

# AUTOMATIC SHOULDER BELT SYSTEM

1992 Subaru SVX

1992-96 ACCESSORIES/SAFETY EQUIPMENT  
Subaru Automatic Shoulder Belt System

Subaru; SVX

## OPERATION

### RAIL & MOTOR

NOTE: After replacing any parts/components, perform operation checks.

While latching shoulder belt on shoulder anchor (emergency release buckle), open and close the door to check that shoulder anchor moves smoothly without binding, free play, etc.

### EMERGENCY RELEASE BUCKLE

NOTE: After replacing any parts/components, perform operation checks.

Check that tongue properly releases when emergency release button is pressed. Also check that click is heard to indicate proper latching when tongue is inserted into emergency release buckle.

## TROUBLE SHOOTING - NON-SELF DIAGNOSTIC

### A: BASIC TROUBLE SHOOTING PROCEDURE

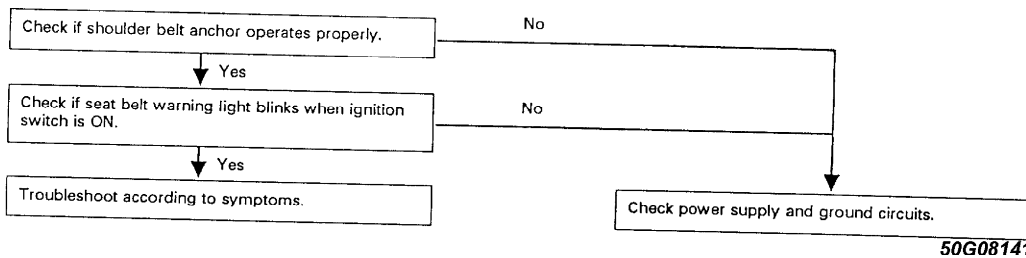


Fig. 1: Basic Trouble Shooting Procedure, Flow Chart

### B: POWER SUPPLY & GROUND CIRCUITS

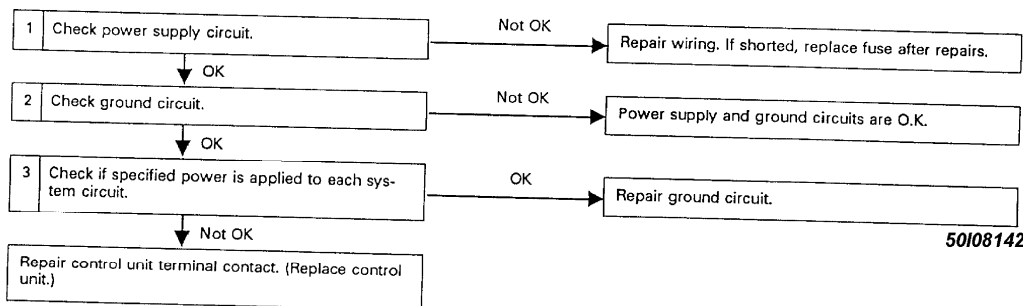


Fig. 2: Power Supply & Ground Circuits, Flow Chart

1) Check power supply circuit. Disconnect battery ground (-) cable. Disconnect connector from control unit. Measure resistance

between control unit connector and fuse, and between control unit connector and body (Connector R32, Terminal No. 8 through No. 22 Fuse and Connector R32, Terminal No. 8 through Body and Connector R32, Terminal No. 6 through No. 15 Fuse and Connector R32, Terminal No. 6 through Body). See POWER SUPPLY & GROUND CKTS TERMINAL/RESISTANCE table below.

2) Check the ground circuit. Disconnect the connector from the control unit. Measure resistance between control unit connector (Connector R32, Terminal No. 9 through Body) and body. Refer to the POWER SUPPLY & GROUND CKTS TERMINAL/RESISTANCE table below.

3) Verify that correct voltage is applied to each circuit. Check voltage between control unit connector (Connector R32, Terminal No. 8 through Body and Connector R32 Terminal No. 6 through Body) and body. See POWER SUPPLY & GROUND CKTS TERMINAL/RESISTANCE table below.

POWER SUPPLY & GROUND CKTS TERMINAL/RESISTANCE TABLE

Connector (Terminal)	Resistance (Ohms)
R32 (No. 8 - No. 22 Fuse)	1Ω Max.
R32 (No. 8 - Body)	1MΩ Min.
R32 (No. 6 - No. 15 Fuse)	1Ω Max.
R32 (No. 6 - Body)	1MΩ Min.
R32 (No. 9 - Body)	1Ω Max.

