



① Normal Condition
 Insulator nose greyish-yellow to russet brown. Engine is in order. Heat range of plug correct. Mixture setting and ignition timing are correct, no misfiring, cold starting device functions correctly. No deposits from fuel additives containing lead or from alloying constituents in the engine oil. No overheating.



② Normal Condition
 As per above.



③ Partially Melted Centre Electrode
 Centre electrode partially melted, blistered, spongy insulator tip.
Cause: Overheating due to over advanced ignition timing, defective ignition distributor, inadequate fuel quality.
Effect: Misfiring, loss of power (engine damage).
Remedy: Check engine timing, ignition and mixture formation.



④ Heavy Wear on Ground Electrode
Cause: Aggressive fuel and oil additives. Unfavourable influence of gas turbulence in the combustion chamber, possibly caused by deposits. Knocking. No overheating.
Effect: Misfiring particularly when accelerating (ignition voltage no longer sufficient for large electrode gap.) Poor starting performance.
Remedy: New spark plugs.



⑤ Insulator Nose Breakage
Cause: Mechanical damage due to being struck or dropped when improperly handled. When the spark plug has been in use for too long - the insulator nose may be cracked by deposits between the centre electrode and the insulator nose and by corrosion of the centre electrode.
Effect: Misfiring. Spark jumps across at points which are not reliably reached by the mixture.
Remedy: New spark plugs.

See the Bosch Spark Plug Catalogue for further information.

Correct installation of spark plugs with torque wrench:

10Nm = 1 kpm

Note:

The tightening torques listed apply to dry, non-greased and non-oiled threads.

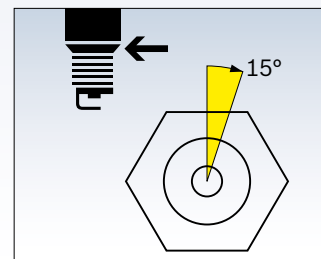
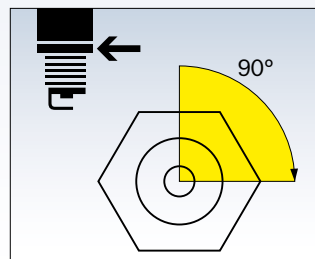
Tightening Torques - Nm

	Flat Seat	
	in cast iron	in light alloy
M 10 X 1	10 ... 15	10 ... 15
M 12 X 1,25	15 ... 25	15 ... 25
M 14 X 1,25	20 ... 40	20 ... 30
M 18 X 1,5	30 ... 45	20 ... 35

	Conical Seat	
	in cast iron	in light alloy
M 14 X 1,25	15 ... 25	10 ... 20
M 18 X 1,5	20 ... 30	15 ... 23

Correct installation of spark plugs without torque wrench:

Screw in spark plug by hand until it is seated in the cylinder head. New spark plugs with flat seat are then given a further approx. 90° turn with a spark plug wrench. The figure for spark plugs with conical seat and used spark plugs with flat seat is approx. 15°.



For further information please contact your leading automotive distributor or call Australia 1300 307 040 New Zealand 0800 452 896 www.bosch.com.au



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