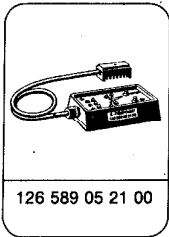


## 54-504 Testing cruise control with adapter

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### Special tool



### Prerequisite for testing

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Prior to testing by means of adapter, check battery voltage ( $> 11$  V), stop lamps and speed indication for function. Repair, if required, and check cruise control/Tempomat for function prior to testing with adapter.

Test cruise control/Tempomat with adapter only. If other testing and measuring instruments are used, the cruise control/Tempomat may be destroyed. During this test, the cruise control/Tempomat system is tested with the exception of the control unit.

Faults can be found by means of the adapter only if cruise control/Tempomat is permanently not functioning. Complaints such as temporary failure or poor control characteristics (e.g. shaking) cannot be checked with adapter. In such cases, proceed according to programmed repairs.

If testing with adapter indicates a faulty component, check plug connections for good contacting prior to replacement, e.g. the plug sockets should not be widened. Reshape widened plug sockets. Then check respective component once again.

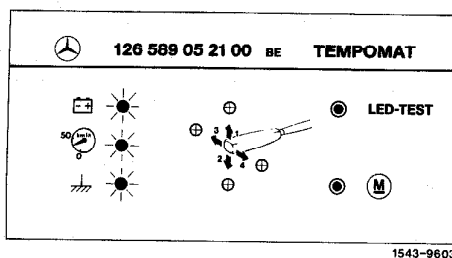
## 54-504 Testing cruise control with adapter

### Preparation for test

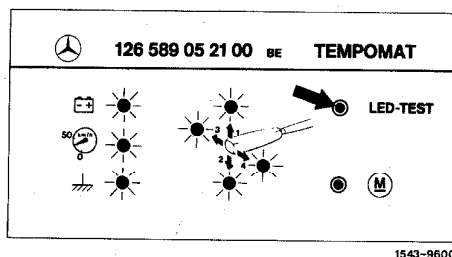
- 1 Remove cover under instrument panel on side of driver.
- 2 Pull 14-point plug from control unit.
- 3 Test jacks in 14-pole plug, reshape widened bushings.
- 4 Connect test adapter to 14-pole plug.

5 Switch on ignition. The following LED readouts will light up, if no fault is indicated.

Symbol	Models
Battery	all
km/h	123 with sensor on mechanical speedometer
Ground	107 with engine 116.960 (USA) (J), 116.962 except (CH) up to 83, (AUS), 116.964 and 117, 123 with engine 617.95 except (USA) 81, 126 with engine 116.96, (USA) 116.963 except (CH) (S) up to 83, (AUS), 116.965 and 117






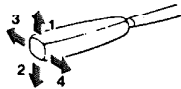
6 Push "LED-TEST" push-button of test adapter and check whether all LED readouts are lighting up. If no LED readout is lighting up check connection of voltage supply and line-up of 14-pole coupler (refer to wiring diagram 54-580).



## 54-504 Testing cruise control with adapter




### Survey test program

Test step	Actuation	Nominal display	Possible cause of deviation from nominal
1		LED display lighting up 	Lines wrongly connected. Lines interrupted.
		LED display lighting up on models with grounding bridge.	Grounding bridge in 14-pole plug interrupted.
		LED display lighting up on models with mechanical speedometer. On models with electronic speedometer perform test step 6.	 On models with mechanical speedometer: 1. Test sensor lines for correct connection and interruption, also test yellow/green line for short to ground. 2. Sensor on speedometer defective.
2	Actuate cruise control switch (positions 1-4).	Respective LED display lights up.	Lines interrupted. Switch defective.
3	Operate push-button switch. 	Regulating linkage moving uniformly to full throttle position and remains there.	Regulating linkage and accelerator pedal not moving: Connecting rod on actuator or on regulating linkage not connected. Lines interrupted or wrongly connected. Switch on clutch pedal defective. Actuator defective.
			Regulating linkage and accelerator pedal are constantly moving to and fro: Poor contacting of harness/actuator harness plug connection. Actuator defective. Throttle control and accelerator pedal are not pulled to full throttle position: Check contacting of lines for actuator and ground for control unit. Renew actuator.



