

GROUP 54Ah

COLUMN SWITCH

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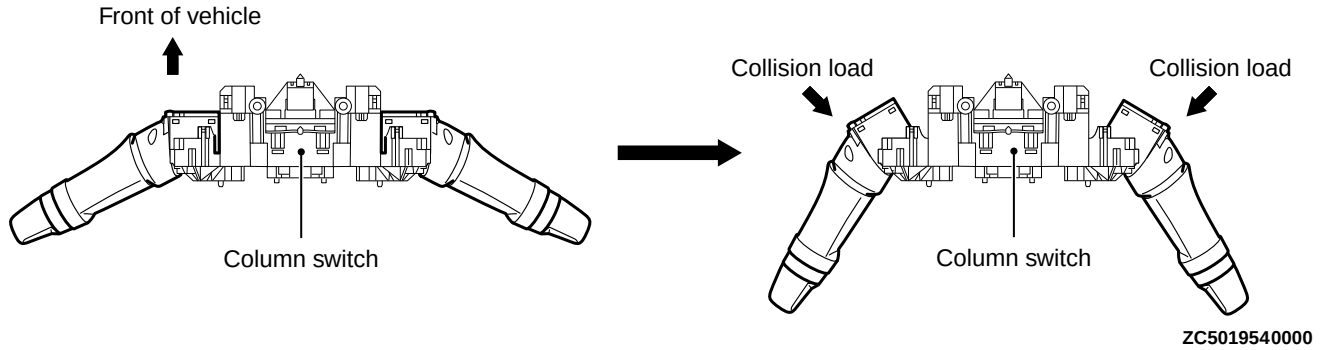
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GENERAL INFORMATION

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The column switch has a built in feature to ensure the driver's safety during frontal collision of vehicle.

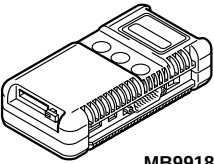
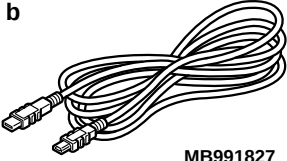
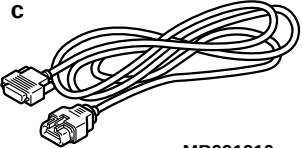
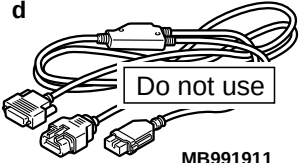
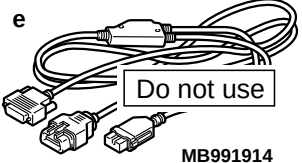
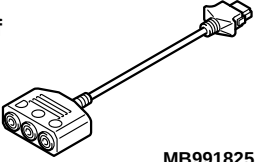
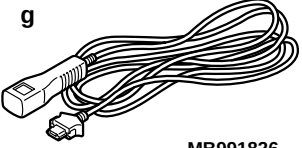
Function

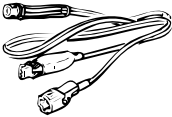
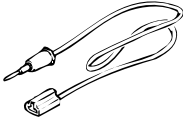
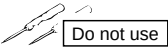
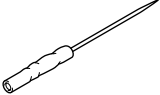
If the column switch is moved toward the front of the vehicle and hit on the instrument panel or meter bezel during a frontal collision, the steering wheel is moved to the front of the vehicle because the right and left levers fall down, ensuring the driver's safety. In

addition, the column switch secures the rigidity that the levers do not fall down by the normal operation. The column switch cannot be reused after the deformation.

SPECIAL TOOLS

M15410200002USA0000010000

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 YB9919580000	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system) e. M.U.T.-III main harness C (for Daimler Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT <i>NOTE: G: MB991826 M. U. T. -III Trigger Harness is not necessary when pushing V. C. I. ENTER key.</i>	⚠ CAUTION M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle. Diagnostic code, service data and actuator test check.

Tool	Tool number and name	Supersession	Application
a  b  c  d  YB9912230000	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe	General service tools	Continuity check and voltage measurement at harness wire or connector a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection
 MB992006	MB992006 Extra fine probe	-	Continuity check and voltage measurement at harness wire or connector.

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

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Refer to GROUP 00 - Contents of troubleshooting P. 00-6.

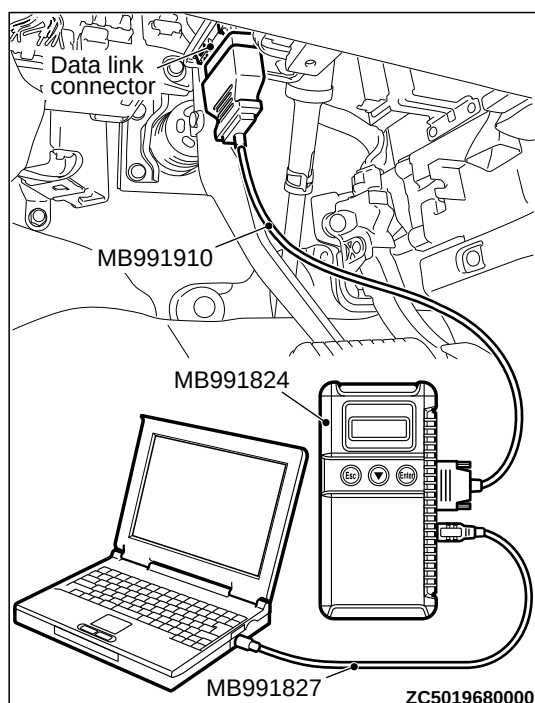
DIAGNOSTIC FUNCTION

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HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)



CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.

