

**Vermeer**

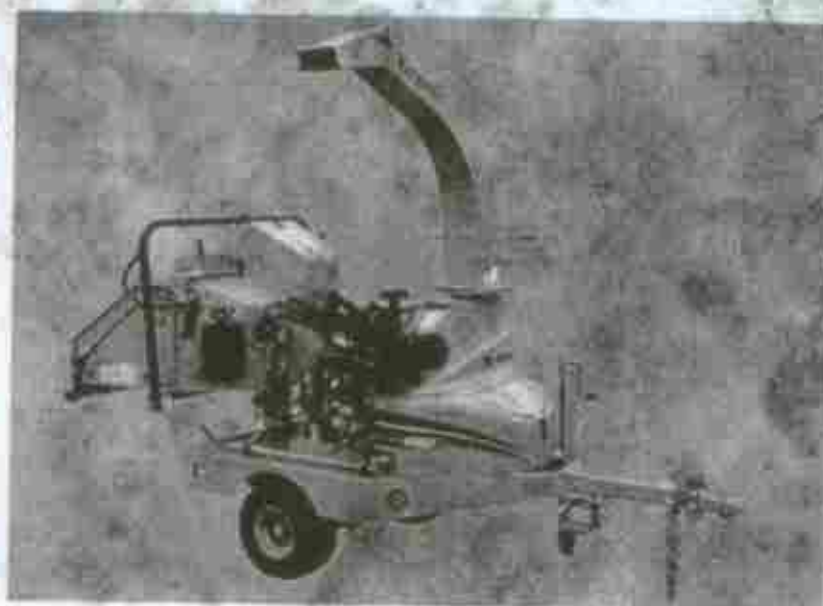
X-13

**BC600XL**  
**Brush Chipper**

**Operator's Manual**



BC600XL-10-02  
Serial No. 262  
Order No. 102400X  
Cabage Assembly No. 15-052522



**NOTE:** Right and left sides of the machine are determined by facing in the direction of forward travel.

## TRADEMARKS

**VERMEER**, **VERMEER** Logo, and **AUTOFEED II** are registered trademarks of Vermeer Manufacturing Company.

**KOHLER** is a trademark of Kohler Company.

**PERKINS** is a trademark of Varity Holdings Ltd., United Kingdom.

**BC600XL** Brush Chipper

Introduction

## PATENTS

This machine may be covered by one or more of the following patents:

AU 795 135	US 5,237,888	US 5,729,354	US 6,247,544	US 6,439,319	US 6,557,851
CA 2,079,320	US 5,297,954	US 5,745,278	US 6,989,997	US 6,449,365	US 6,577,854
DE 196 11 946	US 5,309,200	US 5,768,811	US 6,300,787	US 6,446,829	US 6,585,062
DE 202 14 960.5	US 5,544,055	US 5,779,991	US 6,319,062	US 6,454,025	US 6,585,518
DE Des. 96 006 89.4	US 5,953,407	US 6,819,858	US 6,332,502	US 6,470,976	US 6,651,755
EP 772 743	US 5,565,363	US 5,849,680	US 6,957,537	US 6,474,931	US 6,659,209
EP 800 528	US 5,574,942	US 5,904,210	US 6,360,830	US 6,474,932	US 6,669,946
EP 885 343	US 5,589,474	US 5,944,121	US 6,367,584	US 6,477,795	US 6,684,538
EP 1,153,144	US 5,590,043	US 5,950,942	US 6,374,926	US 6,484,818	US 6,701,647
GB 2,053,835.7	US 5,607,280	US 6,014,996	US 6,052,339	US 6,491,115	US 6,719,069
HK 1015559	US 5,611,396	US 6,050,330	US 6,389,360	US 6,497,296	US 6,725,579
FR 1,215,892	US 5,657,903	US 6,102,007	US 6,390,307	US 6,511,050	US 6,729,950
US Des. 308,662	US 6,653,366	US 6,119,335	US 6,408,952	US 6,516,899	
US Des. 496,837	US 6,647,907	US 6,128,992	US 6,408,954	US 6,517,730	
US 4,948,425	US 5,632,548	US 6,154,367	US 6,412,715	US 6,533,048	
US 5,205,181	US 5,692,549	US 6,181,536	US 6,422,895	US 6,533,062	
US 5,219,380	US 6,704,142	US 6,185,922	US 6,435,280	US 6,554,052	
This machine may be covered by one or more of the following licensed patents:					
US 4,594,913	US 4,987,255	US 5,149,880			
US 4,858,704	US 4,953,838	US 5,775,380			

(Other U.S. and foreign patents pending.)

# VERMEER NEW INDUSTRIAL EQUIPMENT LIMITED WARRANTY

(EFFECTIVE NOVEMBER 1, 1988)

**WARRANTY PERIOD 12 Months / 1000 Hours**

Vermeer Mfg. Co. (hereinafter "Vermeer") warrants each new Industrial product of Vermeer's manufacture to be free from defects in material and workmanship, under normal use and service for use (1) full year after initial purchaser's retail sale or 1000 operating hours, whichever occurs first. This Limited Warranty shall apply only to complete machines of Vermeer's manufacture; parts are covered by a separate Limited Warranty. **EQUIPMENT AND ACCESSORIES NOT OF VERMEER'S MANUFACTURE ARE WARRANTED ONLY TO THE EXTENT OF THE ORIGINAL MANUFACTURER'S WARRANTY AND SUBJECT TO THEIR ALLOWANCE TO VERMEER ONLY IF FOUND TO BE DEFECTIVE BY SUCH MANUFACTURER.**

## **EXTENDED WARRANTY OPTIONS ARE AVAILABLE FOR PURCHASE.**

### **WARRANTY TERMS**

During the Limited Warranty period specified above, any defect in material or workmanship in any warranted item of Vermeer Industrial Equipment not excluded below shall be repaired or replaced at Vermeer's option without charge by any authorized independent Vermeer dealer. The warranty repair or replacement must be made by a Vermeer independent authorized dealer at the dealer's location. Vermeer will pay for replacement parts and such authorized dealer's labor in accordance with Vermeer's labor reimbursement policy. Vermeer reserves the right to supply remanufactured replacement parts as it deems appropriate.

### **RETAIL PURCHASER RESPONSIBILITY:**

This Limited Warranty requires proper maintenance and periodic inspections of the Industrial Equipment as indicated in the Operator's Manual furnished with each new Industrial Equipment. The cost of routine or required maintenance and services is the responsibility of the retail purchaser. The retail purchaser is required to keep documented evidence that these services were performed.

This Vermeer New Industrial Equipment Limited Warranty may be subject to cancellation if the above requirements are not performed.

Vermeer Industrial Equipment with known failed or defective parts must be immediately removed from service.

