



**Advices for the MB
V12 Ignition Coil Pack
M137 / M275 / M285 engines**

Important information!

Product for professionals only.

Please strictly follow the correct steps when installing the product, otherwise you will irreparably damage the parts!

After installation no returns are accepted.

Please refer for installation to the complete installation description from Mercedes Benz.

Please check if you received the correct item, and inspect the item carefully for any transport damage.

Returning a product is with electronics is only possible using the right of withdrawal if the item is un-used, not installed and undamaged, with intact seal.

Please check the conditions that apply to the sale and limited return possibilities after usage of the product.

Reading this document signifies your agreement to our terms and conditions. Work should only be performed by a trained mechanic else damage might be caused to the vehicle. The ignition system is working under high voltage powering a fast vehicle, taking the wrong installation steps can have serious consequences. You are responsible for studying the official service manual and the necessary safety proceedings that should be taken before working on the vehicle as when errors are made serious injuries and death can occur. Mercedes Benz software is required to check system after installation.

Before installation.

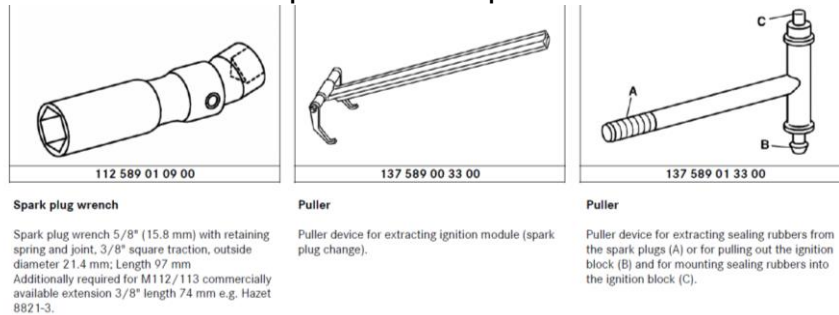
- It is advised to change both the left and right hand side coil packs, and the transformer, at once. A defect transformer or coil pack could, even when used a short while, lead to irreversible damage of the other parts.
- Before installation always install 24 new spark plugs. Use only original OEM spark plugs (double platinum ground and centre electrode plugs for normal aspirated V12 and iridium plugs for twin turbo V12 engines with appropriate air gap.
- Wrong or old spark plugs can lead to failure of the coil pack.
- The coils come with 12 new red rubber isolators inside each of the ignition coil pack, they should be checked and changed when defect or after installation of every new coil, else it can lead to failure of the coil pack.

Mounting the coil pack.

- Make sure to check if the coil pack is mounted correctly.
- The ignition coil must be installed with care using the special tools from Mercedes Benz. Failure to do so may cause the printed circuit board or the coil pack pipes to bend and crack during assembly, rendering the ignition coil fully unusable.
- Use electrode contact paste.
- Please install the heatshield on the ignition coil pack as the heat of the engine easily damages the coil packs without the heat shield.

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Required tools for this procedure:



Diagnosing error codes.

- Always make sure the battery is fully charged and the alternator is working. Bad or low voltage can lead to glitches in the modules.
- Use Xentry Star diagnostic equipment to remove old error codes and to check if error codes remain.
- Perform the commissioning protocol (in ME) to update the software after installation of the new coils
- Please feel free to forward any error codes and/or measurements to our team in order to help you further.

Common issues.

- Misfire on single or multiple individual cylinders could be caused by a defect coil pack.
- Misfire on a complete bank (right bank cylinder 1-6, left bank cylinder 7-12) could be caused by a defect voltage transformer module as well as a defect coil pack, or by any signal from the engine leading to the ECU shutting off 1 side for ignition.
- Misfire on groups of 3 cylinders such as cylinder 1-3, or 9-12, could be caused by a bad, worn or defect (upstream or downstream) lambda O2 sensor, or an old or defect three way catalytic converter.

Further diagnosing misfire codes.

Some other issues that can cause misfire, are generally sensors that are defect or old, and have an improper signal or have glitches, such as;

- defect or old knock sensor
- defect or old oil pressure sensor
- defect or dirty mass air flow MAF sensor
- pressure sensor upstream / downstream of throttle valve actuator
- bad camshaft sensor
- bad signals from sensors in the engine-support mounts and transmission-support mounts
- upstream or downstream lambda sensors.

