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HELP	VEHICLE	ACCOUNT	NOTES	EXIT
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1990 Mercedes Benz 300TE 4Matic (124 Chassis) L6-2960cc 3.0L SOHC (103)

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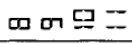
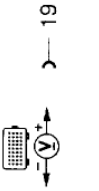
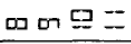



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ETP - Test Procedures

Electrical Test Program - Test

Test Steps 1.0 - 4.0

			Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
↑	1.0		4MATIC control module (N30/3) Voltage supply Circuit 30a	2 — 	Ignition: OFF	11 – 14 V	Wiring, Ground (battery) (W10), Fuse in K1/2, Overvoltage protection relay module (K1/2).
	2.0		4MATIC control module (N30/3) Voltage supply Circuit 15 (fused, 87E)	2 — 	Ignition: ON	11 – 14 V	Wiring, Fuse in K1/2, K1/2, Ignition switch (S2/1).
	3.0		Voltage circuit 61	2 — 	Ignition: ON Engine: at idle	< 3 V 11 – 14 V	Wiring, Generator (G2).
	4.0		ASD/4MATIC (MIL) (A1e24) and diagnostic output	2 — 	Ignition: OFF Unplug 4MATIC control module (N30/3). Ignition: ON	A1e24: ON	Wiring, A1e24.

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Test Steps 5.0 - 7.0

↑		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.0		ASD/4MATIC warning lamp (A1e25)	<p>2 ← N30/3 → 24</p>	<p>Ignition: OFF Unplug 4MATIC control module (N30/3). Ignition: ON</p>	A1e25: ON	Wiring, A1e25.
6.0		<p>Vehicles up to 04/91 Oil pressure switch (A7/2s1)</p> <p>Vehicles as of 05/91 Oil pressure switch (A7/2s1) and 4MATIC function/test selection switch (S7/3)</p>	<p>20 ← N30/3 → 19</p>	<p>Engine: At idle Service valve in TEST position (see Figure 4)</p> <p>Engine: At idle S7/3 in TEST position (see Figure 5)</p>	<p>< 1.5 V 11 – 14 V</p> <p>< 1.5 V 11 – 14 V</p>	<p>Wiring, A7/2s1, HTP - System Pressure ⇒ 1.0</p> <p>Wiring, A7/2s1, S7/3, HTP - System Pressure ⇒ 1.0</p>
7.0		4MATIC – ABS Signal line	<p>2 ← N30/3 → 23</p>	Ignition: ON	6 – 7 V	Wiring.

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Test Steps 8.0 - 10.1

↑		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.0		Stop lamp switch (S9/1) N. O. contact		Ignition: ON Brakes not applied Brakes applied	< 1 V 11 - 14 V	Wiring, S9/1.
9.0		Stop lamp switch (S9/1) N. C. contact Rear axle differential lock valve (A7/2y3)		Ignition: ON Brakes not applied Brakes applied	11 - 14 V < 1 V	Wiring, S9/1, A7/2y3.
10		Steering angle sensor (N49) Signal		Ignition: ON Slowly turn steering wheel from right stop to (center position →) to left stop.	-4.2 to -5.0 V 0 V 4.2 to 5.0 V Voltage varies with steering movement.	⇒ 10.1, Wiring, N49.
10.1		Voltage supply Circuit 87E		Ignition: OFF Unplug 4MATIC control module (N30/3). Ignition: ON	11 - 14 V	Wiring, Overvoltage protection relay module (K1/2).

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Test Steps 11.0 - 13.0

			Test scope	Test connection	Test condition	Normal value	Possible cause/Remedy
↑	11.0		Steering angle sensor (N49) Wiring reversed	<p>N30/3</p>	<p>Ignition: ON</p> <p>Turn steering wheel slowly until nominal value is reached on both meters, then hold securely.</p> <p>⚠ Perform ⇒ 12.0 immediately.</p> <p>Note: For ⇒ 11.0 see □ 22 Figure 2 for connection diagram.</p>	0 - 0.7 V	⇒ 10.0
	12.0		Steering angle sensor (N49) Wiring reversed	<p>N30/3</p>	<p>Ignition: ON</p> <p>Turn steering wheel slowly to the left</p>	0 - 0.7 V 4.2 - 5.0 V	If a reading of -4.2 to -5.0 V is obtained, connection 17 and 18 in the steering angle sensor connector (N49x2) are reversed.
	13.0		Left front vehicle speed signal (VSS) from ABS control module (N30)	<p>N30/3</p>	<p>Lift front of vehicle.</p> <p>Ignition: ON</p> <p>Turn left front wheel by hand (approx. 1 rev. per sec.)</p>	> 3 V~	⇒ 13.1, Wiring, ABS control module (N30), Left front axle VSS sensor (L6/1), 4MATIC control module (N30/3).

