BC700XL Brush Chipper

Operator's Manual

BC700XL_o2_01 Serial No. 1417 -Order No. 105400EG0 Cabled Assembly No. 163709631



Introduction

This manual explains the proper operation of your machine. Study and understand these instructions thoroughly before operating or maintaining the machine. Failure to do so could result in personal injury or equipment damage. Consult your Vermeer dealer if you do not understand the instructions in this manual, or need additional information.

The instructions, illustrations, and specifications in this manual are based on the latest information available at time of publication. Your machine may have product improvements and features not yet contained in this manual.

Vermeer Corporation reserves the right to make changes at any time without notice or obligation.

Operation instructions are included in the two Operator's Manuals provided with the machine. The tethered (cabled) manual must remain attached to the machine for ready reference. Store it in the manual storage box when not in use.

Lubrication and maintenance procedures are in the Maintenance Manual provided with the machine. Refer to it for all lubrication and maintenance procedures.

Additional copies of the manuals are available from your dealer. Use the reorder number on the front cover to order additional manuals.

Copies of this manual are available in Spanish from your dealer. Other languages may also be available.

Se dispone de ejemplares de este manual en español.

NOTICE TO OWNER

Replacement manuals are free of charge by registering your **used** Vermeer machine. Your machine's Operator's, Maintenance and Parts Manuals may be available online at <u>www.myvermeer.com</u>. For questions about online or printed manuals, or to register a used machine, contact the Customer Data Department by telephone: 800-829-0051 or 641-628-3141; email: <u>customerdata@vermeer.com</u>; internet: <u>www.vermeer.com</u> or <u>www.myvermeer.com</u>; or, letter: Customer Data Dept., Vermeer Corporation, PO Box 200, Pella IA 50219 USA.

Introduction

BC700XL Brush Chipper



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

TRADEMARKS

VERMEER, VERMEER Logo and EQUIPPED TO DO MORE are trademarks of Vermeer Manufacturing Company. KOHLER is a trademark of Kohler Company.

BC700XL Brush Chipper

VERMEER NEW INDUSTRIAL EQUIPMENT LIMITED WARRANTY

(EFFECTIVE AUGUST 1, 2013)

WARRANTY PERIOD: 12 Months / 1000 Hours

Vermeer Corporation (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 one (1) full year after initial purchase/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 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/Maintenance 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.

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 modification (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 hour meter 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 equipment/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. Freight costs, if any, of transporting replacement parts 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, out of service time) occurring for any reason at any time.
- (11) Diagnostic and overtime labor premiums are not covered under this Limited Warranty Policy. Oils and fluids are not covered under this Limited Warranty.

- (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) Down hole toolage is not covered under this warranty.
- (15) Wear items which are listed by product group below:

ENVIRONMENTAL: Bearing Seals, Bearings, Belts, Brake Pads, Bolts/Torqued Parts, Chain, Clutches, Clutch Components, Curtains, Cutter Wheels, Discharge Conveyor Belts, Fuel Filters, Hammers, Hoses, Infeed Conveyor Belts, Infeed Conveyor Chains, Knives, Oil Filters, Pockets, Rods, Rollers, Rotor Plates, Screens, Service Items, Shear Bar/Bedknife, Sprockets, Teeth, Wear Blocks, Wear Strips, Tips, Tip Mounts, Track Chain, Track Rollers, Rubber Tracks, Rubber Grouser Bars, Rubber Track Bands, Track Sprockets, Track Pads, Winch Cable, Windshield Wiper Parts, Lights, Antenna.

TRACK: Base Plates, Boom Wear Items, Buckets, Cable Fingers, Conveyor Belts, Clutches, Cups, Digging Chain, Digging Rims, Drums, End Idler, Flashings, Pins and Bushings, Pivot Rings, Plastic Wear Strips, Rooter Bands, Scraper Knives, Sprockets, Teeth, Track Chain, Track Rollers, Trench Cleaner (Crumber), Trip Cleaners, Truck Rollers, Wear Plates.

TRENCHLESS: Brushes, Clamping Vise Parts, Dies, Drive Chuck, Earth Stakes, Fan Belts, Jaws, Leaf Chain, Lights On Light Kits, Packing Assemblies, Rod, Rod Loader Parts, Rollers, Tooling, Track Chain, Track Guides, Track Idlers, Track Pads, Track Sprockets, Valve Seats, Wear Bars, Wear Blocks, Water Hoses, Water Swivels, Wear Bars.

<u>UTILITY PRODUCTS</u>: Augers, Belts, Bearings, Booms, Brake Pads, Bucket, Bushings, Chains, Clutches, Conveyor Belts, End Rollers, Flashings, Pins, Pivot Rings, Plow Blades, Rubber Shielding, Sprockets, Teeth, Tires, Track Chain, Track Idlers, Track Sprockets, Trench Cleaner (Crumber).

