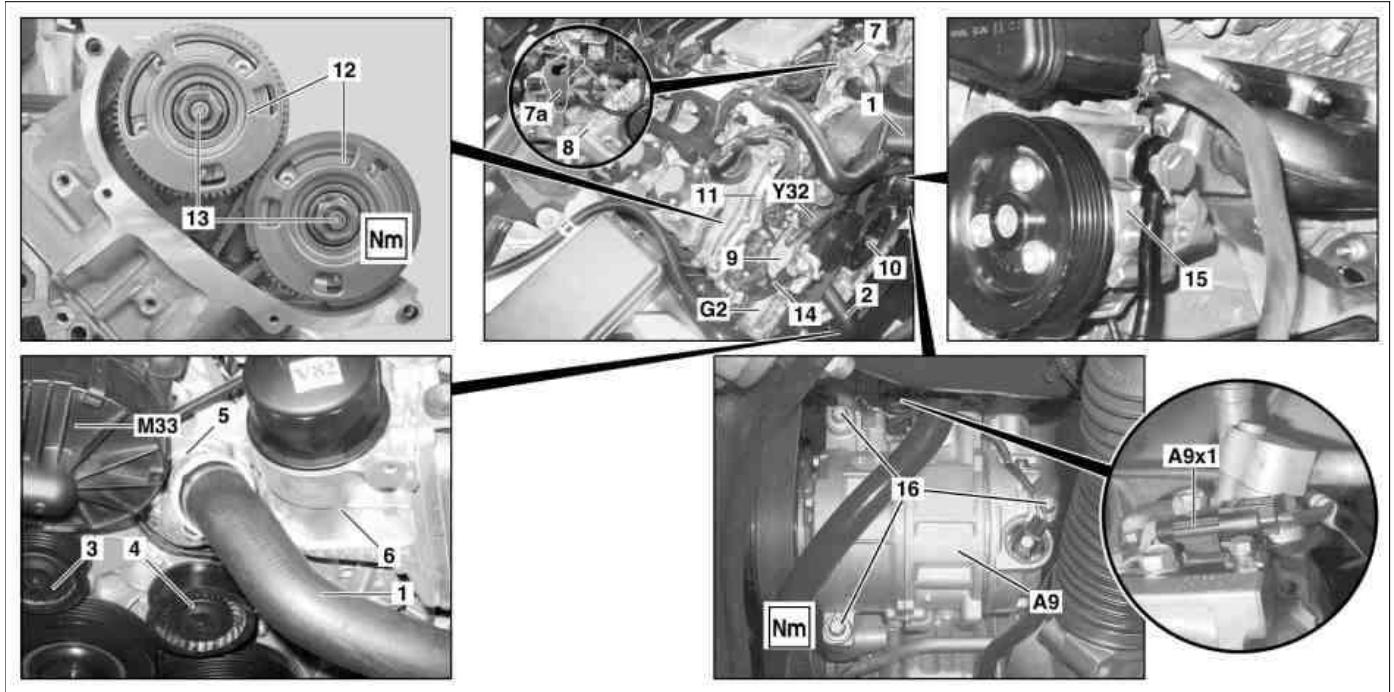


Engine 272, 273 in model 164, 251

Modification notes

08.02.2011 Value changed: cylinder head bolt on timing case

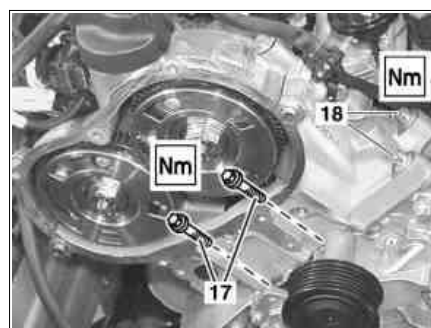
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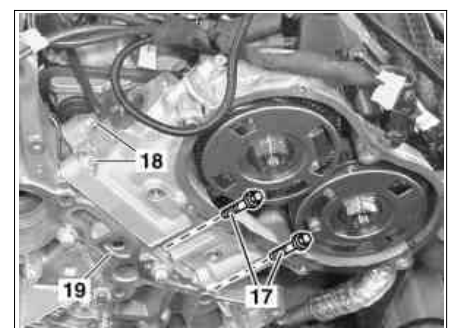
P01.40-2180-09

