

# YOU CAN PAY ME NOW...

The old oil filter commercial was never more true. By spending a few dollars now on routine equipment maintenance, you won't have to pay a lot more later on repair.

By George Thompson III

**T**he life span of engines and related equipment depends on how they've been maintained. Routine maintenance is easy and simple to do and takes very little time. A basic understanding of the engine on your equipment will help you appreciate the importance of periodic maintenance in protecting your equipment investment.

Most engines on outdoor power equipment are either two-cycle or four-cycle designs which operate using gasoline. Do not confuse this with the number of cylinders. Walk-behind rotary mowers generally have only one cylinder. Larger engines powering large riding mowers or garden tractors could have one or two cylinders (two-cylinder engines are usually referred to as "twins").

All gasoline engines require fuel and proper lubrication to run. They also require air for full power delivery and adequate ventilation to prevent overheating. Any condition which deprives the engine of any or all of these necessities leads to poor performance and possible engine failure.

Whether your engine is of the two- or four-cycle variety, lubrication requirements and procedures differ. The literature that comes with your equipment will tell you which engine type you own. We'll concern ourselves with engines on walk-behind mowers, tillers, riders, garden tractors and leaf blowers found in most equipment storage areas.

Two-cycle engines are lubricated by oil mixed with the fuel. Oil-to-fuel ratios vary considerably among different brands. Typical are ratios from 1:16, 1:20 and 1:25 all the way up to 1:50. Four-cycle engines have a crankcase or sump which must contain the proper amount of oil to bathe the moving internal parts while running. The engine type used is largely a matter of the equipment manufacturer's choice



**Routine maintenance will help you protect your investment in your mower and keep it running like new.**

and is often based on product pricing considerations or application.

Here are some general rules to follow:

1. **Lubrication.** For two-cycle engines: add oil to the fuel as recommended by the engine manufacturer; mix thoroughly; never use four-cycle automotive oil.

For four-cycle engines: change oil regularly after every 25 hours of operation; use a high grade, high viscosity automotive oil (SAE 10W30 or 10W40); add nothing to the fuel; fill to the level indicated in maintenance instructions; check oil level each time gasoline is added.

2. **Fuel.** Use fresh clean unleaded gasoline with a minimum octane of 77. Use of lead-free fuels will reduce combustion deposit build-up (an eventual occurrence in any engine). Because of the uncertainty of exact formulation of gasohol and similar fuels, their use is not recommended. Methanol formulations, in particular, are to be avoided because they can easily gum and clog fuel lines and carburetor jets.

3. **Air** is important too: clean air to mix with the gas in sufficient quan-

ties for optimum combustion and power. The newest innovation for small engines is a larger-capacity pleated paper air cleaner. Proven in automotive and industrial engines for years, their use in small engines offers new levels of protection and convenience. Servicing is easy: remove and replace like automobile filters. More familiar is the oil-foam air cleaner. Oil-foam air cleaner elements can also be cleaned.

- First, wash foam element in kerosene or liquid detergent and water to remove dirt.

- Then, wrap foam in cloth and squeeze dry.

- Finally, saturate foam in engine oil. Squeeze to remove excess oil.

For convenience, pre-oiled replacement foam elements are also readily obtainable. Either air cleaner element style should be checked and cleaned every 25 operating hours or three months, whichever comes first. Dusty or abrasive operating environments require more frequent servicing of the air cleaner. When reinstalling or replacing either air cleaner, make sure that no damage to the outer sealing areas has occurred

George Thompson III is head of public relations for the Briggs & Stratton Corp., Milwaukee, Wis.



which would render the filter elements useless.

4. Air-cooling. Dirt and debris can enter the blower housing and clog the cooling fins. This causes internal engine temperatures to rise excessively. The resulting overheating can damage critical engine parts beyond repair. For this reason, prevent grass and debris from impacting around fins and corners around the engine by removing blower housing and flushing with air or garden hose manually.

5. Check the blade and deck for wear and possible damage. Before looking under the deck, always ground the spark plug wire. Briggs & Stratton provides a safe, handy ground lug for attaching this spark plug wire. Removing the spark plug will also prevent accidental starting when checking or removing the blade.

