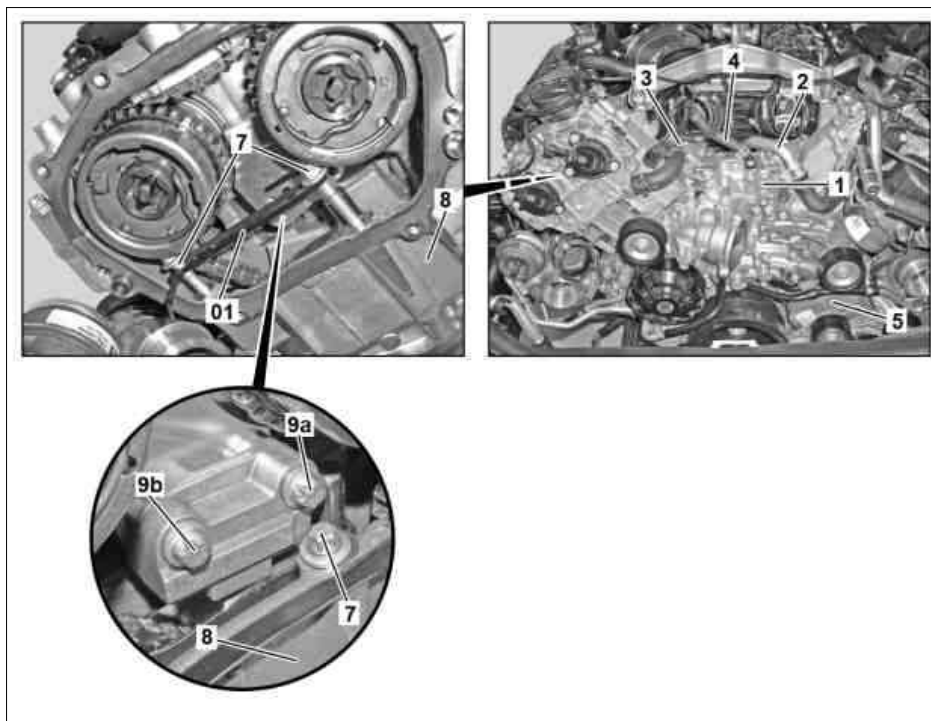


Engine 157, 278 in model 212, 218











Engine 278 in model 207

- 01 Cable tie
- 1 Timing case cover
- 2 Coolant line
- 3 Coolant line
- 4 Coolant hose
- 5 Heat exchanger
- 7 Bolts
- 8 Right cylinder head
- 9a Screw
- 9b Screw



P01.40-2273-06

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
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
	Notes on avoiding damage through contamination and foreign objects		AH00.00-P-5000-01A
	Remove		
1	Remove fan	Engine 157, 278 in model 212, 218 Engine 278 in model 207	AR20.40-P-5050EL AR20.40-P-5050CW
2	Detach vacuum hoses on ATL adjusters		
3	Remove charge air pipe		AR09.41-P-8620ELB
4	Remove upper guide pulley at timing case cover (1)		AR13.20-P-0001ELB
5	Remove belt pulley/vibration damper	Engine 278 in model 207 Engine 157, 278 in model 212, 218	AR03.30-P-1600FH AR03.30-P-1600EL AR01.45-P-7500ELB
6	Remove oil pan		
7	Release and disconnect electrical connections for engine oil pump valve at timing case cover (1) and place electrical line to one side		
8	Detach A/C compressor on timing case cover (1) and place with attached lines to one side		
9	Remove tensioning device for poly-V belt		AR13.20-P-0001ELB
10	Remove coolant thermostat		AR20.10-P-2460ELB
11	Detach coolant lines (2, 3) and coolant hose (4) if the charge air cooler on timing case cover (1)		
12	Remove coolant pump		AR20.10-P-1271ELB
13	Remove oil filter housing		AR18.20-P-3471ELB
14	Remove heat exchanger (5)		AR18.30-P-6840ELB

