

15.2e Model 140 Individual Rear Power Seats

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Diagnosis - Function Test

Test step/Test sequence	Test condition	Nominal value	Possible cause/Remedy ¹⁾	
⇒ 1.0 Rear power seat, seat cushion inclination raise/lower adjustment (Left seat switch S55/1s3) (Right seat switch S55/2s3)	Ignition: ON Activate power seat switch (s3) seat cushion raise/lower	Rear seat seat cushion inclination adjusts up/down	Left seat 23 ⇒ 1.0 23 ⇒ 2.0 23 ⇒ 3.0	Right seat 23 ⇒ 13.0 23 ⇒ 14.0 23 ⇒ 15.0
⇒ 2.0 Rear power seat, backrest fore/aft adjustment (Left seat switch S55/1s1) (Right seat switch S55/2s1)	Ignition: ON Activate power seat switch (s1) backrest fore/aft	Rear seat backrest adjusts forward/backward	Left seat 23 ⇒ 1.0 23 ⇒ 4.0 23 ⇒ 5.0 23 ⇒ 6.0	Right seat 23 ⇒ 13.0 23 ⇒ 16.0 23 ⇒ 17.0 23 ⇒ 18.0
⇒ 3.0 Rear power seat, head restraint raise/lower adjustment (Left seat switch S55/1s2) (Right seat switch S55/2s2)	Ignition: ON Activate power seat switch (s2) head restraint up/down	Rear seat head restraints adjust up/down	Left seat 23 ⇒ 1.0 23 ⇒ 7.0 23 ⇒ 8.0 23 ⇒ 9.0 23 ⇒ 10.0	Right seat 23 ⇒ 8.0 23 ⇒ 13.0 23 ⇒ 19.0 23 ⇒ 20.0 23 ⇒ 21.0
⇒ 4.0 Rear power seat, head restraint raise/lower adjustment Console switch (S52/5)	Ignition: ON Activate power seat switch (S52/5) head restraint up/down	Rear seat head restraints adjust up/down	Left seat 23 ⇒ 8.0 23 ⇒ 9.0 23 ⇒ 10.0 23 ⇒ 24.0 23 ⇒ 25.0	Right seat 23 ⇒ 8.0 23 ⇒ 20.0 23 ⇒ 21.0 23 ⇒ 24.0 23 ⇒ 25.0

1) Observe Preparation for Test, see 22.

Diagnosis - Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾	
Rear power seat adjustment does not function	Convenience relay module (K24) Rear power seat adjustment switch group(S55/1 or S55/2)	DM Body & Accessories Vol. 1 section 5.1 Left seat 23 ⇒ 1.0	Right seat 23 ⇒ 13.0
Rear power seat cushion inclination raise/lower adjustment does not function	Rear power seat adjustment switch group(S55/1 or S55/2) Rear seat motor group,cushion inclination raise/lower motor (M18/1m2 or M18/2m2)	Left seat 23 ⇒ 1.0 23 ⇒ 2.0, 3.0	Right seat 23 ⇒ 13.0 23 ⇒ 14.0, 15.0
Rear power seat backrest fore/aft adjustment does not function Note: At a specific backrest inclination the seat cushion will not adjust fore/aft	Rear power seat adjustment switch group(S55/1 or S55/2) Rear seat motor group, backrest fore/aft motor (M18/1m2 or M18/2m2) Rear seat motor group, seat cushion fore/aft motor (M18/1m2 or M18/2m2)	Left seat 23 ⇒ 1.0 23 ⇒ 4.0, 5.0 23 ⇒ 6.0	Right seat 23 ⇒ 13.0 23 ⇒ 16.0, 17.0 23 ⇒ 18.0
Rear power seat head restraint raise/lower adjustment does not function	Rear power seat adjustment switch group(S55/1 or S55/2) Rear power seat adjustment , head restraint raise/lower switch (S55/1s2 or S55/2s2) Rear seat motor group, seat cushion fore/aft motor (M18/1m2 or M18/2m2)	Left seat 23 ⇒ 1.0 23 ⇒ 7.0 23 ⇒ 9.0, 10.0	Right seat 23 ⇒ 13.0 23 ⇒ 9.0 23 ⇒ 20.0, 21.0

¹⁾ Observe Preparation for Test, see 22.

