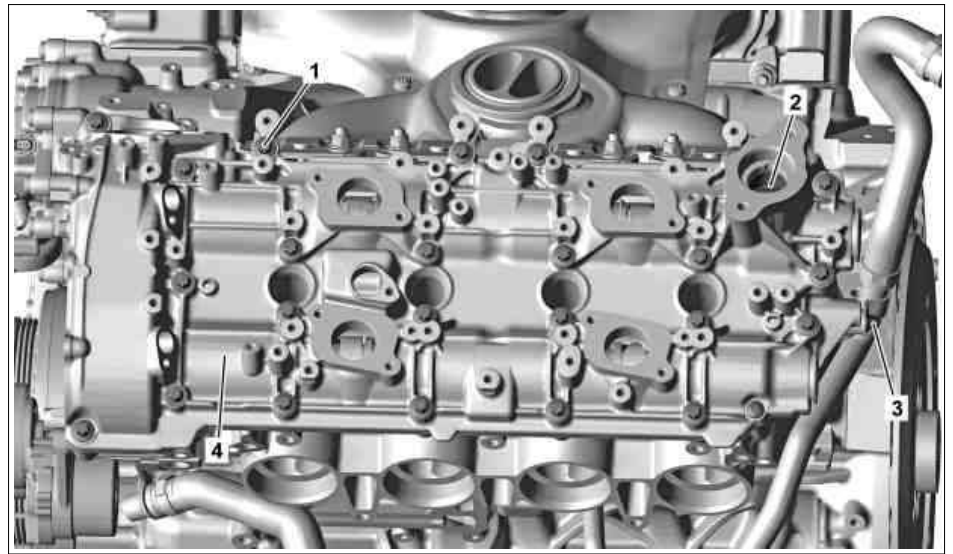


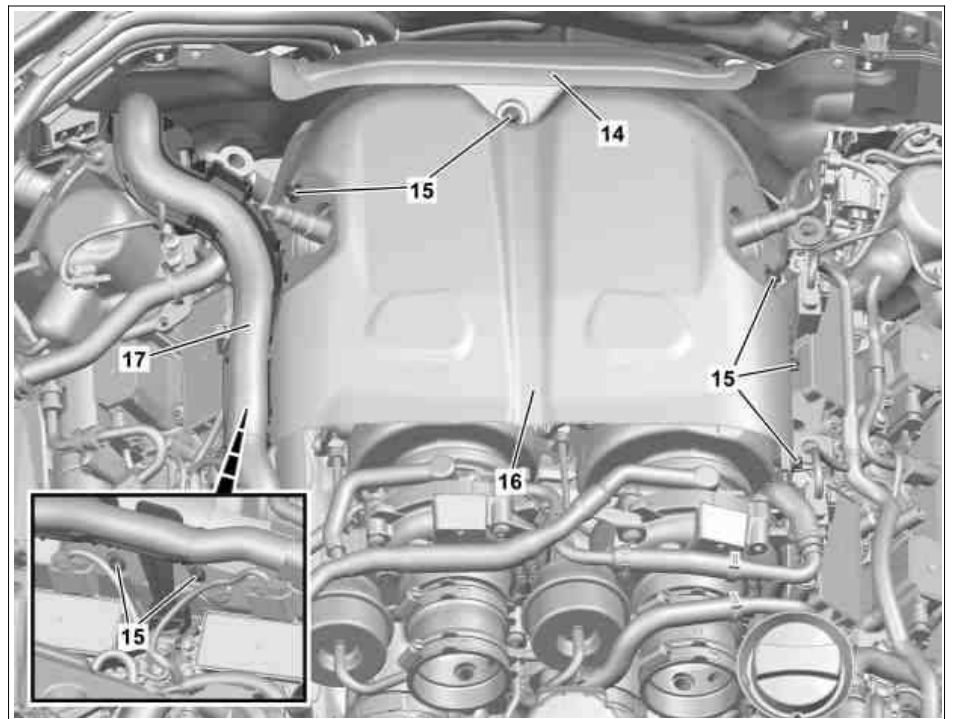
## Engine 176 in model 217, 222

- 1 Screws (25 x)  
2 Tappet  
4 Cylinder head cover



P01.20-2437-05

- 15 Bolts  
16 Heat shield



P09.40-2616-06

<p>⚠ Warning</p>	<p><b>Risk of injury</b> to skin and eyes suffering scalding from contact with hot coolant spray. <b>Risk of poisoning</b> from swallowing coolant.</p>	<p>Do not open cooling system unless coolant temperature is below 90 °C. Open cap slowly and release the pressure. Do not pour coolant into beverage containers. Wear protective gloves, protective clothing and safety glasses.</p>	<p>AS20.00-Z-0001-01A</p>
<p>⚠ Caution</p>	<p><b>Risk of injury</b> to skin and eyes due to handling of engine oil. <b>Risk of poisoning</b> caused by swallowing engine oil</p>	<p>Wear protective gloves, protective clothing and safety glasses. Do not fill engine oil into beverage containers.</p>	<p>AS18.00-Z-0001-01A</p>
	<p>Notes on threaded connections fastened using a tightening angle-based tightening process</p>		<p>AH00.00-P-0020-01A</p>
	<p>Notes on avoiding damage through contamination and foreign objects</p>		<p>AH00.00-P-5000-01A</p>

