

**09-22 INSTRUMENTATION/DRIVER INFO.**

**LOCATION INDEX** ..... 09-22-1

**INSTRUMENT CLUSTER SYSTEM**

**WIRING DIAGRAM** ..... 09-22-2

**INSTRUMENT CLUSTER**

**REMOVAL/INSTALLATION** ..... 09-22-3

    Instrument Cluster Removal Note .... 09-22-3

**INSTRUMENT CLUSTER**

**DISASSEMBLY/ASSEMBLY** ..... 09-22-3

**INSTRUMENT CLUSTER INSPECTION.** 09-22-4

  Speedometer ..... 09-22-4

  Tachometer ..... 09-22-4

  Fuel Gauge ..... 09-22-4

  Water Temperature Gauge ..... 09-22-4

**INSTRUMENT CLUSTER REPAIR** .....09-22-4

  Tachometer.....09-22-4

**INSTRUMENT CLUSTER INPUT/OUTPUT**

**CHECK MODE** .....09-22-5

    DTC Chart.....09-22-5

    Operating Order .....09-22-6

    Checking Order .....09-22-7

    Inspection of DTCs .....09-22-7

**WARNING AND INDICATOR LIGHT BULB**

**REMOVAL/INSTALLATION.**.....09-22-13

**FUEL GAUGE SENDER UNIT**

**INSPECTION** .....09-22-13

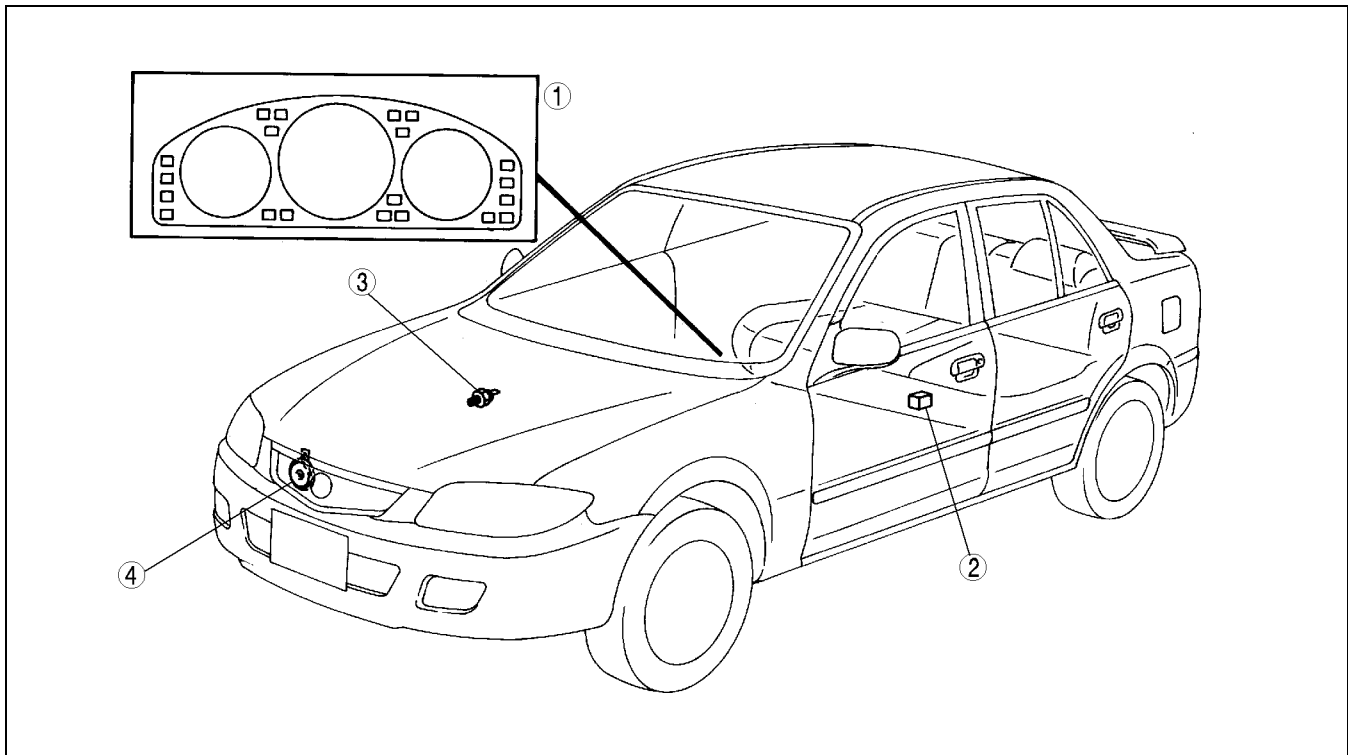
