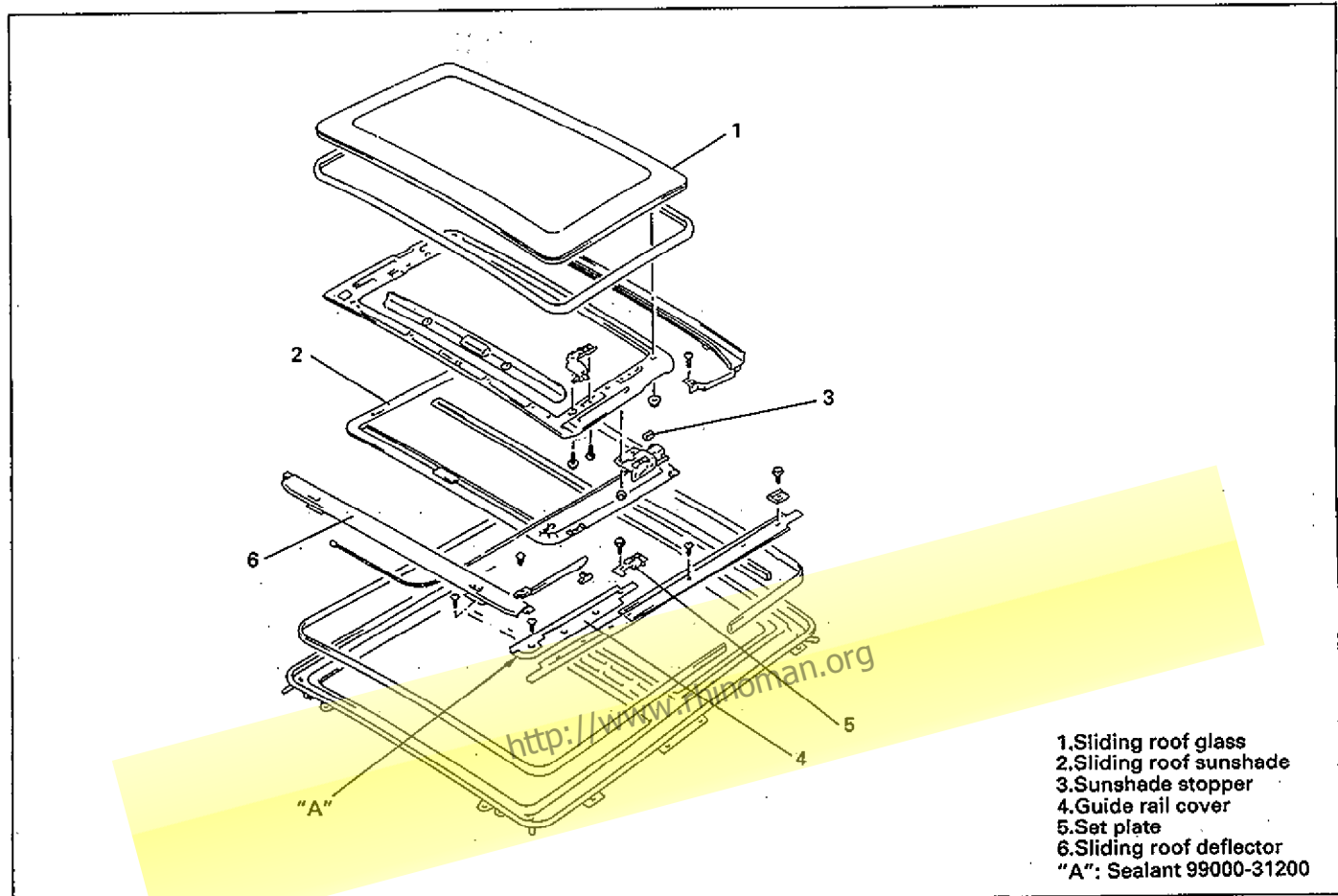
BODY SERVICE

NOTE:

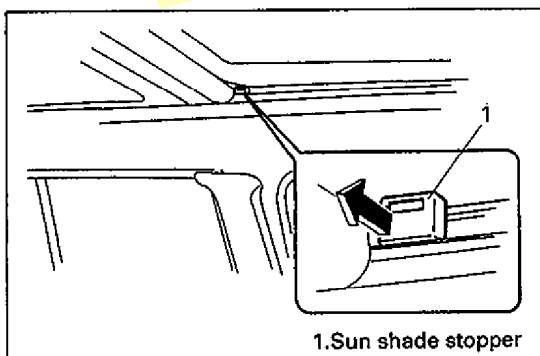
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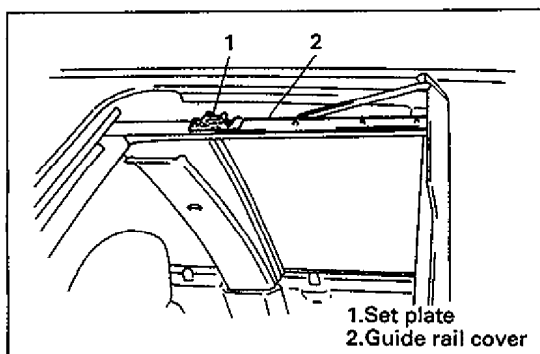
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ON VEHICLE SERVICE**SLIDING ROOF****SLIDING ROOF SUNSHADE**

60A60-9-2-1S



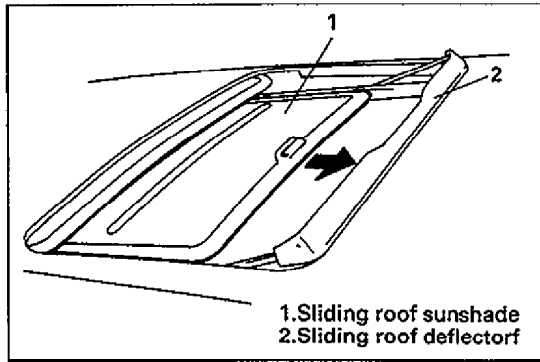
60A60-9-2-4S



60A60-9-2-5S

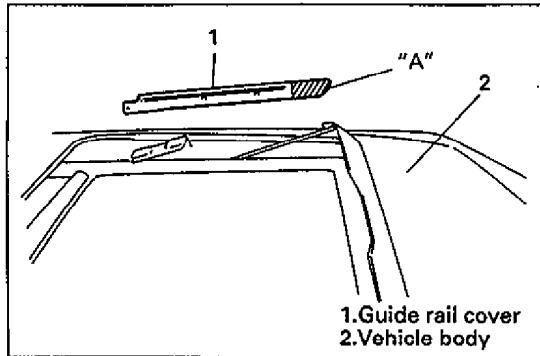
REMOVAL/INSTALLATION

- 1) Disconnect battery negative cable at battery.
- 2) Remove sliding roof switch cover.
- 3) Using sliding roof handle or hexagon wrench (5mm), close sliding roof completely.
- 4) Open sunshade fully.
- 5) Remove sunshade stoppers (right & left).
- 6) Using sliding roof handle or hexagon wrench (5mm), open sliding roof fully.
- 7) Remove set plate and guide rail cover.



