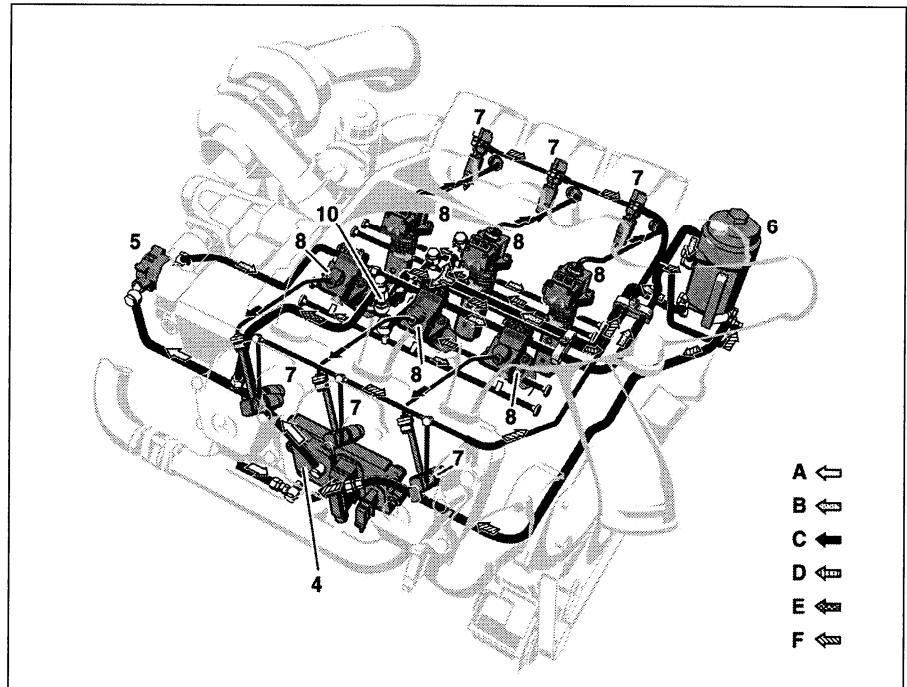


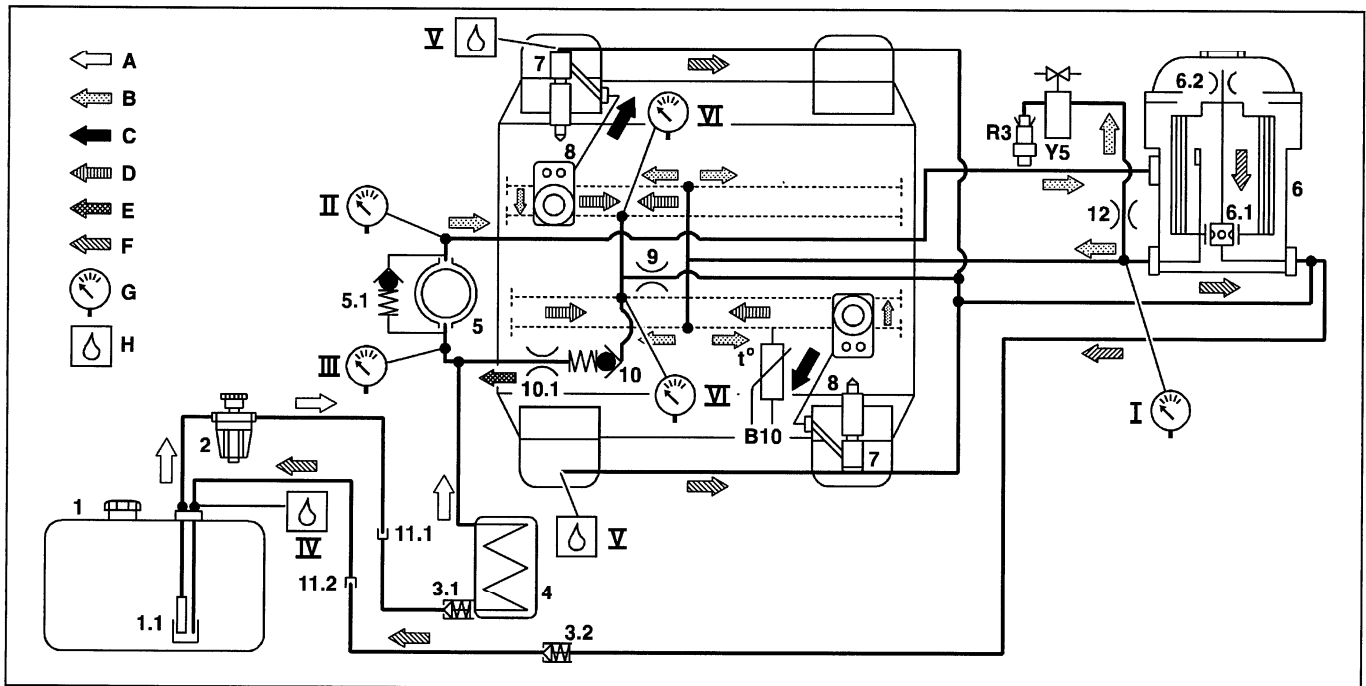
ENGINE 541.9, 542.9

- 4 Fuel heat exchanger
- 5 Fuel pump (KFP)
- 6 Fuel filter
- 7 Nozzle holder combination
- 8 PLD unit pumps (Y6 to Y13)
- 10 Overflow valve

- A Fuel feed (inlet side)
- B Fuel feed (pressure side)
- C Fuel high pressure side (injection line) downstream of PLD unit pumps
- D Fuel return flow downstream of unit pump
- E Fuel scavenging quantity (fuel bypass)
- F Fuel return flow/leak fuel



W07.00-1001-06



W07.15-0131-09

- 1 Fuel tank
- 1.1 Fuel strainer (800 µm)
- 2 Fuel prefilter (KVF 300 µm) with fuel priming pump
- 3.1 Assembly valve in fuel feed (opened by pressure)
- 3.2 Assembly valve in fuel return flow (opened by pressure)
- 4 Fuel heat exchanger
- 5 Fuel pump (KFP)
- 5.1 Pressure relief valve (9.0 -12.0 bar)
- 6 Fuel filter (KF 5 µm)
- 6.1 Fuel filter drain valve
- 6.2 Continuous vent in fuel filter (0.7mm)
- 7 Nozzle holder combination
- 8 PLD unit pumps (Y6 to Y13)
- 9 Banjo union with continuous vent (0.7 mm)

- 10 Overflow valve (up to engine end no. 092407: 2.0 bar; as of engine end no. 092408: 2.65 bar)
- 10.1 Restrictor (3.1 mm) in overflow valve
- 11.1 Plug connector of fuel feed (in frame)
