

# And Engine Care

## MAINTENANCE

75 PSI at the discharge you are only working against a pressure of approximately 20 PSI at the packing. Therefore, a pump of this type with the sleeve and packing in good condition and properly adjusted should not require constant readjustment, but should be checked daily.

Operators of the pumping equipment should take caution that should additional rings of packing be needed, add only the type and size of packing as recommended by the manufacturer. Different sizes or types of packing, other than recommended, might not give the proper service and might damage the shaft sleeve.

Most operators of pumping units are more familiar with the proper operational maintenance for engines than for pumps; most will check the coolant and oil levels. However, in many cases the operator, when adding to the coolant or oil, fails to add the proper materials. Most manufacturers recommend that their engines be run with a year-round antifreeze type coolant. When running an engine with just water for a coolant, you lose the advantage of the anti-rust type additive that is found in most types of antifreeze. In addition, if only water is used the manufacturers recommend that prior to winter the coolant be drained and refilled with antifreeze for winter storage.

Most engines cannot be complete-  
*(continued on page 50)*

## SHUT DOWN MAINTENANCE

**T**HE MAINTENANCE performed on a pump and engine unit at the end of the irrigation season greatly affects the overall life expectancy of the unit. It may well make the difference between being able to get the unit in operation at the beginning of the next season.

Ideally, the pumping unit should be stored inside a protective building during long periods of shut-down. Regardless of whether the unit is stored in a building or left outside, these steps should still be followed prior to storage:

On the pump end, the suction and discharge piping should be removed, all water should be drained from the pump unit and a 50 weight oil should be injected between the eye of the impeller and the wear ring of the pump.

All openings, including the suction and discharge openings should be covered to prevent the entrance of rodents and foreign material into the pump unit.

If the unit has a diaphragm type hand primer on it, the primer should be removed, the opening into the pump plugged and the primer stored in a building.

If the unit has an intake manifold type primer made of glass or plastic, this should also be removed and stored in a building.

If the unit is equipped with a discharge priming valve that has a rubber seat or clack face, the valve should be removed and stored in-

side or the rubber parts should be coated with a good rubber preservative.

The stuffing box gland should be loosened and if the stuffing box is equipped with a grease cup or a grease zerk a couple of shots of grease should be applied to the stuffing box to force out remaining water and give some measure of protection to the packing.

If the unit is not equipped with grease fittings, the packing gland should be backed off and the last two rings of packing removed and grease packed into the stuffing box. The packing gland can then be tightened slightly to force the grease into the remaining rings of packing; then the gland should be again loosened.

If during the season you had encountered any difficulties with the pumping unit, such as excessive stuffing box leakage, or a serious pressure drop, indicating that your pump was wearing out, now is the time to order the necessary repair parts or remove the pump and get it to your dealer or manufacturer for necessary repairs.

This is the time of year when these people are usually at the low ebb of their season and can get your repairs accomplished. Your unit will be ready to go when you want to start your new season.

If your pump unit is connected to the driver by a flexible coupling  
*(continued on page 28)*

line as fast as the operator is removing it. A vacuum gauge installed on the pump or suction line will tell an operator if he is actually pulling a vacuum with his primer or just moving air through his pump.

Air leaks can be found in a number of places: holes in the suction hose or pipe, cracks around welds on the suction pipe, loose or poor fitting flanges or gaskets, or cracks or holes in the pump case. If the air leak is not found in one of these areas, the operator should look at the valve on the discharge side of the pump.

Sand or other foreign objects may prevent the valve from sealing properly. The rubber face may be

cracked or chipped and not seating properly. Many gatetype valves of all-metal construction will never seal properly to allow a vacuum to be applied to the pump.

The stuffing box on the pump may leak air. This is particularly true of a pump that has been out of service for some time and the packing has dried and hardened. If the pump is equipped with a grease fitting, usually a shot of grease will seal the stuffing box. If the pump is not so equipped, the packing gland might be tightened down to seal. However, the operator should be sure to loosen the packing gland again after he gets the pump going

to insure proper leakage.

One other area to look for trouble is in the primer itself. Insure that it is functioning properly. On hand-type primers a check valve insures that air can be pulled out of the pump but not put in the pump. If grass or other foreign objects get into this check valve the operator may be putting air back into the pump at every stroke.

