

2012 - Mazda6 - Body and Accessories

NO.3 NO SOUND FROM ALL SPEAKERS [ENTIRE AUDIO SYSTEM]

Without Bose®

3	No sound from all speakers	
Possible DTC	Audio unit (without display)	09:Er20, 09:Er21
	Audio unit (with display)	Device code 09/error code 20, 21
Possible cause	• Electronic jamming from outside, or inferior condition of broadcasting station radio wave • Glass antenna malfunction • Antenna feeder malfunction • Center roof antenna malfunction • Speaker muted by Bluetooth system (hands-free telephone (HF/TEL) system) operation • Poor connection of music device • Volume adjustment of music device is at minimum • Audio unit malfunction • Short circuit in wiring harness between audio unit • Short circuit inside speaker • Speaker malfunction • Poor connection at audio unit/car-navigation unit connector, terminal damage	

Diagnostic procedure

STEP	INSPECTION	ACTION
1	• It sound not output from the	YesGo to the next step.

	speaker only while in radio mode?		No Go to Step 6.
2	• Does noise occur?	Yes	Go to the next step.
		No	Go to Step 8.
3	• Can the location where the noise occurs be specified?	Yes	The system is normal. Explain to the customer that the noise is caused by radio wave disturbances or broadcast wave conditions from the outside.
		No	Go to the next step.
4	- Compare the radio broadcast reception condition on another vehicle of the same model (model/unit) in the location where the noise occurs. - Compared to another vehicle of the same model, is the reception worse?	Yes	Go to the next step.
		No	Go to Step 6.
5	- Inspect the glass antenna and antenna feeder. - Are the glass antenna and antenna feeder normal?	Yes	Go to the next step.
		No	Repair or replace the glass antenna and/or the antenna feeder.
6	• Does the Bluetooth system (hands-free telephone (HF/TEL) system) operate?	Yes	The system is normal. Explain to the customer that the Bluetooth system (hands-free telephone (HF/TEL) system) operates and the speaker is muted.
		No	Go to the next step.
7	• Does the AUX mode operate?	Yes	Verify the volume of the music device which has been connected. If sound is output, go to the next step.
		No	Go to the next step.
8	- Inspect the vehicle battery voltage. - Is the vehicle battery voltage normal?	Yes	Go to the next step.
		No	Charge the battery, then go to the next step.
	Specification:		

	▪ Ignition switch ON: 11.5 V or more ▪ Idle: 12.5 V or more		
9	• Press AUDIO CONT switch more than 2 s. • Play the CD or Radio. • Adjust the volume between "10" and "15". • Is there sound?	Yes	The system is normal.
		No	Go to the next step.
10	• Turn the ignition switch to the LOCK position. • Remove the audio unit. • Disconnect the audio unit connector (24-pin). • Inspect the continuity between the audio unit wiring harness-side connector terminal and ground: For front door speaker ▪ Terminal 1A (LH+)—GND ▪ Terminal 1C (LH-)—GND ▪ Terminal 1D (RH+)—GND ▪ Terminal 1F (RH-)—GND For rear door speaker ▪ Terminal 1S (LH+)—GND ▪ Terminal 1U (LH-)—GND ▪ Terminal 1V (RH+)—GND ▪ Terminal 1X (RH-)—GND • Is there continuity?	Yes	Repair or replace the suspect wiring harness or speaker unit. NOTE: • If there is a short circuit between the speaker harness or speaker lead wire and ground, the protector circuit inside the audio unit operates to cut the sound.
		No	• Replace the audio unit. (See AUDIO UNIT REMOVAL/ INSTALLATION.)

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3	No sound from all speakers	
Possible DTC	Audio unit	09:Er20, 09:Er21
	Car-navigation unit	Device code 09/error code 20, 21
Possible cause	• Electronic jamming from outside, or inferior condition of broadcasting station radio wave • Glass antenna malfunction • Antenna feeder malfunction • Center roof antenna malfunction • Speaker muted by Bluetooth system (hands-free telephone (HF/TEL) system) operation • Poor connection of music device • Volume adjustment of music device is at minimum • Speaker malfunction • Audio amplifier malfunction • Open or short circuit in wiring harness between audio amplifier and audio unit/car-navigation unit • Short circuit inside speaker • Poor connection of audio unit/car-navigation unit or audio amplifier connector, terminal damage • CAN signal wiring harness malfunction • Short circuit inside speaker • Open or short circuit in wiring harness between audio amplifier and speaker	

