5 INCH CHIPPER SHREDDER BLOWER

OWNER'S MANUAL

SC5627B

627cc Briggs & Stratton®

P/N: 78525-00
Revision: 20230227
VIN Range: 5VJAA0213NW006978 - Current

Companion to P/N: 78526-00

CRARY
BEAR CAT®
UNLEASH THE POWER.™

Before You Begin

DEAR Crary Bear Cat® CUSTOMER

Thank you for purchasing an Crary Bear Cat product. The Crary 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 888-625-4520.

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

This document is based on information available at the time of its publication. Crary 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.

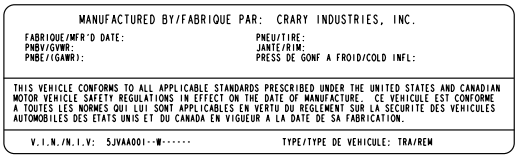
IMPORTANT WARRANTY REGISTRATION

IF YOU HAVE NOT REGISTERED YOUR CRARY BEAR CAT PRODUCT, PLEASE DO SO TODAY. TO REGISTER YOUR CRARY BEAR CAT PRODUCT ON-LINE AT HTTPS://WWW.BEARCATPRODUCTS.COM/SUPPORT/PRODUCT-REGISTRATION/ OR CALL OUR CUSTOMER SERVICE LINE AT (888) 625-4520 FOR ASSISTANCE IN REGISTRATION.

IDENTIFICATION NUMBER LOCATION

Your machine will have a 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: 5VJAA001XXWXXXXXX. For the exact location of the VIN, see the parts manual available at bearcatproducts.com/Product-Support/Find-A-Product-Manual.

Record your identification number in the space provided below.


MANUFACTURED BY/FABRIQUE PAR: CRARY INDUSTRIES, INC.

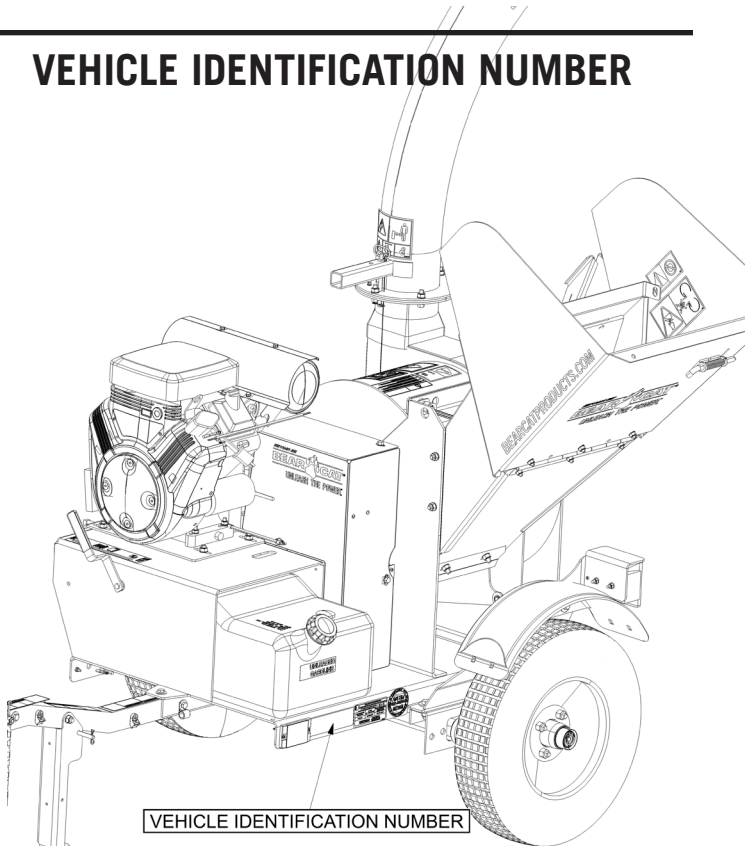
FABRIQUE/MFR'D DATE:
PNBV/GVWR:
PNBE/(GAWR):

PNEU/TIRE:
JANTE/RIM:
PRESS DE GONF A FROID/COLD INFL:

THIS VEHICLE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED UNDER THE UNITED STATES AND CANADIAN MOTOR VEHICLE SAFETY REGULATIONS IN EFFECT ON THE DATE OF MANUFACTURE. CE VEHICULE EST CONFORME A TOUTES LES NORMES QUI LUI SONT APPLICABLES EN VERTU DU REGLEMENT SUR LA SECURITE DES VEHICULES AUTOMOBILES DES ETATS UNIS ET DU CANADA EN VIGUEUR A LA DATE DE SA FABRICATION.

V.I.N./N.I.V: 5JVAA001--M------ TYPE/TYPE DE VEHICULE: TRA/REM

VEHICLE IDENTIFICATION NUMBER



CARB Preemption Statement

Your Crary Industries (Crary) gasoline or diesel fueled engine powered equipment (Equipment) is certified and compliant to applicable U.S. Environmental Protection Agency (EPA) standards. Your Crary Equipment matches an Equipment Type "preempted" from California Air Resources Board (CARB) jurisdiction. Farm and Construction equipment such as your Crary Equipment is beyond CARB's authority to regulate and therefore subject only to EPA standards in the US, including in California. Please reference the CARB List to Determine Preempt Off-Road Applications on http://www.arb.ca.gov/msprog/offroad/preempt.htm for more information. As the owner, you must still follow all engine and Equipment operating, maintenance and repair instructions. Other local use or national standards and registration requirements, such as the CARB Portable Equipment Registration Program may apply.

LIMITED WARRANTY

This warranty applies to all Crary® Bear Cat® Outdoor Power Equipment manufactured by Crary Industries, Inc. and does not include gas engine or electric powered pressure washers under the Crary Bear Cat brand. See Crary Bear Cat Pressure Washer Limited Warranty for complete warranty details on those products.

Crary Industries, Inc. warrants to the original owner each new Crary Bear Cat product to be free from defects in material and workmanship, under normal use and service. The warranty shall extend, from date of purchase, three years (U.S. and Canada only [two years outside U.S. and Canada]) for Consumer use of the product, one year for Commercial applications and six months for Rental applications. Replacement parts and accessories are warranted for 90 days from date of installation. Batteries for Inverters and Generators are warranted for 90 days from the date of purchase.

“Consumer” defined as:Complete unit for personal, residential, or non-income producing use.

“Commercial” defined as:Complete unit for commercial, institutional, property management, agricultural,horticultural or income producing use.

“Rental” defined as:Complete unit for rental purposes to produce income.

The product is warranted to the original owner by either a completed warranty registration on file at Crary Industries, Inc. and/or proof of sale. Warranty coverage begins on the date of purchase. The warranty registration can be registered on-line by visiting bearcatproducts.com/Product-Support/Product-Registration.

