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		Misfiring
1	Fault code (  ) Readout on generic scan tool)	<p>0629 Misfire cumulative error, damaging to the TWC (P0300)</p> <p>0630 Misfire cumulative error, emission limit (P0300)</p> <p>0632 Misfire cumulative error, emission limit after start (P0300)</p> <p>0633 Misfire on cylinder 1, damaging to the TWC (P0301)</p> <p>0634 Misfire on cylinder 1, emission limit (P0301)</p> <p>0636 Misfire on cylinder 1, emission limit after start (P0301)</p> <p>0637 Misfire on cylinder 4, damaging to the TWC (P0304)</p> <p>0638 Misfire on cylinder 4, emission limit (P0304)</p> <p>0640 Misfire on cylinder 4, emission limit after start (P0304)</p> <p>0641 Misfire on cylinder 3, damaging to the TWC (P0303)</p> <p>0642 Misfire on cylinder 3, emission limit (P0303)</p> <p>0644 Misfire on cylinder 3, emission limit after start (P0303)</p> <p>0645 Misfire on cylinder 6, damaging to the TWC (P0306)</p> <p>0646 Misfire on cylinder 6, emission limit (P0306)</p> <p>0648 Misfire on cylinder 6, emission limit after start (P0306)</p> <p>0649 Misfire on cylinder 2, damaging to the TWC (P0302)</p> <p>0650 Misfire on cylinder 2, emission limit (P0302)</p> <p>0652 Misfire on cylinder 2, emission limit after start (P0302)</p> <p>0653 Misfire on cylinder 5, damaging to the TWC (P0305)</p> <p>0654 Misfire on cylinder 5, emission limit (P0305)</p> <p>0656 Misfire on cylinder 5, emission limit after start (P0305)</p>
2	Fault storage  Actuation of engine diagnosis indicator lamp (EURO4) or CHECK ENGINE (MIL) malfunction indicator lamp (  )	<p>After expiry of test duration and fault</p> <p>Misfire damaging to the TWC : the indicator lamp is actuated immediately.</p> <p>Misfire emission limit: after 8 faults in various driving cycles, whereby at least 4 faults must be detected in one driving cycle.</p> <p>Misfire emission limit after start: after two faults in various driving cycles.</p>
3	Checking frequency	Continuous
4	Checked signal or status	Number of detected combustion misfires (detection via a smooth operation assessment)
5	<b>Fault setting conditions</b> - Limit value, TWC deteriorating  - Limit value for emission limit - Limit value of emission limit after	<p>- Fault if there are more than 16 combustion misfires (depending on the engine speed and loads according to the performance map) on one cylinder bank within 200 engine revolutions.</p> <p>- Fault if there are more than 22 combustion misfires within 1000 engine revolutions.</p>

	start	- Fault if there are more than 25 combustion misfires within 1000 engine revolutions after the start.
6	Check prerequisites	<ul style="list-style-type: none"> <li>- Engine speed 450 to 6700 rpm</li> <li>- Engine load (vehicle moving) at least 7 to 23% (dependent on the engine speed)</li> <li>- Engine load (idling, vehicle stationary) at least 5%</li> <li>- No abrupt acceleration (no large changes in the engine speed and load)</li> <li>- Intake air temperature higher than -30°C</li> <li>- Coolant temperature higher than -14°C</li> <li>- Coolant temperature at engine start greater than -24°C</li> <li>- No road bumps detected (via CAN of ESP control unit, determined by comparing wheel speeds)</li> <li>- Sensor adaptation already performed in deceleration</li> <li>- No ESP control intervention function</li> <li>- No cylinder-selective inertia fuel cutoff active</li> <li>- No fault in the ignition system with safety retarded setting of the ignition timing</li> <li>- No fault in throttle flap position, Hall sensor for crankshaft, camshaft adjustment or CAN.</li> </ul>
7		<p>If an excessive number of combustion misses occur at one cylinder the corresponding fuel injection valve will be switched off (cylinder-selective fuel cutoff).</p> <p><b>Misfires through faults in the ignition system</b>  If ignition does not take place misfiring occurs. If in addition to misfiring faults there are also other ignition faults stored, then start the troubleshooting by beginning with the ignition system (for example ignition coil defect, spark plug defect, short circuiting to ignition coils or plug on the ignition coil loose).</p> <p><b>Misfires due to fuel starvation</b>  If combustion misfires are recognized, the additional fault codes 2125, 2126 or 2127 will be emitted if the fuel tank level is too low. This workshop information indicates combustion misfires due to fuel starvation.</p> <p><b>Misfiring because of miscellaneous causes</b>  Combustion misfires may be caused by many faults in the injection system. Usually in this case other component or function faults are stored, in addition to the misfire fault.  Faults in the fuel supply can also lead to misfiring during combustion.  The cause may also be due to faults in the engine mechanics.</p>