**OIL PRESSURE SWITCH**

**INSPECTION** .....09-22-13

**HORN REMOVAL/INSTALLATION** ..... 09-22-13

**LOCATION INDEX**

A3U092201067W01



**09-22**

Z3U0922W003

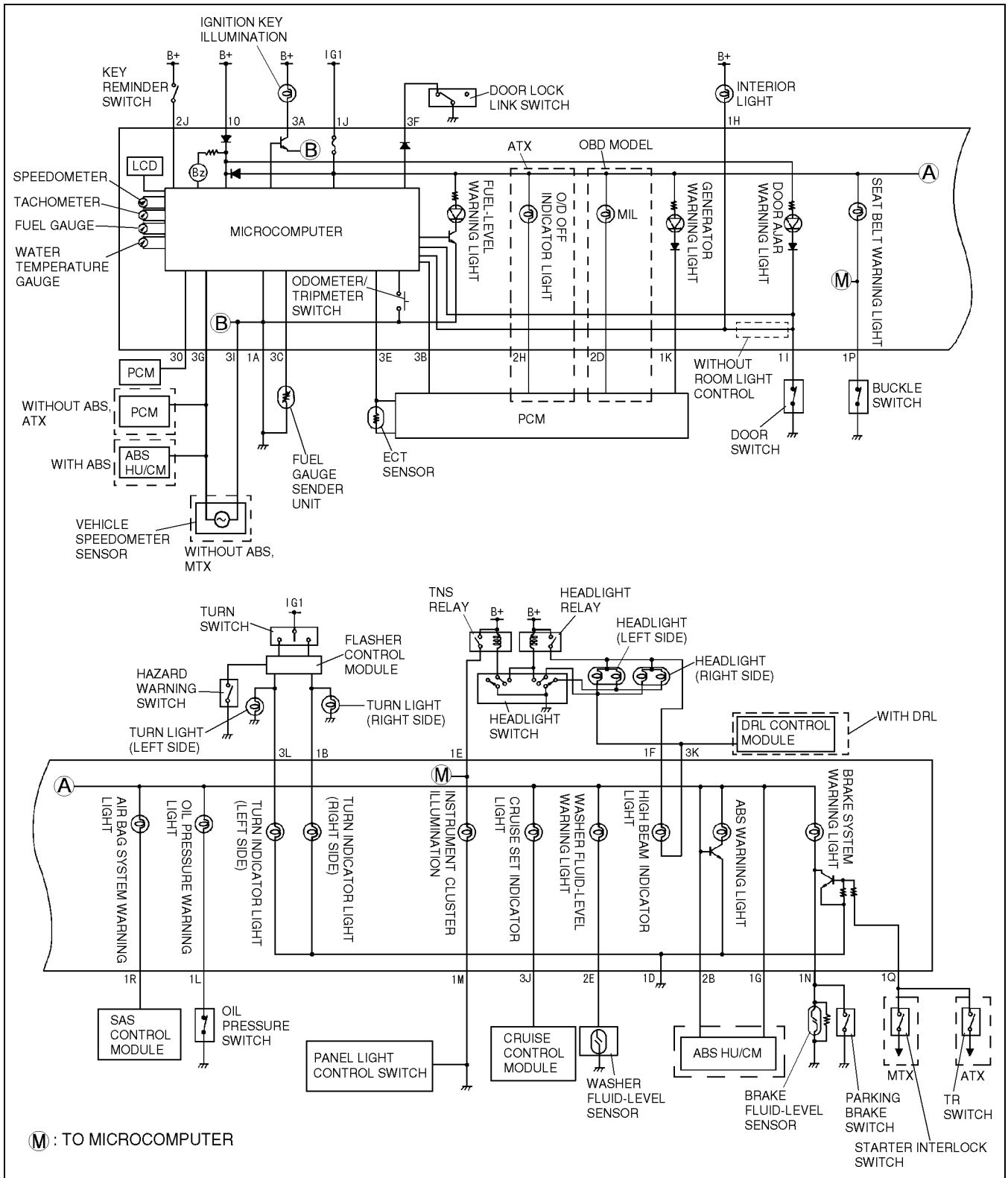
1	<p>Instrument cluster            (See 09-22-3 INSTRUMENT CLUSTER REMOVAL/INSTALLATION)            (See 09-22-3 INSTRUMENT CLUSTER DISASSEMBLY/ASSEMBLY)            (See 09-22-4 INSTRUMENT CLUSTER INSPECTION)            (See 09-22-4 INSTRUMENT CLUSTER REPAIR)            (See 09-22-5 INSTRUMENT CLUSTER INPUT/OUTPUT CHECK MODE)            (See 09-22-13 WARNING AND INDICATOR LIGHT BULB REMOVAL/INSTALLATION)</p>
---	---

2	<p>Fuel gauge sender unit            (See 09-22-13 FUEL GAUGE SENDER UNIT INSPECTION)</p>
3	<p>Oil pressure switch            (See 09-22-13 OIL PRESSURE SWITCH INSPECTION)</p>
4	<p>Horn            (See 09-22-13 HORN REMOVAL/INSTALLATION)</p>

