



The dirty environment and the severe vibrations of aeration place the machinery involved under a great deal of stress, so regular maintenance is mandatory. Photo courtesy: Trusty & Associates.

## Equipment

# Maintenance:

# Aerators

By Nolan Meggers

Of all the turf maintenance procedures, aeration is recognized as the hardest on equipment. The continual pounding stresses stationary, as well as moving parts, and can cause a great deal of downtime.

Although aeration does take the turf out of play temporarily and leaves it somewhat undesirable for play afterward, culturally it's one of the best practices for maintaining healthy premium turf. As we see shorter mowing heights and increased playing pressure on the turf, the more we need to aerify.

Preventive maintenance actually begins with equipment selection. When purchasing an aerator, look for a unit with simple mechanisms that provide the desired performance for your application. Your service technician can tell you that less complex mechanisms have fewer parts to cause problems, and if they do break down, repair is faster and easier.

Select aeration equipment that has good access for service and repair. Look at the number and type of fasteners used in the linkage. The more fasteners that are used, the higher the potential for loosening or breakage. The type of fasteners also is critical. Common hardware is usually readily available and relatively inexpensive. Specialty or unique hardware will not be as readily sourced

and can add to repair cost and can increase downtime.

### Regular Maintenance

Aerators with chain drives should be lubricated at least once a day, and possibly twice a day, if used more than four to six hours. The dirty environment of aeration and the high chain drive speeds are harder on the chains and even the sprockets than other mechanical applications. Lubrication will help extend the life of these components and generally reduce the noise of the chain drive as well. The

Turf guard fingers should be checked frequently. These fingers tend to bend and then move into the path of the aeration tines. The result can damage the tines, the turf guard, or even some of the aeration linkage. A twisted or bent turf guard finger also can gouge the turf, leaving unsightly marks that take time to heal.

Clean out tines every day with a high pressure washer. Check tines for damage and replace any damaged ones. Check the "spikes" on spike-type units daily, and replace any that are bent or damaged.

Wash the aerator thoroughly and inspect all the linkage and fasteners for damage. Look for worn metal spots where linkage parts may be contacting each other. Use a straight edge on tine rams and other parts to inspect for any bending. Visually check all fasteners

for any damage or missing parts. Aeration equipment has a lot of vibration, oscillating and rotary motions that tend to loosen fasteners. Even go so far as to check the torque on all fasteners that may have loosened during operation.

### Seasonal Storage

Always perform a thorough inspection after you have completed the season's aeration and before you store the equipment for an extended period of time. Repair any worn or damaged parts on the machine.

Keep track of parts that tend to wear out every one to two years and replace them at the end of your aeration season. Often there are one or two of these parts in each aerating linkage. Replace those parts each year, even if they are not worn out. Interruption during aeration would cost more in downtime than the cost of replacing those parts. Examples of parts that might need replacing include the following: tines, bearings, springs, rubber isolators, special fasteners, belts and chains. Keep some inventory of these parts on hand in the event of a breakdown. This will reduce your downtime significantly. Waiting for parts delivery could cost you four to 24 hours of lost time.

Before storing the aerator for the season, the tines should be removed from the holder. Generally, new tines will be used to achieve maximum depth at the



start of the next aeration, but if tines are saved, clean them and apply a light coating of oil.

As with any extended storage of equipment, change the engine oil and filters, following the correct procedures as prescribed by the manufacturer for that unit.

For gasoline engines, use the gasoline storage stabilizer recommended by the manufacturer. Add the stabilizer and run the engine for a minimum of ten minutes to make sure the stabilizer gets into the carburetor.

Varnishing can occur in fuel left in the machine without stabilizer. Attempting to run the engine dry is not an effective alternative because even small pockets of fuel trapped in the machine could cause varnishing problems.

Wash and thoroughly clean the machine.

Remove the spark plugs and place one ounce of clear oil in the cylinder. Install the spark plugs, but don't connect the spark plug wires. Crank the engine five or six times to distribute the oil.

Make sure the engine and engine compartment are clean. Paint any scratched or chipped parts of the engine to prevent rust.

Service the air cleaner.

Lubricate, grease and oil all moving parts.

Remove and clean the battery. Check the electrolyte level and charge the battery. Then store it in a cool, dry place where it won't freeze. Storing the battery away from the machine avoids any corrosion.

Turn the fuel shutoff valve to the "off" position.

Loosen or relax any belts that are easy to loosen. This will prevent the deformation that occurs when they stay taut, in the same position, for long periods.

Put blocks or support stands under the machine to take the weight off the tires and let one-third of the air out of the tires. This prevents flat spotting and the moisture accumulation that can occur when equipment is stored on rock or limestone.

Store the machine in a dry, protected place. If it's stored outside, place a waterproof cover over it. If possible, use a cover for inside storage also to protect the unit from dust and dirt, from leaks, and from condensation dripping off a roof during temperature changes.

Protect machines from mouse damage. These pests can chew insulation off wires. They build nests within any small, dark opening, including the engine. These nests can block proper airflow when the unit is operated.

When bringing the aerator back out of storage, inspect the machine thoroughly and restore all systems to operational status. Then, try your aerator a week or two before you are scheduled to aerate. This will give you some time to obtain parts if necessary and make any needed adjustments or repairs. □

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