

#### 3.3 Model 140 as of 06/94

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### 3.3 Adaptive Damping System (ADS II)

#### Diagnosis - Function Test

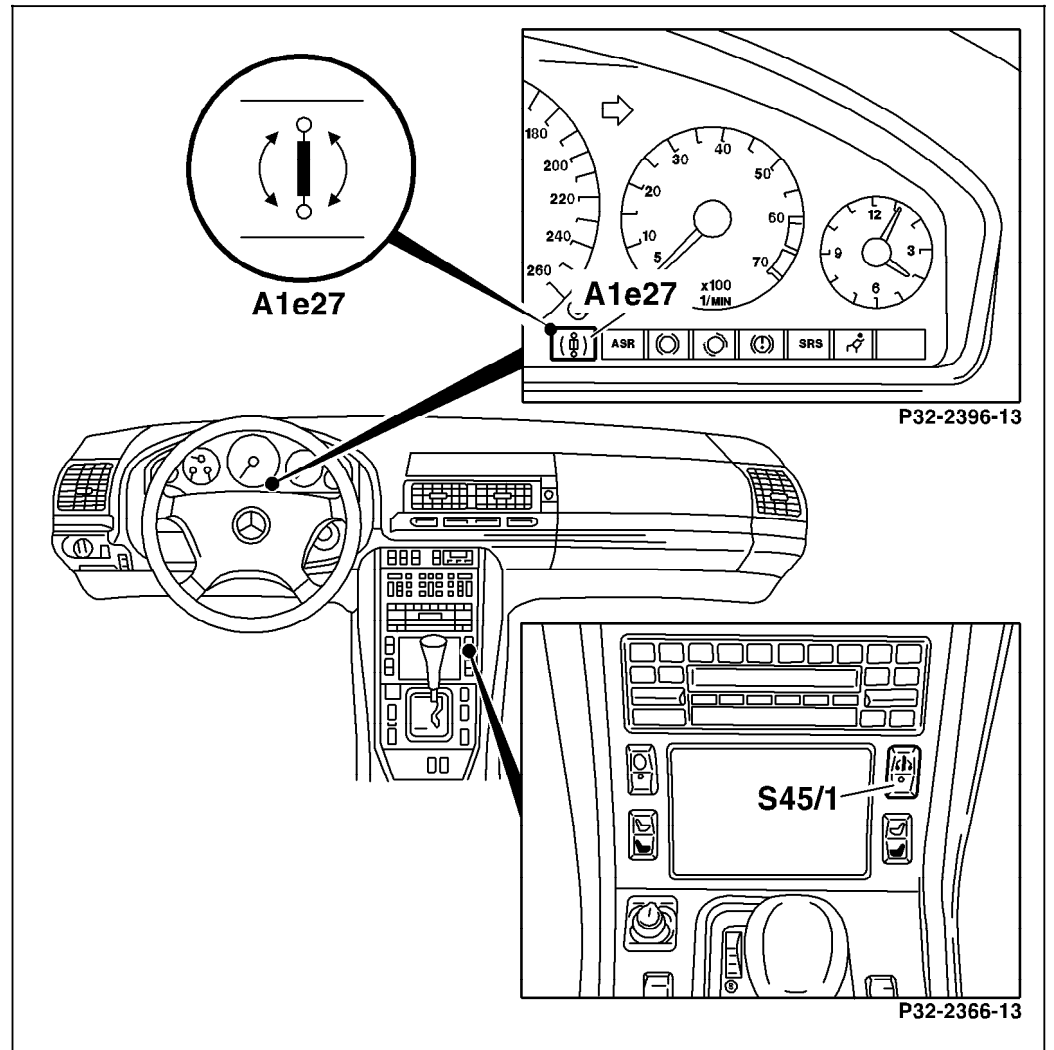


Figure 1

A1e27 ADS MIL  
S45/1 Comfort/sport switch

P32.32-0256-12

### 3.3 Adaptive Damping System (ADS II)

#### Diagnosis - Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy <sup>1)</sup>
⇒ 1.0 ADS MIL (A1e27)	Ignition: <b>ON</b>  Engine: <b>at Idle</b>	A1e27 illuminates.  A1e27 goes out.	Wiring, A1e27 23 ⇒ 3.0, 1.0,  Steering angle sensor (N49) not initialized, turn steering wheel from right to left stop, DTC stored in memory, readout DTC's 12, 23 ⇒ 10.0
⇒ 2.0 Comfort/sport switch (S45/1)	Switch (S45/1) set to: <b>Sport</b>  Switch (S45/1) set to: <b>Comfort</b>	Indicator lamp in switch (S45/1): <b>ON</b>  Indicator lamp in switch (S45/1): <b>OFF</b>	Wiring, S45/1 23 ⇒ 16.0.

<sup>1)</sup> Observe Preparation for Test, see 22.

### 3.3 Adaptive Damping System (ADS II)

#### Diagnosis - Diagnostic Trouble Code (DTC) Memory

##### Preparation for DTC Readout

1. Connect Hand-Held Tester (HHT) to data link connector (X11/4) according to connection diagram (see section 0).
2. Ignition: **ON**
3. Read out DTC memory for ADS control module (N51) and for model 140, the Base Module (N16/1) as well.
4. If no DTC's are stored in memory: perform entire test in 33 as well.

##### Special Tools



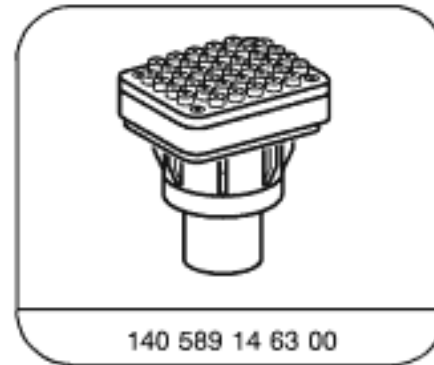
965 589 00 01 00

Hand-Held-Tester



965 589 00 40 00

Test cable




140 589 14 63 00

Adapter

### 3.3 Adaptive Damping System (ADS II)

#### Diagnosis - Diagnostic Trouble Code (DTC) Memory


	Possible cause	Test step/Remedy <sup>1)</sup>
–	No fault in system.	In case of complaint: 23 (entire test) and 33
002	ADS control module (N51)	Replace N51
003	Left front body acceleration sensor (B24/3)	23 ⇒ 13.0
004	Right front body acceleration sensor (B24/4)	23 ⇒ 14.0
005	Right rear body acceleration sensor (B24/6)	23 ⇒ 15.0
006	Left front axle damper valve assembly, front axle solenoid valve 1 (Y51y1)	23 ⇒ 6.0
007	Left front axle damper valve assembly, front axle solenoid valve 2 (Y51y2)	23 ⇒ 6.0
008	Right front axle damper valve assembly, front axle solenoid valve 1 (Y52y1)	23 ⇒ 7.0
009	Right front axle damper valve assembly, front axle solenoid valve 2 (Y52y2)	23 ⇒ 7.0
010	Left rear axle damper valve assembly, rear axle solenoid valve 1 (Y53y1)	23 ⇒ 8.0
011	Left rear axle damper valve assembly, rear axle solenoid valve 2 (Y53y2)	23 ⇒ 8.0
012	Right rear axle damper valve assembly, rear axle solenoid valve 1 (Y54y1)	23 ⇒ 9.0
013	Right rear axle damper valve assembly, rear axle solenoid valve 2 (Y54y2)	23 ⇒ 9.0
014	ADS MIL (A1e27)	23 ⇒ 3.0

<sup>1)</sup> Observe Preparation for Test, see 22.

### 3.3 Adaptive Damping System (ADS II)

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#### Diagnosis - Diagnostic Trouble Code (DTC) Memory

	Possible cause	Test step/Remedy <sup>1)</sup>
015	Steering angle sensor (N49)	23 ⇒ 4.0
016	Steering angle sensor (N49), incorrect signal	23 ⇒ 4.0
017	Steering angle sensor (N49) not initialized	23 ⇒ 5.0
018	<b>Model 140:</b> Right front VSS signal from ASR/SPS control module (N47-1, N47-2) or ESP/SPS/BAS control module (N47-5) or ESP/SPS control module (N47-5)	23 ⇒ 11.0
019	Comfort/sport switch (S45/1)	23 ⇒ 16.0
020	Voltage supply too low	23 ⇒ 1.0
021	Voltage supply too high	23 ⇒ 1.0
022	Stop lamp switch (S9/1) (4-pole)	23 ⇒ 6.0

1) Observe Preparation for Test, see 22.