I have seen some trouble getting prime on pumps used as boosters, where a turbine pump is pumping into a centrifugal pump. On this type of installation, where a check valve is used on the discharge side  
*(continued on next page)*

## SHUT DOWN MAINTENANCE

(from page 23)

containing rubber parts, these parts should also receive a coating of preservative. If a flexible shaft is used, grease should be applied at all fittings.

The engine should be run until it is warmed up to operating temperature and then the oil drained and the oil filter changed. New oil with a rust-preventative should be added and the unit again run a short time to distribute the oil. **A word of caution here: if the power unit is connected to the pump through a clutch, the pump should not be allowed to operate during this warm-up period. If the pump is directly connected to the power unit, the warm-up and engine service should be performed prior to draining the pump unit. The pump should not be run without fluid in it.**

While the engine is warm, the coolant should be checked. If you are using one of the all-year type coolants that are now on the market, the level and the degree of protection are all that need to be checked and necessary addition should be made. If water or a methanol type of antifreeze have been used, the cooling

system should be drained and refilled with water, rust inhibitor and antifreeze.

The spark plugs should be pulled, cleaned and re-gapped and about two ounces of SAE 50 engine oil should be poured into each cylinder and the plugs replaced.

The distributor cap should be removed and a small amount of oil placed on the governor weights and a drop of grease on the grease wick. The distributor cap should then be replaced and sealed with weatherproof masking tape where the cap joins the distributor housing.

The air cleaner and breather cap should be removed and stored inside after cleaning, and all openings in the engine, carburetor, exhaust and breather should be sealed with a weatherproof tape.

The fuel filter should be removed, cleaned and replaced.

Any engine safety switches and the lines to them that are operated by water should be drained completely. Electrically operated safety switches and the ignition system should be given a good coat of one of the spray-on electrical protection compounds to prevent corrosion.

Any grease fittings on the engine

should be given a good shot of new grease.

Batteries should be removed, charged and stored in a cool, dry place.

If the driver is an electric motor, the old grease should be flushed out and new grease put in and then the motor run for a few seconds to distribute the new grease and allow the excess grease to get out prior to replacing the grease plugs.

The motor should be protected from oil, water and rodents during the shut down period, **but should not be covered with a plastic or canvas cover that will not allow proper circulation of air in and around the motor during shutdown.**

The starting switch box should be checked for missing knock-out plugs or other holes and these should be sealed against rodents and dirt.

Insure that all switches are in the off position and either lock the panel in the off position or remove the fuses to prevent an accidental or vandal type start-up during the shut down season.

A pumping unit properly prepared for storage this way will be ready for start-up in the spring with a minimum amount of problems.□



**is the most accurate fertilizer spreader you can use.**

Right behind the spreader. . . or 20 feet to each side. . . your turf gets the same amount of fertilizer if you use a Vicon. Field tests have proven it.

Vicon uses an exclusive system. . . a spout oscillating at 540 times per minute. This gives a rectangular coverage pattern that eliminates the overlapping and missed spots you get with fan spreaders.

Vicon is quality constructed to last for years. Major parts are non-corroding polyester and stainless steel. Application rate is easily adjusted from 10 to 2500 pounds per acre.

Even lime is no problem for the Vicon. It handles lime, fertilizer, seed and chemicals. Six hopper capacities from 600 to 7000 pounds suit your course and budget.

Vicon has the accuracy that professional turf men are looking for. Write today.

**Vicon** the better idea from Holland  
Vicon Farm Machinery, Inc.  
5898 Poplar Hall Drive • Norfolk, Virginia 23502

For More Details Circle (114) on Reply Card

## EDITORIAL

(from page 6)

not what to do for the political process. Green Industry organizations must exercise their lobbying power in government as the organized voice of the membership. Sitting back on the sidelines in silence signifies consent with the situation.

Above all, we must expend a little motivational energy to turn the tide. Energy in teamwork will bring order to the current chaos. The rewards of our effort more than justify the means.

## Mr. Sod Grower:

Earn more profits and place yourself ahead of competition with the finest sod available. . .

## Warren's A-20 & A-34

Kentucky Bluegrass

Performance proven across the nation and rated highest by universities doing turfgrass research. Sells for more yet is less expensive to produce than other bluegrass strains. Two crops of sod in one growing season possible with A-20 & A-34. A few northern territories open for exclusive grower's franchise. Write or call for information:

### WARREN'S TURF NURSERY

8400 West 111th Street, Palos Park, Ill. 60464

Phone: 312/974-3000

For More Details Circle (143) on Reply Card