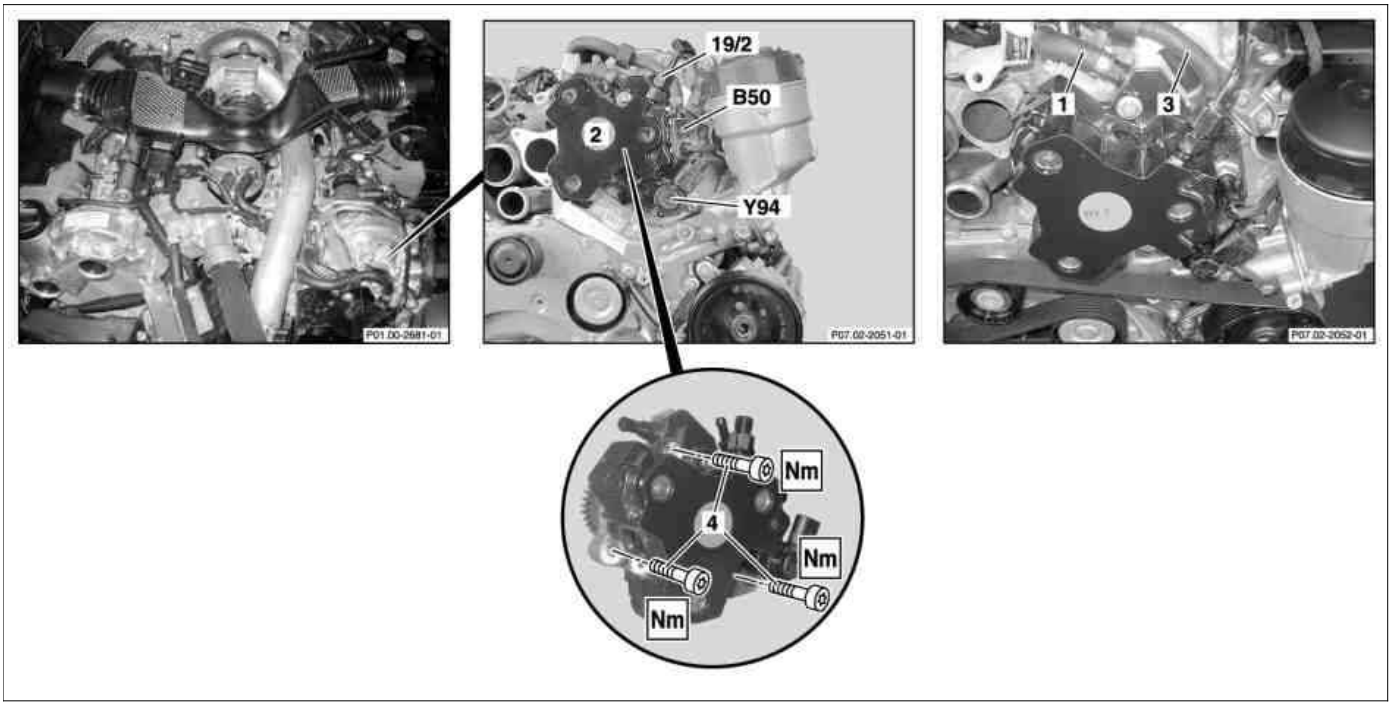
Engine 642 in model 207, 212, 218, 221



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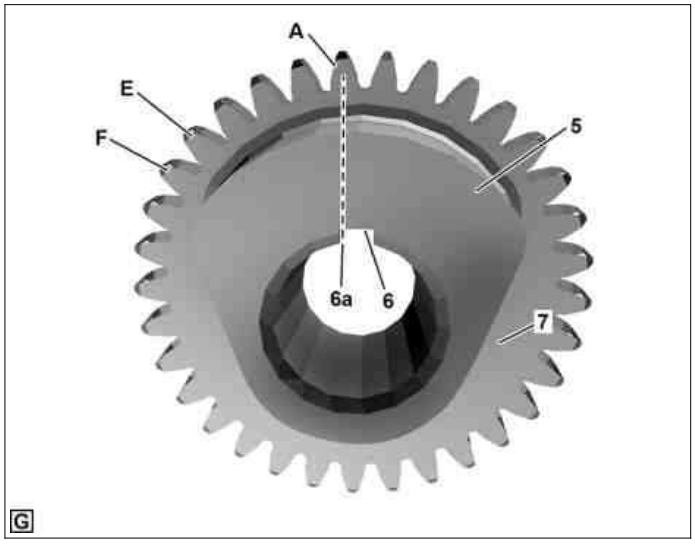
Illustrated on model 207