- 11.2 Plug connector of fuel return flow (in frame)
- 12 Restrictor (0.5 mm) in flame starting system fuel line
- B10 Fuel temperature sensor
- R3 Flame glow plug
- Y5 Flame starting system solenoid valve
- G Pressure gage test
- H Fuel return flow quantity test

Test points

- I Fuel pressure downstream of fuel filter
Idle speed: 1.8–2.8 bar
Governed speed: 4.5–55 bar
- I Fuel pressure downstream of fuel pump
Idle speed: 2.1–3.0 bar
Governed speed: 5.0–6.0 bar (limit value ≈ 6.5 bar)
- I Fuel inlet pressure upstream of fuel pump
Governed speed: - 0.35 to - 0.25 bar
- IV Fuel return flow quantity at fuel tank
Idle speed: 0.6 - 1.0 l/min
Governed speed: 1.0 - 1.6 l/min
- V Fuel return flow quantity at nozzle holder combinations
Idle speed: oil-moist
Governed speed: max. only drips
- VI Low pressure fuel circuit leaktightness
Test pressure 5.5 bar/test time 5 minutes: no pressure drop

Fuel circuit

- A Fuel feed (inlet side)
- B Fuel feed (pressure side)
- C Fuel high pressure side (injection line) downstream of PLD unit pumps
- D Fuel return flow downstream of unit pump
- E Fuel scavenging quantity (fuel bypass)
- F Fuel return flow/leak fuel
- Fuel passages in crankcase
- Fuel lines