Diagnosis - Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾	
<p>Rear power seat head restraint raise/lower adjustment switch does not function Console switch (S52/5)</p>	<p>Rear head restraint raise/lower switch (S52/5)</p> <p>Rear head restraint control module (N32/12)</p> <p>Rear seat motor group, head restraint raise/lower motor (M18/1m3 or M18/2m3)</p>	<p>Left seat 23 ⇒ 24.0, 25.0 23 ⇒ 8.0 23 ⇒ 10.0</p>	<p>Right seat 23 ⇒ 24.0, 25.0 23 ⇒ 8.0 23 ⇒ 21.0</p>
<p>Rear power seat adjustment switch group illumination does not function</p>	<p>Rear power seat adjustment switch group (S55/1 or S55/2), or switch group illumination (e1)</p>	<p>Left seat 23 ⇒ 11.0, 12.0</p>	<p>Right seat 23 ⇒ 22.0, 23.0</p>
<p>Rear power seat head restraint raise/lower adjustment switch illumination does not function</p>	<p>Rear head restraint raise/lower switch (S52/5)</p>	<p>23 ⇒ 26.0, 27.0</p>	

¹⁾ Observe Preparation for Test, see 22.

Electrical Test Program - Component Locations

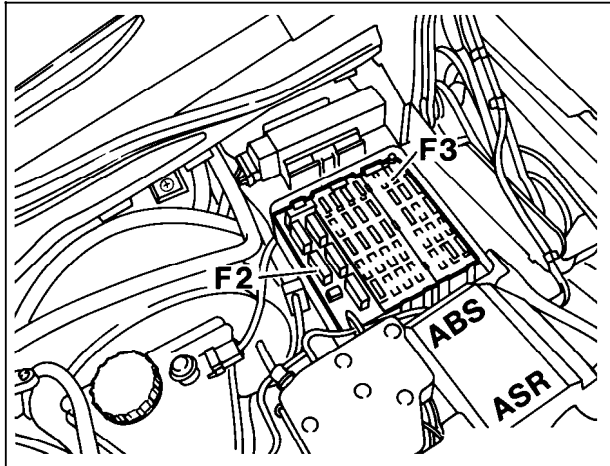


Figure 1 P54-2806-13
F3 Fuse box (35-fuse, in fuse and relay box F1)

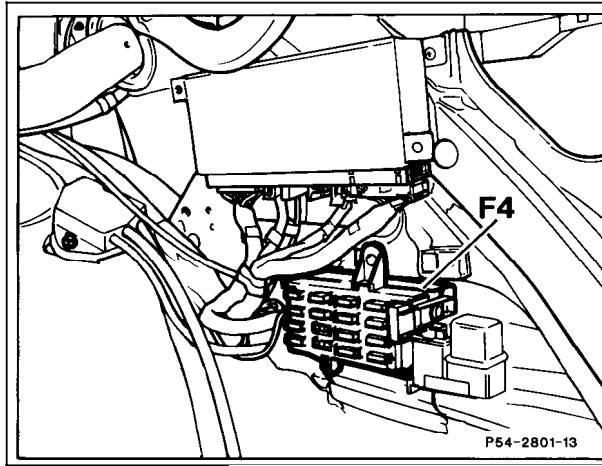


Figure 2 P54-2801-13
F4 Rear fuse box (17-fuse, in trunk)