### 3.3 Adaptive Damping System (ADS II)

#### Diagnosis - Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy <sup>1)</sup>
ADS MIL (A1e27) comes on with engine running	Steering angle sensor (N49) not initialized  DTC stored	Turn steering wheel from right to left stop. Readout DTC memory, See 12
Damping too hard/too soft		Readout DTC memory, 12 35
Vehicle level too low (base level)		33 (SMS, Job No. AR40.20-P-0300B, [Model 140]).
Vehicle lowers at rear axle		Visually check for external leaks. If no leaks are present, replace leveling valve.
Hydraulic oil level too low		Visually check for external leaks.

<sup>1)</sup> Observe Preparation for Test, see 22.

### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Component Locations

##### Electrical Components in Passenger Compartment

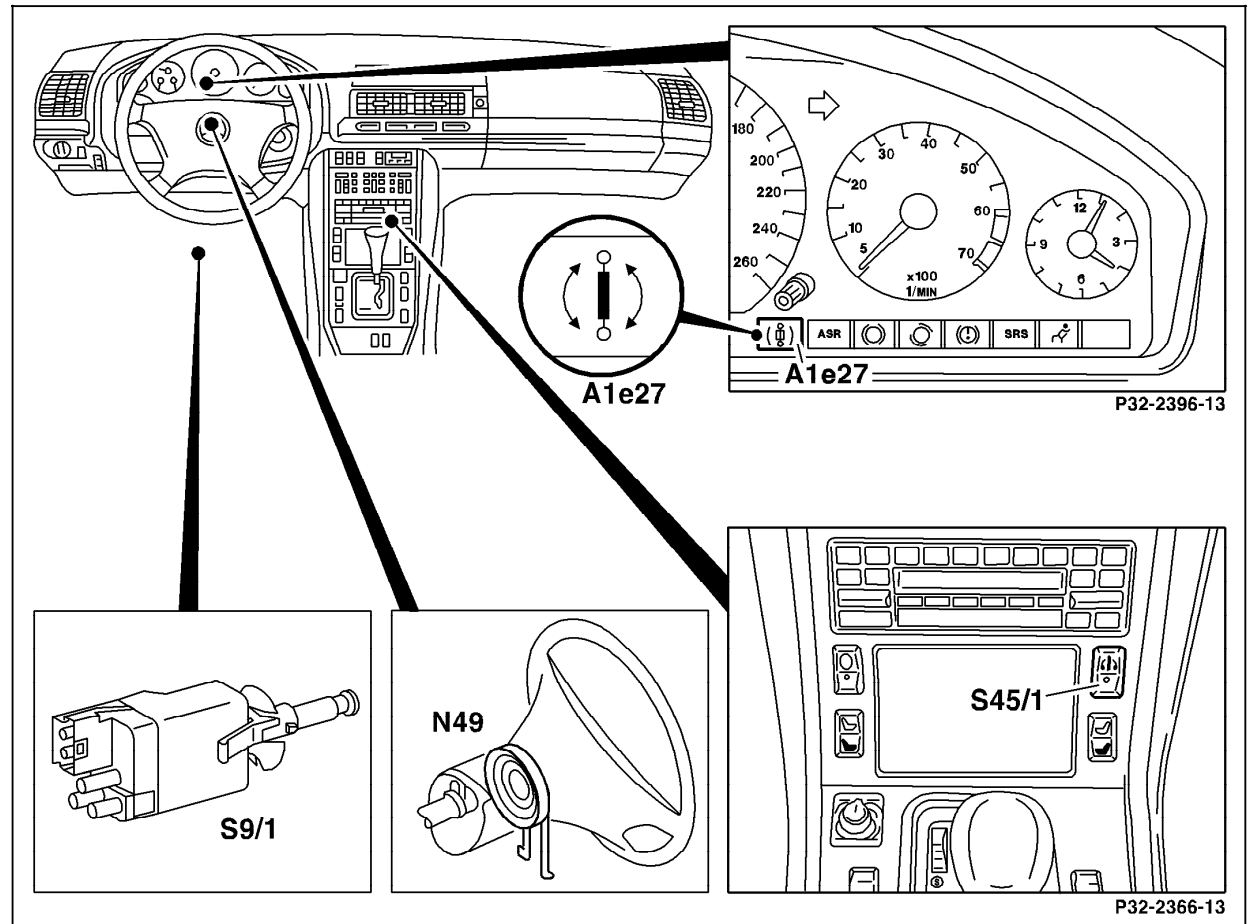


Figure 1

- A1e27 ADS MIL
- N49 Steering angle sensor
- S9/1 Stop lamp switch
- S45/1 Comfort/sport switch

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### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Component Locations

##### Electrical Components in Engine Compartment and on Chassis

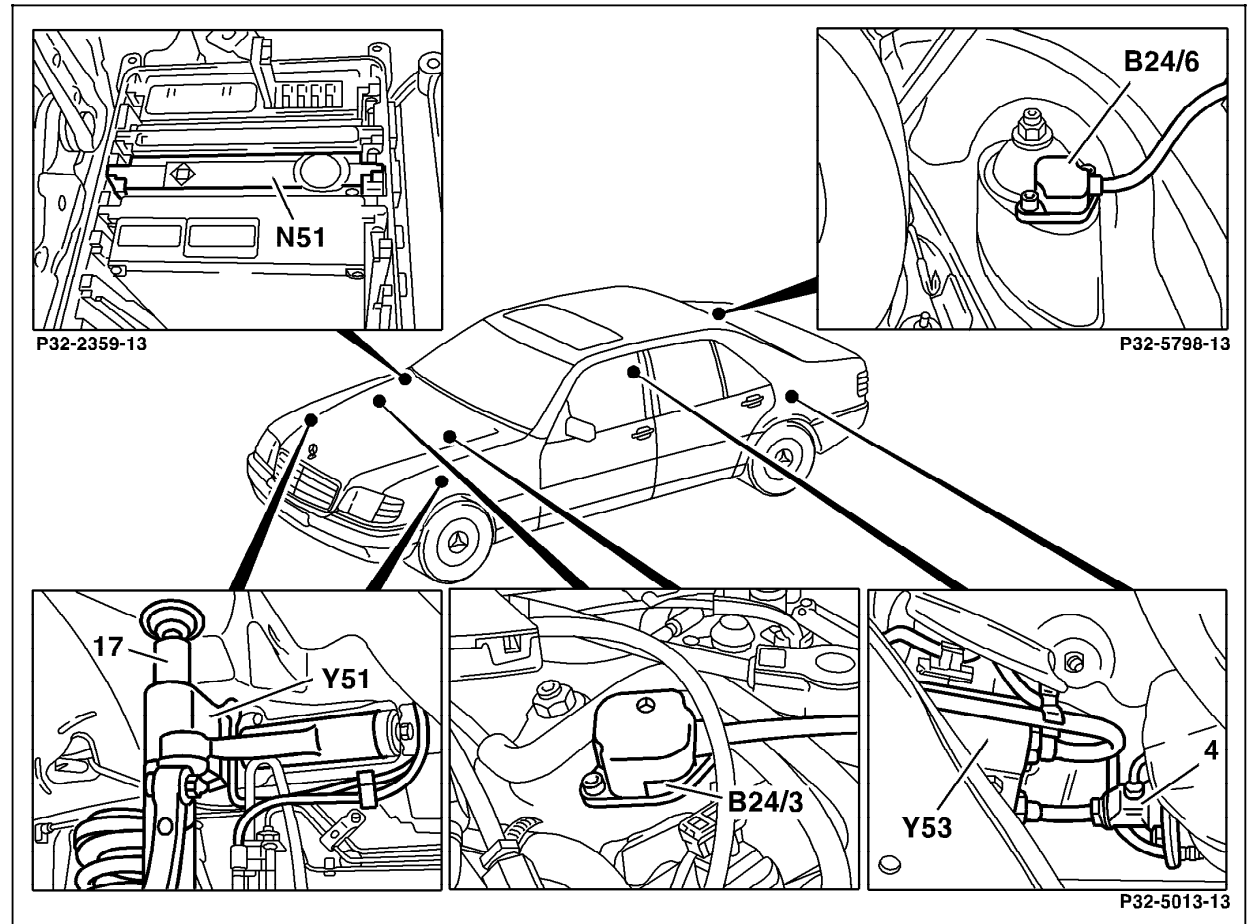


Figure 2

- B24/3 Left front body acceleration sensor
- B24/4 Right front body acceleration sensor (mirror image of B24/3)
- B24/6 Right rear body acceleration sensor
- N51 ADS control module
- Y51 Left front axle damper valve assembly
- Y52 Right front axle damper valve assembly (mirror image of Y51)
- Y53 Left rear axle damper valve assembly
- Y54 Right rear axle damper valve assembly (mirror image of Y53)

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### 3.3 Adaptive Damping System (ADS II)

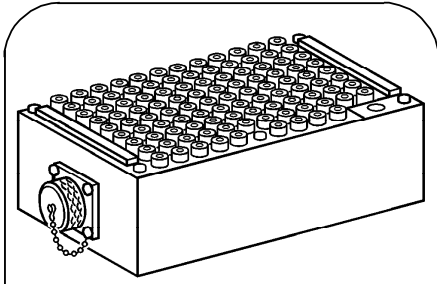
#### Electrical Test Program - Preparation for Test

1. Ignition: **OFF**
2. Disconnect ADS control module (N51).
3. Connect socket box with contact module 4 and contact box according to connection diagrams on page 22/3.