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 and reinstallation.

EXCLUSIONS OF WARRANTIES: EXCEPT FOR THE WARRANTIES EXPRESSLY AND SPECIFICALLY MADE HEREIN, VERMEER MAKES NO OTHER WARRANTIES, AND ANY POSSIBLE LIABILITY OF VERMEER HEREINUNDER 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.

NO DEALER WARRANTY. The selling dealer makes no warranty of its own and the dealer has no authority to make any representation or promise on behalf of Vermeer or to modify the terms or limitations of this warranty in any way.

ELECTRONIC SIGNATURES. Each of the parties hereto expressly agrees to conduct transactions by electronic means. Accordingly, the parties agree and intend that all electronic transmissions including, without limitation, electronic signatures, shall be considered equivalent to an original writing as provided under Iowa law, as it may be amended from time to time.

> MANUFACTURED BY: VERMEER CORPORATION Pella, Iowa 50219 USA

VERMEER TWO-YEAR EVAPORATIVE EMISSION CONTROL WARRANTY STATEMENT

EFFECTIVE NOVEMBER 1, 2016

YOUR WARRANTY RIGHTS AND OBLIGATIONS

This evaporative emissions-related warranty is for models of Vermeer equipment that (a) are delivered to the United States and (b) contain gas engines and certified fuel systems installed pursuant to Certificates of Conformity provided by the US EPA. This warranty is in addition to the Vermeer New Industrial Equipment Limited Warranty. The US EPA and Vermeer are pleased to explain the evaporative emission control system (EECS) warranty on your Vermeer equipment. Vermeer must warrant the EECS on your equipment for the period of time listed below provided there has been no abuse, neglect or improper maintenance of your equipment. Your EECS may include components such as the fuel lines, fuel caps, canisters, vapor hoses, clamps, connectors, and other associated evaporative emission-related components. Where a warrantable condition exists, Vermeer will repair your equipment at no cost to you including diagnosis, components and labor.

MANUFACTURER'S WARRANTY COVERAGE

This EECS is warranted for two years. If any evaporative emission-related component on your equipment is defective, the component will be repaired or replaced by Vermeer.

OWNER'S WARRANTY RESPONSIBILITIES

As the equipment owner, you are responsible for performance of the required maintenance listed in your owner's manual. You may choose any qualified repair shop or person to maintain, replace, or repair emission control devices and systems with original or equivalent replacement components. Vermeer recommends that you retain all receipts covering maintenance on your equipment, but Vermeer cannot deny warranty solely for the lack of receipts.

However, warranty, recall and all other services paid for by Vermeer must be performed at an authorized Vermeer service provider. As the equipment owner, you should however be aware that Vermeer may deny your warranty coverage if your equipment or a component has failed due to abuse, neglect, or improper maintenance or unapproved modifications.

You are responsible for presenting your equipment to an authorized Vermeer dealer or distributor as soon as the problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days. If you have a question regarding your warranty coverage, you should contact the Vermeer Customer Data Department at 1-800-829-0051.

Introduction

GENERAL EMISSIONS WARRANTY COVERAGE

Vermeer warrants to the ultimate purchaser and each subsequent purchaser that the equipment is:

- Designed, built and equipped so as to conform with all applicable regulations; and
- Free from defects in materials and workmanship that cause the failure of a warranted component to be identical in all material respects to that component as described in Vermeer's application for certification.

The warranty period begins on the date the equipment is delivered to an ultimate purchaser or first placed into service. The warranty period is two years.

Subject to certain conditions and exclusions as stated below, the warranty on emission-related components is as follows:

- (1) Any warranted component that is not scheduled for replacement as required maintenance in the written instructions supplied, is warranted for the warranty period stated above. If the component fails during the period of warranty coverage, the component will be repaired or replaced by Vermeer according to subsection (4) below. Any such component repaired or replaced under warranty will be warranted for the remainder of the period.
- (2) Any warranted component that is scheduled only for regular inspection in the written instructions supplied is warranted for the warranty period stated above. Any such component repaired or replaced under warranty will be warranted for the remaining warranty period.
- (3) Any warranted component that is scheduled for replacement as required maintenance in the written instructions supplied is warranted for the period of time before the first scheduled replacement date for that component. If the component fails before the first scheduled replacement, the component will be repaired or replaced by Vermeer according to subsection (4) below. Any such component repaired or replaced under warranty will be warranted for the remainder of the period prior to the first scheduled replacement point for the component.
- (4) Repair or replacement of any warranted component under the warranty provisions herein must be performed at a Vermeer authorized warranty station at no charge to the owner.
- (5) Notwithstanding the provisions herein, warranty services or repairs will be provided at all of our distribution centers that are franchised to service the subject engines or equipment.
- (6) The equipment owner will not be charged for diagnostic labor that is directly associated with diagnosis of a defective, emission-related warranted component, provided that such diagnostic work is performed at a warranty station.