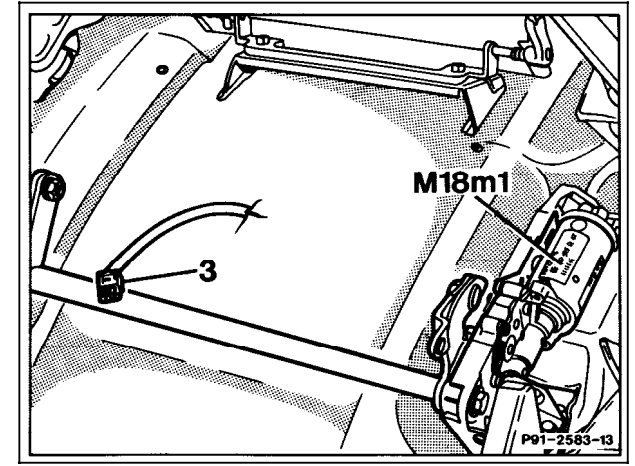


Figure 3 P91-2583-13
M18/m1 Backrest fore/aft motor

Electrical Test Program - Component Locations

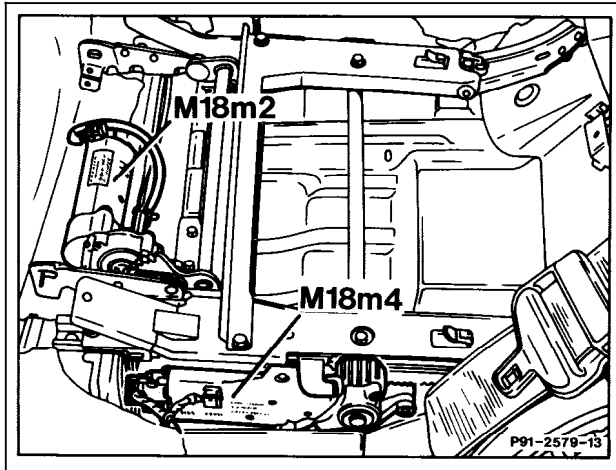


Figure 4 P91-2579-13
 M18/1m2 Cushion inclination raise/lower motor
 M18/1m4 Seat cushion fore/aft motor

