

LAW OFFICE 101's RON SUSSMAN

COLUMNS • a hammer &amp; a nail

# Lawn mower dead?



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What is it about the lead time on this rag? You try to write something timely, something kinda now, kinda wow, and by the time the “Magazine by TM people for TM people” is finally issued, what you’ve written is reduced to an anachronism! And why? Sloth! Well I for one, wish to register a complaint! As soon as the election is over and the Kerry administration is swept into power, things will be very different, and heads will roll! There, I feel better now.

I’m looking out over the backyard enjoying the graceful beauty of the antelope in the tall grass, and then it hits me: that can only mean that the cheetahs will soon be moving in. Time to cut the grass. But, of course the five year old Sears® lawn mower won’t start.

My hatred of small gas engines is deep and strong; they never start for me. Probably because I never do the preventive maintenance in the fall that I should. I should have emptied the gas tank and started it up, burning up the gas in the carburetor and fuel line, or at least I should have added some gas stabilizer to the tank. Then I should have taken out the spark plug, squirted a little oil in the cylinder and pulled the starter cord a couple times to coat the cylinder walls with oil. But, it was fall, there was football, so I didn’t. Therefore, I likely have gum deposits from old gasoline all though the carburetor and fuel line clogging everything up. And the spark plug is probably fouled with oil so that even if gas could get in there, the plug won’t ignite the mixture.

Ever happen to you? Here’s what worked for me and what you might try to get a dead lawn mower started. First, check the air filter to see if it’s dirty. If it is, replace it if it’s paper. If it’s made of foam, wash it in gasoline or kerosene, let it dry, then soak it in oil, squeeze out the oil, and reinstall.

Check for a spark by removing the spark plug. Put the spark plug wire back on the plug and using insulated or non-metal pliers (very important to avoid getting zapped), hold the plug so that the metal body of the plug touches the metal body of the engine. Have someone pull the cord and see if the plug sparks when the cord is pulled. If it does not, replace the plug and try again. If it still doesn’t spark and it’s not a broken or a disconnected spark plug wire, you’ve got a problem that is

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best solved by paying someone money to fix. Or you can buy a new mower. If there is a spark, clean and gap the plug to about .035 inches or whatever your mower manufacturer recommends, and put it back in. Be sure the spark plug wire terminal fits tightly on the plug. If it's loose, push back the rubber nipple and crimp the terminal with pliers.

Next, empty out the old gas, and clean out the carburetor with lots of spray carburetor cleaner. You can use cleverly bent bits of wire to clean out the small holes and tubes. When everything seems clean, fill the tank with fresh gas. Now change the oil. If you don't want to change the oil, you should at least check it and top it off with new oil. It will probably be low; four-stroke lawn mower engines burn oil even when new. Gently pull the starter cord slowly several times to get the oil moving through the engine. Two-stroke engines, such as Lawn Boy®, use oil mixed with the gasoline, so there's no oil to change.

Prime the engine by putting about half a teaspoon of gasoline into the spark plug hole, or spray some ether in there. Ether is available at any auto parts store under names like "Instant Engine Starter," or "Fast Auto and Truck Start." You can spray the ether into the spark plug hole, or right into the carburetor at the air filter. Put the plug back in, and snap the wire onto it. Set the choke and now PULL that starter cord! You should hear the engine try to start once or twice, and then cover your ears: Time to annoy the neighbors!

If it doesn't start, try some more ether. If it still doesn't start, and it never even sounded like it wanted to start, and

you've got an old four-stroke engine that does not use electronic points, it might be bad or misadjusted points. To get at the points, you have to remove the pull-starter mechanism and the flywheel underneath it - kind of a pain, but not impossible. Removing the spark plug will make the engine easier to turn, and has the added benefit of keeping the engine from accidentally starting while you're working on it, so you don't lose any fingers - bonus!

The pull-start mechanism is usually just held on with a few screws. Under that you'll see the flywheel, a big circular cast metal thing with a bunch of fins on it, held in place with a big nut in the center. The trick to removing the bolt is to keep the flywheel from turning by holding it in place with a long screwdriver or something. Once the bolt is off, the flywheel can be pulled off the tapered shaft by tapping it with a piece of wood. Don't break a fin! Oh, there's a key, a little rectangular piece of metal that slides in a groove between the flywheel and the shaft to keep the flywheel in place. It's easy to lose. Don't lose it.

Under the flywheel is the points cover. It's usually held in place with one or two screws. Under this: the points! Whew! The best thing to do is just replace the points and the condenser, but you can try cleaning the points with a small file if you want. Before you can put it all back together, you have to adjust the points.

Put the new points and condenser in but don't completely tighten the screws just yet. Put the nut on the tapered shaft and, using your wrench, slowly turn the engine until the points are their farthest distance apart. Check the distance with a feeler gauge and then loosen the adjusting screw and move the points until they are the proper distance apart, usually about .020 inches. Tighten the screws. Put everything back together. Spray in some more ether, and fire up!

Still didn't start? If the mower cost under about \$150 new, trash it. It's probably not worth fixing. If it's something expensive like a Lawn Boy® or a Honda®, take it to a professional, but be prepared to spend well over \$100.

If you have any suggestions for future articles please send them to me at [ron.sussman@uspto.gov](mailto:ron.sussman@uspto.gov). **TM**



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