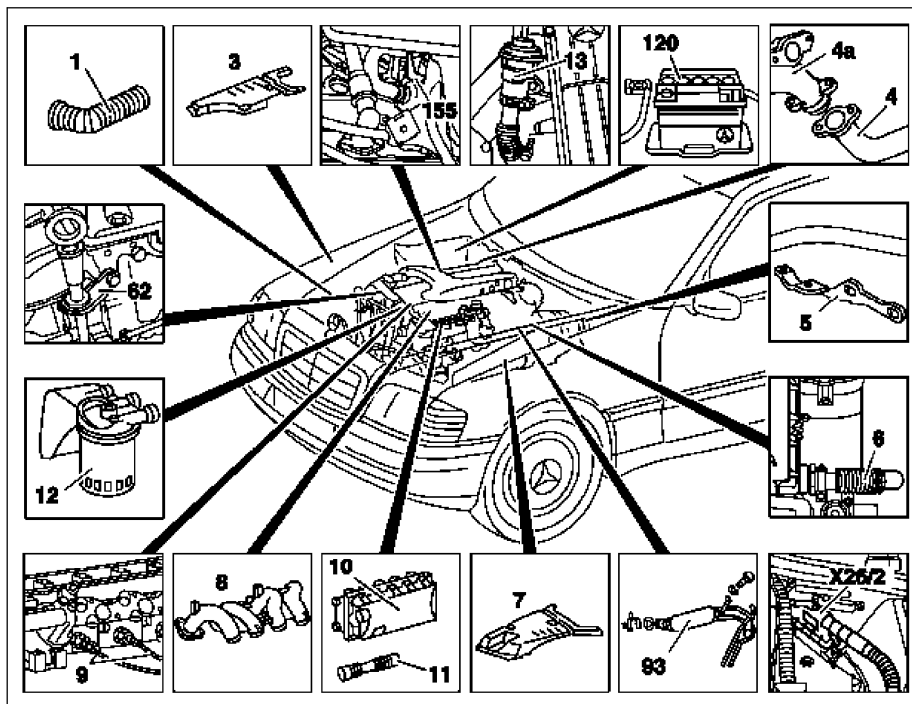


ENGINE 601 in MODEL 124, 201, 202

ENGINE 602 in MODEL 124, 201

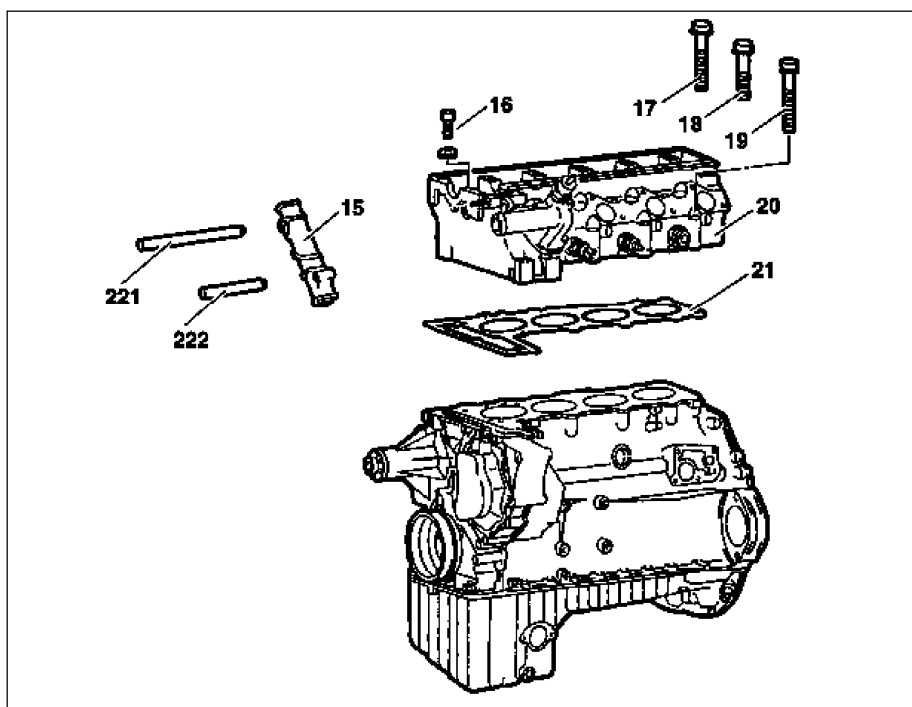
ENGINE 603 in MODEL 124, 126, 140

- 1 Intake hose
 3, 7 Cover
 4 Exhaust pipe
 4a Exhaust manifold
 5 Exhaust side support
 6 Exhaust gas recirculation line
 8 Intake manifold
 9 Glow plug connection line
 10 Air filter
 11 Air intake hose
 12 Fuel filter
 13 EGR valve
 62 Bracket
 93 Manifold of heater feed line
 120 Battery
 155 Supporting strut
 X26/2 Plug connection