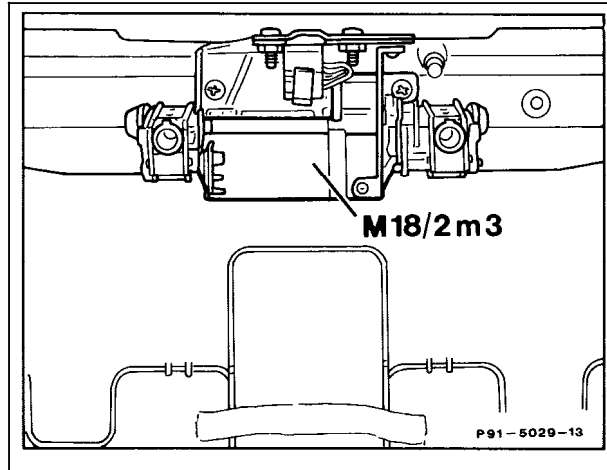


Figure 5 P91-5029-13
 M18/2m3 Head restraint raise/lower motor

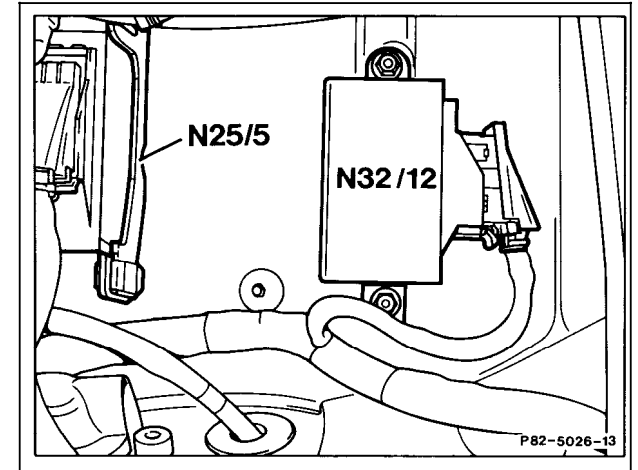


Figure 6 P82-5026-13
 N32/12 Rear head restraint control module

Electrical Test Program - Component Locations

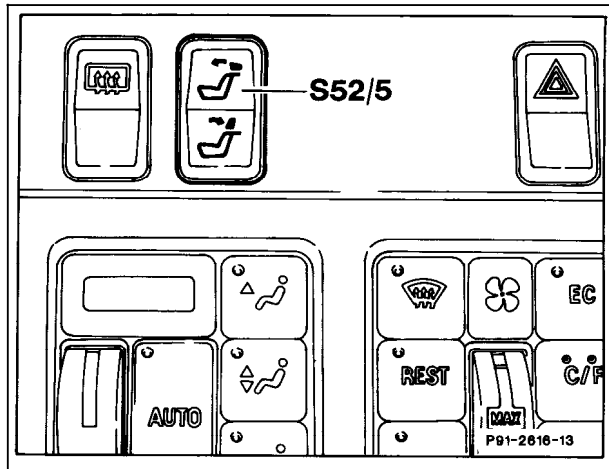


Figure 7 P91-2616-13

S52/5 Rear head restraint raise/lower switch

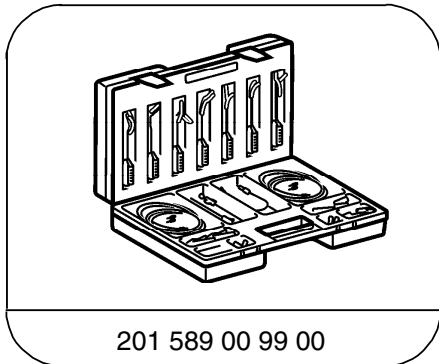
Electrical Test Program - Preparation for Test

1. Battery voltage 11–14 V.
2. Fuses F3-31, F3-32 and F4-15 O.K.
3. Remove seat cushion from individual rear seats.

Electrical wiring diagrams

Electrical Troubleshooting Manual, Model 140.

Special Tools



201 589 00 99 00

Electrical connecting set

Equipment

Digital multimeter ¹⁾

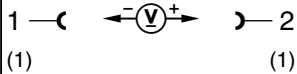
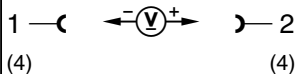
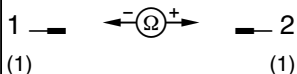
Fluke model 23 with 80i-410 current probe
Sun DMM-5

¹⁾ Available through the MBUSA Standard Equipment Program.

Electrical Test Program - Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 1.0	Left rear power seat adjustment switch group (S55/1) Voltage supply		Ignition: ON Connector (1) from switch (S55/1) disconnected.	11–14 V	Wiring
⇒ 2.0	Left rear power seat motor group, cushion inclination raise/lower motor (M18/1m2) Voltage supply		Ignition: ON Connector (2) from motor (M18/1m2) disconnected. Press seat switch (S55/1s3): cushion up cushion down	11–14 V -11 to -14 V	Wiring, Left rear power seat adjustment switch group (S55/1).
⇒ 3.0	Left rear power seat motor group, cushion inclination raise/lower motor (M18/1m2) Resistance		Connector (2) from motor (M18/1m1) disconnected.	0.5–15 Ω	Left rear power seat motor group, cushion inclination raise/lower motor (M18/1m2)

Electrical Test Program - Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 4.0	<p>Left rear power seat motor group, backrest fore/aft motor (M18/1m1) Voltage supply</p> <p>Left rear power seat motor group, seat cushion fore/aft motor (M18/1m4) Voltage supply</p> <p>At a specific backrest inclination, the seat cushion fore/aft motor (m4) is activated by the limit switches (s1 and s2)</p>	<p>M18/1m1</p>  <p>1 (1) — 2 (1)</p>	<p>Ignition: ON</p> <p>Connector (1) from motor (M18/1m1) disconnected.</p> <p>Press seat switch (S55/1s1): forward backward</p>	<p>11–14 V -11 to -14 V</p>	<p>Wiring, Left rear power seat adjustment switch group (S55/1), Left rear power seat motor group, seat cushion adjustment limit switch (M18/1s2).</p>
	<p>M18/1m4</p>  <p>1 (4) — 2 (4)</p>	<p>Connect connector (1) to motor (M18/1m1)</p> <p>Connector (4) from motor (M18/1m4)</p> <p>Press seat switch (S55/1s1) rearward until limit switches (M18/1s1 and s2) turn motor (m4) off</p>	<p>11–14 V</p>		
⇒ 5.0	<p>Left rear power seat motor group, backrest fore/aft motor (M18/1m1) Resistance</p>	<p>M18/1m1</p>  <p>1 (1) — 2 (1)</p>	<p>Connector (1) from motor (M18/1m1) disconnected.</p>	<p>0.5–15 Ω</p>	<p>Left rear power seat motor group, backrest fore/aft motor (M18/1m1)</p>

