

## 17.1 Model 129

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## Diagnostics Functional control

**Testing for mechanical and electrical functional capacity of the seat belt tensioner is to be conducted:**

- after an accident
- after deployment of the seat belt tensioner
- after removal or installation of one or both front seats
- after replacement of the seat belt automatic rollers

Test step <sup>1)</sup> /scope of test	Test condition	Nominal value	Possible cause/remedy
⇒ 1.0 <b>Free movement of the seat belts and/or the seat belt automatic rollers (left and right)</b>	Pull the seat belts out slowly and with equal force and release.	The seat belt can be pulled out and is pulled back by the automatic rollers.	Bowden cable defective. Bowden cable is not connected to the seat belt. Connector, ETR/left seat plug connection (2-pole), does not have good contact. Seat latch relay is not plugged in.
⇒ 1.1	Pull the seat belts out abruptly.	Seat belts lock.	Seat belt automatic rollers defective.

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

## 17.1 Emergency Tensioning Retractor

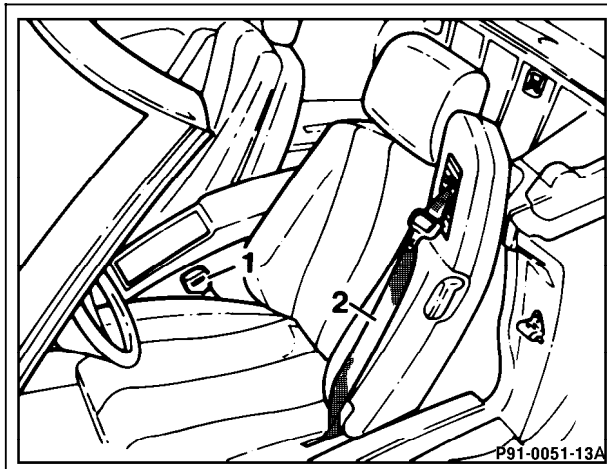
Model 129

### Diagnostics Functional control

Test step <sup>1)</sup> /scope of test	Test condition	Nominal value	Possible cause/remedy
⇒ 2.0 <b>Left and right seat belt latch</b>	Ignition: <b>OFF</b> Disconnect the battery ground cable. Put on the seat belts.		
	Seat belt buckle <b>inserted</b> into latch.  Seat belt buckle <b>not inserted</b> into latch.	Belts are latched.  Belts move freely.	Defective seat belt automatic roller.  Bowden cable defective and/or not connected at the seat belt latch.
⇒ 2.1	Release the belts again. Connect the battery ground cable.  Seat belt buckle <b>inserted</b> into latch.	Seat belts remain free moving.	Conduct diagnostics through the roll bar control unit (N53).

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

## Diagnostics Troubleshooting chart



P91-0051-13A

Figure 1

- 1 Seat belt latch
- 2 Seat belt

Complaint	Possible cause	Test step <sup>1)</sup> /remedy
After an accident both seat belt tensioners deployed and/or did not deploy.		23 ⇒ 1.0
Seat belt cannot be pulled out.		11 ⇒ 1.0
Seat belt latch does not work.		11 ⇒ 2.0 19.1 23 ⇒ 4.0 and/or 5.0
After connecting the seat belt latch the seat belt cannot be pulled out (no freeplay in seat belt).		11 ⇒ 2.0 19.1 23 ⇒ 4.0 and/or 5.0 19.1 23 ⇒ 9.0 and/or 10.0

