

WHAT → DOES WHAT

Shaking or batting oil filters.	Crumbles parts of the elements or damages rubber seals.
Blowing air through air filters.	Creates holes that allow dirt and dust to pass through them.
Using hard bolts for attachments in place of shear bolts.	Can force attachments to continue operating, transferring stress and damage to a more expensive part of the machine.
Using the wrong belt.	Can slip or change the shape of the sheave, cutting power output.
Using big hoses or power washers to wash equipment, especially when equipment is hot.	Water can leak or be forced into seals and housing cavities, contaminating oil and grease.
Not changing oil before storing.	Sludge accumulates in the bottom of the crankcase.
Operating the machine in partial choke.	Overfuels the machine and fouls the spark plugs. Cuts efficiency of cooling system, lets carbon deposits build up, fouls spark plugs.
Not keeping engine clean.	Can reduce engine cooling capacity and cause engine failure.
Using dull blades.	Makes turf look ragged and wastes engine power.
Not cleaning underside of mower decks daily—more often in wet conditions.	Alters air flow pattern in the deck, thereby lessening mowing efficiency.

—T.B.

has cooled. Use a low-pressure hose. After washing, grease all fittings to force out any water that may have accumulated in seal areas and housing cavities.

Use fresh fuel. It should be the fuel specified for the season and the machine; it should be clean and stored in a contamination-free container.

Gauge the amount of pre-mixed fuels needed so that supplies are depleted at the end of the season.

Change oil at recommended intervals. Always use the oil specified for the machine for the conditions.

Change oil before storing the machines. Even changing oil at the beginning of the season may not flush the sludge remaining at the bottom of the crankcase. You may be adding fresh oil to it.

Don't operate in partial choke. Engines are designed to function at wide-open throttle for maximum power and longest engine life.

Keep the engine clean. On air-cooled engines, the build-up of debris can reduce engine cooling capacity and cause engine failure. On liquid-cooled engines the air intake screen and cooling fins must be clean to allow air passage to the radiator.

—Tom Brink is product service coordinator for John Deere's Lawn & Grounds Care Division's Horicon (Wis.) Works.

Preventive maintenance for hand-held equipment

by Pete Fernald

Two-cycle engines

- 1) Maintain good fuel quality.
 - Avoid oxygenated gas whenever possible; if necessary, use MTBE over alcohol.
 - Follow manufacturer's fuel/oil mix ratio recommendations; use only quality oil for two-cycle engines.
 - Drain fuel tank and run carburetor dry before long-term storage (more than 30 days) to reduce potential problems with fuel filters, diaphragms and inlet needles.
- 2) Keep carburetor on spec.
 - See dealer regularly for proper adjustment, thus avoiding poor performance.

- Follow manufacturer's recommendations for appropriate fuel/oil mix ratio, and use quality oil.

3) Attend to the essentials.

- Routinely inspect for debris build-up, particularly on cooling fins and air intake ports.
- Keep all air and fuel filters clean, replacing as necessary.
- Check spark arrestor in muffler for carbon and clogging; keep mounting bolts tightly secured.
- Watch electrical system, checking for bad wiring or out-of-spec spark plug gap; replace plug annually or after 50 to 80 hours of use.

Chain saws

- 1) Don't cut with a dull chain; it causes damage to the bar, sprocket and chain itself.
- 2) Routinely check the depth gauges and lower per manufacturer's recommendation.
- 3) Clean guide bar groove and oil port to assure proper oil transfer.
- 4) Make sure the chain is properly tensioned by following manufacturer's recommendation.
- 5) Ensure the oiler is working; bar-end splatter is a good indicator of proper operation; adjust or repair as necessary.
- 6) Clean clutch drum area (especially around chain brake mechanism), removing oil and chip build-up.
- 7) Check for drive sprocket wear and lubricate clutch drum bearing.

String trimmers

- 1) Grass trimmer maintenance:
 - Routinely clean and apply fresh grease to flex-shaft cables.
 - Watch solid-shaft gear case for signs of leaks; make sure to lubricate at recommended intervals.
 - Routinely inspect blade for integrity, and keep it sharp.
- 2) Hedge trimmer maintenance:
 - Blade sharpness is most important.
 - Maintain proper blade tension following manufacturer's recommendation.
 - Lube blades daily before use.
 - Routinely inspect gearcase and lubricate as needed.

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