

ECHO



3 INCH CHIPPER/SHREDDER

SC3206 (70050) - B&S 205 cc

SC3305 (70080) - B&S 305 cc

SC3305E (70085) - B&S 305 cc Elec

SC3240 (70380) - HONDA 240 cc

SC3240T (70580) - HONDA 240 cc Tow

SC3342 (75311) - B&S 342 cc

SC3270 - HONDA 270 cc

SC3270T - HONDA 270 cc TOW



Manual P/N 14846-00

Rev. 021308

Companion to P/N 14849-00

SN Range: 705134 - A08786

VIN Range: 5VJAA00137W000009 - 5VJAA0012AW002577

OWNER'S MANUAL

ENGLISH

ESPAÑOL

FRANÇAIS

Before You Begin

DEAR ECHO BEAR CAT CUSTOMER

Thank you for purchasing a ECHO Bear Cat product. The ECHO Bear Cat line is designed, tested, and manufactured to give years of dependable performance. To keep your machine operating at peak efficiency, it is necessary to adjust it correctly and make regular inspections. The following pages will assist you in the operation and maintenance of your machine. Please read and understand this manual before operating your machine.

If you have any questions or comments about this manual, please call us toll-free at 1-800-247-7335.

If you have any questions or problems with your machine, please call or write your local authorized ECHO Bear Cat Dealer.

This document is based on information available at the time of its publication. ECHO Bear Cat is continually making improvements and developing new equipment. In doing so, we reserve the right to make changes or add improvements to our product without obligation for equipment previously sold.

PLEASE SEND US YOUR WARRANTY CARD

A warranty card is included in your owner's kit packaged with your machine. Please take the time to fill in the information requested on the card. When you send your completed card to us, we will register your machine and start your coverage under our limited warranty.

FOR MACHINE SERVICE OR PARTS:

For service assistance, contact your nearest authorized ECHO Bear Cat dealer or the factory. For parts, contact your authorized dealer. Your dealer will need to know the identification number of your machine to provide the most efficient service. See below for information on how to identify and record the identification number for your machine.

FOR ENGINE SERVICE OR PARTS:

For engine service or parts, contact your nearest authorized engine dealer. ECHO Bear Cat does not handle any parts, repairs or warranties for engines.

ORDERING PARTS

Only genuine ECHO Bear Cat replacement parts should be used to repair the machine. Replacement parts manufactured by others could present safety hazards, even though they may fit on this machine. Replacement parts are available from your ECHO Bear Cat dealer.

Provide the following when ordering parts:

The SERIAL NUMBER OR VIN of your machine.

The PART NUMBER of the part.

The PART DESCRIPTION.

The QUANTITY needed.

IDENTIFICATION NUMBER LOCATION

Your machine will have either a serial number or vehicle identification number (VIN). VINs are located on the left side of the trailer frame near the hitch. They are 17-digit numbers of the format: 5VJAA001XXWXXXXX. Serial numbers are located on the machine body. They are 6-digit numbers.

Record your identification number in the space provided and on the warranty registration card.

SERIAL NUMBER OR VIN

HOW TO CONTACT ECHO BEAR CAT

| ADDRESS | PHONE | E-MAIL | HOURS |
|--|---|--|--|
| 237 NW 12th Street P.O. Box 849 West Fargo, ND 58078 | 800.247.7335 701.282.5520 FAX: 701.282.9522 | sales@bearcatproducts.com service@bearcatproducts.com | Monday - Friday, 8 am to 5 pm Central Time |

*Original Instructions

LIMITED WARRANTY

This warranty applies to all AG and Outdoor Power Equipment manufactured by Crary Industries.

Crary Industries warrants to the original owner each new Crary Industries product to be free from defects in material and workmanship, under normal use and service. The warranty shall extend 1 year from date of delivery for income producing (commercial) applications and 2 years from date of delivery for non-income producing (consumer) use of the product. The product is warranted to the original owner as evidenced by a completed warranty registration on file at Crary Industries. Replacement parts are warranted for (90) days from date of installation.

THE WARRANTY REGISTRATION MUST BE COMPLETED AND RETURNED TO CRARY INDUSTRIES WITHIN 10 DAYS OF DELIVERY OF THE PRODUCT TO THE ORIGINAL OWNER OR THE WARRANTY WILL BE VOID.

In the event of a failure, return the product, at your cost, along with proof of purchase to the selling Crary Industries dealer. Crary Industries will, at its option, repair or replace any parts found to be defective in material or workmanship. Warranty on any repairs will not extend beyond the product warranty. Repair or attempted repair by anyone other than a Crary Industries dealer as well as subsequent failure or damage that may occur as a result of that work will not be paid under this warranty. Crary Industries does not warrant replacement components not manufactured or sold by Crary Industries.

This warranty applies only to parts or components that are defective in material or workmanship.

This warranty does not cover normal wear items including but not limited to bearings, belts, pulleys, filters and chipper knives.

This warranty does not cover normal maintenance, service or adjustments.

This warranty does not cover depreciation or damage due to misuse, negligence, accident or improper maintenance.

This warranty does not cover damage due to improper setup, installation or adjustment.

This warranty does not cover damage due to unauthorized modifications of the product.

Engines are warranted by the respective engine manufacturer and are not covered by this warranty.

Crary Industries is not liable for any property damage, personal injury or death resulting from the unauthorized modification or alteration of a Crary product or from the owner's failure to assemble, install, maintain or operate the product in accordance with the provisions of the Owner's manual.

Crary Industries is not liable for indirect, incidental or consequential damages or injuries including but not limited to loss of crops, loss of profits, rental of substitute equipment or other commercial loss.

This warranty gives you specific legal rights. You may have other rights that may vary from area to area.

Crary Industries makes no warranties, representations or promises, expressed or implied as to the performance of its products other than those set forth in this warranty. Neither the dealer nor any other person has any authority to make any representations, warranties or promises on behalf of Crary Industries or to modify the terms or limitations of this warranty in any way. Crary Industries, at its discretion, may periodically offer limited, written enhancements to this warranty.

CRARY INDUSTRIES RESERVES THE RIGHT TO CHANGE THE DESIGN AND/OR SPECIFICATIONS OF ITS PRODUCTS AT ANY TIME WITHOUT OBLIGATION TO PREVIOUS PURCHASERS OF ITS PRODUCTS.

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1 SAFETY

Section



1.1 SAFETY ALERT SYMBOL





The Owner/Operator's manual uses this symbol to alert you of potential hazards. Whenever you see this symbol, read and obey the safety message that follows it. Failure to obey the safety message could result in personal injury, death or property damage.

 **DANGER** 

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

 **WARNING** 

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

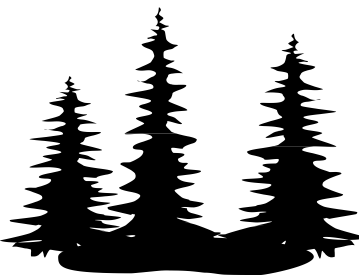
 **CAUTION** 

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

1.2 EMISSION INFORMATION

Under California Law and the laws of several other states, you are not permitted to operate an internal combustion engine using hydrocarbon fuels on any forest covered, brush covered or grass covered land or on land covered with grain, hay or other flammable agricultural crops, without an engine spark arrester in continuous effective working order.

The engine on your power equipment, like most outdoor



power equipment, is an internal combustion engine that burns gasoline or diesel fuel (hydrocarbons). Therefore, your power equipment must be equipped with a spark arrester muffler in continuous effective

working order. The spark arrester must be attached to the engine exhaust system in such a manner that flames or heat from the system will not ignite flammable material.

Failure of the owner/operator of the equipment to comply with this regulation is a misdemeanor under California law and may also be a violation of other state and/or federal regulations, laws, ordinances, or codes. Contact your local fire marshal or forest service for specific information about which regulations apply in your area.


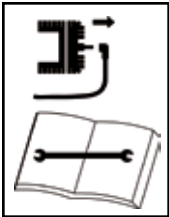
The standard muffler installed on the engine is not equipped with a spark arrester. One must be added before using this machine in an area where a spark arrester is required by law. Contact the local authorities if these laws apply to you. See your authorized engine dealer for spark arrester options.

1.3 BEFORE OPERATING



1. Read and understand this owner's manual. Be completely familiar with the controls and the proper use of this equipment.
2. Familiarize yourself with all of the safety and operating decals on this equipment and on any of its attachments or accessories.
3. Keep safety decals clean and legible. Replace missing or illegible safety decals.
4. Obtain and wear safety glasses and use hearing protection at all times when operating this machine.
5. Avoid wearing loose fitted clothing. Never operate this machine while wearing clothing with drawstrings that could wrap around or get caught in the machine.
6. Do not operate this machine if you are under the influence of alcohol, medications, or substances that can affect your vision, balance or judgment. Do not operate if tired or ill. You must be in good health to operate this machine safely.
7. Do not operate this equipment in the vicinity of bystanders. Keep the area of operation clear of all persons, particularly small children. It is recommended that bystanders keep at least 50 feet (15 meters) away from the area of operation.
8. Do not allow children to operate this equipment.
9. Use only in daylight or good artificial light.
10. Do not run this equipment in an enclosed area. Engine exhaust contains carbon monoxide gas, a deadly poison that is odorless, colorless and tasteless. Do not operate this equipment in or near buildings, windows or air conditioners.
11. Always use an approved fuel container. Do not remove gas cap or add fuel when engine is running. Add fuel to a cool engine only.
12. Do not fill fuel tank indoors. Keep open flames, sparks, smoking materials and other sources of combustion away from fuel.
13. Do not operate machine without guards, deflectors, doors, and shields in place. Failure to do so may cause serious injury or death.
14. Keep all guards, deflectors, doors, and shields in good working condition.
15. Before inspecting or servicing any part of this machine, shut off the machine and make sure all moving parts have come to a complete stop. Disconnect the battery and remove the ignition key where applicable.
16. Check that all screws, nuts, bolts, and other fasteners are secured, tightened and in proper working condition before starting the machine.
17. Do not transport or move machine while it is operating or running.

1.4 OPERATION SAFETY

1. Always stand clear of discharge area when operating this machine. Keep face and body away from feed and discharge openings.
2. Keep hands and feet out of feed and discharge openings while machine is operating to avoid serious personal injury. Stop and allow machine to come to a complete stop before clearing obstructions. 
3. Set up your work site so you are not endangering traffic and the public. Take great care to provide adequate warnings.
4. Do not climb on machine when operating. Keep proper balance and footing at all times.
5. Check cutting chamber to verify it is empty before starting the machine.
6. The disk will continue to rotate after being disengaged. Shut off the machine and make sure all moving parts have come to a complete stop before inspecting or servicing any part of the machine. Disconnect the battery and remove the ignition key if applicable.
7. Do not insert branches with a diameter larger than the max chipper capacity into machine or machine damage may occur.
8. When feeding material into machine, do not allow metal, rocks, bottles, cans or any other foreign material to be fed into the machine.
9. Ensure debris does not blow into traffic, parked cars, or pedestrians.
10. Keep the machine clear of debris and other accumulations.
11. Do not allow processed material to build up in the discharge area. This may prevent proper discharge and can result in kickback of material through the feed opening.
12. If the machine becomes clogged, the cutting mechanism strikes any foreign object, or the machine starts vibrating or making an unusual noise, shut off machine immediately and make sure all moving parts have come to a complete stop. Disconnect the battery and remove the ignition key if applicable. After the machine stops: A) Inspect for damage, B) Replace or repair any damaged parts, and C) Check for and tighten any loose parts. 
13. On electric start models, disconnect cables from battery before doing any inspection or service. Remove key.
14. Check blade bolts for proper torque after every 8 hours of operation. Check blades and rotate or sharpen daily or as required to keep blades sharp. Failure to do so may cause poor performance, damage or personal injury and will void the machine warranty.

1.5 MAINTENANCE AND STORAGE SAFETY

1. Before inspecting, servicing, storing, or changing an accessory, shut off the machine and make sure all moving parts have come to a complete stop. Disconnect the battery and remove the ignition key where applicable.
2. Replace any missing or unreadable safety decals. Refer to the safety decal section for part numbers.
3. Allow machine to cool before storing in an enclosure.
4. Store the machine out of reach of children and where fuel vapors will not reach an open flame or spark.
5. Never store this machine with fuel in the fuel tank inside a building where fumes may be ignited by an open flame or spark. Ignition sources can be hot water and space heaters, furnaces, clothes dryers, stoves, electric motors, etc.
6. Drain the fuel and dispose of it in a safe manner for storage periods of three months or more.

