Diagnosis - Diagnostic Trouble Code (DTC) Memory

Preparation for DTC Readout

1. Connect impulse counter scan tool or Hand-Held Testr (HHT) to data link connector (X11/4) according to connection diagram (see section 0).

Note:
Connect yellow wire from impulse counter scan tool to:
ASD control module (N30/2)

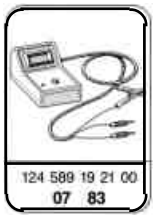
- 16-pole data link connector (X11/4) socket 5
- 38-pole data link connector (X11/4) socket 26

2. Engine: **at Idle**.
3. Read out DTC`s for ASD control module (N30/2).

⚠
To erase DTC`s, Engine: **at Idle**.

Note:
To activate the DTC memory of a new ASD control module (N30/2), see □ 12.

Special Tools



Equipment

Hand-Held Tester (HHT)	See S.I. in groups 58 and 99.

Diagnosis - Diagnostic Trouble Code (DTC) Memory

Diagnostic trouble code (DTC)	Possible cause	Test step/Remedy [1]
1 —	No fault in system.	In case of complaint: □ 23 and □ 33 (entire test)
2 002	ASD control module (N30/2).	Replace N30/2.
3 003	Stop lamp switch (S9/1).	□ 23⇒ 6.0 □ 23⇒ 7.0
4 004	Left front axle VSS sensor (L6/1) or from ABS control module (N30).	□ 23⇒ 10.0
5 005	Right front axle VSS sensor (L6/2) or from ABS control module (N30).	□ 23⇒ 9.0
6 006	Rear axle VSS sensor (L6) or from ABS control module (N30).	□ 23⇒ 11.0
7 007	No VSS from any sensor (L6, L6/1, L6/2).	□ 23⇒ 9.0 □ 23⇒ 10.0 □ 23⇒ 11.0
8 008	ASD valve (Y38) or stop lamp switch (S9/1).	□ 23⇒ 6.0 □ 23⇒ 7.0 □ 23⇒ 8.0
9 009	Incorrect front axle tooth count, signal implausible [2]	Visually inspect

1) Observe Preparation for Test, see □ 22.
2) Rotor with incorrect tooth count, dirt accumulation on or damaged rotor, incorrect rear axle ratio, wrong wheel or tire size.

Test step / Fault code	Scope of test	Measuring equipment/ test connection	Operation/ requirement	Nominal value	Possible cause/remedy
⇒ 1.0	**ASD control unit (N30/2)** Voltage supply Terminal 87 E	N30/2 8 — 14	Ignition: **ON**	11-14 V	⇒ 1.1
⇒ 1.1	Voltage supply from overvoltage protection relay (K1/1 or K1/2)	N30/2 ⊥ — 14	Ignition: **ON**	11-14 V	Fuse at K1/1 or K1/2 Cables K1/1 or K1/2 ⇒ 1.2
⇒ 1.2	Ground cable	**Models 124, 201** N30/2 W10/2 — 8 W10 **Models 129, 202** N30/2 W16 — 8 W16/4	Ignition: **OFF**	<1 Ω	Cables **Model 124** Electronic ground (W10/2, figure 1) **Model 201** Ground, battery (W10) **Model 129** Ground, component compartment (W16) **Model 202** Ground, component compartment right (W16/4)

Test programme - electrical Testing

Test step / Fault code	Scope of test	Measuring equipment/ test connection	Operation/ requirement	Nominal value	Possible cause/remedy
⇒ 2.0	**Voltage terminal 61**	N30/2 8 — 13	Ignition: **ON** Engine: **Start**	<1,5 V 11-14 V	Cables Alternator (G2)
⇒ 3.0	**Diagnosis output**	**X11/4 8-pin/16-pin** N30/2 5 — 6 **X11/4 38-pin** N30/2 26 — 6	Ignition: **OFF**	<1 Ω	Cables Test coupling for diagnosis (X11/4)
⇒ 4.0	**ASD function indicator lamp (A1e25)**	N30/2 8 — 4	Ignition: **ON**	A1e25: **ON**	Cables A1e25 Body volume 1 - 1 □ 23

Test programme - electrical Testing

Test step / Fault code	Scope of test	Measuring equipment/ test connection	Operation/ requirement	Nominal value	Possible cause/remedy
⇒ 5.0	**ASD warning lamp (A1e24)**	**Model 124, 129, 201** N30/2 8 — 2	Ignition: **ON** Insert bridge between sockets 8 and 2	A1e24: **ON**	Cables A1e24 Cables
		Model 202 N30/2 8 — 2	Ignition: **ON** Insert bridge between sockets 8 and 2	A1e24: **OFF** after approx. 30 s A1e24: **ON**	Cables A1e24 Information/Communications volume 1 - 1
⇒ 6.0	**Stop lamp switch (ASD/ ASR) (S9/1)** NO contact	N30/2 8 — 11	Ignition: **ON** Do **not** operate brake Operate brake	<1 V 11-14 V	Fuse in overvoltage protection relay (K1/1 or K1/2) Cables S9/1