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



Test Steps 13.1 - 15.1

↑		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy			
13.1		Left front axle VSS sensor (L6/1)	L6/1x1 (coaxial connector)	Ignition: OFF	0.85 – 2.3 kΩ	L6/1.			
14.0	5	Right front vehicle speed signal (VSS) from ABS control module (N30)	N30/3 	Lift front of vehicle. Ignition: ON Turn right front wheel by hand (approx. 1 rev. per sec.)	> 3 V~	⇒ 14.1, Wiring, ABS control module (N30), Right front axle VSS sensor (L6/2), 4MATIC control module (N30/3).			
14.1		Right front axle VSS sensor (L6/2)	L6/2x1 (coaxial connector)	Ignition: OFF	0.85 – 2.3 kΩ	L6/2.			
15.0	5	Rear vehicle speed signal (VSS) from ABS control module (N30)	N30/3 	Lift front of vehicle. Ignition: ON Turn rear wheel by hand (approx. 1 rev. per sec.)	> 3 V~	⇒ 15.1, Wiring, ABS control module (N30), Rear axle VSS sensor (L6), 4MATIC control module (N30/3).			
15.1		Rear axle VSS sensor (L6)	L6x1 	Ignition: OFF	0.85 – 2.3 kΩ	L6.			

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Test Steps 16.0 - 18.0

		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
↑ 16.0		Front axle drivetrain valve (A7/2y1) Operation	2 N30/3 	Ignition: OFF Unplug 4MATIC control module (N30/3). Ignition: ON	A7/2y1 actuates audibly	⇒ 19.0, Wiring, Overvoltage protection relay module (K1/2), A7/2y1.
17.0		Central differential lock valve (A7/2y2) Operation	2 N30/3 	Ignition: OFF Unplug 4MATIC control module (N30/3). Ignition: ON	A7/2y2 actuates audibly	⇒ 19.0, 20.0, Wiring, Overvoltage protection relay module (K1/2), A7/2y2.
18.0		Rear axle differential lock valve (A7/2y3) Operation	2 N30/3 	Ignition: OFF Unplug 4MATIC control module (N30/3). Ignition: ON	A7/2y3 actuates audibly	⇒ 20.0, Wiring, Stop lamp switch (S9/1), K1/2, A7/2y3.

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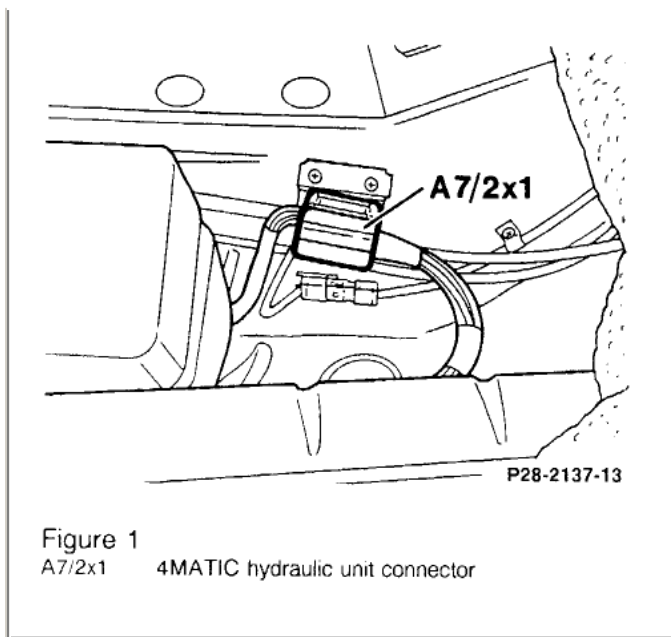
Test Steps 19.0 - 20.0

		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
↑	19.0	 Front axle drivetrain valve (A7/2y1) and central differential lock valve (A7/2y2) Internal resistance	4 — c  N30/3	Ignition: OFF Unplug 4MATIC control module (N30/3).	11 – 14 Ω	Wiring, A7/2y1, A7/2y2.
	20.0	Central differential lock valve (A7/2y2) and rear axle differential lock valve (A7/2y3) Internal resistance	8 — c  N30/3	Ignition: OFF Unplug 4MATIC control module (N30/3).	11 – 14 Ω	Wiring, Stop lamp switch (S9/1), A7/2y2, A7/2y3.