## 54-504 Testing cruise control with adapter

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<b>4</b>	Operate push-button switch.  Regulating linkage in full throttle position. Step on brake pedal. Then release pushbutton switch.	When actuating brake pedal, regulating linkage moves immediately into idle speed position.	Regulating linkage hard to move. Actuator defective.
<b>5</b> manual transmission only	Operate push-button switch.  Regulating linkage is in full throttle position. Step on clutch pedal. Then release pushbutton switch.	When actuating clutch pedal, regulating linkage moves immediately into idle speed position.	Lines are shorted. Switch on clutch pedal defective.
<b>6</b> (vehicles with electronic speedometer only)	Move vehicle for at least 2 full wheel turns.	LED display  flashing.	Line interrupted or short to ground. On model 126 with speed-dependent volume control for radio: 1. Control line for radio has short to ground. 2. Volume control on radio defective. Speedometer defective.

If no fault has been found during previous checkup:

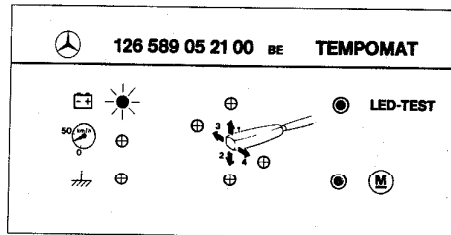
1. Test blue line from plug actuator socket 5 to plug control unit socket 10 for short to ground by means of ohmmeter.
2. On control units with coding plug, check coding plug R 29 (54-506).
3. Mount new control unit for tryout.

# 54-504 Testing cruise control with adapter

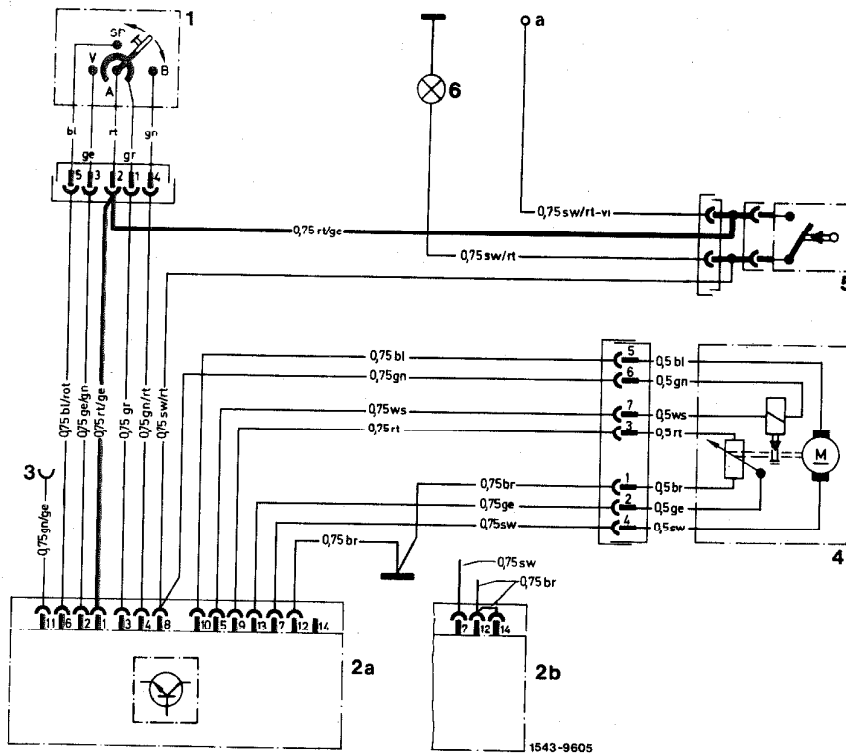
Test

Voltage supply on all models	
LED readout lighting up	
yes	no

Check lines for correct connection and passage, while paying attention to changed voltage supply (refer to 54-580).