In the event of a failure, return the product, at your cost, along with proof of purchase to the selling Crary Bear Cat dealer. Crary Industries, Inc. 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 an authorized Crary Bear Cat 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, Inc. does not warrant replacement components not manufactured or sold by Crary Industries, Inc.

1. This warranty applies only to parts or components that are defective in material or workmanship.
2. This warranty does not cover normal wear items including, but not limited to: batteries, bearings, belts, pulleys, filters, chipper blades, shredder knives.
3. This warranty does not cover normal maintenance, service, or adjustments.
4. This warranty does not cover depreciation or damage due to misuse, negligence, accident, or improper maintenance.
5. This warranty does not cover damage due to improper setup, installation, or adjustment.
6. This warranty does not cover damage due to unauthorized modifications of the product.
7. Engines are warranted by the respective engine manufacturer and are not covered by this warranty.

Crary Industries, Inc. is not liable for any property damage, personal injury or death resulting from the unauthorized modification or alteration of an Crary Bear Cat 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, Inc. 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, Inc. 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, Inc. or to modify the terms or limitations of this warranty in any way. Crary Industries, Inc., at its discretion, may periodically offer limited, written enhancements to this warranty.

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

TABLE OF CONTENTS

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 FIRE HAZARD INFORMATION

Federal, state, and local laws may prohibit the operation of 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 arrestor in continuous effective working order.

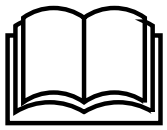
The engine on your power equipment, like most outdoor power equipment, is an internal combustion engine that burns gasoline or diesel fuel (hydrocarbons). If operating your power equipment in affected areas, it must be equipped with a spark arrestor in continuous effective working order. The spark arrestor 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 federal, state, and local laws may subject him or her to fines and/or other penalties. Contact your local fire marshal or forest service for specific information about which regulations apply in your area.

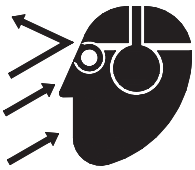
The standard muffler installed on the engine is spark arrestor capable. Spark arrestors require regular maintenance. See the Service & Maintenance section of this manual for more information.

Contact local fire authorities for laws or regulations regarding fire prevention requirements.

1.3 BEFORE OPERATING

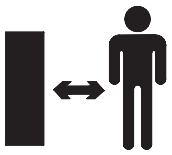


1. Read and understand this owner's manual. Be completely familiar with the controls and the proper use of this equipment.
2. Familiarize yourself with all of the safety and operating decals on this equipment and on any of its attachments or accessories.
3. Keep safety decals clean and legible. Replace 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 judgement. 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 shields in place. Failure to do so may cause serious injury or death.
14. Keep all guards, deflectors, 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 rotor 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 resharpen 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 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.

1.6 MAINTENANCE/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.

1.7 TOWING SAFETY

1. Position and lock the discharge tube to face the opposite direction of the towing vehicle prior to towing.
2. 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.
3. Do not exceed the maximum towing speed indicated on tire sidewall. Inflate tires to manufacturer's specifications as stated on the tire sidewall.
4. Optimum towing performance can be achieved by maintaining a horizontal trailer hitch.
5. Check wheel lug bolts periodically to ensure they are tight and secure.
6. 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.
7. Never allow passengers to ride on the machine.
8. If applicable, shut off fuel supply when towing.
9. 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.

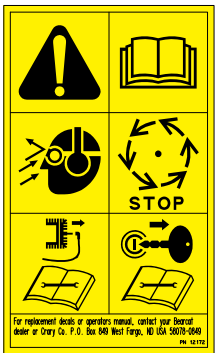
1.8 SAFETY DECALS

See Section 1.9 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.

1 PN 12169

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.

2 PN 12172



Read and understand this owner/operators manual. Be completely familiar with the controls and the proper use of 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, remove the key, disconnect spark plug wire from spark plug and make sure all moving parts have come to a complete stop.

3 PN 12173

Do not operate this equipment in the vicinity of bystanders. Do not allow children to operate this equipment. Always stand clear of discharge area when operating this machine. Keep face and body away from discharge areas.

4 PN 12174

Do not operate machine without shields in place. Failure to do so may cause serious injury or death.

5 PN 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.

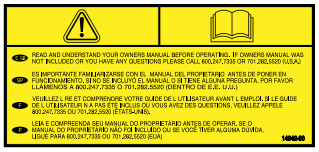
6 PN 12176

Do not insert branches larger than 3/4 inch into shredder or machine damage may occur.

7 PN 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.

8 PN 14942-00

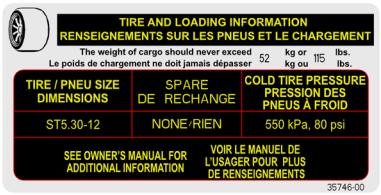


Read and understand you owners manual before operating. If owners manual was not included or you have any questions, please call 800.247.7335 or 701.282.5520 (U.S.A.).

9 PN 32109-00

Do not operate this equipment in the vicinity of bystanders. Do not allow children to operate this equipment. Always stand clear of discharge area when operating this machine. Keep face and body away from discharge areas. Rotate the discharge tube over the hitch before towing and lock securely in place.

10 PN 35746-00



11 PN 33883-00

Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

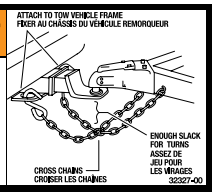
12 PN 32327-00 ENG. & FR. (32339-00 ESP. & PORT.)

⚠ WARNING

ALWAYS use safety chains.
Chains hold trailer if connection fails.
You must:
- CROSS chains underneath coupler.
- ALLOW slack for trailer to turn.
- ATTACH chain hooks securely to tow vehicle frame.

⚠ AVERTISSEMENT

TOUJOURS utiliser des chaînes de sécurité.
Les chaînes retiennent la remorque en cas de défaillance de la connexion.
Vous devez :
- CROISER les chaînes sous le coupleur.
- LAISSER assez de jeu pour permettre à la remorque d'effectuer les virages.
- FIXER solidement les crochets de chaîne au châssis du véhicule remorqueur.



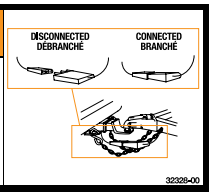
13 PN 32328-00 ENG. & FR. (32340-00 ESP. & PORT.)

⚠ WARNING

Lights can prevent trailer from being hit by other vehicles. You must:
- CONNECT trailer and tow vehicle electrical connectors.
- CHECK all lights: tail lights, turn signal, and brake lights.
- DO NOT TOW if lights are not working.