- | | | | | | |
|----|----------------------------|----|------------------------------|------|----------------------------------|
| 1 | Coolant hose | 8 | Cylinder head | 16 | Bolts |
| 2 | Coolant hose | 9 | Air shutoff valve | A9 | Refrigerant compressor |
| 3 | Guide pulley | 10 | Belt pulley/vibration damper | A9x1 | Refrigerant compressor connector |
| 4 | Guide pulley | 11 | Front cover | G2 | Alternator |
| 5 | Coolant thermostat housing | 12 | Segmental disks | M33 | Electric air pump |
| 6 | Oil filter housing | 13 | Central valves | Y32 | Air pump switchover valve |
| 7 | Air shutoff valve | 14 | Oil dipstick guide tube | | |
| 7a | Intermediate flange | 15 | Power steering pump | | |

- | | |
|----|-------------------|
| 17 | Bolts |
| 18 | Bolts |
| 19 | Timing case cover |













P01.40-2181-01







P01.40-2261-01

	Remove/install		
Warning	Risk of injury caused by fingers being jammed or pinched when removing, installing or aligning hoods, doors, trunk lid/rear-end door or sliding roof.	No parts of the body or limbs should be within the operating area when the components are moving.	AS00.00-Z-0011-01A


 Danger	Risk of death caused by vehicle slipping or toppling off of the lifting platform.	Align vehicle between vehicle lift columns and position the four support plates at the vehicle lift support points specified by the vehicle manufacturer.	AS00.00-Z-0010-01A
Topical note	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"	 Vehicles with code (889) Keyless-Go: Press Keyless-Go start/stop button repeatedly until ignition is switched off.	
2	Remove air filter housing with engine air intake ducts	Engine 272 (except 272.973), 273 in model 164, 251	AR09.10-P-1150GZA
3	Remove lower engine compartment paneling	Model 164 with engine 272, 273 Model 251 with engine 272, 273	AR61.20-P-1105GZ AR61.20-P-1105RT
4  AP  AP	Drain engine oil	Model 164, 251 with engine 272 Model 164, 251 with engine 273	AP18.00-P-0101PIT AP18.00-P-0101RX
 Warning	Risk of injury to skin and eyes suffering scalding from contact with hot coolantspray. Risk of poisoning from swallowing coolant.	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.	AS20.00-Z-0001-01A
5 Topical note	Drain coolant at radiator Notes on coolant		AR20.00-P-1142GZC AH20.00-N-2080-01A
6	Disconnect coolant hose (1) on coolant temperature regulator housing (5)		
7	Close off coolant hose (2) at coolant pump		
8	Remove electric fan	Model 164 with engine 272, 273 Model 251 with engine 272, 273	AR20.40-P-5000GZA AR20.40-P-5000RTA
9  WF	Attach guard plate for radiator/condenser		WF58.50-P-0110-01A
10	Remove poly-V belt, tensioning device and guide pulley (3)		AR13.20-P-0001GZA
11	Remove electric air pump (M33)		AR14.30-P-7251GZA
12	Remove coolant thermostat housing (5)	 Installation: Replace O-ring and seal.	AR20.10-P-2460GZA
13	Remove oil filter housing (6) with oil-water heat exchanger		AR18.20-P-3471GZA
14	Remove air shutoff valve (7) and intermediate flange (7a) at left cylinder head (8)		AR14.30-P-7200GZA
15	Remove air shutoff valve (9) at right cylinder head		AR14.30-P-7200GZA
16	Remove air pump switchover valve (Y32)		AR14.30-P-7255GZA
17	Rotate engine at crankshaft center bolt in direction of engine rotation to a 40° crankshaft angle after ignition TDC	 Socket wrench bit	*001589650900
18	Install retaining lock for crankshaft/starter ring gear	Model 164, 251 with engine 272 (except 272.973), 273 with transmission 722.9	AR03.30-P-5000GZA
19	Remove belt pulley/vibration damper(10)		AR03.30-P-1600GZA
20	Remove front cover (11) at left cylinder head (8)	 Installation: After installing the front cover (11), check that the camshafts are positioned at a 55° crank angle BTDC: ↓ Check basic position of camshafts	AR01.30-P-5700GZA AR05.20-P-6010GZA
21	Remove front cover (11) at right cylinder head (8)	 Installation: After installing the front cover (11), check that the camshafts are positioned at a 55° crank angle BTDC: ↓ Check basic position of camshafts	AR01.30-P-5700GZC AR05.20-P-6010GZA
22	Remove chain tensioner	Engine 272 in model 164, 251Chain tensioner with thread M24 × 1.5 Engine 272, 273 in model 164, 251Chain tensioner with thread M22 × 1.5	AR05.10-P-7800GZA AR05.10-P-7800GZG