- (7) Throughout the equipment warranty period stated above, Vermeer will maintain a supply of warranted components sufficient to meet the expected demand for such components.
- (8) Any replacement component may be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of Vermeer.

WARRANTED COMPONENTS

The repair or replacement of any warranted component otherwise eligible for warranty coverage may be excluded from such warranty coverage if Vermeer demonstrates that the cause of the need for equipment repair or replacement was abuse, neglect, improper maintenance, improper components, improper use or continued use when a problem is evident. That notwithstanding, any adjustment of a component that has a factory installed, and properly operating, adjustment limiting device is still eligible for warranty coverage. The following emission warranty components are covered: (1) Fuel Cap, (2) Fuel Line, (3) Fuel Tank, (4) Rollover Valve, and (5) Fittings, clamps, gaskets, grommets, and mounting hardware associated with systems above.

The exclusive remedy for breach of this limited warranty shall be, at the exclusive option of Vermeer, repair or replacement of any defective materials, components or products. THE REMEDIES SET FORTH IN THIS LIMITED WARRANTY ARE THE ONLY REMEDIES AVAILABLE TO ANY PERSON FOR BREACH OF THIS EMISSIONS WARRANTY. VERMEER SHALL HAVE NO LIABILITY TO ANY PERSON FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY DESCRIPTION, WHETHER ARISING OUT OF EXPRESS OR IMPLIED WARRANTY OR ANY OTHER CONTRACT, NEGLIGENCE OR OTHER TORT OR OTHERWISE. THIS EXCLUSION OF CONSEQUENTIAL, INCIDENTAL, AND SPECIAL DAMAGES IS INDEPENDENT FROM AND SHALL SURVIVE ANY FINDING THAT THE EXCLUSIVE REMEDY FAILED OF ITS ESSENTIAL PURPOSE. ALL IMPLIED WARRANTIES (INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE LIMITED IN DURATION TO THE WARRANTY PERIOD DESCRIBED HEREIN.

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 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.
- ____ Check machine for proper lubrication.

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- _ 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 196 ft-lb (265 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 *Maintenance 50 Service Hours or Weekly Section* in the *Maintenance Manual*).

Feed System

- ____ Check operation of feed roller controls.
- ____ Check operation of the SmartFeed 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/OWNER INFORMATION

dealer	owner
address	address
city	city
state / province	state / province
zip / postal code	zip / postal code
country	country
phone number	phone number
email address	email address

MACHINE IDENTIFICATION NUMBERS - RECORD

Model Number_____

VIN Number_____

ENGINE - RECORD

Model Number_____

Serial Number_____





MACHINE IDENTIFICATION DECAL

This decal provides easy identification of the model and 17-digit identification number. The barcode contains the machine's VIN number and can be scanned with any barcode reading device.



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Section 11: 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	Indicates a hazardous situation that if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates information considered important, but not hazard-related.

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 death or bodily injury.



This symbol indicates that at least one part of the machine is not operating correctly. Shutting down the machine may not be necessary, but some maintenance may be required.



WARNING: Read Operator's Manual and safety signs, and watch the operations and safety video, before operating machine.



W ar

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



WARNING: Always wear safety glasses and safety shoes. Some working conditions and regulations may require the use of other appropriate PPE, such as hearing protection, hard hat, gloves, face shield, or any other PPE necessary to provide proper safety protection for the work being performed.



WARNING: Keep spectators away.



WARNING: Engine exhaust can asphyxiate. Operate only outdoors.



WARNING: Use Shutdown Procedure before servicing, cleaning, repairing or transporting machine. *Follow Shutdown Procedure, page 23-1.*





WARNING: Pressurized fluid can penetrate body tissue and result in death or serious injury. 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.



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 death or serious injury. This machine is to be used only for those purposes for which it was intended as explained in this Operator's Manual.

Section 20: Controls

(1) Ignition Switch

Vertical position.....engine off

1st position clockwise engine on

2nd position clockwise..... engine start



(2) Throttle

Push lever to left side high RPM/cutter disc engage

Push lever to right side low RPM/cutter disc disengage

(3) Hourmeter/Tachometer

- Displays total machine hours when machine is off.
- Display will flash for preset service reminders. Refer to "Hourmeter," page 60-1.

Displays RPM when engine is running.





FEED ROLLER CONTROLS

(1) Upper Feed Control Bar

Rear position feed roller emergency STOP

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

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

Forward position feed roller REVERSE

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





NOTICE: Feed roller will not move unless:

- Engine speed is at high RPM.
- *Lower Feed Stop Bar* is reset (rear amber warning light **not** blinking).
- *Upper Feed Control Bar* is in FORWARD or REVERSE feeding position.
- *Hold-to-Run Button* is pressed.
- SmartFeed control is always ON, and is activated automatically.
- Feed roller will move in REVERSE at any engine speed and when light blinks.

