

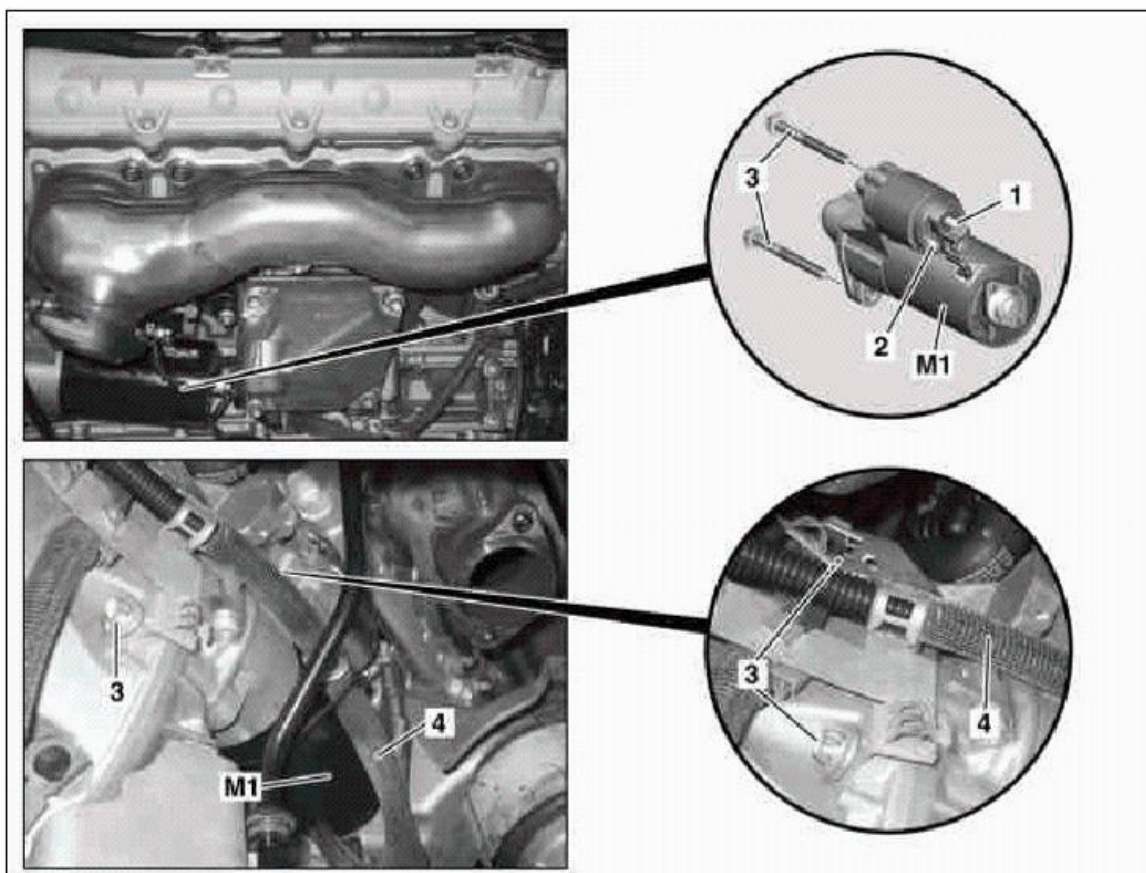
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AR15.30-P-7100QMG	Remove/install starter	15.2.12
ENGINE 156.982 in MODEL 209.377 /477		

1 *Electric cable circuit 30*
2 *Electric cable circuit 50*
3 *Bolts*
4 *Electrical line*

M1 *Starter*



The diagram illustrates the process of removing or installing the starter motor (M1) on the engine. The main image shows the engine block with the starter motor (M1) and electrical lines (3, 4). Two circular insets provide close-up views of the starter motor and its electrical connections. The top inset shows the starter motor (M1) with electrical lines (1, 2) and bolts (3). The bottom inset shows the starter motor (M1) with electrical lines (3, 4) and bolts (3).

