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INTRODUCTION

A chainsaw, when used improperly by an unskilled operator increases the risk of personal injury.

Objectives of this training

- Develop a strong understanding of the fundamentals of safe chainsaw use and maintenance, and jobsite safety.
- Understand basic chainsaw safety and operation to help an operator become a competent, safe, and professional sawyer.

All the maintenance and operation information contained in this manual can also be found in the STIHL user manual, which can be a valuable reference tool. Proficiency with a chainsaw will come with experience. However, it is important to always stay focused and never become complacent while operating a chainsaw.

Know when a situation is beyond your skill level. NEVER cut something you are not comfortable with. Know when to walk away and ask for help. Your safety is ultimately your responsibility and is influenced not just by the protective equipment you wear but by the decisions you make and the attitude you have while working.

VOLUNTEER CHAINSAW LEVELS

A MINIMUM OF 3 CHAINSAW HOURS PER YEAR MUST BE RECORDED ON OVS TO MAINTAIN CERTIFICATION.

Chainsaw Operator - Safety Assistant

This training level indicates that an individual has been trained in basic chainsaw safety and maintenance and has a solid understanding of jobsite safety involved with working around others who are operating chainsaws. A chainsaw assistant is not allowed to use a chainsaw on FPCC property.

- Obtained by attending the classroom portion of Chainsaw Training and passing exam.
- Pre-requisite is a minimum of 15 volunteer hours in ecological stewardship logged on Online Volunteer System (OVS).

Chainsaw Operator - Apprentice Feller

Apprentice Feller level chainsaw operator is allowed to operate a chainsaw on FPCC property to remove ***approved*** woody vegetation up to 6" dbh (diameter at breast height) under the direct supervision of FPCC staff or an approved volunteer mentor.

- Obtained by attending the classroom and field portion of Chainsaw Training and passing exam and field assessment.
- Pre-requisite is a minimum of 15 volunteer hours in ecological stewardship logged on Online Volunteer System (OVS) and the recommendation of a Site Steward or FPCC staff.

Chainsaw Operator - Feller Level I

Feller I level chainsaw operator is allowed to operate a chainsaw on FPCC property to remove ***approved*** woody vegetation up to 6" dbh (diameter at breast height).

- Complete Apprentice Feller requirements.
- Obtained by completing 20 hours of mentorship under the direction of a volunteer Feller Mentor or FPCC staff.
- Pass a field assessment at the completion of the 20-hour mentorship period.

Chainsaw Operator - Feller Level II

Feller II level chainsaw operator is allowed to operate a chainsaw on FPCC property to remove ***approved*** woody vegetation up to 12" dbh.

- Obtained by attending the classroom portion of Level II Chainsaw Training and passing the exam
- Participation in a training conducted by Resource Management. The individual will be required to demonstrate in-depth knowledge of chainsaw safety, maintenance, operation, hazard assessment, jobsite safety and advanced cutting techniques.
- Pre-requisite is a minimum of 300 volunteer chainsaw hours, or 100 chainsaw workdays logged in on OVS specifically as chainsaw work and the recommendation of a Site Steward or FPCC staff

PERSONAL PROTECTIVE EQUIPMENT (PPE)

There are five items required by OSHA (Occupational Safety & Health Administration) to be worn by the chainsaw operator. These items are designed to prevent bodily injury and are necessary to operate a chainsaw for the Forest Preserves of Cook County. All items are supplied by FPCC through Volunteer Resources. If you choose to use your own personal equipment, they must still meet the OSHA standards. Inspect your PPE before use for damage.

See equipment section of text for ordering information.

Hardhat – Only good for five years due to plastic degradation from UV light. Five years is based on moderate to heavy use. Helmets must be replaced if a significant impact is applied to the hardhat or at the 5-year point. Dates are stamped on the underside of the bill. An example is shown below indicating a manufacture date of September 2013 (the year's last two digits are in the center and the month is indicated by the "hour hand").

- **Eye Protection** – Mesh face shields are approved eye protection. Broken shields can be replaced separately from helmet.

- **Hearing protection** – May be either plug (provided by volunteer) or muff style (part of combination helmet). Broken muff assembly can be replaced separately from helmet.

  The above 3 items are ordered as one helmet system.

- **Chaps** – Protect the legs by utilizing a Kevlar weave. Damaged chaps must be replaced. They can be cleaned with a pressure washer.

- **Boots** – Must be constructed of cut resistant material (such as Kevlar). Leather or steel toed leather are not sufficient.

- **Leather Gloves** - Highly recommended but not required.

- **Logging First Aid Kit** OSHA requires a First Aid Kit with a specific minimum set of contents.

- **Orange Safety Vest –** Recommended but not required.

All individuals engaged in logging type operations are also required by OSHA to be trained and current in First Aid and CPR. See First Aid section of text.

FIRST AID AND EMERGENCIES

First Aid Kit

A logging first aid kit is required for every work site when chain sawing is occurring. These kits are available through Volunteer Resources. Contents are listed in the appendix.

CPR/First Aid Training

OSHA requires that everyone participating in a logging operation is trained in CPR and First Aid. Classes are typically offered by FPCC once a month on a weekday and four times a year on Saturdays. Registration is via OVS.

Emergencies

It is important on every workday (with or without chainsaws) to know where the nearest medical facility is and to know how to give directions to your worksite. Since street addresses won't work to give to 911 for a medical emergency, volunteers must be prepared to provide other information and use other means.

- Know the name of the closest intersection
- Know closest access to the site by vehicle
- Know directions on further access by foot
- Send scouts out to significant points like driveway entrances or trailheads to flag down emergency responders
- Give GIS location if known
- Give the dispatcher your cellphone number to help locate the site if it can't be easily found