Please check also for defect or improper working;

- camshaft adjustment valves
- air cleaner
- map-dependent boost pressure control valves
- boost pressure sensor
- electric air injection pump/secondary air pump

It is also documented that the following issues could lead to misfires;

- carbon deposits in the cylinders
- bad compression of 1 or more cylinders
- failing valve cover gasket
- bad/dirty injectors (use injector cleaner procedure) and/or defect or damaged seals of the injectors
- false ventilation or false air in the vacuum lines
- bad or dirty gas inlet valve
- bad valve stem seals (common on these engines)
- bad piston rings (common on these engines)
- defect regulating flaps and valves inside the air inlet manifold
- thermal problems of the engine

Finally the engine computer ECU should be checked as well as its wiring and fuse, and operate without glitches.

Diagnosing while 1 of the issues above exist, might throw error codes noted as misfire on 1 or multiple cylinders, or lead to the engine ECU shutting off 1 side of the engine, to prevent damage, leading to a misfire error code on 6 or 12 cylinders.

Please make sure to check all these components well, as any defect even when used in a running engine for a short period, can lead to a malfunctioning or damage of the coil pack, transformer or other parts.

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Important differences between M275, M285 and M137 engine.

M275, M285	M137
<p>Detection of boost pressure through signal from pressure sensor upstream of throttle valve actuator (B28/6). Detection of load through signal from pressure sensor downstream of throttle valve actuator (B28/7). Hot film mass air flow sensor no longer applicable.</p>	<p>One hot film mass air flow sensor with integrated intake air temperature sensor</p>
<p>One exhaust gas turbocharger (bi-turbo) made of steel casting for each cylinder bank. Turbine housing integrated into exhaust manifold, shaft housing coolant cooled.</p>	<p>Naturally aspirated engine</p>
<p>For each exhaust gas turbocharger a water/charge air cooler. For both water/charge air coolers a separate low-temperature cooling circulation with low temperature cooler and electric circulation pump (M44). Engine 285: actuation of electric circulation pump (M44) from motor electronics control module via relay (N10/9 kO) cannot be verified, because the relay is actuated by its own output stage in the passenger-side signal acquisition and actuation module (N1 0/9).</p>	
<p>One air cleaner for each cylinder bank. Downstream of each air cleaner in the air cleaner housing a pressure sensor (B28/4, B28/5) is installed, in order to recognize the pressure drop across the air cleaner. To limit the maximum charger speed the pressure ratio downstream/upstream of the compressor (pressure value of B28/6 to B28/4 and B28/5) is calculated and regulated by the map-dependent boost pressure control.</p>	<p>One air cleaner</p>
<p>One three-way catalytic converter per cylinder bank. A total of 4 O2 sensors, each upstream and at the side of the two three way catalytic converters.</p>	<p>A firewall three way catalytic converter for 3 cylinders each. A total of 8 O2 sensors, each upstream and downstream of each of the 4 firewall three way catalytic converters.</p>
<p>No camshaft adjustment</p>	<p>Camshaft adjustment with engine oil pressure, 2 valve camshaft adjustment (Y49/1, Y49/2)</p>
<p>No cylinder shutoff</p>	<p>Cylinder shutoff for left-hand cylinder bank, Oil pressure sensor downstream of secondary oil pump for cylinder shutoff, Exhaust flap in exhaust pipe for cylinder shutoff</p>
<p>ECl ignition system (AC voltage ignition system with integrated ionic current measurement), ignition voltage 32 kV, two spark plugs per cylinder (dual ignition).</p>	<p>ECl ignition system (AC voltage ignition system with integrated ionic current measurement), ignition voltage 30 kV, two spark plugs per cylinder (dual ignition).</p>
<p>Detection of combustion misfires through ionic current signals and through smooth operation evaluation using the crankshaft position sensor.</p>	<p>Detection of combustion misfires through ionic current signals.</p>
<p>Air injection with electric air pump (M33), air injection actuated over an air pump switchover valve (Y32), Combination valve air injection designed for suction and charging.</p>	<p>Air injection with electric air pump (M33) Air injection for each cylinder bank can be individually actuated, two air pump switchover valves (Y32/1, Y32/2) Air injection combination valve for suction operation</p>
<p>Purge line with check valve, so that boost pressure cannot get to the activated charcoal canister.</p>	<p>Purge line for naturally aspirated engine without check valve.</p>
<p>The fuel system is designed as an induction system, the fuel filter with integrated diaphragm pressure regulator, and the fuel supply is demand controlled. The fuel pump (maximum delivery rate approx. 245 l/h) is actuated by the fuel pump control module (N118) using a pulse width modulated signal, in accordance with the signals from the fuel pressure sensor (B4/7).</p>	<p>The fuel system is designed as an induction system, the fuel filter with integrated diaphragm pressure regulator, and the fuel pump unregulated.</p>

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