

Engine 157, 278 in model 212, 218

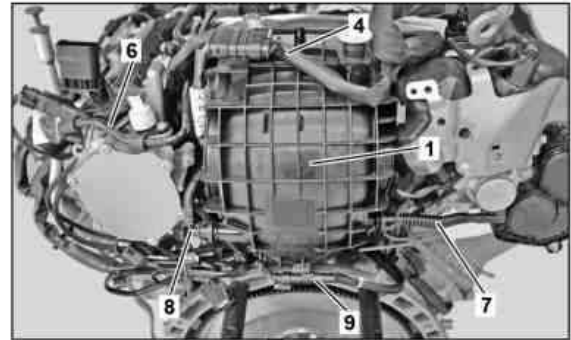
Engine 278 in model 207

Modification notes

04.07.2016	Überwurfmutter Kraftstoffleitung an Kraftstoffverteiler	BA07.03-P-1001-01E
04.07.2016	Überwurfmutter Kraftstoffleitung an Hochdruckpumpe	BA07.03-P-1002-01E

Shown on model 218.373 without code 139 (Measures for engine cooling M157/M278)

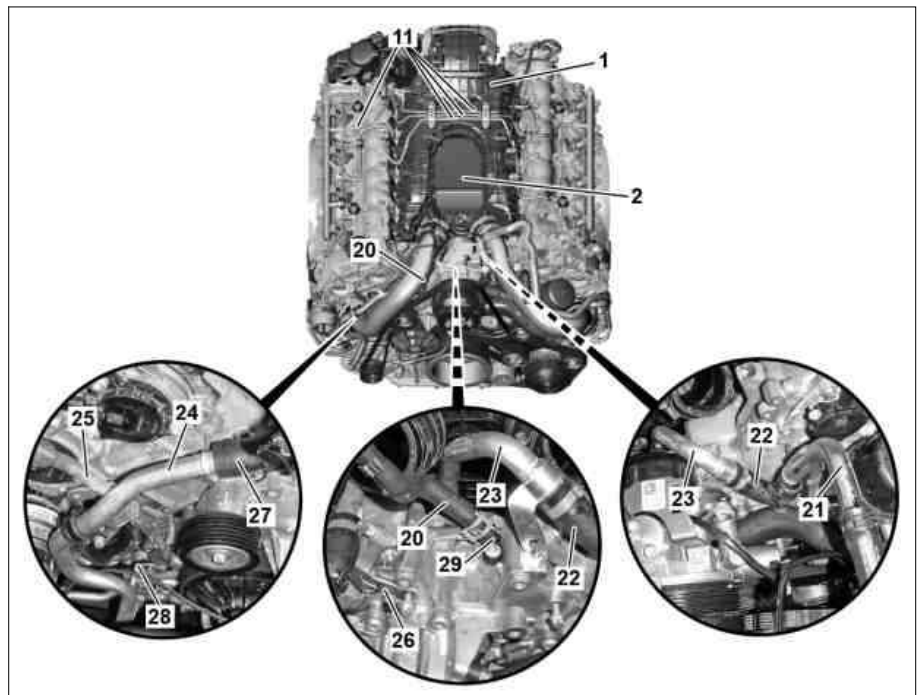
- 1 Intake manifold
- 3 Bulkhead
- 4 Electrical line
- 5 Air filter housing
- 6 Vacuum line
- 7 Vacuum line
- 8 Vacuum line
- 9 Electrical line
- 20 Vent line
- 21 Coolant return line
- N3/10 ME-SFI [ME] control unit



P09.20-2283-12

Shown on model 218.373 without code 139 (Measures for engine cooling M157/M278)