BC500XL Brush Chipper

Introduction

## **EXCLUSIONS AND LIMITATIONS**

The warranties contained herein shall **NOT APPLY TO:**

1. Any defect which was caused (in Vermeer's sole judgment) by other than normal use and service of the Industrial Equipment, or by any of the following: (i) accident (ii) misuse or negligence (iii) overloading (iv) lack of reasonable and proper maintenance (v) improper repair or installation (vi) unsuitable storage (vii) non-Vermeer approved alteration or modifications (viii) natural calamities (ix) vandalism (x) parts or accessories installed on Industrial Equipment which were not manufactured or installed by Vermeer authorized dealers (xi) the elements (xii) collision or other accident.
2. Any Industrial Equipment whose identification numbers or marks have been altered or removed or whose hourmeter has been altered or tampered with.
3. Any Industrial Equipment which any of the required or recommended periodic inspection or services have been performed using parts not manufactured or supplied by Vermeer, or meeting Vermeer Specifications including, but without limitation, engine tune-up parts, engine oil filters, air filters, hydraulic oil filters, and fuel filters.
4. New Industrial Equipment delivered to the retail purchaser in which the warranty registration has not been completed and returned to Vermeer within ten (10) days from the date of purchase.
5. Any defect which was caused (in Vermeer's sole judgment) by operation of the Industrial Equipment not abiding by standard operating procedures outlined in the Operator's Manual.
6. Engine, battery, and tire Limited Warranties and support are the responsibility of the respective product's manufacturer.
7. Transportation costs, if any, of transporting to the Vermeer dealer.
8. The travel time of the Vermeer dealer's service personnel to make a repair on the retail purchaser's site or other location.
9. In no event shall Vermeer's liability exceed the purchase price of the product.
10. Vermeer shall not be liable to any person under any circumstances for any incidental or consequential damages (including but not limited to, loss of profits, but of service time) occurring for any reason at any time.
11. Diagnostic and overtime labor premiums are not covered under this Limited Warranty Policy.
12. Depreciation damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow operating instructions, misuse, lack of proper protection during storage.

13) Accessory systems and electronics not of Vermeer's manufacture are warranted only to the extent of such manufacturer's respective Limited Warranty, if any.

14) Downhole tooling is not covered under this warranty.

15) Wear items which are listed by product group below:

**ENVIRONMENTAL:** Belts, Chain, Wear Strips, Cutter Wheels, Pickoffs, Knives, Service Items, Shear Bar/Box, End Rollers, Brake Pads, Bolts/Torqued Parts, Wear Blocks, Hammermill Bearings, Discharge Conveyor Belts, Hoses, Clutches, Clutch Components, Hammers, Teeth, Blades, Oil Filters, Fuel Filters, Screwing Rods, Motor Plates, Rollers.

**TRACK:** Digging Chain, Base Plates, Cams, End Idler, Wear Plates/Track Frames, Flashings, Pins At Pivot Points, Sprockets, Teeth, Boom Wear Items, Track Chain, Conveyor Belts, Plastic Wear Strips, Pivot Rings.

**TRENCHLESS:** Fan Belts, Lights On Light Kits, Wear Bars, Rollers, Trolling, Valve Seats, Track Guides, Track Chain, Track Sprockets, Drive Chuck, Earth Stakes, Water Hoses, Leaf Chain, Wear Blocks, Clamping Vee Parts, Packing Assemblies, Jaw, Water Swivels, Rod Louifer Parts, Track Pads, Track Idlers, Rod.

**RUBBER TIRE:** Bearings, End Rollers, Belts, Pins, Trench Cleaner, Tires, Bucket, Brake Pads, Clutch, Track Sprockets, Sprockets, Chains, Bushings, Booms, Rubber Shielding, Bucket Teeth, Plow Blades, Rock Wheel Teeth, Augers, Track Idlers.

### **PARTS WARRANTY**

Parts replaced in the warranty period will receive the balance of the first year New Industrial Equipment Limited Warranty, during the first (12) months or 1000 hours whichever comes first. Replacement parts after the original machine warranty are warranted to be free from defects of material for ninety (90) days or the part will be repaired or replaced, without labor coverage for removal or reinstallation.

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Introduction

**EXCLUSIONS OF WARRANTIES:** EXCEPT FOR THE WARRANTIES EXPRESSLY AND SPECIFICALLY MADE HEREIN, VERMEER MAKES NO OTHER WARRANTIES, AND ANY POSSIBLE LIABILITY OF VERMEER HEREUNDER IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. VERMEER RESERVES THE RIGHT TO MODIFY, ALTER, AND IMPROVE ANY PRODUCT WITHOUT INCURRING ANY OBLIGATION TO REPLACE ANY PRODUCT PREVIOUSLY SOLD WITH SUCH MODIFICATION. NO PERSON IS AUTHORIZED TO GIVE ANY OTHER WARRANTY, OR TO ASSUME ANY ADDITIONAL OBLIGATION ON VERMEER'S BEHALF.

MANUFACTURED BY:  
VERMEER MANUFACTURING COMPANY  
Pella, Iowa 50219

# Receiving and Delivery Report

## DEALER PREP

Check or perform the following:

### Engine

- Check engine oil level.
- Check battery electrolyte level and charge.
- Check air cleaner condition.
- Check coolant level and antifreeze concentration - Perkins engine.
- Check engine operation.
- Check that all gauges and indicators work correctly.
- Check that exhaust system is mounted correctly and tight.

### Hydraulics

- Check hydraulic fluid level.
- Check all hydraulic components for leaks or damage.
- Check control levers for proper operation.
- Check *Upper Feed Control Bar* for proper function.
- Check *Lower Feed Stop Bar* system for proper operation.

### General

- Check machine for shortage or damage in transit.
- Check installation and condition of all shields.

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Receiving and Delivery Report 1

- Check machine for proper lubrication.
- Check condition of all safety signs and operating decals.
- Check all phases of operation.
- Check for loose hardware.
- Check wheel lug nuts torque (refer to the Specifications section in the Maintenance Manual).
- Check air pressure of tires (refer to the Specifications section in the Maintenance Manual).
- Check operation of the brakes (Optional Electric Brakes).
- Check operation of breakaway system (Optional Electric Brakes).
- Check operation of highway lights.
- Check that safety towing chain is properly installed.
- Check that towing hitch is properly attached to machine and mounting hardware is torqued to 120 ft-lb (163 Nm).
- Check drive belt for proper tension.
- Check belt tightener for proper function.
- Check torque on shear bar mounting bolts (refer to the Maintenance - 50 Service Hours or Weekly Section in the Maintenance Manual).
- Check torque on cutter knife bolts (refer to the Maintenance - 50 Service Hours or Weekly Section in the Maintenance Manual).