1.6 TOWING SAFETY

1. Rotate the discharge tube to face the opposite direction of the towing vehicle before towing.
2. Insert transport safety pin and clip, and set brake handle to locked position, if applicable.
3. Connect hitch safety chains. Tighten trailer hitch bolts. Do not attempt to tow the trailer if the vehicle is not equipped with a 2" (50 mm) ball.
4. Do not exceed the maximum towing speed indicated on tire sidewall. Inflate tires to manufacturer's specifications as stated on the tire sidewall.
5. Optimum towing performance can be achieved by maintaining a horizontal trailer hitch.
6. Check wheel lug bolts periodically to ensure they are tight and secure.
7. Make sure the jack stand and the rear stabilizer (where applicable) on the trailer are in the UP position during towing. Place the jack stand on a level surface and secure it in the DOWN position before using.
8. Never allow passengers to ride on the machine.
9. If applicable, shut off fuel supply when towing.
10. Towing laws may vary in different countries/regions/states. It is recommended that you contact your local motor vehicle department for any special regulations that pertain to towing and know the laws of any country/region/state you travel through.

1.7 BATTERY SAFETY

Improper use and care of the battery on electric start models can result in serious personal injury or property damage. Always observe the following safety precautions.

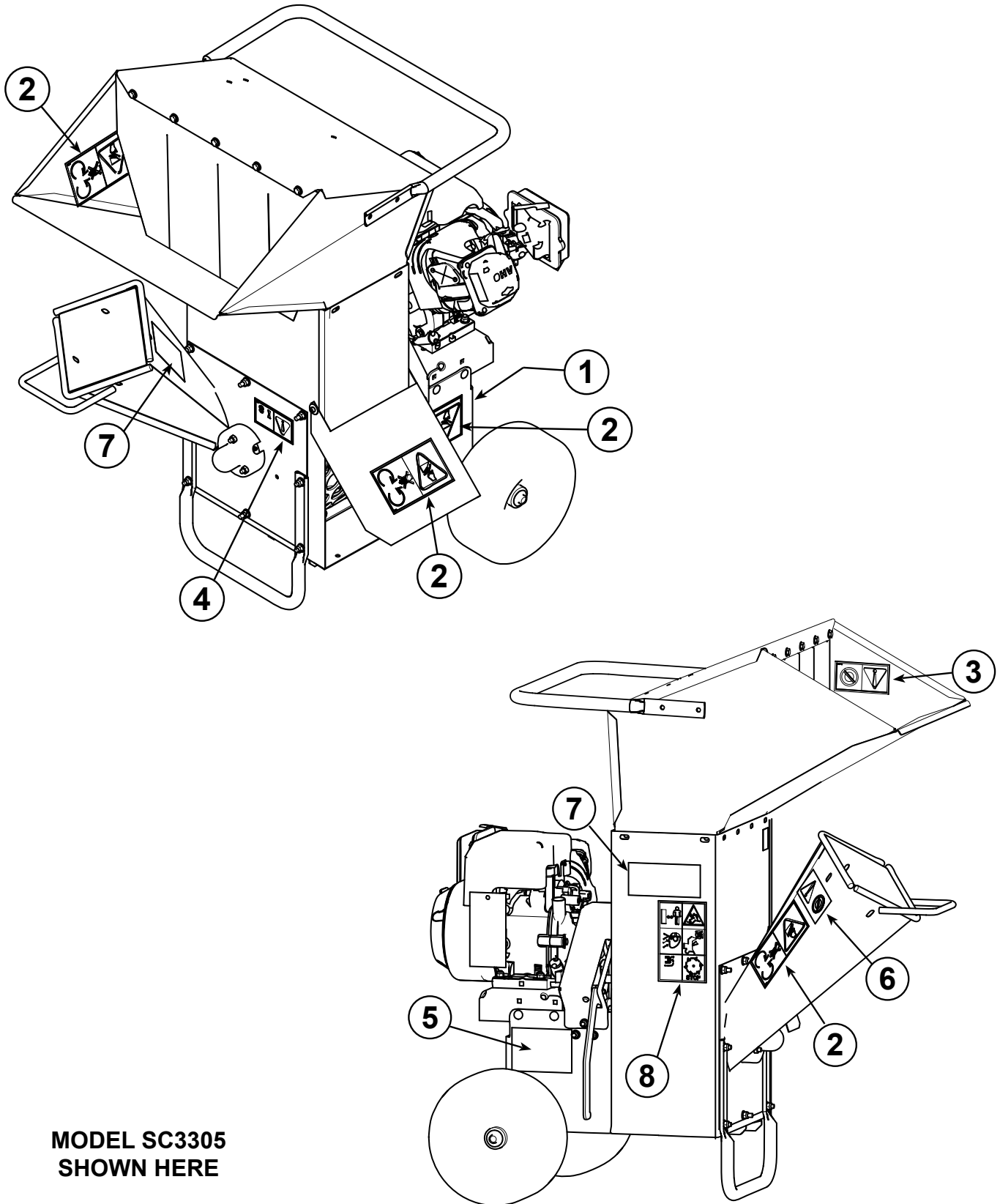
Poison/Danger - Causes Severe Burns. The battery contains sulfuric acid. Avoid contact with skin, eyes or clothing. Keep out of reach of children.

- ANTIDOTE-External Contact: Flush immediately with water.
 - ANTIDOTE-Internal: Drink a large amount of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call a physician immediately.
 - ANTIDOTE-Eye Contact: Flush with water for 15 minutes. Get prompt medical attention.
1. The battery produces explosive gases. Keep sparks, flame or cigarettes away. Ventilate area when charging battery. Always wear safety goggles when working near battery.
 2. The battery contains toxic materials. Do not damage battery case. If case is broken or damaged, avoid contact with battery contents.
 3. Neutralize acid spills with a baking soda and water solution. Properly dispose of a damaged or worn-out battery. Check with local authorities for proper disposal methods.
 4. Do not short circuit battery. Severe fumes and fire can result.
 5. Before working with electrical wires or components, disconnect battery ground (negative) cable first. Disconnect positive cable second. Reverse this order when reconnecting battery cables.



1.8 SAFETY DECAL LOCATIONS

The numbers below correspond to the decals in Section 1.9. Familiarize yourself with all of the safety and operational decals on the machine and the associated hazards. See the engine owner's manual or contact the engine manufacturer for engine safety instructions and decals. Make certain that all safety and operating decals on this machine are kept clean and in good condition. Decals that need replacement must be be applied to their original locations.



**MODEL SC3305
SHOWN HERE**

1.9 SAFETY DECALS

See Section 1.8 for decal locations. Familiarize yourself with all of the safety and operating decals on the machine and the associated hazards. See the engine owner's manual or contact the engine manufacturer for engine safety instructions and decals. Make certain that all safety and operational decals on this machine are kept clean and in good condition. Decals that need replacement must be applied to their original locations.

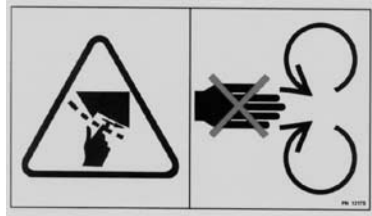
1 P/N 12174

DO NOT OPERATE MACHINE WITHOUT SHIELDS IN PLACE. FAILURE TO DO SO MAY CAUSE SERIOUS INJURY OR DEATH.



2 P/N 12175

KEEP HANDS AND FEET OUT OF INLET AND DISCHARGE OPENINGS WHILE MACHINE IS OPERATING TO AVOID SERIOUS PERSONAL INJURY. STOP AND ALLOW MACHINE TO COME TO A COMPLETE STOP BEFORE CLEARING OBSTRUCTIONS.



3 P/N 12176

DO NOT INSERT BRANCHES LARGER THAN 3/4 INCH INTO SHREDDER OR MACHINE DAMAGE MAY OCCUR.



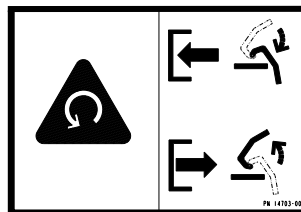
4 P/N 12250

CHECK BLADE BOLTS FOR PROPER TORQUE AFTER EVERY 8 HOURS OF OPERATION. CHECK BLADES AND ROTATE OR RESHARPEN DAILY OR AS REQUIRED TO KEEP BLADES SHARP. REFER TO OWNERS MANUAL FOR INSTRUCTIONS. FAILURE TO DO SO MAY CAUSE POOR PERFORMANCE, DAMAGE OR PERSONAL INJURY AND WILL VOID THE MACHINE WARRANTY.



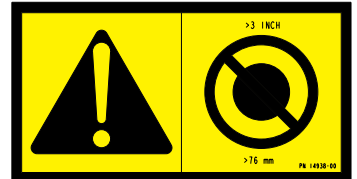
5 P/N 14703-00

LOWER LEVER SLOWLY TO ENGAGE CHIPPER. PULL LEVER UP TO DISENGAGE CHIPPER. CHIPPER/SHREDDER ROTOR WILL CONTINUE TO ROTATE WHEN CLUTCH IS DISENGAGED. STOP ENGINE AND REMOVE SPARK PLUG WIRE BEFORE CLEANING DEBRIS FROM DISCHARGE AREA OR SERVICING THIS MACHINE. DO NOT OPERATE WITHOUT DISCHARGE SCREEN, INLET FLAPS AND ALL SHIELDS IN PLACE.

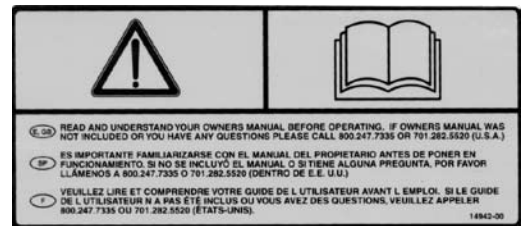


6 P/N 14938-00

DO NOT INSERT BRANCHES LARGER THAN 3 INCHES IN DIAMETER INTO CHIPPER. MACHINE DAMAGE MAY OCCUR. REFER TO OWNERS MANUAL FOR OPERATING INSTRUCTIONS AND RECOMMENDATIONS.



7 P/N 14942-00



8 P/N 14965-00

DO NOT OPERATE THIS EQUIPMENT IN THE VICINITY OF BYSTANDERS. DO NOT ALLOW CHILDREN TO OPERATE THIS EQUIPMENT.

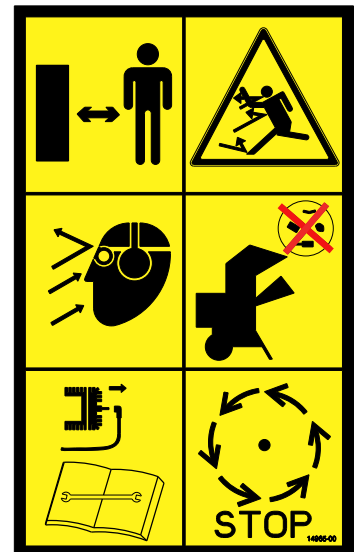
OBTAIN AND WEAR SAFETY GLASSES AND USE HEARING PROTECTION AT ALL TIMES WHEN OPERATING THIS MACHINE.

BEFORE INSPECTING OR SERVICING ANY PART OF THIS MACHINE, SHUT OFF POWER SOURCE, DISCONNECT SPARK PLUG WIRE FROM SPARK PLUG AND MAKE SURE ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.

ALWAYS STAND CLEAR OF DISCHARGE AREA WHEN OPERATING THIS MACHINE. KEEP FACE AND BODY AWAY FROM FEED AND DISCHARGE OPENINGS.

WHEN FEEDING SHREDDABLE MATERIAL INTO CHIPPER, DO NOT ALLOW METAL, ROCKS, BOTTLES, CANS OR ANY OTHER FOREIGN MATERIAL TO BE FED INTO CHIPPER OR SHREDDER.

BEFORE INSPECTING OR SERVICING ANY PART OF THIS MACHINE, SHUT OFF POWER SOURCE, DISCONNECT SPARK PLUG WIRE FROM SPARK PLUG AND MAKE SURE ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.



2 ASSEMBLY

Section



WARNING



If any bolts or nuts are dropped in the machine, be sure to remove them before starting the machine. Remove items from the shredder area by removing the discharge screen.

2.1 INSTALLING THE HANDLE

1. Remove the chipper/shredder and hopper assembly from the shipping box and pallet.
2. Install four 5/16" X 3/4" bolts so the head of the bolt is located on the inside of the hopper. Fasten bolts with 5/16" nylock nuts and 5/16" flat washers.

