

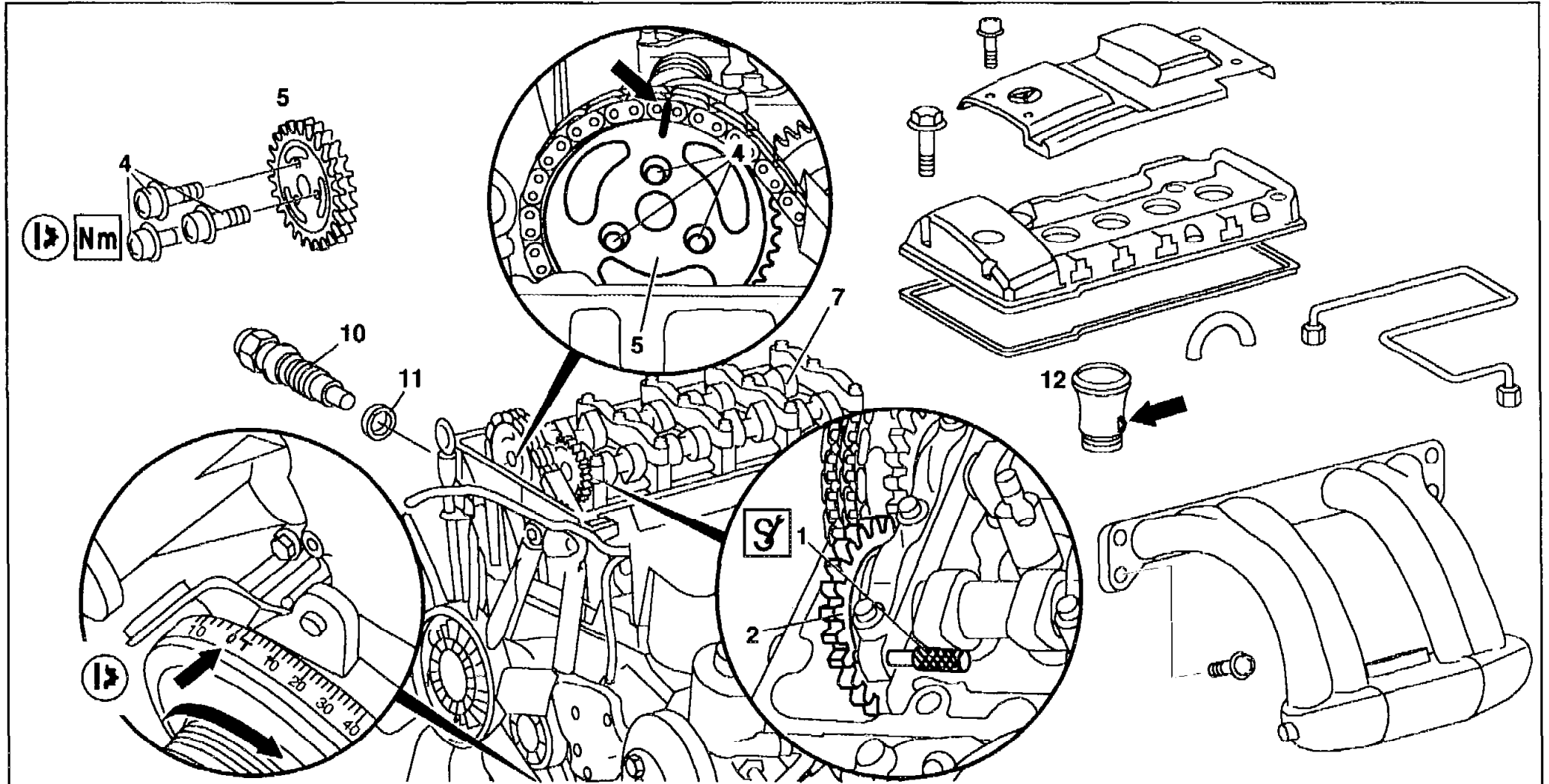
N3


AR05.20-P-6992HA

### Removing, installing camshafts

2.4.93

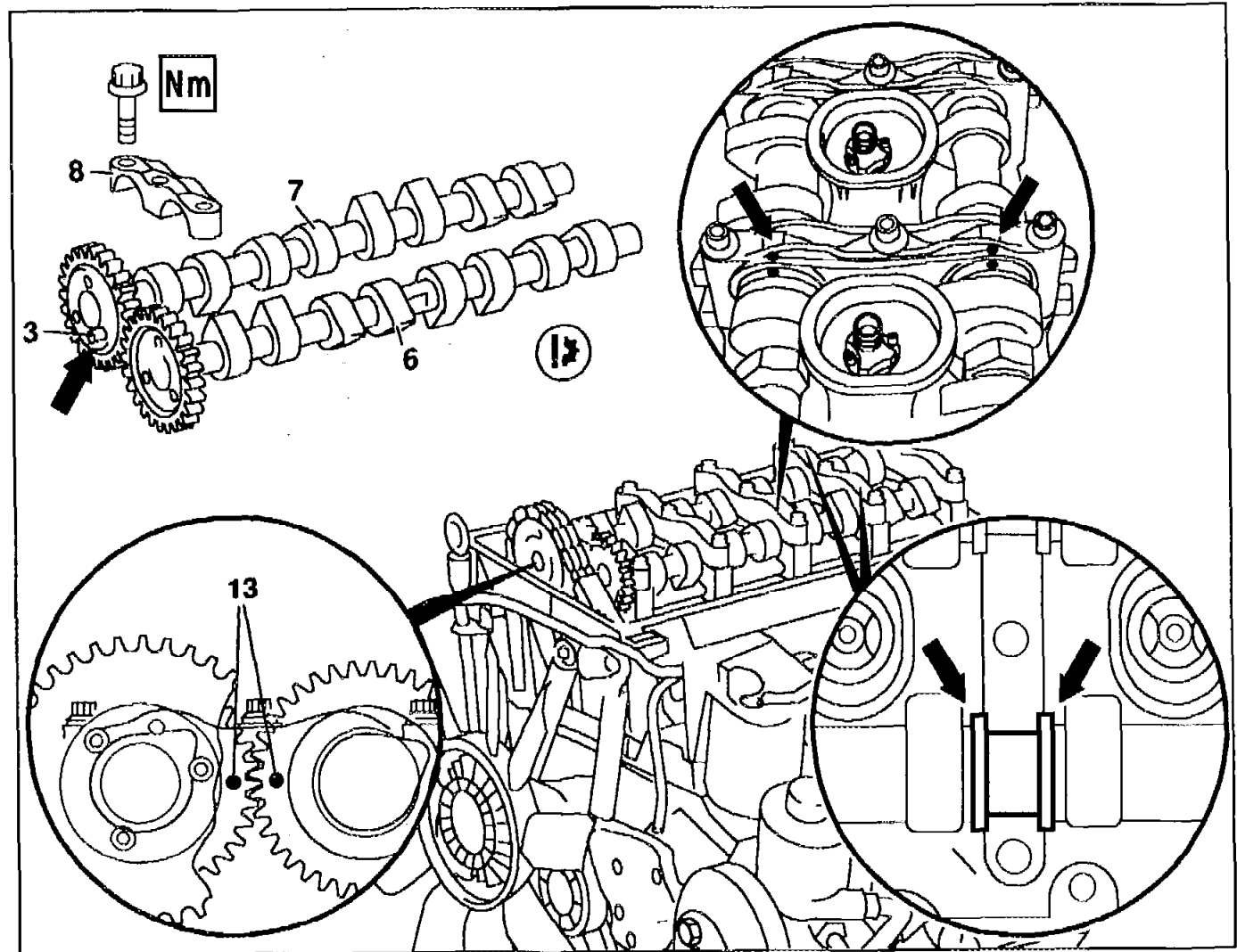
ENGINE 604, 605, 606 /



- 1  Retaining pin
- 2 Inlet camshaft sprocket
- 4 Bolts of camshaft sprocket
- 5 Camshaft sprocket

- 7 Exhaust camshaft
- 10 Chain tensioner
- 11 Seal of chain tensioner
- 12 Bushes of shaft cover






- 3 Dowel pin
- 6 Inlet camshaft
- 7 Exhaust camshaft
- 8 Camshaft bearing cap
- 13 Drillings









## Modification notes

1.3.95	Technical modification: Bolts for attaching camshaft housing discontinued. The camshaft must be bolted to the cylinder head when performing repairs.	See operation 8	AR05.20-6992HA
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	Removing		
1	Remove cylinder head cover		AR01.20-P-5014HA
2	Position piston of cylinder 1 to ignition TDC	 Rotate engine at crankshaft. Do not crank engine at the bolt of the camshaft sprocket. Do not crank engine backward.  Markings of camshaft / camshaft bearing cap (arrows) should be aligned.	
3	Lock inlet camshaft (6)	Insert the retaining pin (1) through the 1st camshaft bearing cap into the hole in the inlet camshaft sprocket (2) 	111 589 03 15 00
