

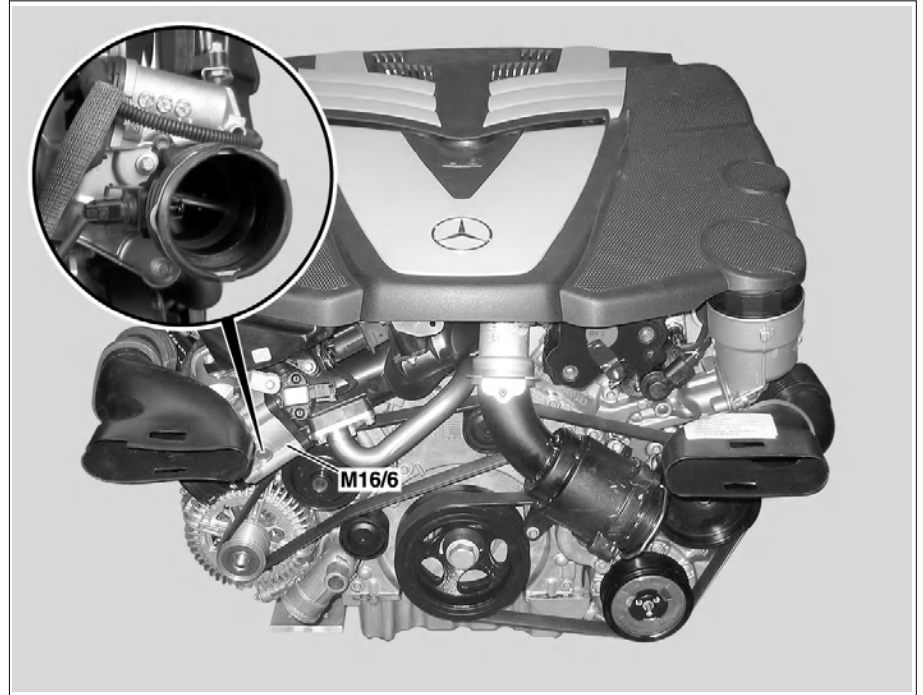
Engine 642 in model 221

### Modification notes

|            |   |                    |
|------------|---|--------------------|
| 16.03.2016 | Engine charge air duct downstream of charge air cooler to throttle valve actuator | BA09.41-P-1005-01J |
|------------|---|--------------------|

Shown on engine 642.9

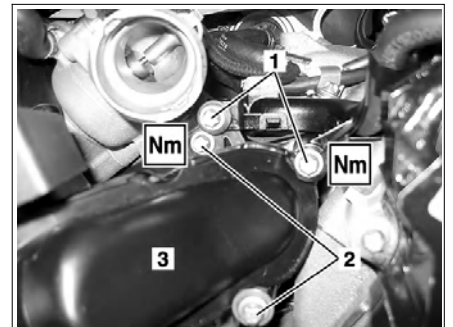
M16/6 Throttle valve actuator



P09.41-2368-06

Shown on engine 642.9

- 1 Screw/bolts
- 2 Screw/bolts
- 3 Mixing chamber



P09.20-2162-01

|   |  |   |  |
|---|--|---|--|
|   | <b>Risk of injury.</b> 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                     |
| ⚠ | Information on preventing damage to electronic components due to electrostatic discharge     |   | AH54.00-P-0001-01A                     |
| ⚠ | <b>Remove/install</b>  |   |  |
| 1 | Remove upper engine cover  |   | AR01.10-P-2405SXI                      |
| 2 | Remove impact plate  | Engine 642.8 in model 221   |  |
| 3 | Remove fan unit  | Engine 642.8 in model 221   |  |
| 4 | Remove engine charge air duct upstream of charge air cooler                                  |   | AR20.40-P-5000SXI<br>AR09.41-P-8623SXI |
| 5 | Remove engine air intake duct downstream of air filter                                       | Engine 642.8 in model 221   |  |
| 6 | Remove engine charge air duct from ATL   | Engine 642.8 in model 221   | AR09.10-P-8130SXI<br>AR09.41-P-8622SXI |