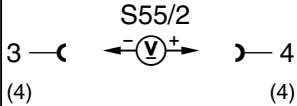


Electrical Test Program - Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 6.0	Left rear power seat motor group, seat cushion fore/aft motor (M18/1m4) Resistance	M18/1m4 1 — (4) ← ⊗ → — 2 (4)	Connector (4) from motor (M18/1m4)	0.5–15 Ω	Left rear power seat motor group, seat cushion fore/aft motor (M18/1m4)
⇒ 7.0	Left rear power seat adjustment switch group, head restraint raise/lower switch (S55/1s2) Electrical circuit	N32/12 17 — () ← ⊕ → — 16	Ignition: ON Connector from module (N32/12) disconnected. Press head restraint switch (S55/1s2): head restraint up head restraint down	11–14 V -11 to -14 V	Wiring, Left rear power seat adjustment switch group (S55/1).
⇒ 8.0	Rear head restraint control module (N32/12) Voltage supply	N32/12 12 — () ← ⊕ → — 9	Ignition: ON Connector from module (N32/12) disconnected.	11–14 V	Wiring

Electrical Test Program - Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 9.0	Left rear power seat motor group, head restraint raise/lower motor (M18/1m3) Voltage supply	<p>M18/1m3</p> <p>1 —(←(V)→)— 2 (3) (3)</p>	Ignition: ON Remove panel behind rear head restraints Connector (3) from motor (M18/1m3) disconnected. Press head restraint switch (S55/1s2): head restraint up head restraint down	11–14 V -11 to -14 V	Wiring, Rear head restraint control module (N32/12).
⇒ 10.0	Left rear power seat motor group, head restraint raise/lower motor (M18/1m3) Resistance	<p>M18/1m3</p> <p>1 —(←(Ω)→)— 2 (3) (3)</p>	Connector (3) from motor (M18/1m3) disconnected.	0.5–15 Ω	Left rear power seat motor group, head restraint raise/lower motor (M18/1m3)
⇒ 11.0	Left rear power seat adjustment switch group illumination (S55/1e1) Voltage supply	<p>S55/1</p> <p>4 —(←(V)→)— 4 (1) (3)</p>	Connectors (1 and 3) from switch (S55/1) disconnected. Headlamps: ON	11–14 V	Wiring
⇒ 12.0	Left rear power seat adjustment switch group illumination (S55/1e1) Resistance	<p>S55/1</p> <p>4 —(←(Ω)→)— 4 (1) (3)</p>	Connectors (1 and 3) from switch (S55/1) disconnected.	approx. 10 Ω	Bulb, Left rear power seat adjustment switch group (S55/1).




Electrical Test Program - Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 13.0	Right rear power seat adjustment switch group (S55/2) Voltage supply		Ignition: ON Connector (4) from switch (S55/2) disconnected.	11–14 V	Wiring
⇒ 14.0	Right rear power seat motor group, cushion inclination raise/lower motor (M18/2m2) Voltage supply		Ignition: ON Connector (2) from motor (M18/2m2) disconnected. Press seat switch (S55/2s3): cushion up cushion down	11–14 V -11 to -14 V	Wiring, Right rear power seat adjustment switch group (S55/2).
⇒ 15.0	Right rear power seat motor group, cushion inclination raise/lower motor (M18/2m2) Resistance		Connector (2) from motor (M17/2m1) disconnected.	0.5–15 Ω	Right rear power seat motor group, cushion inclination raise/lower motor (M18/2m2)





Electrical Test Program - Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 16.0	<p>Right rear power seat motor group, backrest fore/aft motor (M18/2m1) Voltage supply</p> <p>Right rear power seat motor group, seat cushion fore/aft motor (M18/2m4) Voltage supply</p> <p>At a specific backrest inclination, the seat cushion fore/aft motor (m4) is activated by the limit switches (s1 and s2)</p>	<p>M18/2m1 2 — — 1 (1) (1)</p> <p>M18/2m4 1 — — 2 (4) (4)</p>	<p>Ignition: ON</p> <p>Connector (1) from motor (M18/2m1) disconnected.</p> <p>Press seat switch (S55/2s1): forward backward</p> <p>Connect connector (1) to motor (M18/2m1)</p> <p>Connector (4) from motor (M18/2m4)</p> <p>Press seat switch (S55/2s1) rearward until limit switches (M18/2s1 and s2) turn motor (m4) off</p>	<p>11–14 V -11 to -14 V</p> <p>11–14 V</p>	<p>Wiring, Right rear power seat adjustment switch group (S55/2), Right rear power seat motor group, seat cushion adjustment limit switch (M18/2s2).</p>
⇒ 17.0	<p>Right rear power seat motor group, backrest fore/aft motor (M18/2m1) Resistance</p>	<p>M18/2m1 1 — — 2 (1) (1)</p>	<p>Connector (1) from motor (M18/2m1) disconnected.</p>	0.5–15 Ω	Right rear seat motor group, backrest fore/aft motor (M18/2m1)