⚠ AVERTISSEMENT

Les feux peuvent empêcher la remorque d'être heurtée par d'autres véhicules.
Vous devez:
- BRANCHER les connecteurs électriques de la remorque et du véhicule remorqueur.
- VÉRIFIER tous les feux : feux arrière, clignotants et feux de freinage.
- NE PAS REMORQUER si les feux ne fonctionnent pas.



14 PN 32330-00 ENG. & FR. (32342-00 ESP. & PORT.)

⚠ WARNING

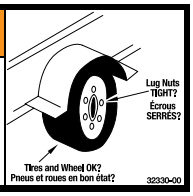
Tire, wheel or lug nut failure can cause loss of control. Before towing, you must CHECK:
- Tire pressure and tread.
- Tires and wheels for damage.
- Lug nuts for tightness.

For new and remounted wheels, re-tighten lug nuts at the first 10, 25 and 50 miles of driving.

⚠ AVERTISSEMENT

La défaillance des pneus, des roues ou des écrous de roue peut provoquer une perte de contrôle. Avant de procéder au remorquage, vous devez VÉRIFIER:
- La pression des pneus et l'état de la bande de roulement.
- L'état des pneus et des roues.
- Le serrage des écrous de roue.

Sur les roues neuves ou remontées, resserrer les écrous de roue après les 16, 40 et 80 premiers kilomètres (10, 25 et 50 miles).



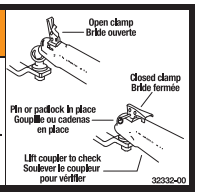
15 PN 32332-00 ENG. & FR. (32341-00 ESP. & PORT.)

⚠ WARNING

Uncoupling will cause trailer to come loose from tow vehicle. You must:
- CHECK that ball LOAD RATING is same as or greater than coupler LOAD RATING.
- CHECK that ball SIZE is same as coupler.
- CLOSE COUPLER CLAMP on ball.
- LIFT coupler upwards to test that it will not separate from ball.
- LOCK coupler clamp with pin or padlock.

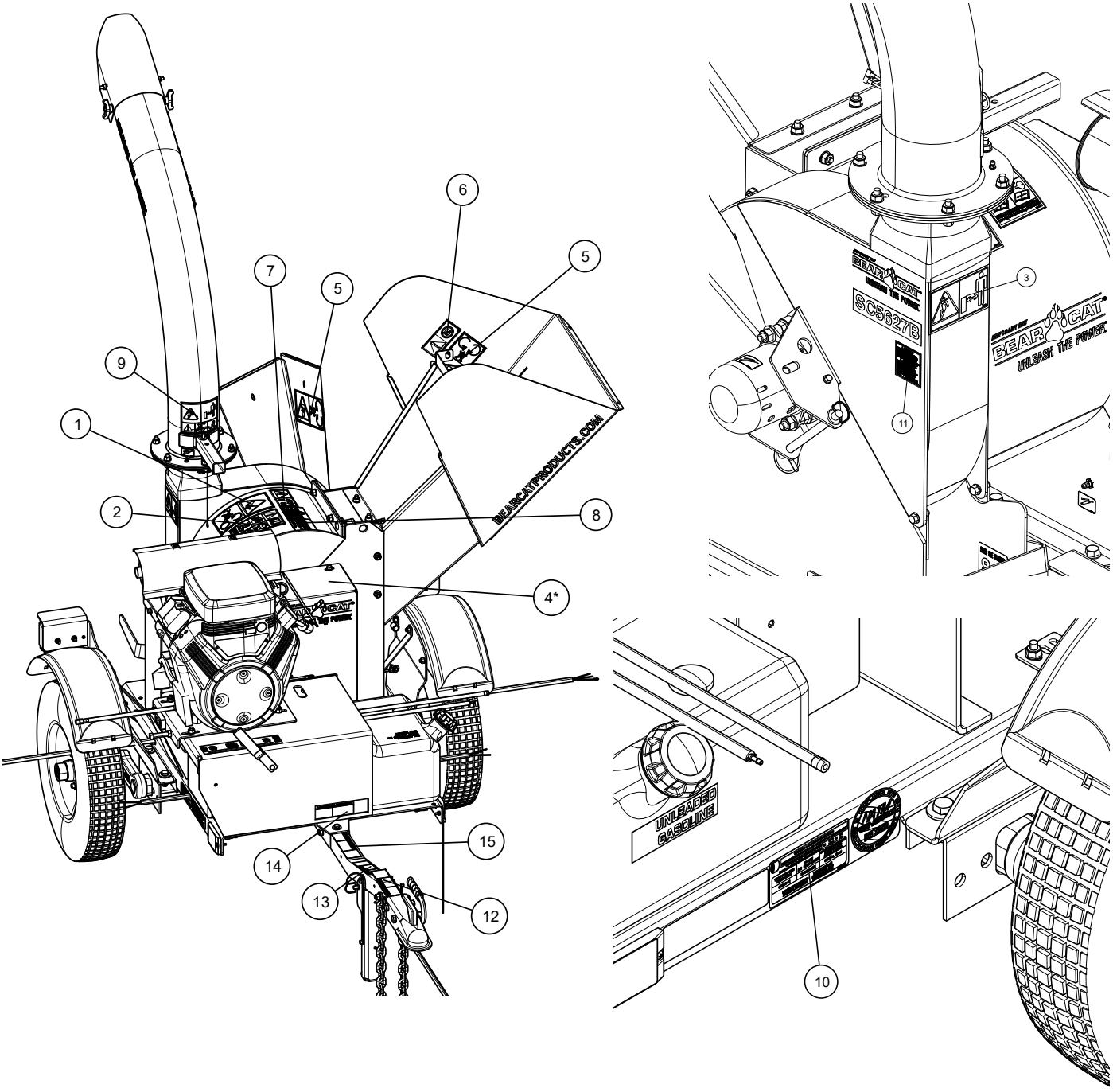
⚠ AVERTISSEMENT

Lors du désaccouplement, la remorque se détache du véhicule remorqueur. Vous devez:
- VÉRIFIER que la CHARGE DE BASE de la rotule est égale ou supérieure à la CHARGE DE BASE du coupleur.
- VÉRIFIER que la DIMENSION de la rotule est a même que celle du coupleur.
- FERMER LA BRIDE DE SERRAGE DU COUPLEUR sur la rotules.
- SOULEVER le coupleur pour vérifier qu'il ne se séparera pas de la rotule.
- VERROUILLER la bride de serrage du coupleur au moyen d'une goupille ou d'un cadenas.



1.9 SAFETY DECAL LOCATIONS

The numbers below correspond to the decals in Section 1.8. Make certain that all safety and operating decals on this machine are kept clean and in good condition. Decals that need replacement must be applied to their original locations.