60A60-9-3-1S

8) With sliding roof deflector held by hand, slide sliding roof sunshade forward to remove it.

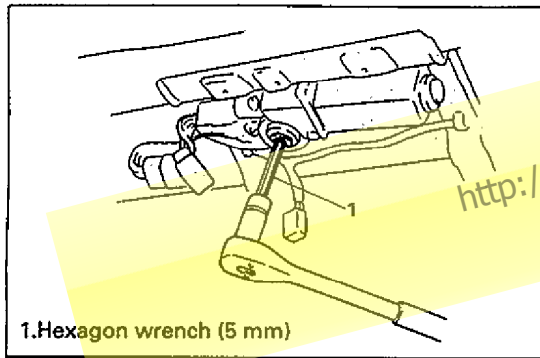


60A60-9-3-2S

9) For installation, reverse removal procedure, noting following points.

- After removing old sealant from guide rail, apply new sealant to it and install it. (right & left)

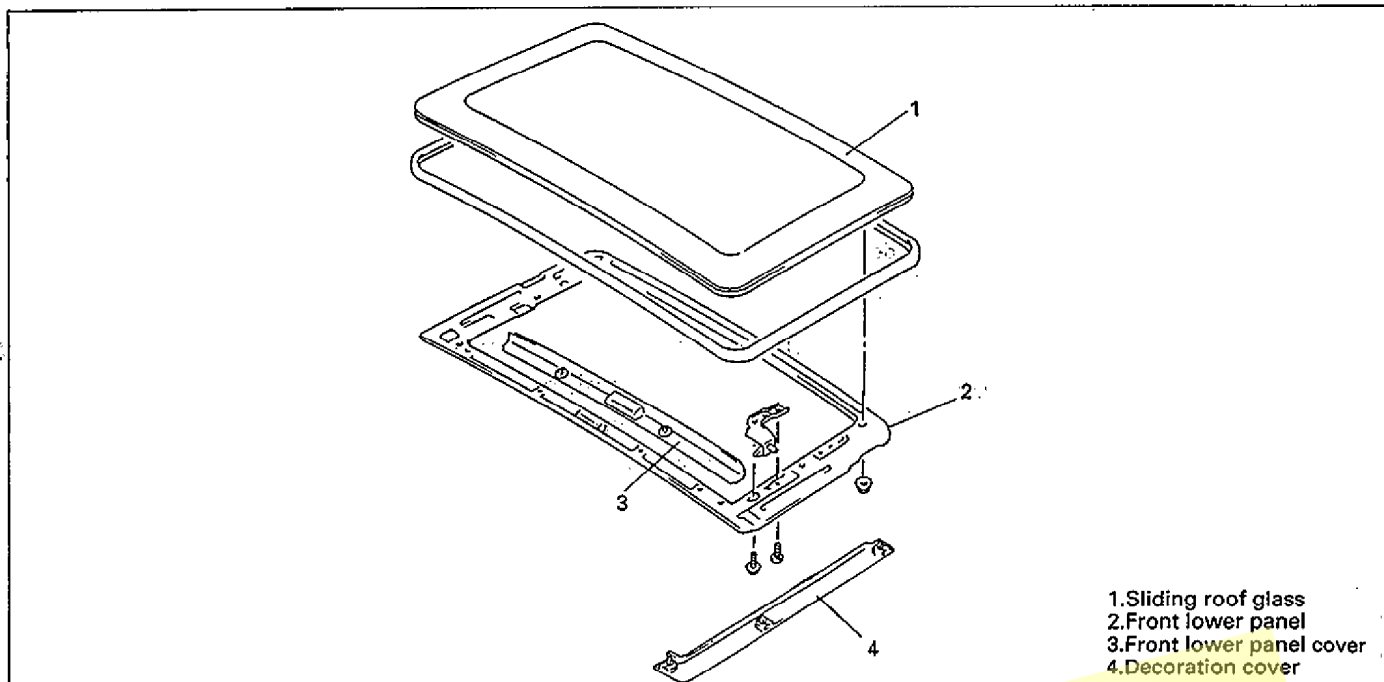
"A": Sealant 99000-31200



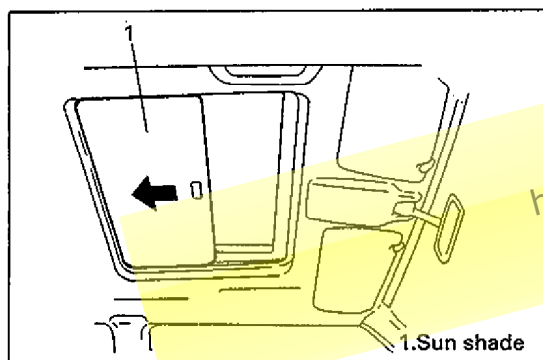
60A60-9-3-3S

- If it is hard to install guide rail due to slack of wire, remove it by moving glass with 5mm hexagon wrench or sliding roof handle.

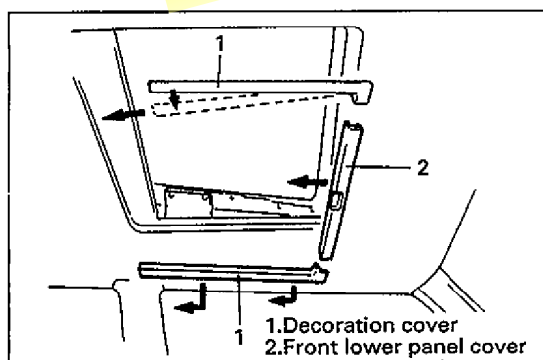
SLIDING ROOF GLASS:



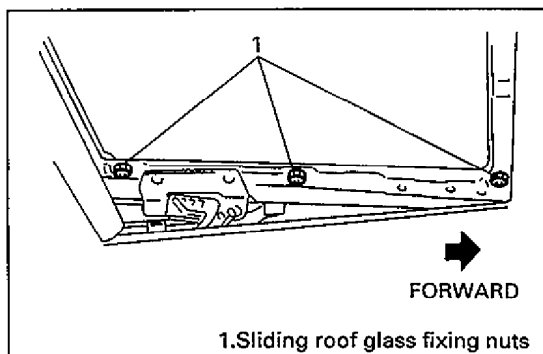
60A60-9-4-1S



60A60-9-4-3S



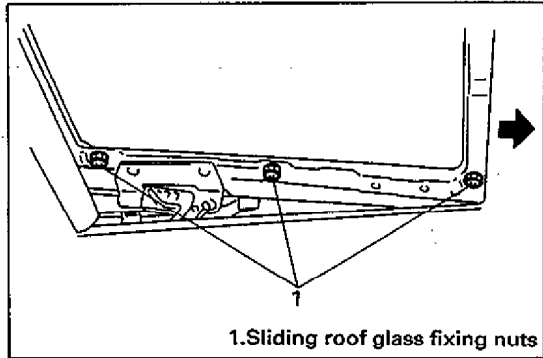
60A60-9-4-4S



60A60-9-4-5S

REMOVAL

- 1) Disconnect battery negative cable at battery.
- 2) Remove sliding roof switch cover.
- 3) Open sunshade fully and tilt up sliding roof by using sliding roof handle or hexagon wrench (5mm).
- 4) Remove decoration cover of glass frame and then front lower panel cover by pulling them in arrow direction.
- 5) Remove sliding roof glass by removing its fixing nuts and pushing it up from inside.