2.2 INSTALLING THE HOPPER

1. Assemble the hopper assembly to the frame so the handle is located above the engine and the opening is toward the chipper chute.
2. Install twelve 5/16" X 3/4" bolts so the head of the bolt is inside the hopper. Fasten bolts with 5/16" flat washers and 5/16" nylock nuts.

2.3 INSTALLING THE CHIPPER CHUTE EXTENSION

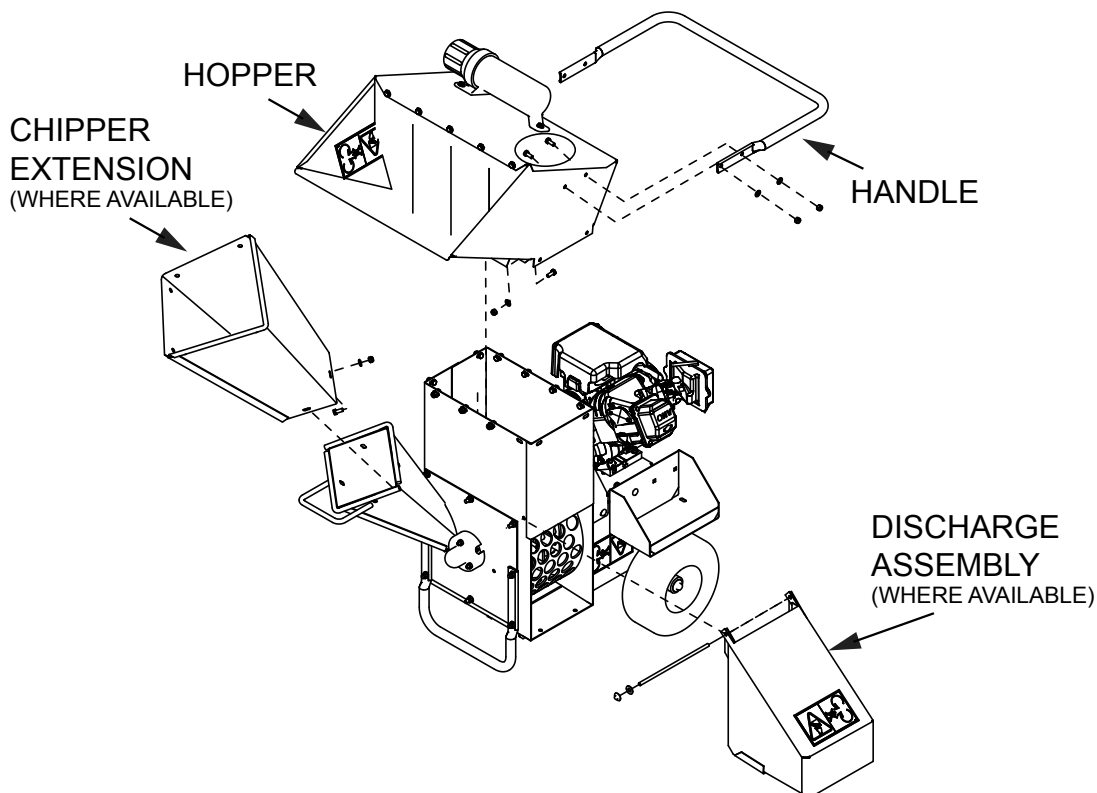
NOT AVAILABLE ON ALL MODELS

1. Place the chipper chute extension onto the chute. Line up the four holes located on the bottom of the extension and the top of the chute.
2. Install four 5/16" X 3/4" bolts so the head of the bolt is located on the inside of the chipper chute. Fasten bolts with 5/16" nuts. Tighten nut until snug against the chute extension.

2.4 INSTALLING DISCHARGE ASSEMBLY

NOT AVAILABLE ON ALL MODELS

1. Place the discharge weldment onto the chipper. The holes on the weldment should line up with holes on the chipper.
2. Secure the top of the discharge weldment using one 5/16" x 7-1/2" bolt (narrow door) or one 5/16" x 10" bolt (wide door) and 5/16" nuts. Tighten to proper torque.
3. Secure the bottom of the discharge weldment using two 5/16" x 3/4" bolts and 5/16" nuts. The head of the bolt should be located inside the discharge assembly. Tighten to the proper torque.



2.5 FILL THE FUEL TANK



WARNING



Gasoline and diesel fuels are highly flammable and their vapors are explosive. To prevent personal injury or property damage:

Store fuel only in approved containers, in well ventilated, unoccupied buildings, away from sparks or flames. A container with a capacity of 2 gallons or less with a pouring spout is recommended. Do not fill the fuel tank while the engine is hot or running, since spilled fuel could ignite if it comes in contact with hot parts or sparks from ignition. Do not start the engine near spilled fuel. Never use fuel as a cleaning agent. **DO NOT MIX OIL WITH FUEL.**

Use only those types of fuels that are recommended in your engine owner's manual.

To add fuel:

1. Stop engine, wait for all parts to stop moving and disconnect spark plug wire. Remove key from key switch. Allow the engine and muffler to cool for at least three minutes.
2. Clean area around fuel fill cap and remove cap.
3. Using a clean funnel, fill fuel tank to 1/2" below bottom of filler neck to provide space for any fuel expansion. Install fuel fill cap securely and wipe up any spilled gasoline.

2.6 ADD OIL

Check the oil level and, if needed, fill the engine crankcase with the type and amount of oil specified in the engine owner's manual.

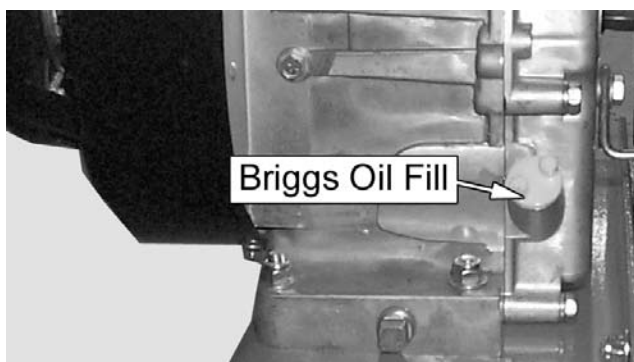


Figure 2.1 - Briggs Oil Fill

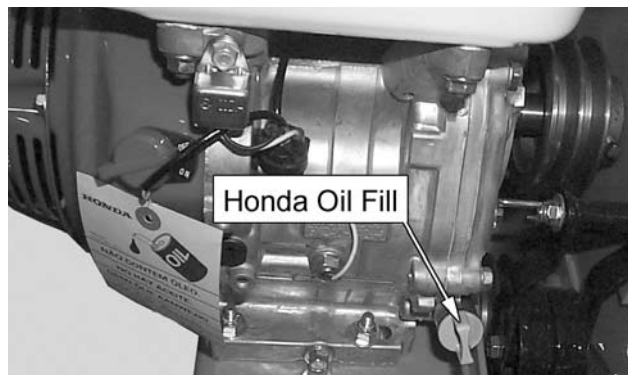


Figure 2.2 - Honda Oil Fill

2.7 INSTALL A BATTERY (SC3305E ONLY)

You will need to purchase a battery. Choose a battery that meets or exceeds the following specifications:

CCA@ Zero Degree: 200-250

Size: 7-3/4" X 5-3/16" X 7-5/16"

BCI Group Size U1

Exide Cutting Edge, Type GT-H



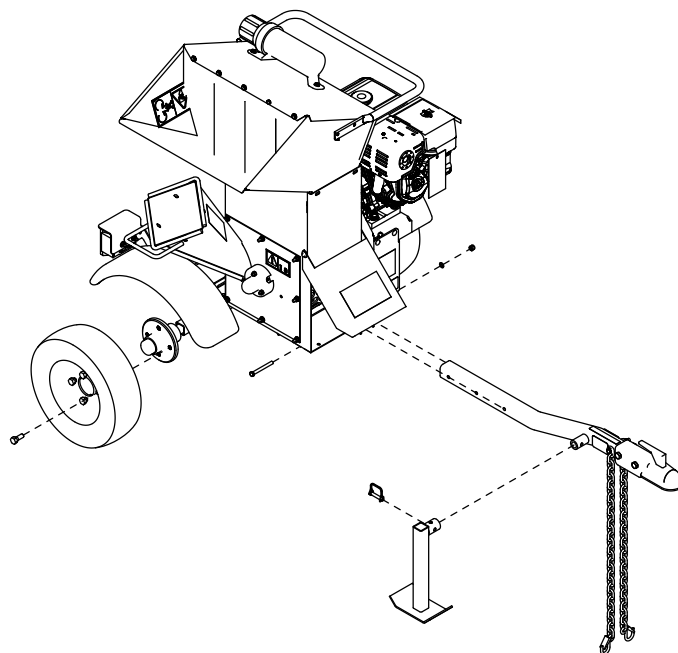
WARNING



To avoid sparks and a possible explosion or fire due to a short circuit, do not touch the positive (+) battery terminal and any surrounding metal with tools, jewelry or other metal objects. When installing battery cables, connect the positive (+) cable first and the negative (-) cable last.

2.8 INSTALLING THE WHEELS, JACK AND HITCH (SC3240T AND SC3270T ONLY)

1. Slide one wheel onto a hub and align the wheel lug holes with the hub lug holes.
2. Thread the wheel bolts into the holes and tighten to the proper torque. Follow an alternating cross pattern when tightening wheel bolts.
3. Repeat for the remaining wheel.
4. Install hitch jack onto hitch pole and install snap pin.
5. Align the hitch pole assembly to the frame and secure using two 3/8" X 2-1/2" bolts, 3/8" flat washers and 3/8" nylock nuts.



3 FEATURES & CONTROLS

Section

Understanding how your machine works will help you achieve the best results when using your machine. The following descriptions define the features and controls of your machine.

ENGAGEMENT HANDLE

During engine start-up, the engagement handle must be in the disengaged position (Figure 3.1). With engine at full throttle, carefully engage the rotor by slowly pushing the engagement handle down, allowing the rotor to speed up gradually (Figure 3.2). Engaging the clutch too quickly with the engine at full or half throttle will bog down the engine and will shorten the life of the belt. To disengage the rotor, first idle the engine down and then lift the engagement handle up

SHREDDER CHUTE

Materials to be shredded are fed through the shredder chute to the shredder knives.

CHIPPER CHUTE

Materials to be chipped are fed through the chipper chute to the chipper blades.

JACK STAND

MODEL SC3240T AND SC3270T ONLY

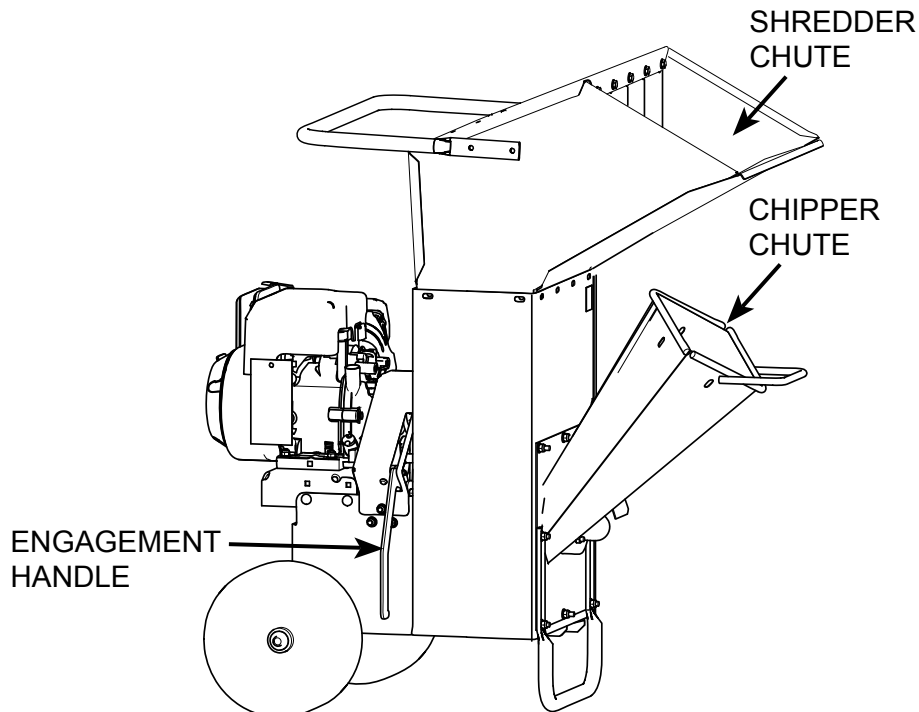
Always have the jack stand retracted from the ground when moving the unit. When in use, be sure the jack stand is down and locked in position with the snap pin.