(2) Lower Feed Stop Bar

Bar pressed..... feed roller stop

To reset: Briefly press Hold-to-Run Button (3).

(3) Hold-to-Run Button (Located on both sides of feed table)

Feed roller will automatically restart when engine speed exceeds a preset speed.

Press and hold feed roller operates for 30 sec. maximum regardless of position of *Upper Feed Control Bar* (1) or *Lower Feed Stop Bar* (2). After 30 seconds, feed roller stops.

(4) Lower Feed Stop Bar Sensitivity Switch

Push switch up Normal sensitivity Feed roller stops when stop bar is pushed a shorter distance.

NOTICE: Each time engine key is turned OFF, the *Lower Feed Stop Bar* system defaults to the "Normal Sensitivity" selection.











(5) Rear Warning Light - Center

Normal sensitivity setting selected.....warning light off

Reduced sensitivity setting selectedwarning light on

Light (5) flashes quickly when feed roller needs to be restarted after pressing Lower Feed Stop Bar or pulling Upper Feed Control Bar.
NOTICE: When the Rear Warning Light flashes quickly, the Hold-to-Run Button (3) (on previous page) must be pushed to reset stop system. The warning light will then stop flashing.



DISCHARGE CHUTE CONTROLS

(1) Chute Rotation Handles

(2) Chute Rotation Lock Pin

Rotate to center position and release lock pin
so pin engages hole locked
Pull lock pin down and rotate left or right unlocked

(3) Chute Deflector

Controls the distance chipped material is discharged.

$Up\ldots\ldots$	 ••••	 	farther
Down	 	 	closer

(4) Chute Deflector Lock

- Loosen to change deflector position, secure.
- Use tongue of machine to aid in reaching chute deflector lock.



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FLUID MONITORS

(1)

Hydraulic Fluid Level Gauge Correct fluid level is when marker is in the green zone.



TONGUE JACK CONTROL

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) and secure.



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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 $32^{\circ}F(0^{\circ}C)$), 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.

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 jump-start or charge a battery that is frozen or low on electrolyte.

Avoid explosion hazard.

NOTICE: 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.

22-2 Starting Procedure

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

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

NOTICE: 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.



BC700XL Brush Chipper

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Section 23: Shutdown Procedure

STOPPING THE MACHINE

NOTICE: 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 and cutter disc will disengage.

- Whenever practical and consistent with good safety practice, 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: Shut off engine and remove key.
- Step 4: Wait for cutter disc and belt to stop.

NOTICE: Cutter disc rotation can be checked by looking at the end of the shaft on the left rear side of cutter disc housing. Cutter disc will continue to turn for a short time after engine has stopped.

Step 5: Close and latch feed table.





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Section 30: Transporting the Brush Chipper

REPORTING HIGHWAY TRANSPORTING SAFETY DEFECTS

For BC700XL within the United States:

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

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 Corporation. 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/, 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.

For BC700XL outside the United States:

Contact your local governmental road regulation authority or contact Product Safety Department, Vermeer Corporation; Email: productsafety@vermeer.com; Telephone: 641.628.3141; Toll Free: 800.829.0051.

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.

NOTICE: If equipped with optional electric brakes, the towing vehicle for the BC700XL 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.

HITCH HEIGHT - ADJUST

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 180 ft-lb (245 Nm).



ATTACH TO TOWING VEHICLE



WARNING: Safety towing chains may uncouple from towing vehicle if chain hook latches are damaged or missing. Do not tow vehicle with damaged or missing hook latches.

If chain hook latch is damaged, refer to "Maintenance As Required" section in the *Maintenance Manual* for replacement instructions

- Step 1: Securely attach machine hitch to towing vehicle. Refer to "Hitch Ball Coupler," *page 30-4.*
- Step 2: If possible, cross safety chains 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.

NOTICE: 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 to the towing vehicle. Check that highway lights and optional electric brakes are functioning properly.

NOTICE: 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 (1), rotate 90° and secure with attachment pin.

NOTICE: Inspect each safety chain slip hook latch system every time the machine is attached to a towing vehicle. If the latch is damaged, missing, or does not snap closed to the hook, the slip hook may not remain coupled. Refer to "Maintenance as Required" section in the *Maintenance Manual* for instructions on replacing damaged or missing safety towing chains and hooks.





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.



NOTICE: 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.

BREAKAWAY SYSTEM - RESET ELECTRIC BRAKE

Route breakaway cable assembly (1) through loop (2) and insert plastic plug (3) back into body of switch (4). Ensure switch body (4) pivots freely on mounting bolt (5).