#### Electrical wiring diagrams:

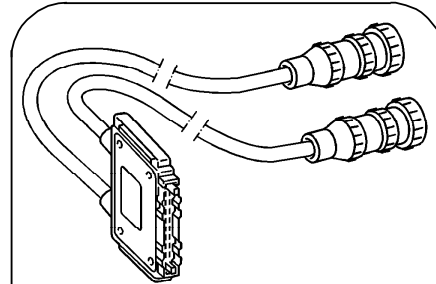
Electrical Troubleshooting Manual, Model 140.

#### Special Tools



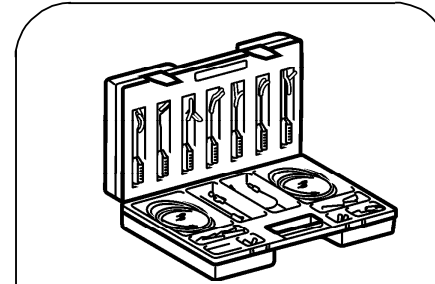
129 589 00 21 00

126-pin socket box



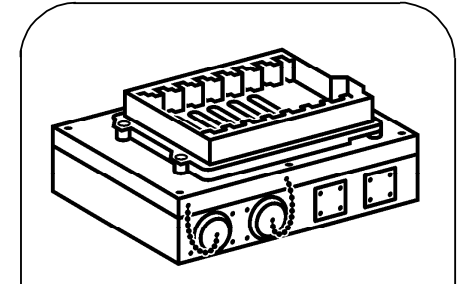
140 589 04 63 00

Contacting module 4



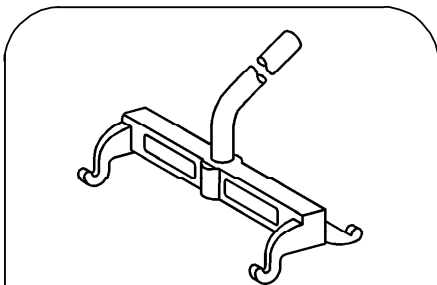
201 589 00 99 00

Electrical connecting set



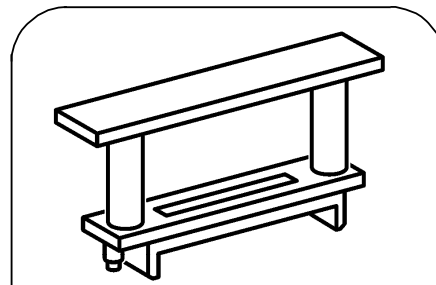
140 589 06 63 00

Contacting box



140 589 01 33 00

Mounting lever



140 589 10 33 00

Spacer

### 3.3 Adaptive Damping System (ADS II)

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#### Electrical Test Program - Preparation for Test

**Test equipment; See MBUSA Standard Service Equipment Program**

Description	Brand, model, etc.
Digital multimeter	Fluke models 23, 77 III, 83, 85, 87

### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Preparation for Test

##### Connection Diagram – Socket Box Model 140 module box (aluminum)

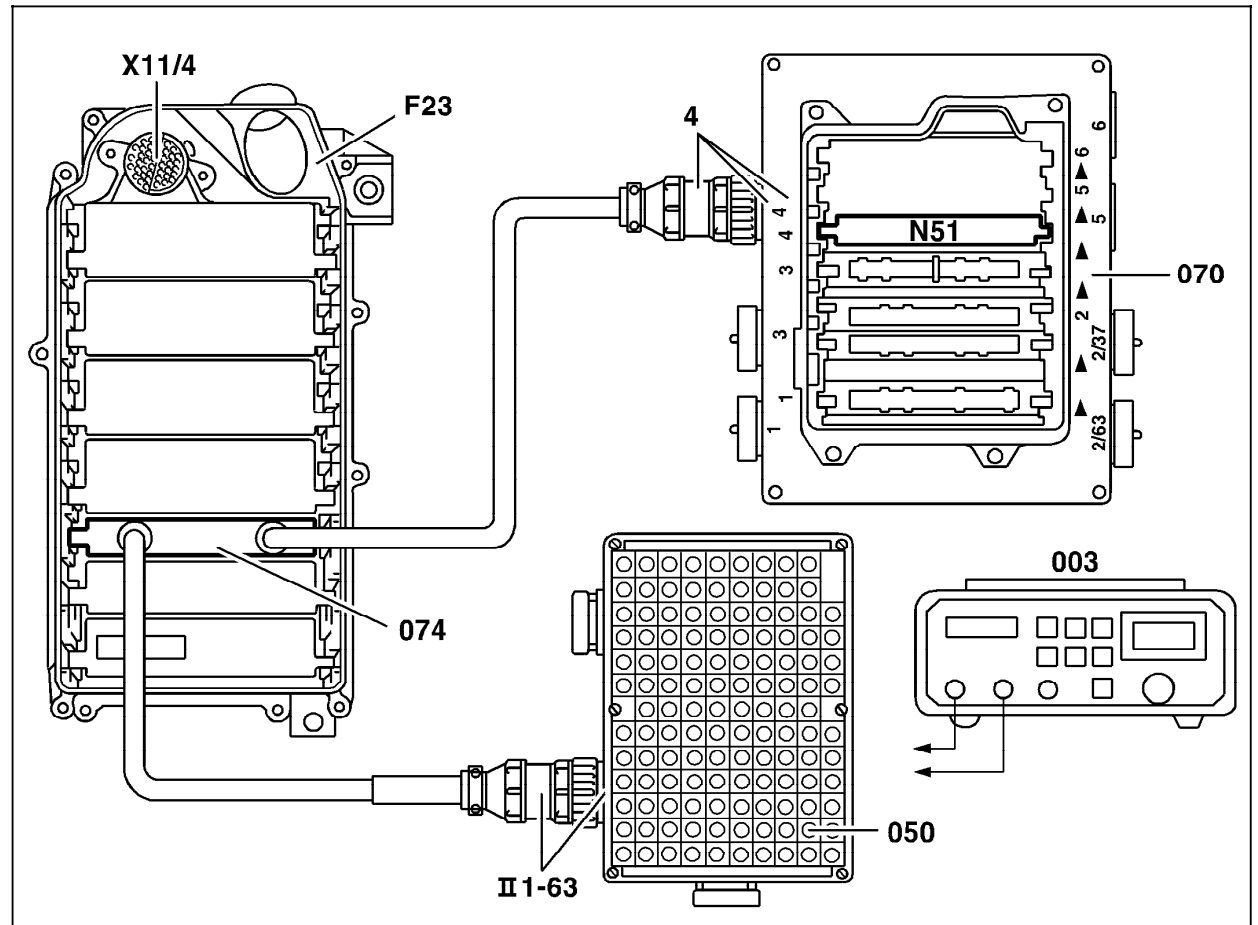


Figure 1

- 003 Digital multimeter
- 050 Socket box (126-pole)
- 070 Contact box
- 074 Contact module 4
- F23 Module box
- N51 ADS control module
- X11/4 Data link connector

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### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Preparation for Test