Figure 3.1
Disengaged Clutch



Figure 3.2
Engaged Clutch



ENGINE THROTTLE

Changes engine speed. Push lever to 1/2 throttle for starting. Push lever to slow for idle and warm-up. Push throttle lever to slow throttle to shut engine off. Refer to engine manual for further engine operating instructions. When chipping or shredding, the engine should be at full throttle.

ENGINE CHOKE

Use when starting a cold engine. Move lever to the choke position when starting. Move lever to the run position when engine is running (Figures 3.3 and 3.4). Refer to engine manual for further engine operating instructions.

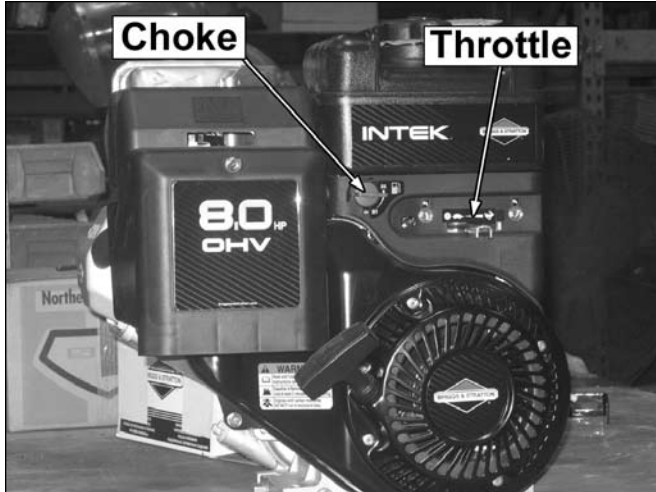


Figure 3.3 Briggs Throttle and Choke Locations

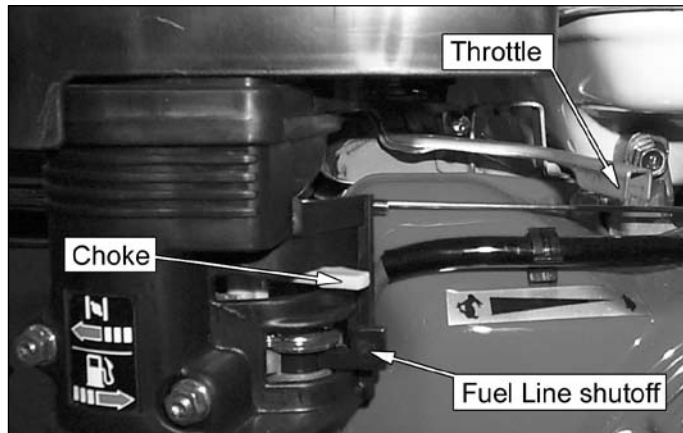


Figure 3.4 Honda Throttle and Choke Locations

KEY SWITCH

The key switch is used to start or stop the engine. See Figures 3.5 thru 3.8 for keyswitch locations. Refer to the engine manual for further operating instructions.

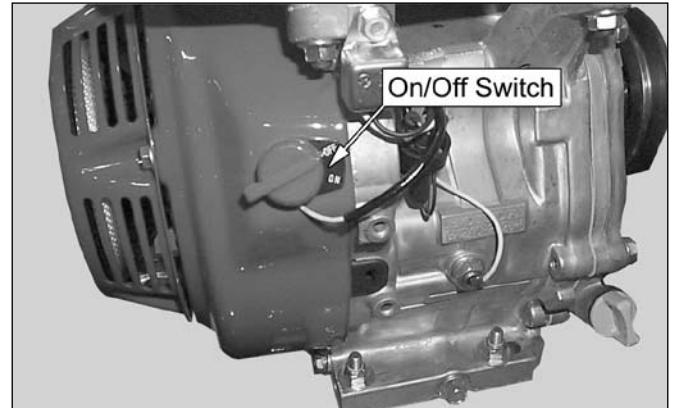


Figure 3.5 Honda On/Off switch

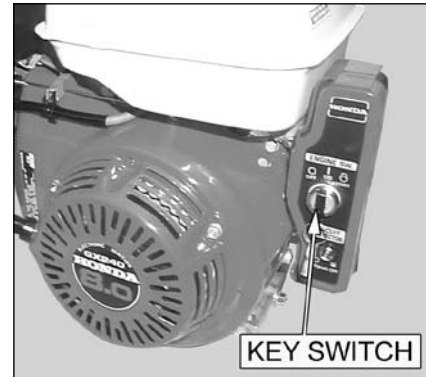


Figure 3.6 Honda Electric Key Switch



Figure 3.7 Briggs Electric On/Off Switch



Figure 3.8 Briggs Commercial On/Off Switch

4 OPERATION

Section



As with any other piece of outdoor equipment, getting the feel for how your machine operates and getting to know the best techniques for particular jobs are important to overall good performance.

CHIPPING OPERATION



The chipping operation takes place on the front of the machine, where hardened steel chipper blades are mounted on a rotating disk assembly. Material fed into the chipper chute is sliced into small chips and propelled out through a discharge tube.

SHREDDING OPERATION

In this operation, hardened steel shredder knives grind up material fed into the shredder chute. The shredded material then leaves the shredder area by traveling through the discharge screen. The shredded material can be diverted into a container or onto the ground.

 **WARNING** 

Move machine to a clear, level area outdoors before starting. Do not operate in the vicinity of bystanders. Make sure cutting chamber is empty before starting.

 **WARNING** 

Before operating your machine, be sure you read and understand all safety, controls and operating instructions in this owner's manual and on your machine. Failure to follow these instructions can result in serious injury or property damage.

4.1 STARTING RECOIL MODELS

1. Check engine oil level before starting.
2. Place the throttle control midway between the slow and fast positions.
3. Place the choke control into the choke position.
4. Turn the key switch to on (if equipped).
5. Pull the recoil starter until the engine starts. Make sure the starting cord retracts.
6. Move throttle to full position.
7. Slowly push the engagement handle down to engage the chipper/shredder.

For a Cold Engine — Gradually return the choke control to the **off** position after the engine starts and warms up. The machine may be operated during the warm up period, but it may be necessary to leave the choke partially on until the engine warms up.

For a Warm Engine — Return choke to the **off** position as soon as engine starts.

4.2 STARTING ELECTRIC MODELS

Do not crank the engine continuously for more than 10 seconds at a time. If the engine does not start, allow a 60 second cool down period between starting attempts. Failure to follow these guidelines can burn out, or permanently damage, the starter motor.

If the engine develops sufficient speed to disengage the starter but does not keep running (a false start), the engine rotation must be allowed to come to a complete stop before attempting to restart the engine. If the starter is engaged while the flywheel is rotating, damage to the starter may result.

If the starter does not turn the engine over, shut off starter immediately. Do not make further attempts to start the engine until the condition is corrected. Do not jump start using another battery. Follow the steps below to start the machine.

1. Check engine oil level before starting.
2. Place the throttle control midway between the slow and fast positions. Place the choke control into the choke position.
3. Start the engine by activating the key switch. Release the switch as soon as the engine starts.
4. Move throttle to full position.
5. Slowly push the engagement handle down to engage the chipper/shredder.
6. **For a Cold Engine** — Gradually return the choke control to the **off** position after the engine starts and warms up. The machine may be operated during the warm up period, but it may be necessary to leave the choke partially on until the engine warms up.

For a Warm Engine — Return choke to the **off** position as soon as engine starts.

4.3 STOPPING THE CHIPPER/SHREDDER

1. Move the throttle to the slow idle position.
2. Disengage the engagement handle.
3. Allow the engine to run at idle for 30-60 seconds; stop the engine by moving the throttle to the low position or turn off ignition.
4. Allow machine to come to a complete stop.

4.4 OPERATING THE CHIPPER/SHREDDER



WARNING



Read and follow all safety instructions in this manual. Failure to operate the machine in accordance with the safety instructions **MAY RESULT IN PERSONAL INJURY!**



CAUTION



Obtain and wear safety glasses at all times when operating the machine.

Do not wear loose fitting clothing.

The operator should always wear heavy boots, gloves, pants and a long-sleeved shirt.

Use common sense and practice safety to protect yourself from branches, sharp objects, and other harmful objects.



WARNING



Never lean over the chipper chute to push objects into the cutting device. Use a push stick or brush paddle.

Never use shovels or forks to feed brush. They can cause extensive damage if they contact the blades. In addition, metal pieces can be ejected from the chipper chute and cause serious injury or death.

Never feed brush into the chute with your feet.

Never use hands or feet to clear materials that build up in the chute.

The machine chips and shreds a variety of materials into a more readily decomposed or handled condition. The following guidelines will help you get started.

1. **Run unit at full operating speed** before starting to chip material.
2. **Limbs fed in to the chipper chute must be 3 inches (7.5 cm) in diameter or less.** Trim side branches that cannot be bent enough to feed into the chipper chute. Hold small diameter branches together in a bundle and feed in simultaneously.
3. **Material fed into the shredder chute must be ¾ inches (2 cm) in diameter or less.** Common shredding materials include grass, leaves, garden refuse, sticks, and small branches.
4. **Exclude pieces of metal, rocks, bottles, cans, and other foreign objects** when feeding material into the machine.
5. **Feed brush from the side of the chipper chute,** rather than from the front. Step aside to avoid being hit by the brush moving into the chipper.
6. **Place limb, butt end first, into the chipper chute until it contacts the chipper blades.** The actual feed rate of the limb into the chipper will depend on the type of material fed and sharpness of the cutting blades.
7. **If the engine slows to where it may stall,** stop feeding material and allow the engine to recover. Feed material more evenly.
8. **If the chipper jams,** remove the branch and rotate it before reinserting it into the chute. Alternately insert and retract the limb or insert continuously at a rate that will not kill the engine.
9. **Do not use the clutch to clear a plugged rotor.** This may cause belt damage. Refer to the instructions for clearing a plugged rotor in the Service and Maintenance section.
10. **Alternate greener material with dry material** to lubricate the chipping blades for longer life and better performance. Chipping dead, dry material will create heat and dull the chipping blades quickly.
11. **Sharpen the chipping blades periodically.** Check the sharpness of the blades every 5-15 hours. Refer to the Service and Maintenance section for sharpening instructions.



WARNING



To prevent personal injury or property damage: shut off engine and make sure that all moving parts have come to a complete stop before, servicing, adjusting or repairing. Disconnect the battery and remove ignition key where applicable.

5 SERVICE & MAINTENANCE

Section

5.1 MAINTENANCE SCHEDULE

The items listed in this service and maintenance schedule are to be checked, and if necessary, corrective action taken. This schedule is designed for units operating under normal conditions. If the unit is operating in adverse or severe conditions, it may be necessary for the items to be checked and serviced more frequently.

SEE ENGINE OWNER'S MANUAL FOR FURTHER ENGINE MAINTENANCE AND TROUBLESHOOTING INFORMATION.



WARNING



To prevent personal injury or property damage: shut off engine and make sure that all moving parts have come to a complete stop before, servicing, adjusting or repairing. Disconnect the battery and remove ignition key where applicable.

SERVICE AND MAINTENANCE SCHEDULE

| COMPONENT | MAINTENANCE REQUIRED | FREQUENCY | | | | | |
|--|--|--|-----------------------|---------------------|----------------------|----------------------|---------------|
| | | REFER TO ENGINE OPERATOR'S MANUAL | BEFORE EACH USE | EVERY 8 HOURS | EVERY 25 HOURS | EVERY 50 HOURS | EVERY YEAR |
| ENGINE OIL | CHANGE (1) | ● | | | | | |
| FUEL FILTER | REPLACE | ● | | | | | |
| SPARK PLUG | CHECK CONDITION AND GAP | ● | | | | | |
| ENGINE OIL | CHECK/FILL | | ● | | | | |
| FUEL TANK | CHECK/FILL | | ● | | | | |
| ALL INTERNAL AND EXTERNAL NUTS AND BOLTS | CHECK TIGHTNESS | | ● | | | | |
| TIRE PRESSURE | CHECK | | ● | | | | |
| BATTERY CONNECTIONS | CHECK | | ● | | | | |
| CHIPPER ANVIL | CHECK CLEARANCE AND RE-TORQUE TO 75 FT-LBS. (2) | | | ● | | | |
| CHIPPER BLADES | CHECK SHARPNESS AND RE-TORQUE TO 25 FT-LBS. (2) | | | ● | | | |
| SHREDDER KNIVES | CHECK CONDITION | | | ● | | | |
| ENTIRE MACHINE | CLEAN | | | ● | | | |
| DRIVE BELT | CHECK | | | | ● | | |
| BELT TENSION | CHECK | | | | ● | | |
| BELT/PULLEY ALIGNMENT | CHECK | | | | ● | | |
| GREASE ZERKS | LUBE | | | | | ● | |
| WHEEL BEARINGS | CHECK AND REPACK | | | | | | ● |

(1) PERFORM MORE FREQUENTLY UNDER EXTREMELY DUSTY CONDITIONS.

