

The 4MATIC is a four-wheel drive system in which the drive of the front wheels can be engaged automatically if required along with the permanent rear-wheel drive. In addition, if required, the center differential lock in the transfer case and the ASD rear axle differential lock are engaged automatically.

The engagement of the 4MATIC is controlled electronically/hydraulically in 3 stages without involving the driver.

- Shift stage 0** - **rear-wheel drive**
- Shift stage 1** - **four-wheel drive compensated**
- Shift stage 2** - **four-wheel drive locked inter-axle**
- Shift stage 3** - **four-wheel drive locked inter axle and inter-wheel**

Automatic engagement of the 4MATIC offers not only optimized traction, but a high degree of driving safety compared to other systems.

4MATIC vehicles are fitted with ABS as standard.

When braking, all differential locks and the four-wheel drive are disengaged. The driving stability and the effect of ABS are therefore retained during braking.

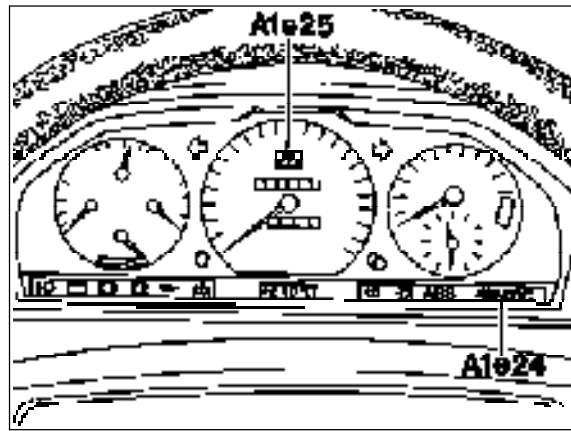
Driving with 4MATIC

Warning lamp and function indicator lamp

Two displays with various symbols are located in the instrument cluster for the 4MATIC.

In key position two in the steering lock, the ASD/4MATIC (A1e25) function display and the yellow ASD/4MATIC (A1e24) warning lamp in the instrument cluster come on and go out when the engine is running.

When driving, the ASD/4MATIC (A1e25) function indicator lamp shows that the 4MATIC is engaged. It warns the driver that he is driving near the limit and that the tires are approaching the limit of adhesion. He can then better adapt his driving style to suit the changed road conditions.