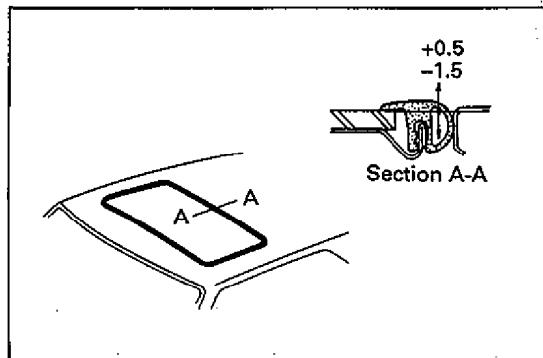
1.Sliding roof glass fixing nuts

60A60-9-5-1S

INSTALLATION

For installation, reverse removal procedure, noting following points.

- Positioning sliding roof glass
- 1) Tighten sliding roof glass fixing nuts temporarily.
- 2) Position sliding roof glass by closing sliding roof glass completely.
- 3) Tighten roof glass fixing nuts.

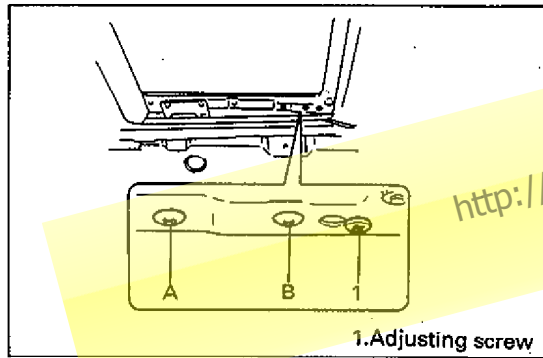


60A60-9-5-2S

ADJUSTMENT

Check that level difference between sliding roof glass and roof panel is within specification. If it is not, make adjustment according to procedure described below.

Level difference around glass: +0.5 ~ -1.5mm



1.Adjusting screw

60A60-9-5-3S

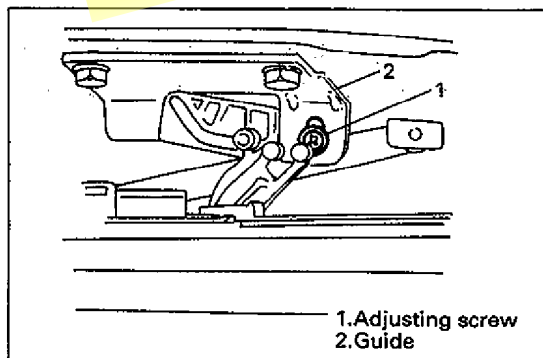
1) Adjusting height at front

Loosen screws A and B fixing front part of sliding roof glass and turn adjusting screw so that level difference between sliding roof glass and roof panel is within specification.

Level difference: +0.5 ~ -1.5mm

Note:

When level difference to be adjusted is about 2mm, screw A should not be loosened.

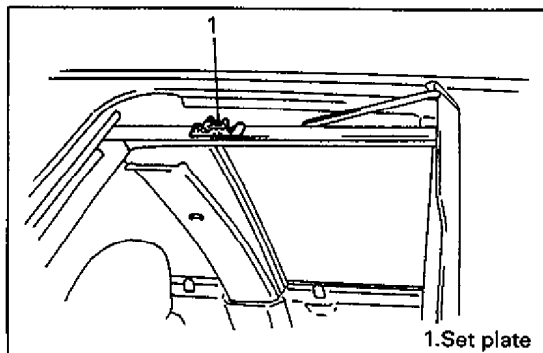


1.Adjusting screw
2.Guide

60A60-9-5-4S

2) Adjusting height at rear

Loosen adjusting screw and move sliding roof glass up or down for adjustment.