##### Connection Diagram – Socket Box Model 140 module box (plastic)

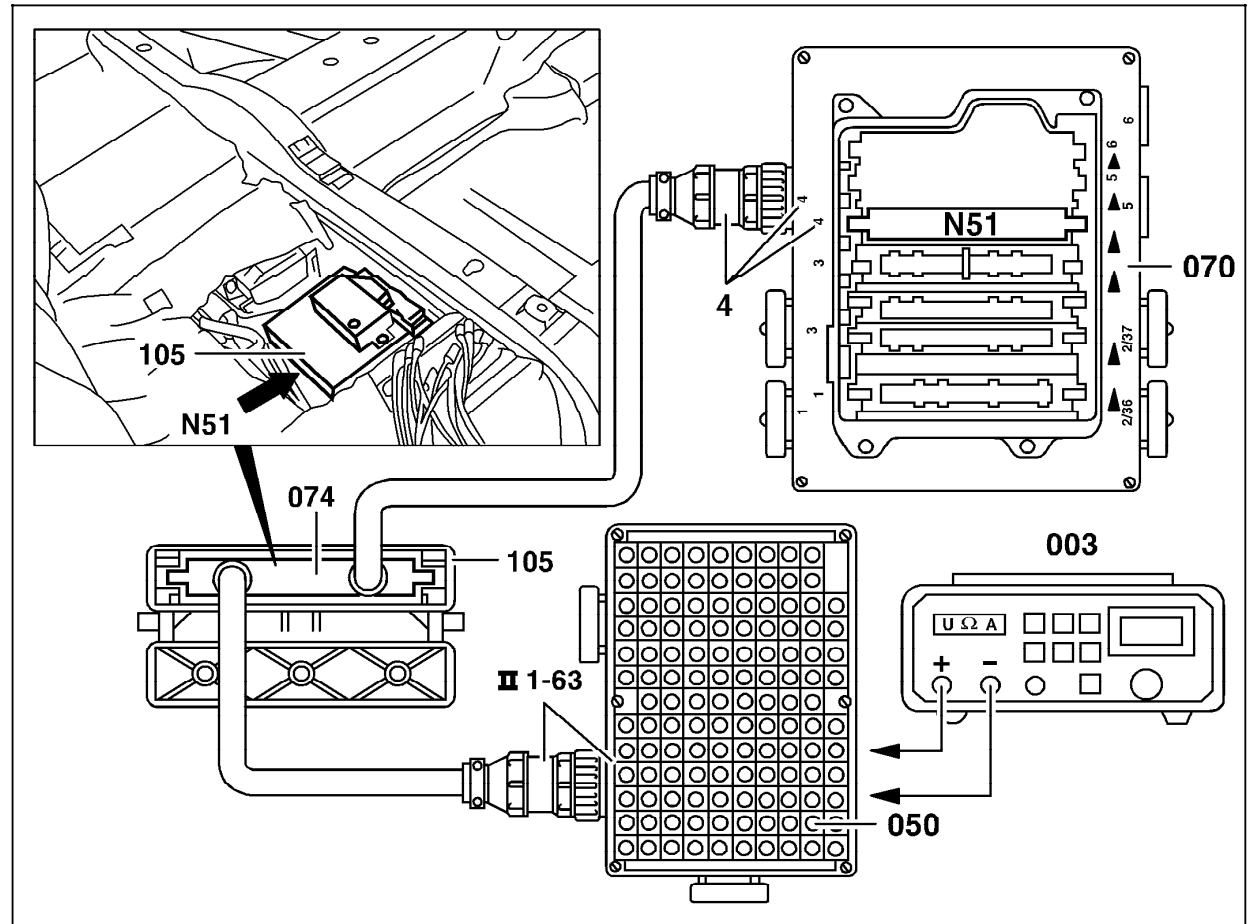


Figure 2

- 003 Digital multimeter
- 050 Socket box (126-pole)
- 070 Contact box
- 074 Contact module 4
- 105 Module box
- N51 ADS control module

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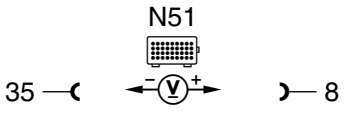

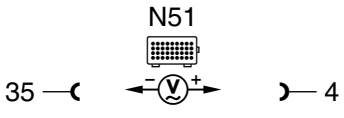
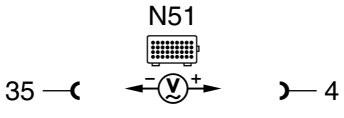
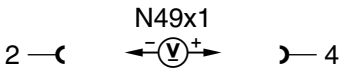
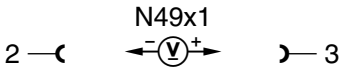
### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		<b>ADS control module (N51)</b> Circuit 87 SA Voltage supply		Ignition: <b>ON</b>	11 – 14 V	⇒ 1.1, Wiring, W15
1.1		Voltage supply from: Base module (N16/1)		Ignition: <b>ON</b>	11 – 14 V	Wiring, Fuse (F3) on BM (N16/1),
2.0		<b>Diagnosis output</b>		Ignition: <b>ON</b>	10 – 14 V	Wiring, ASD control module (N51).
3.0		<b>ADS MIL (A1e27)</b>		Ignition: <b>ON</b>  Engine: <b>at Idle</b>	A1e27: <b>ON</b> < 1 V  A1e27: <b>OFF</b> 11 – 14 V	Wiring, ⇒ 3.1, N51  Readout DTC memory 12, Wiring, N51







### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.1		ADS MIL (A1e27)		Ignition: <b>OFF</b> Disconnect N51. Ignition: <b>ON</b>	11 – 14 V	Wiring, A1e27
4.0		<b>Steering angle sensor (N49)</b> Signal		Ignition: <b>ON</b>	> 3 V ~	Wiring, ⇒ 4.1, ADS control module (N51).
4.1		Steering angle sensor (N49)		Ignition: <b>OFF</b> Disconnect N51. Ignition: <b>ON</b>	> 3 V ~	Wiring, ⇒ 4.2, ⇒ 4.3, N49
4.2		Circuit 30 Voltage supply		Ignition: <b>OFF</b> Disconnect N49x1.	11 – 14 V	Wiring.
4.3		Circuit 87 Voltage supply		Ignition: <b>ON</b>	11 – 14 V	Wiring.

### 3.3 Adaptive Damping System (ADS II)



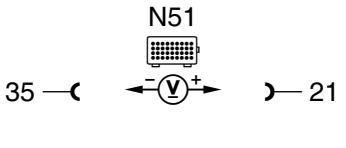
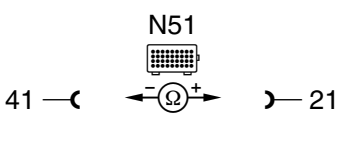
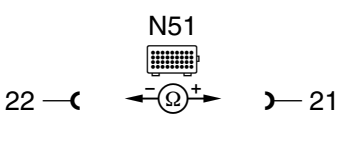
#### Electrical Test Program - Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.0		<b>Steering angle sensor (N49)</b> Initialization		Engine: <b>at Idle</b> Turn steering wheel from right to left stop.	A1e27 goes out.	⇒ 3.0
6.0		<b>Left front axle damper valve assembly (Y51)</b> Voltage supply	35 —  — 19 N51	Ignition: <b>ON</b>	11–14 V	Wiring, ADS control module (N51).
6.1		Front axle solenoid valve 1 (Y51y1)	39 —  — 19 N51	Ignition: <b>OFF</b> Disconnect N51.	10 – 16 Ω	Wiring, Y51
6.2		Front axle solenoid valve 2 (Y51y2)	40 —  — 19 N51	Ignition: <b>OFF</b> Disconnect N51.	10 – 16 Ω	Wiring, Y51





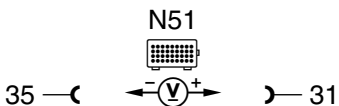

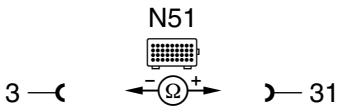
### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0		<b>Right front axle damper valve assembly (Y52)</b> Voltage supply		Ignition: <b>ON</b>	11–14 V	Wiring, ADS control module (N51).
7.1		Front axle solenoid valve 1 (Y52y1)		Ignition: <b>OFF</b> Disconnect N51.	10 – 16 Ω	Wiring, Y52
7.2		Front axle solenoid valve 2 (Y52y2)		Ignition: <b>OFF</b> Disconnect N51.	10 – 16 Ω	Wiring, Y52