Connector (Terminal)	Volts
R32 (No. 8 - Body)	10-13V
R32 (No. 6 - Body)	10-13V

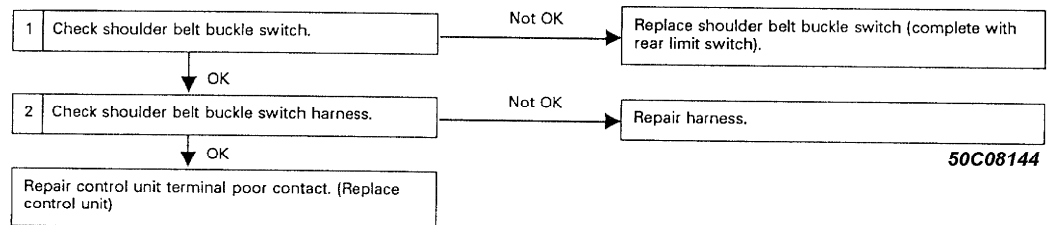
C: SYMPTOM TROUBLE SHOOTING

C: TROUBLESHOOTING ACCORDING TO SYMPTOM	
D	Warning light shows an "unlatch" signal although shoulder belt is properly latched to anchor.
E	Seat belt warning light remains on after ignition switch is turned ON.
F	Seat belt warning light neither blinks nor illuminates after ignition switch is turned ON.
G	Buzzer does not sound under warning conditions.
H	Buzzer continues to sound.
I	"Unlatch" warning is emitted although lap belt is properly latched to buckle.
J	Warning is not emitted when lap belt is unlatched to buckle.

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Fig. 3: Symptom Trouble shooting

D: WARNING LIGHT SHOWS "UNLATCH", BUT SHOULDER BELT IS PROPERLY LATCHED TO ANCHOR



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Fig. 4: Warning Light Shows "UNLATCH", Shoulder Belt Properly Latched To Anchor, Flow Chart

1) Check shoulder belt buckle switch. Disconnect shoulder belt buckle switch connector. Latch shoulder belt to anchor and move

anchor to rear end. Measure resistance between buckle switch's terminals (Connector R14, Terminals Nos. 3 through 4 and Connector R38, Terminals Nos. 3 through 4). See WARNING LIGHT SHOWS "UNLATCH", BUT SHOULDER BELT IS PROPERLY LATCHED TO ANCHOR table below.

2) Check shoulder belt buckle switch harness. Disconnect connector from control unit. Disconnect buckle switch connector. Measure resistance between buckle switch connector and body (Connector R14, Terminal No. 4 through Body and Connector R38, Terminal No. 4 through Body). See WARNING LIGHT SHOWS "UNLATCH", BUT SHOULDER BELT IS PROPERLY LATCHED TO ANCHOR table below.