MACHINE - CLEAN BEFORE TRANSPORTING

NOTICE: Machine controls and electrical/electronic devices are not rated to withstand high pressure water and temperature power washers. Water intrusion will likely cause malfunction or damage to any devices hit directly by the water spray. Keep pressure washer stream away from machine controls and electrical/electronic devices. Compressed air can also push moisture through some connector and component seals. Do not point air nozzle directly at seal areas.

Ensure feed table is empty. Clean machine to keep debris off road and from striking other vehicles during transport.

PREPARE FOR TRANSPORT

- Step 1: Fold up feed table (1) and secure latch (2).
- Step 2: Rotate discharge (3) forward and ensure rotation pin is locked. Refer to "Discharge Chute Controls," page 20-7.



DETACH FROM TOWING VEHICLE

Park machine on level ground and chock wheels. Use jack to support tongue. Store electrical connector (1) and safety chains (2) on end of tongue.





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Section 40: Preparing Brush Chipper And Work Area

INTENDED USE

The Vermeer BC700XL is 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 Corporation.

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, and watch the operations and safety video, 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 (gauntlet-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

The following sound levels are determined while chipping wood according to test procedures specified in EN 13525.

$\label{eq:constraint} \begin{array}{l} Equivalent \ Continuous \ A-Weighted \ Sound \ Pressure \ Level \\ at \ Operator's \ Ear \ (per \ ISO \ 11201). \\ \ldots \\ $
$Representative \ Sound \ Power \ Level \ (per \ 2000/14/EC, \ ISO \ 3744). \ \ldots \ \ldots \ . \ L_{WA} = 123 \ dB(A)$
Guaranteed Sound power Level

The stated sound levels are representative for a given operating condition. Operating conditions may vary at each jobsite. 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.



PREPARE BRUSH CHIPPER



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



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.

- Survey the area around the machine for persons or obstacles before positioning the machine on the jobsite.
- Set up machine in an area free of obstructions that could interfere with the safe and efficient movement of the operator.
- Never set up the chipper beneath the tree that will be pruned or removed including the area where throwlines, rigging lines, and climbing ropes will be used.
- Manage all throwlines, rigging lines, climbing ropes and tools so they cannot become entangled in the brush pile or the chipper during machine operation
- 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.

40-4 Preparing Brush Chipper And Work Area

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.

NOTICE: Machine controls and electrical/electronic devices are not rated to withstand high pressure water and temperature power washers. Water intrusion will likely cause malfunction or damage to any devices hit directly by the water spray. Keep pressure washer stream away from machine controls and electrical/electronic devices. Compressed air can also push moisture through some connector and component seals. Do not point air nozzle directly at seal areas.

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: Pull spring lock pin (1) down and rotate either direction until pin catches under lip as shown.



- Step 2: 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 3: To adjust discharge distance, raise or lower discharge chute deflector (2).
- Step 4: Loosen locking handle (3). Adjust deflector height. Tighten locking handle to secure adjusted deflector.

NOTICE: If spout deflector and locking handle 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.



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. Do not operate brush chipper unless the control bars are installed and operating properly. Refer to "Upper Feed Control Bar," *page 50-3.* Refer to "Lower Feed Stop Bar," *page 50-3.*

Backup Marker Flags (Option) - Install/Adjust

Bolt the flag to each side of cross member (1). Adjust and secure flag, this will assist in backing into jobsite. Reposition flags vertical and secure when transporting machine.



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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



Never climb onto feed table.



Use wood object to push short material.



Keep away from rotating feed roller and



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.

BC700XL Brush Chipper

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.





Section 51: Removing Plugs from Brush Chipper

FEED ROLLER - UNPLUG



DANGER: Do not rely upon the *Lower Feed Stop Bar* to protect you from being pulled into the brush chipper. 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.

Never climb onto feed table.



Use wood object to push short material.



Keep away from rotating feed roller and blades.

If feed roller becomes plugged, reverse feed roller with *Upper Feed Control Bar* (1). Inspect dislodged material, ensuring it is not too large or has branches that prevent it from being fed into the machine.

If reversing feed roller does not dislodge the plug, follow procedures for opening cutter disc housing to remove plugged material. Refer to "Cutter Disc Housing - Open/Unplug," *page 51-4.* Remove any wood that is lodged in feed roller.



CUTTER DISC ROTATION - CHECK



WARNING: Rotating knives under cover can cut off hand. Thrown objects can strike you.

Stop engine, wait for disc to stop, then open access cover.

- Step 1: Shut down the machine. Follow Shutdown Procedure, page 23-1.
- Step 2: Wait for cutter disc to fully stop.
- Step 3: Check cutter disc rotation by looking at end of shaft (1) on side of cutter disc housing.



CUTTER DISC HOUSING - OPEN/UNPLUG



WARNING: Never start engine and engage cutter disc while cutter disc housing is open. Contact with cutter disc will cause serious injury. Ejected material can cause injury and blindness.