1543-9604



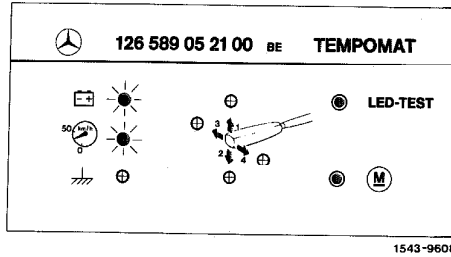
1543-9605

Wiring diagram up to 08/81

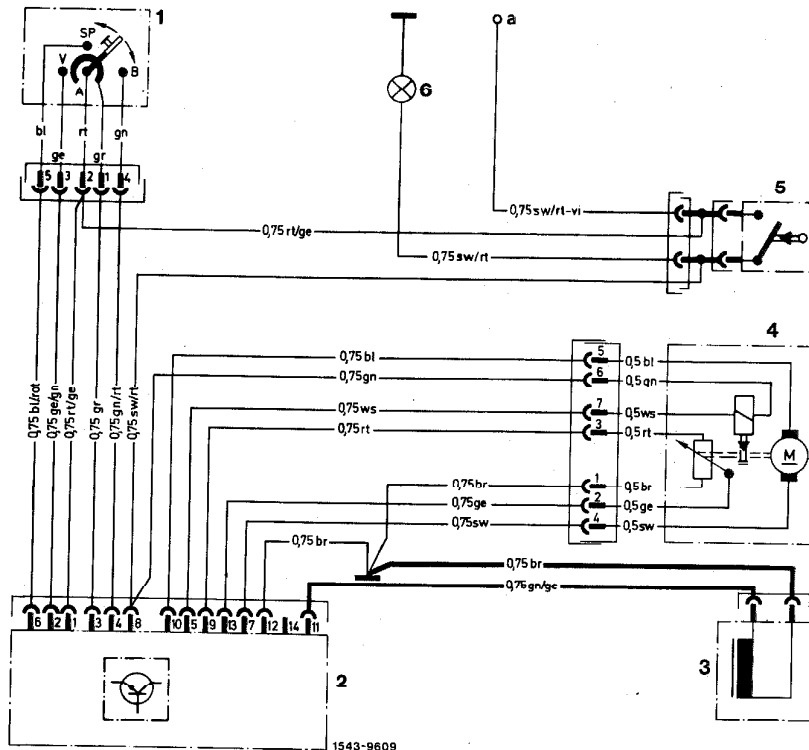
- 1 Switch
- 2 a Control unit
- 2 b Control unit
- 5 Stop lamp switch

# 54-504 Testing cruise control with adapter

Sensor on mechanical speedometer model 123 (except 123.033/053 (J) 1981 and 123.193 (USA) 1981)	
LED readout lighting up	
yes	no



Test lines for correct connection and unobstructed passage. Additionally test green/yellow line for short to ground. Renew sensor.



- 2 Control unit
  - 3 Sensor
- for model 123 except 123.033/053 (J) 1981 and 123.193 (USA) 1981

# 54-504 Testing cruise control with adapter

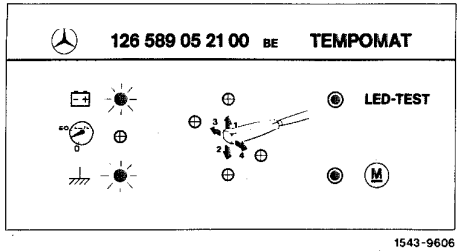
Ground connection on jack (plug) 14 of control unit on models:

107 with engine 116.960 (USA) (J) 116.962 except (CH) up to 83, (AUS), 116.964 and 117  
 116.964 and 117

123 with engine 617.95 except (USA) 1981  
 126 with engine 116.961 (USA), 116.963 except (CH) (S) up to 83, (AUS), 116.965 and 117

