

P01.20-2163-09

1 Fuel pipe  
2 Bracket

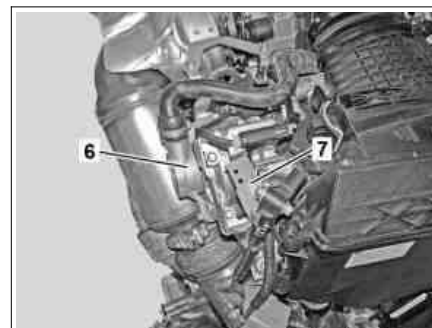
3 Oil dipstick guide tube  
4 Oil separator

5 Connection fitting for oil separator

B6/1 Camshaft Hall sensor




























Shown on engine 642.872

6 Vent valve  
7 Pressure differential sensor bracket (DPF)



P01.20-2249-01

	<b>Remove/install</b>		
<b>Danger!</b>	<b>Risk of explosion</b> caused by fuel igniting, <b>risk of poisoning</b> caused by inhaling and swallowing fuel and <b>risk of injury</b> to eyes and skin caused by contact with fuel	No fire, sparks, open flames or smoking. Pour fuels only into suitable and appropriately marked containers. Wear protective clothing when handling fuel.	AS47.00-Z-0001-01A
<b>Danger!</b>	<b>Risk of explosion</b> from fuel igniting. <b>Risk of injury</b> 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 systems when they are under pressure	AS07.16-Z-0001-01A
	Notes on self-locking nuts and bolts		AH00.00-N-0001-01A
<b>Danger!</b>	<b>Risk of injury</b> caused by <b>fingers being pinched or crushed</b> when removing, installing or aligning hoods, doors, trunk lids, liftgates or sliding roof	Keep body parts and limbs well clear of moving parts.	AS00.00-Z-0011-01A
1.1	Removes strut tower brace	Model 164.8 only Remove strut tower brace from strut tower mounts.	AR62.30-P-2500GY
1.2	Remove partition wall between wheel wells	Model 251 only	AR62.30-P-2400RT
2	Remove engine air intake duct downstream of air filter		AR09.10-P-8130GZB
3	Remove engine charge air duct on turbocharger		AR09.41-P-8622GZB
4	Remove exhaust gas recirculation positioner	When removing left cylinder head cover	AR14.20-P-1020GZB
5	Remove injectors		AR07.16-P-1000GZB
6	Remove vent valve		AS07.16-P-1010GZB

7	Remove power steering expansion reservoir	 On left cylinder head cover.	
8	Detach fuel line (1)	 On left cylinder head cover.  The fuel line (1) must be removed with the flexible feed and return hose so that expansion reservoir for the power steering can be placed to one side.	
9	Unscrew bracket (2) for vacuum line	 On left cylinder head cover.  	*BA01.20-P-1003-01P *BA01.20-P-1004-01P
10	Loosen cylinder head cover bolt in stages and remove	 On left cylinder head cover.  Slacken cylinder head bolts in the reverse sequence of the tightening procedure when the engine has cooled down so that the cylinder head cover is not warped. ↓ Bolt tightening procedure for cylinder head cover  <b>Installation:</b> Pay attention to the tightening procedure and the tightening instructions for the cylinder head bolts so that the cylinder head cover is not warped and the camshafts are not damaged. ↓ Bolt tightening procedure for cylinder head cover  Bolt connecting cylinder head cover to cylinder head	AR01.20-P-5014-03TI  AR01.20-P-5014-03TI  *BA01.20-P-1001-01P
11	Remove left cylinder head cover   Notes on sealant path for cylinder head cover	 Detach left cylinder head cover with impact extractor and threaded stud, then remove.  Threaded stud  Impact extractor Loctite 5970 sealant	AH01.30-P-1000-08PI *102589003400 *116589203300 *BR00.45-Z-1013-01A
12	Remove vacuum pump	 On right cylinder head cover.	AR43.05-P-1320GZ
13	Remove oil separator (4) from right cylinder head cover	Vehicles up to model year 2009: 	*BA01.20-P-1005-01P
14	Remove oil separator connection fittings (5) from right cylinder head cover	Vehicles up to model year 2009:  <b>Installation:</b> Replace O-ring and radial shaft sealing ring.	
15	Remove pressure differential sensor bracket (DPF) (7) from right cylinder head cover	Vehicles as of model year 2009 	*BA07.04-P-1010-01G
16	Remove vent valve (6)	Vehicles as of model year 2009  <b>Installation:</b> Replace O-ring and radial shaft sealing ring.	
17	Detach electrical connector from camshaft Hall sensor (B6/1)	 On right cylinder head cover.	
18	Loosen cylinder head cover bolt in stages and remove	 On right cylinder head cover.  Loosen cylinder head cover bolts in reverse order of the tightening procedure on a cooled off engine so that the cylinder head cover does not shift, see: ↓ Bolt tightening procedure for cylinder head cover  <b>Installation:</b> Observe tightening procedure and tightening instructions for cylinder head cover bolts so that the cylinder head cover does not shift and leads to damage to the camshaft, see: ↓ Bolt tightening procedure for cylinder head cover  Bolt connecting cylinder head cover to cylinder head	AR01.20-P-5014-03TI  AR01.20-P-5014-03TI  *BA01.20-P-1001-01P
19	Remove right cylinder head cover   Notes on sealant path for cylinder head cover	 Detach cylinder head cover using impact extractor and threaded studs, then remove. 	AH01.30-P-1000-08PI *102589003400