### Feed System

- Check operation of feed roller controls.
- Check operation of the AutoFeed II control system.

## DELIVERY

Check and perform the following with the customer:

### Brush Chipper

- Review all sections of the Operator's Manual.
- Grease or oil all lubrication points.

### Review of Operation

Review and demonstrate with the customer the various aspects of brush chipper operation:

- overall explanation of how the brush chipper works
- brush chipper safety
- preparing the brush chipper for operation

## DEALER/CUSTOMER INFORMATION

dealer

owner

address

address

city

city

state/province

state/province

zip/postal code

zip/postal code

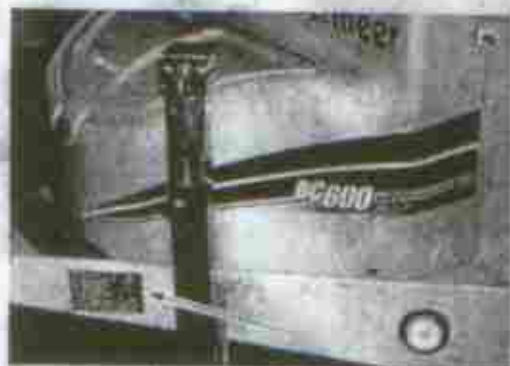
country

country

## MACHINE IDENTIFICATION NUMBERS - RECORD

Model Number \_\_\_\_\_

VIN Number \_\_\_\_\_



## PERKINS ENGINE - RECORD

Model Number \_\_\_\_\_

Serial Number \_\_\_\_\_



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## KOHLER ENGINE - RECORD

Model Number \_\_\_\_\_

Serial Number \_\_\_\_\_



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## Section 10: Safety Messages

General safety messages appear in this Safety Messages section. Specific safety messages are located in appropriate sections of the manual where a potential hazard may occur if the instructions or procedures are not followed.

A signal word "DANGER", "WARNING", or "CAUTION" is used with the safety alert symbol.

Safety signs with signal word "DANGER", "WARNING", or "CAUTION" are located near specific hazards.

**DANGER** Imminent hazards which, if not avoided, will result in serious personal injury or death.

**WARNING** Potential hazards or unsafe practices which, if not avoided, could result in serious personal injury or death.

**CAUTION** Potential hazards or unsafe practices which, if not avoided, could result in minor personal injury or product or property damage.

### SAFETY SYMBOL EXPLANATION



This is the safety alert symbol. This symbol is used in combination with an exclamation mark or other symbols to alert you to the potential for bodily injury or death.



**WARNING:** Read Operator's Manual and safety signs before operating machine.

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Safety Messages 10-1



**WARNING:** Check machine before operating. Machine must be in good operating condition and all safety equipment installed and functioning properly.



**WARNING:** Wear personal protective equipment. Dress properly. Refer to *Preparing Brush Chipper and Work Area*, page 40-1.



**WARNING:** Keep spectators away.



**WARNING:** Engine exhaust can asphyxiate. Operate only outdoors.



**WARNING:** Use Shutdown Procedure before servicing, cleaning, repairing or transporting machine. Refer to the Shutdown Procedure, page 23-1, for instructions.



**WARNING:** Pressurized fluid can penetrate body tissue and result in serious injury or death. Leaks can be invisible. Keep away from any suspected leak. Relieve pressure in the hydraulic system before searching for leaks, disconnecting hoses, or performing any other work on the system. If you must pressurize the system to find a suspected leak, use an object such as a piece of wood or cardboard rather than your hands. When loosening a fitting where some residual pressure may exist, slowly loosen the fitting until oil begins to leak. Wait for leaking to stop before disconnecting the fitting. Fluid injected under the skin must be removed immediately by a surgeon familiar with this type of injury.



**WARNING:** Fuel and fumes can explode and burn.

Shut off engine before refueling. No flame. No smoking.

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Safety Messages 10-3



**WARNING:** Hot fluid under pressure can scald.

Allow engine to cool before opening radiator cap.



**WARNING:** Moving parts can crush fingers.

Close all shields before starting.



**WARNING:** Failure to follow any of the preceding safety instructions or those that follow within this manual, could result in serious injury or death. This machine is to be used only for those purposes for which it was intended as explained in this Operator's Manual.

# Section 21: Controls

## ENGINE CONTROLS - PERKINS (EU MACHINES ONLY)

### (1) Throttle

With center button depressed

Pull knob out ..... increase RPM

Push knob in ..... decrease RPM



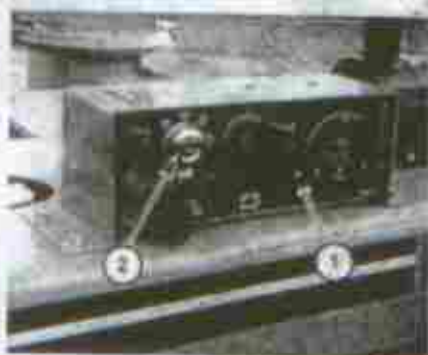
### (2) Ignition Switch

Counterclockwise ..... glow plugs on

Center position ..... engine off

1st position clockwise ..... engine on

2nd position clockwise ..... engine start



## ENGINE MONITORS - PERKINS (EU MACHINES ONLY)

### (1) Oil Pressure Warning Light

On ..... oil pressure low



### (2) Coolant Temperature Warning Light

On ..... coolant hot

**NOTE:** The engine will shut down 5 seconds after either light (1) or (2) comes on.



### (3) Alternator Warning Light

On ..... not charging



### (4) Hourmeter

Records total machine operation time.



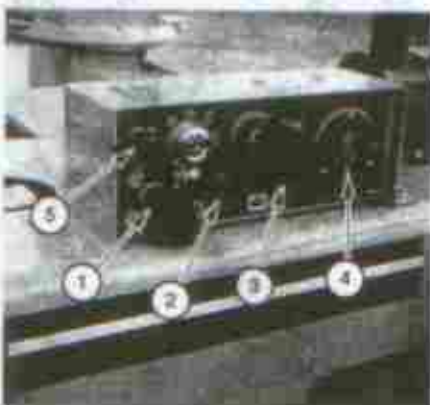
### (5) Preheat Indicator

With ignition switch in GLOW PLUG position.

Dark ..... heating

Dull red glow ..... engine ready to start

**NOTE:** Heating the glow plugs takes approximately 20-30 seconds. Do not continue heating them once the indicator shows a dull red glow; damage to glow plugs may result.