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

## Electrical test program Component locations

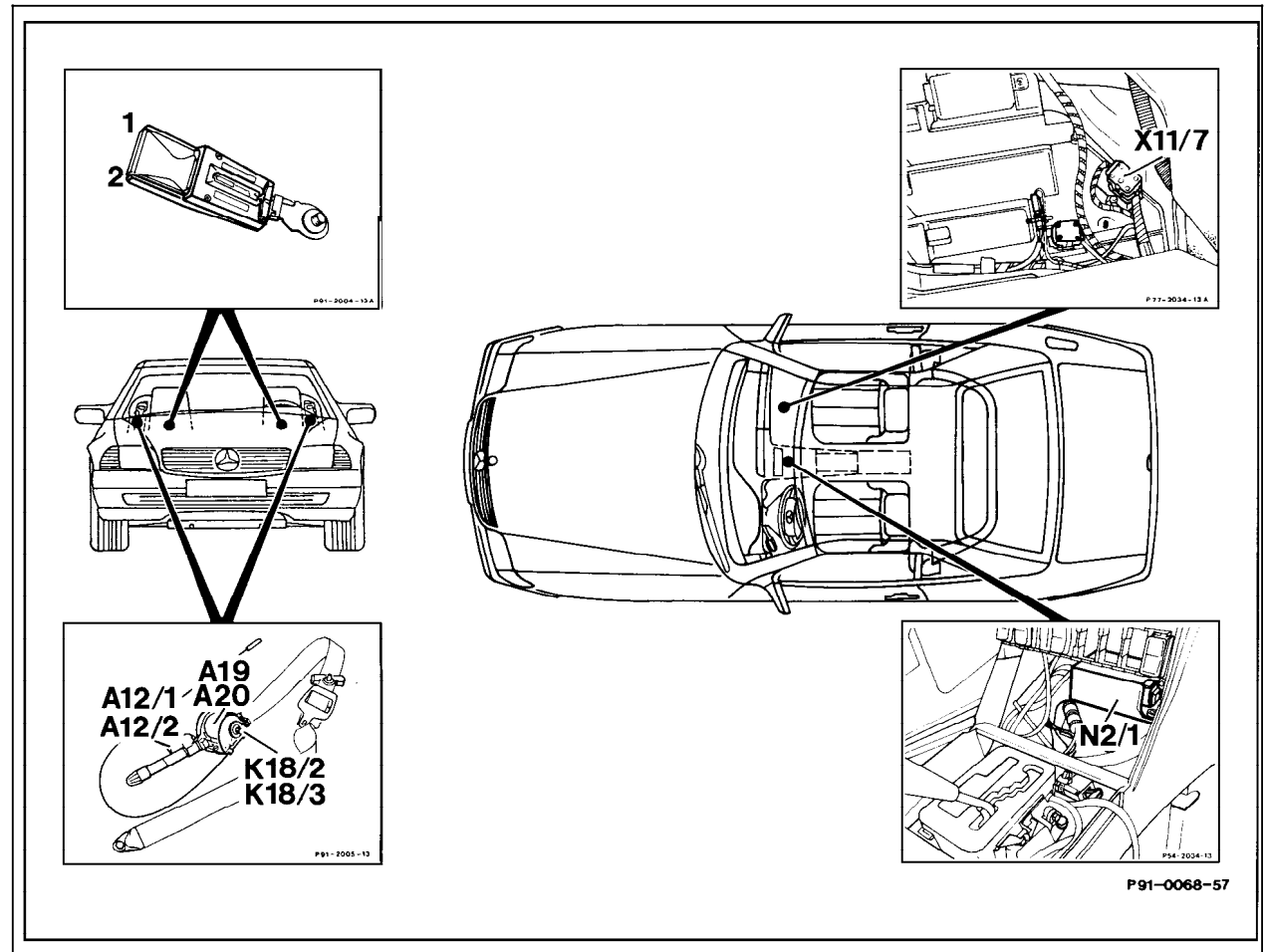


Figure 1

- N2/1 ETR control unit
- R12/1 Left front emergency tensioning retractor (ETR) squib
- R12/2 Right front emergency tensioning retractor (ETR) squib
- X11/7 Test connection, ETR (4-pole)
- 1 Left seat belt latch
- 2 Right seat belt latch

P91-0068-57

### Electrical test program Preparations for testing

#### Preparations for testing

Testing the seat belt tensioners for electrical and mechanical function is to be conducted:

- After an accident
- After deployment of the seat belt tensioner
- After installation or removal of one or both front seats
- After replacement of the seat belt tensioner

#### Electrical wiring diagram note:

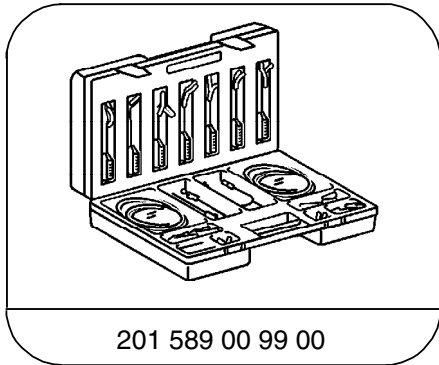
See "Electrical Troubleshooting Manual, Model 129"