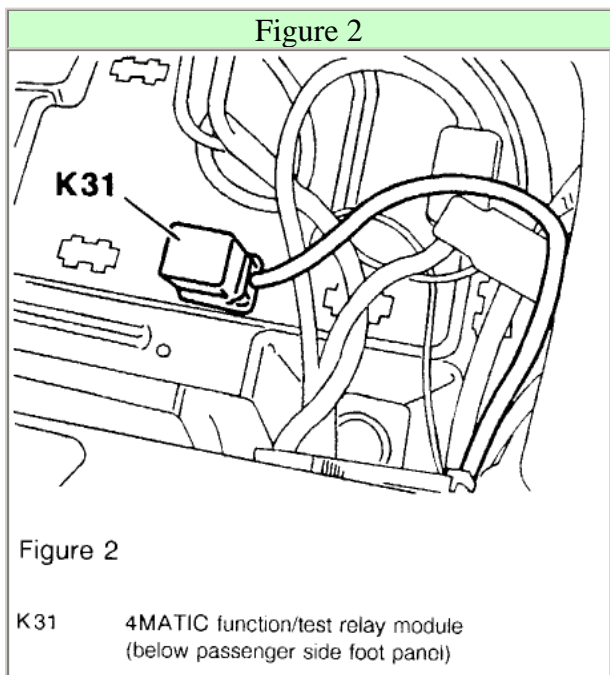
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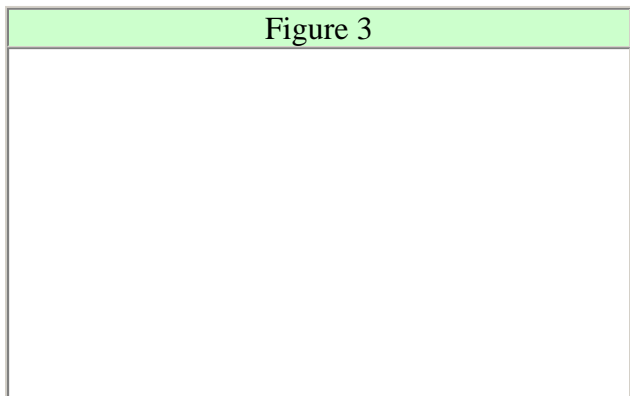
Figure 1



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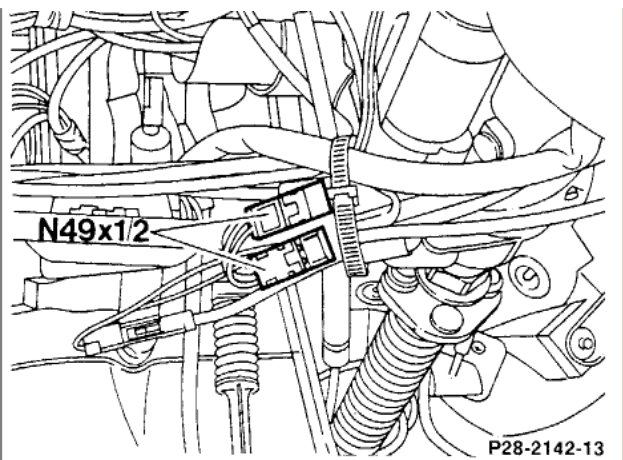


Figure 3

- N49x1 Steering angle sensor connector
- N49x2 Steering angle sensor connector (near steering column)