## ENGINE CONTROLS - KOHLER

### (1) Ignition Switch

Center position ..... engine off

1st position clockwise ..... engine on

Fully clockwise ..... engine start

### (2) Throttle

Push left ..... increase RPM

Pull right ..... decrease RPM

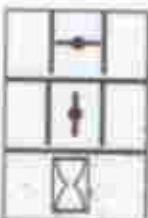
### (3) Choke

Push left ..... close choke

Pull right ..... open choke

### (4) Hourmeter

Records total machine operation time



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Controls 21-3

## FLUID MONITORS

### (1) Hydraulic Fluid Level Gauge

Correct fluid level is when marker is in the green zone.



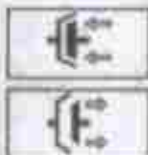
## CUTTER DISC CONTROLS

### (1) Belt Tightener

Pull ..... engage cutter wheel

Push ..... disengage cutter wheel

**NOTE:** Refer to *Operating the Brush Chipper*, page 50-1, for instructions on engaging the clutch.



## FEED ROLLER CONTROLS

### (1) Upper Feed Control Bar

Rear position ..... feed roller STOP

Second position from rear ..... feed roller FORWARD

Third position from rear ..... feed roller STOP

Forward position ..... feed roller REVERSE



BC600XL



BC600XL European

**NOTE:** Upper Feed Control Bar is spring-returned from REVERSE to center STOP position and must be held to operate feed rollers in REVERSE.

**NOTE:** Feed rollers will not move unless:

- engine speed is at high RPM (if equipped with AutoFeed II control system)
- Lower Feed Stop Bar is reset
- Upper Feed Control Bar is in forward or reverse feeding position.

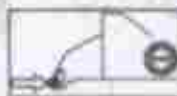
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Controls 21-5

### (2) Lower Feed Stop Bar

Bar pressed ..... feed roller stop

To reset: Pull Reset Lever (4) (BC600XL); or push Reset Button (3) (BC600XL European)



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### (3) Reset Button - BC600XL European Only

Press briefly to restart feed roller after Lower Feed Stop Bar (2) has been tripped or Upper Feed Control Bar (1) has been moved to STOP position. Amber light (A) on switch remains lit until Reset Button is pressed, then light goes off.



BC600XL European



BC600XL European

**(4) Reset Lever (located on both sides of infeed chute) -**

**BC600XL Only**

Press forward ..... feed roller stopped

Pull back ..... feed roller operational

**(5) Lower Feed Stop Bar Sensitivity Lever - BC600XL Only**

Push down ..... Normal sensitivity

**NOTE:** Feed roller stops when stop bar is pushed a shorter distance.

Pull up ..... Reduced sensitivity

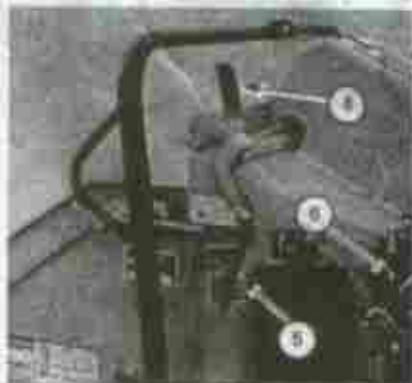
**NOTE:** Feed roller stops when stop bar is pushed a farther distance.

**NOTE:** Each time the feed table is raised to transport position, the lower feed stop bar system defaults to Normal sensitivity.

**(6) Feed Roller Speed Control**

Clockwise ..... increase feed roller speed

Counterclockwise ..... decrease feed roller speed



**DISCHARGE CHUTE CONTROLS**

**(1) Chute Deflector Lock (two levers)**

Counterclockwise ..... loosen lock

Clockwise ..... tighten lock

**(2) Chute Deflector Adjustment**

Raise deflector ..... increase chip throwing distance

Lower deflector ..... decrease chip throwing distance

**NOTE:** To reach chute deflector and locks, position chute over tongue, and stand on slip-resistant material in front of tool box.

**(3) Transport Lock - Red Locking Bar Style**

Before transporting, rotate discharge chute toward tow vehicle, and align slot with RED locking bar. Rotate locking bar into slot as shown and secure with lock pin.

**(4) Transport Lock - Pin Style**

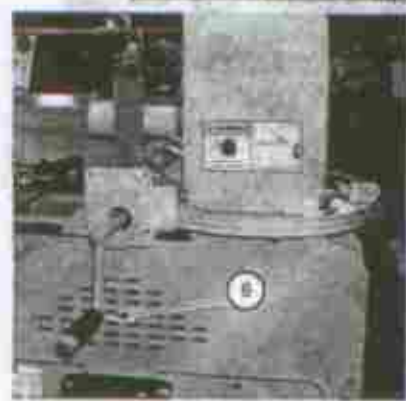
Before transporting, pull spring lock pin down and rotate either direction until pin catches under lip as shown below left. Rotate discharge chute toward tow vehicle, and align lock pin with one of the holes located on underside of chute base plate (A). Rotate and release lock pin as shown below right, so pin engages the hole.



(5) Chute Rotation Handles

(6) Handcrank (Option)

After releasing transport lock (3) or (4), use handles (5) to rotate discharge chute. If equipped, use optional handcrank (6) to rotate discharge chute.



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Controls 21-6

### TONGUE JACK CONTROL - BC600XL

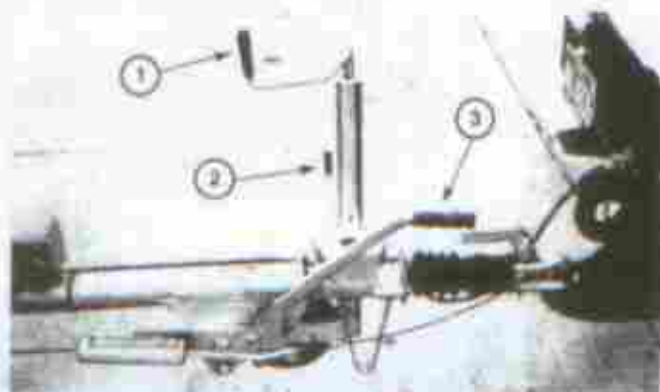
Use crank (1) to lower or raise machine.

To place in transport position, remove pin (2), remove jack, and replace in horizontal position as shown (3).



### TONGUE CONTROLS - BC600XL EUROPEAN

- (1) Crank  
Use crank to lower or raise jack.
- (2) Lever  
Use lever to slide jack up or down.
- (3) Park Brake Lever



## Section 22: Starting Procedure

### STARTING THE PERKINS ENGINE

**IMPORTANT:** Do not use ether or other starting fluids.

- Step 1: Disengage cutter disc.
- Step 2: Place Upper Feed Control Bar in NEUTRAL.
- Step 3: Pull Throttle 1/4 of the way open.
- Step 4: When engine is cold (below 35°F/1.7°C), turn key counterclockwise to turn on glow plugs and hold until preheat light shows a dull red glow (approximately 20-30 seconds).