		<p>ⓘ 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.</p> <p>ⓘ Model 164, 251 with engine 272 Both chain tensioners can be installed.</p> <p>ⓘ Model 164, 251 with engine 273 Only the chain tensioner with thread M22×1.5 is installed.</p>	
23	Remove camshaft adjuster for exhaust camshafts		AR05.20-P-7201GZA
24	Remove camshaft adjuster for intake camshafts		AR05.20-P-7201GZC
25	Remove alternator (G2)	Model 164 with engine 272 (except 272.973), 273 Model 251 with engine 272, 273	AR15.40-P-5032GZA AR15.40-P-5032RTA
26	Remove oil dipstick guide tube (14).		AR18.40-P-3510GZA
27	Remove power-steering pump (15)	Model 164 (except 164.195) with engine 272, 273 Model 251 with engine 272, 273 ⓘ Detach power steering pump (15) with expansion reservoir from front cover (11) or timing case cover (19), and place to one side with their connected lines.	AR46.30-P-0500GZ AR46.30-P-0500RT
28	Unscrew screw/bolts (16) to detach refrigerant compressor (A9) from timing case cover (19) and engine support	ⓘ Disconnect refrigerant compressor connector (A9x1) and attach refrigerant compressor (A9) with connected pipe system, laterally at bottom of engine compartment. Nm Screw/bolt, refrigerant compressor to timing case/crankcase/engine support	*BA83.55-P-1001-01M
29	Remove complete exhaust system		AR49.10-P-7100GZA
30	Remove engine mount Screw/bolts at front axle carrier	Model 164 with engine 272, 273 Model 251 with engine 272, 273	AR33.10-P-0100GZ AR33.10-P-0100RT
31	Put on engine hoist	Model 164 with engine 272, 273 Model 251 with engine 272, 273 ⓘ Observe the manufacturer's assembly specifications and safety information. Nm Bolt, partition wall reinforcement between wheel well liners to fender ☒ Engine lifting device ☒ Adaptation of engine lifting device	AR33.10-P-0100-01GZ AR33.10-P-0100-01RT *BA62.30-P-1008-01E *240589006100 *642589006100
32	Lift engine	ⓘ When lifting engine, ensure that steering coupling is not damaged, no lines are damaged and engine does not contact partition wall.	
33	Remove oil pan bottom section	ⓘ If the oil pan bottom section cannot be released from the oil pan, warm oil pan bottom section in area of sealing surface with a hot air gun, then push assembly wedge between sealing surface to separate oil pan bottom section of oil pan.	AR01.45-P-7555GZA
34	Remove oil pan	ⓘ If the oil pan cannot be released from the cylinder crankcase, warm oil pan in area of sealing surface with a hot air gun, then push assembly wedge between sealing surface to separate oil pan from the cylinder crankcase.	AR01.45-P-7500GZA
35	Lower engine and disconnect from engine hoist		
36	Remove screws/bolts (17, 18)	Nm Screw/bolt, cylinder head to timing case	*BA01.30-P-1003-01O
37	Remove screws/bolts of timing case cover (19)	Nm Engine 272 in model 164, 251 Screw/bolt, timing case cover to cylinder crankcase Nm Engine 273 in model 164, 251 Bolt, timing case cover to cylinder crankcase Pay attention to different lengths and diameters of screw/bolts, see: ↓	*BA01.40-P-1001-01G *BA01.40-P-1001-01T