# INSTRUMENTATION/DRIVER INFO.

## INSTRUMENT CLUSTER SYSTEM WIRING DIAGRAM

A3U092255430W01



Z3U0922W005

## INSTRUMENTATION/DRIVER INFO.

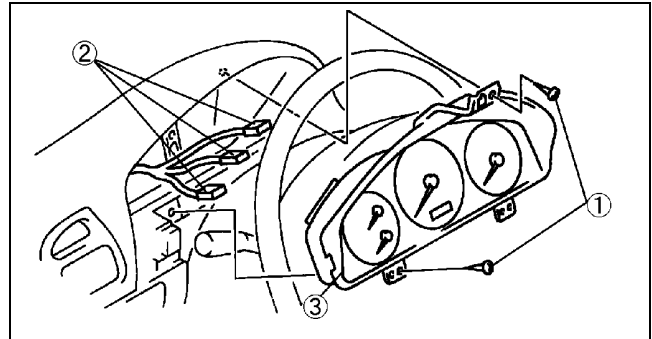
### INSTRUMENT CLUSTER REMOVAL/INSTALLATION

A3U092255430W02

1. Disconnect the negative battery cable.
2. Pull down the adjusting lever of the tilt steering wheel and push the steering wheel down.
3. Remove the meter hood.
4. Remove in the order indicated in the table.

1	Screw
2	Connector
3	Instrument cluster (See 09-22-3 Instrument Cluster Removal Note)

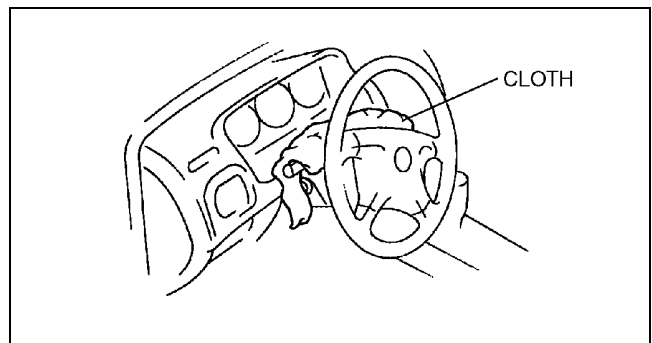
5. Install in the reverse order of removal.



X3U922WA0

#### Instrument Cluster Removal Note

1. When removing the instrument cluster, in order to prevent damage to the lens, cover the steering shaft with a cloth.



X3U922WA1

09-22

### INSTRUMENT CLUSTER DISASSEMBLY/ASSEMBLY

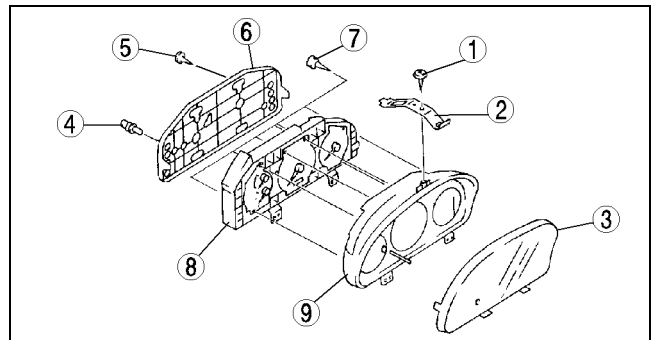
A3U092255430W03

#### Caution

- If the instrument cluster is dropped or the print plate is damaged, the system will not operate properly and it may become the cause of trouble or malfunctions.

1. Disassemble in the order indicated in the table.

1	Screw
2	Bracket
3	Lens
4	Bulb
5	Screw
6	Cover
7	Screw
8	Instrument cluster
9	Case



Z3U0922W001

2. Assemble in the reverse order of disassembly.

# INSTRUMENTATION/DRIVER INFO.

## INSTRUMENT CLUSTER INSPECTION

A3U092255430W04

### Speedometer

1. Inspect the speedometer by setting it in the input/output check mode DTC 12. (See 09-22-5 INSTRUMENT CLUSTER INPUT/OUTPUT CHECK MODE.)

### Tachometer

1. Inspect the tachometer by setting it in the input/output check mode DTC 13. (See 09-22-5 INSTRUMENT CLUSTER INPUT/OUTPUT CHECK MODE.)

### Fuel Gauge

1. Inspect the fuel gauge by setting it in the input/output check mode DTC 23. (See 09-22-5 INSTRUMENT CLUSTER INPUT/OUTPUT CHECK MODE.)

### Water Temperature Gauge

1. Inspect the water temperature gauge by setting it in the input/output check mode DTC 25. (See 09-22-5 INSTRUMENT CLUSTER INPUT/OUTPUT CHECK MODE.)