**NOTE:** Do not continue heating glow plugs once the indicator shows a dull red glow, damage to glow plug will result. Using glow plugs is not necessary if engine was run earlier and is still warm.

- Step 5: Turn key fully clockwise to start engine. Release key once engine starts. If engine fails to start within 15 seconds, heat glow plugs again until preheat light shows a dull red glow.

**IMPORTANT:** Never run starter motor for more than 20 seconds at a time. Allow starter motor to cool 1 minute between attempts.

- Step 6: Move throttle to idle and allow engine to warm up for 4-5 minutes before engaging the cutter disc.

### STARTING THE KOHLER ENGINE

- Step 1: Disengage cutter disc.
- Step 2: Place Upper Feed Control Bar in NEUTRAL.
- Step 3: Choke engine as necessary.
- Step 4: Set Throttle midway between Slow and Fast.
- Step 5: Turn key fully clockwise to start engine. Release key once engine starts.

BC600XL Brush Chipper

Starting Procedure 22-1

**IMPORTANT:** Never run starter motor for more than 10 seconds at a time. Allow starter motor to cool 1 minute between attempts.

- Step 6: Move Throttle to idle and allow engine to warm up before adjusting choke and engaging cutter disc.

### 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.

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

## JUMP-STARTING

### Battery Explosion - Avoid



**WARNING:** Battery fumes are flammable and can explode. Keep all burning materials away from battery. Battery explosion can blind. Acid can blind and burn. Tools and cable clamps can make sparks.

Do not smoke. Shield eyes and face. Read instructions.

Do not jump-start or charge a battery that is frozen or low on electrolyte.

Avoid explosion hazard.

**IMPORTANT:** Use only a 12-volt system for jump-starting.

Do not allow vehicle used to jump-start to be in contact with the disabled machine. Vehicles in contact have a ground connection which allows a spark to occur at the battery when the positive jumper cable is connected or removed. If equipped with battery caps, they must be in place and tight to reduce risk of battery explosion.

### Battery Burns - Avoid



**WARNING:** Battery post, terminals, and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and reproductive harm.

Wash hands after handling.

BC600XL Brush Chipper

Starting Procedure 22-3

Battery contains sulfuric acid which can cause severe burns. Avoid contact with eyes, skin, and clothing.

In case of acid contact:

**External:** Flush with plenty of water. If eyes have been exposed, flush with water for 15 minutes and get prompt medical attention.

**Internal:** Drink large quantities of water or milk, follow with milk of magnesia, beaten egg, or vegetable oil. Call a physician immediately.

### Jump-Starting Procedure

**IMPORTANT:** Review battery service safety guidelines before jump-starting machine (refer to battery maintenance instructions in the "Maintenance - 250 Service Hours" section of the Maintenance Manual).

Step 1: Turn ignition switch to OFF.

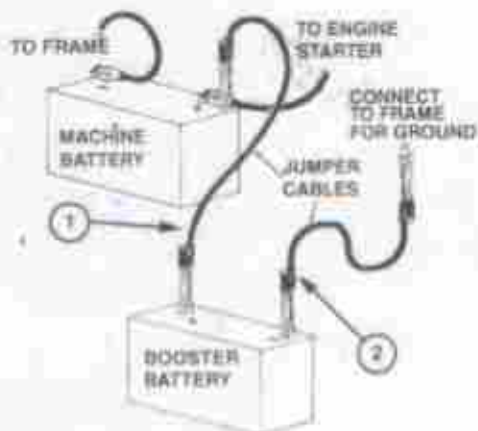
Step 2: Connect jumper cables in the following order:

- Red (1) to discharged battery POSITIVE (+) terminal.
- Red to booster battery POSITIVE (+) terminal.
- Black (2) to booster battery NEGATIVE (-) terminal.
- Black to frame of machine with discharged battery. Make connection away from battery, hydraulic lines, and moving parts.

**NOTE:** To avoid sparks near battery, always disconnect black jumper cable from booster battery before making any adjustment to red jumper cable.

Step 3: Start engine.

Step 4: Remove cables in REVERSE order and install red cover over positive cable clamp on battery.



# Section 23: Shutdown Procedure

## STOPPING THE MACHINE

**IMPORTANT:** For your safety and the safety of others, use the shutdown procedure before working on the machine for any reason, including servicing, cleaning, unclogging, inspecting, or transporting the chipper.

A variation of this procedure may be used if so instructed within this manual, or if an emergency requires it.

Step 1: Return Upper Feed Control Bar to NEUTRAL.

Step 2: Reduce engine speed to idle.

**IMPORTANT:** Whenever practical and consistent with good safety practices, run engine without load for a few minutes before shutting it off. This allows engine temperatures to decrease and equalize, which will increase engine life.

Step 3: Disengage belt tightener.

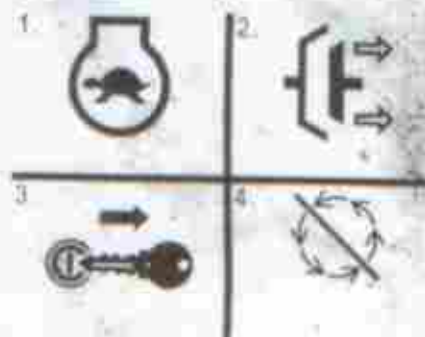
Step 4: Shut off engine and remove key.

Step 5: Wait for cutter disc and belt to stop.

**NOTE:** Cutter disc rotation can be checked by looking at the end of the shaft on the left rear side of cutter disc housing.

**IMPORTANT:** Cutter disc will continue to turn for a short time after engine has stopped.

Step 6: Close and latch feed table.



### Quick Stop Procedure

- Step 1: Turn ignition to OFF position with belt tightener engaged and remove key.
- Step 2: Wait for cutter disc and belt to stop.
- Step 3: Disengage cutter disc.



# Section 30: Transporting the Brush Chipper

## REPORTING HIGHWAY TRANSPORTING SAFETY DEFECTS

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Vermeer Mfg. Co.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer or Vermeer Mfg. Co.

To contact NHTSA, you may either call the DOT Auto Safety Hotline toll-free at 1-888-DASH-2DOT (1-888-327-4236), or file a report on-line at: [www.nhtsa.dot.gov/hotline/](http://www.nhtsa.dot.gov/hotline/), or write to: NHTSA, U.S. Department of Transportation, 400 - 7th St. SW, Washington, D.C. 20590. You can also obtain other information about motor vehicle safety from the Hotline.

## EQUIPPING THE TOWING VEHICLE

It is recommended that the towing vehicle be equipped with mud flaps to reduce damage to the front of the towed machine from road debris.