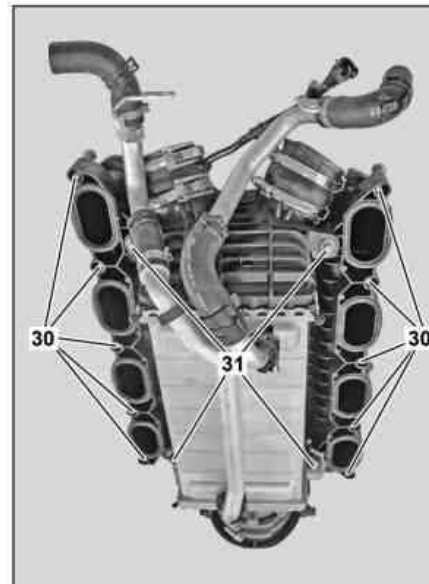
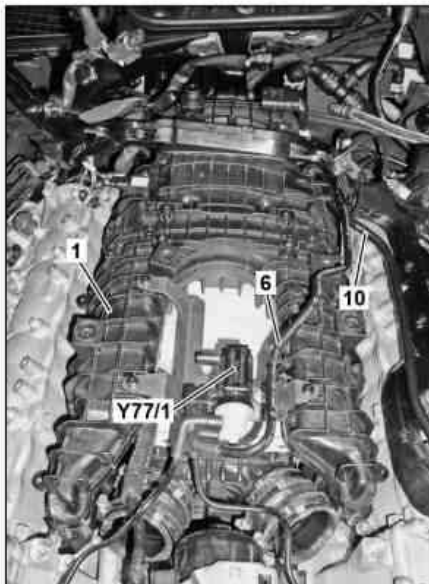
- 1 Intake manifold
- 2 Charge air cooler
- 11 High-pressure lines
- 20 Vent line
- 21 Coolant return line
- 22 Coolant hose
- 23 Coolant return line
- 24 Coolant feed line
- 26 Bracket
- 27 Coolant hose
- 28 Bracket
- 29 Hose connection



P01.20-2251-06



















Shown on model 218.373 without code 139
(Measures for engine cooling M157/M278)

- 1 Intake manifold
- 6 Vacuum line
- 10 Purge line
- 30 Screw/bolts
- 31 Screw/bolts
- Y77/1 Boost pressure control pressure transducer



P01.20-2252-06

☒ ☒	Remove/install		
	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
ⓘ	General information on work on gasoline direct injection system		AH07.00-P-2000-01A
1	Detach ground line from battery		AR54.10-P-0005EW
2	Remove ME-SFI [ME] control unit (N3/10)		AR07.08-P-7008ELB
3	Remove low-temperature circuit coolant expansion reservoir	Vehicles with code 139 (Measures for engine cooling M157/M278)	AR09.41-P-0001ELB
4	Remove upper section of coolant line to the low-temperature circuit coolant expansion reservoir	Vehicles with code 139 (Measures for engine cooling M157/M278)	AR20.20-P-7442ELB
5	Remove both air filter housings (5)		
6	Remove insulation between air filter housings (5) and cylinder head cover		
7	Remove center section of the bulkhead (3)	i Installation: Ensure correct seating of the center section of the bulkhead (3).	
8	Remove crash plate on high-pressure pumps and remove insulation from high-pressure pumps		AR07.02-P-1020ELB
9	Detach vacuum line (8) for brake booster on vacuum pump and intake manifold (1)		AR43.05-P-1320ELB
10	Detach vacuum line (7) for centrifuge on intake manifold (1)		AR01.20-P-2100ELB
11	Disconnect engine wiring harness on intake manifold (1) and cylinder head covers and lay down to the rear	i The electrical line for actuation of the A/C compressor remains on the A/C compressor.	AR01.00-P-2410-02ELB
12	Remove high-pressure lines (11)	<p>ⓘ Do not bend or kink high-pressure lines (11). This prevents leaks and damage. The work instructions absolutely must be observed for assembly work</p> <p style="text-align: center;">↓</p> <p>The sealing cone for the high-pressure line (11) must be checked before assembly. A leak test on the fuel high-pressure circuit must be carried out after assembly.</p> <p>Check sealing cone on high-pressure lines (11)</p>	AR07.03-P-1010-03MM