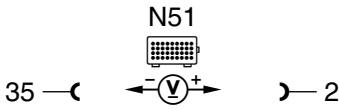
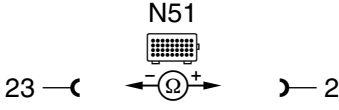
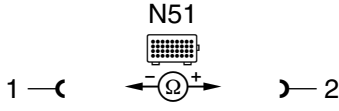
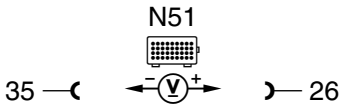
### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.0		<b>Left rear axle damper valve assembly (Y53)</b> Voltage supply		Ignition: <b>ON</b>	11–14 V	Wiring, ADS control module (N51).
8.1		Rear axle solenoid valve 1 (Y53y1)		Ignition: <b>OFF</b> Disconnect N51.	10 – 16 Ω	Wiring, Y53
8.2		Rear axle solenoid valve 2 (Y53y2)		Ignition: <b>OFF</b> Disconnect N51.	10 – 16 Ω	Wiring, Y53



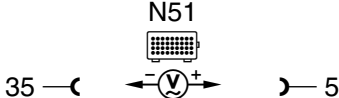

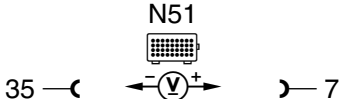

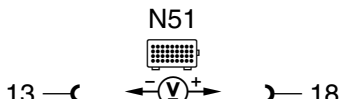
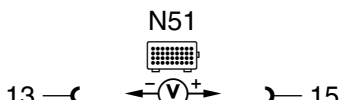
### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.0	012 013	<b>Right rear axle damper valve assembly (Y54)</b> Voltage supply		Ignition: <b>ON</b>	11–14 V	Wiring, ADS control module (N51).
9.1		Rear axle solenoid valve 1 (Y54y1)		Ignition: <b>OFF</b> Disconnect N51.	10 – 16 Ω	Wiring, Y54
9.2		Rear axle solenoid valve 2 (Y54y2)		Ignition: <b>OFF</b> Disconnect N51.	10 – 16 Ω	Wiring, Y54
10.0		<b>Circuit 61</b> Voltage supply		Ignition: <b>ON</b>  Engine: <b>at Idle</b>	< 1 V  11–14 V	Wiring, Generator (G2)


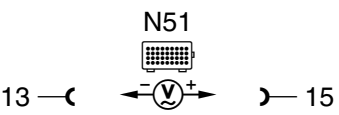
### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.0		<b>Right Front Wheel VSS Signal</b>	N51 	Lift front of vehicle. Ignition: <b>ON</b> Rotate right front wheel at approx. 1 revolution/second.	> 3 V ~	ETS or ASR or ESP, see DM, Chassis and Drivetrain, Wiring, ADS control module (N51).
12.0		<b>Stop lamp switch (S9/1) (4-pole)</b>	N51 	Ignition: <b>ON</b>  Do not apply service brake.  Apply service brake.	< 1 V  11–14 V	Wiring, S9/1
13.0		<b>Left front body lateral acceleration sensor (B24/3) Voltage supply</b>	N51 	Ignition: <b>ON</b>	4.75 – 5.25 V	Wiring, B24/3, ADS control module (N51).
13.1		Static sensor signal (off)	N51 	Ignition: <b>ON</b>	2.35 – 2.65 V	Wiring, B24/3



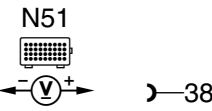
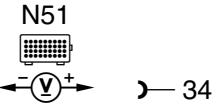
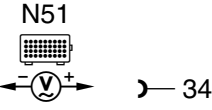
### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
13.2		Dynamic sensor signal (on)		Ignition: <b>ON</b> Vigorously move left front section of vehicle up and down by hand.	> 5 mV ~  <b>Note:</b> Value changes with movement of vehicle. Value can only be attained with digital multimeter set to mV ~.	B24/3



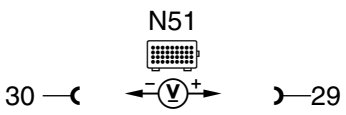
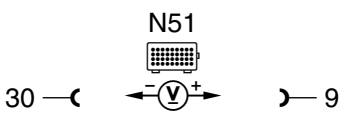
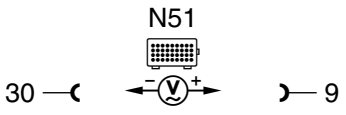
### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
14.0		<b>Right front body lateral acceleration sensor (B24/4)</b> Voltage supply		Ignition: <b>ON</b>	4.75 – 5.25 V	Wiring, B24/4, ADS control module (N51).
14.1		Static sensor signal (off)		Ignition: <b>ON</b>	2.35 – 2.65 V	Wiring, B24/4
14.2		Dynamic sensor signal (on)		Ignition: <b>ON</b> Vigorously move right front section of vehicle up and down by hand.	> 5 mV ~  <b>Note:</b> Value changes with movement of vehicle. Value can only be attained with digital multimeter set to mV ~.	B24/4



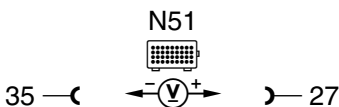
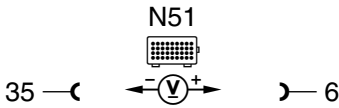
### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
15.0		<b>Right rear body lateral acceleration sensor (B24/6)</b> Voltage supply		Ignition: <b>ON</b>	4.75 – 5.25 V	Wiring, B24/6, ADS control module (N51).
15.1		Static sensor signal (off)		Ignition: <b>ON</b>	2.35 – 2.65 V	Wiring, B24/6
15.2		Dynamic sensor signal (on)		Ignition: <b>ON</b> Vigorously move right rear section of vehicle up and down by hand.	> 5 mV ~  <b>Note:</b> Value changes with movement of vehicle. Value can only be attained with digital multimeter set to mV ~.	B24/6

### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

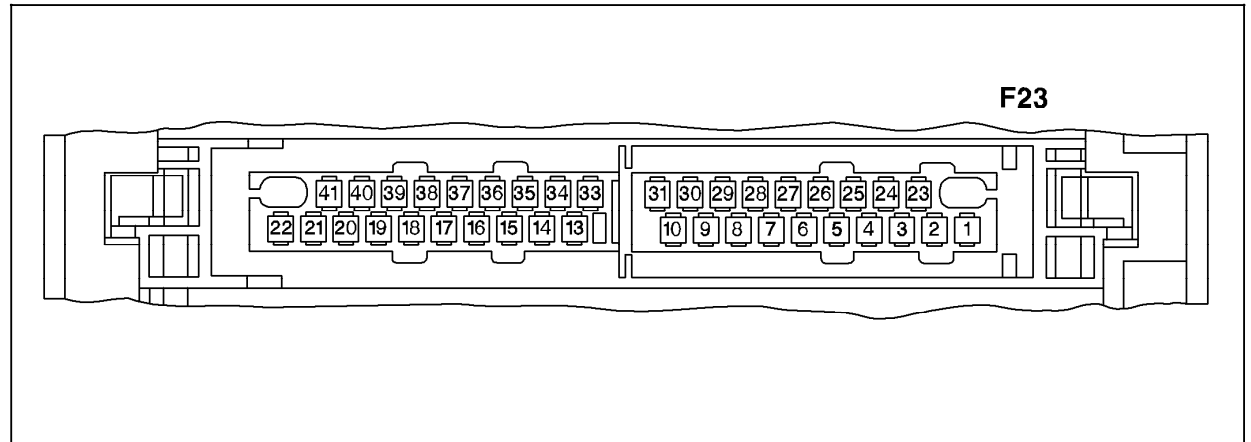
⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
16.0		<b>Comfort/sport switch (S45/1)</b>		Ignition: <b>ON</b> <b>Hold</b> switch S45/1 in: <b>Comfort</b> setting  <b>Release</b> switch:  <b>Sport</b> setting	< 1 V Indicator lamp in S45/1: <b>OFF</b>  11–14 V Indicator lamp in S45/1: <b>OFF</b>  4 – 6 V Indicator lamp in S45/1: <b>ON</b>	Wiring, ADS control module (N51), S45/1  Wiring, ADS control module (N51).  Wiring, ADS control module (N51), S45/1, ⇒ 16.1. control module (N51).
16.1		Indicator lamp in S45/1		<b>Release</b> switch (S45/1)	11 – 14 V Indicator lamp in S45/1: <b>ON</b>	Wiring, N51



