

**Document title** Remove/install high-pressure pump

**Document number** ar0702p1020el

Engine 276 in model 212, 218

### Modification notes

24.09.2014	Union nut, fuel line to high-pressure pump	BA07.03-P-1002-01D
24.09.2014	Union nut, fuel line to fuel distributor	BA07.03-P-1001-01D

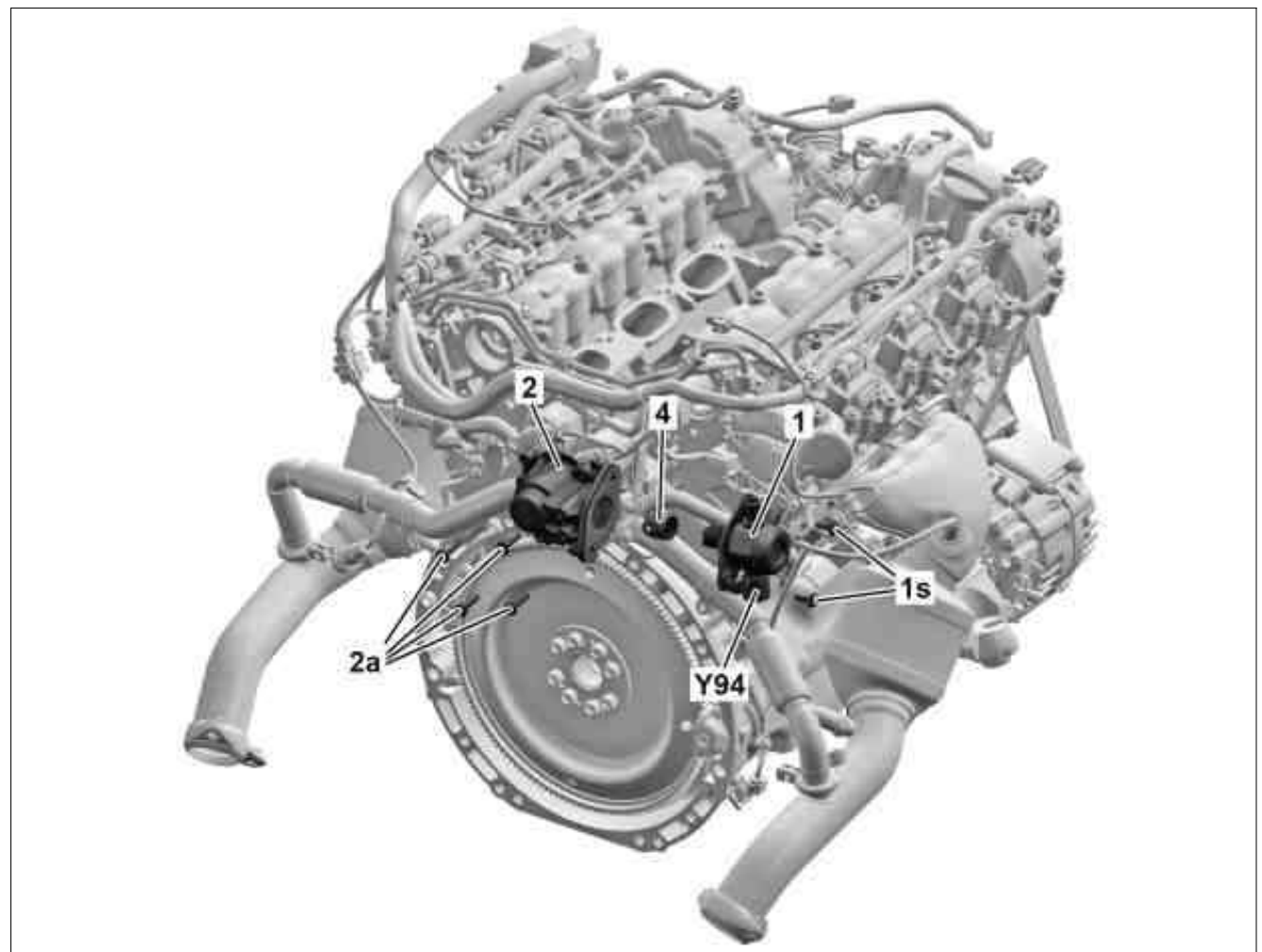
Shown on engine 276.9

78 Center section of the bulkhead



P00.00-4697-11

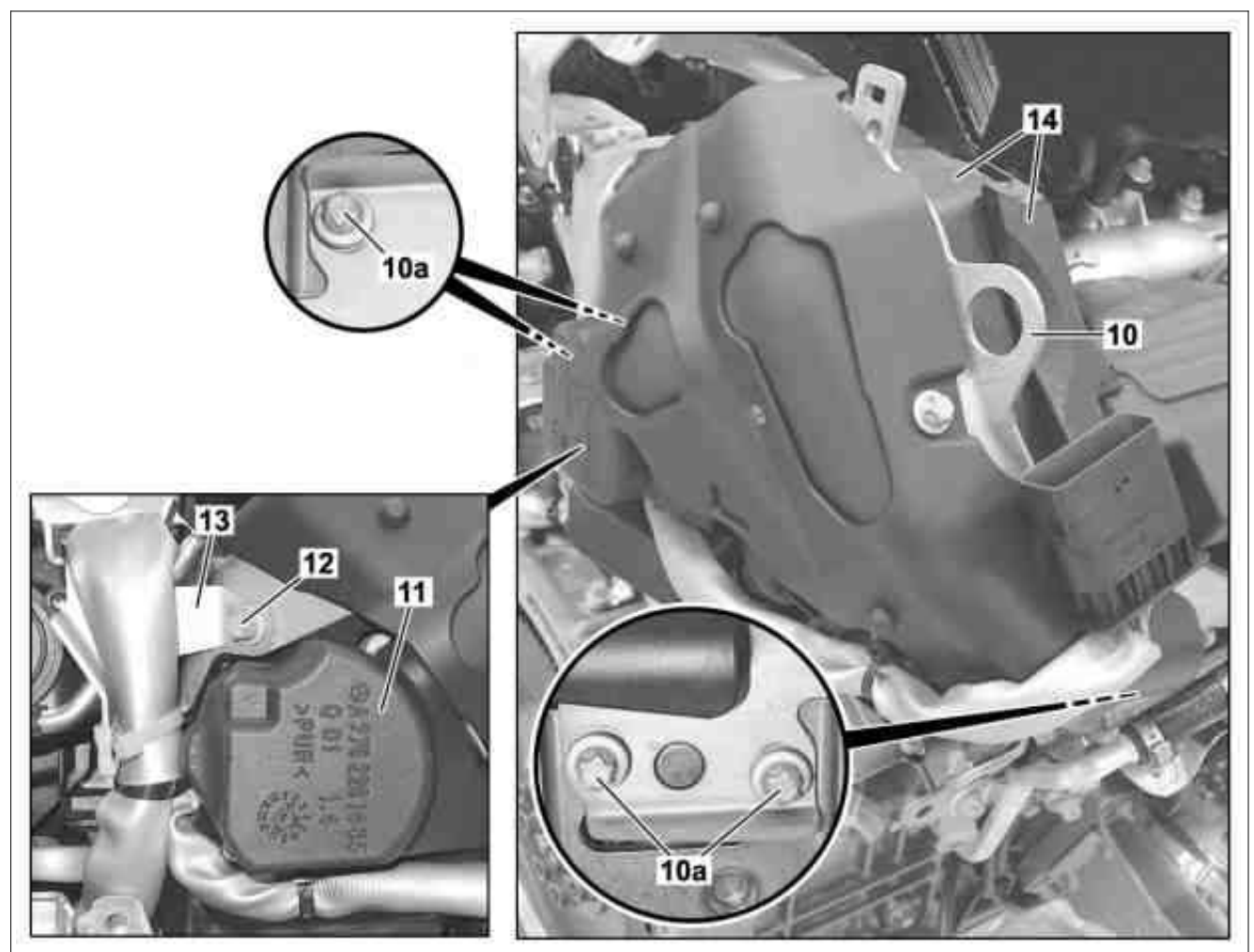
- 1 High pressure pump
- 1s Bolts
- 2 High-pressure pump housing
- 2a Bolts
- 4 Tappet element
- Y94 Quantity control valve