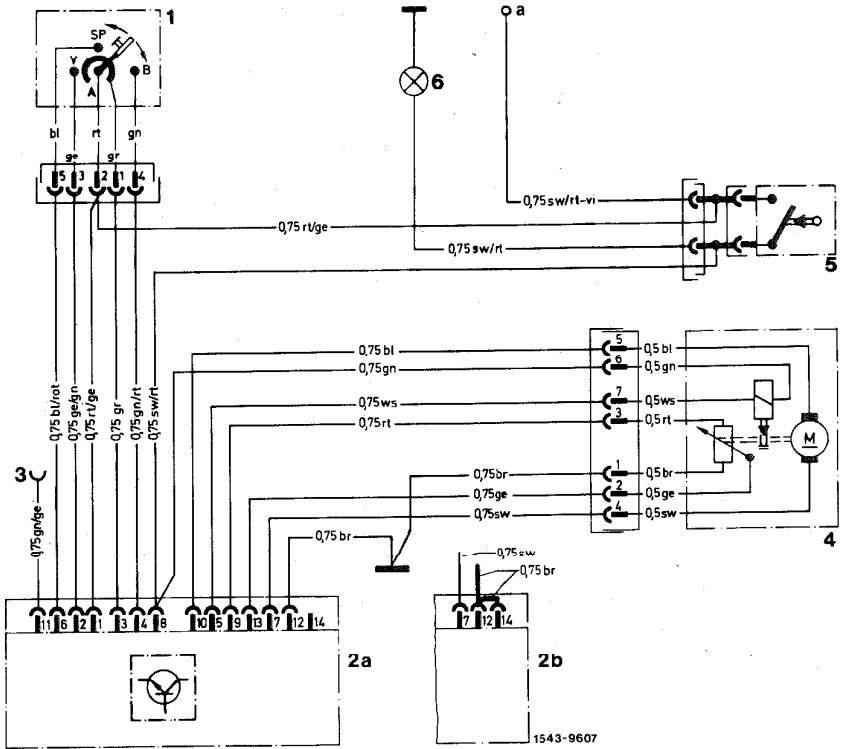
LED readout lighting up

yes	no
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1543-9606

Recondition grounding line to 14-point plug.



1543-9607

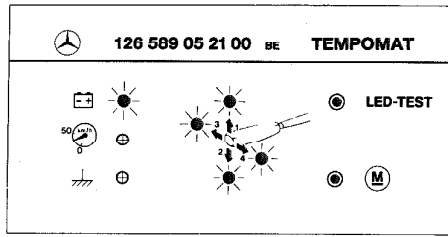
2b Control unit for Models 107 with engine 116.960 (J) (USA), 116.962 except (CH) up to 83, (AUS), 116.964 and 117  
 123 with engine 617.95 except (USA) 1981  
 126 with engine 116.961 (USA), 116.963 except (CH) (S) up to 83, (AUS), 116.965 and 117

**Checking line harness and cruise control switch**

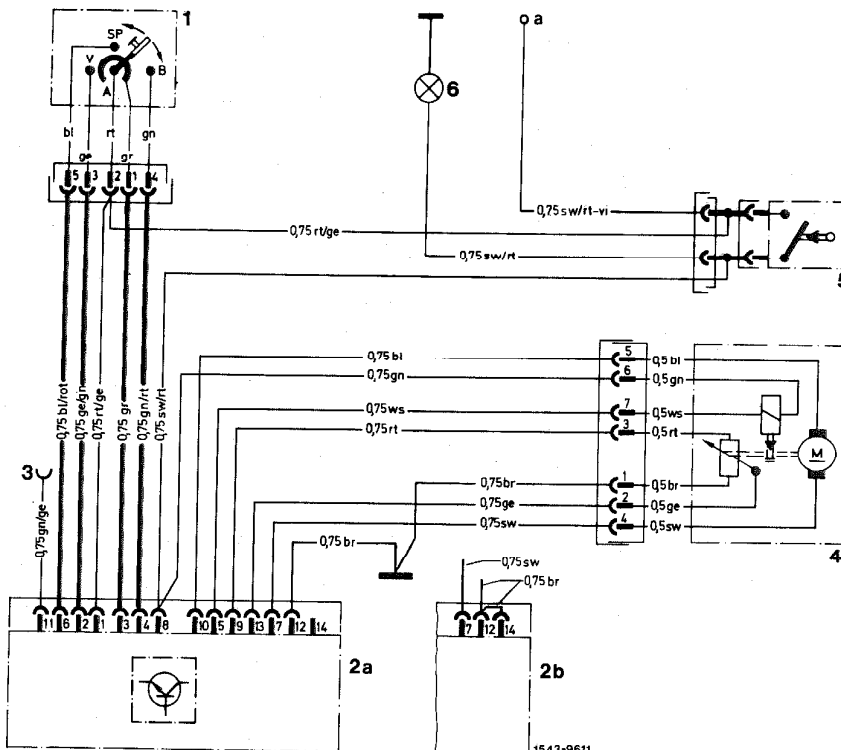
Cruise control switch position	LED readout
Accel	1
Decel	2
Off	3
Resume	4