4	Install retaining lock (7) for crankshaft / starter ring gear		AR03.30-P-5000HA
5	Mark camshaft sprocket (5) relative to timing chain	 For work during which crankshaft must not be rotated, connect camshaft sprocket (5) and timing chain with cable strap	
6	Remove chain tensioner (10)		AR05.10-P-7800HA <b>M1</b>

7	Detach camshaft sprocket (5) at exhaust camshaft (7) and take off	 Pay attention to dowel pin (3) (arrow). Take off camshaft sprocket (5) with timing chain fitted on	000 589 01 10 00
8	Bolt on camshaft housing at cylinder head	Engine 604, 605, 606 as of 09/94  The camshaft housing has to be bolted to the cylinder head in order to avoid damage (leaks at the seals between camshaft housing cylinder head) when removing the camshafts	AR05.20-P-6992-10A <b>A16</b>
 BT	Bolts for attaching camshaft housing to cylinder head discontinued		BT05.20-P-0001-01A <b>P17</b>
9	Unbolt camshaft bearing caps	Pay attention to marking of camshaft bearing caps  Engine 604 Engine 605 Engine 606	AR05.20-P-6992-05HA <b>C16</b> AR05.20-P-6992-05HB <b>D16</b> AR05.20-P-6992-05HC <b>F16</b>
10	Remove inlet and exhaust camshafts (6, 7)		
11	Remove bushes of recess cover (12)		
	Installing		