		Mount high-pressure lines (11)	AR07.03-P-1010-02MMB
		Check fuel high pressure circuit.	AR07.03-P-1010-04MM
		 Union nut, fuel line to fuel distributor	*BA07.03-P-1001-01E
		 Union nut, fuel line to high-pressure pump	*BA07.03-P-1002-01E
		 Bolt, fuel line service valve to cylinder head cover	*BA07.03-P-1003-01E
		 Bolt, right bracket for fuel line clamp to high pressure pump drive housing/cylinder head	*BA07.03-P-1004-01E
		 Bolt, left bracket for high pressure line clamp to cylinder head cover/cylinder crankcase	*BA07.03-P-1005-01E
		 Bolt, fuel line clamp to charge air distribution line	*BA07.03-P-1006-01E
13	Disconnect electrical line (4) on intake manifold (1)		
14	Detach purge line (10) on intake manifold (1)		
15	Detach vacuum line (6) for boost pressure control pressure transducer (Y77/1) on vacuum pump		
16	Detach boost pressure control pressure transducer (Y77/1) with bracket on intake manifold (1) and lay down to the front	 Bolt, pressure transducer holder to charge air distribution line	*BA09.41-P-1010-01O
17	Remove charge air ducts		AR09.41-P-8620ELB
18	Drain off coolant	Vehicles without code (139) Measures for engine cooling M157/M278	
	Notes on coolant	MODEL 207 MODEL 212, 218	AH20.00-N-2080-01A AR20.00-P-1142FH AR20.00-P-1142EL
19	Disconnect bleed line (20) for charge air cooler (2) at connecting point	Vehicles without code (139) Measures for engine cooling M157/M278	
20	Detach clamp for bleed line (20) on ABC pump carrier or guide pulley	 Bolt, low temperature line clamp to bracket	*BA09.41-P-1004-01O
21	Remove poly-V belt		AR13.20-P-0001ELB
22.1	Detach ABC pump with bracket on timing case cover and place with attached lines to one side	Vehicles with code (487) Active Body Control (ABC)  Bolt, guide pulley carrier/ABC pump to timing case cover/coolant pump	*BA13.25-P-1003-01Y
22.2	Remove guide pulley with bracket on timing case cover	Vehicles without code (487) Active Body Control (ABC)  Bolt, guide pulley carrier/ABC pump to timing case cover/coolant pump	*BA13.25-P-1003-01Y
23	Detach coolant return line (21) on oil filter housing	 Bolt, coolant line to timing case cover/oil filter housing	*BA09.41-P-1006-01O
24	Detach coolant return line (21) on coolant hose (22)		
25	Detach coolant return line (23) on timing case cover	 Bolt, coolant line to timing case cover/oil filter housing	*BA09.41-P-1006-01O
26	Detach clamp for coolant feed line (24) on the front cover	Vehicles with code (M005) 4MATIC	
27	Detach lower bracket (28) for coolant feed line (24) on timing case cover	 Bolt, feed line to timing case cover	*BA09.41-P-1005-01O
28	Detach coolant feed line (24) on coolant hose (27)		
29	Detach upper bracket (26) for coolant feed line (24) on timing case cover	 Bolt, feed line to timing case cover	*BA09.41-P-1005-01O
30	Remove screw/bolt for hose fitting (29) for bleed line (20) on timing case cover and pull hose fitting (29) out of the timing case cover	 Installation: Replace sealing ring on oil dipstick guide tube (29).  Bolt, bleed lines hose fitting to timing case cover	*BA09.41-P-1007-01O
31	Remove screw/bolts (30) for intake manifold (1) on cylinder heads	 Bolt, charge air distribution line to cylinder head	*BA09.41-P-1011-01O
32	Lift intake manifold (1)		
33	Disconnect electrical line (9) on front knock sensors		
34	Unclip electrical line (9) for front knock sensors on intake manifold (1)		
35	Remove intake manifold (1) upwards		
36	Modify detachable parts from intake manifold (1)	When replacing	