|      |   |  |                     |
|------|---|--|---------------------|
| 7    | Remove right engine air intake duct upstream of left air filter   |  |                     |
| 8    | Remove noise damper downstream of charge air cooler   |  | AR09.40-P-6925SXI   |
| 9    | Unplug charge air hose downstream of charge air cooler  |  | AR09.41-P-8625SXI   |
| 10   | Release and disconnect electrical connection from throttle valve actuator (M16/6)   |  |                     |
| 11   | Release and disconnect electrical connection of glow time output stage (N14/3)  |  |                     |
| 12   | Release and disconnect electrical connection at charge air temperature sensor (B17/8)   |  |                     |
| 13   | Release and disconnect electrical connection at charge air pressure sensor (B5/1)   |  |                     |
| 14   | Remove screw/bolts (6) at throttle valve actuator holder (M16)  | Bracket, throttle valve actuator to cylinder head  | *BA09.41-P-1006-01J |
| 15.1 | Remove holder of return hose  | Engine 642.9 in model 221  |                     |
| 15.2 | Release and disconnect electrical connection at EGR cooler bypass flap switchover valve (Y85)   | Engine 642.8 in model 221  |                     |
| 16   | Remove screw/bolt from glow time output stage holder (N14/3) on cylinder head   |  | AR15.20-P-4500SXI   |
|      |   | M6   | *BA00.10-P-1002-01A |
| 17   | Detach vacuum hose on EGR cooler bypass flap switchover valve (Y85)   | Engine 642.8 in model 221  |                     |
| 18   | Remove screw/bolts on exhaust gas recirculation cooler pipe   | Engine 642.8 in model 221  |                     |
|      |   | <b>Installation:</b> Replace seal.   |                     |
|      |   | EGR line to charge air distributor   | *BA14.20-P-1003-01G |
| 19   | Remove screw/bolts (1, 2) for mixing chamber (3) at charge air distributor  | Screw/bolt, mixing chamber to charge air distributor   | *BA09.20-P-1001-01Q |
| 20   | Push the hose and tubing bracket at the flange of the mixing chamber (3) upwards  |  |                     |
| 21   | Lift mixing chamber (3) up and out  | <b>Installation:</b> Replace seals.  |                     |
| 22   | Remove screw/bolts for engine charge air duct downstream of charge air cooler   | Engine 642.8 in model 221<br>When replacing the mixing chamber (3).  |                     |
|      |   | Engine charge air duct downstream of charge air cooler to throttle valve actuator  | *BA09.41-P-1005-01J |
| 23   | Pull engine charge air duct downstream of charge air cooler out of the mixing chamber (3)   | Engine 642.8 in model 221<br>When replacing the mixing chamber (3).  |                     |
|      |   | <b>Installation:</b> Replace seals.  |                     |
| 24   | Install in the reverse order  |  |                     |
| 25   | <b>Risk of accident</b> from vehicle starting off by itself when engine running. <b>Risk of injury</b> (bruises and burns) resulting from working on the engine while it is being started or when it is running.<br>Perform an engine test run and check engine for proper function | 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  |

Headless screws: bolts and nuts, coarse-pitch thread

| Number             | Designation | Model all             |
|--------------------|-------------|-----------------------|
| BA00.10-P-1002-01A | M6          | 8.8 Galvanized Nm 9   |
|                    |             | Phosphated Nm 9       |
|                    |             | 10.9 Galvanized Nm 13 |
|                    |             | Phosphated Nm 12      |
|                    |             | 12.9 Galvanized Nm 16 |
|                    |             | Phosphated Nm 14      |

Intake manifold

| Number             | Designation  | Engine 642 |
|--------------------|--|------------|
| BA09.20-P-1001-01Q | Screw/bolt, mixing chamber to charge air distributor | M6 Nm 9    |

Charge air pipe/charge air cooling

| Number             | Designation   |    |    | Engine 642 |
|--------------------|---|----|----|------------|
| BA09.41-P-1005-01J | Engine charge air duct downstream of charge air cooler to throttle valve actuator | M5 | Nm | 5          |
|                    |   | M6 | Nm | 9          |

**Nm** Charge air pipe/charge air cooling

| Number             | Designation                                       |  |    | Engine 642 |
|--------------------|---|--|----|------------|
| BA09.41-P-1006-01J | Bracket, throttle valve actuator to cylinder head |  | Nm | 9          |

**Nm** Exhaust gas recirculation

| Number             | Designation                        |  |    | Engine<br>642.82/83/85/86/87/<br>886/887/9 |
|--------------------|------------------------------------|--|----|--|
| BA14.20-P-1003-01G | EGR line to charge air distributor |  | Nm | 13   |