

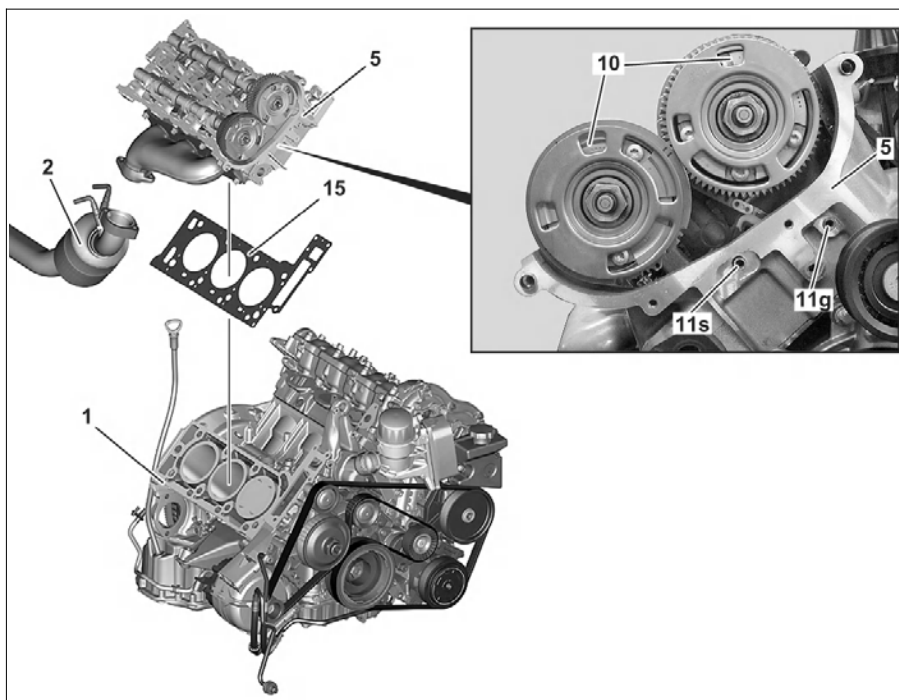
Engine 272, 273 in model 211, 219
Right cylinder head

Modification notes

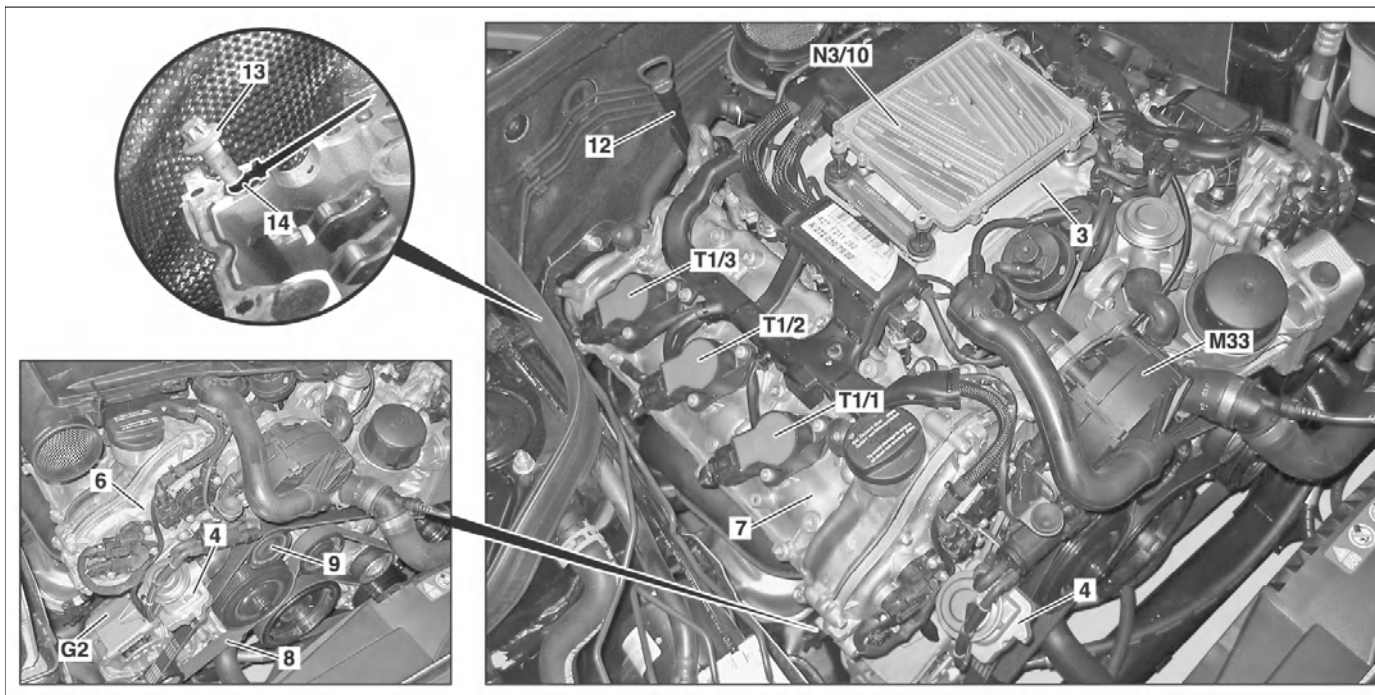
11.04.2014	Cylinder head bolt	Engine 272	BE01.30-P-1001-04B
11.04.2014	Cylinder head bolt	Engine 273	BE01.30-P-1001-04B