(2) PERFORM MORE FREQUENTLY WHEN CHIPPING DRY OR DIRTY WOOD.

As the Limited Warranty states, failure by the Owner to perform normal maintenance will void the machine's warranty. The aggressive, high-speed nature of chipping REQUIRES THE OWNER TO PERFORM THE ABOVE LISTED NORMAL MAINTENANCE. Special consideration to maintain and re-torque the CHIPPER ANVIL, CHIPPER BLADES, AND ALL INTERNAL AND EXTERNAL NUTS AND BOLTS is the sole responsibility of the Owner. Failure by the Owner to do so shall be cause for denial of warranty.

⚠ WARNING ⚠
 BEFORE INSPECTING OR SERVICING ANY PART OF THIS MACHINE, SHUT OFF POWER SOURCE,
 AND MAKE SURE ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.

ENGLISH

5.2 CHIPPER BLADE MAINTENANCE

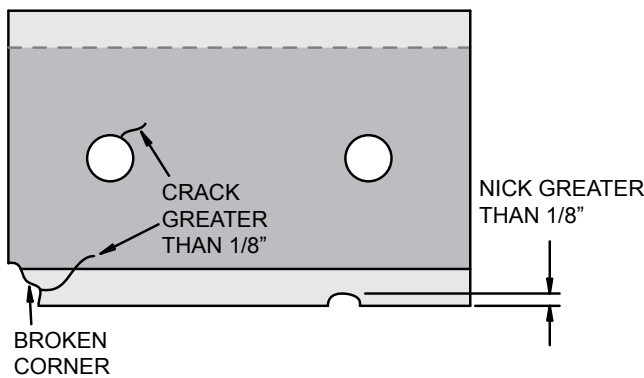
The chipper blades will eventually become dull, making chipping difficult and adding extra strain on the machine. **CHECK THE SHARPNESS OF THE BLADES EVERY 5 - 15 HOURS OF OPERATION AND SHARPEN AS NEEDED.**

Your blades need to be sharpened if:

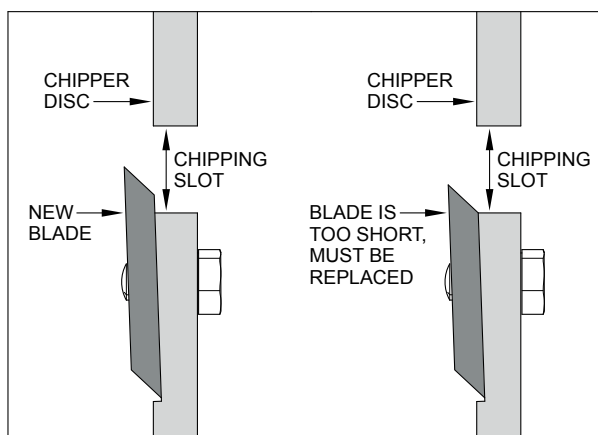
- Machine vibrates severely when material is fed into the chipper.
- Small diameter branches do not self-feed.
- Chips discharge unevenly or have stringy tails, especially when chipping green branches.

Before you sharpen the chipping blades, check for permanent damage. Replace the blade if:

- There are cracks, broken corners or nicks greater than 1/8" (see below).



- The base of the cutting edge is worn or has been re-sharpened so that it no longer extends past the chipping slot (see below).



⚠ WARNING ⚠
 The chipping blades are sharp!! Use care when working on the machine to avoid injury.

5.3 REMOVING THE BLADES

1. Flip the discharge door/shield up. For "S" models, remove the discharge assembly.
2. Remove the 5/16" x 7/8" bolt and nylock nut holding the shredder screen to the bottom of the frame.
3. Disconnect and remove the shredder screen from the machine.
4. Remove the two 5/16" x 1-1/2" hex bolts securing the chipper blade to the rotor. Repeat for the second blade.
5. Inspect blades to see if cracks or nicks are visible. If cracks are present, replace the blades. If nicks can not be removed by sharpening blade, replace the blade.

5.4 SHARPENING THE BLADES

The blades can be ground on a bench grinder or by a professional.

1. Never sharpen or grind the mounting surfaces of the blades. This will cause the edge to roll and the blade will be damaged, resulting in poor chipping performance.
2. Regrind the angled edge of the chipping blades to 45 degrees (Figure 5.1). Make sure some type of fixture is used to correctly hold the blade at the proper angle.
3. Be careful when grinding so that the blade does not become overheated and change color. This will remove the heat-treated properties.
4. Use short grinding times and cool with water or some type of liquid coolant.
5. Remove an equal amount off each blade to maintain rotor balance.
6. Small imperfections such as nicks and burrs on the flat side of the blade will not affect the chipping performance of the machine.
7. For blades that have been repeatedly sharpened, ensure that the sharpened surface extends past the chipping slot opening. If it does not extend past the opening, the blades should be replaced.

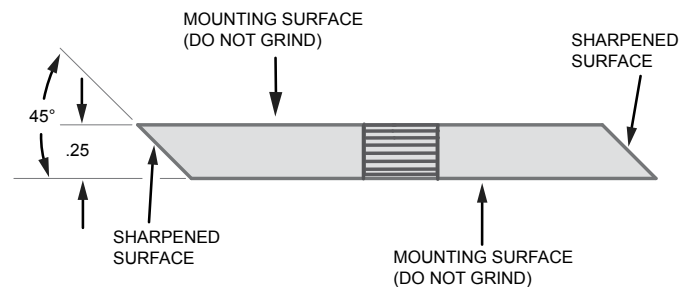


Figure 5.1

WARNING

BEFORE INSPECTING OR SERVICING ANY PART OF THIS MACHINE, SHUT OFF POWER SOURCE, AND MAKE SURE ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.

5.5 INSTALLING THE BLADES

1. Place a blade on the rotor and attach with two 5/16" x 1-1/2" bolts. Torque to 25 Ft-lb. Repeat for the second blade.
2. Attach the shredder screen to the machine with one 5/16" x 7/8" bolt and nylock nut.
3. Lower the discharge door/shield into the normal operating position. For "S" models, reinstall the discharge assembly.

5.6 ADJUSTING THE CHIPPER ANVIL

The chipping blades should clear the anvil by 1/16 inch to 1/8 inch. Check the clearance every 8 hours of operation and adjust if needed.

To adjust the anvil:

1. Remove the rotor shaft end cap and upper shield.
2. Loosen the set screws holding the lock collars on the chute side and engine side bearings (Figure 5.2).
3. Use a punch and hammer to tap the lock collars in the opposite direction of normal rotation. **On the chute side bearing, tap punch in a CW rotation. On the engine side bearing, tap punch in a CCW rotation**
4. Using a rubber mallet tap the end of the rotor shaft to obtain 1/16" to 1/8" clearance. Rotate the rotor and check the clearance on all chipping blades.
5. Once clearance has been set, the lock collars must be replaced and retightened. Using a punch and a hammer, tap the lock collars in the direction of shaft rotation (**clockwise on the engine side bearing and counterclockwise on the chute side bearing**) and set them with a hammer tap. Tighten the lock collar set screws.
6. Loosen the set screws holding the belt pulley on the rotor shaft. Move the pulley on the shaft so it is aligned with the engine drive pulley. The pulley should be moved the same amount the rotor was moved, only in the opposite direction. Torque pulley set screw to 160 In-lbs.
7. Insure the pulley drive key is completely seated under the pulley and tighten the set screws.
8. Check pulley alignment by laying a straightedge across the pulley faces. Pulley faces should line up. If not, repeat steps 6 and 7 until the pulley is lined up.

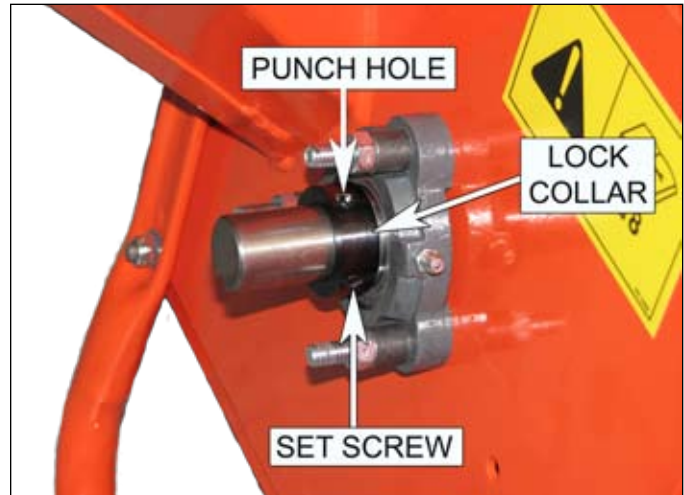


Figure 5.2 - Lock Collar

5.7 REPLACING THE SHREDDER KNIVES

The serrated shredder knives are designed to offer long life and can be reversed if they become dull. Ensure the knives and spacers are properly installed to maintain rotor balance.

Refer to the Parts Manual for a shredder knife kit. To remove the knives or to install new shredder kit, proceed as follows.



IMPORTANT



The serrated edge of the shredder knives should face the same direction as the cutting edge of the chipper blades. Never reuse the #10-24 nut and bolt. Never reuse shafts or spacers if they show signs of wear or abuse. Always install new parts when repairing.

1. Remove the lower belt guard from under engine frame, remove discharge door/shield and discharge screen.
2. Remove the 10-24 x 1-3/8" bolts and nuts from knife shafts.
3. Align shaft with the 5/8" hole in rear of frame and the small hole in front of frame by the chipper chute.
4. Using a small punch or rod, push the shaft out the 5/8" hole in rear of frame.
5. To assemble, insert shaft through the 5/8" hole in rear of frame and slide knives and spacers in their proper order onto the shaft. **Install a new 10-24 x 1-3/8" bolt and nut.**
6. Repeat steps 3 through 6 to assemble the other three shafts.
7. When completed, install the discharge screen, discharge door/shield and torque all 3/8" bolts to 33 Ft-lbs. Test run machine.

⚠ WARNING ⚠

BEFORE INSPECTING OR SERVICING ANY PART OF THIS MACHINE, SHUT OFF POWER SOURCE, AND MAKE SURE ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.

5.8 CHANGING THE DISCHARGE SCREEN

There are several optional discharge screens available in different sizes. Different size discharge screens produce different size chips. To change the discharge screen proceed as follows:

1. Lift discharge door/shield to gain access to the discharge screen.
2. Remove the 5/16" x 7/8" bolt and nut securing the discharge screen to the frame (Figure 5.3).
3. Pull discharge screen out from the bottom and rotate the top down.
4. Clean any trash or debris out from the screen area.
5. Insert the top of the replacement screen into the slot in the chipper body and push the bottom of the screen inward so bolt holes align.
6. Install the bolt from the underside upward through the frame and screen, attach nut and tighten to specified torque.

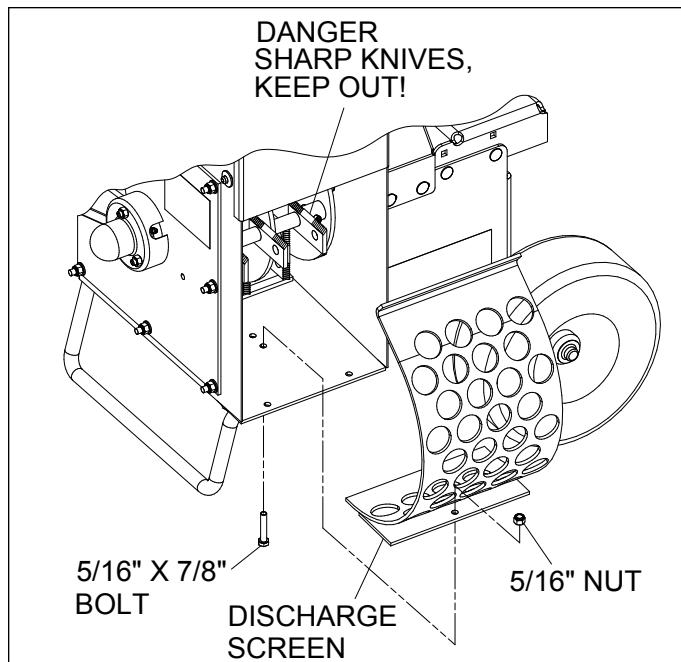


Figure 5.3 - Replacing the Discharge Screen

5.9 CLEARING A PLUGGED ROTOR

1. Remove the bolt securing the discharge screen to the frame and remove the shredder screen.
2. Clean the debris out of the shredding rotor and/or chipper discharge area and tube. Turn the rotor by hand to be sure it is free to rotate.
3. Install discharge screen and retaining bolt.