**Respective LED readout lighting up**

yes	no



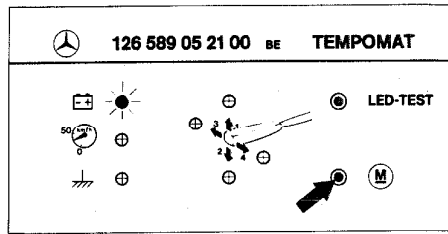
Test lines for correct connection and passage.  
Replace switch.



- 1 Switch
- B Accel
- V Decel
- A Off
- SP Resume
- 2a Control unit
- 2b Control unit

## 54-504 Testing cruise control with adapter

Testing actuator. Depress push-button switch M.	
Regulating linkage and accelerator pedal are moving uniformly to full throttle position and remain there.	
yes	no



Regulating linkage and accelerator pedal are not moving:

- 1 Check regulating linkage.
- 2 Check lines for correct connection or passage, pay attention to changed voltage supply (54-580).
- 3 On vehicles with manual transmission, check switch on clutch pedal for unobstructed operation.
- 4 Replace actuator.

Regulating linkage and accelerator pedal are constantly moving back and forth:

- 1 Test contacting of plug connection line harness/actuator harness.
- 2 Replace actuator.

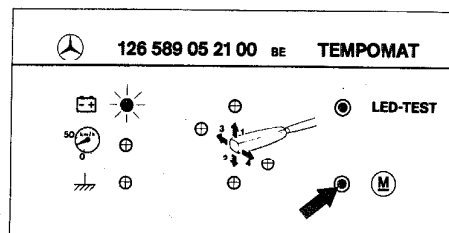
Regulating linkage and accelerator pedal are not pulled to full throttle position.

- 1 Test contacting of lines for actuator, also check ground for control unit.
- 2 Replace actuator.



## 54-504 Testing cruise control with adapter

<p>Test cruise control cutout while braking. Depress pushbutton (M). Regulating linkage and accelerator pedal are in full throttle position! Actuate brake pedal.</p>	
<p>Regulating linkage and accelerator pedal are immediately moving into idle position. Then release push-button switch.</p>	
yes	no

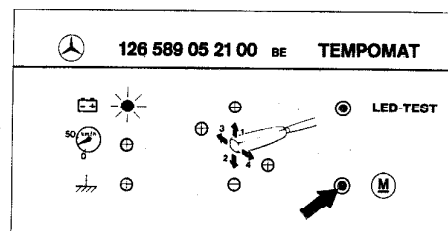


1543-9612

Test regulating linkage for  
easy operation.

Replace actuator.

<p>Test cruise control cutout while declutching (manual transmission only). Depress pushbutton (M). Regulating linkage and accelerator pedal are in full throttle position! Actuate clutch pedal.</p>	
<p>Regulating linkage and accelerator pedal will move immediately into idle position. Then release pushbutton switch.</p>	
yes	no