7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.

HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicle Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

NOTE: If the battery voltage is low, diagnostic trouble codes will not be set. Check the battery if scan tool MB991958 does not display.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.
5. Select "ETACS" from "System List", and press the "OK" button.

NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.

6. Select "Diagnostic Trouble Code."
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

DIAGNOSTIC TROUBLE CODE TABLE

M15410200016USA0000010000

Diagnostic trouble code No.	Diagnostic item	Reference page
B2350	Malfunction of lighting switch	P.54Ah-6
B2351	Malfunction of wiper/washer switch	

DIAGNOSTIC TROUBLE CODE PROCEDURES

DTC B2350: Malfunction of lighting switch,**DTC B2351: Malfunction of wiper/washer switch**

M15410200008USA0000010000

TROUBLE JUDGMENT

The ETACS-ECU receives the signals related to lighting and wiper/washer from the column switch. If the fail information data is included in the signal from column switch, DTC B2350 (malfunction of lighting switch) or B2351 (malfunction of wiper/washer switch) is stored.

TECHNICAL DESCRIPTION (COMMENT)

The column switch or the ETACS-ECU may have a problem.

TROUBLESHOOTING HINTS

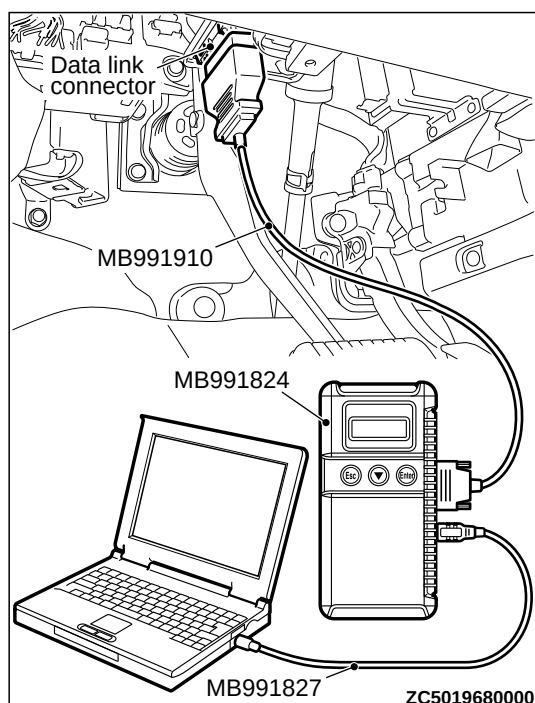
- Column switch may be defective
- The ETACS-ECU may be defective

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicle Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

Check again if the DTC is set to the ETACS-ECU.



CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect scan tool P.54Ah-4."
- (2) Turn the ignition switch to the "ON" position.
- (3) Erase the DTC.
- (4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (5) Check if the DTC B2350 or B2351 is set.
- (6) Turn the ignition switch to the "LOCK" (OFF) position.

Q:Is the DTC set?

DTC B2351 is set.: Go to Step 2.

DTC B2350 is set.: Go to Step 3.

No DTC is set.: The trouble can be an intermittent malfunction (GROUP 00 - How to Cope with Intermittent Malfunction P.00-15).

STEP 2. Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

Check again if the DTC is set to the ETACS-ECU.

- (1) Replace the wiper/washer switch.
- (2) Turn the ignition switch to the "ON" position.
- (3) Erase the DTC.
- (4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (5) Check if DTC is set.
- (6) Turn the ignition switch to the "LOCK" (OFF) position.

Q:Is the DTC set?

YES: Go to Step 3.

NO: The procedure is complete.

STEP 3. Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

Check again if the DTC is set to the ETACS-ECU.

- (1) Replace the lighting switch.
- (2) Turn the ignition switch to the "ON" position.
- (3) Erase the DTC.
- (4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (5) Check if DTC is set.
- (6) Turn the ignition switch to the "LOCK" (OFF) position.

Q:Is the DTC set?

YES: Go to Step 4.

NO: The procedure is complete.

STEP 4. Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

Check again if the DTC is set to the ETACS-ECU.

- (1) Turn the ignition switch to the "ON" position.

- (2) Erase the DTC.
- (3) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (4) Check if DTC is set.
- (5) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the diagnostic trouble code set?

YES: Replace the ETACS-ECU.

NO: The procedure is complete.

