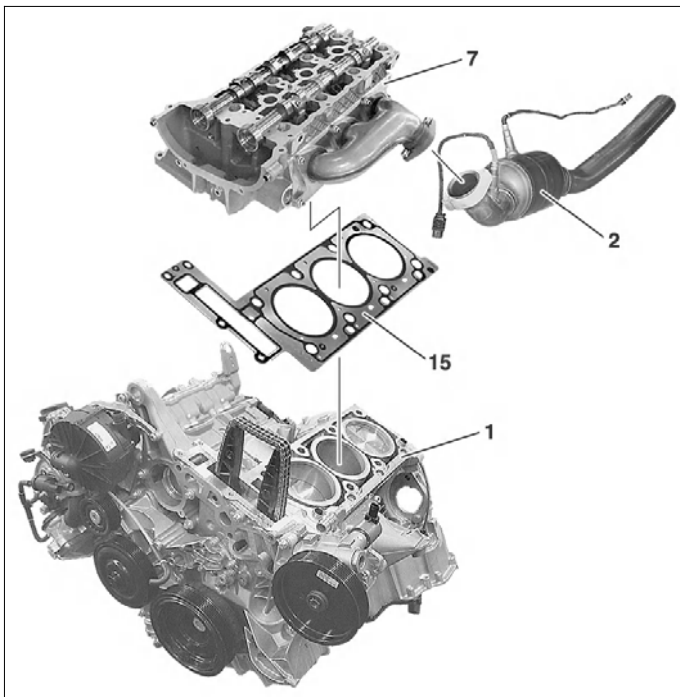


Engine 272, 273 in model 211, 219
Left cylinder head

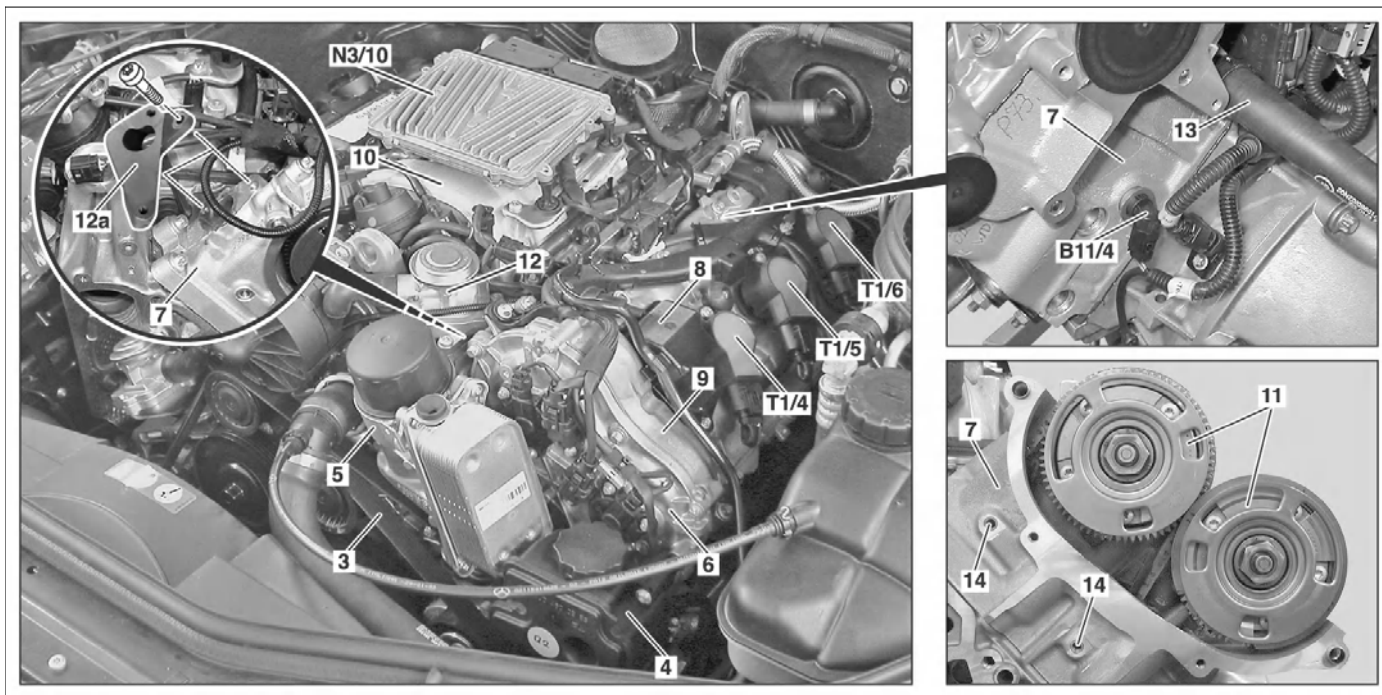
Modification notes

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

- 1 Cylinder crankcase
- 2 Catalytic converter
- 7 Cylinder head
- 15 Cylinder head seal














P01.30-2232-12




P01.30-2233-09

- | | | |
|--------------------------------------|-----------------------|-------------------------|
| 3 Poly-V-belt | 8 Oil separator | 12a Intermediate flange |
| 4 Power steering expansion reservoir | 9 Cylinder head cover | 13 Coolant hose |
| 5 Oil filter housing | 10 Intake manifold | 14 Slide rail pins |

	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 lower engine compartment paneling after the engine test run.	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 left 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 poly-V belt (3) and poly-V belt tensioning device		AR13.20-P-0001TS
9	Remove expansion reservoir (4)	Model 211 with engine 272, 273 Model 219 with engine 272, 273	AR46.25-P-1000TS AR46.25-P-1000TX
10	Remove oil filter housing (5) with oil-water heat exchanger		AR18.20-P-3471TS
11	Remove front cover (6) at left cylinder head (7)	 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-5700TS AR05.20-P-6010TS *001589650900
12	Remove ignition coils at left cylinder head (7)		AR15.12-P-2003TS
13	Remove oil separator (8)		AR01.20-P-9750TS
14	Remove resonance intake manifold (10)	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
15	Remove left cylinder head cover (9)	Model 211 (except 211.057/257), 219 (except 219.357) with engine 272, 273 Model 211.057/257, 219.357	AR01.20-P-5014TS AR01.20-P-5014TX
16	Remove alternator		AR15.40-P-5032TS
17	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
18	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.	AR05.10-P-7800TS AR05.10-P-7800VB