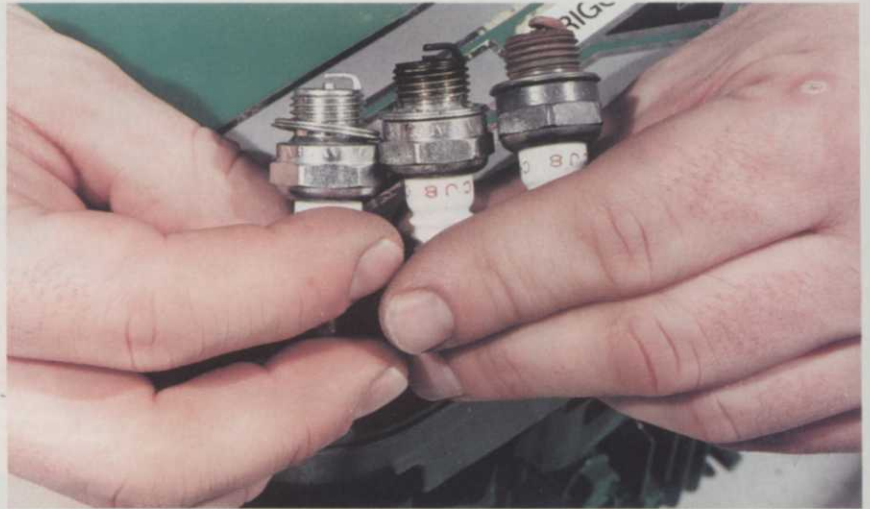
6. An engine requires a healthy spark for complete combustion. A worn spark plug robs the engine of power. Spark plugs should be checked periodically. The gap across the electrodes should be reasonably free of combustion build-up and should not be burnt away. (A fouled spark plug gap or burnt-away electrodes after only a few hours opera-

tion usually requires the attention of a service technician to determine the cause.) Plugs worn because of prolonged use are best discarded and replaced with correctly gapped original spark plugs. When removing and replacing the spark plug, always protect the cylinder cavity from dirt or debris entering the spark plug hole.

For a professional preventative maintenance check, see your author-

ized engine repair or outdoor equipment dealer. He can sharpen the blade, provide a power tune-up and make any adjustments or repairs that might be necessary.

Performing these procedures and checks will greatly increase engine performance and life. Should a problem arise, you'll find a competent (repair) service dealer near you, one of the large nationwide network of ser-



Check spark plugs regularly because a worn spark plug will rob the engine of power.

## Important safety tips

Thousands of people are treated each year in hospital emergency rooms for lawn mower-related accidents. Most of these accidents are due to carelessness and could be avoided if several rules are followed.

"Probably the most important tip to pass on to customers is to remind them to never try to clear the discharge chute with a hand or stick while the blade is operating," says George Thompson of Briggs & Stratton. "While this would seem like common sense to most of us, it is, unfortunately, one of the major causes of lawn mower accidents."

Thompson notes that safety standards introduced by the Consumer Product Safety Commission should help reduce the number of accidents caused by direct contact with the mower blade. Other accidents can be avoided as well, if operators follow these tips:

### Before mowing...

1. Adjust the cutting height, check the blade condition, and tighten all loose bolts before starting the mower.

2. Make certain all safety devices are in proper position:

- handle attachment is secure
- gas cap is securely tightened
- rear shield is in place to protect operator's feet
- grass chute deflector is secure and in working position.

3. Gather up all loose objects from the ground.

4. Make a note of obstructions, and remember not to run the mower over them.

5. Dress properly to do the job.

- wear sturdy shoes with non-slip soles (no sandals, sneakers or bare feet).

### While mowing...

1. Start your mower outside, and near where you're going to mow. Never push a running

mower on gravel.

2. Stay clear of the edge of the blade housing and discharge chute. Never try to clear the discharge chute with hand or stick while the blade is operating.

3. Walk-behind mowers should mow across slopes or inclines; riding mowers should go up and down.

4. Watch out for others (especially children) while you are mowing. Never point the discharge chute at anyone.

5. Never leave a running mower alone.

6. Never start cutting the grass if it is wet.

### A few more tips...

1. Keep gasoline in an approved container, and store it outside the house, if possible, and away from fire or sparks.

2. Disconnect the spark plug or power cord before doing any work on your mower.

3. Have your mower checked annually by an experienced service person. □