Shown on engine 272.964

- 1 Cylinder crankcase
- 2 Catalytic converter
- 5 Cylinder head
- 10 Camshaft adjuster
- 11g Slide rail pins
- 11s Tensioning rail bolts
- 15 Cylinder head seal



P01.30-2236-06































P01.30-2235-09

- 3 Intake manifold
- 4 Air shutoff valve
- 6 Front cover
- 7 Cylinder head cover

- 8 Poly-V-belt
- 9 Guide pulley
- 12 Oil dipstick guide tube
- 13 Cylinder head bolt

- 14 Cable tie
- G2 Alternator
- M33 Electric air pump
- N3/10 ME-SFI [ME] control unit

 	Remove/install		
	Information on preventing damage to electronic components due to electrostatic discharge		AH54.00-P-0001-01A
1	Turn key in ignition lock to position "0"		
2	Detach ground line from battery Notes on battery	Model 211.0 with engine 272, 273 Model 211.2 with engine 272, 273 Model 219.3 with engine 272, 273	AR54.10-P-0003T AH54.10-P-0001-01A AR54.10-P-0003TA AR54.10-P-0003TX
3	Remove lower engine compartment paneling	Model 211 with engine 272, 273 Model 219 with engine 272, 273  Installation: Only install bottom engine compartment paneling after performing a leak check.	AR61.20-P-1105T AR61.20-P-1105TX
4	Drain coolant at radiator and at cylinder crankcase (1) Notes on coolant		AR20.00-P-1142TS AH20.00-N-2080-01A
5	Detach right catalytic converter (2) from exhaust manifold	 Model 211 with engine 272, 273 Bolt, catalytic converter to exhaust manifold  Model 219 with engine 272, 273 Screw/ bolt, catalytic converter to exhaust manifold	*BA49.10-P-1001-01T *BA49.10-P-1001-01R
6	Remove air filter housing		AR09.10-P-1150TS
7	Remove ME-SFI [ME] control unit (N3/10)	Model 211 (except 211.057/257), 219 (except 219.357) with engine 272, 273 Model 211.057/257, 219.357	AR07.08-P-7008TS AR07.08-P-7008TX
8	Remove resonance intake manifold (3)	Model 211 (except 211.057/257), 219 (except 219.357) with engine 272, 273 Model 211.057/257, 219.357	AR09.20-P-1961TS AR09.20-P-1961TX
9	Remove air shutoff valve (4) at right cylinder head (5)	Model 211 (except 211.057/257), 219 (except 219.357) with engine 272, 273	AR14.30-P-7200TS
10	Remove front cover (6) at right cylinder head (5)	 Installation: After installation of front cover (6), check that position of camshafts is at a 55° crank angle before top dead center (ignition TDC). Refer to: ↓ Check basic position of camshafts  Socket wrench bit	AR01.30-P-5700TT AR05.20-P-6010TS *001589650900
11	Remove ignition coil on right cylinder head (5)		AR15.12-P-2003TS
12	Remove right cylinder head cover (7)	Model 211 (except 211.057/257), 219 (except 219.357) with engine 272, 273 Model 211.057/257, 219.357	AR01.20-P-5014TT AR01.20-P-5014TY
13	Remove poly-V belt (8) and upper guide pulley (9)		AR13.20-P-0001TS
14	Remove alternator (G2)		AR15.40-P-5032TS
15	Rotate engine at crankshaft center bolt in direction of engine rotation to a 40° crankshaft angle after ignition TDC	 Pay attention to position of camshafts.  Socket wrench bit	AR05.20-P-6010-01VB *001589650900
16	Remove chain tensioner	Model 211, 219 with engine 272 Chain tensioner with thread M24 × 1.5 Model 211, 219 with engine 272, 273 Chain tensioner with thread M22 × 1.5  Installation: Replace chain tensioner with thread M22 × 1.5 : The previously installed chain tensioner must not be reinstalled. To remove the chain tensioner its thrust bolts are pressed into the end position and the lock on the thrust bolt prevents it moving back, whereby the timing chain would be overtensioned when being reinstalled.  TYP 211, 219 mit MOTOR 272 Left cylinder head Both chain tensioners can be installed.	AR05.10-P-7800TS AR05.10-P-7800VB

