



MAINTENANCE *of the ENGINE-DRIVEN golf car*

A service engineer explains the daily, 25- and 100-hour checks that should be made to keep gas-powered vehicles operating every day

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Successful golf car operators have no secret. But they do have one thing in common. All know and follow a simple two-word formula to ensure top profits from their fleets of engine-driven cars. The formula: Proper maintenance.

They know that regular maintenance is as essential for a golf car as it is for an automobile. A golf car given reasonable care will start easily, run smoothly, and last for years. A few minutes each day to service the engine and other mechanical parts means that no dollars are lost in downtime.

Time saved in servicing cars is important to golf people. Today's engines are designed to save the mechanic's time by having fuel tank, oil fill point and oil drain, air cleaner, and other external components readily accessible.

All the advantages of engine-driven cars hinge once again on the two-word formula of the successful operator — proper maintenance. For basic maintenance, the check lists in this article are a sound guide. Detailed instructions for specific engine models are available in manual form from engine manufacturers.

Dirt Spells Trouble

Keep in mind that dirt is Enemy No. 1 as far as engines are concerned. Any defect in the air intake system that permits dirt to enter spells trouble. Controlled tests have shown that dirt deliberately fed into an engine can ruin it in a matter of days or weeks.

Air cleaners are highly efficient. Dry-type cleaners on golf car engines are the same cleaners which, in larger sizes, are standard on automobiles. With routine attention, they do an excellent job of keeping dirt out of the engine.

When proper maintenance is lacking and dirt has entered the engine, the en-



Linkmobile, made in Eau Claire, Wis., Walker Executive, manufactured in Fowler, Kans., and Parrett Nassau, produced in Benton Harbor (top row) are powered by Kohler K161 engines. So are the Mardi-Car, assembled in St. Clair Shores, Mich., and the Tee Birdie, an Austin, Tex. product (bottom row).

gine shouldn't be written off as a loss. Kohler's experience with engines has been that, because of the excellent grade of cylinder iron in the engine, the piston rings may be completely worn out but the cylinder bore shows only slight wear. Replacing the rings and breaking the cylinder wall glaze with a commercial glaze-breaking tool to permit the new rings to seat properly, are the only measures needed in many cases.

Extend Engine Life

For cylinders which show greater wear (as much as .005 oversize or .004 out of round), service-type replacement rings that are available from major engine manufacturers extend engine life measurably.

Given proper maintenance according to the check lists in this article, and given moderate reconditioning by a competent mechanic once a year, a good golf car engine will perform well season after season. Kohler Co. recommends the steps shown in the following check lists as the best means to keep a golf car engine in top condition:

Daily Maintenance

1. Check the oil level. Add oil as needed to bring the oil to the full mark — and no farther — on the dip stick.
2. Be sure the rotating screen is clean and undamaged. A bent screen will allow chaff and dirt to collect under the shroud and cause the engine to overheat.
3. Make a visual inspection of the starter-generator, air cleaner, and other mounted accessories.

Every 25 Operating Hours

1. Change oil in crankcase — preferably after the engine has been operating. Use a good brand of SAE #30 weight heavy duty, detergent type oil.
2. Remove, service, and replace the air cleaner.
 - a. Dry type air cleaner: Remove cover and check filter element. Tap the element gently on a flat surface to dislodge dust. **Washing with gasoline or cleaning with an air hose is not recommended.** If the element is clogged with dirt which can't be dislodged

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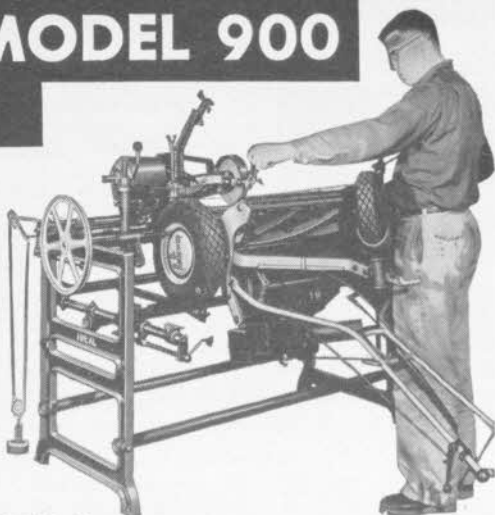
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Maintenance of the Engine-Driven Car

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by tapping, replace with a new element. Also replace the element if it is crushed or bent or, if the faces which must form a tight seal against the back plate and cover, are cracked or deformed.