*Decal located under shield

2 ASSEMBLY
Section

WARNING

If any bolts or nuts are dropped in the machine, be sure to remove them before starting the machine.

2.1 ATTACH TRAILER WHEELS

1. Hold one wheel to a hub and align the wheel lug holes with the hub lug studs.
2. Thread the lug nuts on the hub studs and tighten to 75 ft-lbs. Follow a star pattern when tightening lug nuts.
3. Repeat for the remaining wheel.

2.2 ATTACH HITCH ASSEMBLY

1. First, attach the hitch pole assembly (10) to the hitch channel in the trailer deck bottom with two 3/8 × 3 1/4" bolts (1), washers (2) and nylock nuts (3) and one 3/8 × 3" bolt (4), washer (2) and nylock nut (3). (See Figure 2.1)
2. Next, place the two hitch plates (5) over the axle and attach to hitch pole using two 1/2 × 3 1/4" bolts (6), two washers (7) and two nylock nuts (9) as shown in Figures 2.1 and 2.2.
3. Coated clamps (8) will be used for wiring harness mounting and routing purposes. Place wiring harness in clamps before securing the clamps in place on the bolts. (See Figures 2.1 and 2.3 for clamp locations and mounting details.)

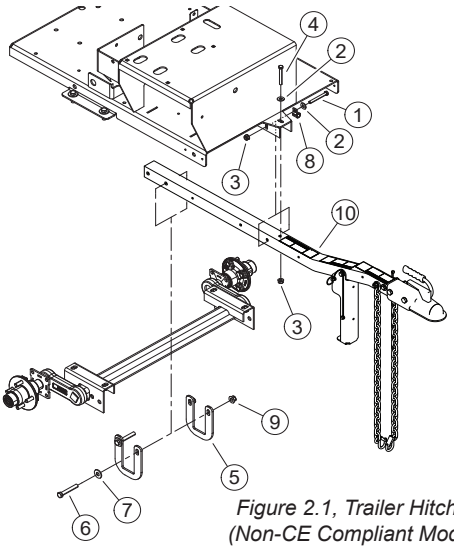
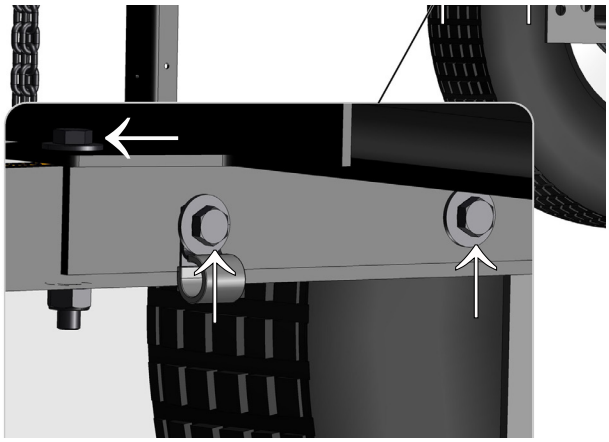


Figure 2.1, Trailer Hitch Assembly (Non-CE Compliant Model Shown)



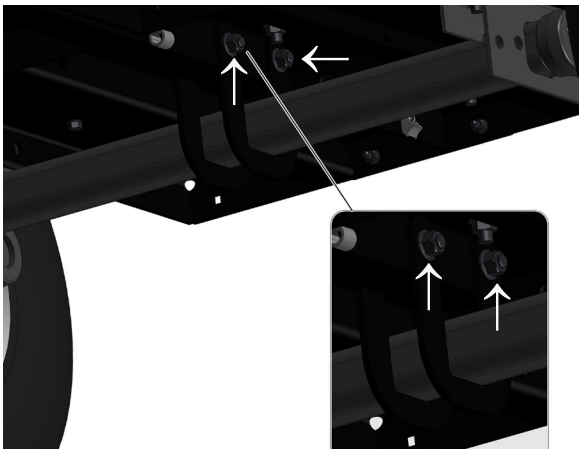


Figure 2.2, Hitch Attachment Locations

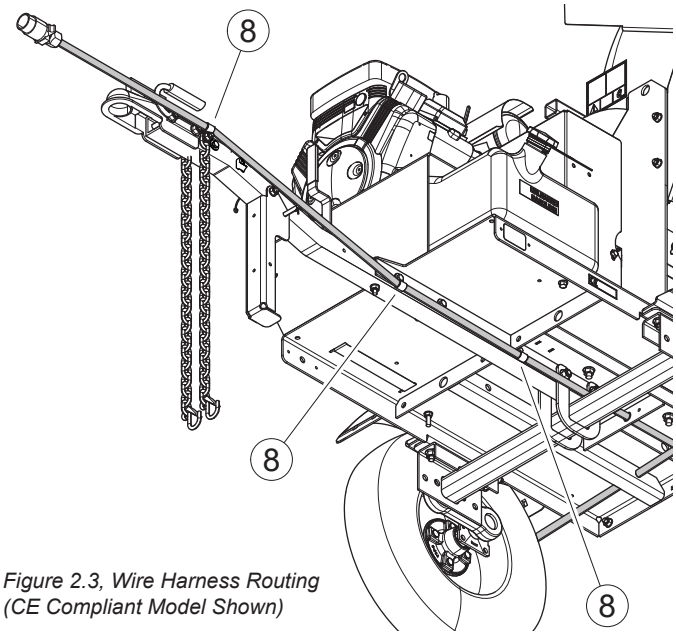


Figure 2.3, Wire Harness Routing (CE Compliant Model Shown)

2.3 ATTACH DISCHARGE TUBE

1. Attach the discharge deflector (7) to the discharge tube. Connect the deflector with two 5/16 × 1-1/4" bolts (8) through the lower holes in the discharge tube. Run these bolts through the inside of the tube, 3/8" washer (12), deflector, 5/16" washer (13), and then knob (9).
2. Finish bolting the deflector to the tube with two 5/16 × 1" bolts (10) through the end holes in the discharge tube and secure with 5/16" washers and nylock nuts (11). (See Figure 2.4)

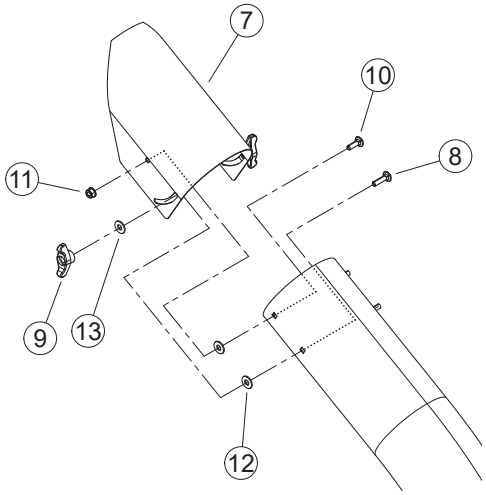


Figure 2.4, Attach Discharge Deflector

3. Attach one handle side clamping ring (1) and one spacer ring (2) to discharge tube base (3) using three 3/8 × 1-1/4" bolts (4) and nylock nuts (5). Tighten leaving 1/16" gap to assist in mounting to flange. (See Figure 2.4.2.)
4. Slide the tube onto the mounting flange on the chipper frame. The discharge clamp (1) should slide underneath the lip of the flange. Tighten the bolts and nuts to secure it.
5. Attach lanyard with discharge pin (6) as shown in Figure 2.4.2. Loop on lanyard installed below nut located under discharge handle.