5.10 BELT GUIDE ADJUSTMENTS

The belt guide aids in disengaging the chipper/shredder. If problems arise with engaging and disengaging the unit, follow the instructions below. These instructions also adjust the lower belt guard.

1. Remove upper shield to expose the belt and pulleys.
2. Loosen set screws and using a straightedge align the engine pulley with the idler pulley and the rotor pulley with the engine pulley. Tighten all set screws.
3. Engage the clutch with the belt in place and check idler engagement. The idler pulley should impact the belt in the center of the pulley. All pulleys must be in perfect alignment. Torque pulley set screws to 160 In-lbs.
4. If idler pulley will not remain in alignment with engine and rotor pulleys, it may be necessary to replace the idler bracket bushings.
5. There should be 1/8" clearance between the belt and the lower belt guard when the clutch is engaged. Adjust by loosening the mounting bolts and repositioning the guide. Retighten mounting bolts.
6. Reinstall upper shield.
7. From underneath, check the alignment of lower belt guard with a post card (Figure 5.4). With the clutch engaged, there should be enough room between the belt and the side of the guard for the card to slide along the belt. With the clutch disengaged, the card should not be able to slide. Adjust if necessary.

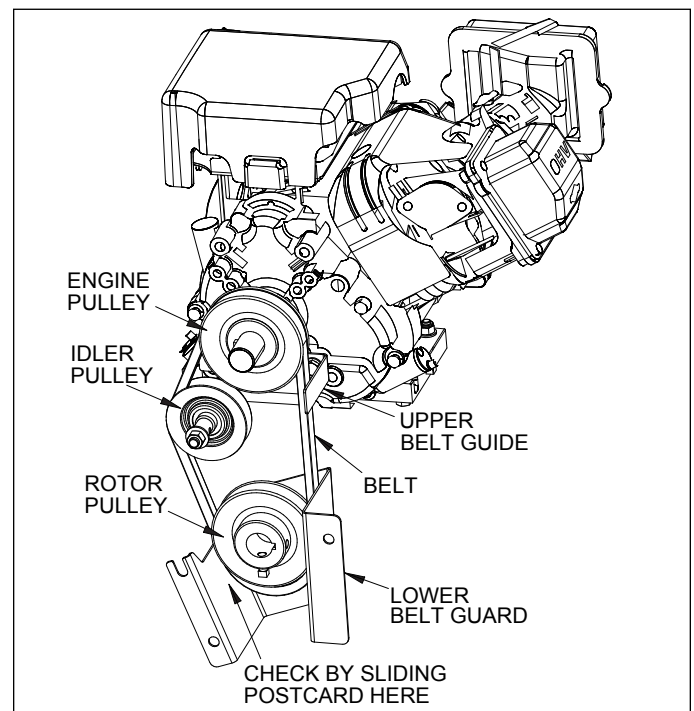


Figure 5.4 - Belt Guide Adjustments

⚠ WARNING ⚠

BEFORE INSPECTING OR SERVICING ANY PART OF THIS MACHINE, SHUT OFF POWER SOURCE, AND MAKE SURE ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.

5.11 REMOVE/REPLACE DRIVE BELT

Check the condition of the drive belt annually or after every 25 hours of operating, whichever comes first. If the belt is cracked, frayed, or worn, replace it. To replace or adjust drive belt, proceed as follows:

1. Remove the upper shield, upper belt guide and lower belt guard.
2. Remove idler pulley.
3. Slip the drive belt off the belt pulleys.
4. Inspect pulleys for wear. Replace the pulleys if they are cracked or worn so that the belt contact area is not smooth and flat.
5. Place the new belt over pulleys. Do not force or pry the belt over pulleys as this may cause cord breakage.
6. Reinstall the idler pulley.
7. Check alignment (Section 5.10).
8. Replace all shields, guides and guards.

5.12 REMOVING THE ROTOR

1. Remove discharge door/shield, screen and rotor shaft end cap.
2. Loosen the set screws on the lock collar securing the chute side bearing on the rotor shaft.
3. Using a punch and hammer, tap the lock collar in the opposite direction of normal rotation until loose; remove lock collar and bearing.
4. Remove the upper shield, upper belt guide and lower belt guard to allow access to the engine side bearing.
5. Remove the drive belt (Section 5.11).
6. Loosen the set screws holding the belt pulley on the rotor shaft and remove the pulley.
7. Repeat steps 2 and 3 on the engine side rotor bearing.
8. Remove the bolts securing the chipper chute cover to the frame and remove chipper chute cover.
9. Remove rotor.

5.13 TRAILER SERVICE TIPS

1. Check wheel bolt torque monthly.
2. Check air pressure in tires monthly.
3. Check and repack wheel bearings with grease every 12 months.
4. When towing, always connect the safety chains. Make sure trailer hitch bolts are tight.
5. Check trailer lights periodically.

5.14 LUBRICATION

Lubricate the machine periodically with a lithium-based grease. Extreme working conditions will require more frequent greasing.

Grease the following points every 50 hours of operating time:

1. Chute side bearing (Figure 5.5).
2. Engine side bearing (Figure 5.6).



IMPORTANT



Polyurea and lithium-based greases are not compatible. Mixing the two grease types may lead to premature failure.

NOTE

Do not over grease bearings. Overfilling can lead to excessive heat and/or unseating of the seals. Add grease slowly and under light pressure. Whenever possible, rotate bearing slowly while lubricating.

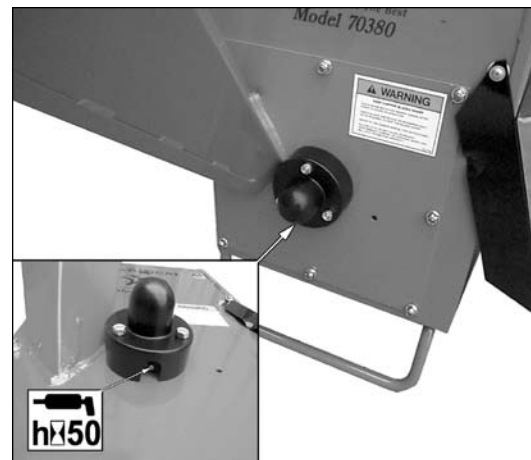


Figure 5.5 - Chute Side Bearing

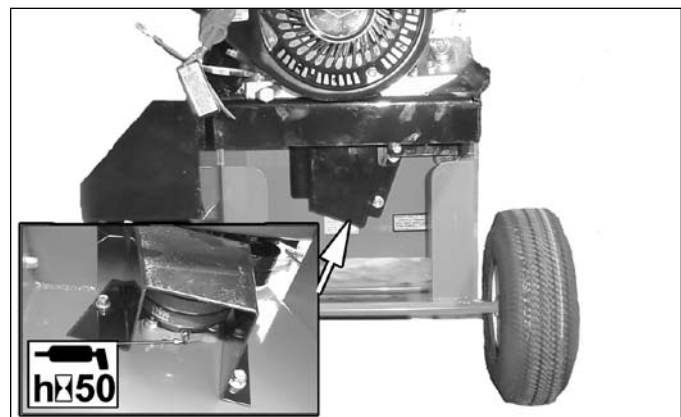


Figure 5.6 - Engine Side Bearing

6 TROUBLESHOOTING

Section

Before performing any of the corrections in this troubleshooting chart, refer to the appropriate information contained in this manual for the correct safety precautions and operating or maintenance procedures. Contact your dealer or the factory for service problems with the machine.

| PROBLEM | POSSIBLE CAUSES | REMEDY |
|---|--|--|
| Engine will not start. | Improper control settings. | Use proper settings. |
| | Lack of fuel. | Fill fuel tank. |
| | Spark plug disconnected. | Connect spark plug. |
| | Dirty, stale or contaminated gas. | Refill gas tank with fresh, clean unleaded regular gasoline. |
| | Internal engine problems. | See your dealer. |
| Engine or rotor stalls or stops. | Obstructed discharge. | Use branch or similar object to clear discharge. |
| | Plugged rotor. | Clear rotor. Feed material more evenly. |
| | Feeding material too large into shredder. | Reduce size of material being fed into shredder. |
| Chipper does not chip. | Dull chipper blades. | Rotate or sharpen blades. |
| | Drive belts loose or worn. | Inspect drive belts, adjust or replace if needed. |
| | Attempting to feed branches that are too large. | Limit branch size to 3 inches in diameter. |
| | Broken or missing chipper blades | Replace blade. |
| Engine overheats. | Cooling system plugged. | Clean cooling fan and fins. |
| | Improper oil level. | Fill engine to correct oil level. Refer to the engine owners manual. |
| Hard to feed chipper; requires excessive power to chip. | Dull chipper blades. | Reverse or sharpen blades. |
| | Obstructed discharge. | Use branch or similar object to clear discharge. |
| | Improper blade clearance. | Adjust clearance between chipper anvil and chipper blades. |
| Shredder requires excessive power or stalls. | Obstructed discharge. | Use branch or similar object to clear discharge. |
| | Plugged rotor. | Clear rotor, feed material into shredder more evenly. |
| | Wet or green material will not discharge. | Alternately feed dry material or install larger discharge screen. |
| Engine stalls or belt squeals when engaging clutch. | Engaging clutch too fast. | Engage clutch more slowly. |
| | Plugged rotor. | Clear rotor. Feed material more evenly. |
| | Belt tension too loose. | Replace belt or spring. |
| Material from chipper wraps around rotor shaft | Stringy, green material bypasses chipper blades. | Rotate branch or material when feeding to cut completely. |
| | Dull chipper blades. | Sharpen blades. |
| | Improper blade clearance. | Adjust clearance between anvil and chipper blades. |

| | | |
|------------------------------------|--|--|
| Excessive vibration while running. | Drive system vibration. | Check drive belts and pulleys for bad or worn areas. Check for dull chipper blades or shredder knives. |
| | Rotor out of balance. | Inspect rotor for broken or missing chipper blades and shredder knives; replace if needed. Check rotor to see if it wobbles. Check to see if rotor is assembled correctly. |
| | Chipper blade to anvil clearance is incorrect. | Set chipper blade/anvil clearance to recommended distance (1/16" to 1/8"). |
| Rotor will not turn. | Drive belt too loose or broken. | Replace belt or spring. |
| | Obstructed discharge. | Use branch or similar object to clear discharge. |
| | Plugged rotor. | Clear rotor. Feed material more evenly. |
| Cannot engage clutch. | Improper belt installation; belt not under belt guide. | Install belt properly; install belt under belt guide. |
| | Improper belt tension. | Adjust belt tension. Replace belt or spring if needed. |
| Excessive belt wear. | Not using correct belt. | Contact your nearest authorized dealer to order the correct belt for your chipper/shredder. |
| | Pulley(s) damaged or worn. | Replace pulley(s). |
| | Pulley(s) not in alignment. | Align pulley(s) with straight edge. |
| | Belt(s) tension too loose. | Replace belt or spring. |