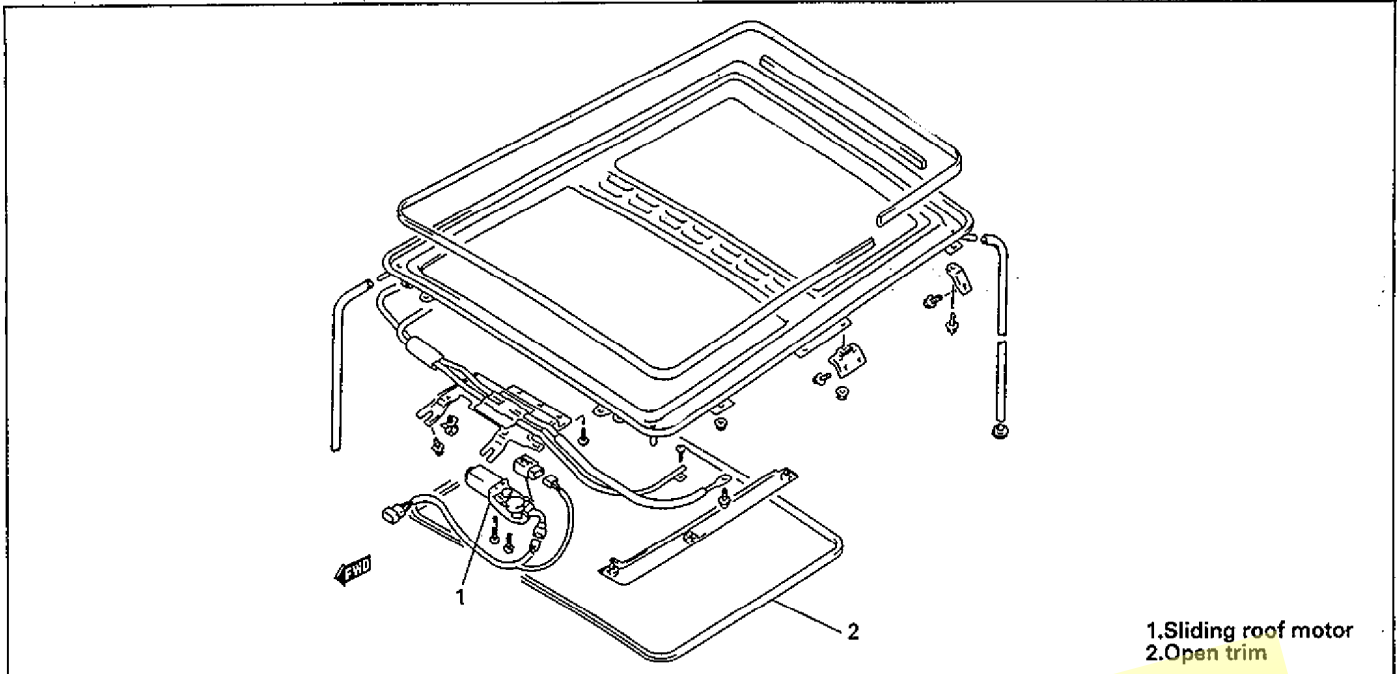
1.Set plate

60A60-9-5-5S

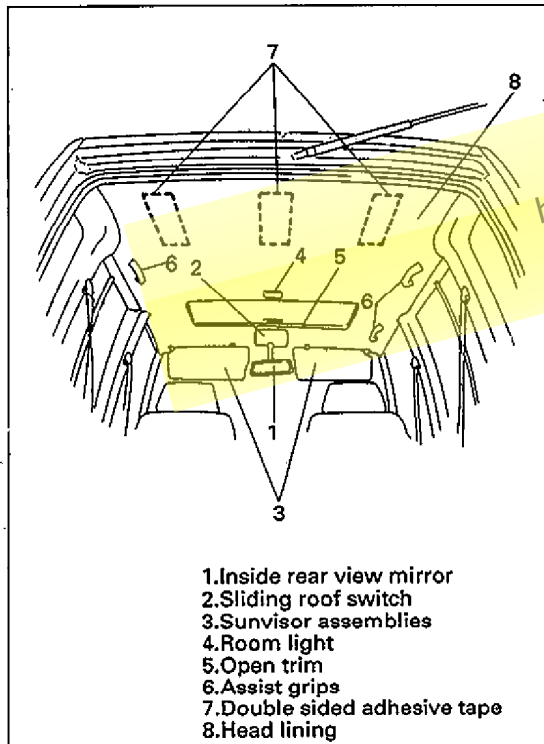
3) Front/rear adjustment

If sliding roof glass panel and roof panel interfere when roof glass is opened or closed, move set plate toward front to adjust position where sliding roof glass panel moves up and down.

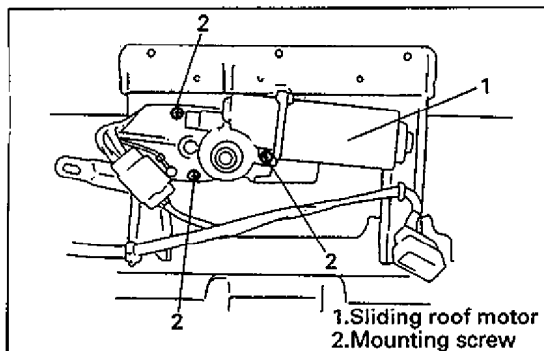
SLIDING ROOF MOTOR/HEAD LINING



60A60-9-6-1S



60A60-9-6-3S



60A60-9-6-5S

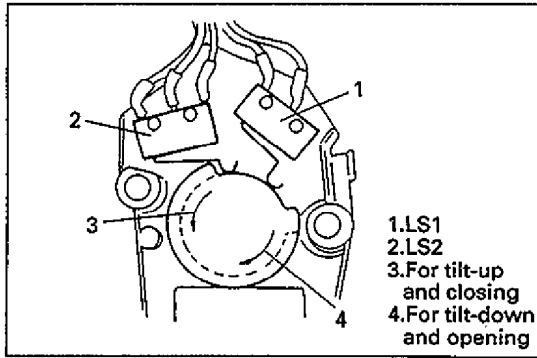
REMOVAL

- 1) Disconnect battery negative cable at battery.
- 2) Remove inside rear view mirror.
- 3) Remove sliding roof switch.
- 4) Remove sunvisor assemblies.
- 5) Remove room light.
- 6) Remove open trim.
- 7) Remove assist grips.
- 8) Remove inner trims covering head lining.
- 9) Remove head lining.

Note:

As rear end of head lining is adhered with double sided tape, be careful so as not to bend head lining when removing it.

- 10) Remove sliding roof motor.

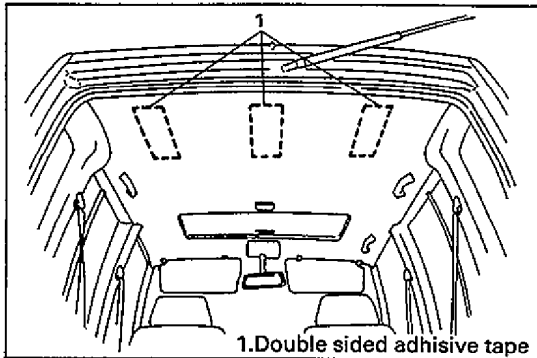


60A60-9-7-1S

INSTALLATION

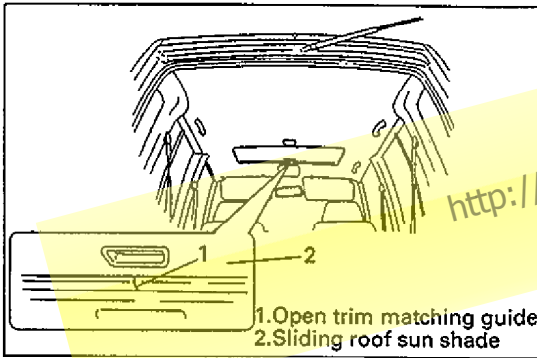
For installation, reverse removal procedure, noting following points.

- Before installing parts, check to make sure that sliding roof is closed completely and limit switches (LS1 and LS2) of sliding roof motor are turned OFF as shown at the left.
- Attach double sided adhesive tape to head lining at positions as shown at the left and install head lining.



60A60-9-7-2S

- Install open trim with its matching guide facing forward.

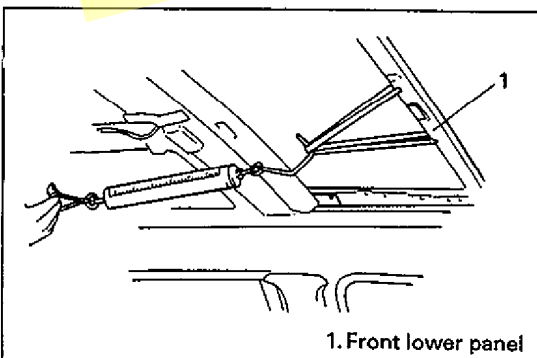


60A60-9-7-3S

INSPECTION:

- Making use of two holes in front lower panel for spring balance as shown at the left, measure motor torque.

Specified motor torque: 15-35kgf (33.5-77.0 lbs)



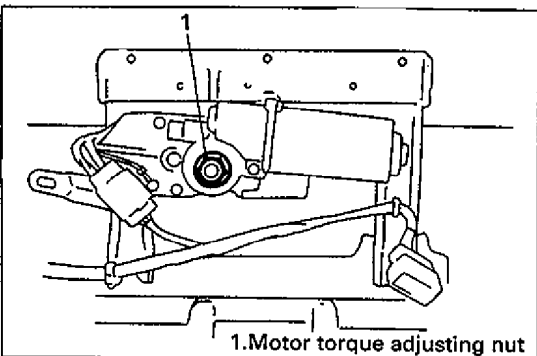
60A60-9-7-4S

ADJUSTMENT

- If measured value is out of specified range, undo lock washer and make adjustment by turning adjusting nut.