NOTE

Keep nuts as tight as possible while allowing the discharge tube to freely turn.

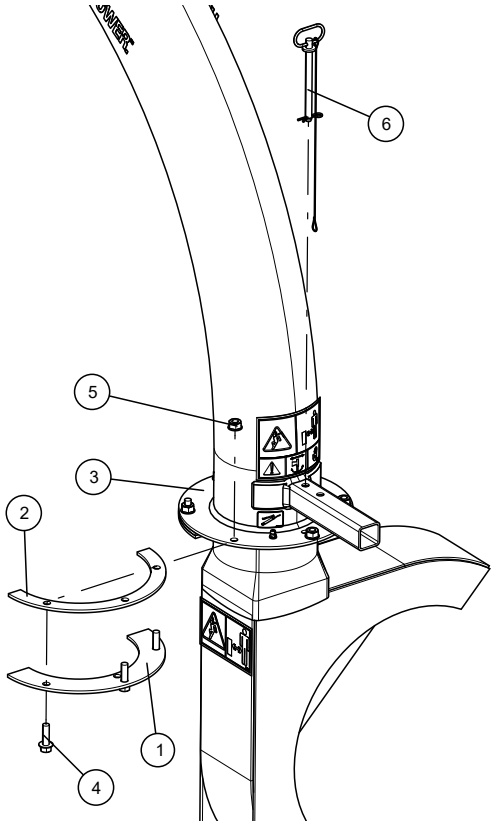


Figure 2.4.2, Attach Clamp Ring and Spacer

6. Install the second half of the spacer (2) and clamp ring (1) on the discharge tube with 3/8 × 1-1/4" bolts (4) and nylock nuts (5). (See Figure 2.4.3)
7. Lubricate the chute by applying grease to the grease zerk at the base of the chute. Rotate the chute and apply grease until the chute rotates freely.
8. Rotate the tube 360 degrees and lock it in place with the lock pin to make sure it is mounted correctly.

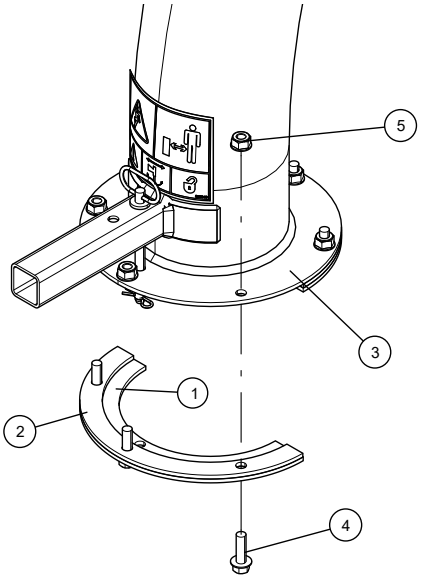


Figure 2.4.3, Attach Discharge Tube

2.4 ATTACH SHREDDER CHUTE TRAY

1. Align the shredder chute tray (1) on the shredder chute (2) so that the chute sits on top of the hinge.
2. Attach the shredder chute tray (1) with the supplied three 5/16 × 3/4" carriage bolts (3) and 5/16" nylock nuts (4).

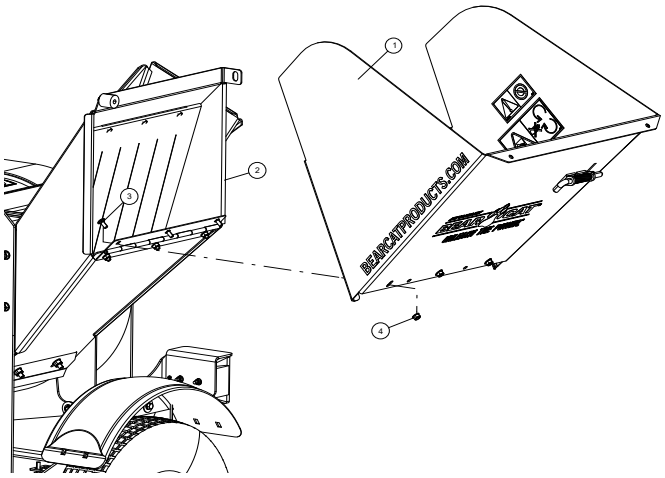


Figure 2.7, Shredder Chute and Shredder Chute Tray

2.5 ADD OIL TO ENGINE

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.

2.6 INSTALL BATTERY

You will need to purchase a battery. Choose a battery that meets or exceeds the engine manufacturer's specifications. Consult your engine owner's manual or authorized dealer for specification details.

To install the battery:

1. Open the battery box and insert battery into the battery box.
2. Attach the positive (red) battery cable from the engine to the positive (+) battery terminal.
3. Attach the negative (black) battery cable from the engine to the negative (-) battery terminal.
4. Secure the cover on the battery box with the strap.

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.

2.7 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.