NOTICE: Swing discharge chute over right side of machine and secure with locking bar before removing access cover bolts (1). If discharge chute is turned out over the left side of machine, the cover and chute could drop suddenly after chute locking pin (2) is removed.

- Step 1: Follow Shutdown Procedure, page 23-1.
- Step 2: Follow Cutter Disc Rotation Check, page 51-3.
- Step 3: Remove two bolts (1) securing access cover.
- Step 4: Support discharge chute while removing chute locking pin (2).
- Step 5: Lower chute and cutter disc cover (3) to full open and lock into position with supplied pin (4).

NOTICE: Wear gloves when working near cutter disc knives. When removing chips, keep hands away from the sharp knives.





- Step 6: Remove chips and plugs from cutter disc housing and discharge chute.
 - Check cutter disc housing. Pull on a cutter disc paddle or grip the edge of cutter disc, away from the knife, and reverse disc rotation to dislodge the plug, making it easier to remove chips.
 - Using a pry bar, move the lodged wood rearward enough to allow room for knives to pass by.
 - Check discharge chute and clean out if plugged. A significant amount of chips left in cutter disc area will quickly re-plug cutter disc.
- Step 7: Remove the locking pin and close the cutter disc cover.
- Step 8: Install bolts and tighten.
- Step 9: Reinstall locking pin to secure in closed position (2).
- Step 10: Operate machine without chipping additional material, to blow out chips that remain in the housing or discharge chute.



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Section 60: Maintenance Intervals



WARNING: Use Shutdown Procedure before servicing, cleaning, repairing or transporting machine. *Follow Shutdown Procedure, page 23-1.*

Visually inspect machine daily before starting the machine.

Make no modifications to your equipment unless specifically recommended or requested by Vermeer Corporation.

HOURMETER

The meter (1) is used to determine maintenance intervals for the machine.

Maintenance intervals are based on normal operating conditions. When operating under severe conditions, the maintenance intervals should be shortened.

When a pre-programmed maintenance interval has been reached, the display will flash the service to be performed. For example, at 100 service hours, display will flash "oil change". To reset display, place tip of included wand (2) in location shown (3). The display will then stop flashing.

MACHINE - GREASE

As a general rule, grease machine after it is shut down for the day. This protects metal under seals from corrosion caused by condensation as temperature drops.

Ensure all fittings and nozzle of grease applicator are clean before applying grease. If any grease fittings are missing, replace them immediately.



SAFETY SIGNS

Safety signs located on your machine contain important and useful information that will help you operate your equipment safely. Refer to the *Parts Manual*. Refer to "Controls," *page 20-1*.

To assure that all safety signs remain in place and in good condition, follow the instructions given below:

- Keep safety signs clean. Use soap and water not mineral spirits, abrasive cleaners, or other similar cleaners that will damage the sign.
- Replace any damaged or missing safety signs. When attaching signs, the temperature of the mounting surface must be at least 40°F (5°C). The mounting surface must also be clean and dry.
- When replacing a machine component with a safety sign attached, replace safety sign also.
- Replacement safety signs can be purchased from your Vermeer equipment dealer.
- Replace any damaged or missing anti-slip material.

MAINTENANCE MANUAL

Maintenance intervals are included for reference only. Before performing any maintenance, refer to the *Maintenance Manual* for safety guidelines and correct procedures.

MAINTENANCE INTERVALS

Initial = Initial maintenance on new machine. Regular maintenance interval may be different.

• = Regular maintenance interval.

Service	10 or Daily	50 or Weekly	100	200	250	500	As Required
Engine Oil Level - Check	•						
Air Cleaner and Element - Check	•						
Fuel Tank - Fill	•						
Hydraulic Fluid Level - Check	•						
Knife/Cutter Disc Maintenance	•						
Optional Brake System - Check	•						
Discharge Chute - Grease	•						
Cutter Disc Bearings - Grease	•						
Feed Roller Bearing - Grease	•						
Feed Roller Controls - Check	•						
Hydraulic Fluid Filter - Initial Replacement		Initial					
Cutter Disc Drive Belt Tension - Check/Adjust		•					
Shear Bar - Check/Adjust		•					
Engine Oil/Filter - Change/Replace			Initial				
Engine Air Cleaner Element - Check/Inspect/Replace			•				
Engine Spark Plug Condition - Check			•				
Engine Cooling Areas - Clean			•				
Hydraulic System - Check			•				
Lower Feed Stop Bar Switch - Check/Adjust			•				
Upper Feed Control Bar Force - Check/Adjust			•				