Test programme - electrical Testing

Test step / Fault code	Scope of test	Measuring equipment/ test connection	Operation/ requirement	Nominal value	Possible cause/remedy
⇒ 7.0	**Stop lamp switch ASD/ASR (S9/1)** NC contact	N30/2 8 — 10	Ignition: **ON** Do **not** operate brake Operate brake	11-14 V <1 V	Cables S9/1 ⇒ 8.0
⇒ 8.0	**ASD valve (Y38)** Function	N30/2 8 — 10	Ignition: **ON** Operate brake	Y38 switches on Y38 switches off	⇒ 8.1 Cables
⇒ 8.1	Coil resistance	Y38x1 1 — 2	Ignition: **OFF** Do **not** operate brake	5-7 Ω	Cables Y38

Test step / Fault code	Scope of test	Measuring equipment/ test connection	Operation/ requirement	Nominal value	Possible cause/remedy
⇒ 9.0	**Front right speed signal**	N30/2 8 — 3	Raise vehicle at front Ignition: **ON** Turn front right wheel by hand (approx. 1/s)	>3 V ∽	Cables Chassis volume 2-6.1 to 6.3 □ 23
⇒ 10.0	**Front left speed signal**	N30/2 8 — 5	Raise vehicle at front Ignition: **ON** Turn front left wheel by hand (approx. 1/s)	>3 V ∽	Cables Chassis volume 2-6.1 to 6.3 □ 23
⇒ 11.0	**Rear axle speed signal**	N30/2 8 — 1	Raise vehicle at rear Selector lever position: **N** Ignition: **ON** Turn rear wheel by hand (approx. 1/s)	>3 V ∽	Cables Chassis volume 2-6.1 to 6.3 □ 23

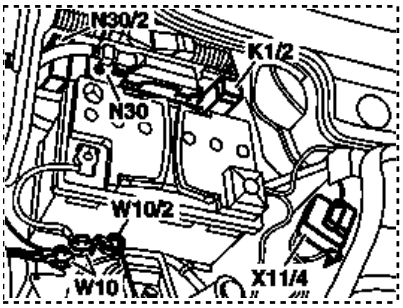


Figure 1

Model 124 components compartment, right

(Location as of 10/92)

K1/2 Overvoltage protection relay, 9-pin
N30 ABS control unit
N30/2 ASD control unit
W10 Ground, battery
W10/2 Ground, electronics/battery (fuse box)
X11/4 Test coupling for diagnosis, pulse readout (16-pin)

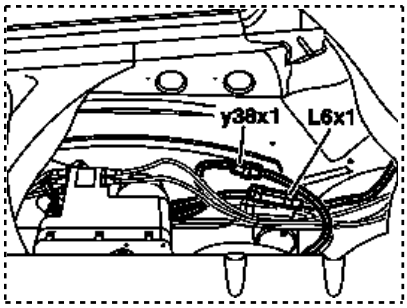


Figure 2

Model 124 rear right of rear compartment

L6x1 Plug connection, rear speed sensor
Y38x1 Plug connection, ASD valve

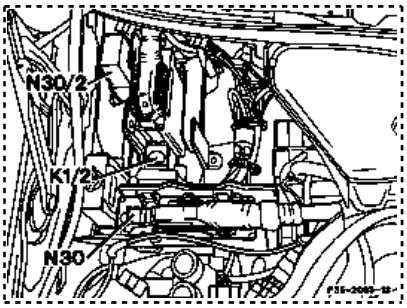
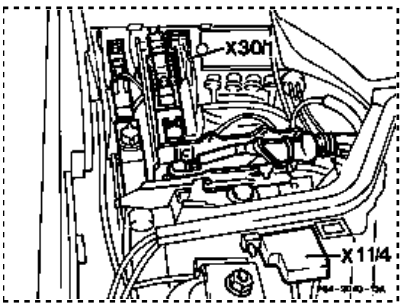
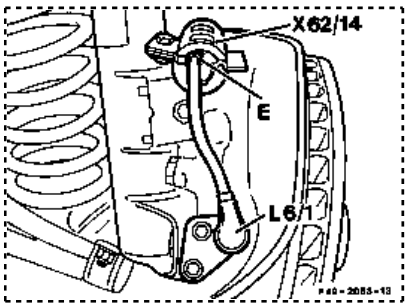


Figure 3

Model 129

K1/2 Overvoltage protection relay, 9-pin
N30 ABS control unit
N30/2 ASD control unit