P07.02-2139-06

**Shown on engine 276.8**

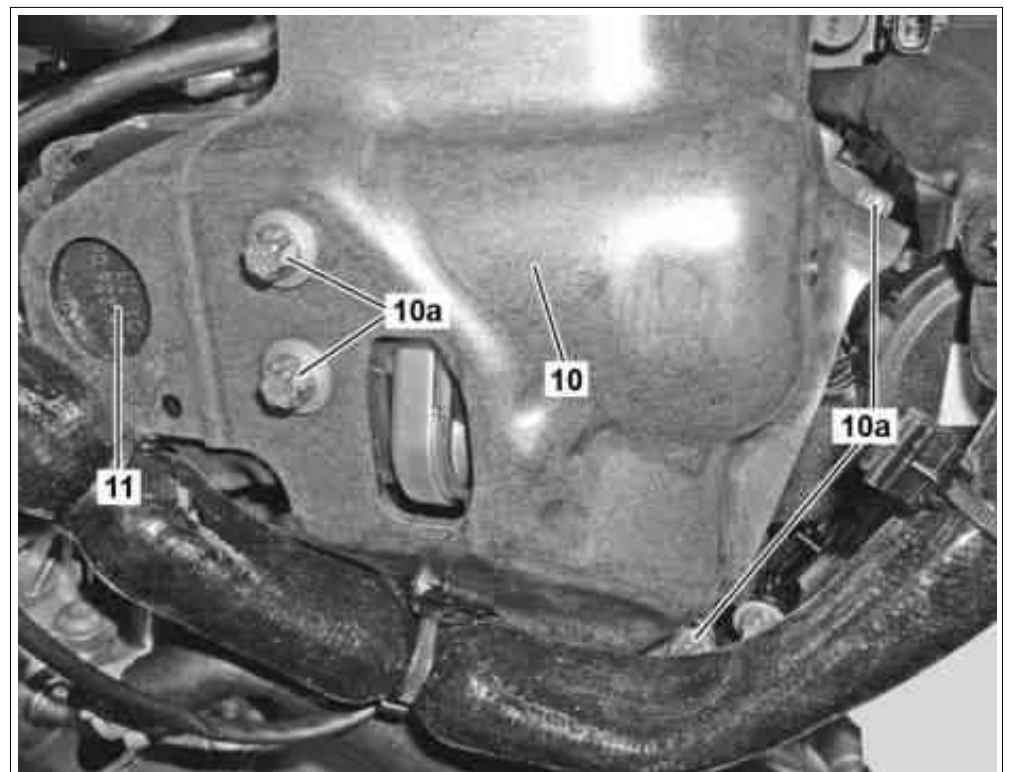
- 10 Crash plate
- 10a Bolts
- 11 Insulation
- 12 Screw
- 13 Bracket
- 14 Insulation



P07.00-2158-06














**Shown on engine 276.9**

- 10 Crash plate
- 10a Bolts
- 11 Insulation



P07.00-2154-11

	<b>Risk of explosion</b> caused by fuel igniting, risk of poisoning caused by inhaling and swallowing fuel as well as risk of injury to eyes and skin caused by contact with fuel.	No fires, sparks, open flames or smoking. Pour fuels into suitable and appropriately marked containers only. Wear protective clothing when handling fuel.	<a href="#">AS47.00-Z-0001-01A</a>
	Information on preventing damage to electronic components due to electrostatic discharge		<a href="#">AH54.00-P-0001-01A</a>
	General information on work on gasoline direct injection system		<a href="#">AH07.00-P-2000-01A</a>
	<b>Remove</b>		
1	Drain off coolant Notes on coolant		<a href="#">AR20.00-P-1142EL</a> <a href="#">AH20.00-N-2080-01A</a>
2	Detach ground line from battery Notes on battery		<a href="#">AR54.10-P-0003EW</a> <a href="#">AH54.10-P-0001-01A</a>
3.1	Remove both air filter housings	Engine 276.8 in model 212, 218	<a href="#">AR09.10-P-1150ELS</a>
3.2	Remove air filter housing	Engine 276.9 in model 212, 218	
4	Take off and remove insulation from right rail		<a href="#">AR07.03-P-1010EL</a>
5	Remove intake manifold	Engine 276.9 in model 212, 218	<a href="#">AR09.20-P-1961EL</a>
6	Detach engine wiring harness on crash plate (10)	Engine 276.8 in model 212, 218 Engine 276.9 in model 212, 218	<a href="#">AR01.00-P-2410-02ELS</a> <a href="#">AR01.00-P-2410-02EL</a>
7	Disconnect left electrical connection at ME-SFI [ME] control unit and unclip electrical line at bracket (13) and place to one side	Engine 276.8 in model 212, 218	<a href="#">AR07.08-P-7008ELS</a>

