

WISCONSIN WOODLANDS

Buying A Safe Chain Saw

Tom Steele and Gordon Cunningham



The chain saw was originally a tool for professional forest workers, but its easy use and versatility have made it popular with homeowners and small woodland owners as well. Many makes and models of chain saws are on the market, varying in size, shape, price and reliability. The array of choices poses many difficulties for the homeowner who wishes to purchase a chain saw for casual use. This publication covers the safety components of a chain saw and presents some guidelines aimed at helping homeowners select a saw.

What Brand?

One of the best indicators of chain saw quality is its use by forest workers. Since their livelihood depends on reliable equipment, forest workers use only high quality chain saws. Many manufacturers make two lines of power saws: a professional line designed for the rugged, day-in, day-out use by woods workers and a semi-professional line designed for casual, less demanding use around the home. We recommend the semi-professional line if you plan to use a chain saw occasionally for cutting ten cords of wood or less per year, for example.

The dealer's dependability is an important consideration when selecting a particular brand of chain saw. The dealer should stock a large supply of spare parts and be knowledgeable about chain saw repair. No matter what the brand, a broken saw in the hands of an inept dealer is of little value.

Choosing the Correct Size

The power of a chain saw is usually determined by the cubic inch displacement of the engine. Ideally, you should match the size of the saw to your cutting needs. If you plan to cut mainly small trees (12 inches in diameter or less), we recommend a chain saw with a 2 to 3.5 cubic inch engine. If you plan to cut mainly large trees (16 inches in diameter or more), you'll need a more powerful saw – in the 3.5 to 4.5 cubic inch range.

The length of the guide bar should match the size of the saw. A 14-inch guide bar is recommended for smaller chain saws and a 16-inch guide bar for larger models. As guide bar length increases, so does the risk of serious injury. Therefore you should purchase the shortest bar which meets your cutting needs.

Safety Features

To reduce the risk of serious injury, the chain saw you purchase should be equipped with the following safety features (see Figure 1):

Front Handle Guard with Chain Brake

The front handle guard and chain brake protect the operator from injuries caused by kickback. Kickback occurs when the nose portion of the guide bar is used. Cutting with the nose causes the chain to jam, making the saw "kick" back rapidly toward the operator (Figure 2). In the event of kickback, contact with the front handle guard will engage the chain brake, stopping the chain immediately and protecting the operator from serious injury.

Safety Chain

A power saw should only be run with a safety chain. The cutters on a safety chain have a low profile, reducing the risk of kickback.

