



Match The Chain Saw to the Job

A chain saw should be carefully selected. Buyers should match the saw to the job they intend to do. They should examine a variety of makes and models before purchasing. Dealers or company representatives should be consulted about the amount and type of cutting to be done, according to Howard J. Doss, Michigan State University extension agricultural engineer.

"The size of the saw, that is, cubic inch displacement, should match the type of work the operator expects to do with it," Doss told WEEDS TREES & TURF. "If too small a saw is continually used for tough jobs, the tendency for the person will be to over-exert. Under these conditions, accidents can occur. The saw should do the work with a minimum of effort on the part of the operator. If a saw keeps binding or stalling, even though it is in good mechanical condition, it is not matched for the job."

The operator should be matched

Match the operator to the job too, says Michigan State University agricultural engineer Howard Doss. His checklist for safe, efficient chain saw work can be used as basic training for every person on your crew.

to the job too. "Felling and cutting timber is hard work. Operators should be in good physical condition, able to withstand heavy work periods. Persons who become exhausted easily may be a potential accident victim," he says. Don't hesitate to take frequent rest breaks.

A chain saw equipped with anti-vibration characteristics will help reduce fatigue and avoid numbing and swelling of hands. Also, some units are equipped with chain brakes to stop the chain if the saw kicks back.

Most small saws are equipped

with automatic oilers which are sufficient for occasional cutting. But if several face-cords a day are to be cut, particularly hardwood, the saw should have a manual oiler in addition to the automatic system.

A prerequisite to any cutting operation is proper clothing for the operator. "Wear warm, comfortable trim fitting clothing that allows easy movement, light nonslip gloves and good gripping boots or shoes," Doss says.

Safety goggles or eye glasses with safety lens help prevent possible eye injury from flying wood chips or sticks. A good safety hardhat may prevent serious head injury from possible falling material.

"Ear plugs or acoustic muffs are essential because of the saw's high noise level. If ears ring for an extended time after the saw is used, hearing damage may have occurred," Doss says.

Check automatic or manual oilers, air filters and cooling fins for

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possible blockage or clogging, before starting. Fuel should be mixed according to owner's manual instructions, stored and transported in a properly labeled heavy gauge metal gasoline container.

"Refueling should be done with the saw on the ground and in an area cleared of possible combustibles at least two tree lengths away from anyone else," Doss says. Under no circumstances should you be smoking while refueling.

Starting should be done with the saw on the ground, one foot placed in the bracket to the rear of the unit. Grip the handle at the top of the saw and pull the starter rope with the other hand after starting controls

Make sure the saw blade does not touch the ground. An operator can cut 40 trees and not do the damage to the chain that striking the ground with it once can do.

have been properly set. Never allow another person to assist in starting. If either person slips or lets go, someone may get cut.

A chain saw must be properly maintained to be safe. This includes sharp teeth, correct chain tension, proper lubrication and a well-tuned engine.

"Most routine maintenance can be accomplished by following the owner's manual recommendations.

Every owner should have a good tool kit to help assure continued operation when doing a lot of cutting. It should contain:

- a few extra cans or a bottle (with attached pouring nozzle) of chain oil
- Wrenches to fit all nuts and lugs on the saw
- Screwdriver
- Round file and guide for touching up the chain
- Flat file and depth gauge to file depth guides
- Small brush to clean away sawdust and wood chips
- Extra sparkplug
- Owner's manual (wrapped in a plastic bag)
- Cleaning rags

"If the operator is going to be doing a lot of cutting, an extra chain should be taken along as a spare. Alternating chains every day will greatly prolong the life of the chain and sprocket upon which it runs," Doss says.

If an owner has not had operating experience before purchasing a saw, a few trial cuts should be made to become accustomed with its cutting and handling characteristics. Cut small logs supported off the ground so the chain will not strike the ground. Let the saw do the cutting. Extra pressure need not be applied. Operate with the saw when cutting large diameter logs with the throttle about three-quarters open. Overpowering the saw will waste fuel and create unnecessary engine wear. Underpowering will not push enough air through the cooling fins and may cause engine overheating.

If the chain cuts a wide groove or the cut shows fine powder instead of wood chips, it needs sharpening. If the saw tends to cut a circular path instead of a straight line through the log, the guidebar track, along which the chain runs, is worn on one side. Unless the owner has the proper equipment to correct the problem, chain and guidebar should be taken to the dealer for filing.

The most important safety factor in a chain saw cutting operation is the operator.