Diagnostic procedure

STEP	INSPECTION	ACTION
1	• It sound not output from the speaker only while in radio mode?	YesGo to the next step.
		NoGo to Step 6.
2	• Does noise occur?	YesGo to the next step.
		NoGo to Step 8.
3	• Can the location where the noise occurs be specified?	YesThe system is normal. Explain to the customer that the noise is caused by radio wave

		disturbances or broadcast wave conditions from the outside.
		No Go to the next step.
4	- Compare the radio broadcast reception condition on another vehicle of the same model (model/unit) in the location where the noise occurs. - Compared to another vehicle of the same model, is the reception worse?	Yes Go to the next step. No Go to Step 6.
5	- Inspect the glass antenna and antenna feeder. - Are the glass antenna and antenna feeder normal?	Yes Go to the next step. No Repair or replace the glass antenna and/or the antenna feeder.
6	Does the Bluetooth system (hands-free telephone (HF/TEL) system) operate?	Yes The system is normal. Explain to the customer that the Bluetooth system (hands-free telephone (HF/TEL) system) operates and the speaker is muted. No Go to the next step.
7	Does the AUX mode operate?	Yes Verify the volume of the music device which has been connected. If sound is output, go to the next step. No Go to the next step.
8	- Inspect the vehicle battery voltage. - Is the vehicle battery voltage normal? Specification: ▪ Ignition switch ON: 11.5 V or more ▪ Idle: 12.5 V or more	Yes Go to the next step. No Charge the battery, then go to the next step.
9	- Press AUDIO CONT switch more than 2 s. - Play the CD or Radio.	Yes The system is normal. No Go to the next step.

	- Adjust the volume between "10" to "15". - Is there sound?		
10	- Measure the voltage at the audio amplifier terminal 4A (8-pin, vehicle harness-side). - Is the voltage B+?	Yes	Go to the next step.
		No	Repair or replace wiring harness between the audio amplifier and fuse. (See AUDIO AMPLIFIER REMOVAL/ INSTALLATION .) Go to the next step.
11	- Inspect the connection of audio unit/car-navigation unit connector (24-pin) and audio amplifier for poor connection (such as damaged/pulled-out pins corrosion). - Are all the pins normal?	Yes	Go to the next step.
		No	Repair or replace the pins and/or the connector.
12	- Turn the ignition switch to the LOCK position. - Disconnect the audio amplifier connector. - Inspect continuity between the following terminals of the audio amplifier connector and speaker connector. For front door speaker (LH) - Terminal 3D—Terminal C (speaker) - Terminal 3C—Terminal B (speaker) For front door speaker (RH) - Terminal 3F—Terminal C (speaker) - Terminal 3E—Terminal B (speaker) For tweeter (LH) - Terminal 3D—Terminal B (tweeter) - Terminal 3C—Terminal A (tweeter)	Yes	Go to the next step.
		No	Repair or replace the repair related wiring harnesses.

	For tweeter (RH) ▪ Terminal 3F—Terminal B (tweeter) ▪ Terminal 3E—Terminal A (tweeter) For rear door speaker (LH) ▪ Terminal 2D—Terminal C (speaker) ▪ Terminal 2B—Terminal B (speaker) For rear door speaker (RH) ▪ Terminal 2M—Terminal C (speaker) ▪ Terminal 2O—Terminal B (speaker) For front center speaker ▪ Terminal 2I—Terminal B (speaker) ▪ Terminal 2K—Terminal A (speaker) For rear center speaker ▪ Terminal 3H—Terminal B (speaker) ▪ Terminal 3G—Terminal D (speaker) For rear speaker ▪ Terminal 2E—Terminal B (speaker) ▪ Terminal 2G—Terminal A (speaker) • Is there continuity?	
13	• Turn the ignition switch to the LOCK position. • Disconnect the audio amplifier connector. • Inspect the continuity between the audio amplifier connector and ground: For front door speaker	Yes Repair or replace the related wiring harness or speaker. (See FRONT DOOR SPEAKER REMOVAL/ INSTALLATION.) (See FRONT CENTER SPEAKER REMOVAL/ INSTALLATION.) (See REAR DOOR SPEAKER REMOVAL/ INSTALLATION.)