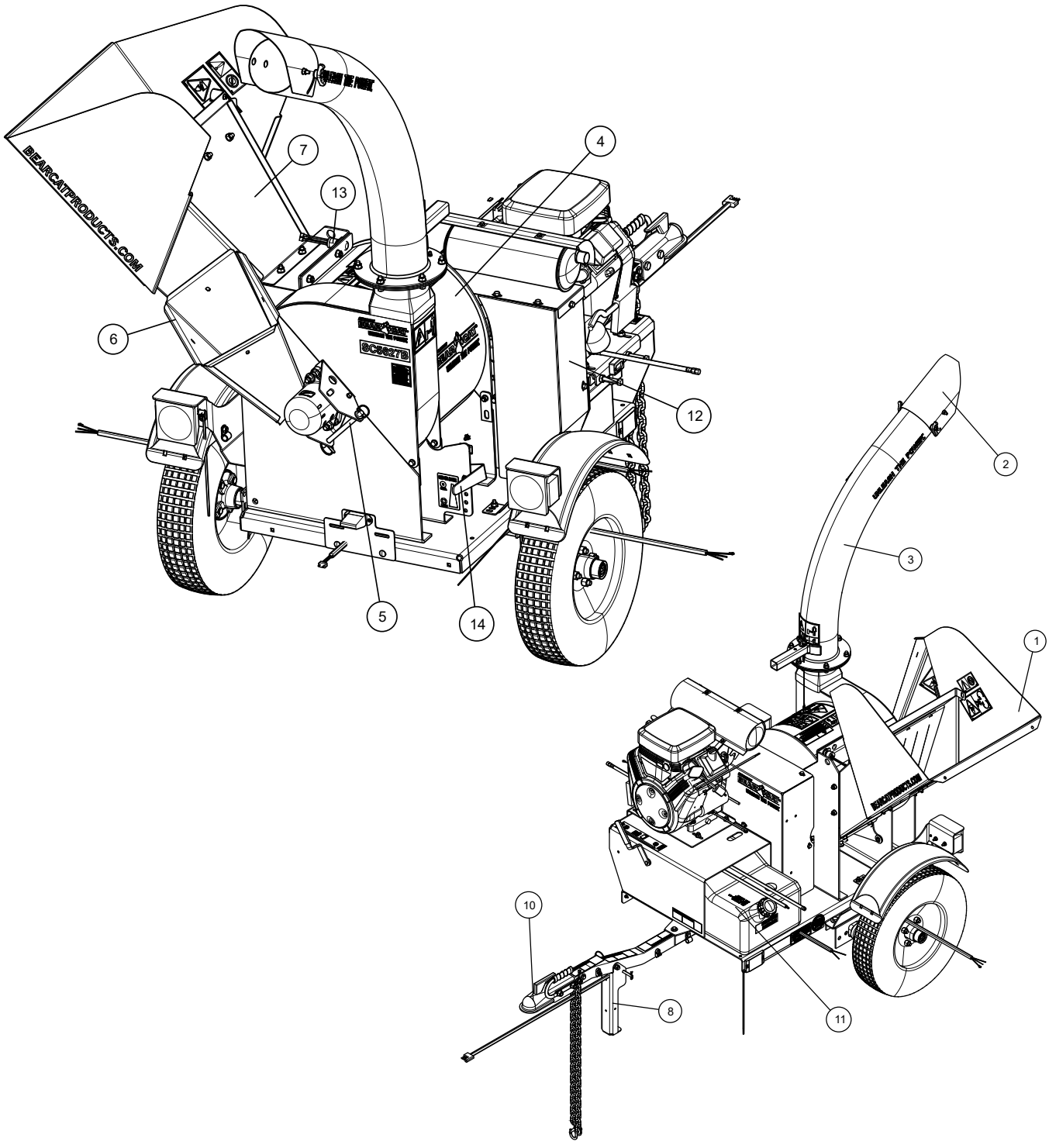
To add fuel:

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.

3 Section FEATURES & CONTROLS

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

REFER TO ENGINE OWNER'S MANUAL FOR FURTHER ENGINE OPERATING INSTRUCTIONS.



1. CHUTE EXTENSION TRAY

The feed chute has an extension tray that folds down. Raise the extension tray to an upright position and secure with latch before towing the machine.

2. DISCHARGE DEFLECTOR

Directs the discharge of material vertically. Adjust the discharge deflector by turning the knobs located on the side. Turn knob counterclockwise to loosen discharge deflector. Adjust to desired position. Turn knob clockwise to secure discharge deflector.

3. DISCHARGE TUBE

Directs the discharge of chipped material horizontally. The discharge tube can be rotated 360° horizontally by removing the pin and rotating the discharge tube until the discharge faces the desired position. Replace the pin in one of the holes on the base of the discharge.

4. KNIFE ACCESS COVER

The knife access cover is used to access the shredder knives and chipper blades in order to check them or remove them for sharpening.

5. ROTOR LOCK

Use the rotor lock to hold the rotor in place when doing any maintenance work. See Section 5.2.

6. CHIPPER CHUTE

Feed branches no larger than 5 inches (12.5 cm) in diameter into the chipper chute

7. SHREDDER CHUTE

Feed sticks and branches no larger than 3/4 inch (2 cm) in diameter into the shredder chute.

8. JACK STAND

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.

9. SAFETY CHAINS

Safety chains are used, during towing, to prevent the chipper from completely separating from the tow vehicle in the event the chipper detaches from the tow vehicle. Cross the safety chains under the hitch and connect to tow vehicle.

10. COUPLER

2 inch coupler for non-CE compliant models. 50 mm coupler for CE compliant models. Always use safety chains when towing.

11. FUEL TANK

Fuel level indicator is located on top.

12. BELT GUARD

Remove the belt guard to access the drive belt. Never remove shields when in use.

13. SAFETY SWITCH

This machine is equipped with a engine kill safety switch that prevents the the engine from starting unless the knife access cover is closed.

14. SHREDDER ADJUSTER

Move the shredder adjuster lever up to produce smaller sized shredded material. Move the shredder adjuster lever down to produce larger sized shredded material.

4 OPERATION
Section

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

CHIPPING

The chipping takes place in the smaller, side chute. Feed branches with a diameter no larger than 5 inches into the chipper chute. Material fed into the chipper chute is sliced into small chips and propelled out through the discharge tube.

SHREDDING

The shredding takes place in the larger, rear chute. Feed branches and other yard materials no larger than 3/4 inch in diameter into the shredder chute. Material fed into the shredder chute is shredded and propelled out through the discharge tube.

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.

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.

4.1 STARTING ENGINE

BEFORE ATTEMPTING TO START THIS MACHINE, MAKE SURE THE BELT IS DISENGAGED AND THE HANDLE IS IN THE "START" POSITION.

NEVER ATTEMPT TO START MACHINE WITH THE DRIVE BELT ENGAGED.

1. Check fuel and engine oil levels before starting.
2. Move the belt engagement lever to START position.
3. Move throttle lever to 1/3 of full throttle. To start a cold engine, place the choke control into the CHOKE position.
4. Turn key to the START postion. Release the key switch as soon as the engine starts. Gradually move the choke lever to the RUN position as the engine warms up.
5. Slowly move belt engagement lever to the CHIPPING position to engage the rotor.
6. Increase engine RPM to full throttle once belt is engaged.

- **For a cold engine:** Gradually return the choke to the OFF position after the engine starts and warms up.
- **For a warm engine:** Use of choke may not be necessary for restart of a warm engine. If it is needed, return choke to the OFF position once the engine starts.