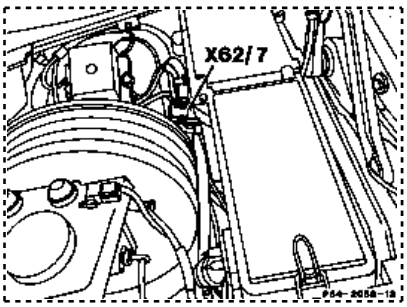


Figure 4

Model 129

X30/1 Plug connection, multi-function block
X11/4 Test coupling for diagnosis, pulse readout (16-pin)

Figure 5

Model 129

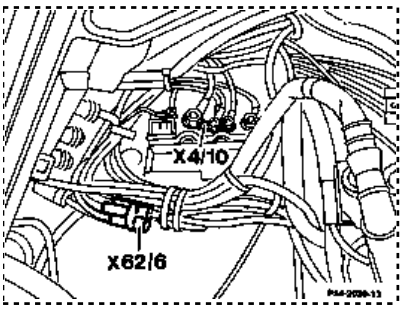
L6/1 Front left speed sensor
L6/2 Front right speed sensor (not illustrated, mirror image arrangement)
X62/14 Plug connection, left front axle distributor, (steering knuckle)
X62/15 Plug connection, right front axle distributor, (not illustrated, mirror image arrangement)

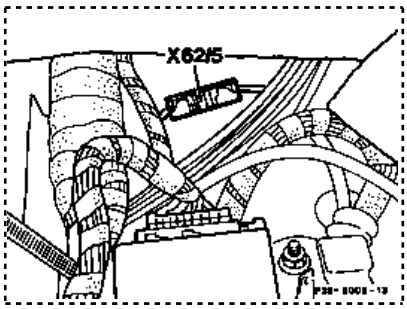
Figure 6

Model 129

X62/7 Plug connection, left front axle distributor, (component compartment)

Test programme - electrical Testing





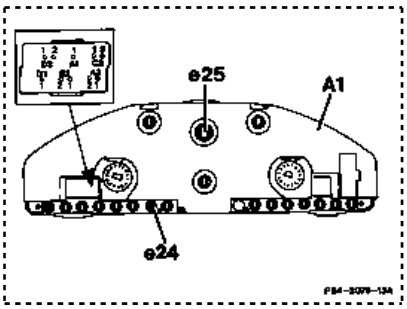


Figure 7

Model 129

X4/10 Terminal block, terminal 30
X62/6 Plug connection, right front axle distributor (component compartment)

Figure 8

Model 129

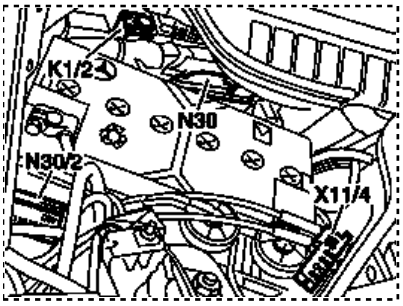
X62/5 Plug connection, ASD valve (2-pin)

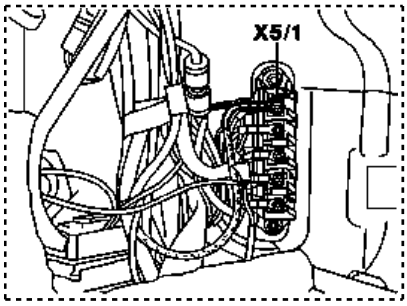
Figure 9

Model 129

A1 Instrument cluster
A1e24 ASD warning lamp
A1e25 ASD function indicator lamp

Test programme - electrical Testing





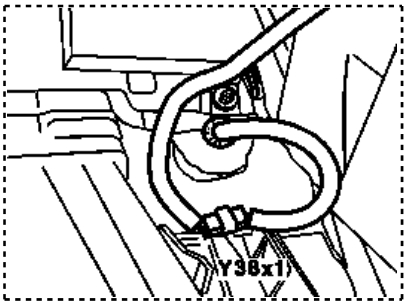


Figure 10

Model 201 component compartment, right

K1/2 Overvoltage protection relay, 9-pin
N30 ABS control unit
N30/2 ASD control unit
X11/4 Test coupling for diagnosis, pulse readout (16-pin)

Figure 11

Model 201 front left footwell

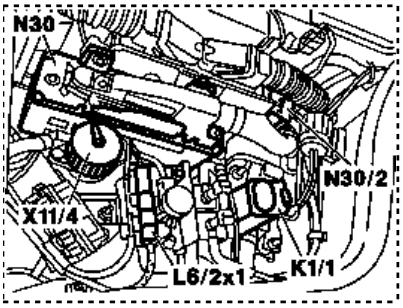
X5/1 Terminal block, interior, terminal 15/30