Electrical Test Program - Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 18.0	Right rear power seat motor group, seat cushion fore/aft motor (M18/2m4) Resistance	M18/2m4 1 —  — 2 (4) (4)	Connector (4) from motor (M18/2m4)	0.5–15 Ω	Right rear seat motor group, seat cushion fore/aft motor (M18/2m4)
⇒ 19.0	Right rear power seat adjustment switch group, head restraint raise/lower switch (S55/2s2) Electrical circuit	N32/12 19 —  — 18 (3) (3)	Ignition: ON Connector from module (N32/12) disconnected. Press head restraint switch (S55/2s2): head restraint up head restraint down	11–14 V -11 to -14 V	Wiring, Right rear power seat adjustment switch group (S55/2).
⇒ 20.0	Right rear power seat motor group, head restraint raise/lower motor (M18/2m3) Voltage supply	M18/2m3 2 —  — 1 (3) (3)	Ignition: ON Remove panel behind rear head restraints Connector (3) from motor (M18/2m3) disconnected. Press head restraint switch (S55/2s2): head restraint up head restraint down	11–14 V -11 to -14 V	Wiring, Rear head restraint control module (N32/12).

Electrical Test Program - Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 21.0	Right rear power seat motor group, head restraint raise/lower motor (M18/2m3) Resistance	M18/2m3 1 —  — 2 (3) (3)	Connector (3) from motor (M18/2m3) disconnected.	0.5–15 Ω	Right rear power seat motor group, head restraint raise/lower motor (M18/2m3)
⇒ 22.0	Right rear power seat adjustment switch group illumination (S55/2e1) Voltage supply	S55/2 3 —  — 3 (4) (6)	Connectors (4 and 6) from switch (S55/2) disconnected. Headlamps: ON	11–14 V	Wiring
⇒ 23.0	Right rear power seat adjustment switch group illumination (S55/2e1) Resistance	S55/2 3 —  — 3 (4) (6)	Connectors (4 and 6) from switch (S55/2) disconnected.	approx. 10 Ω	Bulb, Right rear power seat adjustment switch group (S55/2).
⇒ 24.0	Rear head restraint raise/lower switch (S52/5) Voltage supply	S52/5 3 —  — 4 (4) (6)	Ignition: ON Connector from switch (S52/5)	11–14 V	Wiring, Rear head restraint raise/lower switch (S52/5).

Electrical Test Program - Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 25.0	Rear head restraint raise/lower switch (S52/5) Left electrical circuit Right electrical circuit	<p>N32/12 16 —(←(V)→)— 17</p> <p>N32/12 19 —(←(V)→)— 18</p>	<p>Ignition: ON Connector from module (N32/12) disconnected. Press switch (S52/5): head restraint up head restraint down</p> <p>Press switch (S52/5): head restraint up head restraint down</p>	<p>11–14 V -11 to -14 V</p> <p>11–14 V -11 to -14 V</p>	Left rear power seat adjustment switch group (S55/1), Rear head restraint raise/lower switch (S52/5).
⇒ 26.0	Rear head restraint raise/lower switch (S52/5) Voltage supply	<p>S52/5 3 —(←(V)→)— 5</p>	Connector from switch (S52/5) disconnected. Headlamps: ON	11–14 V	Wiring, Rear head restraint raise/lower switch (S52/5).
⇒ 27.0	Rear head restraint raise/lower switch (S52/5) Resistance	<p>S52/5 3 —(←(Ω)→)— 5</p>	Connector from switch (S52/5) disconnected.	approx. 10 Ω	Wiring, Rear head restraint raise/lower switch (S52/5).