		Impact extractor Loctite 5970 sealant	*116589203300 *BR00.45-Z-1013-01A
	<b>Clean</b>		
20	Clean sealing surface on cylinder head covers and cylinder heads	Do not use any sharp-edged tools or abrasive paper as this will damage the sealing surfaces. Loctite 7200 Loctite 7063 cleaning spray (150 ml)	AR01.00-P-0050-01A *BR00.45-Z-1038-04A *BR00.45-Z-1046-04A
21	Install in the reverse order		
	<b>Checking</b>		
22	Check engine oil level	In order to avoid measurement errors, vehicle must be parked on an even surface. Inspect engine oil level about 5 min. after switching off warm engine Without particulate filter With code 474 Particulate filter	AR18.00-P-3035-01PI *BF18.00-P-1001-01A *BF18.00-P-1001-01S
<b>Danger!</b>	<b>Risk of accident</b> caused by vehicle starting off by itself when engine is running. <b>Risk of injury</b> caused by contusions and burns during starting procedure or when working near the engine as it is running	Secure vehicle to prevent it from moving by itself. Wear closed and snug-fitting work clothes. Do not touch hot or rotating parts.	AS00.00-Z-0005-01A
23	Check for oil leaks with engine running		
24	Check fuel system for leaks with engine running		

#### Crankcase ventilation, cylinder head cover

Number	Designation	Engine 642	
BA01.20-P-1001-01P	Bolt, cylinder head cover to cylinder head	Stage 1, apply	Nm 4
		Stage 2, initial torque	Nm 6
		Stage 3, final torque	Nm 9
BA01.20-P-1003-01P	Bolt, bracket to cylinder head	M6×12	Nm 9
BA01.20-P-1004-01P	Bolt, bracket to cylinder head cover	M6×12	Nm 9
BA01.20-P-1005-01P	Bolt connecting oil separator to cylinder head cover		Nm 14

#### Sensors

Number	Designation	Engine 642 with particle filter	
BA07.04-P-1010-01G	Bolt, pressure differential sensor bracket to cylinder head cover and cylinder head	Nm	14

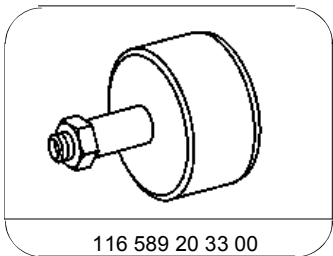
#### Engine lubrication system

Number	Designation	Engine 642.940/950 without particulate filter	Engine 642.820/822/870 / 872 without particulate filter

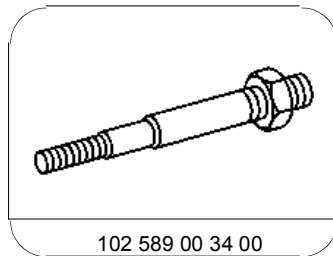
BF18.00-P-1001-01A	Engine oil	Filling capacity (oil and filter change)	Liters	8.5	8.5
		Specifications for Operating Fluids	Sheet	BB00.40-P-0228-03A	BB00.40-P-0228-03A
			Sheet	BB00.40-P-0228-05A	BB00.40-P-0228-05A
			Sheet	BB00.40-P-0228-51A	BB00.40-P-0228-51A
			Sheet	BB00.40-P-0229-03A	BB00.40-P-0229-03A
			Sheet	BB00.40-P-0229-31A	BB00.40-P-0229-31A
			Sheet	BB00.40-P-0229-05A	BB00.40-P-0229-05A
			Sheet	BB00.40-P-0229-51A	BB00.40-P-0229-51A

### Engine lubrication system

Number	Designation	Engine 642.940/950 with particulate filter	Engine 642.820/822/870 /872 with particulate filter		
BF18.00-P-1001-01S	Engine oil	Filling capacity (oil and filter change)	Liters	8.5	8.5
		Specifications for Operating Fluids	Sheet	BB00.40-P-0228-51A	BB00.40-P-0228-51A
			Sheet	BB00.40-P-0229-31A	BB00.40-P-0229-31A
			Sheet	BB00.40-P-0229-51A	BB00.40-P-0229-51A



Impact extractor



Threaded stud

### Repair materials

Number	Designation	Order number
BR00.45-Z-1013-01A	Loctite 5970 sealant	A 003 989 98 20
BR00.45-Z-1038-04A	Loctite 7200	Henkel Loctite Deutschland GmbH Arabellastrasse 17 81925 München Germany Tel. +49 899268-0 Fax + 49 899101978 www.Loctite.de
BR00.45-Z-1046-04A	Loctite 7063 cleaning spray (150 ml)	A 001 986 71 71 10