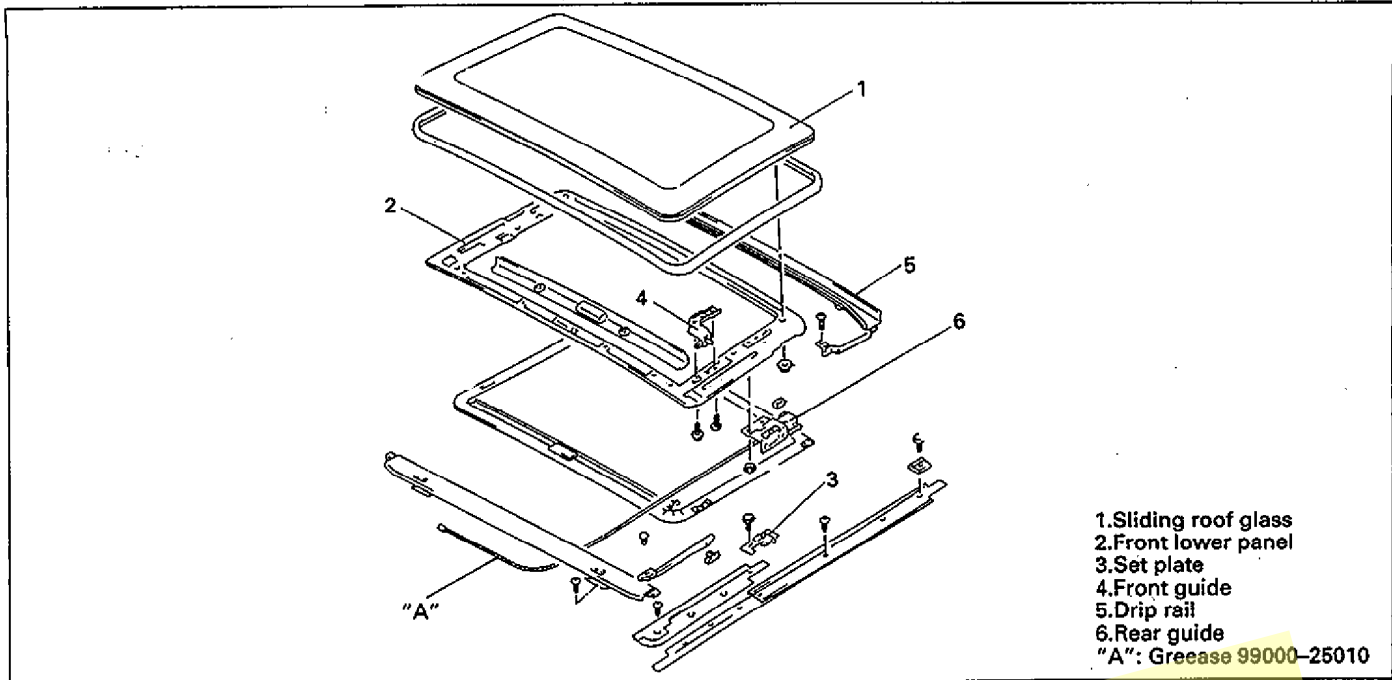
Note:

Be sure to lock adjusting nut with lock washer after adjusting motor torque.



60A60-9-7-5S

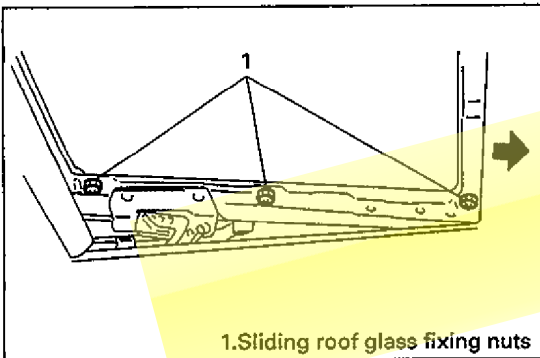
FRONT LOWER PANEL



60A60-9-8-1S

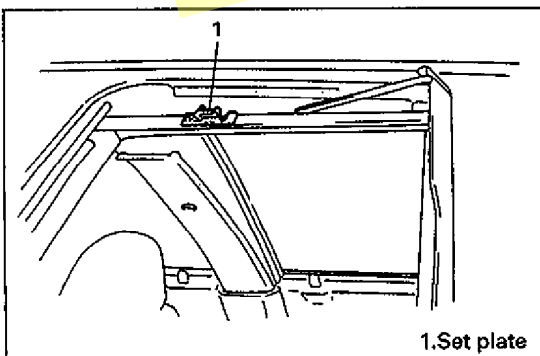
REMOVAL

- 1) Remove Sliding roof glass. (Refer to SLIDING ROOF GLASS REMOVAL described previously.)
- 2) Using sliding roof handle or hexagon wrench (5mm), open front lower panel fully.



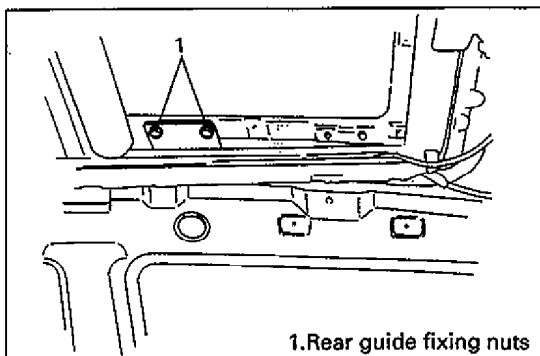
60A60-9-8-3S

- 3) Remove set plates (right & left).
- 4) Using sliding roof handle or hexagon wrench (5mm), close front lower panel completely.

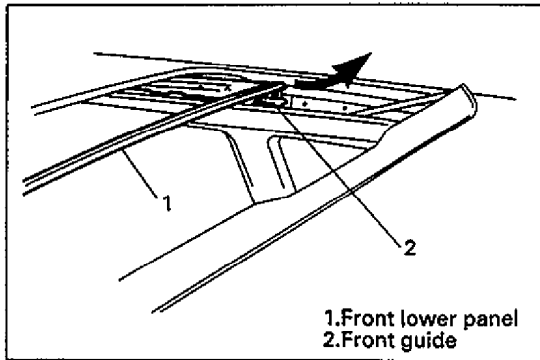


60A60-9-8-4S

- 5) Loosen rear guide fixing nuts (right & left).
- 6) Using sliding roof handle or hexagon wrench (5mm), open front lower panel fully.

