

Engine 274.9 in model 213

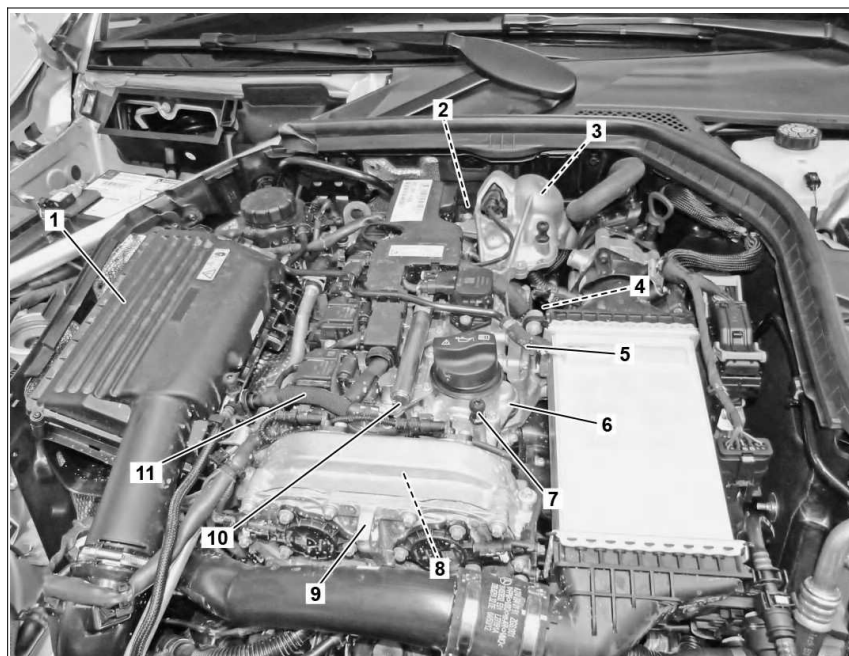
Engine 274.9 in model 238

Modification notes

06.05.2021	Check camshafts and camshaft bearing points in cylinder head cover (6) and the cylinder head for galling and scoring.	Operation step 27.	
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















Shown on ENGINE 274.910 in MODEL 213








- 1 Air cleaner housing
- 2 Cap
- 3 High-pressure fuel pump
- 4 Oil separator
- 5 Coolant vent line
- 6 Cylinder head cover
- 7 Bracket
- 8 Top slide rail
- 9 Front cover
- 10 Rail
- 11 Coolant vent line




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
Danger	Risk of explosion 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.	AS47.00-Z-0001-01A
Warning	Risk of injury. Skin or eye injuries may result when handling hot or glowing objects.	Wear protective gloves, protective clothing and safety glasses, if necessary.	AS00.00-Z-0002-01A
Caution	Risk of injury caused by scraping or cutting body parts on sharp vehicle parts	Always wear protective gloves when working on or near sharp and non-deburred vehicle parts. Deburr repair panels.	AS00.00-Z-0017-01A
Caution	Risk of injury to skin and eyes due to handling of engine oil. Risk of poisoning caused by swallowing engine oil	Wear protective gloves, protective clothing and safety glasses. Do not fill engine oil into beverage containers.	AS18.00-Z-0001-01A
Notice	Information on preventing damage to electronic components due to electrostatic discharge		AH54.00-P-0001-01A
Notice	Notes on threaded connections fastened using a tightening angle-based tightening process		AH00.00-P-0020-01A
Notice	Notes on avoiding damage through contamination and foreign objects		AH00.00-P-5000-01A
Notice	Notes on threaded connections with aluminum screws/bolts		AH00.00-P-0006-01RM
	Note on calculation of tightening torque when using insertion or socket tools with various effective lengths		AH00.00-P-0015-01CW
	General information on work on gasoline direct injection system		AH07.00-P-2000-01A
	Remove/install		
1	Drain off coolant.	Installation: Only install lower engine compartment lining after leak test.	AR20.00-P-11420LC