### 3.3 Adaptive Damping System (ADS II)

#### Electrical Test Program - Test

#### Connector Layout - ADS Control Module (N51)



F23 Module box

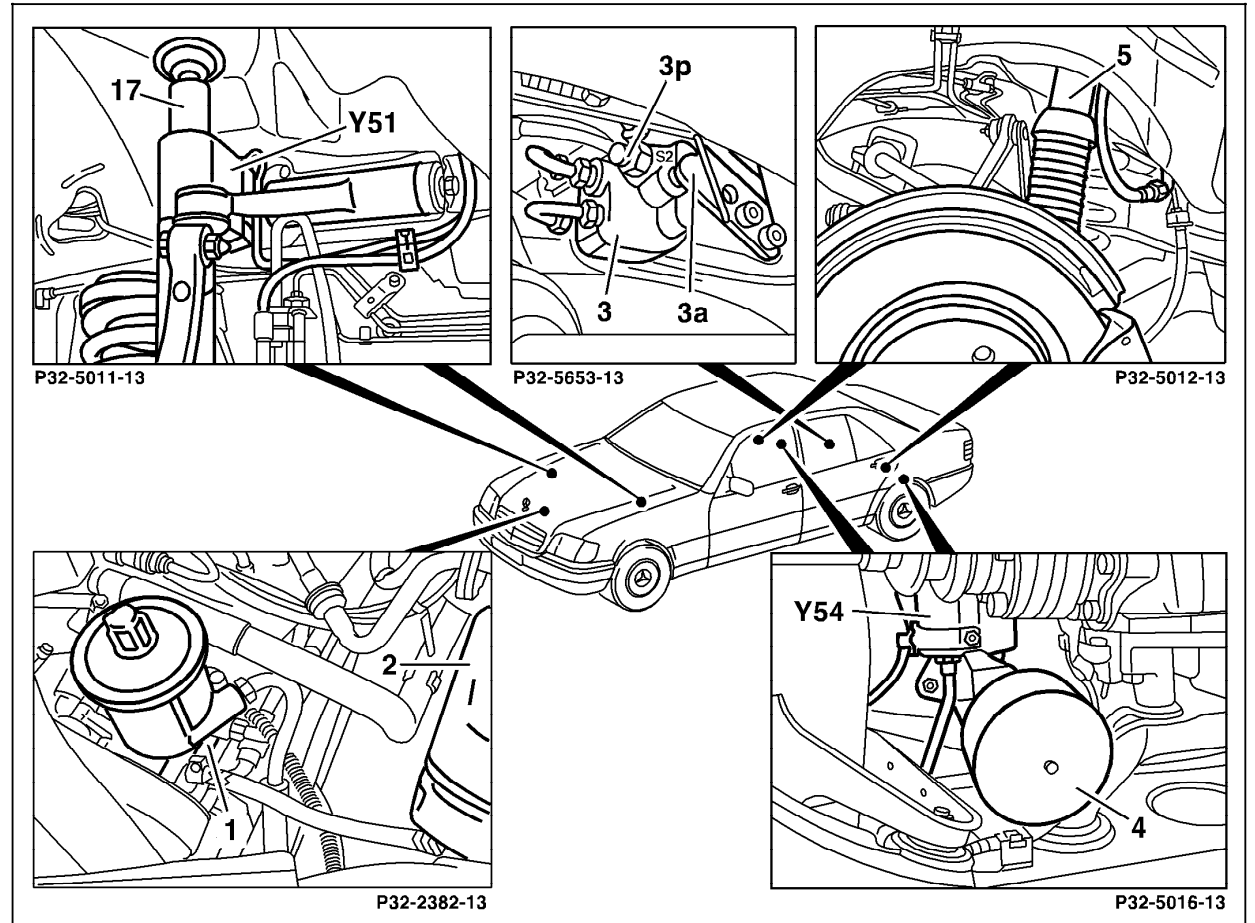
P32.32-0262-04

1	Right rear axle damper valve assembly, valve 2 (Y54y2) (-)	15	Left front body lateral acceleration sensor (B24/3) signal	29	Right rear body lateral acceleration sensor (B24/6) (+)
2	Right rear axle damper valve assembly (Y54y1, Y54y2) (+)	16-17	not used	30	Right rear body lateral acceleration sensor (B24/6) (-)
3	Left rear axle damper valve assembly, valve 2 (Y53y2) (-)	18	Left front body lateral acceleration sensor (B24/3) (+)	31	Left rear axle damper valve assembly (Y53y1, Y53y2) (+)
4	Steering angle sensor (N49)	19	Left front axle damper valve assembly (Y51y1, Y51y2) (+)	32	not used
5	Processed right front VSS signal from ASR/SPS or ETS/SPS or ESP/SPS control module (N47-1 or N47-2 or N47-5)	20	not used	33	Right front body lateral acceleration sensor (B24/4) (-)
6	Comfort/sport switch (S45/1), indicator lamp	21	Right front axle damper valve assembly (Y52y1, Y52y2) (+)	34	Right front body lateral acceleration sensor (B24/4) signal
7	Stop lamp switch (S9/1)	22	Right front axle damper valve assembly, valve 2 (Y52y2) (-)	35	Ground, harness (W15 or W16/3)
8	ADS MIL (A1e27)	23	Right rear axle damper valve assembly, valve 1 (Y54y1) (-)	36-37	not used
9	Right rear body lateral acceleration sensor (B24/6) signal	24	Left rear axle damper valve assembly, valve 1 (Y53y1) (-)	38	Right front body lateral acceleration sensor (B24/4) (+)
10	Circuit 87 voltage supply (feed from N16/1)	25	Diagnosis output	39	Left front axle damper valve assembly, valve 1 (Y51y1) (-)
11-12	not used	26	Circuit 61	40	Left front axle damper valve assembly, valve 2 (Y51y2) (-)
13	Left front body lateral acceleration sensor (B24/3) (-)	27	Comfort/sport switch (S45/1)	41	Right front axle damper valve assembly valve 1 (Y52y1) (-)
14	not used	28	not used		

### 3.3 Adaptive Damping System (ADS II)

#### Hydraulic Test Program - Component Locations

##### Hydraulic Components Model 140



P32.32-0260-06

### 3.3 Adaptive Damping System (ADS II)

#### Hydraulic Test Program - Hydraulic Oil Pump Test

##### Preparation for Test

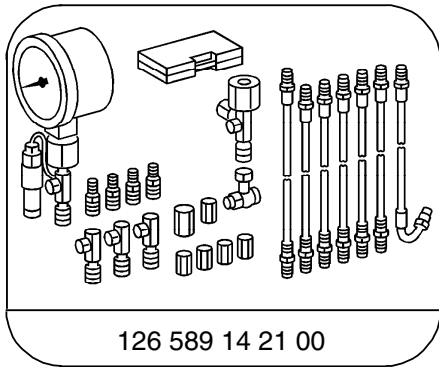
1. Check oil level in oil reservoir, correct if necessary.
2. Unscrew connecting rod at leveling valve lever (3a).
3. Depressurize rear axle hydraulic system by slowly opening bleeder screw (3p), connect drain hose and place into container, remove bleeder screw (3p).
4. Connect test gauge (038a, 038e) to rear axle leveling valve bleeder connection (S2).

5. Set both leveling valve levers to position "F" (fill).
6. Disconnect return line (T) at oil reservoir (2) and using a suitable hose, hold it in a measuring glass.



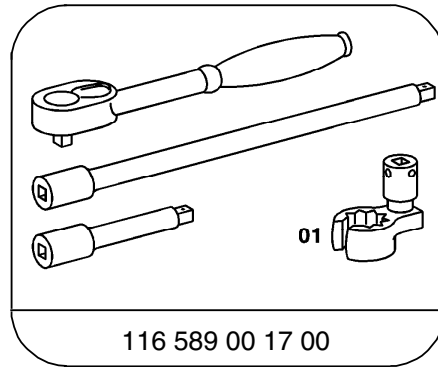
To perform this test, the oil fill quantity must be increased by 0.5 liters. If the oil reservoir was empty, the hydraulic oil pump must first be bled by disconnecting the high pressure flexible hose at the steel line. Run the engine and hold the hose into a container until the oil exits free of bubbles.

