

Section 22: Starting Procedure

STARTING THE ENGINE

Step 1: Set *Throttle* to low idle position.

Step 2: Place *Upper Feed Control Bar* in NEUTRAL.

Step 3: Turn key fully clockwise to start engine. Release key once engine starts.

Step 4: Allow engine at idle to warm up for 3–5 minutes.

- Increasing RPM will engage cutter disk.
- Never run starter motor for more than 10 seconds at a time. Allow starter motor to cool 1 minute between attempts.
- This Electronic Fuel Injected (EFI) Kohler engine requires no choke in warm or cold weather. There is no starting aid such as a choke lever. Refer to Engine Manual for more information.

COLD WEATHER STARTING

Engine

Before operating in cold weather (below 32°F (0°C)), refer to the Engine Operation Manual for recommended engine oil, fuel, and starting procedures.

Hydraulic Fluid

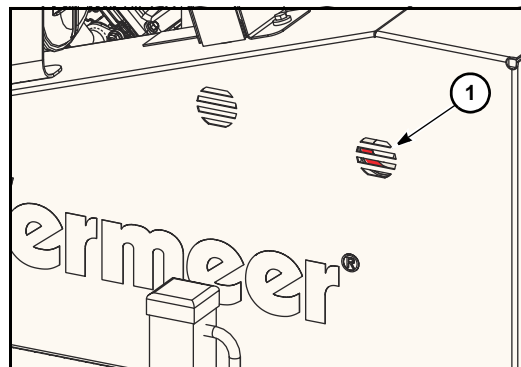
In cold weather, take more time to warm up the hydraulic fluid. After engine is warm, let it run for a minimum of five more minutes at low RPM before operating any controls.

NOTICE: Slow engine down if hydraulic pump squeals due to insufficient oil.

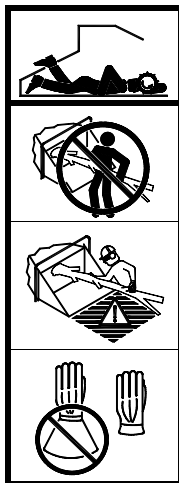
Section 50: Operating the Brush Chipper

CUTTER SHAFT/CLUTCH-CHECK

Refer to “Starting Procedure,” [page 22-1](#). Check cutter disc shaft end (1) to confirm that the cutter disc does not turn while the engine is at low idle. This machine is equipped with a centrifugal clutch. As the RPM increases the cutter wheel will engage. Refer to “Throttle,” [page 20-2](#). If rotation occurs, engine idle could be too high. Refer to Engine Operation Manual to verify RPM setting or clutch may be faulty and need repair or replaced or refer to the [Maintenance - 50 Service Hours](#) in the [Maintenance Manual](#) for instructions.



FEED ROLLER OPERATION

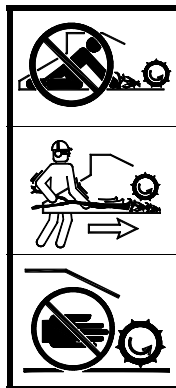


DANGER: Limbs can snag clothing. Roller or blades can grab and pull you in faster than you can let go of limb. Death or cutting injury will result.

Feed material only from side of feed table.

Feed base of limb or branch first.

Wear gloves with narrow tight-fitting cuffs.



Never climb onto feed table.

Use wood object to push short material.

Keep away from rotating feed roller and blades.



WARNING: Feed roller may start unexpectedly with a small increase in engine speed. Place *Upper Feed Control Bar* in Center Stop and stop engine before working on or near feed roller for any reason including cleaning, servicing and unclogging feed intake area.

With SmartFeed control operation, the feed roller will stop feeding material when engine RPM drops below preset speeds, and will automatically restart when engine speed increases.

NOTICE: Proper operation of the *Upper Feed Control Bar* and *Lower Feed Stop Bar* should be checked every 10 hours of operation or daily. Refer to the [Maintenance Manual](#) for adjustment instructions.