Reporting

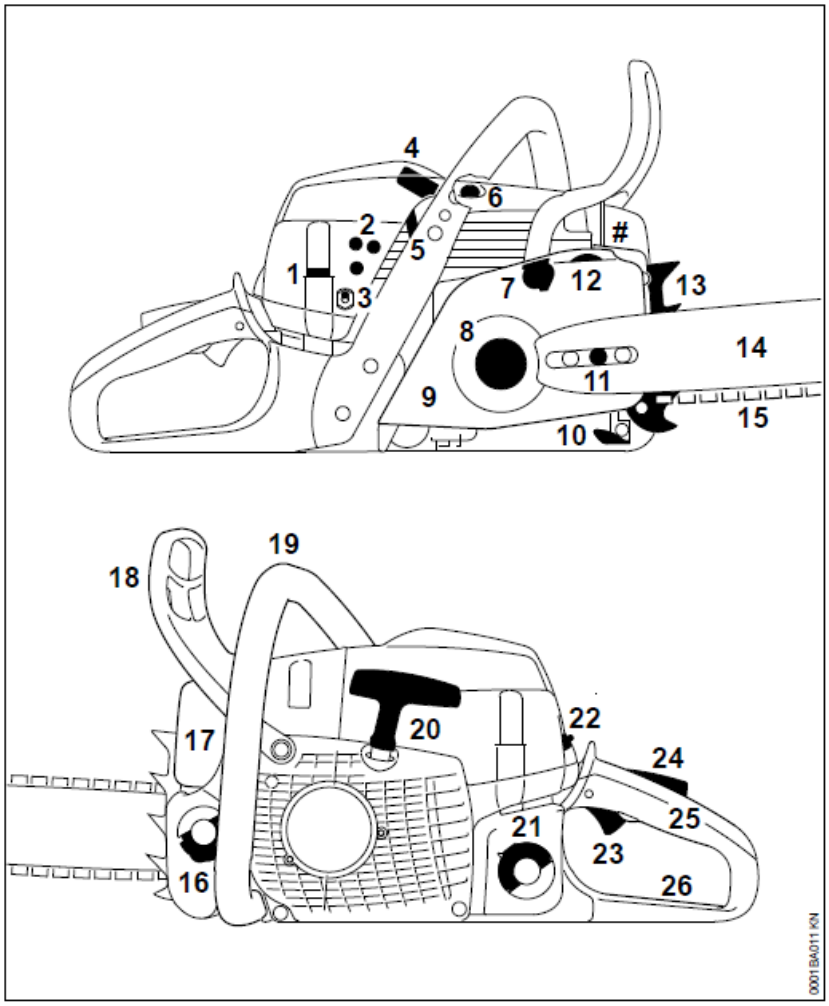
After the wellbeing of the injured has been addressed, it is required to complete the Incident Reporting Form (see appendix). Have witnesses write their account of the accident and then send it in to Volunteer Resources. Minor incidents don't require a phone call. For major incidents (anytime a 911 call or emergency room visit is made, or youth is involved (under 18 years)), call the Stewardship Program Coordinator or Volunteer Resources Manager to apprise them of what happened.

MECHANICS OF CHAINSAW SAFETY

Chainsaw Safety Features

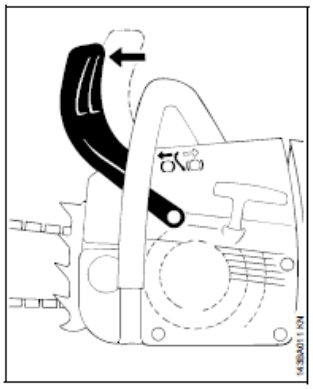
Every chainsaw is equipped with safety features that function to minimize the potential for injury to the user. Proper functionality of these features is necessary for safe saw operation and should be inspected at the beginning of each workday.

Main Parts



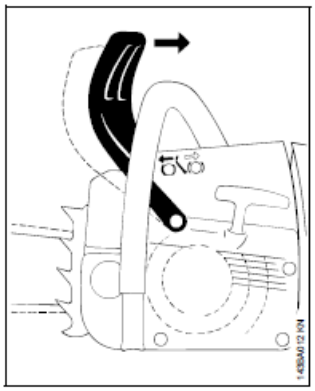
1 Shroud Lock
2 Carburetor Adjusting Screws
3 Handle Heating Switch (Special Option)
4 Spark Plug Boot
5 Shutter
6 Decompression Valve
7 Chain Brake
8 Chain Sprocket
9 Chain Sprocket Cover
10 Chain Catcher
11 Chain Tensioner (lateral)
12 Adjusting Wheel of Quick Tensioner
13 Bumper Spike
14 Guide Bar
15 Oilomatic Saw Chain
16 Oil Filler Cap
17 Muffler
18 Front Hand Guard
19 Front Handle
20 Starter Grip
21 Fuel Filler Cap
22 Master Control Lever
23 Throttle Trigger
24 Throttle Trigger Lockout
25 Rear Handle
26 Rear Hand Guard
Serial Number

Chain brake – *(*#7) The chain brake function is to stop and lock the rotation of the chain around the guide bar. The brake is engaged (on) when the front hand guard is moved to the front of the saw which prevents the chain from spinning. Avoid engaging the chain brake with the saw at full throttle. Allow the chain to decrease speed to prevent damage to the brake and clutch components.



Engaging Chain Brake

The brake is disengaged (off) when the front hand guard is pulled to the rear of the saw, allowing the chain to move. An audible click will be heard when the brake changes from engaged to disengaged.



Disengaging Chain Brake

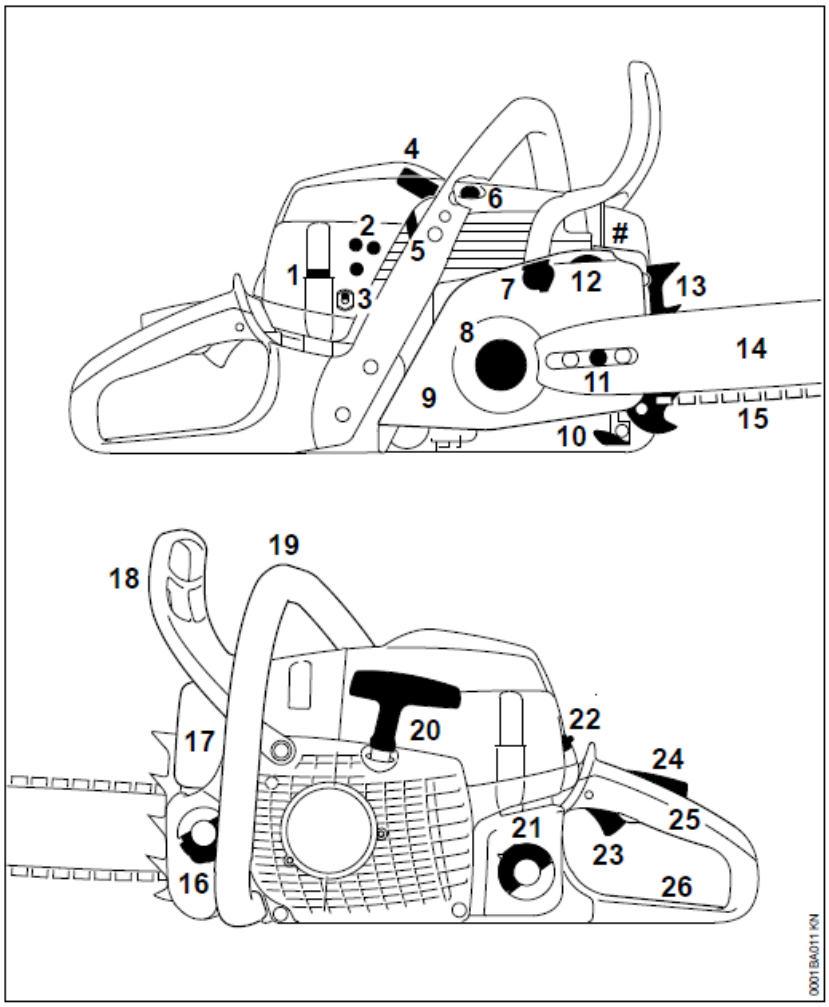
The chain brake must be working properly. A saw with a malfunctioning chain brake must be repaired before use.