	▪ Terminal 3D (LH+)—GND ▪ Terminal 3C (LH-)—GND ▪ Terminal 3F (RH+)—GND ▪ Terminal 3E (RH-)—GND For tweeter ▪ Terminal 3D (LH+)—GND ▪ Terminal 3C (LH-)—GND ▪ Terminal 3F (RH+)—GND ▪ Terminal 3E (RH-)—GND For rear door speaker ▪ Terminal 2D (LH+)—GND ▪ Terminal 2B (LH-)—GND ▪ Terminal 2M (RH+)—GND ▪ Terminal 2O (RH-)—GND For front center speaker ▪ Terminal 2I (+)—GND ▪ Terminal 2K (—)—GND For rear center speaker ▪ Terminal 3H (+)—GND ▪ Terminal 3G (—)—GND For rear speaker ▪ Terminal 2E—GND ▪ Terminal 2G—GND • Is there continuity?	(See REAR SPEAKER REMOVAL/ INSTALLATION.) (See REAR CENTER SPEAKER REMOVAL/ INSTALLATION.) NOTE: • If there is a short circuit between the speaker harness or speaker lead wire and ground, the protector circuit inside the audio unit/car-navigation unit operates to cut the sound.
		No Go to the next step.
14	• Turn the ignition switch to LOCK position. • Disconnect the audio amplifier connector and the audio unit/car-navigation unit connector (24-pin). • Inspect the continuity between audio amplifier terminal 2N (vehicle wiring harness-side) and audio unit/car-navigation unit terminal 1J (24-pin, vehicle	Yes Go to the next step. No Repair or replace the wiring harness between the audio amplifier and the audio unit/car-navigation unit.

	wiring harness- side).		
	Is there continuity?		
15	- Turn the ignition switch to LOCK position. - Disconnect the audio unit/car-navigation unit connector (24-pin) and audio amplifier connectors. - Inspect the for an open or short circuit in following wiring harnesses: - audio unit/car-navigation unit terminal 1O— audio amplifier terminal 3O (CAN_H) - audio unit/car-navigation unit terminal 1Q— audio amplifier terminal 3P (CAN_L) - Is there continuity?	Yes	Repair or replace malfunctioning part.
		No	With audio unit (with display) - Go to the next step. With car-navigation unit or audio unit (without display) - Replace the audio unit/car-navigation unit. (See AUDIO UNIT REMOVAL/ INSTALLATION.) (See CAR-NAVIGATION UNIT REMOVAL/ INSTALLATION.)
16	- Verify that all of the audio unit reset conditions for the customer's audio unit are met. (See AUDIO UNIT RESET PROCEDURE [ENTIRE AUDIO SYSTEM].) - Are all of the audio unit reset conditions for the customer's audio unit met?	Yes	Perform the audio unit reset. (See AUDIO UNIT RESET PROCEDURE [ENTIRE AUDIO SYSTEM].)
		No	Replace the audio unit. (See AUDIO UNIT REMOVAL/ INSTALLATION.)

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NO.3 NO SOUND FROM ALL SPEAKERS [ENTIRE AUDIO SYSTEM]

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3	No sound from all speakers	
Possible DTC	Audio unit (without display)	09:Er20, 09:Er21
	Audio unit (with display)	Device code 09/error code 20, 21
Possible cause	• Electronic jamming from outside, or inferior condition of broadcasting station radio wave • Glass antenna malfunction • Antenna feeder malfunction • Center roof antenna malfunction • Speaker muted by Bluetooth system (hands-free telephone (HF/TEL) system) operation • Poor connection of music device • Volume adjustment of music device is at minimum • Audio unit malfunction • Short circuit in wiring harness between audio unit • Short circuit inside speaker • Speaker malfunction • Poor connection at audio unit/car-navigation unit connector, terminal damage	

Diagnostic procedure

STEP	INSPECTION	ACTION
1	• It sound not output from the	YesGo to the next step.

	speaker only while in radio mode?		No Go to Step 6.
2	• Does noise occur?	Yes	Go to the next step.
		No	Go to Step 8.
3	• Can the location where the noise occurs be specified?	Yes	The system is normal. Explain to the customer that the noise is caused by radio wave disturbances or broadcast wave conditions from the outside.
		No	Go to the next step.
4	- Compare the radio broadcast reception condition on another vehicle of the same model (model/unit) in the location where the noise occurs. - Compared to another vehicle of the same model, is the reception worse?	Yes	Go to the next step.
		No	Go to Step 6.
5	- Inspect the glass antenna and antenna feeder. - Are the glass antenna and antenna feeder normal?	Yes	Go to the next step.
		No	Repair or replace the glass antenna and/or the antenna feeder.
6	• Does the Bluetooth system (hands-free telephone (HF/TEL) system) operate?	Yes	The system is normal. Explain to the customer that the Bluetooth system (hands-free telephone (HF/TEL) system) operates and the speaker is muted.
		No	Go to the next step.
7	• Does the AUX mode operate?	Yes	Verify the volume of the music device which has been connected. If sound is output, go to the next step.
		No	Go to the next step.
8	- Inspect the vehicle battery voltage. - Is the vehicle battery voltage normal? Specification:	Yes	Go to the next step.
		No	Charge the battery, then go to the next step.