	10 or	50 or					As
Service	Daily	Weekly	100	200	250	500	Required
Tires and Rims - Check			•				
Overall Machine - Check			•				
In-Line Fuel Filter - Replace				•			
Replace Spark Plugs - Set Gap				•			
Cooling Areas - Clean				•			
Oil Cooler Fins - Check/Clean				•			
Engine Oil/Filter - Change/Replace				•			
Jack - Grease					•		
Hydraulic Fluid Filter - Replace					•		
Battery Electrolyte Level and Terminals - Check/Clean					•		
Optional Electric Brakes - Test/Adjust					•		
Optional Electrical Breakaway Brake Circuit - Test					•		
Optional Automatic Brake Controller with Manual							
Override - Check					•	-	
Ball Coupler - Inspect and Lubricate						•	
Hydraulic Fluid - Change						•	
Engine Maintenance						•	
Wheel Bearings - Check//Repack/Replace						•	
Engine System- Check							•
In-Line Fuel Filter - Replace							•
Battery - Replace							•
SmartFeed Fuse - Replace							•
Hydraulic Pump Belt Check/Adjust/Replace							•
Highway Lights - Replace							•
Towing Chain/Hook - Replace							•

60-4 Maintenance Intervals
Service	10 or Daily	50 or Weekly	100	200	250	500	As Required
Cutter Disc Drive Belt - Replace							•
Storage Procedure							•

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Section 61: Knife/Cutter Disc Maintenance

Recommended service interval for cutter knives is 10 service hours. However, the actual service hours interval before knife maintenance is required may be more or less, depending upon the wood being chipped and chipping conditions.



<u>î</u>		WARNING: Knives can cut off hand
	N Ste	Lock disc before servicing knives.



WARNING: Never start engine or operate machine with the cutter disc housing open. Thrown objects and contact with cutter disc will result in serious injury.

Performing the following maintenance procedures will aid in reducing the possibility of knives becoming loose, failing, and being ejected from the machine.

KNIFE REMOVAL

WARNING: Wear glove when working with the cutter disc knives. Serious cutting injuries will result if contact is made with the knives while removing or installing them.

• Always remove and replace knives as sets. Chipper balance can be affected if matched knives are not kept together. It is important to keep knives sharpened and properly adjusted.

To remove knives:

NOTICE: Swing discharge chute over the right side of machine and secure with locking bar before removing access cover bolts. If discharge chute is turned out over the left side of machine, the cover and chute could drop suddenly after chute locking pin is removed.

- Step 1: Remove two bolts (1) securing access cover.
- Step 2: Support discharge chute while removing chute locking pin (2).



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- Step 3: Lower chute and cutter disc cover (3) to full open position, insert pin (4) and hair pin to secure.
- Step 4: Lock cutter disc to prevent it from rotating while working on knives. Align to notch in cutter disc and secure with lock pin (5) and hairpin cotter.
- Step 5: Remove three bolts (A), hardened washers (B), nuts (C) and backing plate (D) from first knife (E). Carefully remove knife from disc.
- Step 6: Unlock cutter disc and rotate 1/2 turn to the second cutter knife. Rotate by pushing on the outside surface of disc.
- Step 7: Lock cutter disc.
- Step 8: Repeat Step 5 and remove other knife.
- Step 9: Inspect bolts, washers, and nuts for damaged threads or cracks. Replace as necessary.

Cutter Disc Inspection

Cutter disc must be free of any damage. Thoroughly clean and inspect cutter disc surface for cracks that may begin at the mounting holes and migrate outward.

If any cutter disc damage or cracks are found, contact an authorized independent Vermeer dealer.





Knife Inspection

• **Cracks** — Thoroughly clean knives and inspect both sides of each knife for cracks. If any are found, discard knife and install a new one.

Cracks (1) that start at the mounting hole and progress outward result from the mounting bolts being improperly torqued.

NOTICE: If cracked knives are reused, the cracks will extend across knife and the knife can separate from cutter disc.

• Knife sizes and number of mounting holes may vary between machine models.

NOTICE: **Distortion** — Check the mounting side of knife for distortion. Bolting a distorted knife to cutter disc will add stresses in the knife and possibly cause knife cracking and failure.

- Step 1: Place a straightedge (2) on the mounting side of knife (3) and parallel to the mounting holes as shown.
- Step 2: Move straightedge slowly across knife surface, and inspect for any light that shows between knife and straightedge. If any light appears between the knife surface and the straightedge, this indicates that knife is distorted, and must be replaced.
- Step 3: Turn straightedge perpendicular to mounting holes and repeat Step 2.
- Knifes may be rotated and second edge of knife may be used.





Bolt Inspection

WARNING: Incorrect maintenance and torquing of the knife-mounting bolts can cause the knives to become detached from the cutter disc. Death or serious injury is possible if the failed knives are ejected from the machine and strike someone. Extensive and costly damage to the cutter disc and machine will probably occur if the knives become detached.



