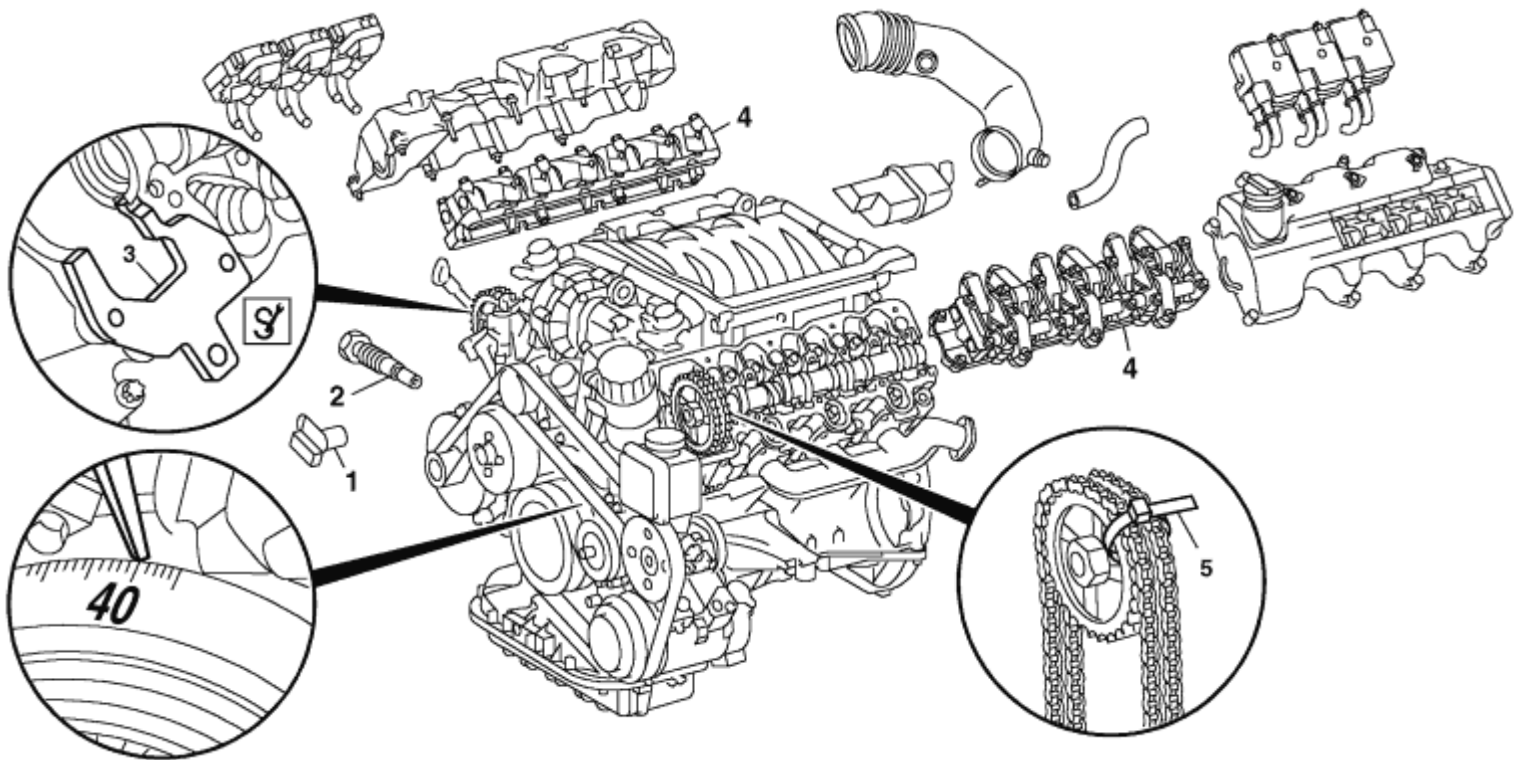


AR05.20-P-6992AU	Remove/install camshafts	7.8.96
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## ENGINE 112, 113