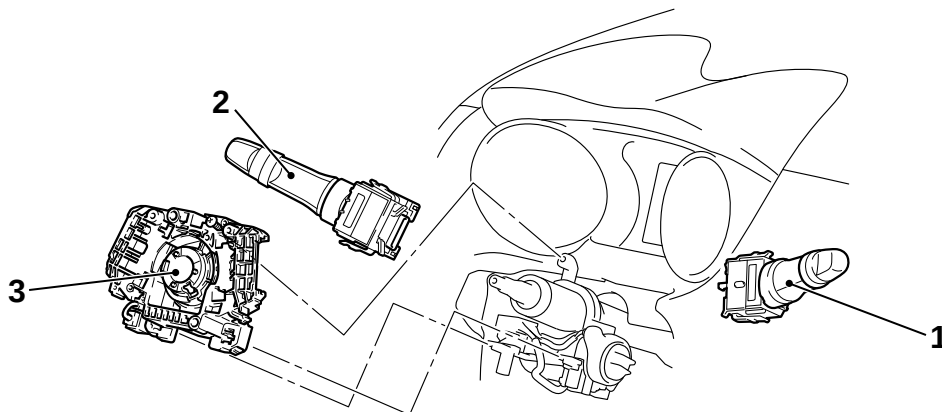
REMOVAL AND INSTALLATION

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CAUTION

- To remove the driver airbag module, refer to GROUP 52B - Service Precautions P.52B-28 and Air Bag Module(s) and Clock Spring P.52B-329.
- When the steering wheel sensor is replaced, always carry out calibration to make ASC-ECU

learn the neutral point. (Refer to GROUP 35C - On-vehicle Service-Steering Wheel Sensor Calibration P.35C-192.) <Vehicles with ASC>



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Removal Steps

- Steering column cover (Refer to GROUP 52A - Instrument Panel Assembly P.52A-2.)
- 1. Wiper/washer switch
- 2. Lighting switch
- Steering wheel assembly (Refer to GROUP 52B - Air Bag Module(s) and Clock Spring P.52B-329.)

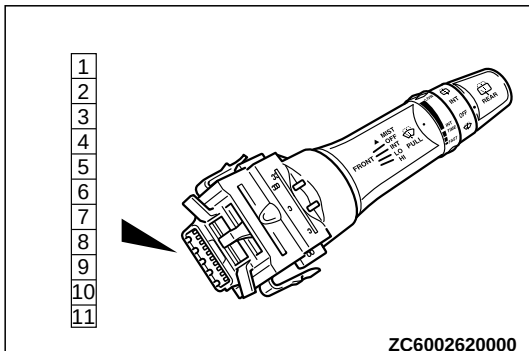
Removal Steps

- Clock spring (Refer to GROUP 52B - Air Bag Module(s) and Clock Spring P.52B-329.)
- 3. Column switch body
- Steering wheel sensor (Refer to GROUP 35C - Steering wheel sensor P.35C-198.) <Vehicles with ASC>

INSPECTION

WIPER/WASHER SWITCH CONTINUITY CHECK

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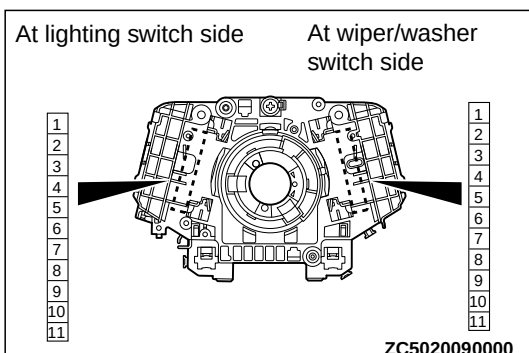


Switch position		Tester connection	Specified condition
OFF		-	Open circuit
Windshield intermittent wiper interval adjusting knob		6 - 3	Operating the adjusting knob changes the resistance.
Rear wiper switch		6 - 4	Continuity exists (2 ohms or less)
Rear washer switch		6 - 5	Continuity exists (2 ohms or less)
Windshield washer switch		6 - 7	Continuity exists (2 ohms or less)
Windshield wiper switch	Hi	6 - 8	Continuity exists (2 ohms or less)
	Lo	6 - 9	Continuity exists (2 ohms or less)
	Int	6 - 10	Continuity exists (2 ohms or less)
	Mist	6 - 11	Continuity exists (2 ohms or less)

COLUMN SWITCH (SWITCH BODY) CONTINUITY CHECK

M15410200011USA0000010000

1. Remove the lighting switch and the wiper/washer switch.
2. Check that the continuity is present for the same terminal numbers (No. 2-11) of the column switch body connectors that remain on the steering column.



Column switch body	Tester connection	Specified condition
• Lighting switch side connector • Wiper/washer switch side connector	2 - 2	Continuity exists (2 Ω or less)
	3 - 3	
	4 - 4	
	5 - 5	
	6 - 6	
	7 - 7	
	8 - 8	
	9 - 9	
	10 - 10	

COLUMN SWITCH
INSPECTION

54Ah-10

Column switch body		Tester connection	Specified condition
		11 - 11	