7 SPECIFICATIONS

Section

7.1 SIZE SPECIFICATIONS

| SC3270 | | |
|-----------------------|--------------------|----------------------|
| DESCRIPTION | English | Metric |
| OVERALL WEIGHT | 242 LBS | 109 KG |
| MAX CHIPPER CAPACITY | 3" | 7.5 CM |
| CHIPPER BLADES | 3.125" X 2" X .25" | 7.94 X 5.08 X 0.64CM |
| MAX SHREDDER CAPACITY | .75" | 2CM |
| SHREDDER KNIVES | 12 | 12 |
| ROTOR SPEED | 3600 RPM | 3600 RPM |
| ROTOR WEIGHT | 29 LBS | 13.2 KG |
| DRIVE TYPE | BELT | BELT |
| BELT SIZE | 29" | 73.7CM |
| TIRE SIZE | 410/350-4 | 410/350-4 |
| ENGINE | 270 CC HONDA | 270 CC HONDA |

| SC3270T | | |
|-----------------------|--------------------|----------------------|
| DESCRIPTION | English | Metric |
| OVERALL WEIGHT | 242 LBS | 109 KG |
| MAX CHIPPER CAPACITY | 3" | 7.5 CM |
| CHIPPER BLADES | 3.125" X 2" X .25" | 7.94 X 5.08 X 0.64CM |
| MAX SHREDDER CAPACITY | .75" | 2CM |
| SHREDDER KNIVES | 12 | 12 |
| ROTOR SPEED | 3600 RPM | 3600 RPM |
| ROTOR WEIGHT | 29 LBS | 13.2 KG |
| DRIVE TYPE | BELT | BELT |
| BELT SIZE | 29" | 73.7CM |
| TIRE SIZE | 410/350-4 | 410/350-4 |
| ENGINE | 270 CC HONDA | 270 CC HONDA |

| SC3206 | | |
|-----------------------|--------------------|----------------------|
| DESCRIPTION | English | Metric |
| OVERALL WEIGHT | 182 LBS | 82.6 KG |
| MAX CHIIPPER CAPACITY | 3" | 7.5 CM |
| CHIPPER BLADES | 3.125" X 2" X .25" | 7.94 X 5.08 X 0.64CM |
| MAX SHREDDER CAPACITY | .75" | 2CM |
| SHREDDER KNIVES | 8 | 8 |
| ROTOR SPEED | 3600 RPM | 3600 RPM |
| ROTOR WEIGHT | 23 LBS | 10.4 KG |
| DRIVE TYPE | BELT | BELT |
| BELT SIZE | 29" | 73.7CM |
| TIRE SIZE | 410/350-4 | 410/350-4 |
| ENGINE | 190 CC B&S | 190 CC B&S |

| SC3240 | | |
|-----------------------|--------------------|----------------------|
| DESCRIPTION | English | Metric |
| OVERALL WEIGHT | 242 LBS | 109 KG |
| MAX CHIIPPER CAPACITY | 3" | 7.5 CM |
| CHIPPER BLADES | 3.125" X 2" X .25" | 7.94 X 5.08 X 0.64CM |
| MAX SHREDDER CAPACITY | .75" | 2CM |
| SHREDDER KNIVES | 12 | 12 |
| ROTOR SPEED | 3600 RPM | 3600 RPM |
| ROTOR WEIGHT | 29 LBS | 13.2 KG |
| DRIVE TYPE | BELT | BELT |
| BELT SIZE | 29" | 73.7CM |
| TIRE SIZE | 410/350-4 | 410/350-4 |
| ENGINE | 240 CC HONDA | 240 CC HONDA |

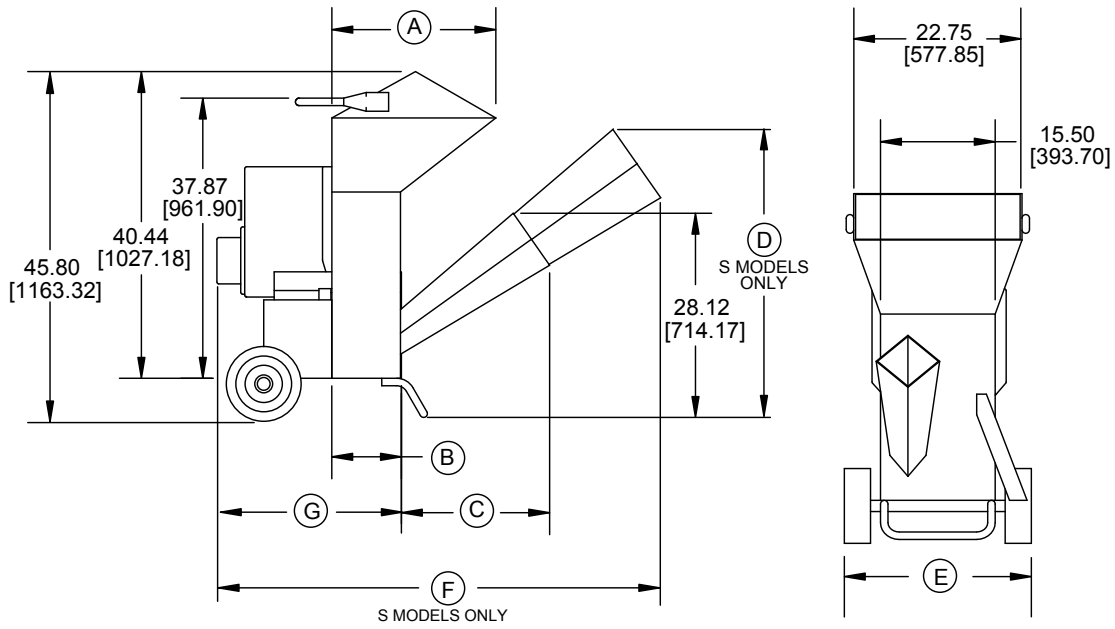
| SC3305 | | |
|-----------------------|--------------------|----------------------|
| DESCRIPTION | English | Metric |
| OVERALL WEIGHT | 217 LBS | 98.4 KG |
| MAX CHIIPPER CAPACITY | 3" | 7.5 CM |
| CHIPPER BLADES | 3.125" X 2" X .25" | 7.94 X 5.08 X 0.64CM |
| MAX SHREDDER CAPACITY | .75" | 2CM |
| SHREDDER KNIVES | 12 | 12 |
| ROTOR SPEED | 3600 RPM | 3600 RPM |
| ROTOR WEIGHT | 29 LBS | 13.2 KG |
| DRIVE TYPE | BELT | BELT |
| BELT SIZE | 29" | 73.7CM |
| TIRE SIZE | 410/350-4 | 410/350-4 |
| ENGINE | 305 CC B&S | 305 CC B&S |

| SC3240T | | |
|-----------------------|--------------------|----------------------|
| DESCRIPTION | English | Metric |
| OVERALL WEIGHT | 330 LBS | 149 KG |
| MAX CHIIPPER CAPACITY | 3" | 7.5 CM |
| CHIPPER BLADES | 3.125" X 2" X .25" | 7.94 X 5.08 X 0.64CM |
| MAX SHREDDER CAPACITY | .75" | 2CM |
| SHREDDER KNIVES | 12 | 12 |
| ROTOR SPEED | 3600 RPM | 3600 RPM |
| ROTOR WEIGHT | 29 LBS | 13.2 KG |
| DRIVE TYPE | BELT | BELT |
| BELT SIZE | 29" | 73.7CM |
| TIRE SIZE | 410/350-4 | 410/350-4 |
| ENGINE | 240 CC HONDA | 240 CC HONDA |

| SC3305E | | |
|-----------------------|--------------------|----------------------|
| DESCRIPTION | English | Metric |
| OVERALL WEIGHT | 217 LBS | 98.4 KG |
| MAX CHIIPPER CAPACITY | 3" | 7.5 CM |
| CHIPPER BLADES | 3.125" X 2" X .25" | 7.94 X 5.08 X 0.64CM |
| MAX SHREDDER CAPACITY | .75" | 2CM |
| SHREDDER KNIVES | 12 | 12 |
| ROTOR SPEED | 3600 RPM | 3600 RPM |
| ROTOR WEIGHT | 29 LBS | 13.2 KG |
| DRIVE TYPE | BELT | BELT |
| BELT SIZE | 29" | 73.7CM |
| TIRE SIZE | 410/350-4 | 410/350-4 |
| ENGINE | 305 CC B&S | 305 CC B&S |

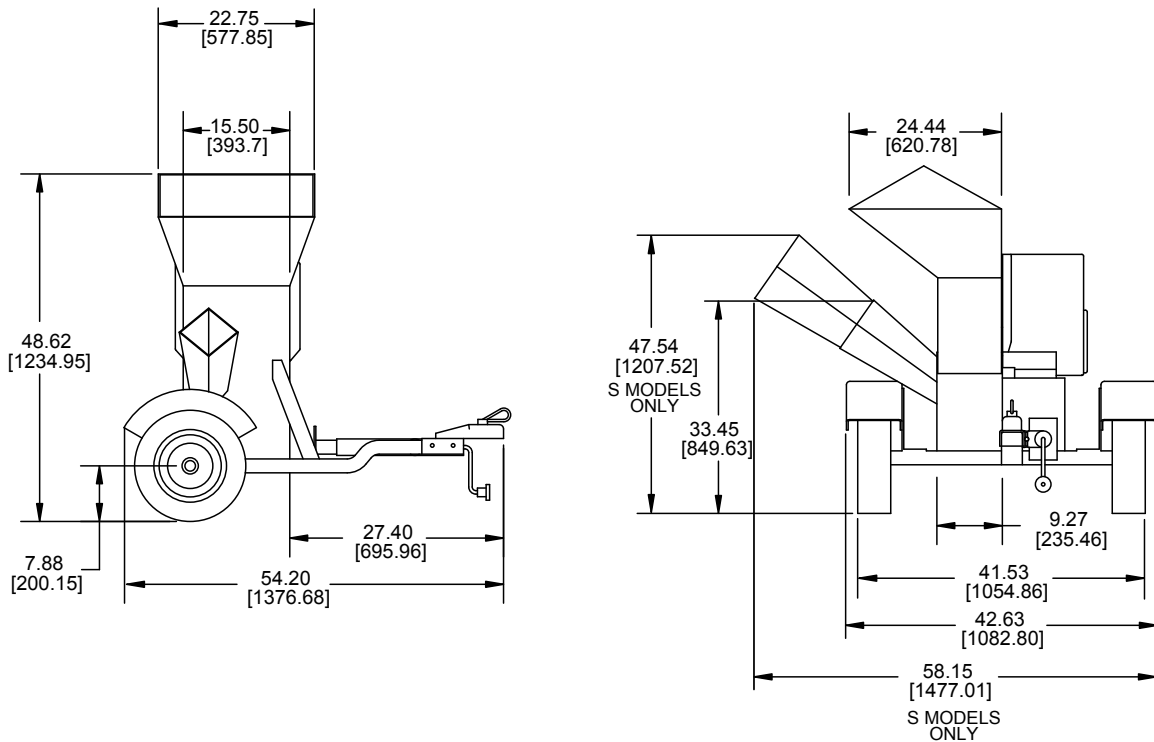
| SC3342 | | |
|-----------------------|--------------------|----------------------|
| DESCRIPTION | English | Metric |
| OVERALL WEIGHT | 232 LBS | 105 KG |
| MAX CHIIPPER CAPACITY | 3" | 7.5 CM |
| CHIPPER BLADES | 3.125" X 2" X .25" | 7.94 X 5.08 X 0.64CM |
| MAX SHREDDER CAPACITY | .75" | 2CM |
| SHREDDER KNIVES | 12 | 12 |
| ROTOR SPEED | 3600 RPM | 3600 RPM |
| ROTOR WEIGHT | 29 LBS | 13.2 KG |
| DRIVE TYPE | BELT | BELT |
| BELT SIZE | 29" | 73.7CM |
| TIRE SIZE | 410/350-4 | 410/350-4 |
| ENGINE | 342 CC B&S | 342 CC B&S |

NON-TOWABLE MACHINES



| MODEL | MEASUREMENT IN [MM] | | | | | | |
|---|------------------------|------------------|-------------------|--------------------|-------------------|--------------------|-------------------|
| | A | B | C | D* | E | F* | G |
| SC3206 (S) | 22.16 [562.86] | 6.67 [169.42] | 15.34 [389.64] | 43.25 [1098.55] | 23.98 [609.09] | 51.00 [1295.40] | 21.32 [541.53] |
| SC3305 (S) SC3305E SC3240 (S) SC3240T SC3342 SC3270 SC3270T | 24.44 [620.78] | 9.27 [235.46] | 20.04 [509.02] | 44.48 [1129.79] | 23.75 [603.25] | 54.00 [1371.60] | 25.61 [650.49] |
| * S MODELS ONLY | | | | | | | |