**IMPORTANT:** If equipped with optional electric brakes, the towing vehicle for the BC600XL must be equipped with a brake controller that automatically applies the towed machine's electric brakes.

Do not use a brake controller that is purely a manually operated controller. If your towing vehicle is equipped with a manually operated controller, remove it and install one that can be applied both automatically and manually.

BC600XL Brush Chipper

Transporting the Brush Chipper 30-1

## HITCH HEIGHT - ADJUST (BC600XL)

Before attaching the machine to the tow vehicle, level the machine tongue and compare the height of the hitches. They should be approximately the same height to keep the machine level during transport.

To adjust hitch height:

- Step 1: Remove two hitch-mounting bolts (1).
- Step 2: Raise or lower hitch to match towing vehicle height.
- Step 3: Replace the two hitch-mounting bolts and tighten. Torque to 80 ft-lb (108 Nm).

**NOTE:** There are two types of hitches available: clevis and ball.



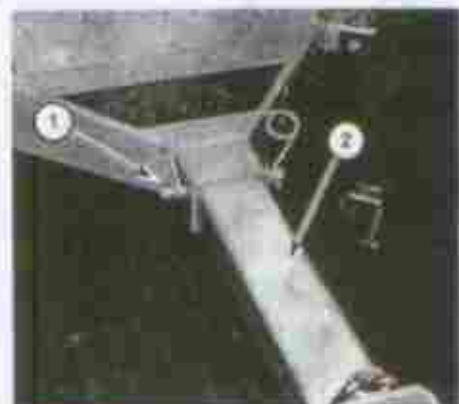
## TONGUE LENGTH - ADJUST (BC600XL)

Tongue can be lengthened or shortened to fit the towing vehicle. There are two positions that allow a 10" (25 cm) total variation in tongue length.

Use the following steps to adjust tongue length:

**NOTE:** Tongue is adjusted most easily with hitch detached from towing vehicle.

- Step 1: Support machine with jack.
- Step 2: Remove snap lock pin (1).
- Step 3: Slide tongue (2) to the new set of holes in tongue. Align holes in tongue with holes in frame.
- Step 4: Insert snap lock pin (1) and secure with snap lock wire.



## ATTACH TO TOWING VEHICLE - BC600XL



**WARNING:** When using a clevis hitch, the hitch pin must be locked in place with a hairpin cotter (or equivalent). Failing to lock the hitch pin in place can allow the towed machine to become unhitched from the towing vehicle.

- Step 1: Securely attach machine hitch to towing vehicle. Refer to "Hitch - Ball Coupler," page 30-4 and "Hitch - Clevis," page 30-5, for instructions on specific hitch type.
- Step 2: Cross safety chains (1) under tongue and attach them to the towing vehicle. Keep chains as short as possible, but leave enough slack to turn corners.
- Step 3: If machine is equipped with optional electric brakes, attach breakaway cable to the towing vehicle bumper or frame.

**IMPORTANT:** Breakaway cable length should be adjusted so breakaway system applies brakes only after both hitch and safety towing chains have disconnected.

- Step 4: Attach electrical connector (2) to the towing vehicle. Check that highway lights and optional electric brakes are functioning properly.

**IMPORTANT:** When using electric brakes, the towing vehicle must be equipped with a brake controller that automatically applies the trailer electric brakes when stopping.

- Step 5: Fully raise jack (3), rotate 90° and secure with attachment pin.



BC600XL Brush Chipper

Transporting the Brush Chipper 30-3

## Hitch - Ball Coupler



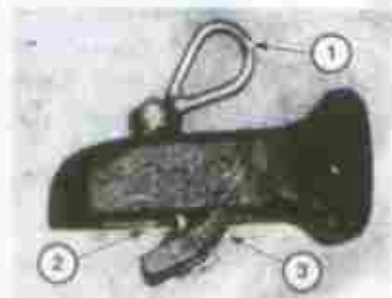
**WARNING:** When using a ball coupler hitch, the clamping lip must be tightened against the ball hitch. Failing to tighten clamping lip can allow the towed machine to become unhitched from the towing vehicle.



**WARNING:** When using a 1-7/8" or 2" ball coupler hitch, the hitch ball diameter must be rated for greater than the towed machine GVW. Using a hitch ball that is smaller can allow the towed machine to become unhitched from the towing vehicle.

- Step 1: Before using, inspect hitch components. They should be in proper working order and correctly assembled. Refer to "Maintenance - 500 Service Hours or Yearly" section in the *Maintenance Manual* for inspection information.
- Step 2: Loosen loop nut (1) to allow innerspring (2) to lower clamping lip (3).
- Step 3: Align towing vehicle hitch ball beneath coupler socket. Lower coupler socket over hitch ball.
- Step 4: Tighten loop nut while ensuring the square head of the bolt is in the square cavity of clamping lip.
- Step 5: While tightening, move the coupler up and down on the ball to ensure it is snug.

**IMPORTANT:** Do not use a wrench or bar to tighten coupler; hand tighten only. Overtightening strains and wears coupler parts. It may also cause coupler to seize on the ball and cause the ball nut to come loose.



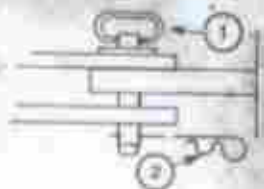
## Hitch - Clevis



**WARNING:** When using a clevis hitch, the hitch pin must be locked in place with a hairpin cotter (or equivalent). Failing to lock the hitch pin in place can allow the towed machine to become unhitched from the towing vehicle.

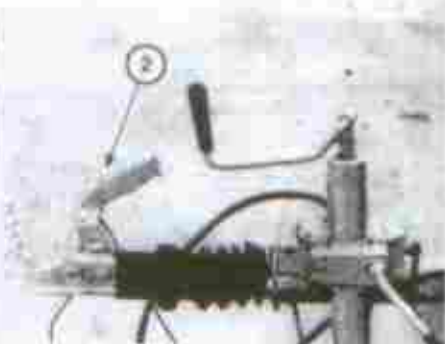
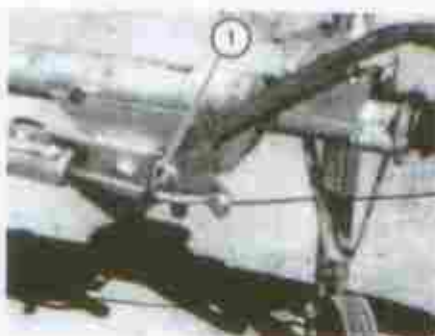
To attach, back towing vehicle hitch between the clevis hitch ears, insert hitch pin through both hitches, and lock with hairpin cotter.