4.2 OPERATING THE CHIPPER

After the engine has been started and properly allowed to warm to an operating temperature, you can begin operating the chipper. To properly start and operate the chipper, follow the steps below:

1. **AFTER** engine is warmed and ready for use, move the throttle control back to approximately 25% of full throttle.
2. When engine is running at approximately 25% of full throttle, **SLOWLY** engage belt by using the belt engagement lever.

   DO NOT engage the belt with engine running at high RPM.

   Engaging belt while engine is running at high RPM will result in significant belt squealing and damage.

   Engaging belt while engine is running at high RPM can also damage vital drive components of the chipper.
3. If the chipper engine stalls while engaging the belt, return the engagement handle back to the START position, restart engine, **SLIGHTLY** increase throttle and attempt engagement again.
4. Once the belt is engaged, **SLOWLY** increase throttle to 100% or full throttle.
5. **ALWAYS** run the chipper at 100% or full throttle when chipping material.

4.3 CHIPPER OPERATION GUIDELINES

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!**

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

1. **Gradually increase engine speed until full throttle is achieved.**
2. **ALWAYS** run engine at full operating speed before starting to chip material.
3. **If the chipper rotor slows,** stop feeding material. Allow the rotor to process backed up material. Feed material more evenly.
4. **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.
5. **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.
6. **Limbs fed in to the chipper chute must be 5 inches (12.7 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.
7. **Material fed into the shredder chute must be 3/4 inches (2 cm) in diameter or less.** Common shredding materials include grass, leaves, garden refuse, sticks, and small branches.

WARNING

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

8. **Alternate green or fresh cut 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 quicker.
9. **ALWAYS 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.
10. **ALWAYS 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.
11. **NEVER use the belt engagement 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.
12. **NEVER** attempt to clear a plugged rotor or discharge with the engine running. **ALWAYS** shut engine OFF and remove the spark plug wire before servicing any part of this machine.
13. **NEVER** attempt to chip pieces of metal, rock, bottles, cans or other foreign objects.

CAUTION

- **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.

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.

4.4 SHREDDER ADJUSTER

The size of shredded materials produced by the machine can be regulated with the shredder adjuster lever. Move the lever up for a smaller shredded product. Move it down for a larger shredded product.

Figure 4.1, Shredder Adjuster Lever Location

4.5 SLOWING AND STOPPING THE CHIPPER ROTOR AND ENGINE

NEVER disengage the belt as part of the stopping or shut down process. The belt should remain engaged during the entire shutdown process.

Leaving the belt engaged is a vital part of proper shutdown and ensures the rotor stops spinning in conjunction with the engine shutting off.

TO PROPERLY SLOW DOWN AND STOP THE ROTOR AND ENGINE

1. With the belt still engaged, slowly move the throttle to the SLOW position with the belt still engaged.
2. Allow the engine to run at slow idle for 30-60 seconds.
3. Stop the engine by moving the throttle to the STOP position or turning off the ignition switch.
4. Allow rotor to come to a complete stop.
5. Once the engine is off and the rotor has completely stopped, the belt can be disengaged by moving the belt engagement handle back to the START position.

NOTE

The rotor will continue to turn for some time after the engine has been shut off. Make sure rotor has stopped completely before inspecting or servicing machine.

5 Section SERVICE & MAINTENANCE

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.

SERVICE AND MAINTENANCE SCHEDULE						
			FREQUENCY			
COMPONENT	MAINTENANCE REQUIRED	REFER TO ENGINE OPERATOR'S MANUAL	BEFORE EACH USE	EVERY 8 HOURS	EVERY 25 HOURS	EVERY 50 HOURS
Air cleaner	Check and clean (1)	●				
Air intake	Clean (1)	●				
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 flails	Check condition			●		
Entire machine	Clean			●		
Spark arrestor*	Clean			●		
Drive belt	Check				●	
Belt tension	Check				●	
Belt/pulley alignment	Check				●	
(1) Perform more frequently under extremely dusty conditions.						
(2) Perform more frequently when chipping dry or dirty wood.						
*If equipped						
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.

5.2 ROTOR LOCK

WARNING

The rotor assembly has a lock mechanism. When working on the rotor assembly, use the lock mechanism at all times.

Follow the steps below to install the rotor lock:

1. There is a hole in the shaft cap, the rotor shaft and a matching hole in the bracket mounted to the rotor bearing.
2. Rotate the rotor assembly until the hole on the rotor shaft lines up with the holes in the rotor shaft cap and bracket.
3. Install pin into the rotor shaft cap, bracket and shaft.
4. Remove pin when service and/or maintenance is completed.

Figure 5.1, Rotor Lock

5.3 OPEN/CLOSE ACCESS COVER

Follow the steps below to open or close the access cover:

1. Rotate the discharge tube so it is parallel to the access cover.
2. To open the access cover, remove the two 3/8 × 1-1/4" bolts and nuts that secure the cover to the chipper housing.
3. Close the access cover and secure to the chipper housing using two 3/8 × 1-14" bolts and nuts.

5.4 CHIPPER BLADES MAINTENANCE

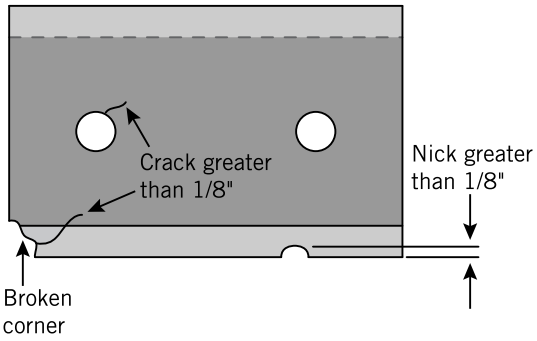
The chipper blades will eventually become dull, making chipping difficult and adding extra strain on the machine. **CHECK THE SHARPNESS OF THE BLADES EVERY 5-15 HOURS OF OPERATION AND SHARPEN AS NEEDED.**

Your blades need to be sharpened if:

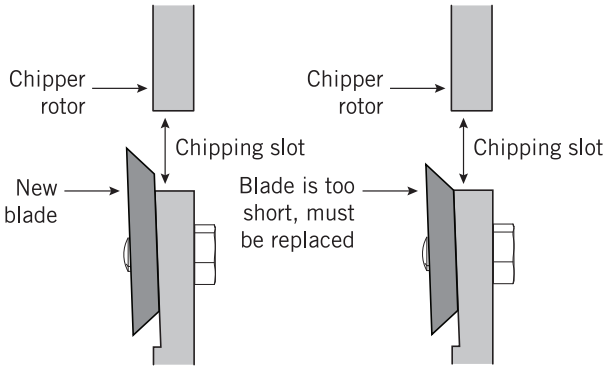
- Machine vibrates severely when material is fed into the chipper.
- Chips discharge unevenly or have stringy tails, especially when chipping green branches.

