

5.11 Loudspeaker System (LS)

Contents

5.11 Model 170 (with Bose® Sound System)

	Page
Diagnosis	
Function Test	11/1
Complaint Related Diagnostic Chart	12/1
Electrical Test Program	
Component Locations	21/1
Preparation for Test	22/1
Test	23/1

Diagnosis – Function Test

Function Test Explanation

For the Function Test, adjust the radio as follows:

- Tune-in a strong radio station (music), or play a cassette or CD.
- Set fader, bass, treble and balance to position 0 (reading in display window).
- Listen to each individual loudspeaker at the various locations.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾
Loudspeaker system not functioning	Left/right audio power amplifier (N40/3) Radio (A2)	23 ⇒ 1.0
Speaker 1 (H4/1h1) of the left front door speaker group (H4/1) not functioning	Speaker 1 (H4/1h1) Left/right audio power amplifier (N40/3) Radio (A2)	23 ⇒ 3.0 23 ⇒ 1.0
Speaker 2 (H4/1h2) of the left front door speaker group (H4/1) not functioning	Speaker 2 (H4/1h2) Left/right audio power amplifier (N40/3) Radio (A2)	23 ⇒ 4.0 23 ⇒ 1.0
Speaker 1 (H4/2h1) of the right front door speaker group (H4/2) not functioning	Speaker 1 (H4/2h1) Left/right audio power amplifier (N40/3) Radio (A2)	23 ⇒ 5.0 23 ⇒ 1.0
Speaker 2 (H4/2h2) of the right front door speaker group (H4/2) not functioning	Speaker 2 (H4/2h2) Left/right audio power amplifier (N40/3) Radio (A2)	23 ⇒ 6.0 23 ⇒ 1.0
Left rear speaker group (H4/7) not functioning	Left rear speaker group (H4/7) Left/right audio power amplifier (N40/3) Radio (A2)	23 ⇒ 7.0 23 ⇒ 1.0
Right rear speaker group (H4/8) not functioning	Right rear speaker group (H4/8) Left/right audio power amplifier (N40/3) Radio (A2)	23 ⇒ 8.0 23 ⇒ 1.0

¹⁾ Observe Preparation for Test, see 22.