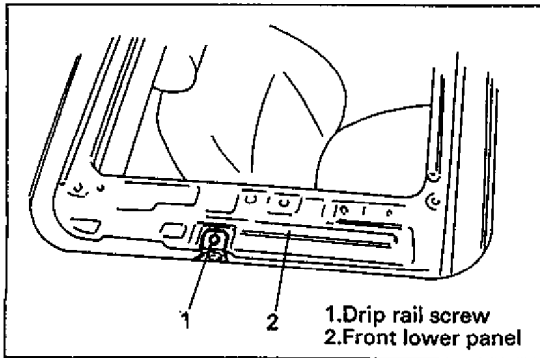


60A60-9-8-5S



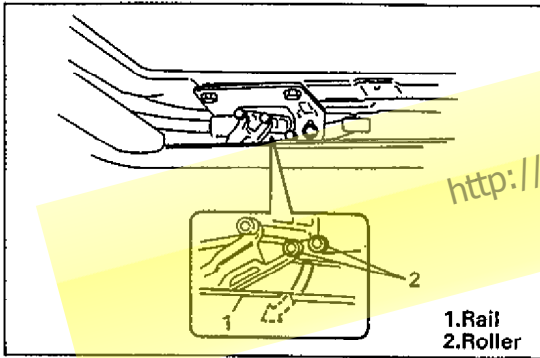
60A60-9-9-1S

7) While sliding front lower panel in its closing direction, remove front guide upward from position where set plate was installed.



60A60-9-9-2S

8) Remove 2 nuts from rear guide and then remove front lower panel by removing drip rail screw. (right & left)



60A60-9-9-3S

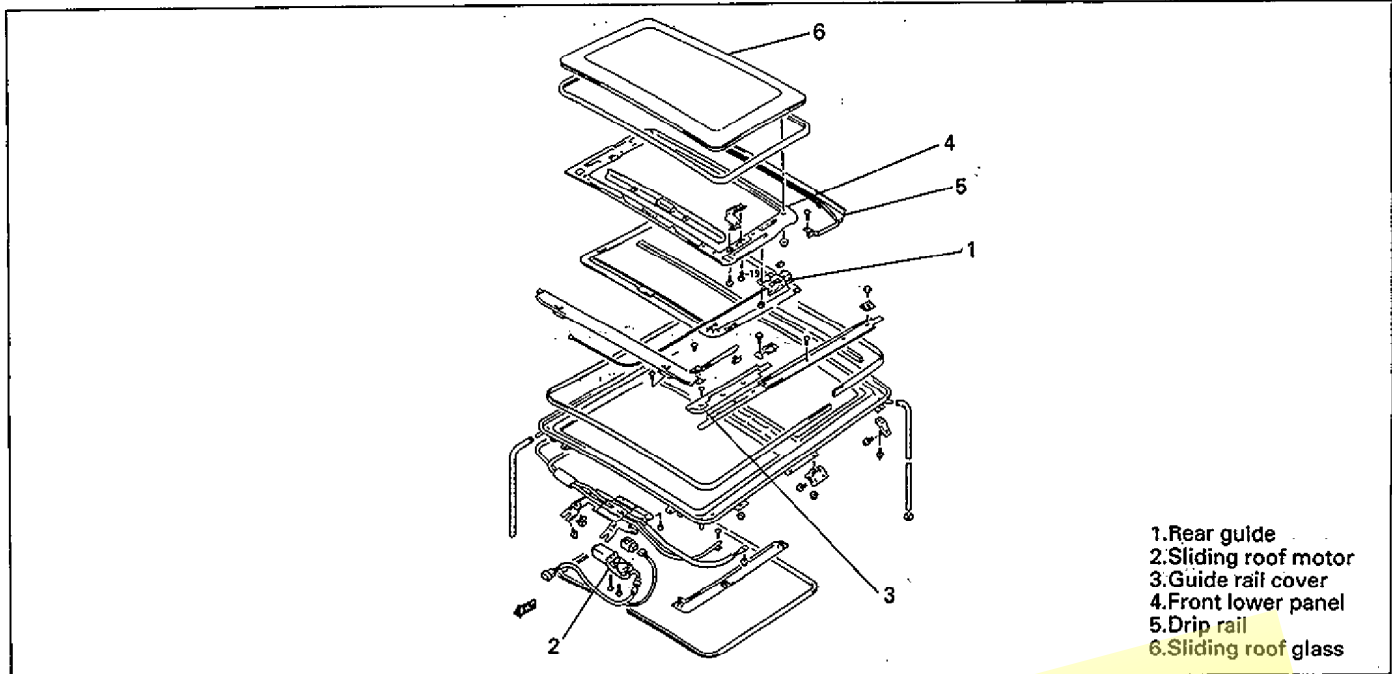
INSTALLATION

For installation, reverse removal procedure, noting following point.

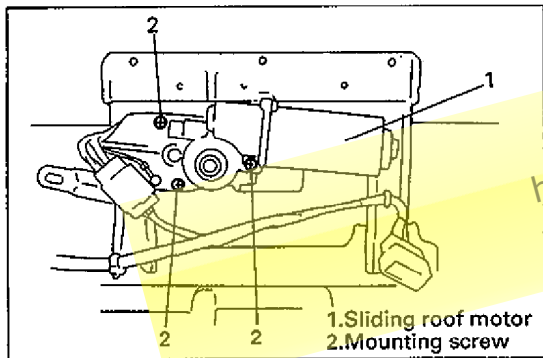
Note:

When setting rear guide, make sure that rear guide roller is placed under drip rail. (right & left)

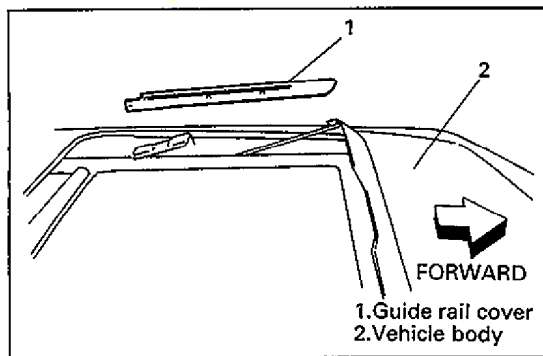
REAR GUIDE



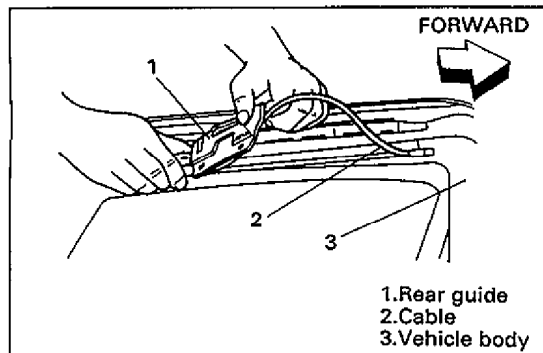
60A60-9-10-1S



60A60-9-10-3S



60A60-9-10-4S



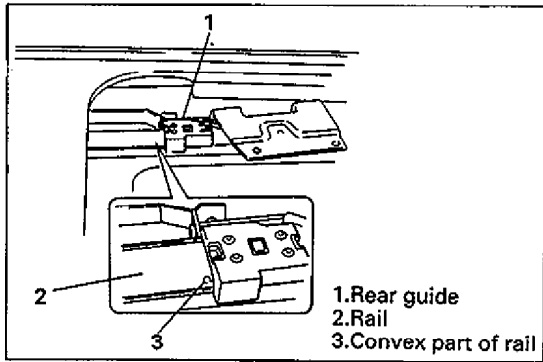
60A60-9-10-5S

REMOVAL

- 1) Remove head lining. (Refer to HEAD LINING REMOVAL described previously.)
- 2) Remove front lower panel. (Refer to FRONT LOWER PANEL REMOVAL described previously.)
- 3) Remove sliding roof motor.

