

What is Spark Plug "Indexing"?



Spark plug indexing may be needed to avoid side electrode contact with high-dome pistons. Moroso offers different thickness spark plug washer kits to accomplish this. Some theorists claim positioning the electrode in relation to the intake or exhaust valve may also be worth some power—at least on old-school chambers. To keep track of the electrode position, mark the plug's rear shell in line with the side electrode's open end.

Spark plug "indexing" refers to the orientation of the spark plug electrode's open end within the cylinder head combustion chamber. Whether the side electrode requires special orientation or indexing within the chamber is controversial. Everyone agrees that it is sometimes necessary to control electrode orientation on extremely high-compression engines using pop-up pistons—not to gain power but to keep the dome from contacting the side electrode and closing up the plug gap. Modern angle plug heads and



This is the correct plug orientation according to most race engine builders. The side electrode gap faces up away from the piston dome, thereby achieving maximum clearance. If you run high-compression pistons and the gaps close up instead of widening as the plugs wear, index the plugs this way.

(for racing) extremely small volume combustion chambers have minimized the need for this.

In the past, some maintained (depending on the theorist) there was power to be had from pointing the open end of the side electrode toward the chamber's squish area or toward the exhaust side. Again, with modern quick-burn chambers, the current thinking is there's usually no discernible power difference, but the final arbiter is, of course, actual dyno testing of the individual combination.

If desired, specific plug electrode orientation can be controlled by using spacer washers of varying thickness, available from Moroso and other aftermarket sources. Moroso PN 71910 is a flat washer assortment for gasket seat 14mm spark plugs. For 14mm tapered seat spark plugs, use Moroso conical washer assortment PN 71900. Caution: Adding washers recesses the plug backward within the hole. Recessing a spark plug too far into the hole could shroud the spark, calling for more ignition lead than normal.

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Some ignition theorists claim that, for max power, the side electrode's open end should point down toward the squish area away from the path of maximum entrance turbulence. The squish air is said to be thrown right into the open, unhindered spark. Some even ricochets back off the side electrode and bounces into the spark again.



Old-school thinking: The open end should face the hotter exhaust valve, making it easier to start the fire. This orientation also protects the plug from fuel wetting caused by a rich air/fuel charge. This isn't needed with modern chambers, ignition, and fuel management. On this Gen IV LS7 chamber, the plug is already biased toward the exhaust by design.

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