## INSTRUMENT CLUSTER REPAIR

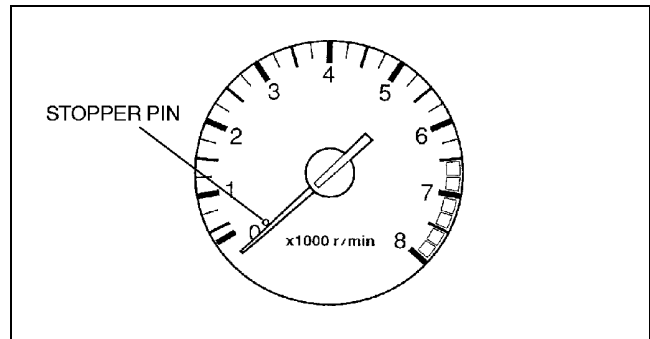
A3U092255430W05

### Tachometer

#### Note

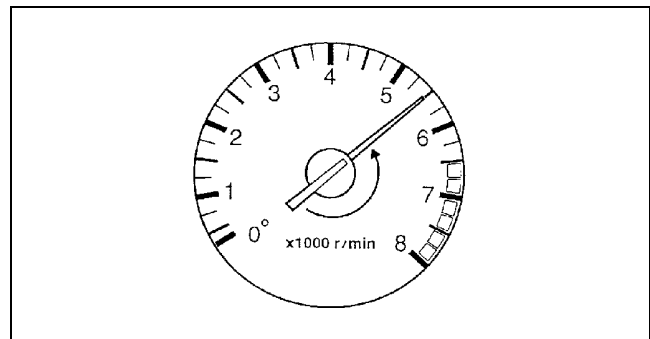
- The tach needle will not return to zero if the engine is turned off while the engine speed is **4,000 rpm** or higher when the ROOM fuse is not installed. The tach needle will continue to rotate clockwise until it rests on the wrong side of the stopper pin. If a customer complains of this concern, inspect the ROOM fuse and if necessary, repair according to the following steps.

1. Verify the concern.
2. Verify that the ROOM fuse is installed.

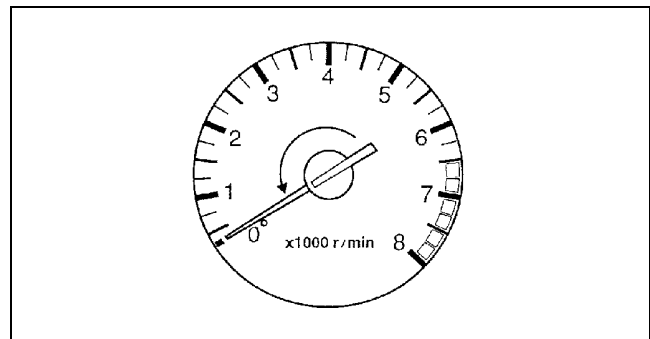


X3U922WC0

3. Start the engine and increase the engine speed to **approximately 5,500 rpm** or until the needle begins to move away from the stopper pin (counterclockwise).
4. Decrease the engine speed to idle and turn the ignition switch to LOCK position.
5. Verify that the needle returns to zero.
  - If the needle does not return to zero, remove the lens and carefully move the needle by hand.



X3U922WC1



X3U922WC2

## INSTRUMENTATION/DRIVER INFO.

### INSTRUMENT CLUSTER INPUT/OUTPUT CHECK MODE

A3U092255430W06

**Note**

- In this mode, it is possible to check the items in the following chart.

**DTC Chart**

DTC	Checking item	Related item
01	Buckle switch	Buckle switch
04	Door switch	<ul style="list-style-type: none"> <li>• Ignition key illumination</li> <li>• Room light control</li> <li>• Power door lock system</li> <li>• Lights-on reminder warning buzzer</li> </ul>
05	Door lock-link switch	Room light control
08	TNS relay	<ul style="list-style-type: none"> <li>• Lights-on reminder warning buzzer</li> <li>• Each illumination</li> </ul>
10	<p><b>With ABS</b></p> <ul style="list-style-type: none"> <li>• ABS HU/CM (vehicle speed signal)</li> </ul> <p><b>Without ABS, MTX</b></p> <ul style="list-style-type: none"> <li>• Vehicle speedometer sensor (vehicle speed signal)</li> </ul> <p><b>Without ABS, ATX</b></p> <ul style="list-style-type: none"> <li>• PCM (vehicle speed signal)</li> </ul>	Speedometer
11	PCM (engine speed signal)	Tachometer
12	Speedometer	Speedometer
13	Tachometer	Tachometer
14	Buzzer	<ul style="list-style-type: none"> <li>• Lights-on reminder warning buzzer</li> <li>• Key reminder warning buzzer</li> </ul>
16	Fuel-level warning light	Fuel-level warning light
22	Fuel gauge sender unit	Fuel gauge
23	Fuel gauge	Fuel gauge
24	ECT sensor	Water temperature gauge
25	Water temperature gauge	Water temperature gauge
26	LCD	LCD
27	Interior light	Room light control
31	Key reminder switch	<ul style="list-style-type: none"> <li>• Room light control</li> <li>• Keyless entry system</li> </ul>