Description:	Functional group
Model 129	07

Electrical test program

Preparations for testing

Special Tools



201 589 00 99 00

Electrical connecting set

Equipment

Description	Supplier
Multimeter	Fluke 23 DB Sun, DMM-5

## Electrical test program

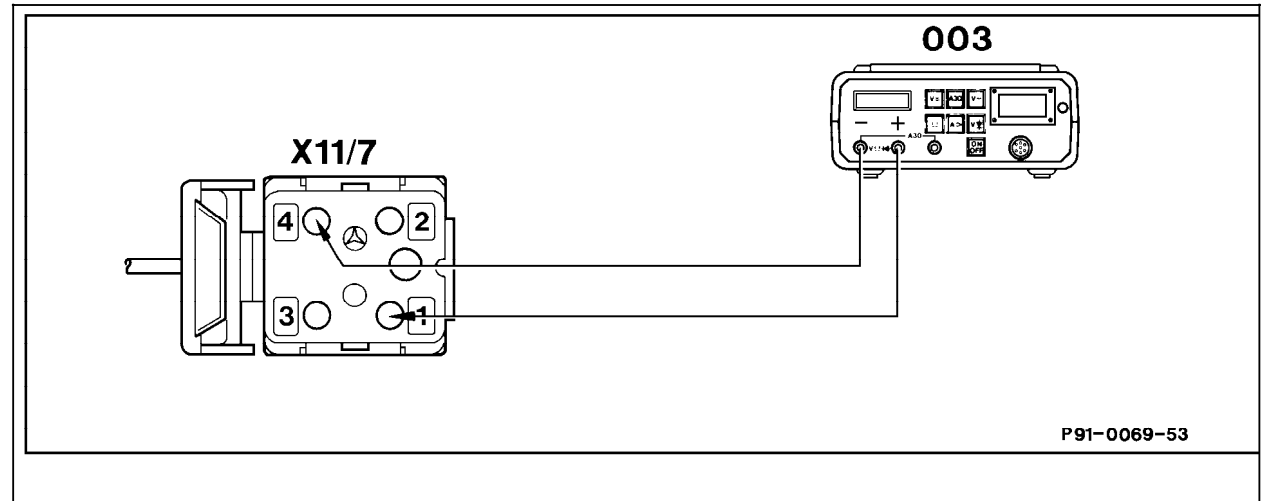
## Preparations for testing

Connection diagram for multimeter for test program

Seat belt tensioner, model 129

Figure 1

X11/7 Test connection, ETR(4-pole)  
003 Multimeter



P91-0069-53



## 17.1 Emergency Tensioning Retractor

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### Electrical test program Testing