A1e24 ASD/4MATIC warning lamp
A1e25 ASD/4MATIC function indicator lamp

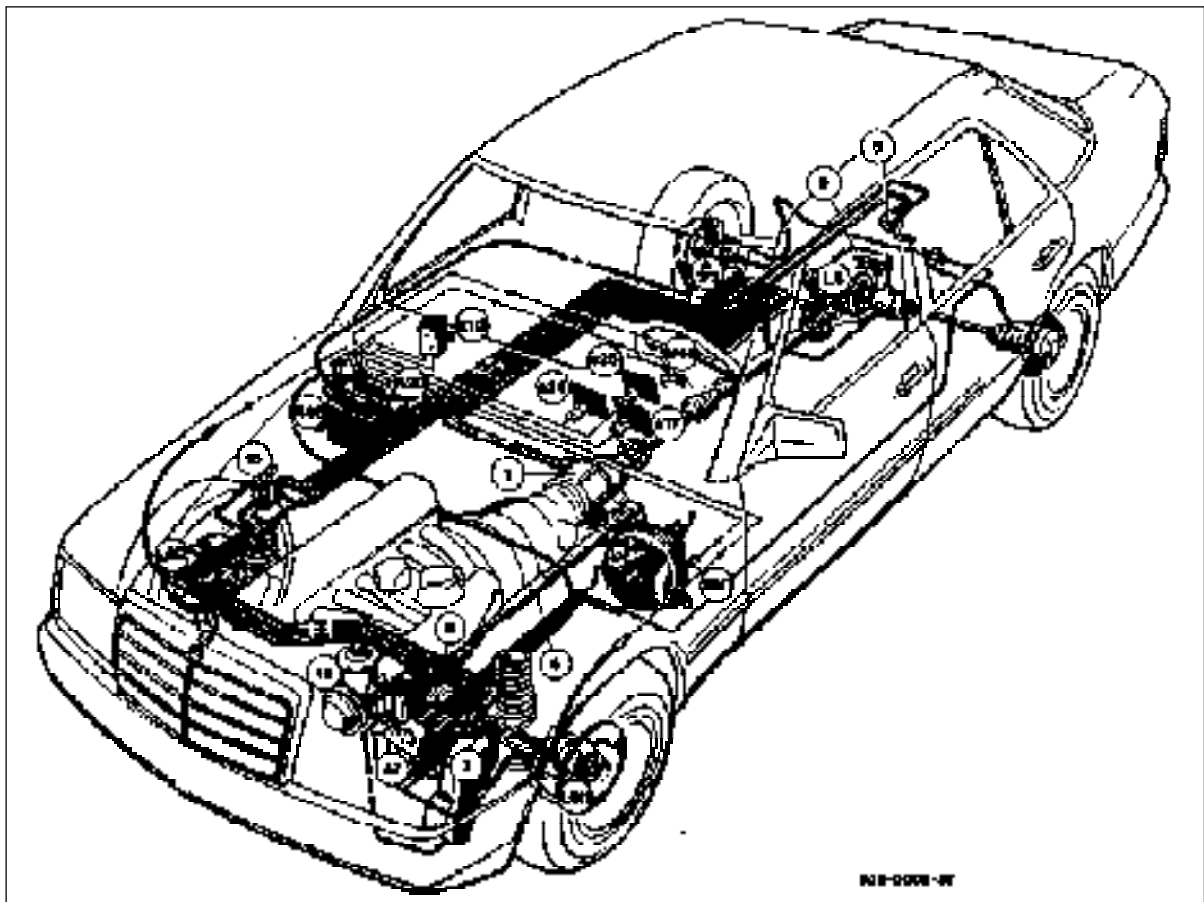
Shift stage 1 is always engaged when starting off.
The function indicator lamp however does not come on provided there is no wheel skid.

The ASD/4MATIC (A1e25) function indicator lamp is controlled via a 4-pin plug connection on the back of the instrument cluster. The brightness of the function indicator lamp is reduced when the lights are switched on to prevent any distraction when driving at night.

The ASD/4MATIC (A1e24) warning lamp is controlled via a 2-pin plug connection on the back of the instrument cluster. If it comes on when the engine is running, the 4MATIC is inoperative. There is an electrical or hydraulic fault.

In this case, switch the service valve or relocate the coding plug into test position and have fault eliminated as soon as possible. In the test position, the 4MATIC and the level control are inoperative.

An electrical fault in the 4MATIC (N30/3) control unit is stored for subsequent interrogation. It can be called up at the test coupling (X11/4) located in the components compartment (28-110).
Refer to Diagnosis Manual Chassis - Volume 2 - 8.1, 4MATIC.



Electrics/electronics		Hydraulics	
A1e17	ABS warning lamp	2	Oil reservoir
A1e24	ASD/4MATIC indicator lamp	6	Level control height controller
A1e25	ASD/4MATIC function indicator lamp	12	Pressure oil pump
K1/2	Ovoltage protection relay 87E/87L/30a,(9-pin) (series K1/1)	15	Service valve
L6	Rear axle speed sensor	A7	ABS hydraulic unit
L6/1	Left front axle speed sensor	A7/2	4MATIC valve control unit
L6/2	Right front axle speed sensor		
N30	ABS control unit		
N30/3	4MATIC control unit	1	Mechanical
N49	Steering angle sensor	4	Transfer case
S9/1	Stop lamp switch (4MATIC/ASD)	8	Front-wheel drive propeller shaft
X11/4	Test coupling for diagnosis, pulse readout (8-pin)	9	Front axle differential with front axle shafts
			ASD locking rear axle differential