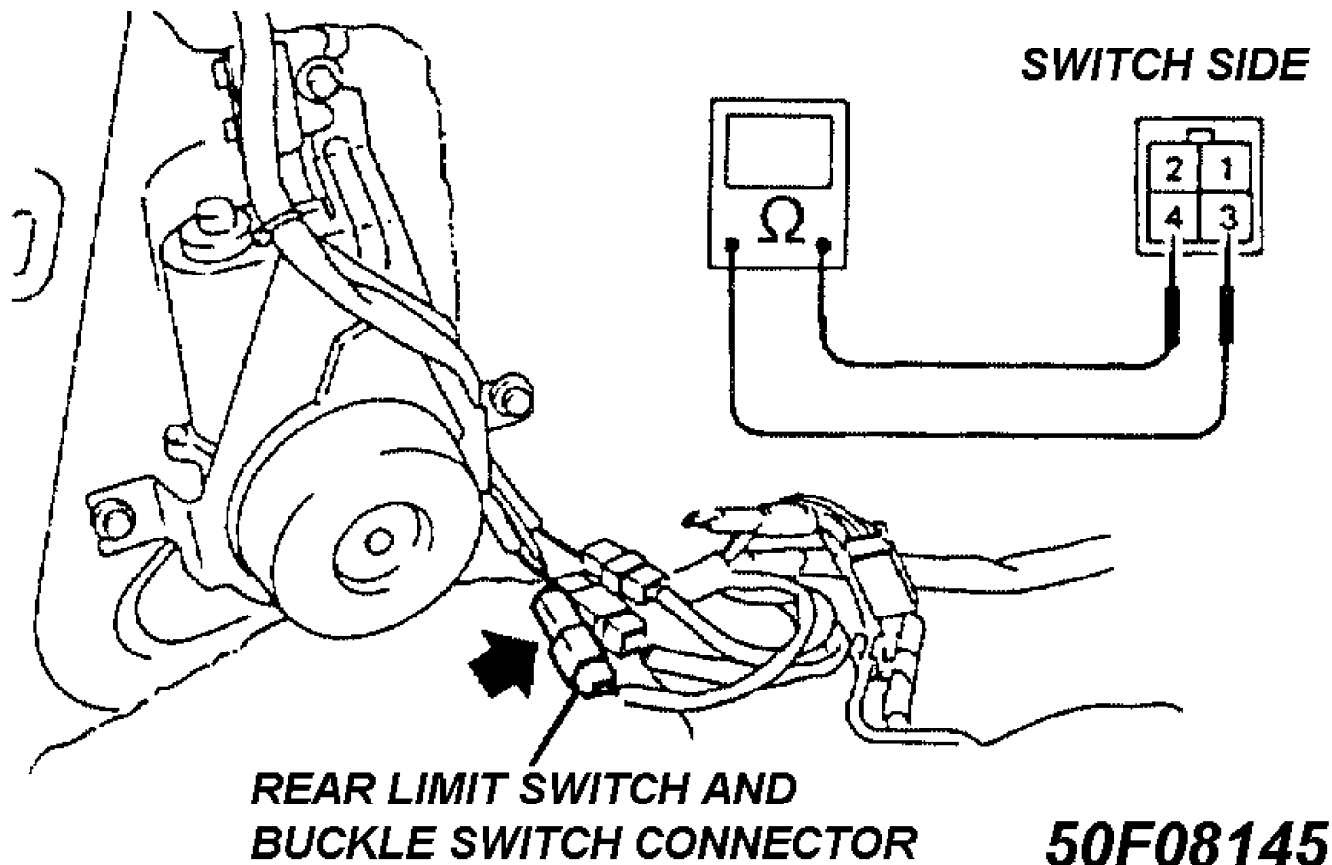


Fig. 5: Rear Limit Switch & Buckle Switch Connector

WARNING LIGHT SHOWS "UNLATCH", BUT SHOULDER BELT IS PROPERLY LATCHED TO ANCHOR TABLE

Connector (Terminal)	Resistance (Ohms)
R14 (No. 3-4)	1M $\Omega$ Min.
R38 (No. 3-4)	1M $\Omega$ Min.
R14 (No. 4 - Body)	1M $\Omega$ Min.
R38 (No. 4 - Body)	1M $\Omega$ Min.

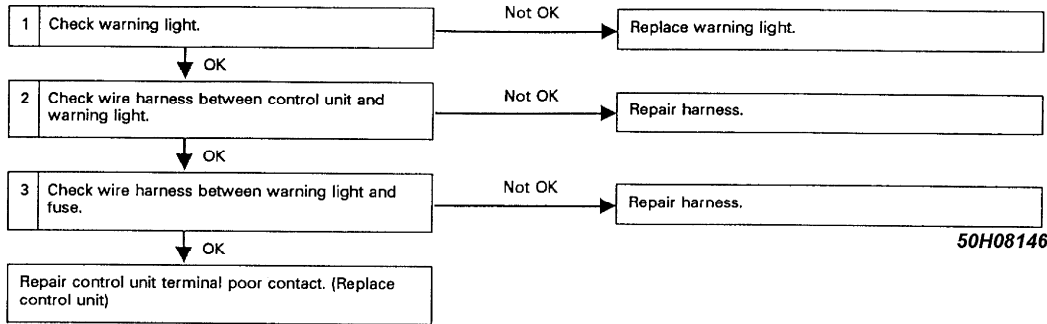
**E: SEAT BELT WARNING LIGHT REMAINS ON AFTER IGNITION SWITCH IS TURNED ON**

Disconnect connector from control unit. Measure resistance between control unit connector and body (Connector R32, Terminal No. 5 through Body). See SEAT BELT WARNING LIGHT STAYS ON AFTER IGNITION SWITCH IS TURNED ON table below.

SEAT BELT WARNING LIGHT STAYS ON AFTER IGNITION SWITCH IS TURNED ON TABLE

Connector (Terminal)	Resistance (Ohms)
R32 (No. 5 - Body)	1MΩ Min.

**F: SEAT BELT WARNING LIGHT DOES NOT BLINK OR ILLUMINATE**  
AFTER IGNITION SWITCH IS TURNED ON



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Fig. 6: Seat Belt Warning Light Neither Blinks Nor Illuminates After Ignition Switch Is Turned On, Flow Chart

1) Check warning light. Remove bulb from rear of meter and check for burned out bulb.

2) Disconnect combination meter connector. Disconnect control unit connector. Measure resistance between combination meter connector and control unit connector (Connector i8, Terminal No. 15 through Connector R32, Terminal No. 5). See SEAT BELT WARNING LIGHT DOES NOT BLINK OR ILLUMINATE AFTER IGNITION SWITCH IS TURNED ON table below.

3) Disconnect the combination meter connector. Turn ignition switch on. Measure resistance between the combination meter connector and vehicle body (Connector i6, Terminal No. 3 through body and Connector i6, Terminal No. 15 through body), and between combination meter connector and fuse (Connector i6, Terminal No. 3 through No. 15 fuse and Connector i6, Terminal No. 15 through No. 15 fuse). Refer to the SEAT BELT WARNING LIGHT DOES NOT BLINK OR ILLUMINATE AFTER IGNITION SWITCH IS TURNED ON table below.