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	Remove/install		
Danger!	Risk of injury caused by fingers being pinched or crushed when removing, installing or aligning hoods, doors, trunk lids, tailgates or sliding roof.	Keep body parts and limbs well clear of moving parts.	AS00.00-Z-0011-01A
Danger!	Risk of death caused by vehicle slipping or toppling off the lifting platform.	Align vehicle between columns of vehicle lift and position four support plates at vehicle lift support points specified by vehicle manufacturer.	AS00.00-Z-0010-01A
Danger! 1 	Risk of explosion caused by escaping oxyhydrogen gas. Risk of injury caused by caustic burns to eyes, skin and mucous membranes from battery electrolyte (contains diluted sulfuric acid) or metal spatter due to short circuit. Risk of burn injuries caused by short circuit. Risk of poisoning caused by swallowing battery electrolyte (contains diluted sulfuric acid) or absorption of lead over the skin or orifices Disconnect ground line from battery Notes on battery	No fire, sparks, open flames or smoking. Wear acid-resistant gloves and clothing and safety glasses with side guards. Do not place any conductive objects on the battery and avoid any short circuit from battery positive to ground. Only fill liquid battery electrolyte (diluted sulfuric acid) into suitable and appropriately marked containers. Insulate ground line clamp as a protection against unintentional contact of dismantled ground line with ground point of battery. Vehicles with code 889 Keyless Go: Switch engine off, remove Keyless-Go cards from the vehicle and store outside of transmitter range.	AS54.10-Z-0001-01A AR54.10-P-0003Q AH54.10-P-0001-01A
2	Open engine hood		AR88.40-P-1000Q
3	Remove both intake air ducts		

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4	Remove front engine cover	ⓘ Do not tilt front engine cover, but lift upwards vertically otherwise the retaining lugs can break off.	
5.1	Mount engine carrier arm	Vehicles without code P98 Black Series ⓘ	AR33.10-P-0100-01P *240589006100
5.2	Mount the engine hoist	Vehicles with code P98 Black Series	AR33.10-P-0105QBS
6	Raise vehicle with lifting platform		AR00.60-P-1000P
7	Remove lower engine compartment paneling		AR61.20-P-1105P
8	Remove right catalytic converter		AR49.10-P-5531AC
9	Remove heat shield from right knock sensor	Vehicles without code P98 Black Series	AR15.12-P-2184TMG
10	Unclip electrical line (4) and hang to one side	ⓘ Installation: Ensure that no electrical lines are pinched or damaged	
11	Remove protection against accidental contact for circuit 30 (1) electrical line from starter (M1)		
12	Dismount electrical line for circuit 30 (1) at starter (M1)	Nm	*BA15.30-P-1001-01O
13	Remove circuit 50 (2) electrical line on starter (M1)	Nm	*BA15.30-P-1002-01O
14.1	Remove engine mount with right engine support	Vehicles without code P98 Black Series	AR22.10-P-1260QMG
14.2	Remove engine mounts	Vehicles with code P98 Black Series	AR22.10-P-1260QMG
15	Remove bolts (3) from starter (M1)	Nm	*BA15.30-P-1003-01O
16	Take starter (M1) down and out		
17	Check ring gear on drive plate for wear and damage	ⓘ When replacing starter (M1). ⓘ Rotate engine at center bolt of	

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17	Check ring gear on drive plate for wear and damage	<p>i When replacing starter (M1).</p> <p>i Rotate engine at center bolt of crankshaft in the direction of rotation.</p>	
18	Install in the reverse order		
19	Perform basic programming		AR00.19-P-0200Q
 Danger!	<p>Risk of accident caused by vehicle starting off by itself when engine is running. Risk of injury caused by contusions and burns during starting procedure or when working near the engine as it is running</p>	<p>Secure vehicle to prevent it from moving by itself.</p> <p>Wear closed and snug-fitting work clothes.</p> <p>Do not touch hot or rotating parts.</p>	AS00.00-Z-0005-01A
20	Carry out engine test run		

Nm Starter

Number	Designation	Engine 156
BA15.30-P-1001-010	Nut, connection for circuit 30	Nm 15
BA15.30-P-1002-010	Nut, connection for circuit 50	Nm 8
BA15.30-P-1003-010	Bolt connecting starter to crankcase	Nm 40

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