P01.30-0363-06

- 15 Slide rail cylinder head
 16 Hexagon socket head screws of cylinder head to timing case cover
 17 Cylinder head bolts
 18 Cylinder head bolts
 19 Cylinder head bolts
 20 Cylinder head
 21 Cylinder head gasket
 221 Slide rail pins
 222 Slide rail pins




P01.30-0364-06

Modification notes

| | | | |
|--------|-----------------------------|------------------|--------------------|
| 1.1.91 | Cylinder head bolts changed | Refer to Step 24 | BT01.30-P-0003-01A |
|--------|-----------------------------|------------------|--------------------|

| | Remove/Install | | |
|---|--|---|------------------------------------|
| | Remove cylinder head only once the engine has cooled off | | |
| 1 | Remove camshaft | Installation: Check basic position of camshaft | ra05006010220x AR05.20-P-6010HW |
| 2 | Remove nozzle holder | On naturally aspirated engine On turbocharged engine | ra07016010230x ra07016026810x |

| | | | |
|----------|--|--|---|
| 3 | Remove radiator | Models 124, 126, 140, 201 Model 202 | AR20.20-P-3865HW AR20.20-P-3865HA |
| 4 | Remove poly V-belt | | AR13.25-P-3200HW |
| 5 | Pinch-off ground line at battery (120) | | AR54.10-P-0003A |
| 6.1 | Remove air intake hose (11) and air cleaner cover (10) with filter insert | Naturally aspirated engine | |
| 7.1 | Detach cover (3, 7) | Model 140 | |
| 8.1 | Detach intake hose (1) to turbocharger | On turbocharged engine | |
| 9.1 | Unscrew supporting strut (155) of heater return line | On turbocharged engine | |
| 10.1 | Unscrew pressure oil line charger to cylinder crankcase | On turbocharged engine | ra09006026020x |
| 11 | Detach fuel filter (12) | For this step pinch off fuel line and unbolt bolts to cylinder head. | |
| 12 | Unbolt bracket (62) of oil dipstick guide tube | | |
| 13.1 | Detach pipe line (6) between exhaust gas recirculation valve and intake manifold or charge air distribution pipe | For engine fitted with exhaust gas recirculation | |
| 14.1 | Detach exhaust gas recirculation (13) line to air guide housing | For engine fitted with exhaust gas recirculation | |
| 15 | Unbolt exhaust side support (5) at transmission | | |
| 16 | Unscrew exhaust pipe (4) from exhaust manifold | On naturally aspirated engine On turbocharged engine | ra49006010100x ra49006027000x |
| 17.1 | Remove manifold of heater feed at rear left cylinder head | For engines fitted with exhaust gas recirculation Installation: Replace O-ring | |
| 18 | Unscrew glow plug connection line (9) | | |
| 19.1 | Unplug connector (X26/2) | Model 202 | |
| 20 | Remove intake manifold (8) on naturally aspirated engine or charge air distribution pipe on turbocharged engine | On naturally aspirated engine On turbocharged engine | ra14006010180x ra14006021310x |
| 21 | Knock out slide rail pins (221, 222) at cylinder head | Installation: Coat collar of sliding rail pins with sealing mass. | AR01.30-D-5800-04B *116589203300 *116589013400 *605589003300 *BR00.45-Z-1010-01A |
| 22 | Take slide rail (15) of timing chain out of chain case | | |
| 23 | Unscrew hexagon socket head screws (16) in chain case | | *BA01.40-P-1002-01A |
| BT 24 | Cylinder head bolt changed Unscrew cylinder head bolts (17, 18, 19) in reverse order of tightening pattern | Loosening/tightening pattern Installation: Check length and if necessary use new cylinder head bolts. Observe different bolt length and tightening instructions. Oil thread and bolt head contact surface before assembling | BT01.30-P-0003-01A *601589001000 AR01.30-P-5800-01HW AR01.30-P-5800-03HA *BE01.30-P-1001-04A *BA01.30-P-1003-01C |
| 25 | Remove cylinder head (20) together with cylinder head gasket (21) | Clean separating surfaces and check for cracks. Install cylinder head together with new seal. | |
| 26 | Clean threaded holes of cylinder head bolts | blow out with compressed air | |
| 27.1 | Remove oil from cooling and heating system | If oil present in cooling and heating system | ra20006010016x |
| 28.1 | Remove overflow tank and clean | If oil present in cooling and heating system Engine 602.96 in Model 124, 201 Engine 603.96 in Model 124 Engine 603 in Model 140 | AR20.30-P-4540HW AR20.30-P-4540HX |
| 29 | Install in the reverse order | | |

