

Putting New Life Back Into Old Sparkplugs

I've used the pipe thread style of spark plugs since my Dispro Zero Day and early on, I was fascinated by the way in which they are made. It seemed that they could be taken apart. Well, one day I did exactly that – I put the plug in a good sized vice and firmly and smoothly undid the plug.

The first picture shows the plug before disassembly.



The next picture shows the plug after I had unscrewed the upper portion of the plug body.



The ceramic insulator can be removed by carefully and gently rotating it while sliding it out of the threaded retainer part.

You'll likely find that the tip of the ceramic body which is exposed to the combustion chamber is black with carbon buildup.



You now need to carefully and gently wipe the black stuff off the ceramic tip, but **DO NOT USE** any kind of abrasive, no steel wool, no Scotch Brite etc.— just a clean cloth and patient, rotational wiping.

The ceramic body has a very thin layer of glazing. The ceramic material underneath this hard thin layer is porous. You **DO NOT** want to remove the glazing layer. If that glazed layer is removed (e.g. by using an abrasive), the small oily carbon particles in the combustion chamber will be absorbed by the porous material and then will start to become a secondary path for the high voltage spark current degrading the spark across the electrode gap. Once absorbed they cannot be removed.



You may not be able to get the ceramic tip area totally clean and white, but you will have removed most of the carbon build up layer.

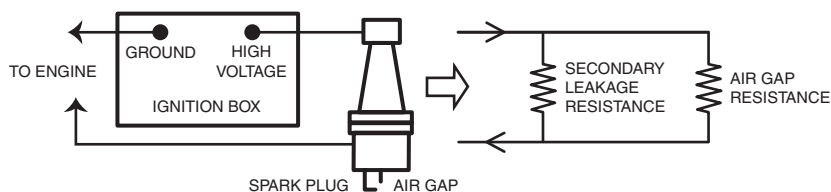
Now, carefully reassemble the plug, making sure not to overtighten the threaded retainer part.

I suggest that you start with your dirtiest plug, so that in the unlikely event that you damage it, you have not lost too much, but have gained the “learning experience” to prevent it from happening a second time.

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By cleaning the layer of carbon particles on the ceramic tip, you have removed the secondary path for the electric spark current, and your spark plug will perform better.

The spark current has two paths – the air gap between the electrodes and the path over the surface of the ceramic insulator. The resistance of the secondary path must always be much higher than the air gap resistance so that the air gap is the path of least resistance.



If your spark plug cannot be disassembled, then your only real option is replacing it with a new one.

Sand blasting the plug may help initially, but that will remove the thin layer of glazing and eventually you'll be worse off than before.

Happy cruising, **Miro Forest, P.Eng.**