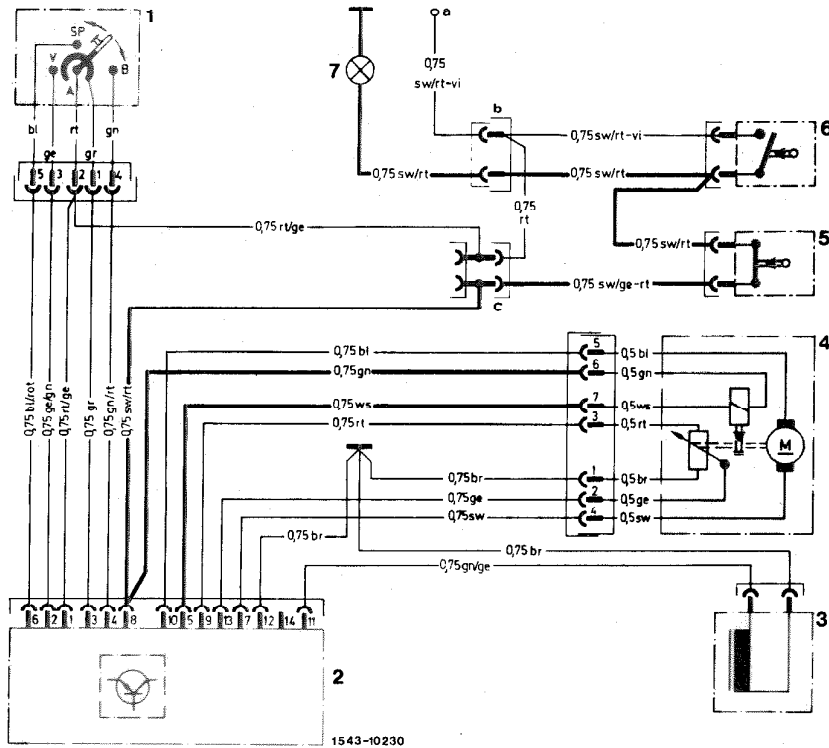


1543-9612

# 54-504 Testing cruise control with adapter

Lines are shorted.

Switch on clutch pedal defective.



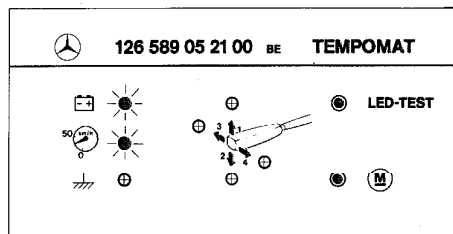
Test harness and cruise control connection of electronic speedometer, speed readout should be in order.

Models 107, 123.033/053 (J) 1981,  
123.193 (USA) 1981 and 126,  
Move vehicle by at least 2 wheel turns.

LED display flashing.

yes

no

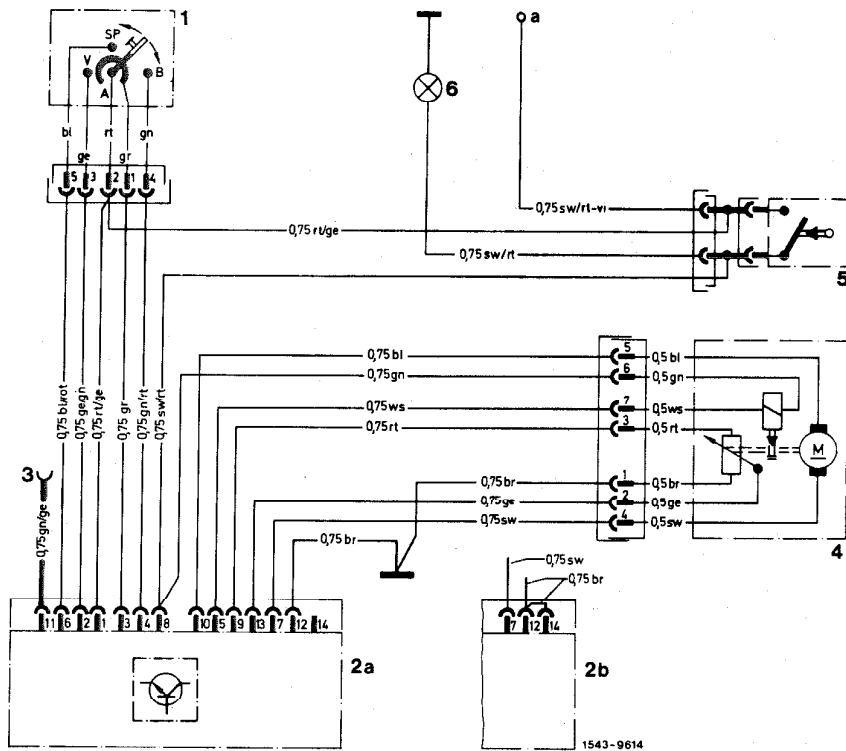


# 54-504 Testing cruise control with adapter

Check line for correct connection, open passage and short to ground.