2	Remove soundproofing.	Engine 274.9 in model 213 except code 920 (Direct petrol injection with stratified charging) Engine 274.9 in model 238 except code 920 (Direct petrol injection with stratified charging)  Installation: Install soundproofing only after the leak test.	AR94.30-P-5410MRD
3	Place coolant bleed line (5) to one side.		
4	Remove charge air cooler.	 Installation: Do not install upper engine cover until after the leak test.	AR09.41-P-0105MRD
5	Remove ME-SFI [ME] control unit (N3/10).		AR07.08-P-7013MRD
6	Remove bracket of the charge air cooler.	 Screw, water-cooled charge air cooler holder to cylinder head cover/cylinder head/chain case cover	*BA09.41-P-1003-01U
7	Remove front cover (9).		AR01.30-P-5700MRD
8	Remove high-pressure fuel pump (3).		AR07.02-P-1028MRD
9	Remove rail (10) with fuel injectors.		AR07.03-P-1052MRD
10	Remove air filter housing(1).		AR09.10-P-1150MRD
11	Remove front bracket of the air filter housing (1).	 M8 × 1.25	*BA00.10-P-1005-04A
12	Remove rear right engine lifting lug and place to one side.	 Bolt, lifting eye to cylinder head/cylinder head cover	*BA01.30-P-1008-01Y
13	Remove ignition coils.		AR15.12-P-2003MRD
14	Remove valve lift changeover actuator.	Engine 274.910 in model 213	AR05.20-P-6500MRA
15	Remove oil separator (4) from the cylinder head cover (6) and place to one side.	Engine 274.9 in model 213 except code 494 (US version) except code 945 (China Stage 6 exhaust treatment) Engine 274.9 in model 238 except code 945 (China Stage 6 exhaust treatment) Engine 274.9 in model 213 with code 494 (US version)	AR01.20-P-9691MRD AR01.20-P-9691MRU
16	Remove coolant bleed line (11) from the cylinder head cover (6), unclip from the brackets, and place to one side.	 Hose clamp pliers	*003589033700
17	Disconnect engine wiring harness.	 M6 × 1	AR15.18-P-1000-04MRD *BA00.10-P-1002-04A
18	Remove the vacuum pump.		AR43.05-P-1320MRD
19	Remove cap (2).	 Installation: Replace cap (2).	
20	Release bolts of cylinder head cover (6) in reverse order to tightening procedure and remove.	 Installation: Replace screw/bolts. Observe tightening procedure for cylinder head cover (6).  Screw/bolt, cylinder head cover to cylinder head	AR01.20-P-5014-03MR *BA01.20-P-1001-01R
21	Remove cylinder head cover (6) from the cylinder head. Notes on application of flange sealants to seal major assemblies Notes on sealant path for cylinder head cover	 Do not hammer in a tool to pry off between cylinder head cover (6) and cylinder head. Otherwise, damage to the sealing surfaces can occur.  Cylinder head cover (6) and cylinder head must be replaced together.  Use puller screw if necessary.  Installation: Install new sealing rings.  Installation: Apply sealant to cylinder head cover (6). Sealant, Loctite 5970, 50 ml  Application gun	AH00.00-P-0500-01MNE AH01.30-P-1000-08MM *BR00.45-Z-1013-01A *112589002500
22	Remove brackets (7) of the engine cover.	When installing new cylinder head cover (6).	
23	Remove Hall sensors of the camshafts.	When installing new cylinder head cover (6).	AR15.10-P-1999MRD
24	Remove top slide rail (8).	When installing new cylinder head cover (6).	


25	Remove oil filler cap with molded seal.	When installing new cylinder head cover (6).	AR05.10-P-8480MRD
	Check		
26	Check top slide rail (8) of the timing chain for galling and score marks.	If galling and score marks are present, ↓ Replace upper slide rail (8).	AR05.10-P-8480MRD
27	Check camshafts and camshaft bearing points in cylinder head cover (6) and the cylinder head for galling and scoring. General information on checking camshafts and bearing points of camshafts	 Cylinder head cover (6) and cylinder head form a unit and can thus only be replaced together.  The cylinder head can also be replaced without replacing the camshaft. If there are problems, ↓ Replace camshafts and/or cylinder head cover (6) together with cylinder head. Replace cylinder head Replace camshafts	AH05.20-P-1000-09SZ AR01.30-P-5800MRD AR05.20-P-6992MRD
	Clean		
28	Clean sealing surfaces on cylinder head and cylinder head cover (6).	 Do not use any sharp-edged tools or abrasive paper. Otherwise, damage to the sealing surfaces can occur. Loctite 7063 (400 ml) cleaning spray Loctite 7200	AR01.00-P-0050-01A *BR00.45-Z-1046-04A *BR00.45-Z-1038-04A
29	Install in the reverse order.		
 Warning	Risk of burn injuries , suffocation and poisoning when working on the exhaust system and the components connected to it. Risk of suffocation and risk of poisoning caused by inhalation of gaseous and solid components of the exhaust. Risk of poisoning caused by skin contact with solid components of the exhaust.	Wear protective clothing and safety glasses. Use the extraction system. Move people out of the danger zone.	AS49.00-Z-0001-01A
 Warning	Risk of accident from vehicle starting off by itself when engine running. Risk of injury (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
30	Carry out engine test run and check engine for proper operation and leak tightness.		

 Metric screws/bolts and nuts as per MBN 10 105, 10 143

Number	Designation		8.8	10.9
BA00.10-P-1002-04A	M6 × 1	Nm	9	13

 Metric screws/bolts and nuts as per MBN 10 105, 10 143

Number	Designation		8.8	10.9
BA00.10-P-1005-04A	M8 × 1.25	Nm	22	32

 Crankcase ventilation system, cylinder head cover, camshaft housing

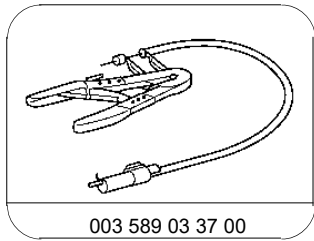
Number	Designation		Engine 274	
BA01.20-P-1001-01R	Screw/bolt, cylinder head cover to cylinder head	Stage 1	Nm	10
		Stage 2	Δ°	90

Nm Cylinder head

Number	Designation			Engine 274
BA01.30-P-1008-01Y	Bolt, lifting eye to cylinder head/ cylinder head cover	M8	Nm	20

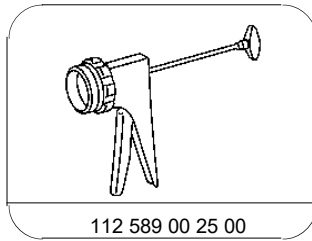
Nm Charge air pipe/charge air cooling

Number	Designation	Engine 274
BA09.41-P-1003-01U	Screw, water-cooled charge air cooler holder to cylinder head cover/ cylinder head/chain case cover	8



003 589 03 37 00

Hose clamp pliers



112 589 00 25 00

Application gun

Repair materials

Number	Designation	Order number
BR00.45-Z-1013-01A	Sealant, Loctite 5970, 50 ml	A 003 989 98 20 10
BR00.45-Z-1038-04A	Loctite 7200	A 010 989 90 71
BR00.45-Z-1046-04A	Loctite 7063 (400 ml) cleaning spray	A 001 986 71 71 09