SEAT BELT WARNING LIGHT DOES NOT BLINK OR ILLUMINATE AFTER IGNITION SWITCH IS TURNED ON TABLE

Connector (Terminal)	Resistance (Ohms)
i8 (No. 15) - R32 (No. 5)	1Ω Max.
i6 (No. 3) - Body	1MΩ Min.
i6 (No. 15) - Body	1MΩ Min.
i6 (No. 3) - No. 15 Fuse	1Ω Max.
i6 (No. 15) - No. 15 Fuse	1Ω Max.

**G: BUZZER DOES NOT SOUND UNDER WARNING CONDITIONS**

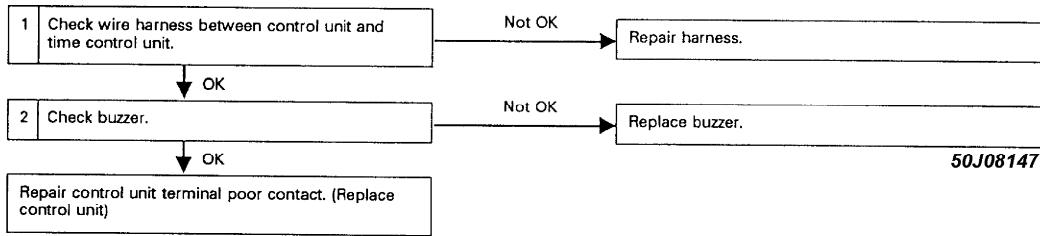


Fig. 7: Buzzer Does Not Sound Under Warning Conditions, Flow Chart

1) Check wire harness between control unit connector and time control unit connector. Turn ignition off. Disconnect time control unit connector. Disconnect control unit connector. Check continuity between time control unit connector and control unit connector. (Connector R32, Terminal No. 4 through Connector B90 Terminal No. 12 and Connector R32, Terminal No. 10 through Connector B90 Terminal No. 3, Connector R32 and Terminal No. 12 through Connector B90 Terminal No. 4). See BUZZER DOES NOT SOUND UNDER WARNING CONDITIONS table.

2) To check buzzer disconnect connector from control unit. Apply 12 volts (DC) to terminals (Connector B90, Terminal No. 1 and Connector B90, Terminal No. 12) to check that the buzzer sounds. See BUZZER DOES NOT SOUND UNDER WARNING CONDITIONS table below.

**BUZZER DOES NOT SOUND UNDER WARNING CONDITIONS TABLE**

Connector (Terminal)	Resistance (Ohms)
R32 (No. 4) - B90 (No. 12)	1Ω Max.
R32 (No. 10) - B90 (No. 3)	1Ω Max.
R32 (No. 12) - B90 (No. 4)	1Ω Max.

Connector (Terminal)	Volts
B90 (No. 1)	+12V
B90 (No. 12)	-12V

**H: BUZZER CONTINUES TO SOUND**

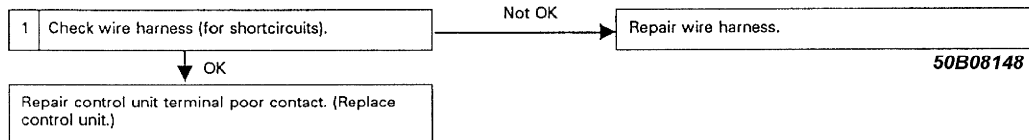


Fig. 8: Buzzer Continues to Sound, Flow Chart

1) To check wire harness for short circuits disconnect connector from control unit. Measure resistance between control unit connector and body (Connector R32, Terminal No. 4 through Body). See BUZZER CONTINUES TO SOUND table below.

**BUZZER CONTINUES TO SOUND**

Connector (Terminal)	Resistance (Ohms)
R32 (No. 4) - Body	1MΩ Min.

**I: "UNLATCH" WARNING SIGNAL IS EMITTED, BUT LAP BELT IS PROPERLY LATCHED TO BUCKLE**

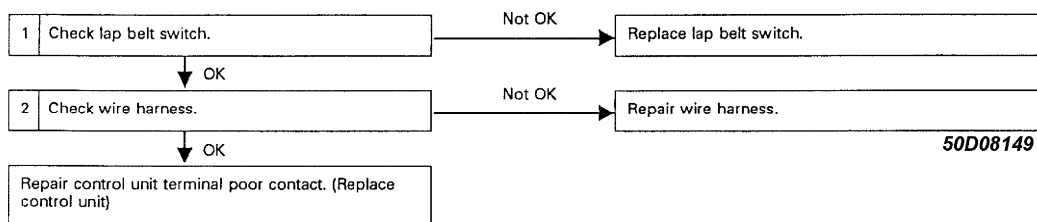


Fig. 9: "Unlatch" Warning Signal Is Emitted Although Lap Belt Is Properly Latched To Buckle, Flow Chart

1) To check lap belt switch, remove seat and disconnect lap belt switch connector. Disconnect connector from control unit. Latch belt tongue in place. Measure resistance between lap belt switch's terminals (Connector 46, Terminal No. 1 through No. 2). Refer to the "UNLATCH" WARNING SIGNAL EMITTED, BUT LAP BELT IS PROPERLY LATCHED TO BUCKLE table below.