		<p>i Model 211, 219 with engine 272 Left cylinder head Both chain tensioners can be installed.</p> <p>i Model 211, 219 with engine 273 Left cylinder head Only the chain tensioner with thread M22 × 1.5 is installed.</p>	
19	Remove both camshaft adjuster (11) at left cylinder head (7)		AR05.20-P-7201TS
20	Remove air shutoff valve (12) at left cylinder head (7)	Model 211 (except 211.057/257), 219 (except 219.357) with engine 272, 273 Left cylinder head	AR14.30-P-7200TS
21	Remove intermediate flange (12a) of air shutoff valve (12)	Model 211 (except 211.057/257), 219 (except 219.357) with engine 272, 273 Left cylinder head Nm Screw/bolt, left air shutoff valve intermediate flange to cylinder head	*BA14.30-P-1004-02A
22	Detach coolant hose (13) from heater valve		
23	Disconnect electrical connection at coolant temperature sensor (B11/4)		
24	Pull out slide rail pins (14) from left cylinder head (7)	<p>Pull out guide rail pins at cylinder head</p> <p>i Installation: Apply sealant to slide rail pins (14) before inserting them. Sealant, Loctite 5970, 50 ml</p> <p>S Impact extractor</p> <p>S Threaded bolt</p> <p>S Application gun</p>	<p>AR01.30-P-5800-04V</p> <p>*BR00.45-Z-1013-01A</p> <p>*116589203300</p> <p>*116589013400</p> <p>*112589002500</p>
25	Loosen cylinder head bolts in stages in reverse order of tightening procedure and remove them	<p>Tightening specifications for cylinder head bolts Engine 272 in model 211, 219</p> <p>Tightening specifications for cylinder head bolts Engine 273 in model 211, 219</p> <p>!</p> <p>The cylinder head bolts must only be loosened for a cooled engine. Stresses can occur in the cylinder head (7) otherwise.</p> <p>Nm Screw/bolt, cylinder head to timing case</p> <p>Nm Bolt, cylinder head to crankcase</p>	<p>AR01.30-P-5800-07VA</p> <p>AR01.30-P-5800-07SX</p> <p>*BA01.30-P-1003-01O</p> <p>*BA01.30-P-1016-01O</p>
26	Remove LH cylinder head (7) from cylinder crankcase (1) Information on applying sealant to cylinder head gasket	<p>i Installation: Fit new cylinder head gasket (15) on the cylinder crankcase (1). Pay attention to fitting sleeves for fixing cylinder head (7).</p>	AH01.30-P-1000-04RX
	Clean		
27	Clean sealing surfaces on LH cylinder head (7), timing case cover and cylinder crankcase (1)	<p>!</p> <p>Do not use any sharp-edged tools or abrasive paper. The sealing surface will be damaged otherwise.</p> <p>i 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</p>	<p>AR01.00-P-0050-01A</p> <p>*BR00.45-Z-1038-04A</p> <p>*BR00.45-Z-1046-04A</p>
	Check		
28	Check cylinder head bolts and replace if necessary	Cylinder head bolt	<p>AR01.30-P-5800-03VA</p> <p>*BE01.30-P-1001-04B</p>
29	Check sealing surfaces on LH cylinder head (7), timing case cover and cylinder crankcase (1) for cracks and unevenness	<p>!</p> <p>The cylinder head (7) and cylinder crankcase (1) must not be reworked (surface grinding). The permissible machining tolerances will be exceeded otherwise. In the event of a complaint, replace cylinder head (7), timing case cover or cylinder crankcase (1).</p>	

		i Any distortion of the cylinder head (7) occurring in the longitudinal or transverse direction will be balanced out again during reassembly through tightening of the cylinder head bolts.	
30	Install in the reverse order		
31	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
 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
32	Carry out an engine test run, and check engine and fuel system for leak tightness		
33	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
			Stage 2	Nm	50	50
			Stage 3	∠°	90	90
			Stage 4	∠°	90	90

Air shutoff valve

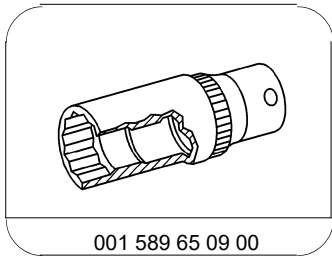
Number	Designation	Engine 272	Engine 273	
BA14.30-P-1004-02A	Screw/bolt, left air shutoff valve intermediate flange to cylinder head	Nm	14	14

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

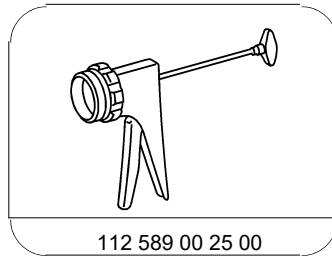
Exhaust system

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



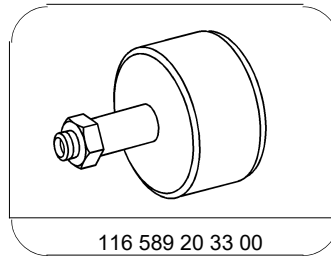
001 589 65 09 00

Socket wrench bit



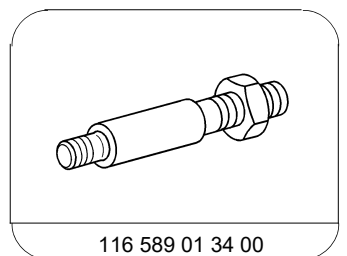
112 589 00 25 00

Application gun



116 589 20 33 00

Impact extractor



116 589 01 34 00

Threaded bolt

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