In reassembling the air cleaner, make sure the element is seated properly against both back plate and cover and tighten the cover securely. Be sure there are no air leaks at the gasket joints between air cleaner, carburetor, and cylinder block. If the air cleaner is mounted somewhere else than on the engine, check hoses and all connecting points to make sure they are air tight. Replace any faulty part.

b. Oil bath air cleaners: Remove the cleaner cover, check oil level, and add oil as needed to maintain the indicated level. If the course is very dusty, clean the air cleaner and replace the oil every 25 hours or less.

3. Readjust starter-generator belt if necessary. When thumb pressure on the belt at the midway point between pulleys deflects the belt $\frac{1}{4}$ -inch, the belt is at

proper tension.

4. Wipe oil and dirt from fins, shroud and baffles.

Every 100 Operating Hours

1. Perform regular 25-hour service.
2. Replace spark plug or recondition by filing electrodes and resetting gap to .025. Use Champion J8 plug or equivalent. Sand blasting of plugs is not recommended.
3. Check ignition timing. Reset if necessary by adjusting breaker points.
4. Remove, clean, and replace sediment bowl.
5. Check carburetor mixture and speed settings. Idle speed range is 1000 to 1300 RPM on older models. Newer ones idle down to 800 RPM. Top operating speed is 3600 RPM.
6. Lubricate starter-generator through hinge caps at both ends, applying 8 to 10 drops of light engine oil.
7. Inspect the voltage regulator mountings. Tighten mounting bolts and wiring connections.
8. Check the throttle shaft on the carburetor. If it becomes worn, dust can enter the engine. New engines now have Teflon-coated throttle shafts with three times the life of uncoated shafts.

Keep These Precautions in Mind

If the responsibility for cars falls to someone who has no experience with engines or engine-driven equipment, the following precautions should always be followed and are especially important:

1. Stop engine before filling fuel tank. Avoid spilling gasoline on a hot engine. Use fresh, clean gasoline or regular grade. Do not mix oil with gasoline. Be sure the vent hole in the fuel tank cap is open.
2. Disconnect spark plug cable before making any adjustment on engine, transmission, or associated parts.
3. Allow engine to warm up before applying load.
4. Do not operate at speeds greater than governor setting or run continuously at wide open throttle.
5. Whenever possible, remove load and let engine idle briefly before stopping.

Keep It Clean

While we're talking dollars and profits, any golfer is more apt to rent a car — and treat it with respect — if it is clean. Whoever services the cars can make them more popular simply by using sponge, water, and elbow grease on his fleet of golf cars once a day. The job takes only a few minutes.

Cars in Storage

If an engine is to be out of service for some time:

1. Drain carburetor by loosening the nut on bottom of carburetor bowl; then retighten it.
2. Drain fuel tank.
3. Drain sediment bowl.
4. Remove spark plug and pour a tablespoon of oil into the engine cylinder. Replace spark plug and crank engine by hand, stopping on the compression stroke.
5. Clean exterior of engine and spread a film of oil over exposed surfaces which are subject to corrosion.
6. Store the engine in a dry place.

Mechanical Planting

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soon as the grass is planted.

Light Watering Best

Three light waterings per day is best. If this is impossible, do not fail to get it watered at least once per day. Temperatures, soil, and wind will determine the daily water requirements. One-eighth of an inch is generally the minimum, one-quarter inch average. If soil is dry

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