



# Burn-Out

## One thing you can do if you have a rough mag on run-up.

Larry Bothe, 9/2/2007

7/14/2010 -- I originally wrote this article in September of 2007 in response to a letter or an article in a magazine wherein the author provided bad information about how to perform a burn-out to clear a rough mag on run-up. He suggested that you just leave the mag switch on the mag with the miss. Here's the explanation of why it was wrong, and the correct way.

I submit that the procedure as you describe it won't do a bit of good. Here's why: The purpose of the aggressive leaning during a burn-out is to raise the combustion temperature in the cylinder head high enough to burn the lead or oil off the nose of the fouled spark plug so it is no longer shorted out. Then it can once again have a spark jump between the center electrode and the tab to the outer shell. That spark will assist (along with the other spark plug in that cylinder) in providing the efficient combustion you mention earlier in your article. I think we probably agree thus far.

The error is in the sentence, "leave just the one problematic mag system on while you try this." Think about it. How in the world can you raise the temperature in the cylinder with the fouled plug if you are not firing any plug in that cylinder? No combustion means no heat, and that in turn means the lead or oil fouling will not burn away. During the mag check, you ground (shut off) one mag. That kills one of the two spark plugs in each cylinder. The reason you got the miss is that one of the remaining spark plugs in one of the cylinders is not firing because it is fouled. The cylinder that is not firing at all causes the roughness you feel and hear, and the loss of power as evidenced by the lower RPM indicated on the tach. The only way to cure it (short of a trip to the maintenance shop) is to burn the crud off the fouled plug. In order to do that you will have to go back to BOTH on the mags so the other spark plug in the fouled cylinder will fire and burn the lean air/fuel mixture to create the heat to burn the fouled plug clean.

Here's the right way to do a burn-out:

1. Put the mag switch on BOTH.
2. Advance the throttle to 2000rpm (or as recommended by manufacturer).
3. Lean the mixture to the point of roughness, and then enrichen it just enough for the engine to run smoothly.
4. Run this way for about 20 seconds. It seems like half of forever when you are waiting.
5. Retard the throttle back the usual engine run-up rpm.
6. Push the mixture in to full-rich.
7. Try the mag check again. It will likely be OK.



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Once in a great while, in cases of extreme plug fouling, it is necessary to repeat the above procedure at full throttle, but don't start there. It's a little hard on the engine. Check with your engine/maintenance shop if you have any questions.

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