		Bolt plan for timing case cover	AR01.40-P-8000-01VA
38	Remove timing case cover (19) Notes on sealant path for timing case cover	<p>i Installation: Replace crankshaft radial sealing ring.</p> <p>i Installation: Clean the sealing surfaces, replace both sealing rings in the timing case cover (19) and apply sealant to the sealing surface of the timing case cover (19). Sealant, Loctite 5970, 50 ml</p> <p> Application gun</p>	<p>AH01.40-P-1000-01VA</p> <p>*BR00.45-Z-1013-01A *112589002500</p>
	Clean		
39	Clean sealing surfaces on oil pan, oil pan bottom section and timing case cover	<p> Do not use any sharp-edged tools or abrasive paper. The sealing surfaces can be damaged otherwise. Loctite 7200 Loctite 7063 cleaning spray (150 ml)</p>	<p>AR01.00-P-0050-01A</p> <p>*BR00.45-Z-1038-04A *BR00.45-Z-1046-04A</p>
40	Install in the reverse order		
41	Change engine oil and oil filter element	<p>Model 164, 251 with engine 272 Model 164, 251 with engine 273</p> <p>i Replace sealing ring.</p>	<p>AP18.00-P-0101PIT AP18.00-P-0101RX</p>
 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
42	Carry out an engine test run and check engine for leaktightness		
43	Check cooling system for leaktightness		AR20.00-P-1010GZC

 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 crankcase, timing case cover, end cover

Number	Designation	Engine 272
BA01.40-P-1001-01G	Screw/bolt, timing case cover to cylinder crankcase	M8 Nm 20

 Crankcase, timing case cover, end cover

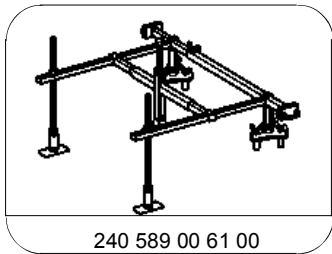
Number	Designation	Engine 273
BA01.40-P-1001-01T	Bolt, timing case cover to cylinder crankcase	M8 Nm 20

 Crossmember and front reinforcement

Number	Designation	Model 164	Model 251
BA62.30-P-1008-01E	Bolt, partition wall reinforcement between wheel well liners to fender	Nm –	10

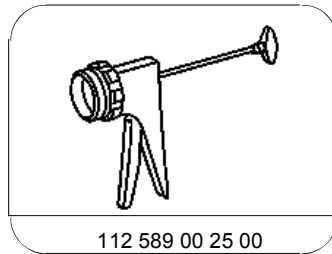
 Refrigerant compressor

Number	Designation	Engine 272	Engine 273
BA83.55-P-1001-01M	Screw/bolt, refrigerant compressor to timing case/crankcase/engine support	Nm 20	20



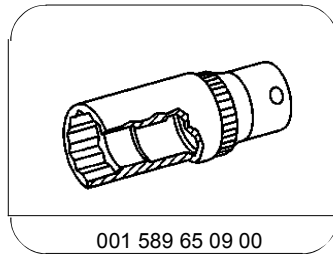
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Engine lifting device



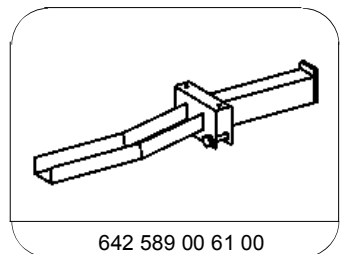
112 589 00 25 00

Application gun



001 589 65 09 00

Socket wrench bit



642 589 00 61 00

Adaptation of engine lifting device

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 cleaning spray (150 ml)	A 001 986 71 71 10