Modification notes

1.3.00	The opening pressure at the overflow valve (as of engine end no. 092408) has been increased. Re-parameterizing stationary speed limit to higher setting with STAR DIAGNOSIS	from 2.0 bar to 2.65 bar Test step 6 modified	
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	Removing, installing		
<p>⚠ Danger!</p> <p>1</p> <p></p>	<p>Risk of injury from hand being jammed and bruised when tilting cab</p> <p>Tilt cab</p> <p>Notes on tilting cab</p>	<p>No person must be within the tilting range of the cab when the cab is tilted. Always tilt cab as far as the end position and secure with safety prop.</p>	<p>Page 22</p> <p>Page 22</p>

<p>⚠ Danger!</p> <p>2</p>	<p>Risk of explosion from ignition, risk of poisoning from inhaling and swallowing fuel, as well as risk of injury from skin and eye contact with fuel.</p> <p>Carry out visual inspection at all fuel lines, screw connections and components</p>	<p>No fire, sparks, naked flames or smoking. Pour fuels only into suitable and appropriately marked containers. Wear protective clothing when handling fuel.</p> <p>i Clean parts if dirty and dry. Run engine at governed speed for about 2-3 minutes. If damage or leakage exists, replace parts or re-tighten to specified torque.</p>	<p>Page 20</p>
<p>3</p> <p>AP</p>	<p>Inspect fuel prefilter element</p>	<p>i Clean fuel prefilter, if necessary.</p>	<p>AP47.20-W-0730A</p>
<p>4</p> <p>AP</p>	<p>Inspect fuel filter element</p>	<p>i Replace fuel filter element, if necessary.</p>	<p>AP47.20-W-0780A</p>
<p>5</p>	<p>Open cap at fuel tank</p>		
<p>6</p> <p>AD</p>	<p>Re-parameterizing stationary speed limit to higher setting with STAR DIAGNOSIS</p>	<p>Connection of diagnostic test equipment</p> <p>i Only on engine fitted with stationary speed limit, re-parameterize this to 4000 rpm. Note stationary speed limit value entered.</p> <p>i Installation: Re-parameterize stationary speed limit back to original setting with STAR DIAGNOSIS.</p>	<p>AD00.00-W-2003A</p>
	<p>Inspecting</p>		
<p>i</p>	<p>Conditions for tests</p>	<p>If Racor fuel pre-filter fitted ↓ Separate fuel lines at the Racor fuel pre-filter and create standard condition at fuel circuit.</p> <p>Engine must be at normal operating temperature. Fuel temperature in fuel tank ≤ 40°C. Collect fuel which flows out. The fuel flowing through during the tests must be free of bubbles.</p>	
<p>7</p> <p>AD</p>	<p>Test fuel pressure downstream of fuel filter</p>	<p>Attach test and measuring equipment to low pressure fuel circuit.</p> <p>☑ High pressure hose ☑ Tester ☑ Adaption parts Nm</p> <p>i If the fuel pressure is within the tolerance range ↓</p>	<p>Page 32</p> <p>AD07.15-W-7001-01A 123 589 04 21 18 541 589 02 21 00 541 589 00 91 00 BA47.25-N-1003-01B</p>
<p>8</p> <p>AD</p>	<p>Measure fuel return flow quantity at the nozzle holder combinations</p>	<p>Attach test and measuring equipment to low pressure fuel circuit.</p> <p>☑ Clamp Nm</p>	<p>Page 33</p> <p>AD07.15-W-7001-07A 000 589 40 37 00 BA01.30-N-1004-01D</p>