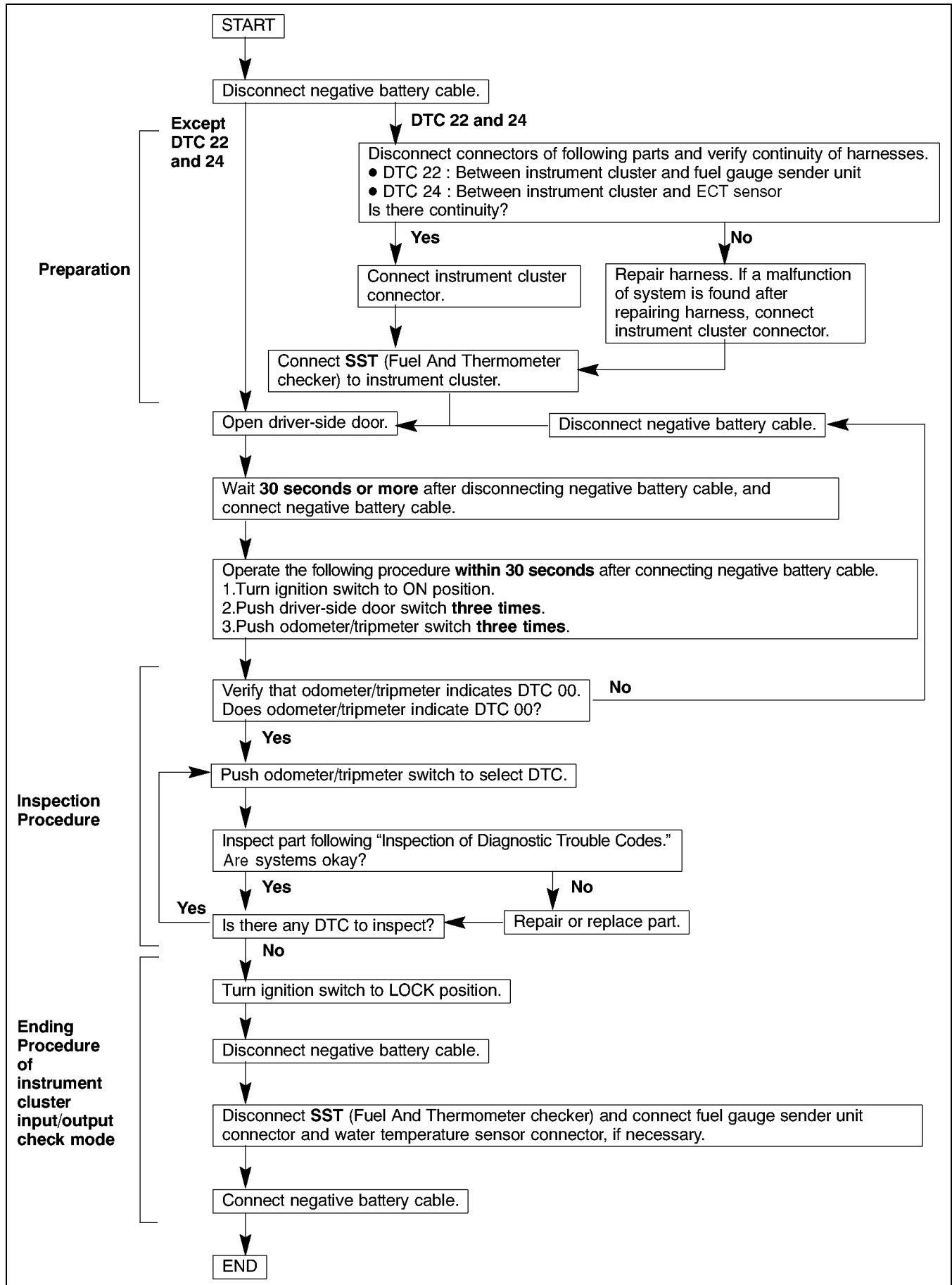
09-22

**Note**

- The diagnostic trouble codes are displayed in numerical order. (While performing the inspection, if you want to inspect a diagnostic trouble code number which is smaller than the code number you are currently inspecting, terminate the check mode then repeat the inspection from the beginning.)
- If the speed signal is put into the instrument cluster (the front wheels are rotated) while a code other than DTC 10 is displayed, the input/output check mode will be cancelled.
- The diagnostic trouble codes can be fast-forwarded by pushing and holding the odometer/tripmeter switch for **1 second or more**.

# INSTRUMENTATION/DRIVER INFO.

## Operating Order



Z3U0922W002

## INSTRUMENTATION/DRIVER INFO.

### Checking Order

#### Note

- When inspecting more than two check codes, perform the inspection by following the priority order of inspection indicated in the chart below.

Priority order of inspection	IG switch position	Check code
1	ON	22, 24
2		01, 04, 05, 08, 10, 11, 12, 13, 14, 16, 23, 25, 26, 27
3	LOCK	31

### Inspection of DTCs

DTC 01 Buckle switch on/off signal			
STEP	INSPECTION	INDICATION	ACTION
1	Unfasten driver-side seat belt. (Buckle switch on.)	ON	Go to next step.
		OFF	<ul style="list-style-type: none"> <li>Inspect buckle switch. (See 08–11–5 BUCKLE SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Instrument cluster — buckle switch)</li> </ul>
2	Fasten driver-side seat belt. (Buckle switch off.)	ON	<ul style="list-style-type: none"> <li>Inspect buckle switch. (See 08–11–5 BUCKLE SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Instrument cluster — buckle switch)</li> </ul>
		OFF	Input signal to instrument cluster is okay.