- 4) Remove guide rail cover. (right & left)

- 5) Remove rear guide and pull out cable. (right & left)

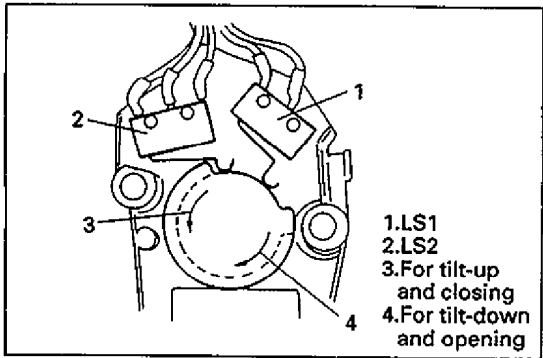


60A60-9-11-1S

INSTALLATION

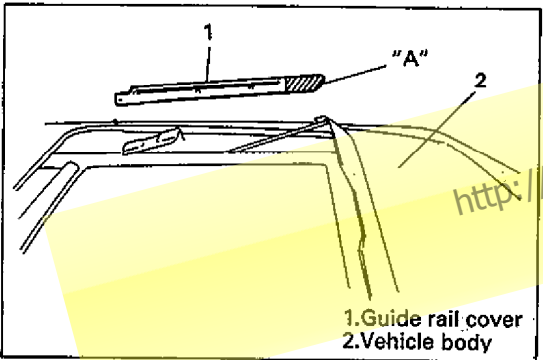
For installation, reverse removal procedure, noting following points.

- To position wire, align rear end of rear guide to convex part at the end of rail. (right & left)



60A60-9-11-2S

- With sliding roof closed completely, check that limit switches (LS1 and LS2) of sliding roof motor are turned OFF as shown at the left and install rear guide.



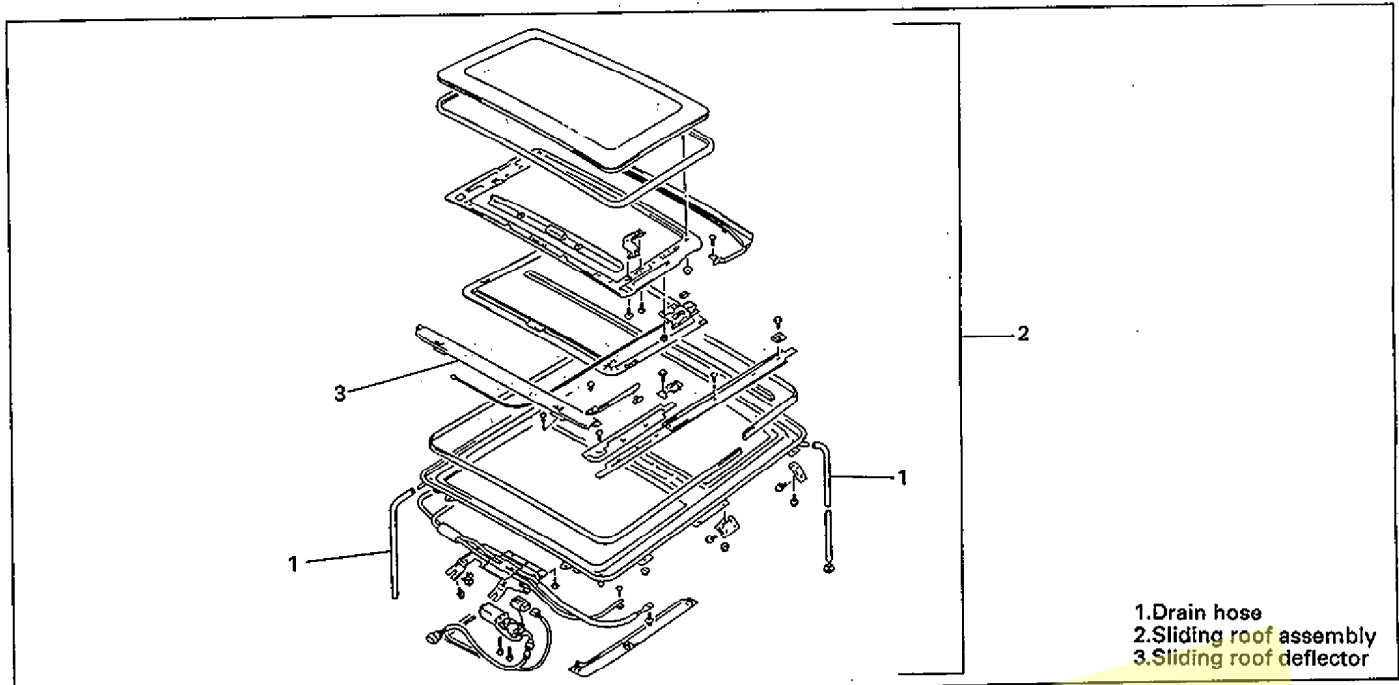
60A60-9-11-3S

- After removing old sealant from guide rail, apply new sealant to it and install it. (right & left)