Throttle Trigger Lockout - (#24) – Located on the top of the rear handle, this device must be depressed in order to allow the throttle to function. Test this feature, with the saw NOT running, by attempting to pull the throttle without depressing the throttle trigger lockout. The throttle should not be able to move if the lockout is functioning properly.

Chain Catcher – (#10) The catcher is an aluminum hook located on the bottom of the saw where the guide bar meets the main housing of the saw. Its function is to prevent a chain loop from hitting the rear hand of the saw operator in the event the chain comes off the bar during cutting operations. The chain catcher must be replaced after one hit from a detached chain.

Anti-Vibration Mounts – Modern saws have integrated anti-vibration mounts in the form of springs and rubber bushings which function to reduce user fatigue. Pulling excessively on a pinched saw can damage and break these mounts which can lead to stress on other saw components and the operator.

Main Parts



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26 Rear Hand Guard
Serial Number

Decompression Valve - (#6) Located on the top of saw, when depressed, the valve functions to reduce the resistance of the motor while pulling the starter cord. This reduces user fatigue and makes starting the saw easier.

Rear Hand Guard – (#26) Located at the rear of the saw. This guard functions to protect the user's hand from contact with the saw chain in the event the chain comes off the bar during operation.

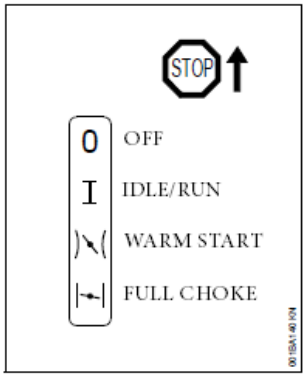
Front Hand Guard – (#18) Located at the front of the saw, the front hand guard operates the chain brake mechanism and protects the operator's hand.

Front Handle – (#19) Located towards the front of main saw housing, the handle wraps from the left side of the saw to the top right side. Proper hand position on the front handle will ensure the effective engaging of the chain brake in the event kickback occurs.

Bumper Spikes – (#13) Located at the front of the saw, these spikes function to aid in flushing stumps and bucking logs by providing a leverage point.

Muffler – (#17) Located at the front of the saw, the muffler functions to reduce the noise output and contains a spark arrestor screen. The screen prevents sparks from exiting the muffler, reducing the potential for ignition of vegetation near the work site.

Master Control Lever - (#22) - Located at the rear of the saw on the left side of the rear handle, this switch functions to adjust the carburetor to full choke, warm start, and idle settings. This is also the off switch and is intended to easily be operated by the thumb of your right hand.



CHAINSAW CARE

In the field maintenance

Stripping and cleaning Field stripping the saw involves a basic breakdown of parts to facilitate cleaning and servicing the saw on the jobsite. Small parts are easily lost at a worksite. Using your helmet or another container to hold the parts is helpful.

In most cases, a chainsaw tool called a "Scrench" or "T-wrench" is all that is required for a basic breakdown. The Scrench is a socket on the end of a flat blade screwdriver. The socket is used to remove the bar nuts which hold the chain sprocket cover on. The flat blade screwdriver is used to adjust the chain tension and to remove the shroud which covers the air filter and sparkplug.

The steps for field stripping and cleaning are:

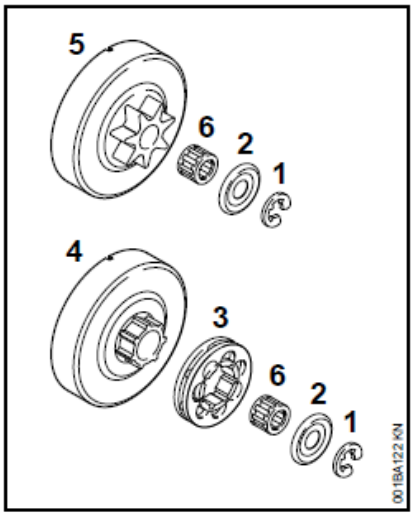
1. Turn the saw off
2. Remove chain sprocket cover (keep track of the nuts) - scrape out debris
3. Remove the guide bar and chain - clean bar groove and oil ports
4. Remove the shroud (with the master control lever in full choke position)
5. Remove the air filter – tap out dust

Further breakdown of the saw should only be performed in a shop to avoid losing small pieces. With the saw now broken down, you can inspect and clean the exposed components with a brush and tap out the air filter. Check the guide bar for burs along the grove. Remove any burs using a flat file.

Reassemble the saw by:

1. Fitting the air filter
2. Secure the shroud
3. Mount the guide bar and chain
    a. Flip the guide bar each time it is removed to ensure even wear
4. Secure the chain sprocket cover with the nuts - finger tight
5. Adjust the chain for proper tension
6. Tighten the nuts

A more thorough cleaning and inspection can be performed at a facility and should be expanded to include checking the sprocket for wear and greasing the needle bearing.



Sprocket/Bearing Removal

1. **E-Clip**
2. **Washer**
3. **Rim Sprocket**
4. **Clutch Drum**
5. **Integrated Spur Chain Sprocket**
6. **Needle Bearing**

The sprocket should be replaced after every 2 saw chains. New sprockets are available through Volunteer Resources. A worn sprocket will reduce the life of a saw chain and increase wear on the saw.

Remove the sprocket and needle bearing by:

1. Removing "E-clip" and Washer
2. Removing the sprocket
3. Exposing and greasing the bearing
4. Replace the sprocket if needed

Chain filing (sharpening) Replacement chains are available through Volunteer Resources. But volunteers are encouraged to sharpen their chains in between replacements. File guides and files are also available from Volunteer Resources.