WARNING: Knife-mounting bolts must be replaced each time knives are sharpened or replaced. Bolts may be reused **ONLY ONCE** when rotating knife to its second cutting edge. Failure to replace bolts can cause knife/disc separation resulting in death or serious injury, and machine damage.

WARNING: Overtightened bolts can cause knife distortion, allowing wood to pack under the knife. Distorted knives can crack and fail resulting in death or serious injury, and machine damage. Use a straightedge and check all knives for distortion; discard any that are distorted.

NOTICE: When installing a new or sharpened set of knives, discard the existing mounting bolts and use new Vermeer-approved bolts. Repeated reuse of the bolts will decrease their clamping capacity each time the bolts are torqued. Inadequate clamping of the knives will cause the knives to loosen and fail.

Bolts — Inspect bolts (1) for damaged threads, corrosion, and distortion. If any are found, discard the bolt and install a new one.



Knife Sharpening

- Sharpen knives at a 40° angle.
- Use a soft "J" grade grinding disc with 36 to 46 grit.
- Use adequate coolant while grinding.
- Hone knives between sharpenings with an oil honing stone.

NOTICE: Do not use a knife which has been sharpened past a minimum width of 2"(51 mm).



Knife Installation

- Step 1: Clean and inspect all cutter disc components as per the preceding instructions.
- Step 2: Lock cutter disc.
- Step 3: Install knife (A) with the bevel oriented as shown to cutter disc.

NOTICE: Backing plate is tapered to allow hardened washers and nuts to seat flat on backing plate. Be careful to install this plate (**C**) correctly as shown. If installed incorrectly, premature bolt failure could occur.

- Step 4: Lubricate bolts (**B**) with light oil and install backing plate (**C**), hardened washer (**D**), and one nut (**E**).
- Step 5: Lightly tighten first nut on each bolt to hold knife in place. Ensure all bolt heads are centered in the knife holes and that hardened washers and nuts seat flat on backing plate.
- Step 6: Torque nuts to 180 ft-lb (244 Nm) beginning with the center bolt. Recheck torque on all nuts after the last nut is tightened. Do not overtorque nuts.





WARNING: Overtightened bolts can cause knife distortion, allowing wood to pack under knife. Distorted knives can crack and fail resulting in death or serious injury, and machine damage. Use a straightedge and check all knives for distortion; discard any that are distorted.

Step 7: Install second nut on each bolt and torque to 60 ft-lb (80 Nm). Recheck torque of all three nuts after the last nut is tightened. Do not overtorque nuts.

NOTICE: Do not tighten second nut beyond 60 ft-lb (80 Nm). Overtorquing nuts could cause bolts to fail.

BC700XL Brush Chipper

- Step 8: Unlock cutter disc and rotate 1/2 turn to the next cutter knife.
- Step 9: Lock cutter disc.
- Step 10: Repeat Steps 3–7 to install the second knife.
- Step 11: After both knives are changed or turned, the shear bar will need to be adjusted (refer to the *Maintenance Manual, Maintenance - 50 Service Hours or Weekly section,* "Shear Bar - Check/Adjust").

NOTICE: The shear bar bolts must be checked weekly, even if you do not need to adjust or replace the shear bar. Refer to the *Maintenance Manual, Maintenance - 50 Service Hours or Weekly section,* "Shear Bar - Check/Adjust".

- Step 12: Remove cutter disc lock pin.
- Step 13: After shear bar adjustment is complete, close access cover and reinstall bolts (1) and cutter disc and housing lock pin (2) as shown.



Knife Mount Surface Inspection



WARNING: Follow Shutdown Procedure, page 23-1. Before opening the access cover, look at the view slots in cutter disc shield to confirm that the cutter disc rotation has stopped. Wear gloves when working with the cutter disc knives. Serious cutting injuries will result if contact is made with the knives while removing or installing them.

When a cutting knife is removed from cutter disc, the knife-mounting surfaces on cutter disc must be thoroughly cleaned and inspected. Remove all wood chips and other material from the mounting pocket area.

Any debris left on the mounting surface can prevent knife from lying perfectly flat on its mating surface. This condition can lead to knife failure during operation.

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Revision History

Revision	Date	Pages	Description
o1_00	09/13		1st edition manual released.
o2_00	09/16	Intro, Section 10, 20-3, 20-5, 20-6, 30-6, 40-4, 40-6, 40-7, 50-3, 50-4, 50-5, 50-7, 51-2, 60-1	Updated safety labels, updated safety warnings, added hourmeter info.
02_01	12/16	Front	Added evap emissions warranty rider.

A WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

CALIFORNIA Proposition 65 Warning

Engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.



This product contains chemicals known to the state of California to cause birth defects or other reproductive harm.

CALIFORNIA Proposition 65 Warning

This product contains chemicals known to the state of California to cause birth defects or other reproductive harm.

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