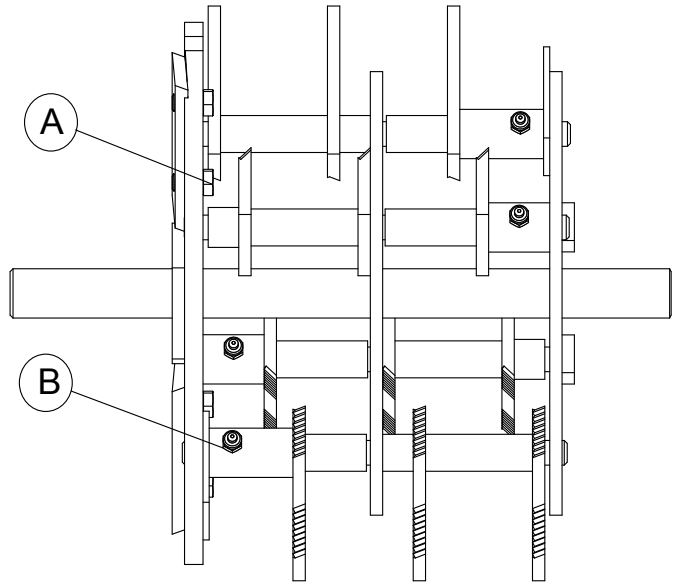
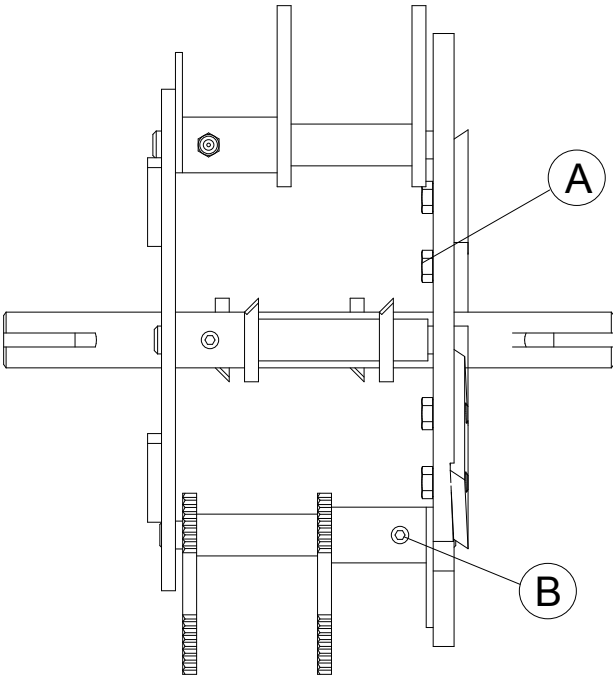
TOWABLE MACHINES



7.3 SPECIAL TORQUE REQUIREMENTS




| SPECIAL TORQUE REQUIREMENTS | | | | |
|-----------------------------|--------------------------------------|--|-----------------------|-----------------|
| | LOCATION ON MACHINE | HARDWARE DESCRIPTION | TORQUE (UNIFIED INCH) | TORQUE (METRIC) |
| A | ON ROTOR PLATE, BLADE MOUNTING BOLTS | 5/16" X 1" HEX HD. GRADE 8 BOLTS (QTY 8) | 25 Ft-lbs. | 34 N.m |
| B | ON ROTOR KNIFE SHAFTS | 10-24 X 1-1/8" SCREW (QTY 6) | 36 In-lbs. | 4 N.m |

ENGLISH







7.2 BOLT TORQUE

The tables below are for reference purposes only and their use by anyone is entirely voluntary, unless otherwise noted. Reliance on their content for any purpose is at the sole risk of that person and any loss or damage resulting from the use of this information is the responsibility of that person.

| SAE Grade and Head Markings | SAE - 2 | SAE - 5 | SAE - 8 | BOLT DIAMETER |
|-----------------------------|---|---|---|---------------|
| |  |  |  | |

| BOLT DIAMETER (A) | ENGLISH | | | | | |
|-------------------|---------------|--------|-------|--------|-------|--------|
| | BOLT TORQUE * | | | | | |
| | SAE 2 | | SAE 5 | | SAE 8 | |
| | N.m | Ft-lb. | N.m | Ft-lb. | N.m | Ft-lb. |
| 1/4" | 7.5 | 5.5 | 11 | 8 | 16 | 12 |
| 5/16" | 15 | 11 | 23 | 17 | 34 | 25 |
| 3/8" | 27 | 20 | 41 | 30 | 61 | 45 |
| 7/16" | 41 | 30 | 68 | 50 | 95 | 70 |
| 1/2" | 68 | 50 | 102 | 75 | 149 | 110 |
| 9/16" | 97 | 70 | 149 | 110 | 203 | 150 |
| 5/8" | 122 | 90 | 203 | 150 | 312 | 230 |
| 3/4" | 217 | 160 | 353 | 260 | 515 | 380 |
| 7/8" | 230 | 170 | 542 | 400 | 814 | 600 |
| 1" | 298 | 220 | 786 | 580 | 1220 | 900 |
| 1-1/8" | 407 | 300 | 1085 | 800 | 1736 | 1280 |
| 1-1/4" | 570 | 420 | 2631 | 1940 | 2468 | 1820 |

| METRIC Grade and Head Markings | 4.8 | 8.8 | 10.9 | 12.9 | BOLT DIAMETER |
|--------------------------------|---|---|---|---|---------------|
| |  |  |  |  | |

| BOLT DIAMETER (A) | METRIC | | | | | | | |
|-------------------|---------------|--------|------|--------|------|--------|------|--------|
| | BOLT TORQUE * | | | | | | | |
| | 4.8 | | 8.8 | | 10.9 | | 12.9 | |
| | N.m | Ft-lb. | N.m | Ft-lb. | N.m | Ft-lb. | N.m | Ft-lb. |
| M3 | 0.5 | 0.4 | - | - | - | - | - | - |
| M4 | 3 | 2.2 | - | - | - | - | - | - |
| M5 | 5 | 4 | - | - | - | - | - | - |
| M6 | 6 | 4.5 | 11 | 8.5 | 17 | 12 | 19 | 14.5 |
| M8 | 15 | 11 | 28 | 20 | 40 | 30 | 47 | 35 |
| M10 | 29 | 21 | 55 | 40 | 80 | 60 | 95 | 70 |
| M12 | 50 | 37 | 95 | 70 | 140 | 105 | 165 | 120 |
| M14 | 80 | 60 | 150 | 110 | 225 | 165 | 260 | 190 |
| M16 | 125 | 92 | 240 | 175 | 350 | 255 | 400 | 300 |
| M18 | 175 | 125 | 330 | 250 | 475 | 350 | 560 | 410 |
| M20 | 240 | 180 | 475 | 350 | 675 | 500 | 800 | 580 |
| M22 | 330 | 250 | 650 | 475 | 925 | 675 | 1075 | 800 |
| M24 | 425 | 310 | 825 | 600 | 1150 | 850 | 1350 | 1000 |
| M27 | 625 | 450 | 1200 | 875 | 1700 | 1250 | 2000 | 1500 |

* Torque value for bolts and capscrews are identified by their head markings.

Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: 70050

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}

Guaranteed Sound Power Level: 111 dB L_{WA}

70050 Serial number X00064 thru 709824

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

The authorized representative in Europe who is authorized to compile the technical file:

Company: Atlantic Bridge Limited

Address: Atlantic House, PO Box 4800

Earley, Reading RG5 4GB, United Kingdom

Mr. Phillip Wicks

Data contained in this document pertains only to machines sold in areas that require CE compliance standards. To identify if your machine is CE compliant, it will have the following CE mark decal:



Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO
Type: Engine driven Chipper/Shredder
Model Number: 70050E

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}
Guaranteed Sound Power Level: 111 dB L_{WA}

70050E Serial number 706369 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

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Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: Crary Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: 70050S

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}

Guaranteed Sound Power Level: 111 dB L_{WA}

70050S Serial number X00237 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: 70080

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 98 dB L_{PA}

Guaranteed Sound Power Level: 112 dB L_{WA}

70080 Serial number X00113 thru 709656

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

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Earley, Reading RG5 4GB, United Kingdom

Mr. Phillip Wicks

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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO
Type: Engine driven Chipper/Shredder
Model Number: 70080E

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 98 dB L_{PA}

Guaranteed Sound Power Level: 112 dB L_{WA}

70080E Serial number 702306 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

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Earley, Reading RG5 4GB, United Kingdom

Mr. Phillip Wicks

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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: Crary Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: 70080S

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 98 dB L_{PA}

Guaranteed Sound Power Level: 112 dB L_{WA}

70080S Serial number X00111 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

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Mr. Phillip Wicks

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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: 70380

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}

Guaranteed Sound Power Level: 111 dB L_{WA}

70380 Serial number X00195 thru 709833

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

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Address: Atlantic House, PO Box 4800

Earley, Reading RG5 4GB, United Kingdom

Mr. Phillip Wicks

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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO
Type: Engine driven Chipper/Shredder
Model Number: 70380E

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}

Guaranteed Sound Power Level: 111 dB L_{WA}

70380E Serial number 706548 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

The authorized representative in Europe who is authorized to compile the technical file:

Company: Atlantic Bridge Limited

Address: Atlantic House, PO Box 4800

Earley, Reading RG5 4GB, United Kingdom

Mr. Phillip Wicks

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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: Crary Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: 70380S

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}

Guaranteed Sound Power Level: 111 dB L_{WA}

70380S Serial number Y00962 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

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Address: Atlantic House, PO Box 4800

Earley, Reading RG5 4GB, United Kingdom

Mr. Phillip Wicks

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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: 75311

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 94 dB L_{PA}

Guaranteed Sound Power Level: 114 dB L_{WA}

75311 Serial number 400486 thru 709843

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

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Address: Atlantic House, PO Box 4800

Earley, Reading RG5 4GB, United Kingdom

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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO
Type: Engine driven Chipper/Shredder
Model Number: 75311E

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 94 dB L_{PA}

Guaranteed Sound Power Level: 114 dB L_{WA}

75311E Serial number 706541 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

The authorized representative in Europe who is authorized to
compile the technical file:

Company: Atlantic Bridge Limited

Address: Atlantic House, PO Box 4800

Earley, Reading RG5 4GB, United Kingdom

Mr. Phillip Wicks

Data contained in this document pertains only to machines sold in areas that require CE compliance standards. To identify if your machine is CE compliant, it will have the following CE mark decal:



Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified new unit:

CHIPPER SHREDDER

Brand: ECHO Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: SC3265 & SC3265XE

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}

Guaranteed Sound Power Level: 111 dB L_{WA}

SC3265 Serial number A08787 and up
SC3265XE Serial number B01542 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



Arlan Mathias
Senior Project Engineer

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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: SC3206 & SC3206XE

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}

Guaranteed Sound Power Level: 111 dB L_{WA}

SC3206 Serial number 709896 and up
SC3206XE Serial number 709949 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



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The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: Crary Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: SC3206XS

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}

Guaranteed Sound Power Level: 111 dB L_{WA}

SC3206XS Serial number 802350 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



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The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: SC3305XE

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 98 dB L_{PA}

Guaranteed Sound Power Level: 112 dB L_{WA}

SC3305 Serial number 710265 and up
SC3305XE Serial number 708586 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: Crary Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: SC3305XS

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 98 dB L_{PA}

Guaranteed Sound Power Level: 112 dB L_{WA}

SC3305XS Serial number 801076 and up

West Fargo, ND 58078-0849
June 29, 2011
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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO
Type: Engine driven Chipper/Shredder
Model Number: SC3305E

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 98 dB L_{PA}

Guaranteed Sound Power Level: 112 dB L_{WA}

SC3305E Serial number 708586 and up

West Fargo, ND 58078-0849
June 29, 2011
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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: SC3342 & SC3342XE

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 94 dB L_{PA}

Guaranteed Sound Power Level: 114 dB L_{WA}

SC3342 Serial number 709937 and up
SC3342XE Serial number 709844 and up

West Fargo, ND 58078-0849
June 29, 2011
CRARY INDUSTRIES, INC.



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Declaration of Conformity

The undersigned manufacturer:

Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: Crary Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: SC3342XS

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 94 dB L_{PA}

Guaranteed Sound Power Level: 114 dB L_{WA}

SC3342XS Serial number 703327 and up

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Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: ECHO Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: SC3270 & SC3270XE

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}

Guaranteed Sound Power Level: 111 dB L_{WA}

SC3270 Serial number 802156 and up
SC3270XE Serial number 803184 and up

West Fargo, ND 58078-0849
June 29, 2011
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Crary Industries, Inc.
237 NW 12th Street
P.O. Box 849
West Fargo, ND 58078-0849

Declares that hereunder specified unit:

CHIPPER SHREDDER

Brand: Crary Bear Cat
Type: Engine driven Chipper/Shredder
Model Number: SC3270XS

Complies with the requirements of:

Machinery Directive 2006/42/EC

Garden equipment-Integrally power shredders/chippers-Safety EN13683:2003 + A3 2009

Emission of Gaseous and Particulate Pollutants Directive 2002/88/EC

EN ISO 12,100, Part 1-Safety of Machinery-Basic Concepts, General Principles for Design

Noise Emissions Directive 2000/14/EC

-Conformity Assessment Procedure: Annex V
(Use of harmonized standard EN ISO 3744:2010)

Sound Pressure Level: 97 dB L_{PA}

Guaranteed Sound Power Level: 111 dB L_{WA}

SC3270XS Serial number 802136 and up

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ECHO BEAR CAT
www.bearcatproducts.com
237 NW 12th Street, West Fargo, ND 58078-0849
Phone: 701.282.5520 • Toll Free: 800.247.7335 • Fax: 701.282.9522
E-mail: service@bearcatproducts.com • sales@bearcatproducts.com