Properly sharpening a saw chain is necessary for safe operation and should be performed as needed. A sharp chain will produce wood chips or shavings as a byproduct of the cut and require minimal force from the operator to complete the cut. A dull chain will produce powder or saw dust as a byproduct of the cut, require excessive force which will fatigue the operator and increase wear on the saw.

Chains can be filed in the field or at a work bench using various tools. Following the manufacturers recommended filing angles will ensure the best cutting performance and life of the chain. The correct file size for a chain is determined by the chain pitch.

Stihl chains have a coding system which indicates Pitch, Gauge, Cutter type and shape, Link Design and Number of Links.

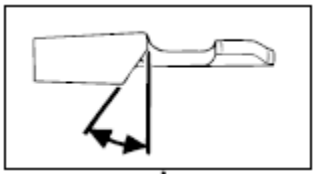
The pitch is marked on each cutter in a chain loop and the gauge on the drive link.

FPCC standard chain for volunteers is
26 RMC 3 67.

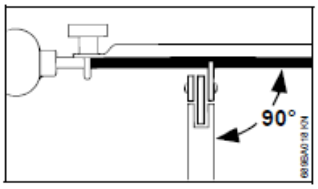
2= .325 pitch;
6 = .063 or 1.6mm gauge;
Rapid Micro Chisel Cutter;
3 = Special Humped Drive Link;
67 links per 16" bar

They require round files sized 3/16" to sharpen.

The top plate of the tooth should be filed at a 30° angle with the file horizontal in relation to the bar.



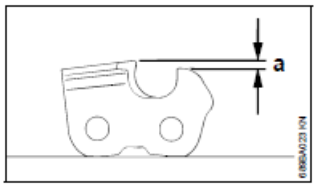
30° Filing Angle



Filing Pitch

A reference line etched on the top, rear of each tooth indicates a 30° line. A cutting tooth may be filed all the way back to this etched line as long as the appropriate gap with the depth gauge is maintained. The file only works in the forward motion.

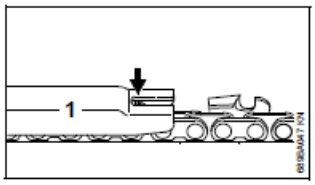
Each tooth has a depth gauge in front of it. The depth gauge is slightly lower than the cutting edge of the tooth.



Depth Gauge/Raker Gap

This gap determines how much wood is cut each time the tooth passes through the wood. As the tooth is filed, its height is reduced.

The depth gauge must also be filed to maintain the appropriate gap. Special sharpening gauges and a flat file should be used to properly maintain the depth gauge each time the chain is sharpened.



Filing Depth Gauge

A larger gap between the tooth and depth gauge makes the saw cut more aggressively and increases the potential for kickback.

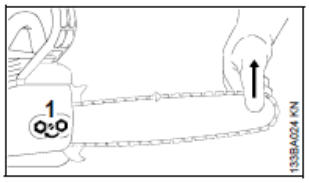
Always wear gloves when sharpening or handling the saw chain. They are very sharp even when they aren't sharp enough for sawing!

- Prevent dulling the chain by avoiding contact with soil and foreign debris when operating a chainsaw.
- Always store the chainsaw with the scabbard on the guide bar.

CHAINSAW PREPARATION

Chain tension

Proper chain tension will prevent unnecessary wear on the guide bar and chain. A loose chain will damage the sprocket and can be thrown off the bar, potentially injuring the operator. Loose chain will also rotate around the bar while the saw is idling. A taught chain will roll the edges of the guide bar and stress the motor, clutch, crank and chain links. To adjust the chain:



Chain Tensioning

1. Loosen bar nuts (do not remove)
2. Hold the nose up the bar up
3. Use Scrench to adjust chain tensioner screw located between the two nuts
4. Turn adjuster screw clockwise to tighten chain
5. Turn adjuster screw counterclockwise to loosen chain.
6. Tighten bar nuts to secure chain sprocket cover and bar once proper tension is reached.

Proper chain tension is achieved when the chain touches along the entire bottom edge of the guide bar and with the saw OFF and chain brake disengaged, you can pull the chain around the bar with a gloved hand. A properly adjusted chain will not rotate around the bar when the saw idles with the chain brake disengaged.

Always wear gloves when handling the saw chain. The teeth are very sharp!

Fueling/oiling procedure

All STIHL products run on a 50:1 fuel to oil mix ratio. 2-cycle oil comes in premeasured bottles which indicate how many gallons of gasoline the bottle of oil should be mixed with**.**

DO NOT confuse bar oil with 2-cycle oil. They are not the same.

Important fueling/oiling points are:

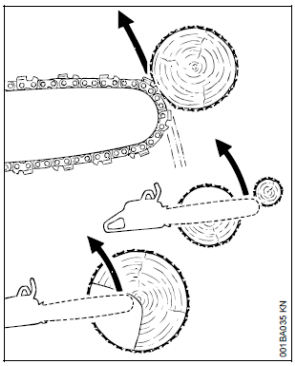
- The fuel tank is near the rear of the saw (#21)
- The bar oil tank is near the front of the saw (#16)
- Do not fuel the saw within 10 feet open flames
- Do not smoke while fueling the saw
- Do not start the saw within 10 feet of fueling site
- Use at least 89 octane (higher is preferred) gasoline mixed with 2-cycle oil
- Avoid using fuel older than 3 months
- Mix fuel and 2-cycle oil in an approved fuel container prior to gassing the saw (FPCC VR supplies 1gal approved containers)
- Clean area around fuel cap prior to removal
- Ensure fuel cap is fully seated and secured before resuming work (some of these are tricky and can easily be broken if not done correctly)
- Clean bar oil cap before removing
- Use appropriate bar oil to ensure proper chain lubrication (FPCC VR supplies winter and year round grade bar oil)
- Ensure oil cap is fully seated and secured before resuming work

KICKBACK AND ROTATIONAL FORCES

Understanding the forces involved with a chain spinning around a bar is necessary for the safety of the operator. The saw will respond in a motion that is directly opposite the direction of the chain's travel.

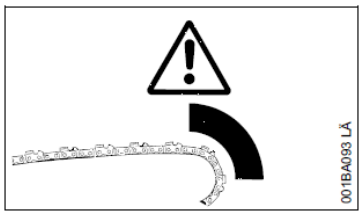
Kickback

This force poses the greatest risk for catastrophic injury. Proper handling of the saw and properly functioning safety features will greatly reduce the potential for injury.