09–22

DTC 04 Door switch on/off signal			
STEP	INSPECTION	INDICATION	ACTION
1	Open driver-side door. (Door switch on.)	ON	Close driver-side door, then go to next step.
		OFF	<ul style="list-style-type: none"> <li>Inspect door switch. (See 09–18–25 DOOR SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Instrument cluster — door switch)</li> </ul>
2	Open passenger-side door. (Door switch on.)	ON	Close passenger-side door, then go to next step.
		OFF	<ul style="list-style-type: none"> <li>Inspect door switch. (See 09–18–25 DOOR SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Instrument cluster — door switch)</li> </ul>
3	Open rear door on driver-side. (Door switch on.)	ON	Close rear door on driver-side, then go to next step.
		OFF	<ul style="list-style-type: none"> <li>Inspect door switch. (See 09–18–25 DOOR SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Instrument cluster — door switch)</li> </ul>

## INSTRUMENTATION/DRIVER INFO.

<b>DTC 04 Door switch on/off signal</b>			
<b>STEP</b>	<b>INSPECTION</b>	<b>INDICATION</b>	<b>ACTION</b>
4	Open rear door on passenger-side. (Door switch on.)	ON	Close rear door on passenger-side, then go to next step.
		OFF	<ul style="list-style-type: none"> <li>Inspect door switch. (See 09-18-25 DOOR SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Instrument cluster — door switch)</li> </ul>
5	Close all doors. (Door switch off.)	ON	<ul style="list-style-type: none"> <li>Inspect door switch. (See 09-18-25 DOOR SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Instrument cluster — door switch)</li> </ul>
		OFF	Input signals to instrument cluster are okay.

<b>DTC 05 Door lock-link switch on/off signal</b>			
<b>STEP</b>	<b>INSPECTION</b>	<b>INDICATION</b>	<b>ACTION</b>
1	Turn driver-side door lock knob to lock position. (Door lock-link switch to lock position.)	ON	Go to next step.
		OFF	<ul style="list-style-type: none"> <li>Inspect door lock-link switch. (See 09-14-4 DOOR LOCK-LINK SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Instrument cluster — door lock-link switch — GND)</li> </ul>
2	Turn driver-side door lock knob to unlock position. (Door lock-link switch to unlock position.)	ON	<ul style="list-style-type: none"> <li>Inspect door lock-link switch. (See 09-14-4 DOOR LOCK-LINK SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Instrument cluster — door lock-link switch — GND)</li> </ul>
		OFF	Input signal to instrument cluster is okay.

<b>DTC 08 TNS relay on/off signal</b>			
<b>STEP</b>	<b>INSPECTION</b>	<b>INDICATION</b>	<b>ACTION</b>
1	Turn headlight switch to TNS position. (TNS relay on.)	ON	Go to next step.
		OFF	<ul style="list-style-type: none"> <li>Inspect TNS relay. (See 09-21-5 RELAY INSPECTION)</li> <li>Inspect wiring harness. (Battery — TNS relay — instrument cluster)</li> </ul>
2	Turn headlight switch off. (TNS relay off.)	ON	<ul style="list-style-type: none"> <li>Inspect TNS relay. (See 09-21-5 RELAY INSPECTION)</li> <li>Inspect wiring harness. (TNS relay — instrument cluster)</li> </ul>
		OFF	Input signal to instrument cluster is okay.



## INSTRUMENTATION/DRIVER INFO.

DTC 10 Vehicle speed input signal		
INSPECTION	INDICATION	ACTION
Rotate drive wheels using chassis roller.	□□	Input signal to instrument cluster is okay.
	□FF	Inspect following parts <b>With ABS</b> <ul style="list-style-type: none"> <li>• ABS HU/CM</li> <li>• Wiring harness (Instrument cluster—ABS HU/CM)</li> </ul> <b>Without ABS, ATX</b> <ul style="list-style-type: none"> <li>• PCM</li> <li>• Wiring harness (Instrument cluster—PCM)</li> </ul> <b>Without ABS, MTX</b> <ul style="list-style-type: none"> <li>• Vehicle speedometer sensor</li> <li>• Wiring harness (Instrument cluster—vehicle speedometer sensor)</li> </ul>

DTC 11 Engine speed input signal		
INSPECTION	INDICATION	ACTION
Start engine.	□□	Input signal to instrument cluster is okay.
	□FF	<ul style="list-style-type: none"> <li>• Inspect PCM. (See 01-40A-7 PCM INSPECTION [ZM]) (See 01-40B-7 PCM INSPECTION [FS])</li> <li>• Inspect wiring harness. (instrument cluster — PCM)</li> </ul>


09-22

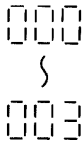
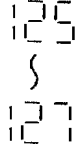
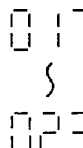
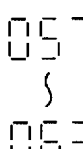

DTC 12 Operation signal to speedometer			
INSPECTION	INDICATION	SITUATION	ACTION
Wait for <b>2 seconds</b> after selecting DTC 12.	□□	Speedometer needle moves full scale then returns to <b>60 km/h {37 MPH}</b> .	Speedometer is okay.
		Other than stated above.	Replace instrument cluster.
	E r r	—	

DTC 13 Operation signal to tachometer			
INSPECTION	INDICATION	SITUATION	ACTION
Wait for <b>2 seconds</b> after selecting DTC 13.	□□	Tachometer needle moves full scale then returns to <b>3000 rpm</b> .	Tachometer is okay.
		Other than stated above.	Replace instrument cluster.
	E r r	—	

DTC 14 Operation signal to buzzer			
INSPECTION	INDICATION	SITUATION	ACTION
Wait for <b>2 seconds</b> after selecting DTC 14.	□□ (Fixed)	Buzzer continuously sounds.	Buzzer is okay.
		Buzzer does not continuously sound.	Replace instrument cluster.