##### Special Tools



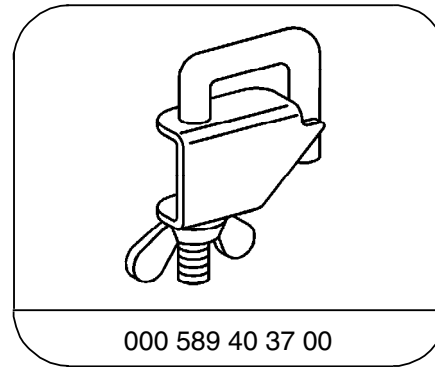
126 589 14 21 00

Tester



116 589 00 17 00

Box wrench



000 589 40 37 00

Clamp

### 3.3 Adaptive Damping System (ADS II)

#### Hydraulic Test Program - Hydraulic Oil Pump Test

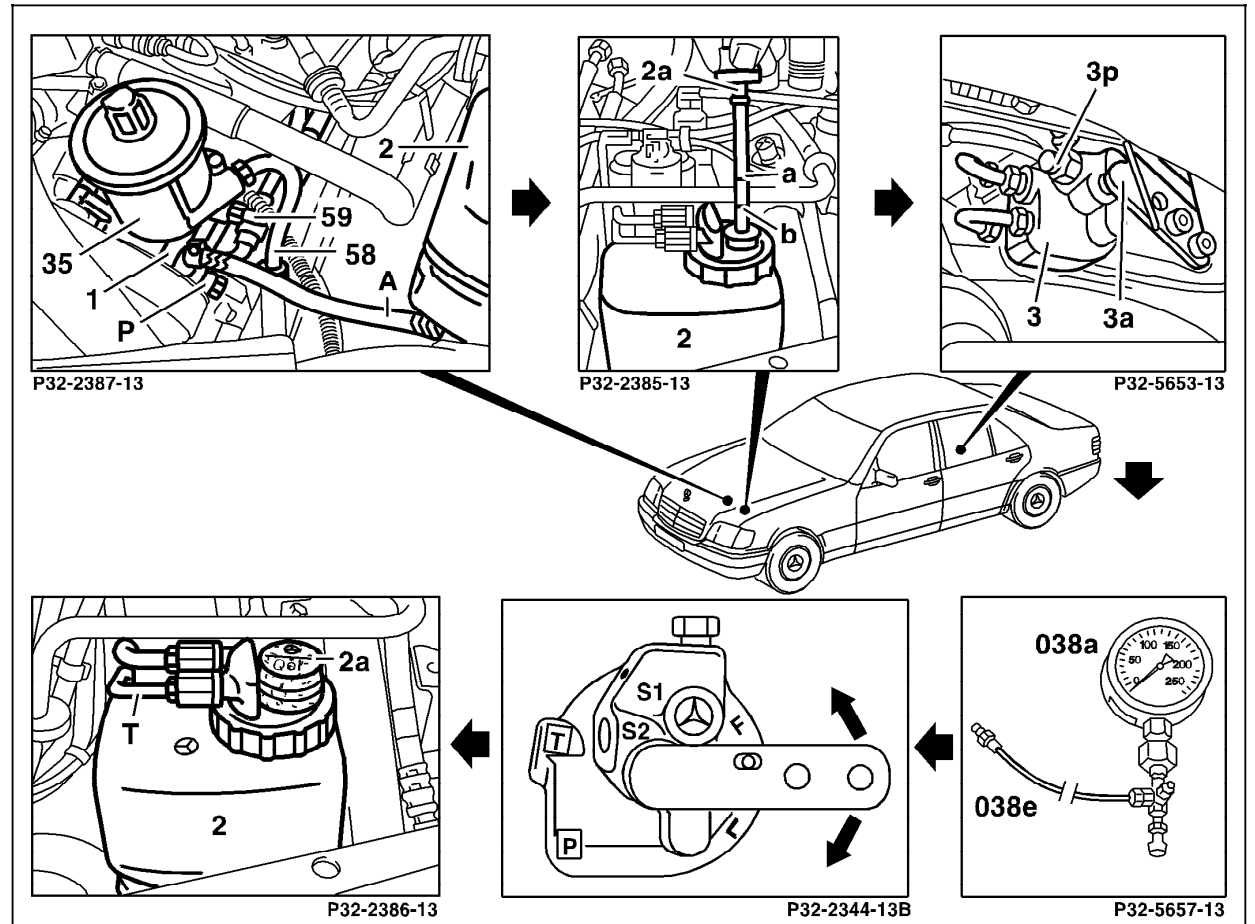




Figure 1

- 1 Hydraulic oil pump
- 2 Hydraulic oil reservoir
- 3 Leveling valve
- 3a Connecting lever
- 3p Bleeder screw
- 038a Test gauge
- T Retrun line from leveling valve

P32.32-0261-06

### 3.3 Adaptive Damping System (ADS II)

#### Hydraulic Test Program - Hydraulic Oil Pump Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	<b>Delivery pressure</b>  <b>WARNING!</b> High pressure	 250 bar Connect test gauge to rear axle leveling valve connection S2	Engine: <b>at Idle</b> Set leveling valve lever(s) to position "F" (fill).  Observe test gauge needle until pressure no longer increases.	> 120 bar Delivery capacity at idle > 0.2 l/min.	Delivery pressure < 120 bar, Delivery capacity < 0.2 l/min: Replace hydraulic oil pressure pump  Delivery pressure < 120 bar, Delivery capacity > 0.2 l/min: Replace rear axle leveling valve.  Delivery pressure > 153 bar, Replace rear axle leveling valve.

### 3.3 Adaptive Damping System (ADS II)

#### Hydraulic Test Program - Leveling Valve Function Test

##### Function Test Model 140

1. Check oil level in oil reservoir, correct if necessary.
2. Unscrew connecting rod at leveling valve lever (3a) (set lever to neutral position).