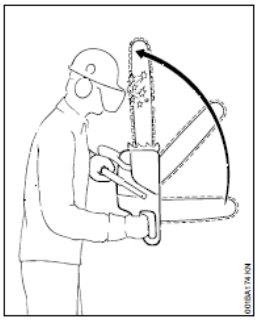
Kickback Motion

Kickback occurs when the top of the guide bar nose contacts wood.



Kickback Zone

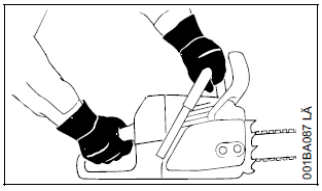
The saw violently moves up and toward the operator.



Kickback Injury

The operator can reduce the potential for kickback by:

- Keeping the top of the guide bar nose from contacting wood
- Cleaning the worksite of obstructions
- Always have a good grip on the saw with your thumb wrapped on the front handle



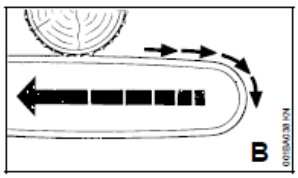
Good Grip

Push-back and pull-in

These are two other forces created by the saw during operation.

Push-back occurs when:

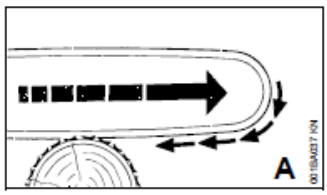
- The top of the bar is used to cut wood
- The chain stops moving due to pinching



Push-Back

Pull-in occurs when:

- The bottom of the bar is used to cut wood
- The chain stops moving due to pinching

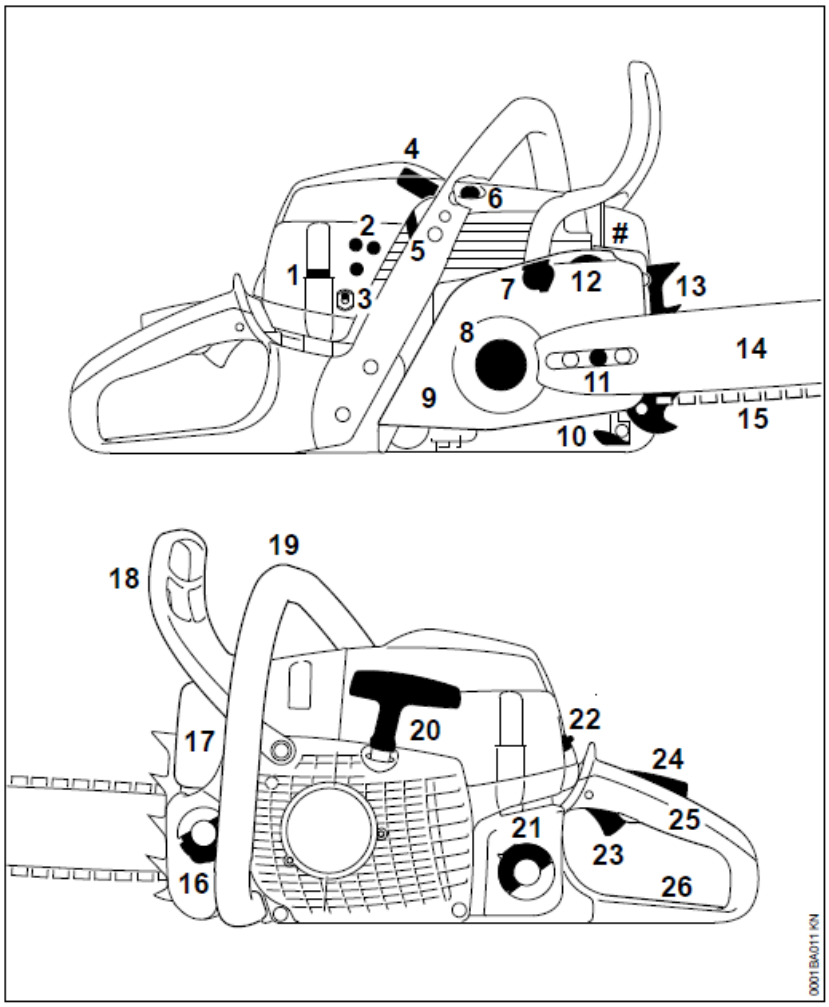


Pull-In

The operator can reduce the effects of these forces by:

- Having the chain spinning at full throttle before contacting the wood
- Having the bumper spikes close to the wood

Main Parts



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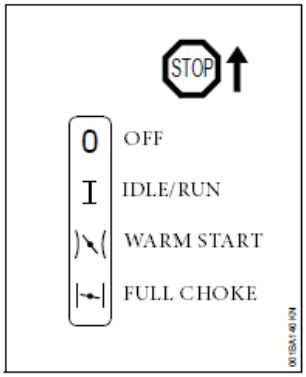
OPERATING A CHAINSAW

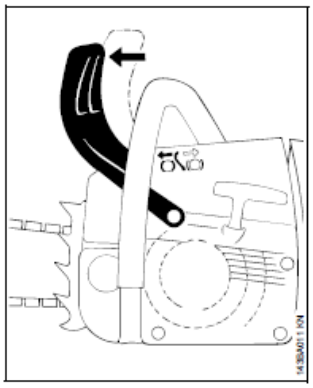
Starting procedure

There are two recommended starting procedures. They are the Leg Lock start and the Ground start. Additionally, a saw can either be Cold started or Warm started. Cold starting is required when a saw has not recently been running. Warm starting is required when starting a saw which has been recently running. For all types of starts,

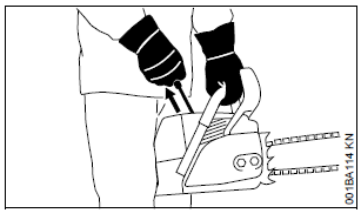
Always have the chain brake engaged when starting a saw and ensure no one is within your field of reach.