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Figure 4

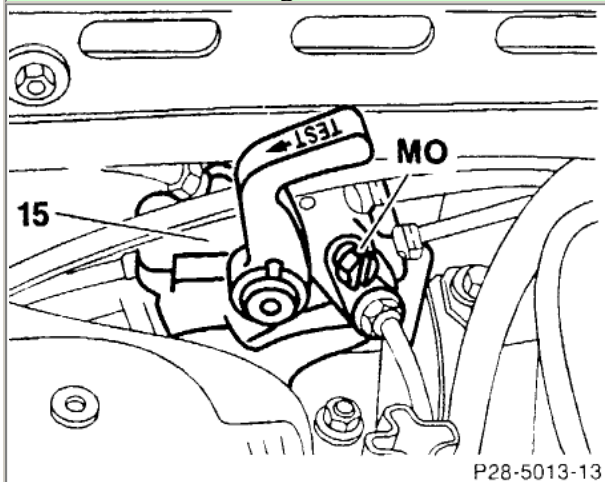


Figure 4

- 15 Service valve

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Figure 5

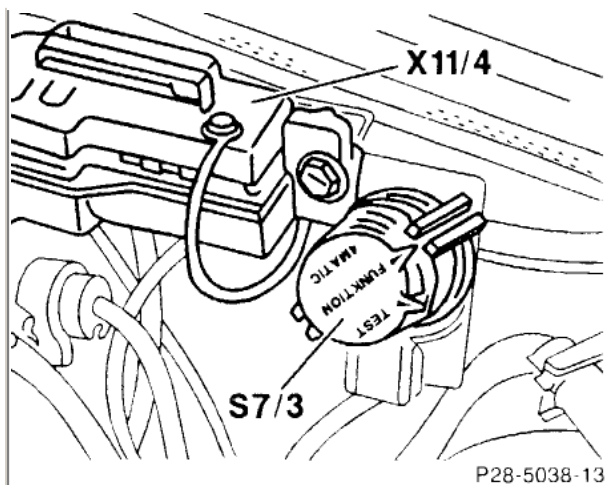


Figure 5

S7/3 4MATIC function/test selection switch
X11/4 Data link connector (DTC readout)

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Figure 6

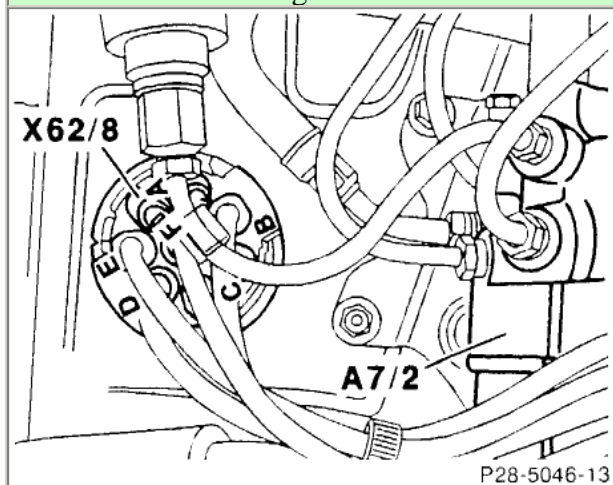


Figure 6

A7/2 4MATIC hydraulic unit
X62/8 Rear axle multiple circuit junction connector
(as of 05/91)

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Figure 7

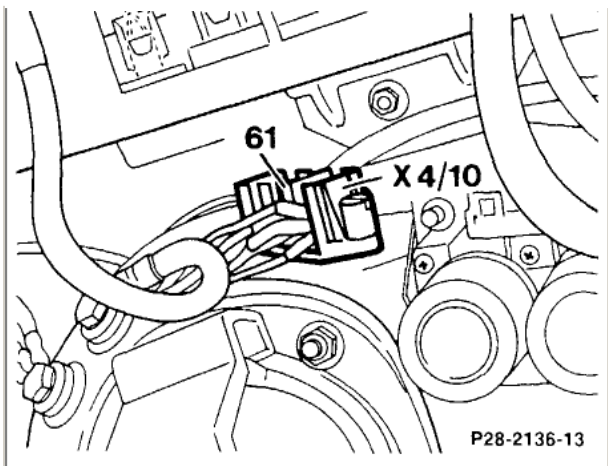


Figure 7

X4/10 Terminal block
(circuit 30/circuit 61 battery) (3-pole)
(forward of battery, on right wheelhousing)