P05.20-0303-09

**Shown on engine 112**

1 Camshaft Hall sensor  
2 Chain tensioner

3 Locating plate of right camshaft 40° after first ignition TDC  
4 Camshaft bearing bridge  
5 Tie strap

	Remove		
1	Remove cylinder head covers	Air cleaner mounted on vehicle.	<a href="#">AR01.20-P-5014B</a>
		Air cleaner positioned at engine side.	<a href="#">AR01.20-P-5014BV</a>
2	Position piston of cylinder 1 at 40° after TDC	Rotate engine at crankshaft in direction of rotation until 40° marking on belt pulley/ vibration damper is aligned with marking on timing case cover. The grooves on the camshafts must be pointing toward the inner V.	<a href="#">AR05.10-P-6858V</a>
		Engine must not be rotated backwards.	
3	Remove chain tensioner (2)	Model 163 except 163.174.	<a href="#">AR05.10-P-7800C</a>
		Model 163.174.	<a href="#">AR05.10-P-7800CA</a>
4	Remove camshaft Hall sensor (1)		<a href="#">AR15.10-P-2000A</a>
5	Detach camshaft sprocket, take off	Tie together camshaft sprocket and timing chain with cable strap (5).	
		Open wrench.	<a href="#">112 589 00 01 00</a>
		Insertion tool	<a href="#">112 589 01 03 00</a>
		Torque wrench	<a href="#">001 589 72 21 00</a>
6	Detach camshaft bearing bridge (4)	Observe slackening diagram!	
		Engine 112, 113 except code (479) Cylinder shutoff.	<a href="#">AR05.20-P-7103AU</a>
7	Remove camshaft		
	<b>Install</b>		

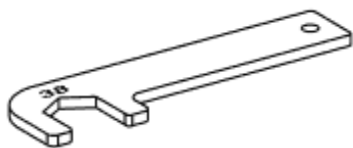
			
8	Install camshaft	 Pay attention to camshaft marking when installing camshaft.	
	Camshaft code number and assignment	Engine 112, 113.	<a href="#">AH05.20-N-0100-01A</a>
		 Oil the bearing surfaces! For tolerance reasons, camshafts must not be replaced individually. Ensure correct seating of cover on face end of camshaft.	
9	Mount camshaft bearing bridge (4)	 Observe tightening diagram.	
		Engine 112, 113 except code (479) Cylinder shutoff.	<a href="#">AR05.20-P-7103AU</a>
10	Rotate camshaft into basic position		<a href="#">AR05.20-P-6020AU</a>
		 Insertion tool	<a href="#">112 589 00 32 00</a>
		 Locating plate	<a href="#">112 589 01 32 00</a>
		 Open-end wrench	<a href="#">112 589 00 01 00</a>
11	Fit on camshaft sprocket	 Remove cable strap (5)!	
			<a href="#">BA05.20-P-1001-01B</a>
		 Open-end wrench	<a href="#">112 589 00 01 00</a>
12	Install camshaft Hall sensor (1)		<a href="#">AR15.10-P-2000A</a>
			<a href="#">BA15.10-P-1002-03A</a>
13	Install chain tensioner (2)	Model 163 except 163.174	<a href="#">AR05.10-P-7800C</a>
		Model 163.174.	<a href="#">AR05.10-P-7800CA</a>
14	Inspecting timing of engine		<a href="#">AR05.10-P-6858V</a>
15	Install cylinder head covers	Air cleaner mounted on vehicle.	<a href="#">AR01.20-P-5014B</a>
		Air cleaner positioned at engine side.	<a href="#">AR01.20-P-5014BV</a>

 **Camshaft**

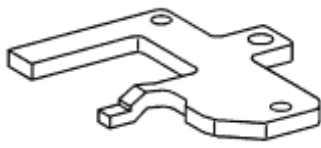
Number	Designation	Engine 112	Engines 113.942/965/981
BA05.20-P-1001-01B	Bolt of camshaft sprocket	M12 x 45	50
		1st stage	50
		Step 2	90
		4°	90

 **Position sensor**

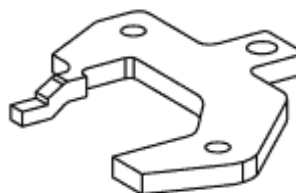
Number	Designation	Engine 112, 113
BA15.10-P-1002-03A	Camshaft Hall sensor to cylinder head	Nm 8



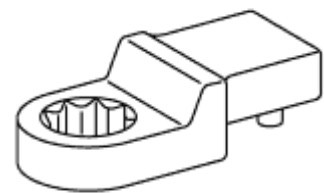
112 589 00 01 00  
Open-end wrench



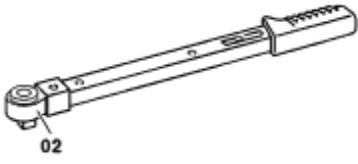
112 589 01 32 00  
Locating plate



112 589 00 32 00  
Locating plate



112 589 01 03 00  
Insertion tool



001 589 72 21 00

Torque wrench