Master Control Lever



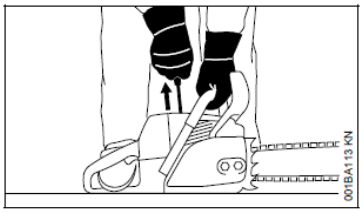
Engaging Chain Brake



Leg-Lock Start

Leg Lock Cold Start method:

1. Engage the chain brake
2. Ensure fuel and oil caps are secured
3. Firmly grip the front handle with your left hand
4. Move master control lever to full choke
5. Pinch the rear handle between your legs
6. Slightly angle the saw to the right to expose the starter grip
7. Press the decompression valve if desired
8. Lock your left arm straight
9. Pull the starter grip across your body
10. When the saw “burps”, move the master control lever up one position to warm start
11. Pull starter grip across body again until saw is running
12. Squeeze throttle to set saw to idle (I)



Ground Start

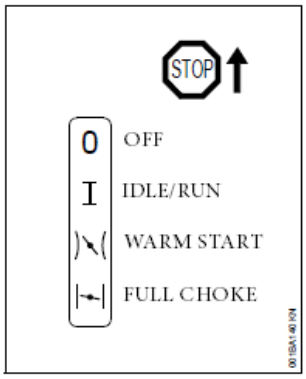
Ground Cold Start method:

1. Engage the chain brake
2. Ensure fuel and oil caps are secured
3. Place saw on flat, clear ground
4. Stand facing the left side of the saw
5. Firmly grip the front handle with your left hand
6. Move the master control lever to full choke
7. Place the toe of your right boot into the rear handle
8. Press the decompression valve if desired
9. Pull the starter grip across your body
10. When the saw “burps”, move the master control lever up one position to warm start
11. Pull starter grip across body again until saw is running
12. Squeeze throttle to set saw to idle (I)

Warm starting a saw does not require the master control lever to be in the full choke position. When starting a warm saw:

1. Chose the desired start method Leg Lock/Ground
2. Move the master control lever to warm start position (one up from full choke)
3. Pull starter grip across your body until saw is running
4. Squeeze throttle to set saw to idle (I)

To turn the saw off, move the master control lever up to the off (O) position.



WORK SITE HAZARD ASSESSMENT AND SAFETY

Hazards

Identifying the work to be done along with any hazards that are present on a work site prior to beginning work is **critical** for reducing the potential for injury both to the saw operator and any other individuals present at the work site. The scope of the work to be done should be understood by all individuals involved and is defined by the volunteer running the workday - Site Steward, Steward or Stewardship Workday Leader. This helps prevent confusion and accidents and keeps the jobsite running efficiently.

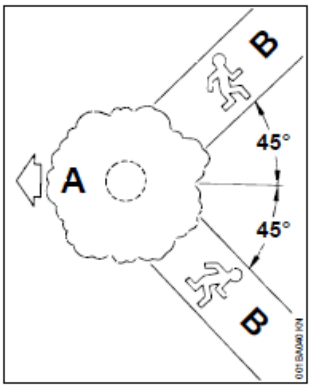
OSHA requires a worksite briefing to take place prior to commencing work and this is required in the volunteer setting as well. This briefing should clearly define the work to be done and any hazards that are present. Identifying hazards involves walking the work site the day the work is to be done and noting anything that can potentially hurt an individual or cause damage to equipment.

Hazards can include:

- Power lines and other Utilities
- Rough terrain, rocks
- Vines, limbs or other vegetation in nearby trees
- Bees, hornets, and wasps
- Poisonous plants
- Foreign material (glass, metal, garbage etc.)
- Pedestrians (the public)
- Traffic
- Weather
- Smoke/Fire and Burn/Brush Piles
- Distance from trucks and other machinery
- Unskilled volunteers
- Youth volunteers (under 18 years)
- Defects in the trees being cut (cracks, lean, rot)

Escape route

An escape route provides a safe line of retreat for the saw operator once the tree begins to fall. Escape routes should be 45° back, opposite the direction of the fall. It is the saw operator's responsibility to clear all debris and vegetation from the planned escape route prior to felling a tree.



Escape Path

SAFETY CONSIDERATIONS FOR THE SAWYER

Minimizing the potential for personal injury is the highest priority of a saw operator. Key points to always follow when operating a chainsaw are:

- Always wear the required PPE
- Never work alone. FPCC policy requires a Chainsaw Safety Assistant be present overseeing the operator's safety as well as the public's safety.
- Know your skill level
- Recognize when to ask for help
- Do not cut something you are not comfortable with
- Do not cut above chest level
- Ensure chainsaw is working properly
- Keep good hand position and footing while working
- Keep your work site free of debris and congestion
- Work at a comfortable pace
- Take breaks when needed to stay hydrated and to prevent fatigue
- Know where other individuals are in relation to you and your saw
- Maintain good communication with other people on the jobsite
- Stand on the uphill side if working on a slope

.

Two-Step Rule

During cutting operations, if you are going to take more than two steps between cuts, the chain brake must be engaged.

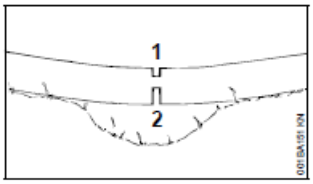
CUTTING CONCEPTS

Understanding how woody material responds to cutting is crucial to prevent operator fatigue and pinching the saw. A saw will become pinched when the cut being made closes on the bar of the saw like a clamp.

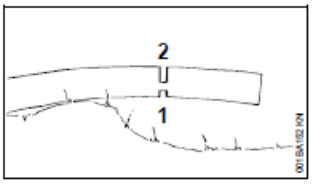
Tension and Compression

These two forces are most often experienced during cutting operations.

Compression/Tension Wood



1. Compression
2. Tension



1. Compression
2. Tension

- Wood which is under **Tension** will separate as the saw cuts through the wood fibers. The result is the cut opens as more material is removed by the chain.

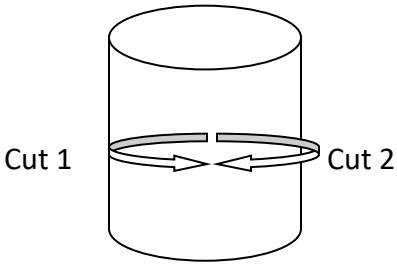
- Wood which is under **Compression** will close as the saw cuts through the wood fibers. This compression results in the cut closing and clamping down on the bar of the saw.

The force being applied to a particular limb or section of trunk is not always obvious. A skilled chainsaw operator will pay attention to how the wood is reacting as a cut is being made and reposition the saw accordingly.

Basic chainsaw cuts

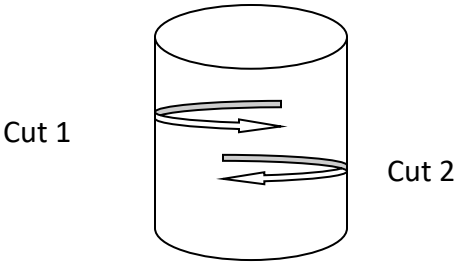
Drop Cut – Two cuts, made from either side of a log which directly meet one another.