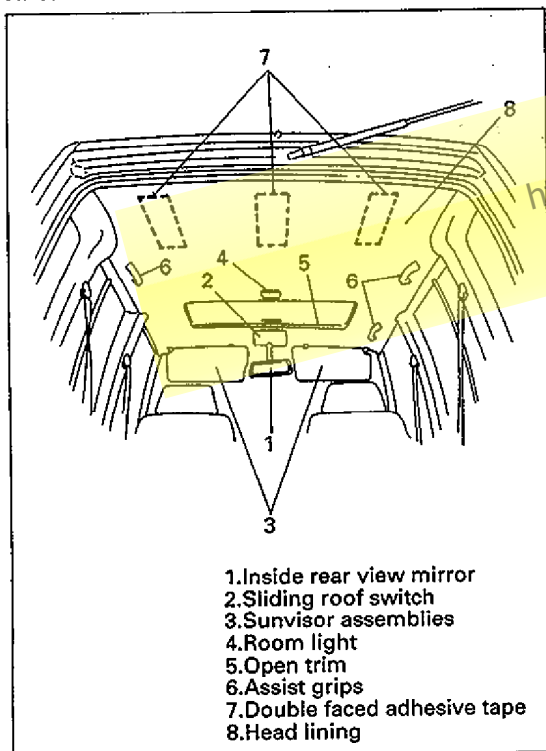
"A": Sealant 99000-31200

http://www.rhinoman.org

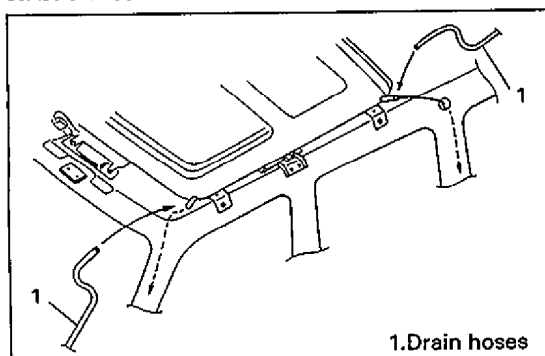
SLIDING ROOF ASSEMBLY



60A60-9-12-1S



60A60-9-12-3S



60A60-9-12-5S

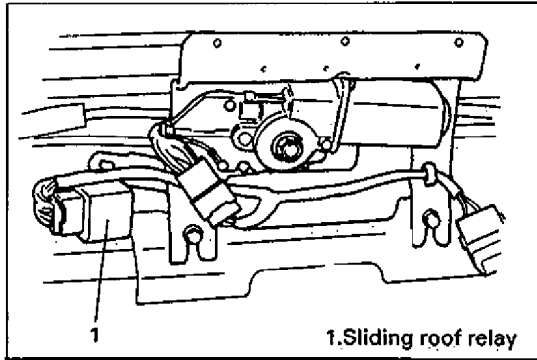
REMOVAL

- 1) Disconnect battery negative cable at battery.
- 2) Remove inside rear view mirror.
- 3) Remove sliding roof switch.
- 4) Remove sunvisor assemblies.
- 5) Remove room light.
- 6) Remove open trim.
- 7) Remove assist grips.
- 8) Remove inner trims covering head lining.
- 9) Remove head lining.

Note:

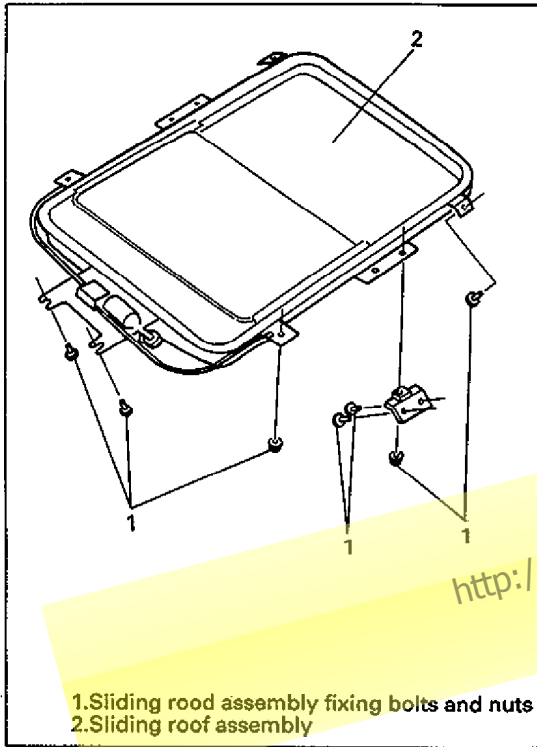
As rear end of head lining is attached with double faced adhesive tape, use care not to bend head lining when removing it.

- 10) Disconnect drain hoses connected to sliding roof assembly at 4 locations.



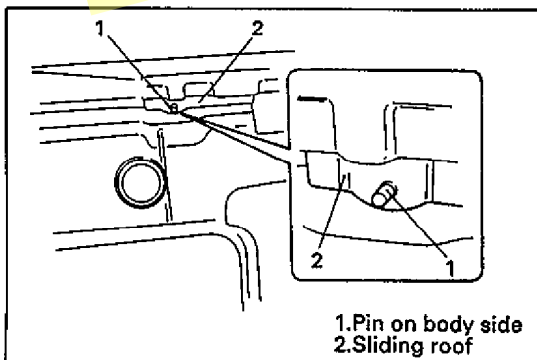
60A60-9-13-1S

11) Remove sliding roof relay located at the left side of sliding roof motor.



60A60-9-13-2S

12) Remove 2 ground bolts, 4 nuts and 6 screws and then remove sliding roof assembly.

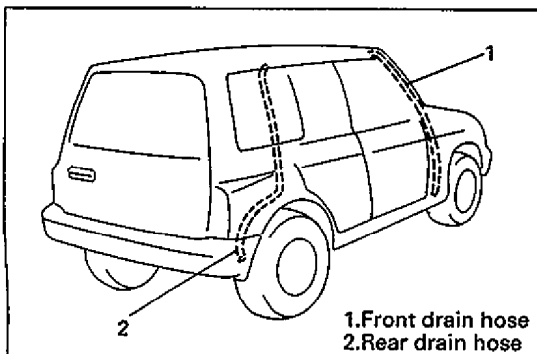


60A60-9-13-4S

INSTALLATION

For installation, reverse removal procedure, noting following points.

- With sliding roof opened halfway, install sliding roof assembly. (If closed completely, it is difficult to install glass to roof.)
- Align positioning holes in sliding roof assembly at right and left and pins on body side for installation.

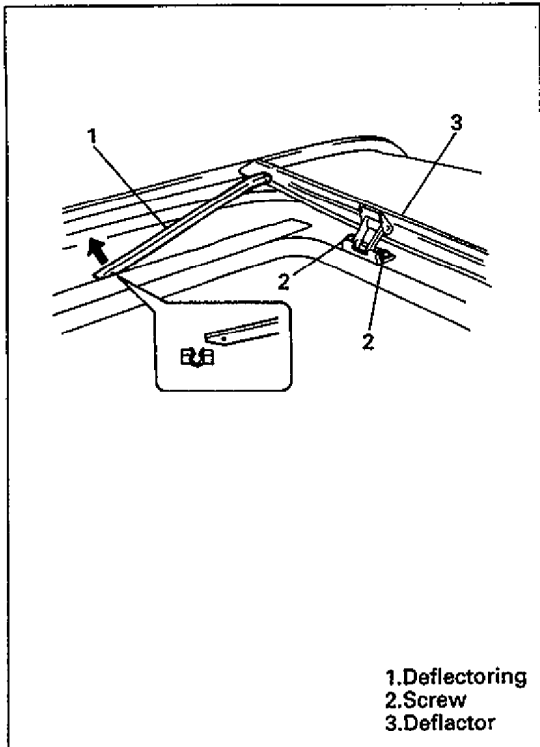


60A60-9-13-5S

- Connect drain hoses to sliding roof assembly at 4 locations. Pass front drain hose between roof panel and inner panel and through front pillar down to sill side. Pass rear drain hose into baring hole in rear quarter inner panel and through C pillar down to jig hole in rear side bumper.

Note:

After reinstalling sliding roof assembly, be sure to make glass adjustment. (Refer to SLIDING ROOF GLASS ADJUSTMENT described previously.)



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SLIDING ROOF DEFLECTOR

REMOVAL/INSTALLATION

- 1) Pull out connector from rear end of deflector link as arrow shows at the left.

Note:

As spring force is applied to deflector in opening direction, hold it by hand when removing it.

- 2) Remove screws and then remove deflector.
- 3) For installation, reverse removal procedure.

REQUIRED SERVICE MATERIALS

MATERIALS	RECOMMENDED SUZUKI PRODUCTS	USE
Sealant	SUZUKI BOND NO. 5211C (99000-31200)	Guide rail cover

60A60-9-14-3S

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Prepared by

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