		 TYP 211, 219 mit MOTOR 273 Left cylinder head Only the chain tensioner with thread M22×1.5 is installed.	
17	Remove both camshaft adjusters (10) at right cylinder head (5)		AR05.20-P-7201TS
18	Remove slide rail bolts (11g) and tensioning rail bolts (11s) from right cylinder head (5)	 Installation: Coat slide rail bolts (11g) and tensioning rail bolts (11s) before inserting them with sealant. Sealant, Loctite 5970, 50 ml  Impact extractor  Threaded bolt  Application gun	AR01.30-P-5800-04V *BR00.45-Z-1013-01A *116589203300 *116589013400 *112589002500
19	Remove electric air pump (M33) with bracket	Model 211 (except 211.057/257), 219 (except 219.357) with engine 272, 273	AR14.30-P-7251TS
20	Detach oil dipstick guide tube (12) from right cylinder head (5)	 Installation: Check that seal for the oil dipstick guide tube (12) is correctly seated in the oil pan.  Mounting screw/bolt, oil dipstick guide tube	*BA01.45-P-1006-01M
21	Loosen cylinder head bolts in stages in reverse order of tightening procedure and remove them	Tightening specifications for cylinder head bolts Engine 272 in model 211, 219 Tightening specifications for cylinder head bolts Engine 273 in model 211, 219  The cylinder head bolts must only be loosened for a cooled engine. Otherwise stresses can occur in the cylinder head (5).  The cylinder head bolt (13) cannot be removed. To be able to handle cylinder head (5) more easily, raise cylinder head bolt (13) and fix it with a cable tie (14).  Screw/bolt, cylinder head to timing case  Bolt, cylinder head to crankcase	AR01.30-P-5800-07VA AR01.30-P-5800-07SX *BA01.30-P-1003-01O *BA01.30-P-1016-01O
22	Remove RH cylinder head (5) from cylinder crankcase (1) Information on applying sealant to cylinder head gasket	 Installation: Fit new cylinder head gasket (15) on the cylinder crankcase (1). Pay attention to fitted sleeves for fixing cylinder head (5). Before fitting, insert cylinder head bolt (13) into cylinder head (5), and fix it with a cable tie (14).	AH01.30-P-1000-04RX
	Clean		
23	Clean sealing surfaces at RH cylinder head (5), cylinder crankcase (1) and timing case cover	 Do not use any sharp-edged tools or abrasive paper. The sealing surface will be damaged otherwise.  Blow out threaded holes of cylinder head bolts in cylinder crankcase (1) with compressed air and clean off engine oil and coolant. Loctite 7200 Loctite 7063 (400 ml) cleaning spray	AR01.00-P-0050-01A *BR00.45-Z-1038-04A *BR00.45-Z-1046-04A
	Check		
24	Check cylinder head bolts and replace if necessary	Cylinder head bolt	AR01.30-P-5800-03VA *BE01.30-P-1001-04B
25	Check the sealing surfaces at RH cylinder head (5), cylinder crankcase (1) and timing case cover for cracks and unevenness	 The cylinder head (5) and cylinder crankcase (1) must not be post-worked (surface grinding). The permissible machining tolerances will be exceeded otherwise. In the event of any complaint, replace cylinder head (5), timing case cover or cylinder crankcase (1).	