- Make a cut in the compression wood, stopping when the cut starts to close
- Move the saw to cut through the tension wood directly opposite your first cut
- When the second cut meets the first, the log will be separated



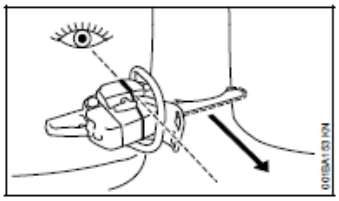
Snap/By-Pass Cut – Two cuts made from either side of a log which pass each other and are 1”-3” apart.

- Make a cut on one side of the log
- Move the saw to the other side of the log and make a second cut 1”-3” away from the first.
- The two cuts must pass each other



Notching a tree (basic concept)

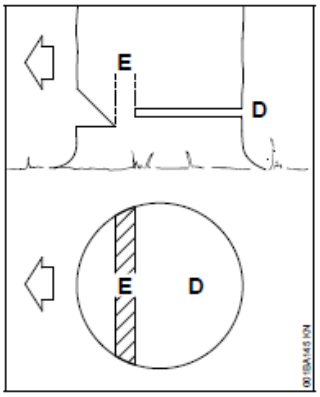
Notching a tree involves removing a wedge or "pie slice" of wood in order to establish a hinge. This setup allows the saw operator to aim and control the direction of fall of the tree being removed.



Aiming the Notch

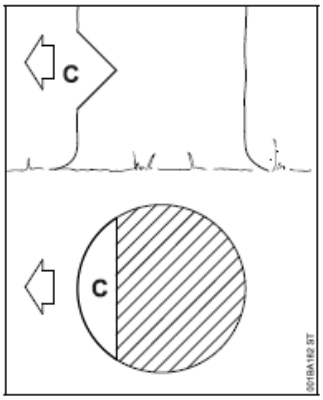
There are three common types of notches:

1. **Conventional** – A 45° opening made using a downward top cut and horizontal bottom cut



Conventional 45º Notch

2. Open Face – A 90° notch made using a downward top cut and an upward bottom cut

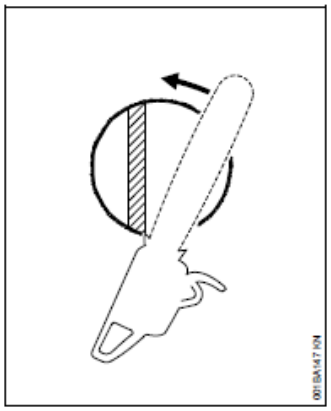


Open Face Notch

3. **Humbolt** – First, a 45° notch is made using a horizontal top cut and an upward bottom cut

The top cut and bottom cut must meet cleanly to establish the apex of the Hinge. The more open the notch (90° vs 45°) the longer the hinge will control the tree during the fall. Once the hinge closes, the fall of the tree will be dictated by gravity.

A Back-cut or "felling cut" is made from the rear of the tree approaching the hinge but. The Back-cut must stop before cutting through the hinge. The hinge keeps the tree connected to the stump during the fall to maximize control.



Back Cut

CHAINSAW SAFETY ASSISTANT

Policy

FPCC policy requires that there is a Chainsaw Safety Assistant for Chainsawyers.

Role

The role of the Chainsaw Safety Assistant is to monitor the site constantly to assure the safety of the Chainsaw Operator and of other volunteers or the public.

This Chainsaw Safety Assistant can be another sawyer or a trained Chainsaw Safety Assistant. All Chainsaw Safety Assistants must be trained and certified by FPCC.

Chainsaw Safety Assistants are required to wear the Helmet, Ear Protection and Face Protection of the Chainsaw PPE requirement but are not required to wear chaps or Kevlar boots.

Communication

To communicate with the sawyer, the Chainsaw Safety Assistant must walk around the fell zone to the front of the sawyer. Never approach a sawyer from behind or the side. Most teams of sawyers develop standard hand gestures that indicate shutting off the machine or other types of alerts.

Managing the public

There is something about the hum of a chainsaw that draws people over to see what is going on. It is the Safety Assistant's role to make sure a proper distance from the saw and the soon to be felled tree is kept.

Other volunteers and the public must be kept at a distance of 2 times the height of the specimen. When a tree is felled, you cannot be assured that it falls as predicted. In the situations that most of the volunteers work in, cut trees are often snagged by other trees, pull down parts of other trees, etc. in their felling path. **Only Chainsaw Safety Assistants and Fellers are permitted at the chainsaw worksite while saws are running . Required chainsaw PPE must be worn by all volunteers inside the chainsaw work zone.**

Other work

It is important that the other activity doesn't distract or prevent the Chainsaw Safety Assistant from seeing the sawyer at all times. They should always have the sawyer in their sight.

GENERAL WORKDAY SAFETY AND PLANNING

Establishing and maintaining a safe worksite is a major priority. Working with large groups of volunteers while chainsaws are being operated and brush piles are burning presents a unique set of hazards. Only Chainsaw Safety Assistants and Fellers are permitted at the chainsaw worksite while saws are running . Required chainsaw PPE must be worn by all volunteers inside the chainsaw work zone. There are no exceptions to this protocol.

Only Chainsaw Safety Assistants and Fellers are permitted at the chainsaw worksite while saws are running.

Some options are:

- Create two separate worksites, one for sawyers and one for non-certified volunteers. Only certified Chainsawyers and Safety Assistants may enter the chainsaw worksite. PPE is required at all times.
- Do the sawing before the workday starts and then have volunteers lop or hand saw it smaller pieces, haul and burn it
- Do periods of sawing (maybe 15 minutes every hour) and direct other volunteers to a safe location away from the worksite until the chainsaw work is complete and saws are off
- Saw at a distance from the group and then switch locations for non-sawing volunteers to remove the brush
- Do most of the workday with hand tools and then saw to trim stumps to flush cuts after a workday

SUPPLIES - ORDERING, LOANERS & REPAIR

Tool/Supply Ordering

Volunteer Resources provides and loans the tools and the herbicides needed to run successful workdays. The Volunteer Supply Order form and the Loaner Form can be found in the Resources section of the website. Parts are supplied only for FPCC issued chainsaws.