Electrical Test Program - Test

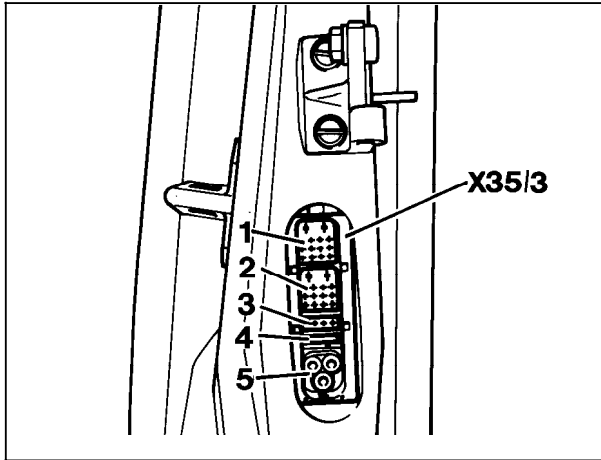


Figure 1
X35/3 Left rear door plug connection

P54-2808-13

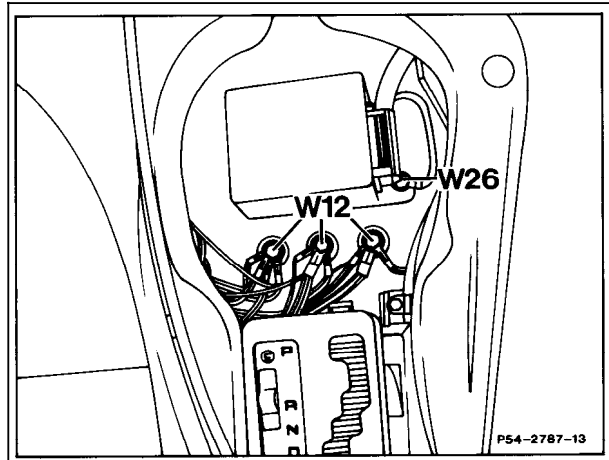


Figure 2
W12 Ground (center console)

P54-2787-13

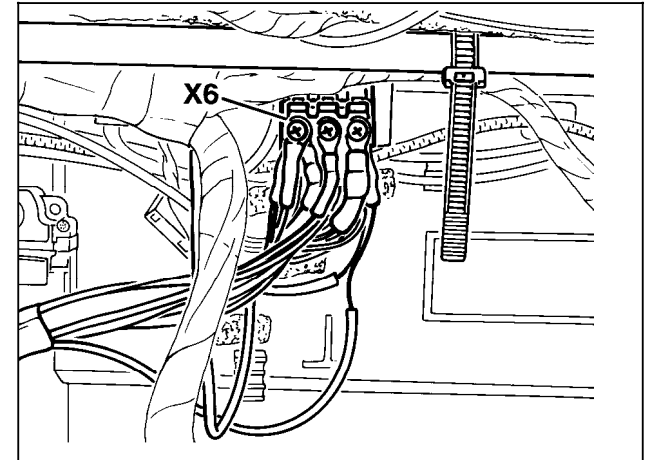


Figure 3
X6 Terminal block (terminal 58d) (3- or 4-pole)

P82-3066-13

Electrical Test Program - Test

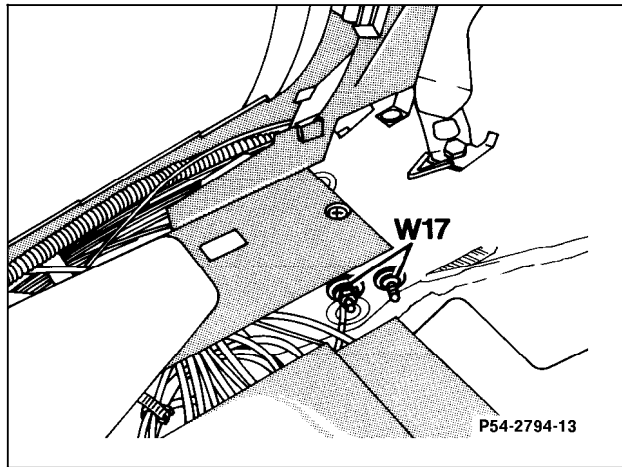


Figure 4 P54-2794-13

W17 Ground (right rear seat)