- (1) Hitch Pin
- (2) Hairpin Cotter



## ATTACH TO TOWING VEHICLE - BC600XL EUROPEAN

- Step 1: Before attaching machine to the towing vehicle, service lock eyebolt (1) must be removed.
- Step 2: Press bottom side of the handle (2) and lift to unlock hitch.
- Step 3: Attach machine to the towing vehicle and lock handle (2) down.



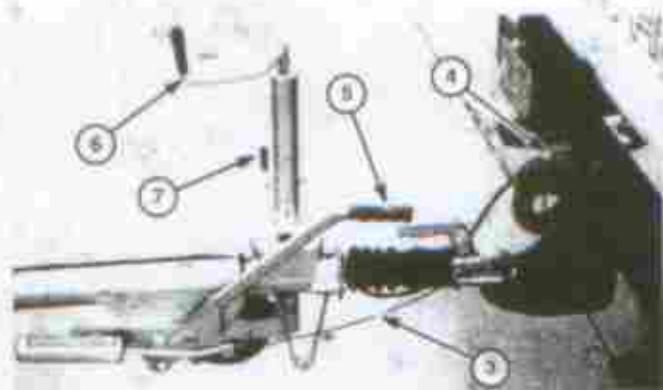
## BC600XL Brush Chipper

## Transporting the Brush Chipper 30-5

- Step 4: Attach breakaway cable (3) to the towing vehicle bumper or frame.

**IMPORTANT:** Breakaway cable length should be adjusted so breakaway system applies brakes only after hitch has disconnected.

- Step 5: Attach electrical connector (4) to the towing vehicle. Check that highway lights are functioning properly.
- Step 6: Move park brake lever (5) forward to release park brake.
- Step 7: Fully raise jack (6).
- Step 8: Loosen jack mount using lever (7) to slide jack up for additional clearance.



## PREPARE FOR TRANSPORT

- Step 1: Fold up food table (1) and secure latch (2).
- Step 2: Spring lock pin: If equipped, pull spring lock pin (3) down and rotate either direction until pin catches under lip as shown.



**Step 3:** Use handles (4) or handcrank (5) (option) to rotate discharge chute until chute faces towing vehicle.

**Red lock bar:** If equipped, align red locking bar (6) with slot.

**Spring lock pin:** If equipped, align one of the holes in chute base plate (A) with lock pin.

**Step 4:** **Red lock bar:** Lower locking bar (6) into slot and secure with pin as shown.

**Spring lock pin:** Rotate and release lock pin as shown (7), so pin engages hole.

**IMPORTANT:** Do not transport machine with discharge chute extending beyond sides of machine.



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# Section 40: Preparing Brush Chipper and Work Area

## INTENDED USE

The Vermeer BC600XL and BC600EXL European Brush Chippers are designed solely for use in chipping organic material such as wood, bark, limbs, brush, and undergrowth.

Always use the machine in accordance with the instructions contained in this Operator's Manual, safety signs on the machine, and other material provided by Vermeer Manufacturing Co.

Proper maintenance and repair is essential for safety, and for efficient operation of the machine. Do not use the machine if it is not in suitable operating condition.

## OPERATOR QUALIFICATIONS



**WARNING:** Read Operator's Manual and safety signs before operating machine.

Allow only responsible, properly instructed individuals to operate machine.

Become familiar with the controls, operation and use of the machine under the supervision of a trained and experienced operator.

The operator must be familiar with the workplace's safety rules and regulations, and must be mentally and physically capable of operating the machine safely.

## PERSONAL PROTECTION



**WARNING:** Wear personal protective equipment. Wear close-fitting clothing and confine long hair. Avoid jewelry, such as rings, wristwatches, necklaces, or bracelets.

Operating the machine will require you to wear protective equipment. You should always wear a hard hat, safety shoes, loose-fitting gloves with narrow cuffs (guntlet-type gloves with wide cuffs are not permitted), hearing protectors, and eye protection. If working near traffic, wear reflective clothing.

Hearing protection is recommended when operating machine. Hearing protection devices provide differing levels of sound reduction. It is important to select a device that is adequate and appropriate for your specific work environment. Actual sound levels may vary widely, depending on your working conditions. To determine the level of hearing protection your work environment requires, enlist the help of your local environmental noise specialist.

Eye protection must consist of wraparound safety glasses or goggles.

Other workers in immediate area must also wear the above listed required protective equipment.

Wear close-fitting clothing and confine long hair.

Avoid wearing jewelry, such as rings, wristwatches, necklaces, or bracelets.

## Sound Levels

Sound pressure and sound power levels while chipping wood were determined according to test procedures specified in ISO 2744 and ISO 11201.

Equivalent Continuous A-Weighted Sound Pressure at Operator's Ear

$L_{Aeq} = 117$  dB(A) Kohler engine  
 $L_{Aeq} = 119$  dB(A) Perkins engine

Guaranteed Sound Power Level

$L_{WA} = 125$  dB(A) Kohler engine  
 $L_{WA} = 128$  dB(A) Perkins engine



**NOTE:** The stated sound levels are representative for a given operating condition. Operating conditions may vary at each job site. The actual sound levels for your application and operating conditions may be different.

## PREPARE THE AREA



**WARNING:** Keep all spectators and other workers away from the machine and work area while in operation.  
Never work on or near the brush chipper unless the engine is shut off and the cutter disc is stopped.

BC600XL Brush Chipper

Preparing Brush Chipper and Work Area 40-3

## PREPARE BRUSH CHIPPER



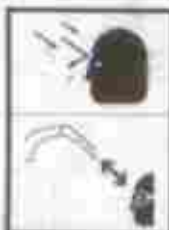
**WARNING:** Check machine before operating. Machine must be in good operating condition and all safety equipment installed and functioning properly.

- Survey the area around the machine for persons or obstacles before positioning the machine on the job site.
- Set up machine in an area free of obstructions that could interfere with the safe and efficient movement of the operator. Never set up beneath a tree being pruned or removed.
- Position machine so working surface of feed table is a minimum of 24" (61 cm) above ground when feeding material.
- During typical operation, brush chipper must stay hitched to the towing vehicle.
- Brush chipper may be operated while unattached to the towing vehicle if:
  - Machine is parked on a level surface.
  - Tongue and rear frame are securely supported with blocking.
  - Wheels are securely chocked.
- If operating along a road, properly warn and divert motor vehicle and pedestrian traffic. Use all necessary signs, cones, and flag persons needed for the work situation.

## Clean Flammable Materials from Machine

Prevent fires by keeping engine compartment, battery, hydraulic lines, fuel tank and operator's station clean of accumulated trash, grease, and debris.

## Discharge Chute



**WARNING:** Thrown objects can blind you.

Keep everyone away from discharge area while cutter disc is turning. Direct discharge chute away from people. Wear eye protection.