Electrical Test Program – Component Locations

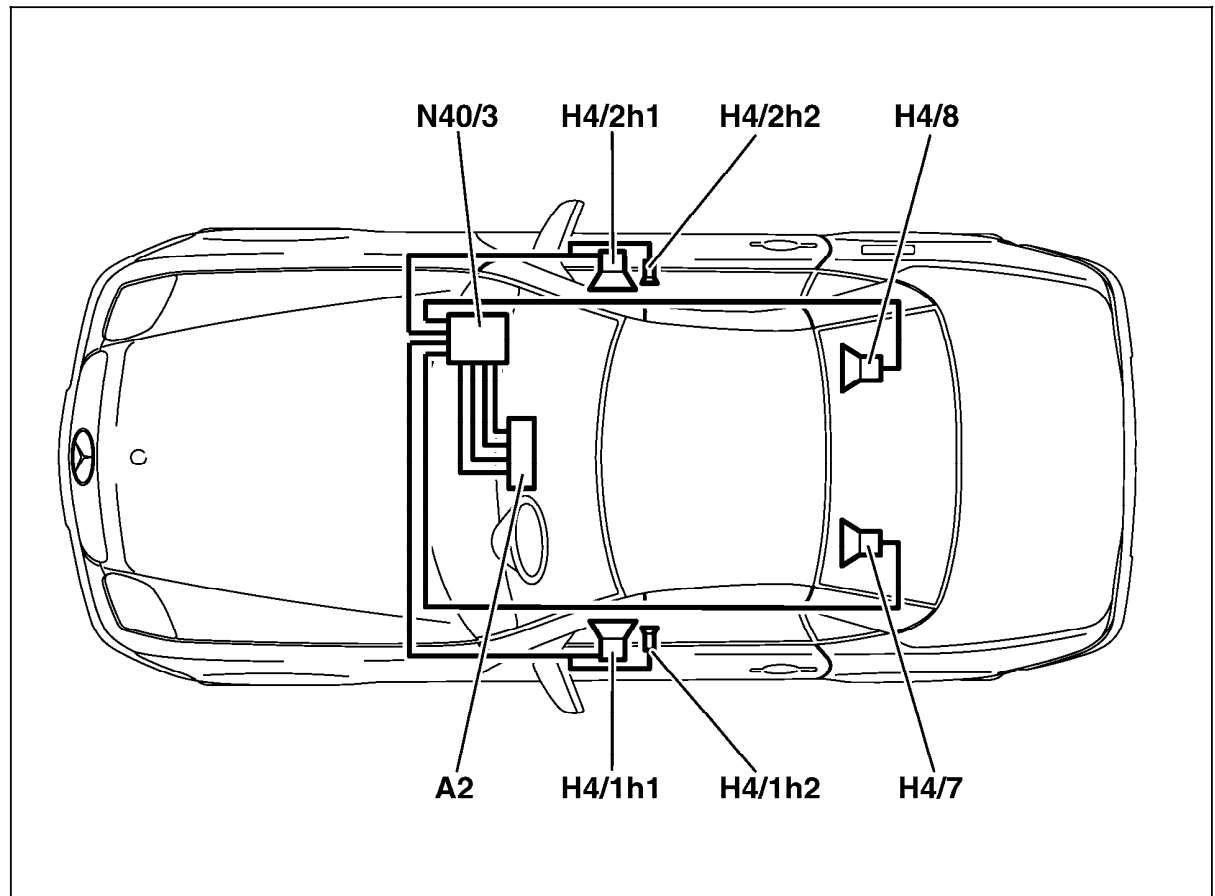


Figure 1
Model 170 with Sound System

- A2 Radio
- H4/1h1 Speaker 1, left front door speaker group
- H4/1h2 Speaker 2, left front door speaker group
- H4/2h1 Speaker 1, right front door speaker group
- H4/2h2 Speaker 2, right front door speaker group
- H4/7 Left rear speaker
- H4/8 Right rear speaker
- N40/3 Left/right audio power amplifier

P82.62-0295-57

Electrical Test Program – Preparation for Test

1. Battery voltage 11–14 V
2. Check fuses.
3. Radio OK.
4. Loudspeaker for sound system installed.

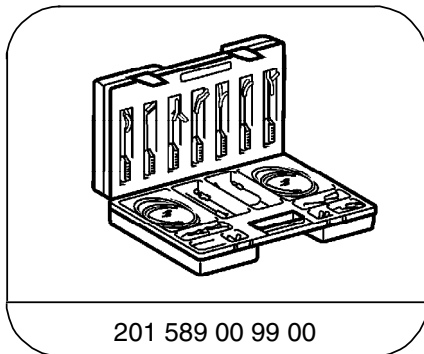
Electrical wiring diagrams:

Electrical Troubleshooting Manual, Model 170, Group 82

Note:

To prevent damage to the radio and left/right audio power amplifier, the connectors must only be removed or installed with the ignition and radio **OFF**.

Special Tools



201 589 00 99 00

Electrical connecting set

Conventional tools, test equipment









Description	Brand, model, etc.
Multimeter ¹⁾	Fluke Models 23, 77 III, 83, 85, 87, 88
Signal generator ¹⁾	SUN DTR-8416

¹⁾ Available through the MBUSA Standard Equipment Program.







Electrical Test Program – Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	Left/right audio power amplifier (N40/3) Voltage supply	<p>N40/3 9 — — 26</p>	Disconnect connector from N40/3. Radio (A2): OFF	11 – 14 V	Fuse 14 in fuse and relay box (F1), Fuse in N40/3, see Figure 1, Ground (right A-pillar) (W29/2), Wiring, Values OK: ⇒ 1.1
1.1	Control voltage from radio (A2)	<p>N40/3 9 — — 8</p>	Disconnect connector from N40/3. Radio (A2): ON	11 – 14 V	Wiring, Radio (A2), see 3.1 23, Values OK: ⇒ 2
2.0	Left/right audio power amplifier (N40/3) Loudspeaker signal from radio (A2)	<p>N40/3 Left front: 3 — — 5 Right front: 4 — — 6</p>	Disconnect connector from N40/3. Radio (A2): ON Turn volume control to maximum.	> 0.2 V Short voltage surges permitted	Wiring, Radio (A2), see 3.1 23, AD82.60 in WIS

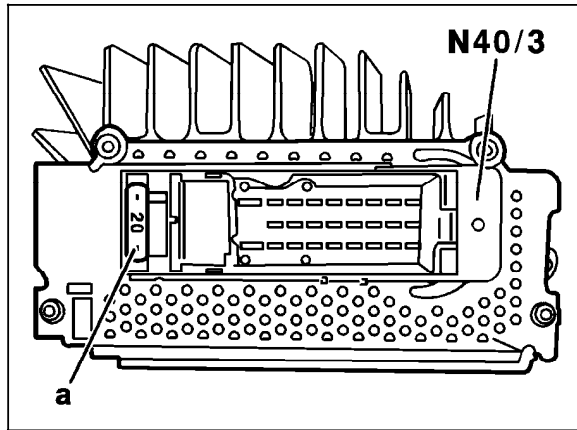
Electrical Test Program – Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0	Speaker 2 (H4/1h2) of the left front door speaker group (H4/1)	<p>H4/1h1</p> <p>15 —  — 23</p> <p>9 —  — 23</p> <p>9 —  — 15</p>	<p>Provide access to N40/3</p> <p>Remove passenger side floor board.</p> <p>Disconnect connector from N40/3.</p> <p>Radio (A2): OFF</p>	<p>1.5 – 2.5 Ω</p> <p>∞ Ω</p> <p>∞ Ω</p>	<p>Wiring,</p> <p>Speaker 2 (H4/1h1),</p> <p>Values OK:</p> <p>N40/3</p>
4.0	Speaker 2 (H4/1h2) of the left front door speaker group (H4/1)	<p>H4/1h2</p> <p>—  —</p>	<p>Remove interior door panel.</p> <p>Measure directly at speaker.</p>	<p>7.5 – 8.5 Ω</p>	<p>Wiring,</p> <p>Speaker 2 (H4/1h2),</p> <p>Values OK:</p> <p>N40/3</p>
5.0	Speaker 1 (H4/2h1) of the right front door speaker group (H4/2)	<p>H4/2h1</p> <p>25 —  — 17</p> <p>9 —  — 17</p> <p>9 —  — 25</p>	<p>Provide access to N40/3</p> <p>Remove passenger side floor board.</p> <p>Disconnect connector from N40/3.</p> <p>Radio (A2): OFF</p>	<p>1.5 – 2.5 Ω</p> <p>∞ Ω</p> <p>∞ Ω</p>	<p>Wiring,</p> <p>Speaker 1 (H4/2h1),</p> <p>Values OK:</p> <p>Left/right audio power amplifier (N40/3).</p>
6.0	Speaker 2 (H4/2h2) of the right front door speaker group (H4/2)	<p>H4/2h2</p> <p>—  —</p>	<p>Remove interior door panel.</p> <p>Measure directly at speaker.</p>	<p>7.5 – 8.5 Ω</p>	<p>Wiring,</p> <p>Speaker 2 (H4/2h2),</p> <p>Values OK:</p> <p>N40/3</p>