## INSTRUMENTATION/DRIVER INFO.

DTC 16 Operation signal to fuel-level warning light			
INSPECTION	INDICATION	SITUATION	ACTION
Wait for <b>2 seconds</b> after selecting DTC 16.	 (Turns on and off)	Fuel-level warning light turns on and off <b>3 times</b> .	Fuel-level warning light is okay.
		Other than stated above.	Inspect fuel-level warning light. (See 09-22-13 WARNING AND INDICATOR LIGHT BULB REMOVAL/ INSTALLATION)

DTC 22 Fuel level signal				
STEP	INSPECTION	INDICATION	SITUATION	ACTION
1	Select DTC 22.		Short to GND.	<ul style="list-style-type: none"> <li>• Inspect fuel gauge sender unit. (See 09-22-13 FUEL GAUGE SENDER UNIT INSPECTION)</li> <li>• Inspect wiring harness. (Instrument cluster — fuel gauge sender unit.)</li> </ul>
			Open circuit.	
		Other than stated above.	Go to next step.	
2	Using <b>SST</b> (Fuel And Thermometer checker), input <b>20 ohms</b> to terminal 3C of instrument cluster.		—	Go to next step.
		Other than stated above.	—	Replace instrument cluster.
3	Using <b>SST</b> (Fuel And Thermometer checker), input <b>60 ohms</b> to terminal 3C of instrument cluster.		—	Go to next step.
		Other than stated above.	—	Replace instrument cluster.
4	Using <b>SST</b> (Fuel And Thermometer checker), input <b>100 ohms</b> to terminal 3C of instrument cluster.		—	Input signal to instrument cluster is okay.
		Other than stated above.	—	Replace instrument cluster.

## INSTRUMENTATION/DRIVER INFO.

DTC 23		Operation signal to fuel gauge		
INSPECTION		INDICATION	SITUATION	ACTION
Wait for <b>2 seconds</b> after selecting DTC 23.		<div style="text-align: center;">□ □</div>	Fuel gauge indicates in following order for every <b>2 seconds</b> . <ul style="list-style-type: none"> <li>F→1/2→E→F (fixed)</li> </ul>	Fuel gauge is okay.
			Other than stated above.	Replace instrument cluster.
		<div style="text-align: center;">E F F</div>	Replace instrument cluster.	

DTC 24		Water temperature signal			
STEP	INSPECTION	INDICATION	SITUATION	ACTION	
1	Inspect PCM and ETC sensor. Are any DTCs of PCM displayed?	Yes	—	—	Go to applicable DTC inspection.
		No	—	—	Go to next step.
2	Select DTC 24. <b>Caution</b> <ul style="list-style-type: none"> <li>If ignition switch is turned to ON position with ECT sensor connector disconnected, DTC (P0117, P0118) of on-board diagnostic system will be recorded in PCM. After inspecting DTC 24, always delete DTC of PCM.</li> </ul>	<div style="text-align: center;">000 } 003</div>	Short to GND.	Inspect wiring harness. (Instrument cluster — ECT sensor)	
		<div style="text-align: center;">252 } 255</div>	Open circuit.		
		Other than stated above.	—	Go to next step.	
3	Use the <b>SST</b> (Fuel and thermometer checker) to adjust the resistance so that the voltage of the instrument cluster terminal 3E is <b>approximately 0.29 V</b> .	<div style="text-align: center;">0 10 } 020</div>	—	Go to next step.	
		Other than stated above.	—	Replace instrument cluster.	
4	Use the <b>SST</b> (Fuel and thermometer checker) to adjust the resistance so that the voltage of the instrument cluster terminal 3E is <b>approximately 1.61V</b> .	<div style="text-align: center;">0 77 } 087</div>	—	Input signal to instrument cluster is okay.	
		Other than stated above.	—	Replace instrument cluster.	

## INSTRUMENTATION/DRIVER INFO.

DTC 25 Operation signal to water temperature gauge			
INSPECTION	INDICATION	SITUATION	ACTION
Wait for <b>2 seconds</b> after selecting DTC 25.	□ □	Water temperature gauge indicates in following order for every <b>2 seconds</b> . • H→Center→C→H (fixed)	Water temperature gauge is okay.
		Other than stated above.	Replace instrument cluster.
	E r r	Replace instrument cluster.	

DTC 26 LCD indication			
INSPECTION	INDICATION	SITUATION	ACTION
Wait for <b>2 seconds</b> after selecting DTC 26.	TRIP A B ODO 88888.8	Indication is normal.	LCD is okay.
		Other than stated above.	Replace instrument cluster.