| | | | |
|---|--|--|--------------------|
| 30 | Check engine oil level, adjust to correct level. | | |
| 31 | Inspect cooling system for leaks | | AR20.00-P-1010HA |
|  Danger! | Risk of accident caused by vehicle starting off by itself when engine is running. Risk of injury caused by contusions and burns when working in engine during starting procedure | Secure vehicle to prevent it from moving. Wear closed and snug-fitting work clothes. Do not grasp hot or rotating parts. | AS00.00-Z-0005-01A |
| 32 | Run engine and inspect for leaks | | |
| 33 | Read fault memory, erase | | AD00.00-P-1000AZ |

Cylinder head/cylinder head bolts

| Number | Designation | Engines 601, 602 except 602.98, 603 | | |
|--------------------|--------------------|-------------------------------------|----|------------|
| BE01.30-P-1001-04A | Cylinder head bolt | Thread diameter | M | 10 |
| | | Length (L) when new | mm | 80/102/115 |
| | | max. length (L) | mm | 82/104/117 |
| | | Fig. see | | - |

Cylinder head tightening torques

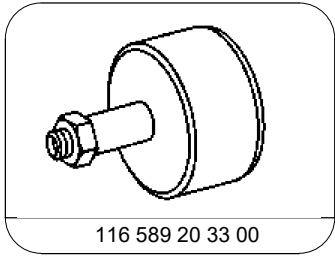
| Number | Designation | | Engine 601 | Engine 602 except 602.98 |
|--------------------|------------------------|---------------|------------|--------------------------|
| BA01.30-P-1003-01C | Cylinder head bolt M10 | 1st stage | Nm | 15 |
| | | 2nd stage | Nm | 35 |
| | | Step 3 | └° | 90 |
| | | Settling time | min | 10 |
| | | 4th stage | └° | 90 |
| | | Fig. see | | - |

Cylinder head tightening torques

| Number | Designation | | Engine 603 |
|--------------------|------------------------|---------------|------------|
| BA01.30-P-1003-01C | Cylinder head bolt M10 | 1st stage | Nm |
| | | 2nd stage | Nm |
| | | Step 3 | └° |
| | | Settling time | min |
| | | 4th stage | └° |
| | | Fig. see | |

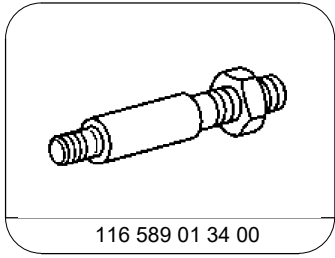
Crankcase, timing case cover, end cover

| Number | Designation | | Engine 601, 602 except 602.98, 603 |
|--------------------|--|----|------------------------------------|
| BA01.40-P-1002-01A | Bolt of cylinder head to timing case cover | Nm | 25 |



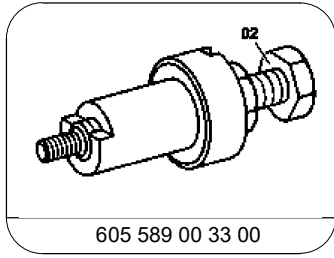
116 589 20 33 00

Impact extractor



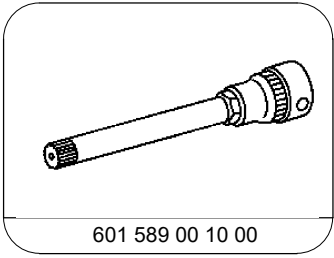
116 589 01 34 00

Threaded pin



605 589 00 33 00

Extractor



601 589 00 10 00

Screwdriver bit

Auxiliary repair materials

| Number | Designation | Order number |
|--------------------|---------------------|---------------|
| BR00.45-Z-1010-01A | Loctite 574 sealant | 001 989 89 20 |