8	Unclip ME-SFI [ME] control unit from bracket and place to one side with attached lines	Engine 276.8 in model 212, 218	AR07.08-P-7008ELS
9	Remove center section of the bulkhead (78)	Engine 276 in model 212, 218 Engine 276.8 in model 212	AR61.25-P-6600EW
10	Remove bracket at crash plate (10) and vacuum pump	Engine 276.8 in model 212, 218	
11	Rotate engine at crankshaft center bolt in direction of engine rotation to a 40° crank angle (CKA) after top dead center (TDC) on cylinder 1 (ignition TDC)		AR05.10-P-7620-04MM
12	Remove screw/bolt (12) and press the bracket (13) to one side.		
13	Remove screw/bolts (10a) and remove crash plate (10)		
14	Remove insulation (11, 14)		
15	Unclip engine wiring harness on exhaust gas recirculation positioner bracket	Engine 276.9 in model 212, 218	
16	Relieve fuel pressure over diagnostic socket	 Cap on service connection  Pressure hose	AR07.03-P-1460-01VA *BA07.03-P-1007-01D *119589046300
17	Relieve fuel pressure in fuel system high-pressure circuit		AR07.03-P-1460-02MM
18	Unscrew union nuts for fuel lines on rails and high-pressure pump (1)	 Thoroughly clean area around fuel line on the locations to be separated. Failure can occur otherwise to the fuel system.  Do not kink or bend fuel lines. Otherwise leaks and damage may occur. Assembly cleaner	*BR00.45-Z-1028-04A
19	Disconnect electrical connection at quantity control valve (Y94)		
20	Remove high-pressure pump (1) screw/bolts (1s) and the high-pressure pump (1)	 Screw/bolts (1s) <b>must</b> be removed alternately each by half a revolution each time when removing the high-pressure pump (1). Otherwise damage could occur to the high-pressure pump (1).  Thoroughly clean area around the fuel high-pressure circuit. Failure can occur otherwise to the fuel system.	
21	Pull tappet element (4) out of high-pressure pump housing (2)		
22	Detach engine wiring harness bracket on high-pressure pump housing (2)		
23	Remove screw/bolts (2a) of high-pressure pump housing (2) and remove high-pressure pump housing (2) and pull out upwards		
	<b>Check</b>		
24	Check tappet element (4)	If wear is found: ↓ Replace tappet element (4)	
	<b>Install</b>		
25	Attach high-pressure pump housing (2) and tighten down screw/bolts (2a) of the high-pressure pump housing (2)	Tightening procedure for housing of fuel system high pressure pump  Observe tightening procedure. Damage can occur otherwise to the camshaft and cylinder head.  Replace seal.  Bolt, high-pressure pump drive housing to cylinder head/cylinder head cover	AR07.02-P-1020-02MM  *BA07.02-P-1002-01C
26	Detach engine wiring harness bracket on high-pressure pump housing (2)	 Screw/bolt, additional bracket for high-pressure line to high pressure pump drive housing	*BA07.03-P-1006-01D
27	Push tappet element (4) in high-pressure pump housing (2)	 The tappet element (4) must be installed in such a way that the drive roller for the tappet element (4) sits on the camshaft. Damage can occur to the camshaft otherwise.	
28	Clean mount for high-pressure pump (1) in high-pressure pump housing (2).		