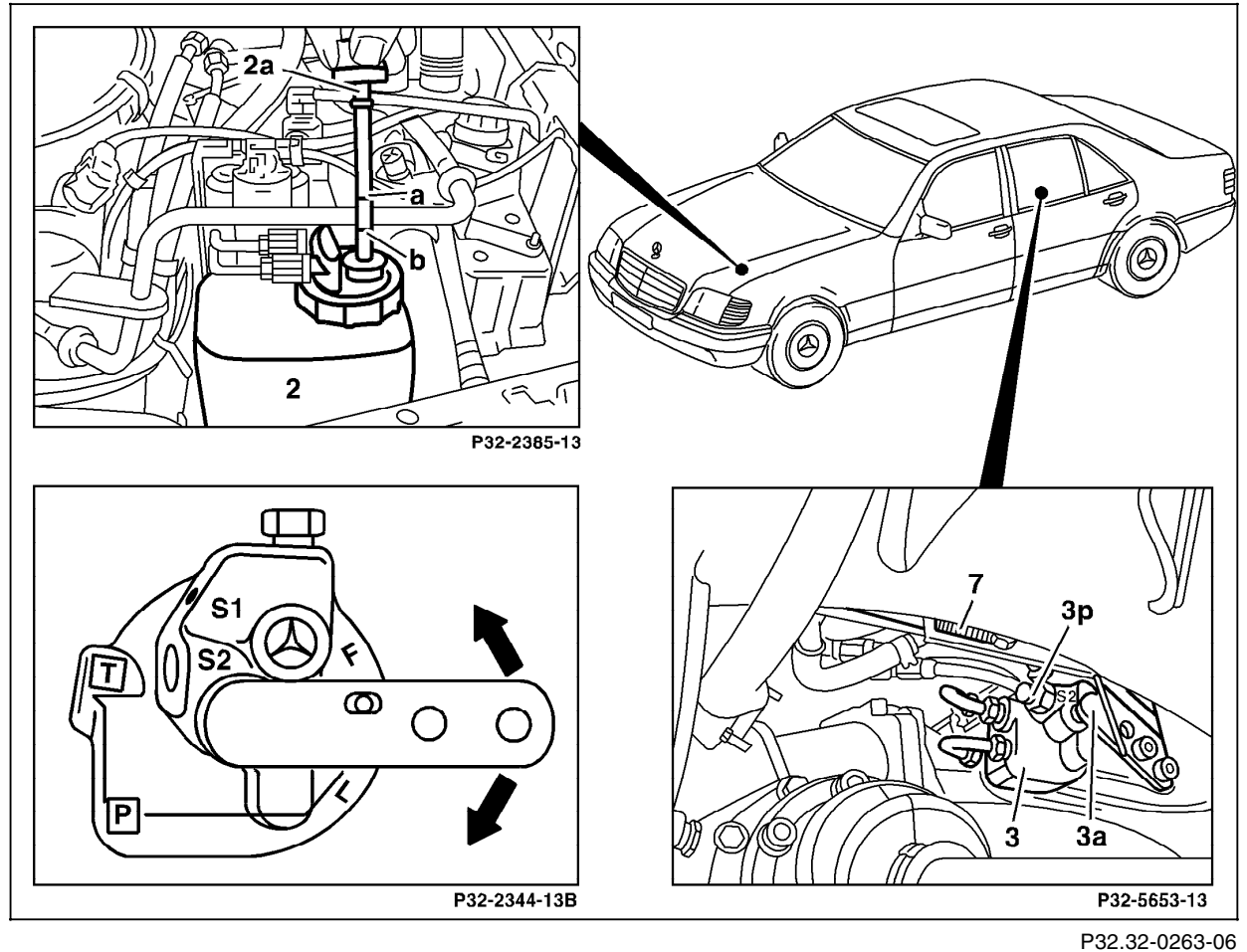


Figure 1

- 3 Leveling valve
- 3a Leveling valve lever
- 7 Connecting rod

### 3.3 Adaptive Damping System (ADS II)

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#### Hydraulic Test Program - Leveling Valve Function Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		<b>Leveling valve</b> Control function		Engine: <b>at Idle</b> Set leveling valve lever to position "F" (fill).	Vehicle must raise at rear axle.	34

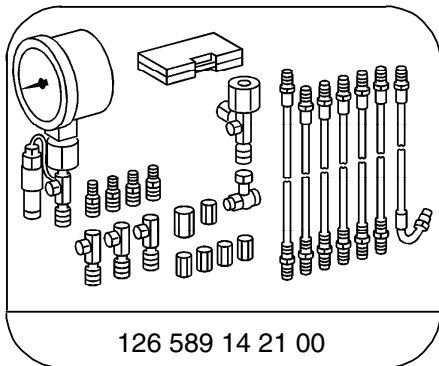
### 3.3 Adaptive Damping System (ADS II)

#### Hydraulic Test Program - Leveling Valve Pressure Test

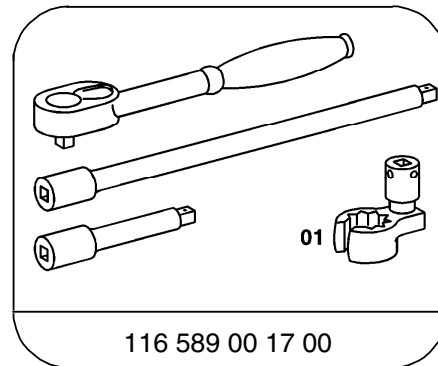
##### Preparation for Test

1. Check oil level in oil reservoir, correct if necessary.
2. Unscrew connecting rod at leveling valve levers (set levers to neutral position).
3. Depressurize hydraulic system by slowly opening bleeder screw (3p), connect drain hose and place into container, remove bleeder screw (3p).
4. Connect test gauge to leveling valve connection (S2).

##### Special Tools



Tester



Box wrench



### 3.3 Adaptive Damping System (ADS II)

#### Hydraulic Test Program - Leveling Valve Pressure Test

##### Pressure Test Model 140

1. Check oil level in oil reservoir, correct if necessary.
2. Unscrew connecting rod at leveling valve lever (3a) (set lever to neutral position).

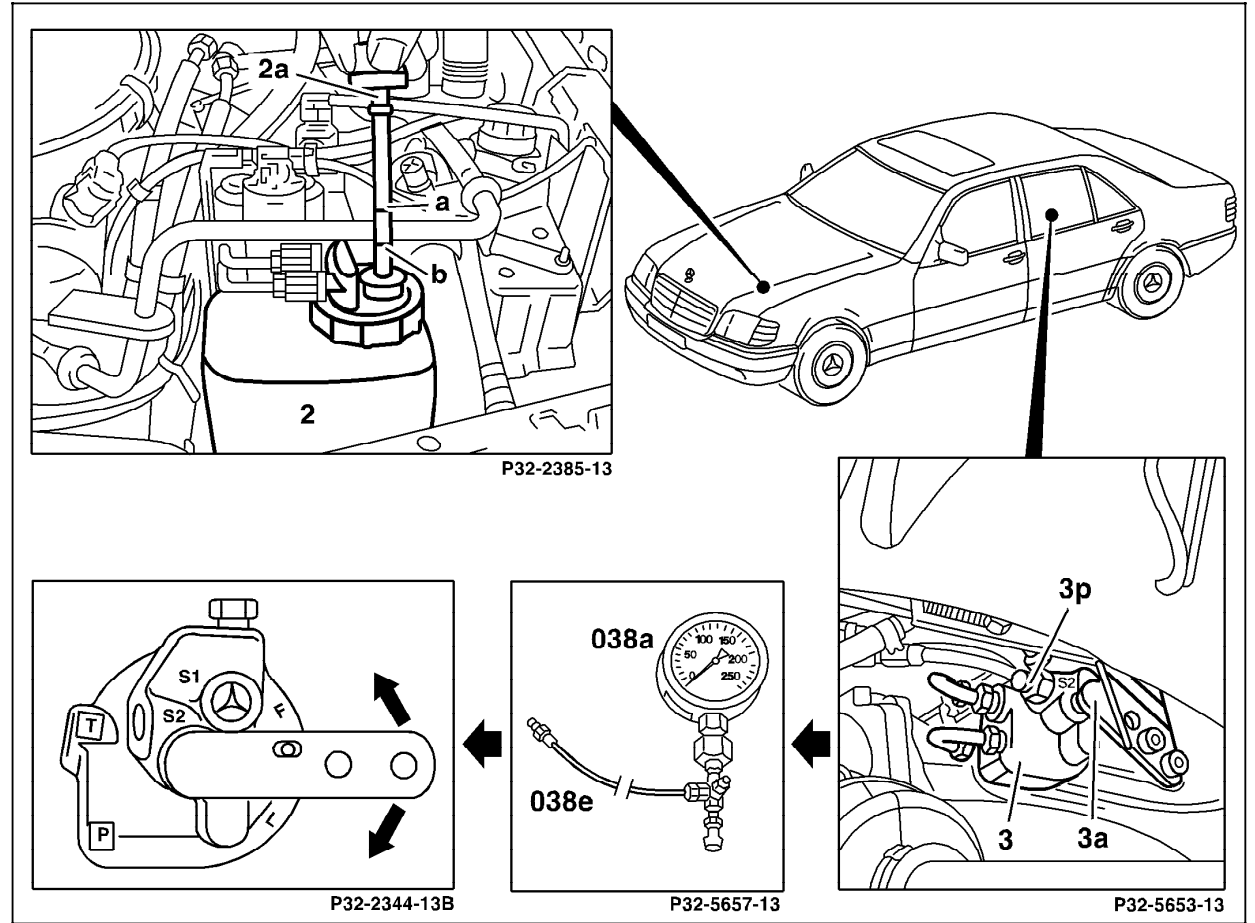





Figure 2

- 2 Oil reservoir
- 3 Leveling valve
- 3a Leveling valve lever
- 3p Oil drain screw

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### 3.3 Adaptive Damping System (ADS II)

#### Hydraulic Test Program - Leveling Valve Pressure Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	<b>Opening pressure of relief valve</b>   <b>WARNING!</b> High Pressure	 250 Connect test gauge to S2.	Engine: <b>at Idle</b> Set leveling valve lever to "F" (fill).	120 – 153 bar	> 153 bar Replace leveling valve.  < 120 bar Replace hydraulic oil pump, see 32
2.0	<b>Overflow valve function</b>	 250 Connect test gauge to S2.	Engine: <b>at Idle</b> Set leveling valve lever to "F" (fill) until gauge indicates approximately 80 bar.  Set leveling valve lever to "L" (empty)	30 – 36 bar	Rear axle, Replace leveling valve.

### 3.3 Adaptive Damping System (ADS II)

#### Hydraulic Test Program - Damping Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		<b>Damping valve</b>	Connect  to X11/4	Activate Comfort/Sport setting  Test all four damping valves by manually rocking vehicle at respective wheel.	Difference between <b>hard/soft</b> damping must be clearly noticeable.	readout DTCs, 12, Damping valves.