Step 1: If equipped with:

**Red lock bar:** Move transport red locking bar to position shown (1) and secure with pin, to enable chute rotation.

**Spring lock pin:** Pull spring lock pin down and rotate either direction until pin catches under lip as shown (2).



BC600XL Brush Chipper

Preparing Brush Chipper and Work



Step 2: Using handles (3) or optional crank handle (4), rotate discharge chute to the direction needed to deposit chipped material.

Step 3: If equipped with:

**Red lock bar:** Align red locking bar (5) with slot. Lower locking bar into slot and secure with pin as shown.

**Spring lock pin:** Align one of the holes in chute base plate (A) with lock pin. Rotate and release lock pin as shown (6), so pin engages hole.

Step 4: Discharge chute is equipped with a stop to prevent discharging material over the feed table area. Discharge chute can be rotated 240° to direct chips to desired position.

Step 5: To adjust discharge distance, raise or lower discharge chute deflector (7).

Step 6: Loosen locking handles (8). Adjust deflector height. Tighten locking handles to secure adjusted deflector.

**NOTE:** If spout deflector and locking handles are beyond reach, position discharge chute over tongue. Stand on slip resistant material on front of machine to reach deflector.



### Feed Table

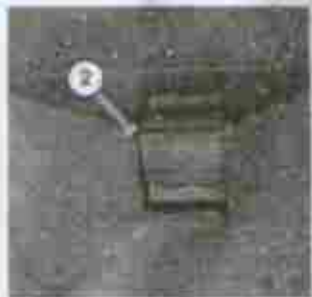
Unlatch feed table (1) and lower to operating position. The feed table provides an important measure of safety by increasing the distance between the feed roller (2) and the operator. **Never** operate brush chipper with the feed table removed.



BC600XL



BC600XL European



### Feed Control Bars - Check

The brush chipper is equipped with an *Upper Feed Control Bar* (1) located across the top and sides of the feed table, and a *Lower Feed Stop Bar* (2) along the bottom of the feed table, also along both sides (3) of the feed table on the BC600XL, European. Do not operate brush chipper unless the control bars are installed and operating properly. Refer to "Upper Feed Control Bar," page 50-3, and "Lower Feed Stop Bar," page 50-3.



BC600XL



BC600XL European

### Backup Marker Flags - Install

Install flag into socket (1) on each side of machine to assist in backing at job site.  
Remove flags when transporting machine.



BC600XL Brush Chipper

Preparing Brush Chipper and Work Area 40-9

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# Section 50: Operating the Brush Chipper

## CUTTER SHAFT - CHECK

Follow *Starting Procedure*, page 20-7, to start engine. Check cutter disc shaft end (1) to see that cutter disc does not turn while *Belt Tightener Lever* is in the **DISENGAGED** position. If adjustment is necessary, refer to the *Maintenance - 50 Service Hours or Weekly* section in the *Maintenance Manual* for instructions.



## BELT TIGHTENER - ENGAGE

- Step 1: Set engine throttle slightly above idle.
- Step 2: Grip *Belt Tightener Lever* (1) firmly and pull up and back.
- Step 3: Engage belts slowly to avoid a sudden overload on engine.
- Step 4: Once belt tightener is fully engaged, increase engine RPM to full throttle.

**IMPORTANT:** Do not engage belt tightener at high engine speeds. Belt life will be greatly reduced if belt tightener is repeatedly engaged at full engine speed.



BC600XL Brush Chipper

Operating the Brush Chipper 50-1

## 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. Cutting injury or death will result.



Feed material only from side of feed table.



Never climb onto feed table.



Feed base of limb or branch first.



Use wood object to push short material.



Wear gloves with narrow tight-fitting cuffs.



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 unlogging feed intake area.

With *AutoFeed II* control operation, the feed roller (1) will stop feeding material when engine RPM drops below preset speeds, and will automatically restart when engine speed increases.

**IMPORTANT:** 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*. 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.



BC600XL



BC600XL European

## Sensitivity Levels - BC600XL Only

The *Lower Feed Stop Bar* has two levels of sensitivity:

**NORMAL** (*Lower Feed Stop Bar Sensitivity Lever* (3) down) - Stop bar is pushed a shorter distance before the feed roller stop.

**REDUCED** (*Lower Feed Stop Bar Sensitivity Lever* (3) up) - Stop bar is pushed farther before feed roller stop.

Each time the *Lower Feed Stop Bar* is engaged or the engine key is turned OFF, the *Lower Feed Stop Bar* defaults to the NORMAL setting.

**IMPORTANT:** 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 job site 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

- Step 1: Pull *Upper Feed Control Bar* (1) to the FORWARD feeding position to start feed roller.
- Step 2: **BC600XL:** Pull *Reset Lever* (2) back.  
**BC600XL European:** If amber indicator light on *Reset Switch* (3) is lit, press top of switch (3).
- Step 3: Adjust *Feed Roller Speed Control* (4) as needed.

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

**NOTE:** Each time the feed table is put into the stow position, the feed system defaults to the tripped (STOP) position.

**NOTE:** Engine throttle must be set at HIGH RPM before feed roller will start.

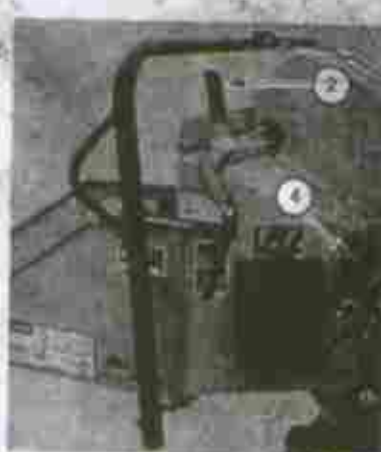
## AutoFeed II Control Operation (Option)

AutoFeed II control is always ON and is actuated automatically.

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



BC600XL



BC600XL European

BC600XL Brush Chipper

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Brush Chipper 50-5-

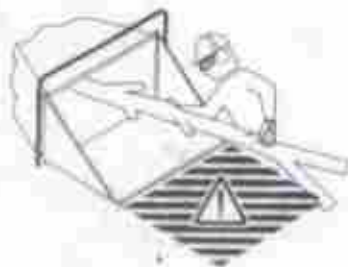
## CHIP MATERIAL



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

## Feeding Tips

- 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 (supplies to BC600XL only).
- 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*, for more information.
- If engine stalls while chipping, return *Upper Feed Control Bar* to STOP and disengage belt tightener.

- With belt tightener disengaged, start engine and throttle up to full speed. Reverse feed roller to remove material that caused the stall.
- Return engine speed to near idle before engaging belt tightener and resuming chipping operation.

#### 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 log 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.



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