15	Remove front cover at left cylinder head		AR01.30-P-5700ELA
16	Remove front cover on the right cylinder head (8)		AR01.30-P-5700ELB
17	Remove screw/bolt (9a) on the right chain tensioner and pull out		
18	Unscrew screw/bolts (7) from timing case cover (1)		
19	Pull screw/bolts (7) as far as possible upwards and secure with cable tie (01) against falling down		
20	Remove screw/bolts of timing case cover (1)		
21	Pry off the timing case cover (1) carefully from crankcase and take off	 Do not pound in a tool for prying off between the sealing surfaces. The sealing surfaces can be damaged otherwise.	
	Clean		
22	Clean sealing surface on crankcase	Loctite 7200 Loctite 7063 cleaning spray (150 ml)	AR01.00-P-0050-01A *BR00.45-Z-1038-04A *BR00.45-Z-1046-04A
23	Clean sealing surface on timing case cover (1)	When reusing the timing case cover (1). Loctite 7200 Loctite 7063 cleaning spray (150 ml)	AR01.00-P-0050-01A *BR00.45-Z-1038-04A *BR00.45-Z-1046-04A
	Install		
24	Replace front radial shaft sealing ring	Engine 278 in model 207 Engine 157, 278 in model 212, 218	AR03.20-P-3000FH AR03.20-P-3000EL
25	Replace seals in timing case cover (1)		
26	Apply sealant to timing case cover (1) Notes on sealant path for timing case cover	Sealant, Loctite 5970, 50 ml  Application gun	AH01.40-P-1000-01MMB *BR00.45-Z-1013-01A *112589002500
27	Place timing case cover (1) carefully on crankcase		
28	Screw in and tighten screw/bolts of timing case cover (1)	Bolt plan for timing case cover  Pay attention to different screw/bolt lengths and screw/bolt diameters.  Bolt, timing case cover to crankcase	AR01.40-P-8000-01MMB *BA01.40-P-1001-01K
29	Remove cable tie (01)		
30	Screw in screws/bolts (7) on timing case cover (1) and tighten	 Screw/bolt, cylinder head to timing case cover / crankcase	*BA01.30-P-1002-01X
31	Screw screw/bolt (9a) onto the right chain tensioner and pull out	 Screw/bolt, chain tensioner to cylinder crankcase/cylinder head	*BA05.10-P-1001-01R
32	Check tightening torque of screw/bolt (9b) on the right chain tensioner	 Screw/bolt, chain tensioner to cylinder crankcase/cylinder head	*BA05.10-P-1001-01R
33	Install front cover on right cylinder head (8)		AR01.30-P-5700ELB
34	Install front cover on left cylinder head		AR01.30-P-5700ELA
35	Install heat exchanger (5)		AR18.30-P-6840ELB
36	Install oil filter housing		AR18.20-P-3471ELB
37	Install coolant pump		AR20.10-P-1271ELB
38	Mount coolant lines (2, 3) and coolant hose (4) of the charge air cooler on timing case cover (1)		
39	Install coolant thermostat		AR20.10-P-2460ELB
40	Install tensioning device on poly-V belt		AR13.20-P-0001ELB
41	Mount A/C compressor on timing case cover (1)	 Screw/bolt, refrigerant compressor to timing case/crankcase/engine support	*BA83.55-P-1001-01M
42	Connect electrical connection for engine oil pump valve to timing case cover (1)		
43	Install oil pan		AR01.45-P-7500ELB
44	Install belt pulley/vibration damper	Engine 278 in model 207 Engine 157, 278 in model 212, 218	AR03.30-P-1600FH AR03.30-P-1600EL
45	Install upper guide pulley on timing case cover (1)		AR13.20-P-0001ELB
46	Install charge air pipes		AR09.41-P-8620ELB
47	Mount vacuum hoses on ATL adjusters		
48	Install fan	Engine 278 in model 207	AR20.40-P-5050CW

		Engine 157, 278 in model 212, 218	AR20.40-P-5050EL
49	Check		
49	Check engine oil level; correct if necessary		
50	Check engine cooling system for leaktightness	Engine 278 in model 207 Engine 157, 278 in model 212, 218	AP18.00-P-1811MP AR20.00-P-1010FH AR20.00-P-1010EL
51	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. Carry out an engine test run and check engine for leaktightness	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

Nm Cylinder head

Number	Designation		Engine 157	Engine 278
BA01.30-P-1002-01X	Screw/bolt, cylinder head to timing case cover / crankcase	M7 Nm	14	14

Nm Crankcase, timing case cover, end cover

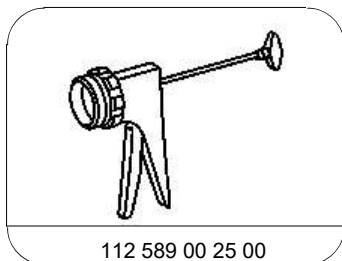
Number	Designation		Engine 157	Engine 278	
BA01.40-P-1001-01K	Bolt, timing case cover to crankcase	M6 Nm	-	-	
		M8	Stage 1 Nm	20	10
			Stage 2 Nm	-	20
		M10 Nm	-	-	

Nm Timing chain, chain tensioner

Number	Designation		Engine 157	Engine 278
BA05.10-P-1001-01R	Screw/bolt, chain tensioner to cylinder crankcase/cylinder head	Nm	9	9

Nm Refrigerant compressor

Number	Designation		Engine 157	Engine 278
BA83.55-P-1001-01M	Screw/bolt, refrigerant compressor to timing case/crankcase/engine support	Nm	20	20



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	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