	▪ Ignition switch ON: 11.5 V or more ▪ Idle: 12.5 V or more		
9	• Press AUDIO CONT switch more than 2 s. • Play the CD or Radio. • Adjust the volume between "10" and "15". • Is there sound?	Yes	The system is normal.
		No	Go to the next step.
10	• Turn the ignition switch to the LOCK position. • Remove the audio unit. • Disconnect the audio unit connector (24-pin). • Inspect the continuity between the audio unit wiring harness-side connector terminal and ground: For front door speaker ▪ Terminal 1A (LH+)—GND ▪ Terminal 1C (LH-)—GND ▪ Terminal 1D (RH+)—GND ▪ Terminal 1F (RH-)—GND For rear door speaker ▪ Terminal 1S (LH+)—GND ▪ Terminal 1U (LH-)—GND ▪ Terminal 1V (RH+)—GND ▪ Terminal 1X (RH-)—GND • Is there continuity?	Yes	Repair or replace the suspect wiring harness or speaker unit. NOTE: • If there is a short circuit between the speaker harness or speaker lead wire and ground, the protector circuit inside the audio unit operates to cut the sound.
		No	• Replace the audio unit. (See AUDIO UNIT REMOVAL/ INSTALLATION.)

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3	No sound from all speakers	
Possible DTC	Audio unit	09:Er20, 09:Er21
	Car-navigation unit	Device code 09/error code 20, 21
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Diagnostic procedure

STEP	INSPECTION	ACTION
1	• It sound not output from the speaker only while in radio mode?	YesGo to the next step.
		NoGo to Step 6.
2	• Does noise occur?	YesGo to the next step.
		NoGo to Step 8.
3	• Can the location where the noise occurs be specified?	YesThe system is normal. Explain to the customer that the noise is caused by radio wave

		disturbances or broadcast wave conditions from the outside.
		No Go to the next step.
4	- Compare the radio broadcast reception condition on another vehicle of the same model (model/unit) in the location where the noise occurs. - Compared to another vehicle of the same model, is the reception worse?	Yes Go to the next step. No Go to Step 6.
5	- Inspect the glass antenna and antenna feeder. - Are the glass antenna and antenna feeder normal?	Yes Go to the next step. No Repair or replace the glass antenna and/or the antenna feeder.
6	Does the Bluetooth system (hands-free telephone (HF/TEL) system) operate?	Yes The system is normal. Explain to the customer that the Bluetooth system (hands-free telephone (HF/TEL) system) operates and the speaker is muted. No Go to the next step.
7	Does the AUX mode operate?	Yes Verify the volume of the music device which has been connected. If sound is output, go to the next step. No Go to the next step.
8	- Inspect the vehicle battery voltage. - Is the vehicle battery voltage normal? Specification: ▪ Ignition switch ON: 11.5 V or more ▪ Idle: 12.5 V or more	Yes Go to the next step. No Charge the battery, then go to the next step.
9	- Press AUDIO CONT switch more than 2 s. - Play the CD or Radio.	Yes The system is normal. No Go to the next step.

	- Adjust the volume between "10" to "15". - Is there sound?		
10	- Measure the voltage at the audio amplifier terminal 4A (8-pin, vehicle harness-side). - Is the voltage B+?	Yes	Go to the next step.
		No	Repair or replace wiring harness between the audio amplifier and fuse. (See AUDIO AMPLIFIER REMOVAL/ INSTALLATION .) Go to the next step.
11	- Inspect the connection of audio unit/car-navigation unit connector (24-pin) and audio amplifier for poor connection (such as damaged/pulled-out pins corrosion). - Are all the pins normal?	Yes	Go to the next step.
		No	Repair or replace the pins and/or the connector.
12	- Turn the ignition switch to the LOCK position. - Disconnect the audio amplifier connector. - Inspect continuity between the following terminals of the audio amplifier connector and speaker connector. For front door speaker (LH) - Terminal 3D—Terminal C (speaker) - Terminal 3C—Terminal B (speaker) For front door speaker (RH) - Terminal 3F—Terminal C (speaker) - Terminal 3E—Terminal B (speaker) For tweeter (LH) - Terminal 3D—Terminal B (tweeter) - Terminal 3C—Terminal A (tweeter)	Yes	Go to the next step.
		No	Repair or replace the repair related wiring harnesses.