DTC 27 Operation signal to interior light			
INSPECTION	INDICATION	SITUATION	ACTION
a. Turn interior light switch to DOOR position. b. Wait for <b>2 seconds</b> after selecting DTC 27.	□ □ (Turns on and off)	Interior light turns on and off <b>3 times</b> .	Interior light is okay.
		Other than stated above.	<ul style="list-style-type: none"> <li>Inspect interior light.</li> <li>Inspect wiring harness. (Battery — interior light — instrument cluster)</li> </ul>

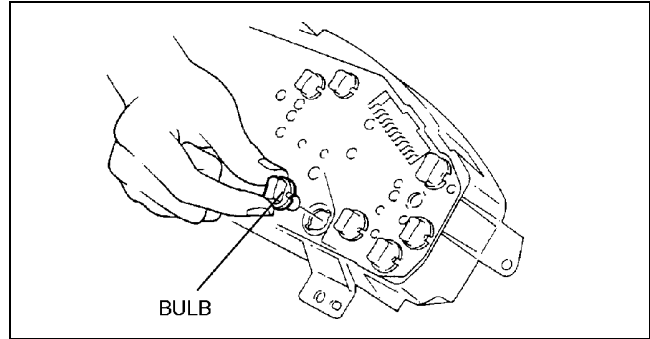
DTC 31 TNS relay on/off signal			
STEP	INSPECTION	INDICATION	ACTION
1	Remove key from steering lock and then insert key into steering lock after selecting DTC 31 (key reminder switch on).	□ □	Go to next step.
		□ F F	<ul style="list-style-type: none"> <li>Inspect key reminder switch. (See 09-21-4 KEY REMINDER SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Battery — key reminder switch — instrument cluster)</li> </ul>
2	Remove key from steering lock (key reminder switch off).	□ □	<ul style="list-style-type: none"> <li>Inspect key reminder switch. (See 09-21-4 KEY REMINDER SWITCH INSPECTION)</li> <li>Inspect wiring harness. (Battery — key reminder switch — instrument cluster)</li> </ul>
		□ F F	Input signal to instrument cluster is okay.

## INSTRUMENTATION/DRIVER INFO.

### WARNING AND INDICATOR LIGHT BULB REMOVAL/INSTALLATION

A3U092255431W01

1. Disconnect the negative battery cable.
2. Remove the instrument cluster. (See 09–22–3 INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
3. Turn the socket counterclockwise to remove the bulb as shown in the figure.
4. Install in the reverse order of removal.

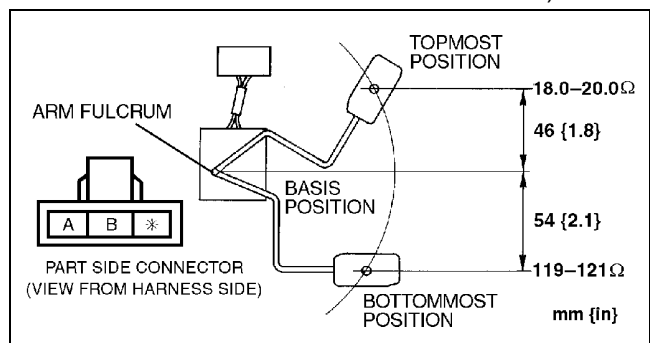


X3U922WBK

### FUEL GAUGE SENDER UNIT INSPECTION

A3U092260960W01

1. Remove the fuel gauge sender unit. (See 01–14–15 FUEL PUMP UNIT DISASSEMBLY/ASSEMBLY.)
2. Move the float to the topmost and bottommost positions, and verify that the resistance between terminals A and B of the unit and the position of the float are as indicated in the figure.
  - If they are not as indicated, replace the fuel gauge sender unit.



Y3U922WAO

09–22

### OIL PRESSURE SWITCH INSPECTION

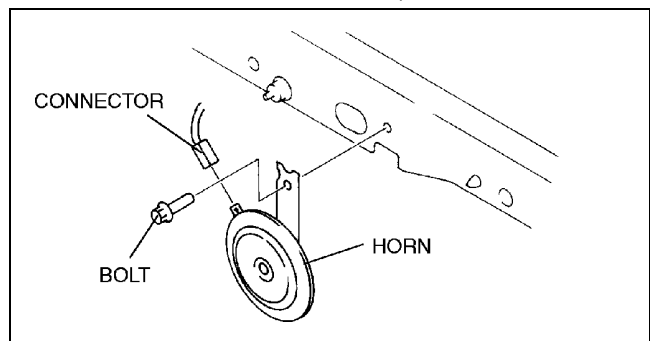
A3U092218500W01

1. Verify that the oil pressure warning light illuminates when the ignition switch is turned to ON position.
2. Verify that the oil pressure warning light goes off when the engine is started.
  - If the oil pressure warning light does not illuminate or remains illuminated, inspect the oil pressure warning light bulb and related wiring harness.
  - If the oil pressure warning light bulb and related wiring harness are normal, inspect the oil pressure. (See 01–11–2 OIL PRESSURE INSPECTION.)
  - If the oil pressure is normal, replace the oil pressure switch.

### HORN REMOVAL/INSTALLATION

A3U092266790W01

1. Disconnect the negative battery cable.
2. Remove the front bumper. (See 09–10–5 FRONT BUMPER REMOVAL/INSTALLATION.)
3. Disconnect the horn connector.
4. Remove the bolt.
5. Remove the horn.
6. Install in the reverse order of removal.



X3U922WBM