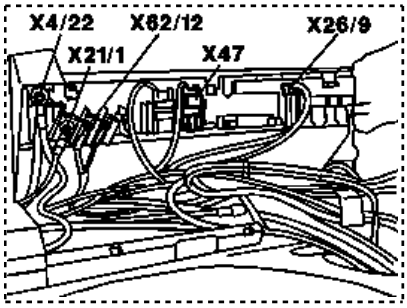
Figure 12

Model 201 right front

Y38x1 Plug connection, ASD valve

Test programme - electrical Testing





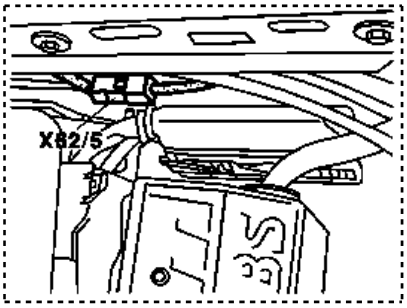


Figure 13

Model 202 component compartment, right

K1/1 Overvoltage protection relay
L6/2x1 Plug connection, front right speed sensor
N30 ABS control unit
N30/2 ASD control unit
X11/4 Test coupling for diagnosis, pulse readout (38-pin)

Figure 14

Model 202 front right footwell

X4/22 Plug connection, terminal 30Z (1-pin)
X21/1 Terminal block, stop lamp switch
X26/9 Plug connection, interior/unit (8-pin)
X47 Plug connection, rear speed sensor harness (2-pin) (left front footwell)
X62/12 Terminal block, front speed signal (1-pin)

Figure 15

Model 202 left engine compartment wheelhouse

X62/5 Plug connection, ASD valve (2-pin)

Test programme - electrical Testing

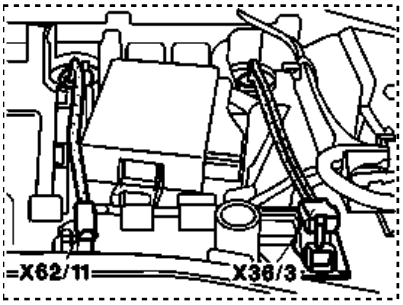


Figure 16

Model 202 trunk

X36/3 Plug connection, fuel pump harness (2-pin)
X62/11 Terminal block, rear axle speed sensor ABS (2-pin)

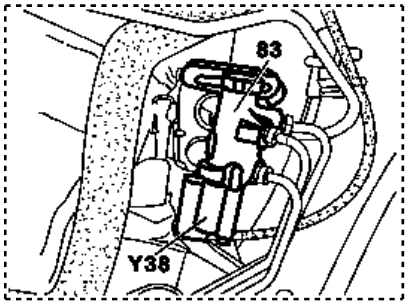


Figure 17

Model 202 front left wheelhouse

Y38 ASD valve

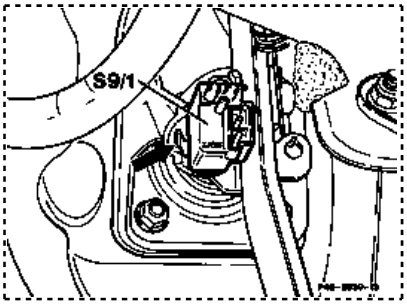


Figure 18

All models, foot controls

S9/1 Stop lamp switch (ASD/ASR)

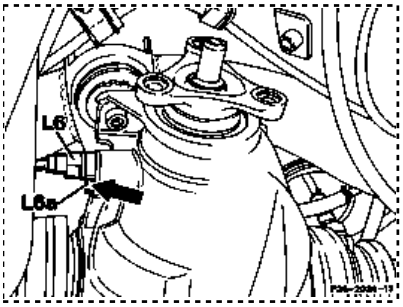


Figure 19

All models, rear axle center piece assembly

L6 Rear axle speed sensor
L6a Speed sensor fastening screw

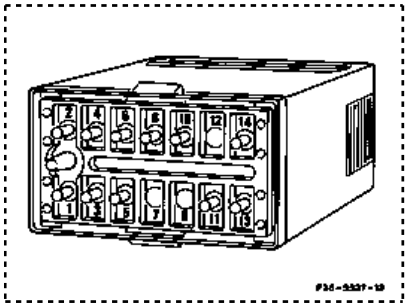


Figure 20

Assignment at ASD control unit (N30/2)

1 Rear axle speed signal
2 ASD warning lamp (A1e24)
3 Front right speed signal
4 ASD function indicator lamp (A1e25)
5 Front left speed signal
6 Test coupling for diagnosis (X11/4)
7 -
8 **Model 124:** Ground W10/2
Model 129: Ground W16
Model 201: Ground W10
Model 202: Ground W16/4
9 -
10 ASD valve Y38 (-)
11 Stop lamp switch (ASD/ASR) (S9/1), normally open contact
12 -
13 Voltage terminal 61
14 Stop lamp switch (ASD/ASR) (S9/1), normally closed contact and voltage supply terminal 87E