Chainsaw related items are:

- Chainsaw – Stihl MS261 and MSA 220 are the current models. Number of chainsaws per site depends on the management schedule for the site **not the number of certified chainsawyers**. Volunteer Resources, the regional ecologist and the work schedule all factor into the decision on number of chainsaws
- Replacement chain – 26RMC3 67 E - Chain to replace old, worn or damaged chain for the MS261. Other chains for older saws are available by special order. Please provide the chain code off the old chain
- Chainsaw bar – 16" bar to replace old, worn or damaged bar.
- Sprocket – Specify if not for MS261
- Scabbard – Protective sheath to go over chainsaw bar
- Bar Oil/Standard grade – Lubricant for bar. Standard is summer weight. Available in gallons only
- Bar Oil/Winter grade – Lubricant for bar. Available in gallons only. For sites who store their saws in unheated facility during the winter
- Two cycle Oil – For 1 gallon mix - Additive for gasoline for power tools
- Helmet with Face Shield & Ear Muffs – Stihl helmet with face shield and ear protection.
- Face Shield – Replacement for damaged face shield for Stihl helmet only.
- Chaps – Protective chaps available in 32", 36" and 40" length. Straps adjust pretty easily to fit everyone. Long length is available by special order
- Gas Can – 1.25 gallon gas can for power tool use.
- Chain Sharpening File Guide – Aid to sharpen chain teeth includes files. This does require some training, skill and experience to do well
- Round bastard-cut file – Small 3/16" file to repair tooth damage
- Logger First Aid Kit - It is different than the First Aid Kits issued for non-chainsaw workdays. VR provides one kit per site that is assigned a chainsaw (not per number of sawyers)
- Orange Safety Vest

Ordering Procedure

- Site Stewards place the order.

Delivery Procedure

Volunteer Resources can deliver requested items to one of twenty different FPCC facilities located around the county.

Loaner Tool Requests

Chainsaw – Loaners will be available when a chainsaw is being repaired and/or when additional chainsawyers are available for a large workday.

Given that loaner items are used for short periods, it is imperative that loaner items be returned to Volunteer Resources by the agreed upon return date, typically 1-5 days after the workday. Arrangements should be made with Volunteer Resources if the loaner items will be returned to a location other than the original delivery location

Kevlar Boot Policy

Chainsawyers are required to wear Kevlar boots while chain sawing on FPCC property. Safety Assistants are not required to do so. Kevlar boots are supplied to ecological stewardship volunteers who pledge to chainsaw at 6 chainsaw workdays per year for two years. The Kevlar boots are available to purchase for $350 (subject to change) if the volunteer does not meet this requirement.

These boots meet the OSHA requirements currently in effect. These are provided for the volunteer to wear while operating a chainsaw on stewardship workdays and not intended to be used for other purposes. Please wear the Kevlar boots only while chain sawing, not for other restoration activities, in order to extend wear.

The 12 chainsaw workdays within two years must be entered on the Online Volunteer System (OVS). Volunteer Resources will send out yearly activity reports. At the end of each year, anyone not meeting the chainsaw workday requirement will be asked to return the boots or purchase them for $300 (subject to change). This policy will be strictly adhered to. Volunteers who do not record chainsaw workdays on OVS as outlined or do not purchase the Kevlar boots will be placed on inactive status and any certifications will be revoked.

The chainsawyer must sign the Kevlar Boot Agreement and send it in with their request.

Repair Process

Basic cleaning and maintenance is expected of the volunteer. Any other repairs to the chainsaw should be made by a professional. A recommended maintenance schedule follows. If your saw needs repair, email volunteer.fpd@cookcountyil.gov to arrange repair. You will need basic information about the problem, a location where the saw can be picked up and whether you need a loaner dropped off.

CHAINSAW MAINTENANCE

The following intervals apply to normal operating conditions only. If your daily working time is longer or operating conditions are difficult (very dusty work area, resin-rich wood, tropical wood, etc.), shorten the specified intervals accordingly. If you only use the saw occasionally, extend the intervals accordingly.		before starting work	after finishing work or daily	after each refueling stop	weekly	monthly	every 12 months	if problem	if damaged	if required
Complete machine	Visual inspection (condition, leaks)	X		X						
	Clean		X							
Throttle trigger, throttle trigger lockout, Master Control	Check operation	X		X						
Chain brake	Check operation	X		X						
	Have checked by servicing dealer[1][2]									X
Pickup body/filter in fuel tank	Check					X				
	Clean, replace filter element					X		X		
	Replace						X		X	X
Fuel tank	Clean					X				
Chain oil tank	Clean					X				
Chain lubrication	Check	X								
Saw chain	Inspect, also check sharpness	X		X						
	Check chain tension	X		X						
	Sharpen									X
Guide bar	Check (wear, damage)	X								
	Clean and turn over									X
	Deburr				X					
	Replace								X	X
Chain sprocket	Check				X					
Air filter	Clean							X		X
	Replace								X	
Antivibration elements	Check	X						X		
	Have replaced by dealer[1]								X	

Cooling inlets	Clean		X							
Air inlet on fan housing	Clean		X		X					X
Cylinder fins	Clean		X		X					X
Preseparator port and carburetor body	Clean									X
"Carb preheat" shutter and preheating port	Clean (winter operation only)									X
Carburetor	Check idle adjustment – chain must not rotate	X		X						
	Readjust idle									X
Spark plug	Readjust electrode gap							X		
	Replace after every 100 operating hours									
All accessible screws and nuts (not adjusting screws) [3]	Retighten									X
Spark arresting screen in muffler	Check							X		
	Clean or replace								X	
Combustion chamber	Decoke after first 139 hours of operating, then every 150 hours									X
Chain catcher	Check	X								
	Replace								X	
Safety labels	Replace								X	

CERTIFICATION PROCESS

Test

You must pass the exam with a 90% or higher score for certification. Passing the test (and attending the class) meets the requirement for the Chainsaw Safety Assistant.

Field Observation

Field Observations must be done with Resource Management Staff for all those aspiring to be certified as a Sawyer. If the student does not pass the first time, they do have the ability to come back a second time to be observed again.

Scheduling

The instructor will give the student their contact information to arrange a date, time, and location of the Field Observation. Multiple students may be observed at the same session.

Certification

Designation including level will be reflected on the volunteer's OVS profile and ID card.

Continuing Education

The FPCC will offer additional required chainsaw training to volunteers. Staff will also periodically attend chainsaw workdays to review volunteer chainsaw operation and site safety.

Know when a situation is beyond your skill level. NEVER cut something you are not comfortable with. Know when to walk away and ask for help. Your safety is ultimately your responsibility and is influenced not just by the protective equipment you wear but by the decisions you make and the attitude you have while working.