1	*Fuel hose*	*4*	*Bolts*	*Y94*	*Quantity control valve*
2	*High pressure pump*	*19/2*	*Pressure line*		
3	*Fuel hose*	*B50*	*Fuel temperature sensor*		

Variant A

5	*Correctional weight*
6	*Groove*
6a	*Left edge*
7	*Drive gear*
A	*Tooth*
E	*Tooth*
F	*Tooth*



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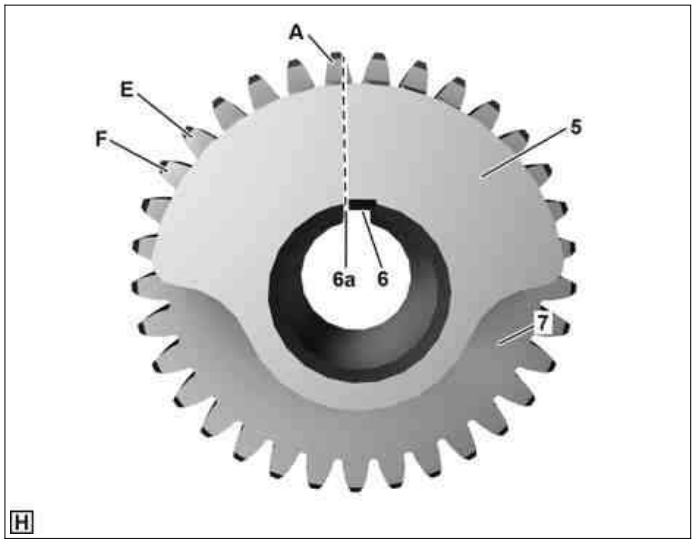
Variant B

5 Correctional weight
6 Groove
6a Left edge
7 Drive gear
A Tooth
E Tooth
F Tooth



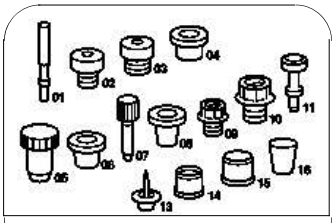
P07.02-2191-11

	Risk of explosion caused by fuel igniting, risk of poisoning caused by inhaling and swallowing fuel as well as risk of injury to eyes and skin caused by contactwith fuel.	No fires, sparks, open flames or smoking. Pour fuels into suitable and appropriately marked containers only. Wear protective clothing when handling fuel.	AS47.00-Z-0001-01A
	Risk of explosion caused by fuel igniting. **Risk of injury** to skin and eyes caused by fuel spraying out at high pressure	Keep all ignition sources out of hazard area. Do not carry out any work on system when it is pressurized.	AS07.16-Z-0001-01A
	Remove		
1	Remove engine cover	Model 207, 212, 218, 221 with engine 642 Model 221 with engine 642	AR01.10-P-2405SXI
2	Remove cover for belt drive	Model 207, 212, 218 with engine 642	
3	Remove retaining clamp on high-pressure line from cylinder head cover	Model 207, 212, 218 with engine 642	
4.1	Detach pressure line (19/2) at high-pressure fitting	Model 207, 212, 218 with engine 642 Seal the pressure line (19/2) using a suitable stop plug. This will prevent ingress of foreign bodies. Counterhold threaded sleeve of pressure line (19/2) when releasing using an appropriate tool. Record plug	AR07.16-P-1080SXI *129589009100
4.2	Remove pressure line (19/2)	Model 221 with engine 642 Seal the pressure line (19/2) using a suitable stop plug. This will prevent ingress of foreign bodies. Counterhold threaded sleeve of pressure line (19/2) when releasing using an appropriate tool. Record plug	AR07.16-P-1080SXI *129589009100
7	Detach fuel hoses (1, 3) on high-pressure pump (2)	Close off fuel hose (1, 3) using a suitable stop plug. This will prevent ingress of foreign bodies. Record plug	*129589009100
8	Disconnect electrical connection at quantity control valve (Y94)		
9	Disconnect electrical connection on fuel temperature sensor (B50)		
10	Position piston of cylinder 1 on crankshaft to ignition TDC	The engine must not be turned back against its direction of rotation. The timing chain can skip otherwise and engine damage can occur.	
11	Remove coolant hose from bracket	Model 207, 212, 218 with engine 642	
12	Remove screw/bolts for cover bracket in front of belt drive and remove bracket	Model 207, 212, 218 with engine 642	