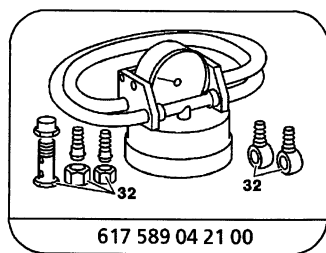
		If the fuel return flow quantity is o.k., it is not necessary to carry out any further tests.	
9 	Test fuel pressure downstream of fuel pump	Attach test and measuring equipment to low pressure fuel circuit. High pressure hose Tester Adaption parts 	Page 34 AD07.15-W-7001-02A 123 589 04 21 18 541 589 02 21 00 541 589 00 91 00 BA47.25-N-1002-01B
10 	Test fuel inlet pressure from fuel pump	Attach test and measuring equipment to low pressure fuel circuit. Tester Clamp Adaption parts 	Page 35 AD07.15-W-7001-03A 617 589 04 21 00 000 589 40 37 00 541 589 00 91 00 BA47.25-N-1002-01B
11 	Measure fuel return flow quantity at fuel tank	Attach test and measuring equipment to low pressure fuel circuit.	Page 36 AD07.15-W-7001-04A
12 	Test low pressure fuel circuit in engine for leaks	Attach test and measuring equipment to low pressure fuel circuit. Remove charge air manifold Test fuel passages of right and left crankcase bank separately. High pressure hose Tester Adaption parts 	Page 36 Page 63 AD07.15-W-7001-08A 123 589 04 21 18 541 589 02 21 00 541 589 00 91 00 BA47.25-N-1004-01B BA47.25-N-1005-01B
13	Install in the reverse order		
14 	Bleed fuel system		Page 38
15	Test vehicle performance on the dynamometer	Only if all the tests or measurements have been carried out and any faults rectified, but no improvement was achieved in fuel consumption or performance. If necessary, connect fuel consumption measuring system.	

Cylinder head

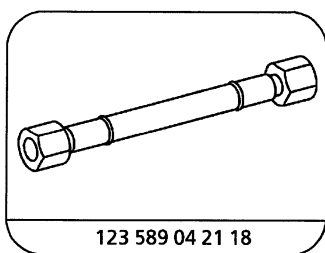
Number	Designation	Engine 541.9, 542.9
BA01.30-N-1004-01D	Leak fuel line to cylinder head	Nm 15

Nm Fuel pipes/hoses

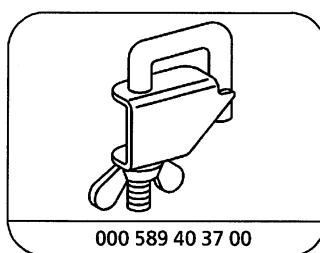
Number	Designation			Engine 541.9, 542.9
BA47.25-N-1002-01B	Banjo bolt of fuel line to fuel pump	M16×1.5	Nm	50
BA47.25-N-1003-01B	Banjo bolt of fuel line to fuel filter housing	M16×1.5	Nm	50
BA47.25-N-1004-01B	Banjo bolt of fuel line to passage in crankcase	M16×1.5	Nm	50
BA47.25-N-1005-01B	Banjo bolt of fuel line to fuel overflow valve	M16×1.5	Nm	50



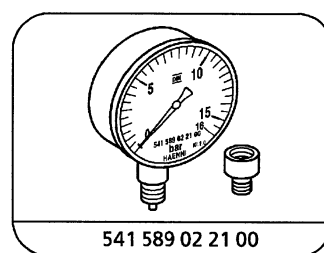
Tester



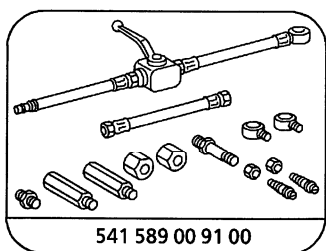
High-pressure hose



Clamp



Tester

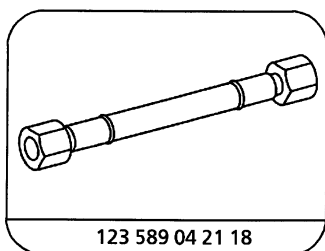


Adaption parts

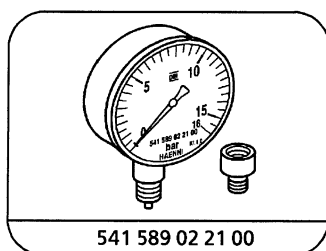
AR07.15-W-2000-01A	Installing test/measuring equipment in low pressure fuel circuit		
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Nm Fuel pipes/hoses

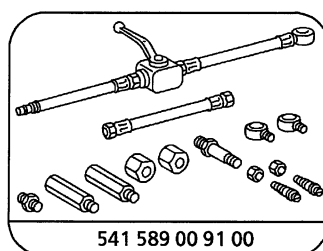
Number	Designation			Engine 541.9, 542.9
BA47.25-N-1003-01B	Banjo bolt of fuel line to fuel filter housing	M16×1.5	Nm	50



High-pressure hose



Tester



Adaption parts