On model 126 with speed-dependent volume control for radio:

1. Control line for radio has short to ground.
  2. Volume control on radio defective.
- Renew speedometer.



- 2a Control unit
- 2b Control unit
- 3 Cruise control connection on speedometer

Disconnect test adapter.

# 54-504 Testing cruise control with adapter

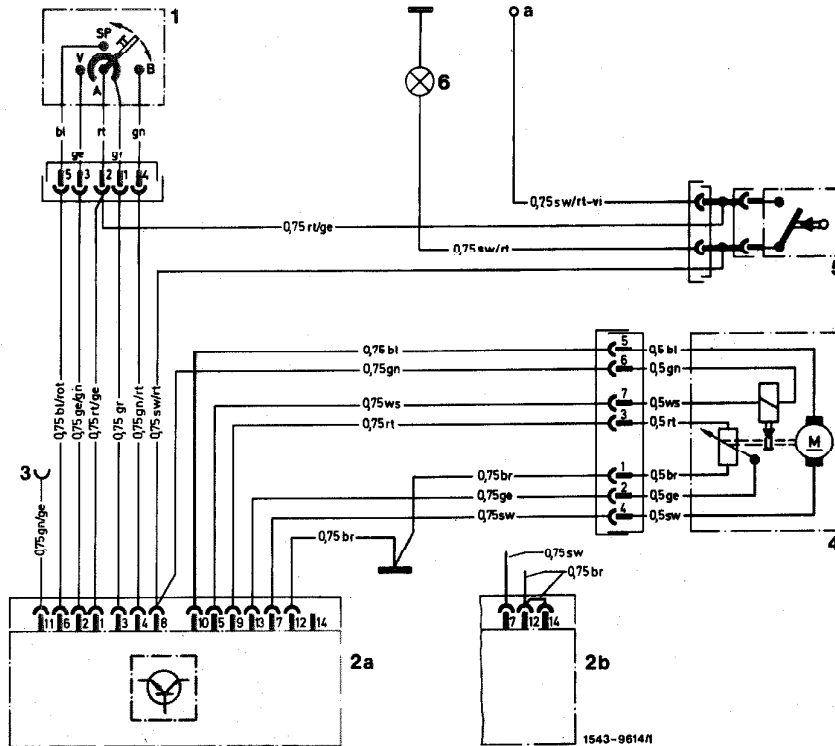
Check blue line from plug connection actuator jack 5 to plug connection control unit plug 10 for ground connection.

Ground connection

no

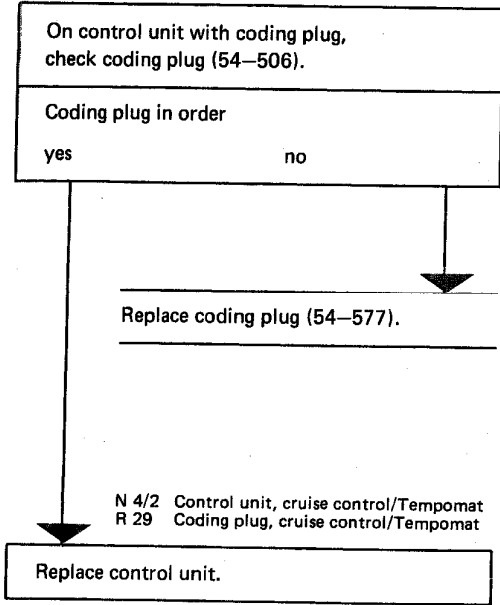
yes

Recondition blue line or replace.



- 2a Control unit
- 2b Control unit
- 4 Actuator

# 54-504 Testing cruise control with adapter



End of test.