12	Install bushes of recess cover (12)	<p>Replace seals.</p> <p>The lug on the bush of the recess cover (arrow) should be aligned with the guide notch in the camshaft housing.</p>	
13	Install inlet and exhaust camshafts (6, 7)	<p>ⓘ The camshafts are very sensitive to fracturing. Ensure they are installed free of stress.</p> <p><b>i</b> <b>Installation:</b> oil bucket tappets and camshaft bearing points, inspect bucket tappets for ease of movement. Align inlet and exhaust camshafts at axle bearing (arrows).</p> <p>Install camshafts so that the two markings (13) in the camshaft sprockets are positioned opposite and the markings of camshaft and camshaft bearing cap are aligned (arrows).</p> <p>Pay attention to assignment of camshafts. The camshaft code numbers are indicated on the thrust collar of the axle bearing.</p>	BE05.20-P-1001-01A
14	Install camshaft bearing caps	<p>Pay attention to marking of camshaft bearing caps</p> <p>Engine 604</p> <p>Engine 605</p> <p>Engine 606</p>	<p>AR05.20-P-6992-05HA     <b>C16</b></p> <p>AR05.20-P-6992-05HB     <b>D16</b></p> <p>AR05.20-P-6992-05HC     <b>F16</b></p>



		Install camshaft bearing caps (8) at the same point in the reverse order. Tighten bearing cap bolts evenly in steps each of 1 turn	BA05.20-P-1002-01A
15	Lock inlet camshaft (6)	Insert the retaining pin (1) through the 1st camshaft bearing cap into the hole in the inlet camshaft sprocket (2). The piston of cylinder 1 should be positioned at the ignition TDC when inlet camshaft is locked.	111 589 03 15 00
16	Install camshaft sprocket (5) at exhaust camshaft (7)	  <b>Installation:</b> replace bolts of camshaft sprocket (4), pay attention to dowel pin (3) (arrow). Install camshaft sprocket (5) with timing chain fitted on; when doing this, ensure that the markings on timing chain and camshaft sprocket are aligned.  	000 589 01 10 00  BA05.20-P-1001-01A
17	Install chain tensioner (10)	Replace seal of chain tensioner (11)	AR05.10-P-7800HA <b>M1</b>
18	Inspect basic position of camshafts	If necessary, after inspecting ↓  Set basic position of camshafts	AR05.20-P-6010HA <b>J2</b>  AR05.20-P-6020HA <b>C3</b>
19	Fit remaining parts to engine		

**Camshaft code numbers**

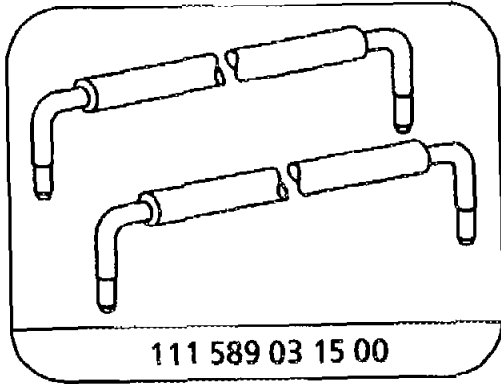
Number	Designation	Engine 604	Engine 605.910/ 911/912	Engine 606.910/ 912
BE05.20-P-1001-01A	Camshaft code numbers	Inlet	11	11
		Exhaust	10	08
				08
				07

**Camshaft code numbers**

Number	Designation	Engine 605.960/ 962	Engine 606.961/ 962
BE05.20-P-1001-01A	Camshaft code numbers	Inlet	14
		Exhaust	08
			11
			07

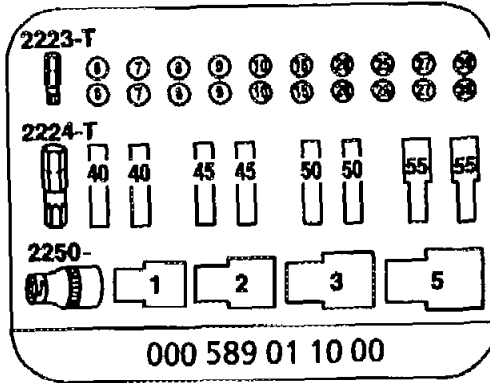
**Nm Camshaft**

Number	Designation	Engine 604, 605, 606
BA05.20-P-1001-01A	Bolt of camshaft sprocket	Nm 18
BA05.20-P-1002-01A	Bolt of camshaft bearing caps	Nm 15



111 589 03 15 00

Retaining pins



000 589 01 10 00

Torx bit set