2) Remove seat. Disconnect lap belt switch connector. Disconnect control unit connector. Measure resistance between control unit connector and body (Connector R32, Terminal 16 through Body). See "UNLATCH" WARNING SIGNAL EMITTED, BUT LAP BELT IS PROPERLY LATCHED TO BUCKLE table below.

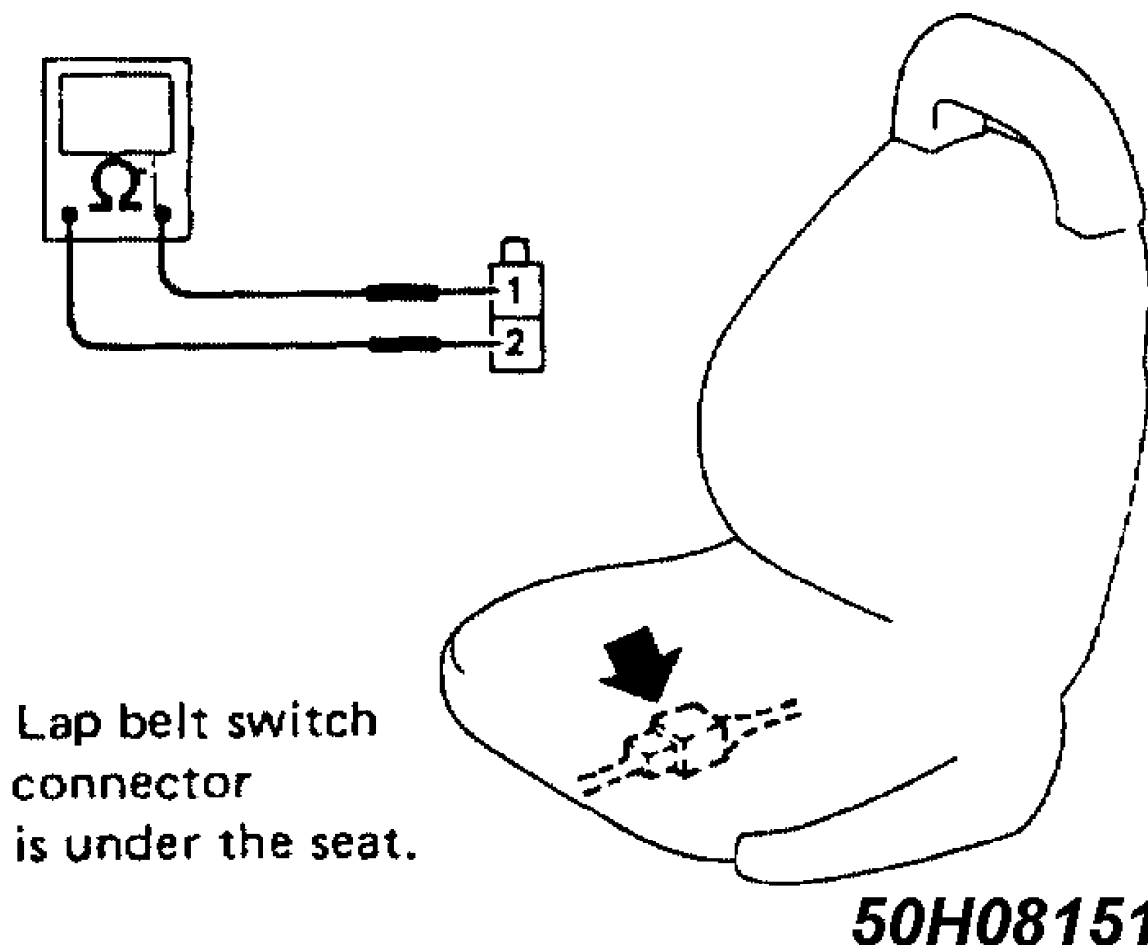


Fig. 10: Lap Belt Switch Connector (Under Seat)

"UNLATCH" WARNING SIGNAL EMITTED, BUT LAP BELT IS PROPERLY LATCHED TO BUCKLE TABLE

Connector (Terminal)	Resistance (Ohms)
R46 (No. 1-2)	1M $\Omega$ Min.
R32 (No. 16) - Body	1M $\Omega$ Min.

**J: WARNING NOT EMITTED WITH LAP BELT UNLATCHED FROM BUCKLE**

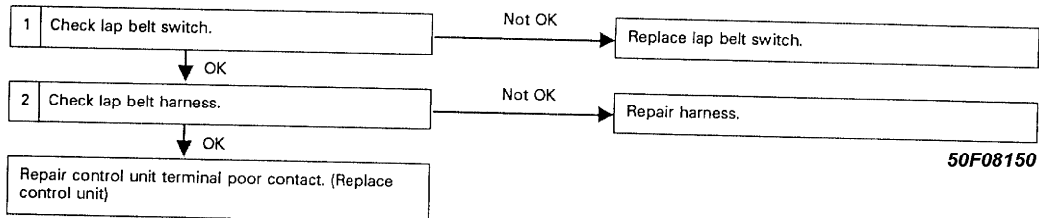


Fig. 11: Warning Is Not Emitted When Lap Belt Is Unlatched From Buckle, Flow Chart

1) To check the lap belt switch, remove the seat and disconnect the lap belt switch connector. Disconnect connector from control unit. Unlatch belt tongue in place. Measure resistance between lap belt switch terminals (Connector R46, Terminal No. 1). Refer to the WARNING NOT EMITTED WITH LAP BELT UNLATCHED FROM BUCKLE table.