☒ ☒	Remove/install		
1	Remove rail with fuel injectors.	<b>i</b> <b>Installation:</b> Only install upper engine cover after the leak test.	AR07.03-P-1050MNL
2	Remove engine wiring harness from cylinder head cover (4).	<b>Nm</b> Bolt, engine wiring harness ground to cylinder head cover <b>Nm</b> Bolt, engine wiring harness to cylinder head cover	AR15.18-P-1000-07MNL *BA15.10-P-1003-05F *BA15.18-P-1001-01G
3	Remove fuel high-pressure pump.		AR07.02-P-1023MNL
4	Remove tappet (2).		
5	Remove ignition coils.		AR15.12-P-2008MNL
6	Remove screws (15) and remove heat shield (16) in upward direction.	<b>Nm</b> Bolt, upper heat shield to bracket/side heat shield	*BA09.40-P-1006-01ZA
7	Remove left heat shield at left exhaust gas turbocharger.	<b>Nm</b> Bolt, side heat shield to cylinder head cover	*BA09.40-P-1007-01ZA
8	Remove front cover at cylinder head.	<b>i</b> <b>Installation:</b> Only install lower engine compartment paneling after leak test.	AR01.30-P-5711MNL
9	Remove lift solenoid of left rear intake camshaft.		AR05.20-P-6551MNL
10	Remove left exhaust camshaft Hall sensor (B6/6).		AR15.12-P-2148MNL
11	Release screws (1) of cylinder head cover (4) in reverse order to tightening procedure and remove.	Bolt tightening procedure for cylinder head cover  <b>i</b> <b>Installation:</b> Replace screw/bolts (1). Observe tightening procedure for cylinder head cover (4). <b>Nm</b> Bolt, cylinder head cover to cylinder head/camshaft housing	AR01.20-P-5014-03MNA  *BA01.20-P-1004-01J
12	Remove cylinder head cover (4) from cylinder head. Notes on sealant path for cylinder head cover	<b>!</b> Do not pound in tool for prying off between cylinder head cover (4) and cylinder head. Otherwise, this damages the sealing surfaces. <b>i</b> <b>Installation:</b> Apply sealant to cylinder head. Sealant, Loctite 5970, 50 ml <b>☒</b> Application gun	AH01.30-P-1000-08MM  *BR00.45-Z-1013-01A *112589002500
13	Remove both rear caps of cylinder head cover (4) at cylinder head.	<b>i</b> <b>Installation:</b> Replace both rear caps.  <b>i</b> <b>Installation:</b> Apply sealant. Sealant, Loctite 5970, 50 ml <b>☒</b> Application gun	*BR00.45-Z-1013-01A *112589002500
14	Remove lift solenoids of left cylinder head cover (4).	On replacing cylinder head cover (4).  Left front intake camshaft Left front exhaust camshaft Left rear exhaust camshaft	AR05.20-P-6550MNL AR05.20-P-6552MNL AR05.20-P-6553MNL
15	Remove left intake camshaft Hall sensor (B6/4).	On replacing cylinder head cover (4).	AR15.12-P-2148MNL
16	Remove air filter housing brackets.	On replacing cylinder head cover (4).	
17	Remove slide rail at cylinder head cover (4).	On replacing cylinder head cover (4). If damage is present, ↓ Replace slide rail at cylinder head cover (4).	
<b>◀</b>	<b>Check</b>	If galling and score marks are present,  ↓ Replace cylinder head cover (4), cylinder head and camshafts.	

			AR01.30-P-5770MNL
	<b>Clean</b>		
19	Clean sealing surfaces at cylinder head and cylinder head cover (4).	Do not use any sharp-edged tools or abrasive paper. Otherwise, this damages the sealing surfaces. Loctite 7063 cleaning spray (150 ml) Loctite 7200	AR01.00-P-0050-01A  *BR00.45-Z-1046-04A *BR00.45-Z-1038-04A
20	Install in the reverse order.		
21	Check oil level of engine and correct.		
			AP18.00-P-1812SKI
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
22	Carry out engine test run and check engine for proper leaktightness and leaktightness.		
23	Install lower engine compartment lining.		AR61.20-P-1105LF
24	Install upper engine cover.		

Crankcase ventilation system, cylinder head cover

Number	Designation			Engine 176
BA01.20-P-1004-01J	Bolt, cylinder head cover to cylinder head/ camshaft housing	Stage 1	Nm	10
		Stage 2	Δ°	90

Turbocharger

Number	Designation			Engine 176
BA09.40-P-1006-01ZA	Bolt, upper heat shield to bracket/side heat shield		Nm	9

Turbocharger

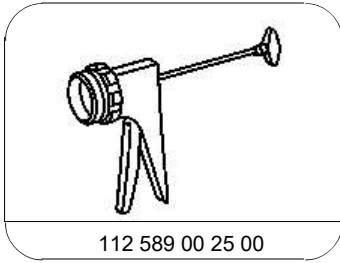
Number	Designation			Engine 176
BA09.40-P-1007-01ZA	Bolt, side heat shield to cylinder head cover		Nm	9

Ground strap

Number	Designation			Engine 176
BA15.10-P-1003-05F	Bolt, engine wiring harness ground to cylinder head cover		Nm	9

Engine wiring harness

Number	Designation			Engine 176
BA15.18-P-1001-01G	Bolt, engine wiring harness to cylinder head cover		Nm	9



112 589 00 25 00

Application gun

**Repair materials**

<b>Number</b>	<b>Designation</b>	<b>Order number</b>
BR00.45-Z-1013-01A	Sealant, Loctite 5970, 50 ml	A 003 989 98 20 10
BR00.45-Z-1038-04A	Loctite 7200	Henkel AG & Co. KGaA <a href="http://www.loctite.de">http://www.loctite.de</a>
BR00.45-Z-1046-04A	Loctite 7063 cleaning spray (150 ml)	A 001 986 71 71 10