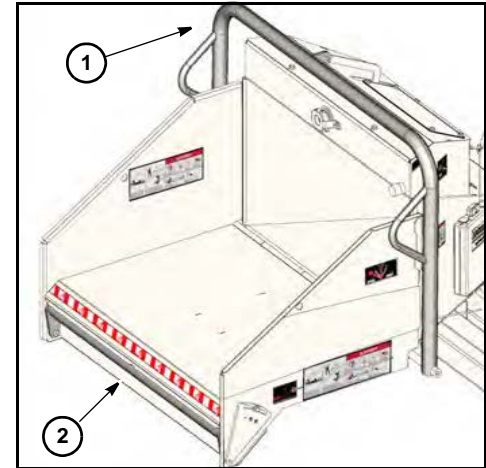
Upper Feed Control Bar

The *Upper Feed Control Bar* (1) provides a means for the operator to quickly stop feed roller as well as selecting forward or reverse operation.

Lower Feed Stop Bar

The *Lower Feed Stop Bar* system (2) provides a means for the operator to quickly stop the feed roller if snagged by a branch and pulled toward the machine. This system is intended for your safety and must be maintained in good operating condition. Do not operate the machine if the *Lower Feed Stop Bar* is not functioning properly.

Stopping the feed roller is accomplished by bumping the *Lower Feed Stop Bar* (2). The *Lower Feed Stop Bar* is strategically located to make it possible for the operator's leg to strike the bar and shut off the feed either intentionally or automatically in an emergency situation. If the operator's leg does not strike the bar, the feed roller will not stop. It is therefore very important to follow all safety instructions for feeding material into the chipper



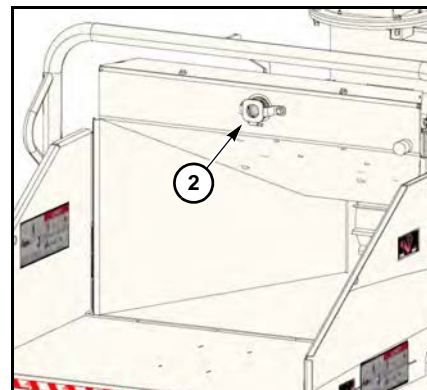
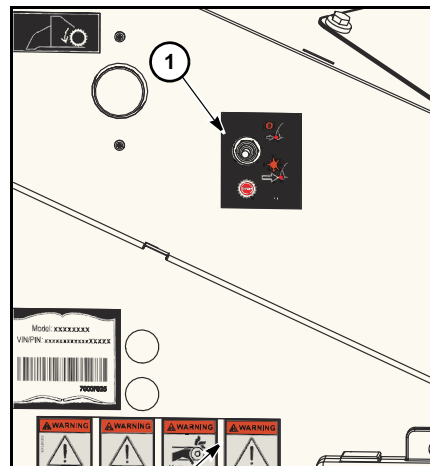
Sensitivity Levels

The *Lower Feed Stop Bar* has two levels of sensitivity. When the NORMAL setting (*Sensitivity Switch up*) is selected (1), the stop bar is depressed a shorter distance before the feed roller stops. When the REDUCED setting (*Sensitivity Switch down*) is selected (1), the stop bar is depressed farther before feed roller stops.

The amber warning light (2) on the rear of the machine turns on when the REDUCED setting of the *Sensitivity Switch* is selected.

Each time the engine key is turned OFF, the lower feed stop bar system defaults to the NORMAL setting.

NOTICE: The NORMAL sensitivity setting provides the most protection for the operator since a leg is more likely to strike the bar and shut off feed in an emergency. Use NORMAL sensitivity setting whenever jobsite conditions permit. If the size and shape of limbs cause branches to strike the bar, resulting in an unacceptable frequency of feed stops, the REDUCED sensitivity setting may be temporarily selected. When these difficult conditions have passed, select the NORMAL setting to continue chipping.



Feed Roller - Engage

Start feed roller:

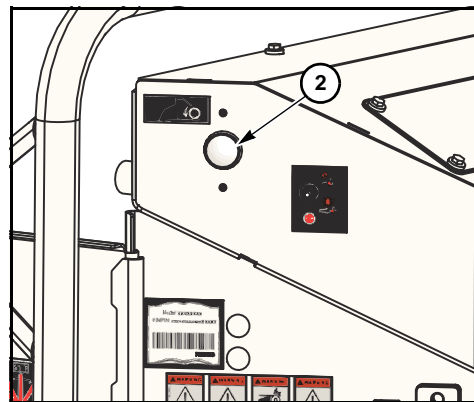
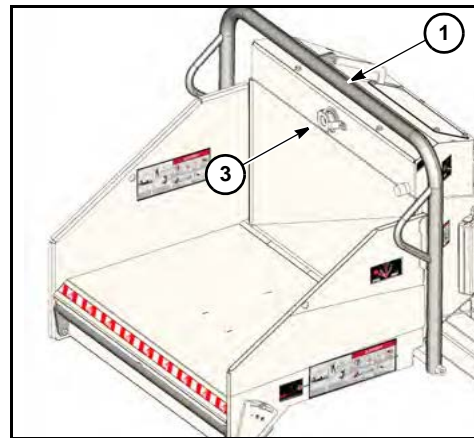
- Pull *Upper Feed Control Bar (1)* to FORWARD feeding position.
- Press *Hold-to-Run Button (2)*.
 - Pressing it briefly causes feed roller to operate and the *Lower Feed Stop Bar* to be ignored for one second.
 - Holding it causes feed roller to operate for up to 30 seconds regardless of position of *Upper Feed Control Bar* and *Lower Feed Stop Bar*. After 30 seconds, feed roller stops, and can be reset by releasing the *Hold-to-Run Button* and pressing it again.

NOTICE: When *Hold-to-Run Button* is released:

- The feed roller stops if the lower feed stop bar is pressed.
- The feed roller runs if both bars are in the RUN position.

If material continues to strike the bar and stop the feed roller, trim or shorten material before feeding it into the chipper.

- Each time the engine key is turned ON, the rear warning light (3) flashes quickly, and *Hold-to-Run Button (2)* must be pushed to start feed roller.
- Engine throttle must be set at HIGH RPM before feed roller will start in forward.



SMARTFEED/CONTROLLER OPERATION

SmartFeed monitors and automatically controls various machine functions to maintain optimum engine performance. Its primary function is to control the infeed and cutting systems when they are heavily loaded. The controller provides control and reset functions for the *Lower Feed Stop Bar* and *Upper Feed Control Bar*

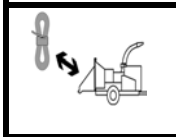
Cutting System

When engine speed drops below a preset RPM because of heavy chipping, SmartFeed momentarily reverses, then stops the feed roller. Feed roller starts again once engine speed recovers. This sequence may occur several times before the material completely passes through the machine.

CHIP MATERIAL



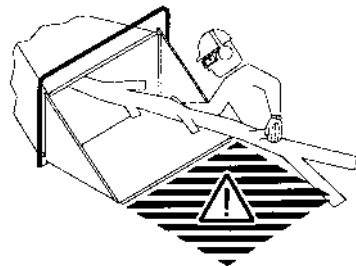
WARNING: Check material being chipped. Avoid stones, wire, or other objects which may damage the knives and become dangerous projectiles.



WARNING: Keep jobsite area around the chipper and brush piles clear of throwlines, rigging lines and climbing ropes. Chipper knives can grab and pull in rope and anything attached to it at high speed.

Feeding Tips

- Ensure that all throwlines, rigging lines and climbing ropes do not get entangled in the brush piles or the chipper during machine operation.
- If feeding material by hand, always feed from the side of infeed chute; never directly behind it.
- Feed large end of log or branch into chipper first.
- To stay out of traffic while operating along a road, feed material from curb side.
- If feeding brushy material that frequently catches on *Lower Feed Stop Bar* and stops the feed roller, change sensitivity setting to REDUCED sensitivity. Refer to “Lower Feed Stop Bar Sensitivity Switch,” [page 20-5](#).
- Sometimes during feeding, a limb will suddenly turn or move sideways and may strike you. To reduce the possibility of being struck, release the limb immediately after it begins feeding and then turn away.



Material Size

- Brush chipper will chip logs approximately 6" (15 cm) in diameter.
- Sometimes a log, due to its size and shape, will not go in. Trim or shorten logs to aid feeding into chipper.

Plugs or Stalls

- If discharge chute, cutter disc, or feed roller becomes plugged during operation. Refer to “Removing Plugs from Brush Chipper,” [page 51-1](#).
- If engine stalls while chipping, reduce engine speed to low idle to ensure clutch stays disengaged.
- With throttle at low idle, start engine reverse feed roller to remove material that caused the stall.
- Throttle up to full speed to engage cutter disk.

Finishing

- Chipped material that accumulates in the infeed chute can be pulled into the machine by feeding in a piece of brush, or by pushing it in with a long limb. **Never** push chipped material with hands, feet, rake, shovel, or any other object.
- When chipping operation is complete. [Follow Shutdown Procedure, page 23-1](#).