Electrical Test Program – Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0	Left rear speaker group (H4/7)	<p>H4/7</p> <p>12 —  — 20</p> <p>9 —  — 20</p> <p>9 —  — 12</p>	<p>Provide access to N40/3</p> <p>Remove passenger side floor board.</p> <p>Disconnect connector from N40/3.</p> <p>Radio (A2): OFF</p>	<p>1.5 – 2.5 Ω</p> <p>∞ Ω</p> <p>∞ Ω</p>	<p>Wiring,</p> <p>H4/7,</p> <p>Values OK:</p> <p>N40/3</p>
8.0	Right rear speaker group (H4/8)	<p>H4/8</p> <p>11 —  — 19</p> <p>9 —  — 19</p> <p>9 —  — 11</p>	<p>Provide access to N40/3</p> <p>Remove passenger side floor board.</p> <p>Disconnect connector from N40/3.</p> <p>Radio (A2): OFF</p>	<p>1.5 – 2.5 Ω</p> <p>∞ Ω</p> <p>∞ Ω</p>	<p>Wiring,</p> <p>H4/8,</p> <p>Nominal values OK:</p> <p>N40/3</p>

Electrical Test Program – Test



P82-7024-13

Figure 1

N40/3 Left/right audio power amplifier

a Fuse

Connections on back of Radio

Figure 2

A

- 1 Speed-sensitive volume control
- 2 Not used
- 3 Muting by telephone system
- 4 Permanent plus (circuit 30)
- 5 Automatic antenna control
- 6 Illumination (circuit 58)
- 7 Switched plus (circuit 15)
- 8 Ground (circuit 31)

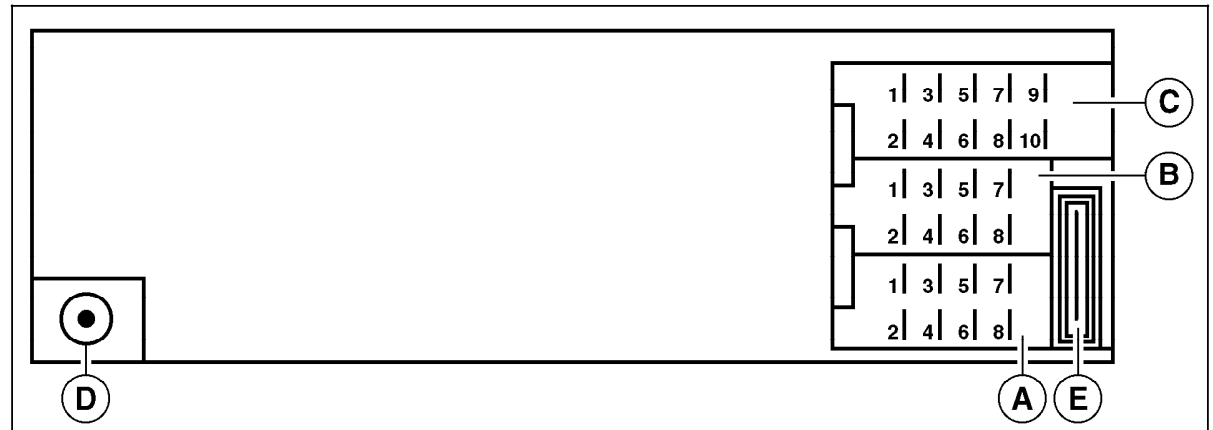
B

- 1 Right rear loudspeaker +
- 2 Right rear loudspeaker -
- 3 Right front loudspeaker +
- 4 Right front loudspeaker -
- 5 Left front loudspeaker +
- 6 Left front loudspeaker -
- 7 Left rear loudspeaker +
- 8 Left rear loudspeaker -

C Connector for CD changer, coding (via wiring harness)

D Antenna jack

E Fuse



P82-6245-53