

Small Engine Maintenance

Storage / Common causes of problems with small engines

1: **Failure to use clean, fresh fuel** — this is the least costly and easiest way to prevent fuel system problems with small engines. Only use small clean gas containers. This decreases the potential for dirt, grass, dust and other trash in the fuel system. Fuel passages are tiny in small engines and can be plugged by tiny particles of dirt. Make extra efforts to keep fuel clean.

Old gasoline tends to form gums and varnishes that can quickly plug fuel passages. In some cases, severe engine damage can result by operating with old fuel. Never use fuel that is more than **30 days old** unless fuel stabilizer was added when the gas was fresh. We recommend at least 89 octane fuels & adding stabilizer at time of purchase. Stabilized fuel should not be run in engine after 60 Days.

All Manufactures Warranty Exclude Failures Due To Stale Fuel!

2. **Dirt getting into the engine** — About 10,000 gallons of air are used in the combustion process for every gallon of fuel used by an engine. Maintain the engine air filter to prevent dirt from entering the engine.

3. **Failure to change oil** — Oil never wears out, but it collects acid, water, metal particles, sludge and other foreign materials in the engine. If the oil is saturated with contaminants, it cannot perform the lubrication, cooling and cleaning necessary for proper engine operation.

4. **Failure to maintain proper oil level** — Most small engines in the five horsepower range only hold about 22 ounces of oil in the crankcase. Any drop in the oil level greatly diminishes the cooling capacity of the oil and puts extra stress on the remaining oil. Keep the oil level between the full and add mark on the dipstick. Never overfill with oil.

5. **Failure to cool off engines before stopping the engine** — Air-cooled engines rely on cooling fins and the blades on the revolving flywheel to keep the engine from overheating. Immediately after an engine is stopped from full speed, the temperature builds up in the engine because the flywheel, which acts as a fan, stops when the engine stops. This heat buildup is especially damaging to the engine oil. To reduce this occurrence, idle the engine for two minutes prior to shutdown.

6. **Failure to keep outside of engine clean**— This may sound like an unnecessary procedure, but there is valid reason for cleaning engine exteriors. Most small engines are air-cooled. Cooling fins on the engine head and engine block usually have fins to increase the exterior surface area, which expedite the air flow and cooling process. Oil and grease will build up over time and dust, dirt, grass clippings and other material will stick to the oil and grease and build up a layer of material on the cooling fins. This material acts as an insulator and prevents heat transfer from the engine to surrounding air. The result is an overheated engine that produces less power and damages the engine oil.

7. Storage.

We recommend storing your equipment with Stabilized Fuel. If it is stored for more than 60 days, simply drain fuel & replace with fresh as described above when ready to use.

Or, you can drain all fuel from unit. Note: You must also drain all fuel from the carburetor float bowl.

Just running the machine until it dies does not remove all fuel in system.