"The saw must be adequate to do the job but more importantly, the operator must have the knowledge and ability to safely perform the work," says Dr. Randall Heiligmann, Michigan State University extension forestry specialist.

Certain trees are dangerous to inexperienced operators. Lumber-

An extra chain should be taken along if a lot of cutting is to be done. Alternating chains every day will greatly prolong the life of the chain and sprocket upon which it runs.

jacks use some of the following expressions to identify problem trees:

—Widowmaker, is a tree with broken or dead limbs or a dead tree "hung up" in another tree. A limb doesn't have to be very big or high in a tree to be capable of causing serious injury if it falls on a person.

—Spring pole is a sapling that is bent and held under tension by another tree. If the spring pole is cut or the other tree is removed from it, the sapling can snap up with a tremendous force and seriously injure anyone nearby.

—Schoolmarm is a tree with a prominent form in the trunk or two trees grown together at the base,

If a chain cuts a wide groove or the cut shows fine powder instead of wood chips, it needs sharpening. If the saw cuts a circular path instead of a straight line, the guidebar track is worn on one side.

making it difficult to predict which way it will fall.

"Unless the operator has had plenty of experience or instruction, trees like these should not be cut. Nor should an inexperienced operator try to cut any tree with a diameter greater than the length of the saw blade. This requires special techniques and a person could be seriously injured if the saw made a 'kickback' — jumped backward as the chain at the top of the cutting bar snagged," Heiligmann says.

Before felling a tree, size it up carefully. Note the distribution of the larger branches and wind direction to determine how the tree is apt to fall.

"During the cutting operation the saw should be held close to the body to provide maximum control. Do not work with arms extended. Keep knees flexed and one foot comfortably behind the other to provide maximum balance," Heiligmann says.

Be sure the work area around the tree is cleared of underbrush or obstacles that could be tripped over. Make sure an escape path 45 degrees opposite the direction the tree will fall, is cleared. Examine the tree for loose or dead limbs before felling. If they appear a hazard, remove them first.

When felling a tree:

—Cut through trees less than 6-8 inches thick with one cut.

—On larger trees, make a notch on the side of the tree on which it is expected to fall. It should have a depth approximately one-third the diameter of the tree.

—Make the felling or back cut at least two inches higher than the horizontal notching cut. The felling cut should be kept parallel with the horizontal notch cut. Cut it so that the wood fibers are left to act as a hinge, keeping the tree from twisting and falling in the wrong direction or making a kickback on the stump.

—Keep the guidebar in the middle of the cut (perfectly horizontal) so the cutters returning in the top groove don't recut. Guide the saw into the tree — don't force it. The rate of feed will depend on the size and type of timber being cut. Whenever possible, work with the tree between your body and the saw to minimize the possibility of accidents.

—Remove the saw from the cut and shut it off before the tree falls. Do not cut through the hinge because this may cause the tree to fall in any direction, possibly on the retreating operator.

"After the tree is on the ground, take a look at each limb before making the cut to be sure that cutting the limb off will not bind the saw blade or cause the trunk to roll toward the operator," Heiligmann says.

Do not face the limb squarely. Stand at approximately a 45 degree angle so that if the saw blade slips or makes the cut sooner than expected, it will not strike the shins.

"Avoid sawing with the point of the blade. This greatly increases chances of kickback because the chain guides can easily snag, possibly causing the chain to be thrown," Heiligmann says.

Never make cuts with the saw between the legs or straddle the limb to be cut. Always be aware of the direction the chain will go if it breaks and stay clear of this area.

"Whenever any cuts are being made, make sure the thumb is locked under the bar atop the saw, not laid along side the index finger on the bar. This will prevent the hand from slipping into the chain," Heiligmann says.

Periodically check the chain for proper tension. Consult the owner's manual for the proper distance the chain should be from the bottom of the chain guide.

"While limbing or cutting the trunk, make sure the saw blade does not touch the ground. An operator

can cut 40 trees and not do the damage to the chain that striking the ground with it once can do," Heiligmann says.

If the trunk is supported along its entire length, make cuts from the top (called overbuck), one-third the diameter of the log deep, the length of the trunk. When this is completed, roll it over and make the final cut. This prevents pinching the guidebar.

When the log is supported from both ends, cut one-third the diameter from the top (overbuck) then complete the cut by cutting upward from the underside (underbuck) to meet the first cut.

If the log is supported on one end, make the first cut (underbuck) one-third the diameter then complete from topside by overbucking the upper two-thirds to meet the underbuck. □

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