		A possible distortion of cylinder head (5) in longitudinal or transverse direction will be balanced out again during reassembly via tightening of cylinder head bolts.	
26	Install in the reverse order		
27	Change engine oil and oil filter element	Model 211, 219 with engine 272 Model 211, 219 with engine 273	AP18.00-P-0101PIT AP18.00-P-0101SX
	Check		
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
28	Carry out an engine test run, and check engine and fuel system for leaktightness		
29	Check cooling system for leaktightness		AR20.00-P-1010TS

Cylinder head/cylinder head bolts

Number	Designation	Engine 272	Engine 273		
BE01.30-P-1001-04B	Cylinder head bolt	Thread diameter	M	11	11
		Length (L) when new	mm	170	170
		Length (L)	mm	≤ 172	≤ 172
		For picture, see	-	-	-

Cylinder head

Number	Designation	Engine 272	Engine 273	
BA01.30-P-1003-01O	Screw/bolt, cylinder head to timing case M8	Nm	20	20

Cylinder head

Number	Designation	Engine 272	Engine 273			
BA01.30-P-1016-01O	Bolt, cylinder head to crankcase	M11	Stage 1	Nm	20	20
				Nm	50	50
				∠°	90	90
				∠°	90	90

Oil pan

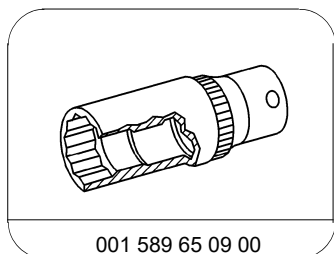
Number	Designation	Engine 272	Engine 273	
BA01.45-P-1006-01M	Mounting screw/bolt, oil dipstick guide tube	Nm	9	9

Exhaust system

Number	Designation	Engine 272 in model 219	Engine 273 in model 219	
BA49.10-P-1001-01R	Screw/bolt, catalytic converter to exhaust manifold	Nm	20	20

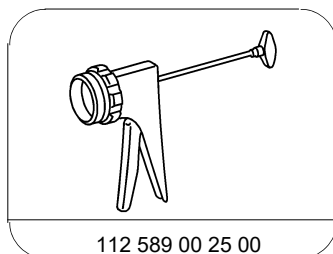
Exhaust system

Number	Designation	Engine 272, 273 in model 211	
BA49.10-P-1001-01T	Bolt, catalytic converter to exhaust manifold	Nm	20



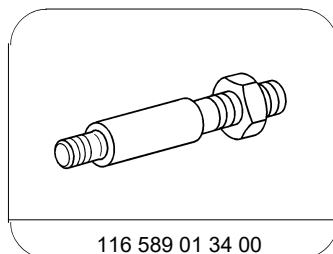
001 589 65 09 00

Socket wrench bit



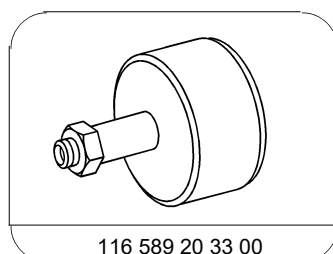
112 589 00 25 00

Application gun



116 589 01 34 00

Threaded bolt



116 589 20 33 00

Impact extractor

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	Henkel AG & Co. KGaA http://www.loctite.de
BR00.45-Z-1046-04A	Loctite 7063 (400 ml) cleaning spray	A 001 986 71 71 09