13	Unscrew bolts (4) of the high pressure pump (2)	Clean threads. Cold degreasing agent/cold cleaning solvent HAKU 1025-920	*BR00.45-Z-1051-04A
14	Detach high-pressure pump (2) from the cylinder head	The high-pressure pump (2) must not be disassembled or opened.	
	Install		
15	Modify drive gear (7)	When replacing the high-pressure pump (2).	AR07.02-P-1021SXI
16	Clean sealing surfaces of the high-pressure pump (2)		
17	Replace O-ring on high-pressure pump (2)	Apply engine oil to O-ring.	
18	Apply marking to tooth (A) of the drive gear (7)	To apply the markings in operation steps 17 and 18 and to adjust in operation step 19 the high-pressure pump (2) must be brought (for example held) in the removed condition in the installation position. Place groove (6) vertically, determine from the left edge (6a) of the groove (6) vertically to the upper tooth (A) and mark.	
19	Apply markings to teeth (E, F)	Determine from tooth (A) counterclockwise the teeth (E, F). Here tooth (A) is the 1st tooth and teeth (E, F) the 5th and 6th tooth.	
20	Adjust position of drive gear (7) relative to high-pressure pump (2)	Teeth (E, F) must be positioned vertically upright.	
21	Place high-pressure pump (2) on cylinder head	Ensure that the previously adjusted drive gear (7) is not twisted. Vibrations will occur otherwise.	
22	Screw on high-pressure pump (2) with screw/bolts (4)	Replace screw/bolts (4) due to micro-encapsulation. Bolt, high-pressure pump to cylinder head	*BA07.16-P-1021-01C
23	Place cover bracket upstream of belt drive and screw screw/bolts in for cover bracket upstream of belt drive	Model 207, 212, 218 with engine 642	
24	Insert coolant hose into the bracket	Model 207, 212, 218 with engine 642	
25	Connect electrical connection at fuel temperature sensor (B50)		
26	Connect electrical connection to quantity control valve (Y94)		
27	Mount fuel hoses (1, 3) on high-pressure pump (2)	Check condition of hose clamps and fuel hoses (1, 3) and replace if necessary.	
28	Install pressure line (19/2)	Counterhold threaded sleeve for the pressure line (19/2) when releasing using an appropriate tool.	AR07.16-P-1080SXI
29	Attach covering for the belt drive	Model 207, 212, 218 with engine 642	
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
30	Check fuel system for leaks with engine running	When replacing the high-pressure pump (2) the ignition must be switched on for at least 15 seconds before the engine is started. The high-pressure pump (2) would be damaged otherwise.	
31	Fit engine cover	Model 207, 212, 218, 221 with engine 642 Model 221 with engine 642 Ensure correct seating of the engine cover.	AR01.10-P-2405SXI

Nm **Common rail diesel injection system (CDI)**

Number	Designation		Engine 642
BA07.16-P-1021-01C	Bolt, high-pressure pump to cylinder head	Nm	15



129 589 00 91 00

Record plug

Repair materials

Number	Designation	Order number
BR00.45-Z-1051-04A	Cold degreasing agent/cold cleaning solvent HAKU 1025-920	Chemische Werke Kluthe GmbH Gottlieb-Daimler-Str. 12 69115 Heidelberg Germany Tel. +49 6221 5301-0 Fax +49 6221 5301-176 http://kluthe.com