2) To check lap belt harness, remove seat and disconnect lap belt switch connector. Disconnect connector from control unit. Measure resistance between lap belt switch connector and control unit connector (Connector R32, Terminal 16 through Connector R46, Terminal 1). See WARNING NOT EMITTED WITH LAP BELT UNLATCHED FROM BUCKLE table below.

**WARNING NOT EMITTED WITH LAP BELT UNLATCHED FROM BUCKLE TABLE**

Connector (Terminal)	Resistance (Ohms)
R46 (No. 1)	1 $\Omega$ Max.
R32 (No. 16) - R46 (No. 1)	1 $\Omega$ Max.

**REMOVAL & INSTALLATION**

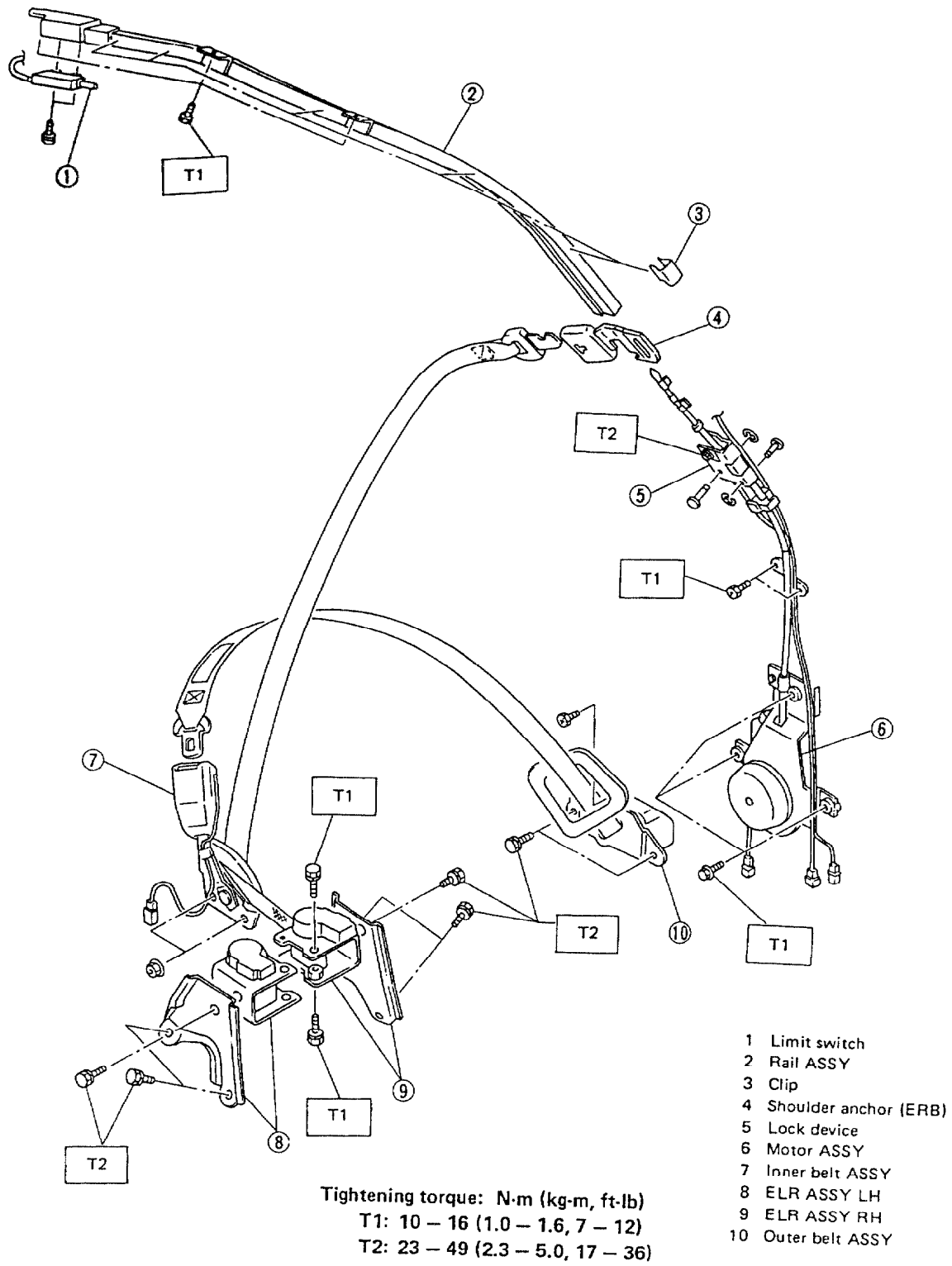


Fig. 12: Exploded View of Front Seat Belt

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In case the connector to the automatic shoulder belt has been disconnected for repairs of the automatic shoulder belt or related parts or for repairs of other parts, be sure to disconnect the battery