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Figure 8

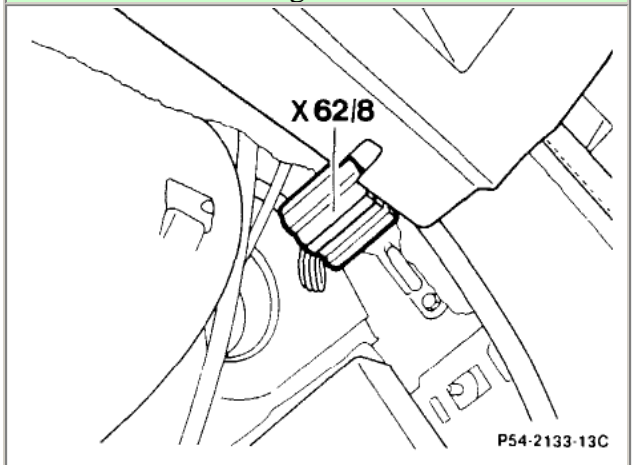
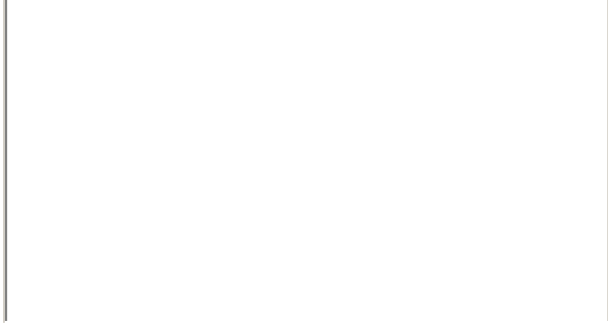


Figure 8

X62/8 Rear axle multiple circuit junction connector
(right A-pillar, at firewall)

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Figure 9



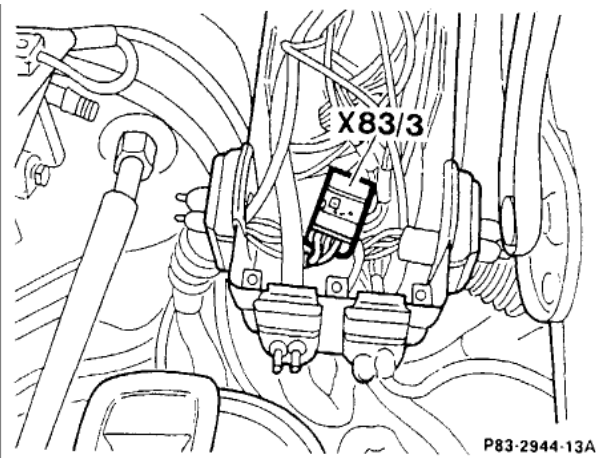


Figure 9

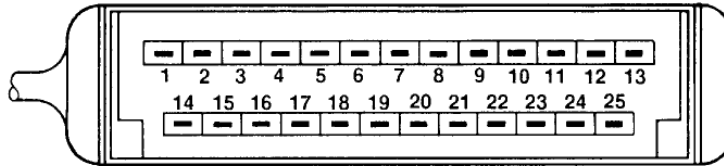
X83/3 Instrument cluster connector (4MATIC MIL)
(3-pole) (below fuse and relay box) (F1)

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Figure 10 -- Layout of connector for 4MATIC Control Module (N30/3)

Figure 10

- 1 Voltage supply from overvoltage protection relay module (87E/87L/30a, 9-pole (Circuit 87E)
- 2 Ground (battery) (W10)
- 3 Not used
- 4 Front axle drivetrain valve (A7/2y1)
- 5 Left front VSS from ABS control module (N30)
- 6 Central differential lock valve (A7/2y2)
- 7 Steering angle sensor (N49) (-)
- 8 Rear axle differential lock valve (A7/2y3)
- 9 Diagnostic output ASD/4MATIC MIL (A1e24)
- 10 Rear axle VSS from ABS control module (N30)
- 11 Voltage circuit 61
- 12 Not used
- 13 Right front VSS from ABS control module (N30)
- 14-15 Not used
- 16 Stop lamp switch (S9/1) (4-pole) N. O. contact
- 17-18 Signal from steering angle sensor (N49)
- 19 Voltage supply from overvoltage protection relay module 87E/87L/30a, 9-pole (circuit 30a)
- 20 Oil pressure switch (A7/2s1)
- 21-22 Not used
- 23 ABS - signal
- 24 ASD/4MATIC warning lamp (A1e25)



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