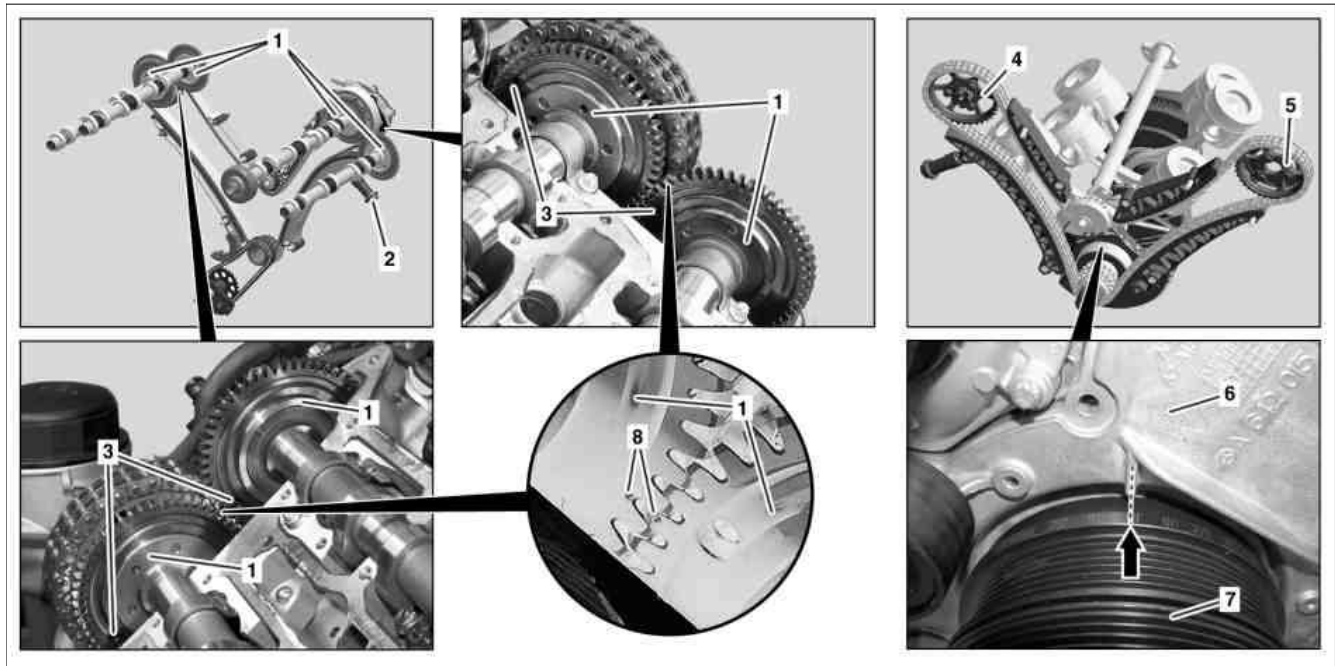


Engine 642



D05.20-1127-09

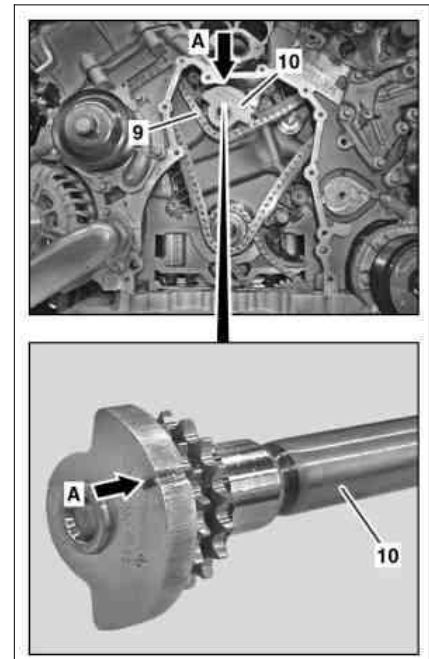
Shown on engine 642.9

- 1 Camshafts
- 2 Chain tensioner
- 3 Markings











- 4 Camshaft sprocket (right)
- 5 Camshaft sprocket (left)
- 6 Timing case cover

- 7 Belt pulley
- 8 Markings
- Pfeil Marking for TDC

- 9 Timing chain
- 10 Balance shaft



D03.20-1112-03

	Warning	Risk of injury . Moving parts can pinch, crush or, in extreme cases even sever extremities.	No parts of the body or limbs should be within the operating area of mechanical components when moving components.	AS00.00-Z-0009-01A
	Caution	Risk of injury to skin and eyes due to handling of engine oil. Risk of poisoning caused by swallowing engine oil	Wear protective gloves, protective clothing and safety glasses. Do not fill engine oil into beverage containers.	AS18.00-Z-0001-01A
	Caution	Risk of injury caused by scraping or cutting body parts on sharp vehicle parts	Always wear protective gloves when working on or near sharp and non-deburred vehicle parts. Deburr repair panels.	AS00.00-Z-0017-01A
		Notes on avoiding damage through contamination and foreign objects		AH00.00-P-5000-01A
		Remove		
1		Place camshafts (1) in basic position		AR05.20-P-6010OM
2		Remove timing case cover (6)	Model 213, 238, 253 with engine 642 Model 222 with engine 642 Model 164, 251 with engine 642 Model 166, 292 with engine 642 Model 203, 209 with engine 642 Model 204 with engine 642 Model 211 with engine 642 Model 219.322 with engine 642 Model 207, 212, 218, 221 with engine 642 Model 461, 463 with engine 642  The crankshaft must not turn while belt pulley (7) is being removed.	AR01.40-P-8000OGW AR01.40-P-8000LFD AR01.40-P-8000GZB AR01.40-P-8000OGR AR01.40-P-8000PI AR01.40-P-8000CO AR01.40-P-8000TI AR01.40-P-8000TQ AR01.40-P-8000SXI AR01.40-P-8000GY
		Check		
3		Install timing case cover (6) and belt pulley (7) provisionally without applying sealant	 Only perform if crankshaft was turned.	