Chain Catcher

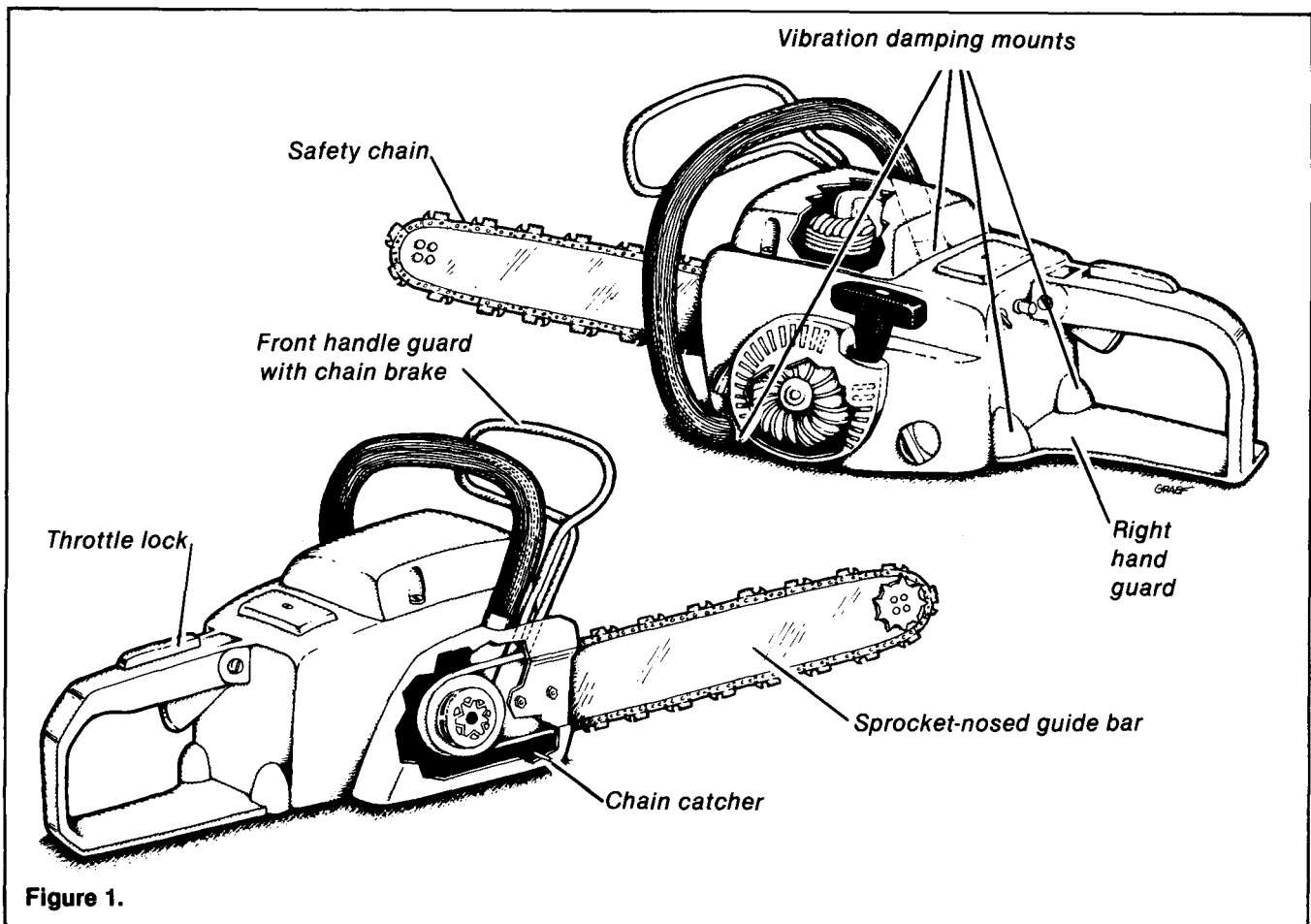
The chain catcher is a metal or hard plastic stud located under the clutch cover. It prevents a broken chain from "whipping" off the guide bar and onto the operator's legs (Figure 2).

Right Hand Guard

The lower portion of the rear handle should be flared to protect the operator's right hand in the event of chain breakage.

Throttle Lock

The throttle lock prevents accidental throttling of the chain saw. It also ensures that the operator has a good grip on the rear handle before accelerating the saw.