29	Replace sealing rings of the high-pressure pump (1).	There are two variants of the sealing rings which can be differentiated based on their color. Dry green sealing ring coated with low-friction paint and insert the black sealing ring wet with oil into the high-pressure pump housing (2). Replace sealing ring by a sealing ring of the same color.	
30	Attach high-pressure pump (1) to high-pressure pump housing (2) and tighten screw/bolts (1s) for high-pressure pump (1)	Screw/bolts (1s) <b>must</b> be screwed in alternately each by half a revolution each time when installing the high-pressure pump (1). Otherwise damage could occur to the high-pressure pump (1). Replace screw/bolts (1s) with new ones. The high-pressure pump (1) <b>must</b> lie flat on the high pressure pump housing (2) after tightening the screw/bolts (1s) . Assembly cleaner Bolt, high-pressure pump to high-pressure pump drive housing	*BR00.45-Z-1028-04A *BA07.02-P-1001-01C
31	Put on electrical connection on quantity control valve (Y94)		
	<b>Check</b>		
32	Check fuel lines		AR07.03-P-1010-03MM
33	Unscrew union nuts for fuel lines on rails and high-pressure pump (1)	Union nut, fuel line to fuel distributor Union nut, fuel line to high-pressure pump	AR07.03-P-1010-02MMA *BA07.03-P-1001-01D *BA07.03-P-1002-01D
34	Clip in engine wiring harness on exhaust gas recirculation positioner bracket	Engine 276.9 in model 212, 218	
35	Attach insulation (11, 14)		
36	Attach crash plate (10) and screw in screw/bolts (10a)	Bolt, shield to housing for high-pressure pump drive/bracket	*BA07.02-P-1003-01C
37	Screw in screw/bolt (12) and tighten down bracket (13)		
38	Install bracket at crash plate (10) and vacuum pump	Engine 276.8 in model 212, 218	
39	Install center section of the bulkhead (78)	Engine 276.8 in model 212, 218 Engine 276.8 in model 212 Ensure correct seating of the center section of the bulkhead (78).	AR61.25-P-6600EW
40	Clip ME-SFI [ME] control unit into bracket	Engine 276.8 in model 212, 218	AR07.08-P-7008ELS
41	Place left electrical connection onto ME-SFI [ME] control unit and clip electrical line onto bracket (13)	Engine 276.8 in model 212, 218	AR07.08-P-7008ELS
42	Attach engine wiring harness on crash plate (10)	Engine 276.9 in model 212, 218 Engine 276.8 in model 212, 218	AR01.00-P-2410-02EL AR01.00-P-2410-02ELS
43	Install intake manifold	Engine 276.9 in model 212, 218	AR09.20-P-1961EL
44	Attach insulation to rail on the right		AR07.03-P-1010EL
45.1	Install air filter housing	Engine 276.9 in model 212, 218 Screw/bolt, air filter to air intake pipe support brace Screw/bolt, air filter to cylinder head cover	*BA09.10-P-1002-01M *BA09.10-P-1001-01M
45.2	Install both air filter housing	Engine 276.8 in model 212, 218	AR09.10-P-1150ELS
46	Attach ground line to battery Notes on battery		AR54.10-P-0003EW AH54.10-P-0001-01A
47	Switch on ignition	The ignition <b>must</b> be switched on for 5 s before the engine start in order to fill the high-pressure pump (1) with fuel. Otherwise damage could occur to the high-pressure pump (1).	
48	Pour in coolant Notes on coolant		AR20.00-P-1142EL AH20.00-N-2080-01A
	<b>Check</b>		
49	Check fuel high-pressure circuit		AR07.03-P-1010-04MM
Warning	<b>Risk of accident</b> from vehicle starting off by itself when engine running. <b>Risk of injury</b> (bruises and burns) resulting from working on the engine while it is being started or when it is running.	Secure vehicle to prevent it from starting off by itself. Wear closed and snug-fitting work clothes. Do not touch hot or rotating parts.	AS00.00-Z-0005-01A
50	Perform an engine test run and check fuel system for proper operation and leaktightness		

**Nm** High pressure pump

Number	Designation		Engine 276
BA07.02-P-1001-01C	Bolt, high-pressure pump to high-pressure pump drive housing	Nm	14

**Nm** High pressure pump

Number	Designation		Engine 276
BA07.02-P-1002-01C	Bolt, high-pressure pump drive housing to cylinder head/cylinder head cover	Stage 1	Nm 1
		Stage 2	Nm 9

**Nm** High pressure pump

Number	Designation		Engine 276
BA07.02-P-1003-01C	Bolt, shield to housing for high-pressure pump drive/bracket	Nm	14

**Nm** Injection nozzles, injection valves, lines

Number	Designation		Engine 276
BA07.03-P-1001-01D	Union nut, fuel line to fuel distributor	Stage 1	Nm 15
		Stage 2	4° 90

**Nm** Injection nozzles, injection valves, lines

Number	Designation		Engine 276
BA07.03-P-1002-01D	Union nut, fuel line to high-pressure pump	Stage 1	Nm 15
		Stage 2	4° 90

**Nm** Injection nozzles, injection valves, lines

Number	Designation		Engine 276
BA07.03-P-1006-01D	Screw/bolt, additional bracket for high-pressure line to high pressure pump drive housing	Nm	9

**Nm** Injection nozzles, injection valves, lines

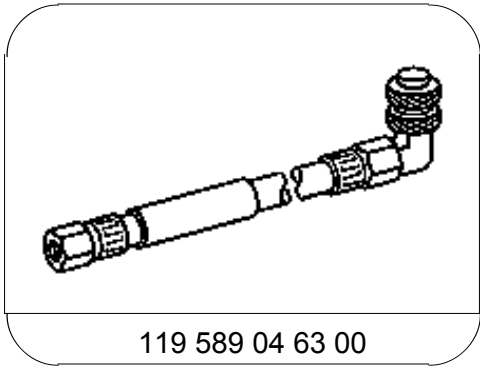
Number	Designation		Engine 276
BA07.03-P-1007-01D	Cap on service connection	Plastic	Nm 2
		Metal	Nm 15

**Nm** Air filter

Number	Designation		Engine 276.9
BA09.10-P-1001-01M	Screw/bolt, air filter to cylinder head cover	Nm	9

**Nm** Air filter

Number	Designation		Engine 276.9
BA09.10-P-1002-01M	Screw/bolt, air filter to air intake pipe support brace	Nm	9



Pressure hose

**Repair materials**

Number	Designation	Order number
BR00.45-Z-1028-04A	Assembly cleaner	A 000 986 56 01