and reset the control unit. If the connector of the automatic shoulder belt control unit or the connector of the front or rear limit switch has been disconnected once during repairs, the control unit can enter the failure mode when the connector is reconnected, making the automatic shoulder belt inoperative.

#### Removal

1) Disconnect battery ground cable. Push emergency release button on the shoulder anchor and remove belt. Remove rear quarter trim and front pillar upper trim.

2) Disconnect three connectors at motor. Remove nine bolts (one on left side and eight on right side), loosen anchor bolts, and then remove front seat belt assembly.

#### Disassembly

1) To disassemble the front limit switch, unfasten the five clips and tape to free limit switch harness from rail assembly. Remove two screws, then limit switch.

2) To disassemble the rear limit switch, remove limit switch. Remove E-clip which fixes two pins of rail and tube and pull out pin. Remove tube in rail and pull out locking device by sliding.

3) To disassemble the shoulder anchor and motor assembly, remove locking device. Remove motor assembly wire and shoulder anchor as a unit from guide rail.

4) To reassemble, reverse the disassembly procedure.

**CAUTION:** Do not remove grease from wire and do not bend/twist wire too sharply.

#### Installation

To install, reverse removal procedure.

## **WIRING DIAGRAMS**

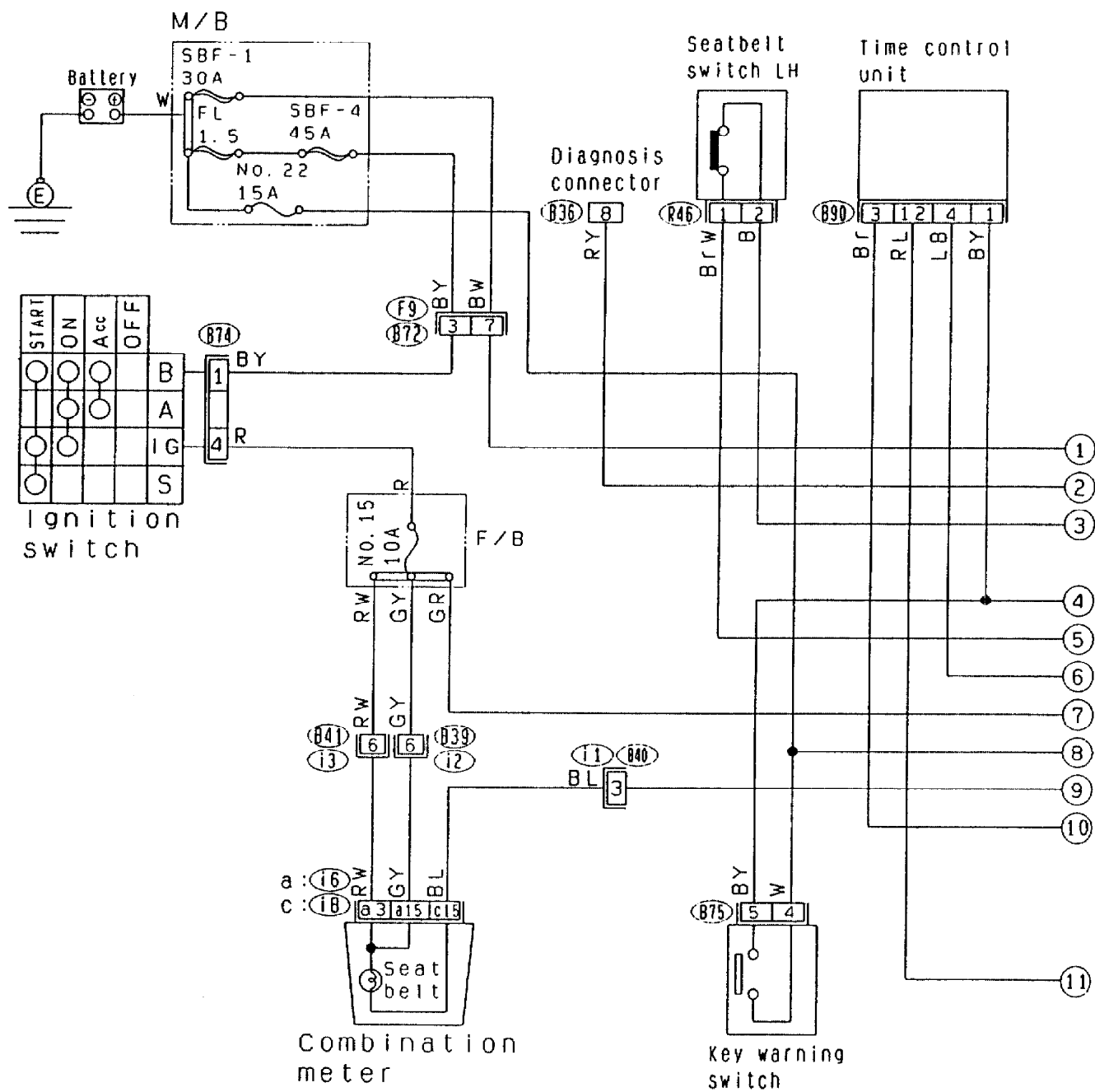


Fig. 13: Automatic Shoulder Belt Wiring Diagram (1 of 2)  
 Courtesy of Subaru Motor Co.

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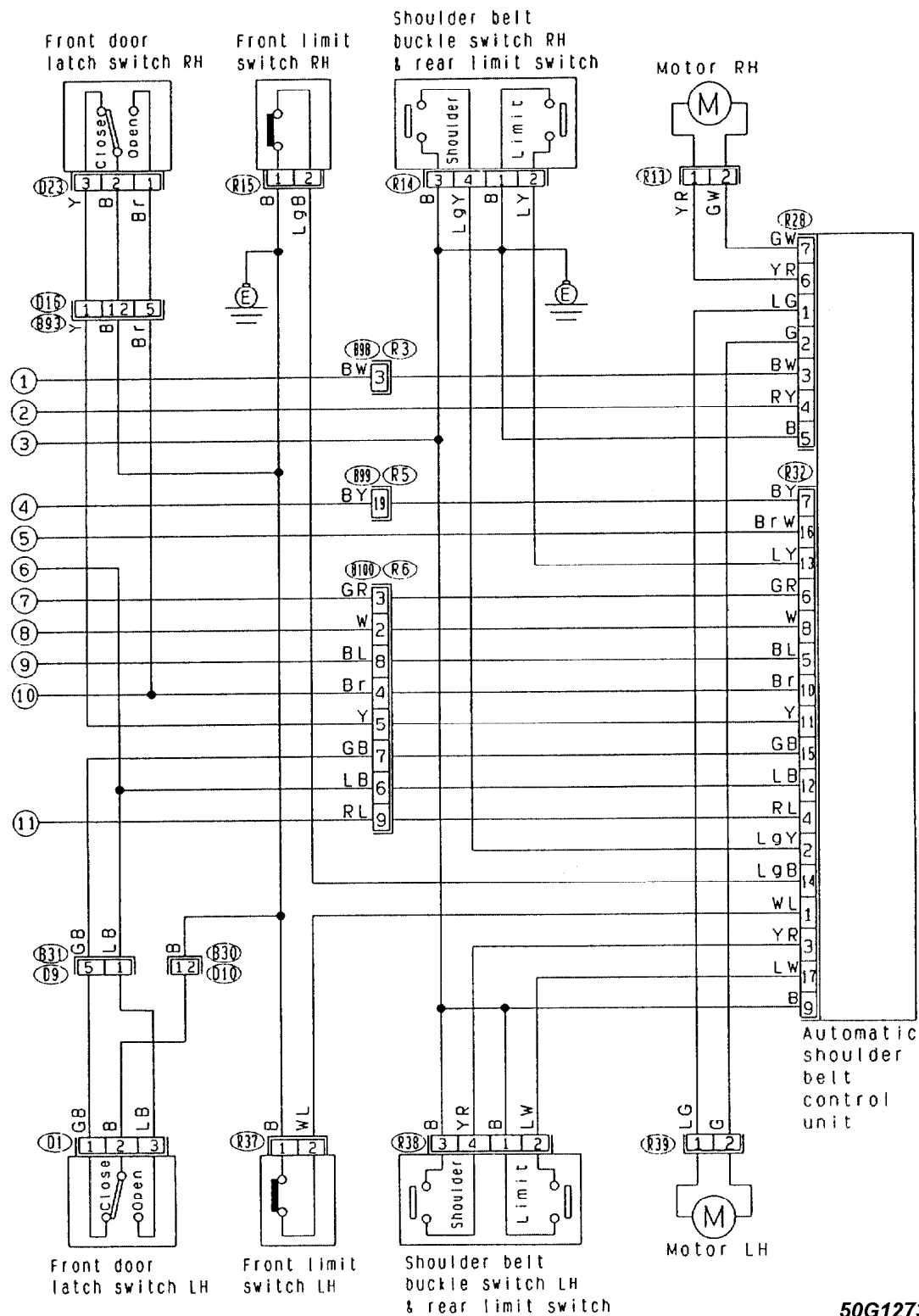


Fig. 14: Automatic Shoulder Belt Wiring Diagram (2 of 2)  
 Courtesy of Subaru Motor Co.

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