	For tweeter (RH) ▪ Terminal 3F—Terminal B (tweeter) ▪ Terminal 3E—Terminal A (tweeter) For rear door speaker (LH) ▪ Terminal 2D—Terminal C (speaker) ▪ Terminal 2B—Terminal B (speaker) For rear door speaker (RH) ▪ Terminal 2M—Terminal C (speaker) ▪ Terminal 2O—Terminal B (speaker) For front center speaker ▪ Terminal 2I—Terminal B (speaker) ▪ Terminal 2K—Terminal A (speaker) For rear center speaker ▪ Terminal 3H—Terminal B (speaker) ▪ Terminal 3G—Terminal D (speaker) For rear speaker ▪ Terminal 2E—Terminal B (speaker) ▪ Terminal 2G—Terminal A (speaker) • Is there continuity?	
13	• Turn the ignition switch to the LOCK position. • Disconnect the audio amplifier connector. • Inspect the continuity between the audio amplifier connector and ground: For front door speaker	Yes Repair or replace the related wiring harness or speaker. (See FRONT DOOR SPEAKER REMOVAL/ INSTALLATION.) (See FRONT CENTER SPEAKER REMOVAL/ INSTALLATION.) (See REAR DOOR SPEAKER REMOVAL/ INSTALLATION.)

	▪ Terminal 3D (LH+)—GND ▪ Terminal 3C (LH-)—GND ▪ Terminal 3F (RH+)—GND ▪ Terminal 3E (RH-)—GND For tweeter ▪ Terminal 3D (LH+)—GND ▪ Terminal 3C (LH-)—GND ▪ Terminal 3F (RH+)—GND ▪ Terminal 3E (RH-)—GND For rear door speaker ▪ Terminal 2D (LH+)—GND ▪ Terminal 2B (LH-)—GND ▪ Terminal 2M (RH+)—GND ▪ Terminal 2O (RH-)—GND For front center speaker ▪ Terminal 2I (+)—GND ▪ Terminal 2K (—)—GND For rear center speaker ▪ Terminal 3H (+)—GND ▪ Terminal 3G (—)—GND For rear speaker ▪ Terminal 2E—GND ▪ Terminal 2G—GND • Is there continuity?	(See REAR SPEAKER REMOVAL/ INSTALLATION.) (See REAR CENTER SPEAKER REMOVAL/ INSTALLATION.) NOTE: • If there is a short circuit between the speaker harness or speaker lead wire and ground, the protector circuit inside the audio unit/car-navigation unit operates to cut the sound.
		No Go to the next step.
14	• Turn the ignition switch to LOCK position. • Disconnect the audio amplifier connector and the audio unit/car-navigation unit connector (24-pin). • Inspect the continuity between audio amplifier terminal 2N (vehicle wiring harness-side) and audio unit/car-navigation unit terminal 1J (24-pin, vehicle	Yes Go to the next step. No Repair or replace the wiring harness between the audio amplifier and the audio unit/car-navigation unit.

	wiring harness- side).		
	Is there continuity?		
15	- Turn the ignition switch to LOCK position. - Disconnect the audio unit/car-navigation unit connector (24-pin) and audio amplifier connectors. - Inspect the for an open or short circuit in following wiring harnesses: - audio unit/car-navigation unit terminal 1O— audio amplifier terminal 3O (CAN_H) - audio unit/car-navigation unit terminal 1Q— audio amplifier terminal 3P (CAN_L) - Is there continuity?	Yes	Repair or replace malfunctioning part.
		No	With audio unit (with display) - Go to the next step. With car-navigation unit or audio unit (without display) - Replace the audio unit/car-navigation unit. (See AUDIO UNIT REMOVAL/ INSTALLATION.) (See CAR-NAVIGATION UNIT REMOVAL/ INSTALLATION.)
16	- Verify that all of the audio unit reset conditions for the customer's audio unit are met. (See AUDIO UNIT RESET PROCEDURE [ENTIRE AUDIO SYSTEM] .) - Are all of the audio unit reset conditions for the customer's audio unit met?	Yes	Perform the audio unit reset. (See AUDIO UNIT RESET PROCEDURE [ENTIRE AUDIO SYSTEM] .)
		No	Replace the audio unit. (See AUDIO UNIT REMOVAL/ INSTALLATION.)