4		Check whether the top dead center marking (arrow) of the belt pulley (7) is flush with the stay on timing case cover (6); align if necessary	 Only perform if crankshaft was turned.	
5		Remove timing case cover (6) and belt pulley (7)	 Only perform if crankshaft was turned.	
6		Check whether markings (8) on the camshafts (1) are aligned with each other and that the markings (3) on camshafts (1), seen in the direction of travel, are aligned on the left side to the cylinder head upper edge	If the markings (8) are not aligned with each other, or if the markings (3), seen in the direction of travel, are not aligned with the cylinder head's left upper edge. ↓ Put timing chain (9) onto the camshaft sprocket (right) (4) and camshaft sprocket (left) (5) again. Model 213, 238, 253 with engine 642 Model 222 with engine 642 Model 166, 292 with engine 642 Model 164, 203, 204, 207, 209, 211, 212, 218, 219.322, 221, 251, 461, 463 with engine 642	AR05.20-P-6040OGW AR05.20-P-6040LFD AR05.20-P-6040OGR AR05.20-P-6040OM
7		Check whether marking for the TDC (arrow) on balance shaft (10) points vertically upward	If the marking for the TDC (arrow) is not pointing vertically upward. ↓ Remove camshaft sprocket (5) and put timing chain (9) onto balance shaft (10) again. Model 213, 238, 253 with engine 642 Model 222 with engine 642 Model 166, 292 with engine 642 Model 164, 203, 204, 207, 209, 211, 212, 218, 219.322, 221, 251, 461, 463 with engine 642	AR05.20-P-6040OGW AR05.20-P-6040LFD AR05.20-P-6040OGR AR05.20-P-6040OM
		Install		
8		Install timing case cover (6)	Model 213, 238, 253 with engine 642 Model 222 with engine 642 Engine 642 in model 164, 251 Model 166, 292 with engine 642 Model 203, 209 with engine 642 Model 204 with engine 642 Model 211 with engine 642 Model 219.322 with engine 642 Model 207, 212, 218, 221 with engine 642 Model 461, 463 with engine 642	AR01.40-P-8000OGW AR01.40-P-8000LFD AR01.40-P-8000GZB AR01.40-P-8000OGR AR01.40-P-8000PI AR01.40-P-8000CO AR01.40-P-8000TI AR01.40-P-8000TQ AR01.40-P-8000SXI AR01.40-P-8000GY