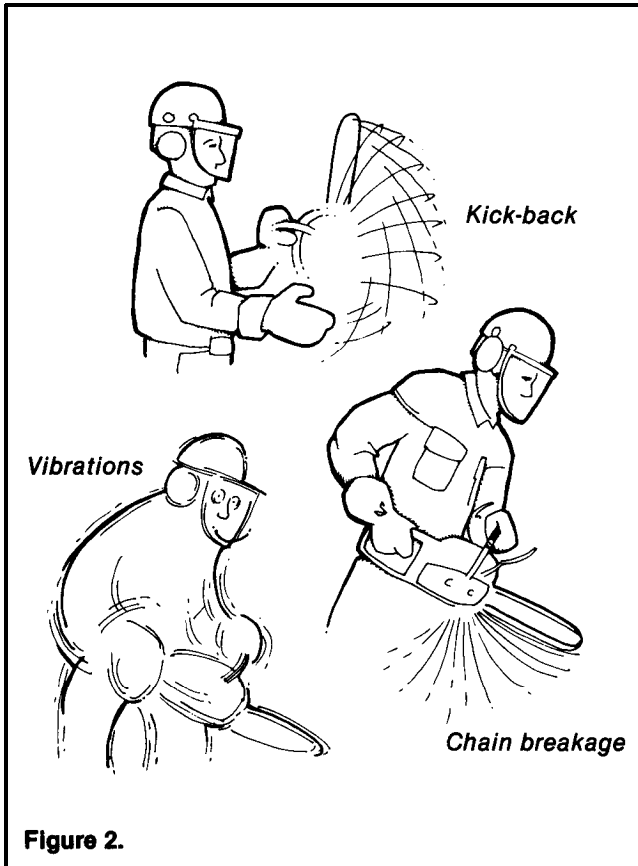


Figure 2.

Vibration-damping Mounts

Chain saws run at very high speeds, generating considerable vibration. This vibration causes blood vessels in the hands and fingers to contract, resulting in “white finger” – a numbness and loss of color and strength in the hands (Figure 3). White finger is aggravated by cold weather. To protect the operator from vibration, the chain saw should be equipped with rubber mounts located between the handles and the engine portion of the saw.

Sprocket-nosed Guide Bar

A sprocket-nosed guide bar has bearings and a sprocket located in the tip. This allows the operator to run a tight chain, decreasing the chances of the chain flying off the guide bar and causing serious injury.

Muffler

The muffler significantly reduces the amount of noise generated by the chain saw. It should be located below the front handle guard and positioned so that the exhaust is blown out and away from the operator.

Other Considerations

A chain saw is a potentially dangerous tool. To minimize the chance of injury, the operator must feel comfortable when working with the saw. The chain saw should be light, well-balanced and capable of providing enough power to do the job required. It should be designed in a manner that facilitates maintenance procedures such as cleaning the air filter, checking the spark plug and adjusting the chain tension. The fuel and chain oil tanks should be positioned so the refueling can be done easily and safely.

Cutting wood is a potentially dangerous activity, but a safe, well-maintained chain saw can significantly reduce the chance of injury. For the professional forest worker or the weekend lumberjack, the cost of even a minor accident is likely to be greater than the cost of a fully equipped chain saw.

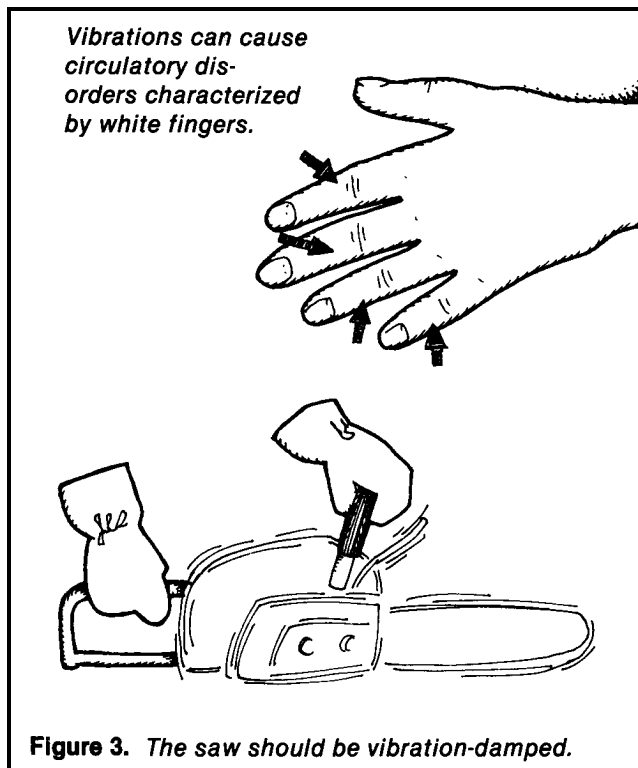


Figure 3. The saw should be vibration-damped.



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