		<p>i To do this remove screw/bolts (31) for charge air cooler (2) on intake manifold (1) and loosen clamp on throttle valve actuator.</p> <p>Nm Bolt, charge air cooler to charge air distribution line</p>	*BA09.41-P-1001-01O
37	Install in the reverse order		
<	Check		
38.1	Check cooling system for leaktightness	Vehicles without code (139) Measures for engine cooling M157/M278 MODEL 207 MODEL 212, 218	AR20.00-P-1010FH AR20.00-P-1010EL
38.2	Check cooling system for low-temperature circuit for leaktightness	Vehicles with code 139 (Measures for engine cooling M157/M278) MODEL 207 MODEL 212, 218 i Screw tester cap onto low-temperature circuit coolant expansion reservoir and apply the test pressure to the cooling system of the low-temperature circuit.	AR20.00-P-1010FH AR20.00-P-1010EL
39	Read out fault memory with STAR DIAGNOSIS and clear if necessary Connect STAR DIAGNOSIS and read out fault memory		AD00.00-P-2000-04A
⚠ Danger !	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
40	Carry out an engine test run and check intake tract and fuel system for leaktightness		

Nm Injection nozzles, injection valves, lines

Number	Designation		Engine 157	Engine 278
BA07.03-P-1001-01E	Union nut, fuel line to fuel In case of reusability distributor	Nm	22	22
		For new lines		
		Stage 1 Nm	15	15
		Stage 2 4°	90	90

Nm Injection nozzles, injection valves, lines

Number	Designation		Engine 157	Engine 278
BA07.03-P-1002-01E	Union nut, fuel line to high-pressure pump	In case of reusability Nm	22	22
		For new lines		
		Stage 1 Nm	15	15
		Stage 2 4°	90	90

Nm Injection nozzles, injection valves, lines

Number	Designation		Engine 157	Engine 278
BA07.03-P-1003-01E	Bolt, fuel line service valve to cylinder head cover	Nm	9	9

Nm Injection nozzles, injection valves, lines

Number	Designation		Engine 157	Engine 278
BA07.03-P-1004-01E	Bolt, right bracket for fuel line clamp to high pressure pump drive housing/cylinder head	Nm	14	14

Nm Injection nozzles, injection valves, lines

Number	Designation		Engine 157	Engine 278
BA07.03-P-1005-01E	Bolt, left bracket for high pressure line clamp to cylinder head cover/ cylinder crankcase	Nm	9	9

Nm Injection nozzles, injection valves, lines

Number	Designation		Engine 157	Engine 278
BA07.03-P-1006-01E	Bolt, fuel line clamp to charge air distribution line	Nm	5	5

Nm Charge air pipe/charge air cooling

Number	Designation		Engine 157	Engine 278
BA09.41-P-1001-01O	Bolt, charge air cooler to charge air distribution line	Nm	9	9

Nm Charge air pipe/charge air cooling

Number	Designation		Engine 157	Engine 278
BA09.41-P-1004-01O	Bolt, low temperature line clamp to bracket	Nm	9	9

Nm Charge air pipe/charge air cooling

Number	Designation		Engine 157	Engine 278
BA09.41-P-1005-01O	Bolt, feed line to timing case cover	Nm	9	9

Nm Charge air pipe/charge air cooling

Number	Designation		Engine 157	Engine 278
BA09.41-P-1006-01O	Bolt, coolant line to timing case cover/oil filter housing	Nm	9	9

Nm Charge air pipe/charge air cooling

Number	Designation		Engine 157	Engine 278
BA09.41-P-1007-01O	Bolt, bleed lines hose fitting to timing case cover	Nm	9	9

Nm Charge air pipe/charge air cooling

Number	Designation		Engine 157	Engine 278
BA09.41-P-1010-01O	Bolt, pressure transducer holder to charge air distribution line	Nm	5	5

Nm Charge air pipe/charge air cooling

Number	Designation		Engine 157	Engine 278
BA09.41-P-1011-01O	Bolt, charge air distribution line to cylinder head	Nm	9	9

Nm Belt tensioning device

Number	Designation		Engine 157	Engine 278
BA13.25-P-1003-01Y	Bolt, guide pulley carrier/ABC pump to timing case cover/coolant pump	Nm	20	20