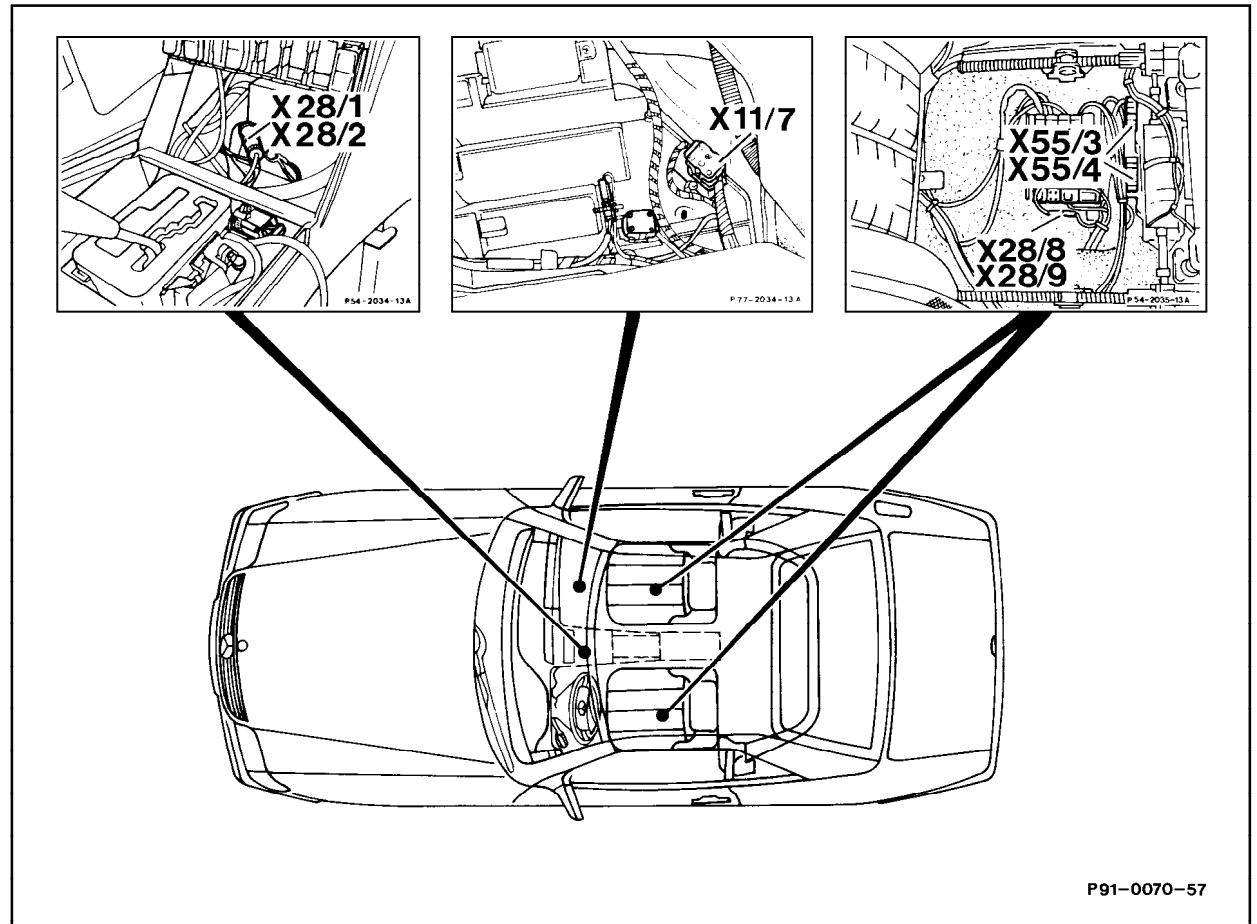
Test step Impulse readout	Scope of test	Test equipment/ test connection	Test condition	Nominal value	Possible cause/remedy
⇒ 1.0	<b>Left emergency tensioning retractor (ETR) squib (R12/1) and right emergency tensioning retractor (ETR) squib (R12/2) with wiring</b>		Ignition: <b>OFF</b>	1.0–1.7 Ω	R12/1 and/or R12/2 not connected. Connector open circuit Connector, ETR/left seat plug connection (2-pole) (X28/8 and/or X28/9) has bad connection. Wiring.
⇒ 2.0	<b>Left emergency tensioning retractor (ETR) squib (R12/1) with wiring</b>		Ignition: <b>OFF</b> Disconnect connector from ETR control unit (N2/1).	2–5 Ω	Connector, ETR/left seat plug connection (2-pole) (X28/8) has a bad connection. Wiring, Replace seat belt tensioner (RA 91-502).
⇒ 2.1	Left emergency tensioning retractor (ETR) squib (R12/1) with wiring		Connector, ETR/left seat plug connection (2-pole) (X28/8) disconnected.	2–5 Ω	Wiring, Replace seat belt tensioner (RA 91-502).

# 17.1 Emergency Tensioning Retractor

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## Electrical test program      Testing

Test step Impulse readout	Scope of test	Test equipment/ test connection	Test condition	Nominal value	Possible cause/remedy
⇒ 3.0	<b>Right front emergency tensioning retractor (ETR) squib (R12/2) with wiring</b>		Ignition: <b>OFF</b> Connector unplugged from ETR control unit (N2/1).	2–5 Ω	Connector, ETR/right seat plug connection (2-pole) (X28/9) has bad contact. Wiring, Replace seat belt tensioner (RA 91-502).
⇒ 3.1	Right front emergency tensioning retractor (ETR) squib (R12/2) with wiring		Connector, ETR/right seat plug connection (2-pole) (X28/9) unplugged.	2–5 Ω	Wiring, Replace seat belt tensioner (RA 91-502).



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