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

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 REMOVING THE BLADES

WARNING

Chipping blades are sharp! Use caution when working on machine to avoid injury.

1. Stop engine, disengage rotor clutch and allow machine to come to a complete stop. Remove the spark plug wire.
2. Remove the two 3/8" retaining bolts securing the access cover to the main frame assembly.
3. Open access cover to allow access to rotor. Rotate the rotor so that the bolts holding the chipper blades are accessible.
4. Install the rotor lock (Section 5.2). The rotor is now restrained for removing the blades. To access the remaining blades, remove pin and reposition rotor. Return pin to the rotor lock hole.
5. Remove the two 5/16" hex head bolts holding the blade itself. Repeat for the second blade. Torque 5/16" bolts to 25 ft-lbs. The hardware can be reused. Repeat for the remaining blade.
6. The blades have two edges and can be reversed one time before sharpening.

5.6 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 chopping blades to 45 degrees (Figure 5.2). Use the blade angle gauge plate when sharpening the blades to achieve the proper angle (see Figure 5.3).
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 (see Section 5.4).

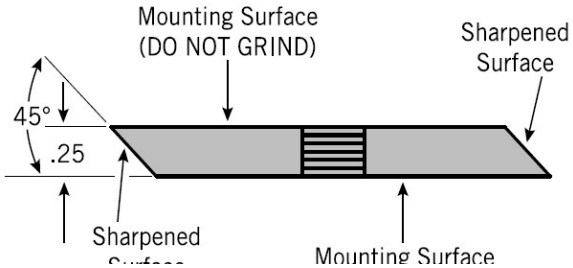


Figure 5.2, Chipper Blade Surfaces

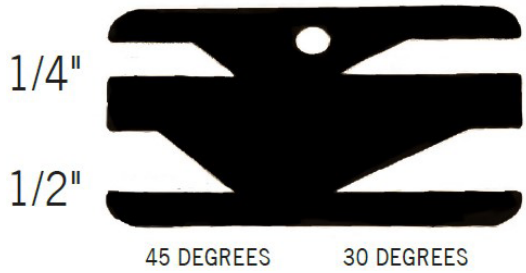


Figure 5.3, Blade Angle Gauge Plate

5.7 INSTALLING THE BLADES

1. Install the rotor lock (Section 5.2). The rotor is now restrained for installing the blades.
2. Place a blade on the rotor and attach using original hardware. Torque the bolts to 25 ft-lbs. (34 Nm). Repeat for the remaining blade.
3. Lower the access cover and secure to the chipper housing using two 3/8" retaining bolts.
4. Remove rotor lock.

5.8 SETTING CHIPPER BLADE CLEARANCE

The chipping blades should clear the anvil by 1/16" but not more than 1/8". Check the clearance every 8 hours of operation and adjust if needed. The chipping anvil is reversible. All four sides of the anvil can be used for chipping.

⚠ 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.

To adjust the anvil:

1. Stop engine, disengage rotor clutch and allow machine to come to a complete stop. Remove the spark plug wire.
2. Remove the 3/8" carriage bolts securing the rotor access cover. Turn discharge tube so it points toward the ground as you open the cover.
3. Remove the dust cover on the front side of the machine.
4. Remove the belt guards on the rear of the machine.

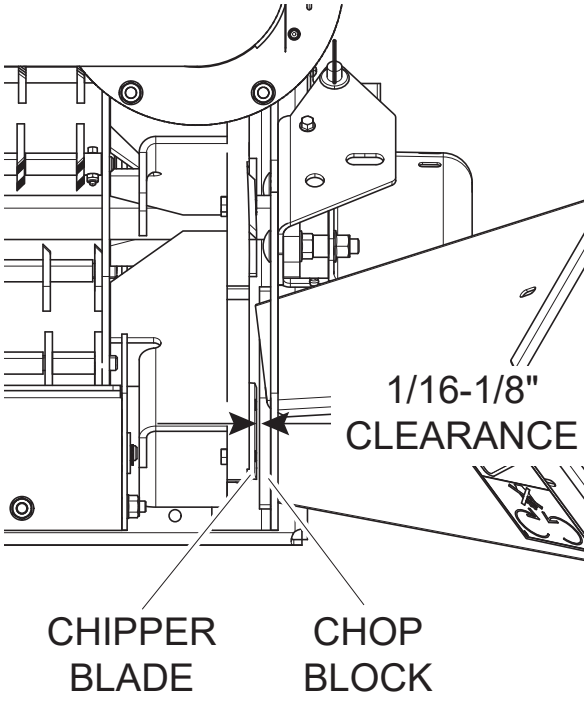


Figure 5.4, Chipper Blade/Anvil Clearance

5. Loosen the set screws holding the lock collars on the front and rear 2-bolt flange bearings.
6. Use a punch and hammer to tap the lock collars directly opposite normal rotation. (On the front side, tap punch in a CW rotation. On the rear side, tap punch in a CCW rotation
7. 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.
8. Once clearance has been set, the lock collars must be replaced and retightened. Using a punch and a hammer, rotate the lock collars in the direction of shaft rotation (i.e., counter-clockwise on the rear bearing and clockwise on the front bearing) and set them with a positive hammer tap. Tighten the lock collar set screws.
9. 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 an equal but opposite amount that the rotor was moved.
10. Insure the pulley drive key is completely seated under the pulley and tighten the set screws.
11. Check pulley alignment by laying a straight-edge across the pulley faces. Pulley faces should line up. If not, determine which pulley to adjust and repeat alignment check.
12. Replace the belt guard and plastic bearing cap.

5.9 SHREDDER KNIVES MAINTENANCE

Do not attempt to sharpen shredder knives. Inspect the knives often for signs of damage.

If a knife has any sign of cracking or is broken in any way, it should be replaced immediately.

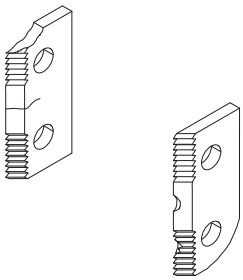


Figure 5.5, Examples of Damage to Knives

5.10 REMOVING THE SHREDDER KNIVES

To replace shredder knives or spacers, order Shredder Knife Kit. Follow the complete installation instructions.

⚠ WARNING ⚠

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.

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 TRAILER MAINTENANCE 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.

5.12 CLEARING A PLUGGED ROTOR

WARNING

If the machine becomes plugged, lift the engagement handle, shut off the engine, disconnect the spark plug wire and allow the machine to come to a complete stop before clearing debris. Do not operate the machine without proper guards and shields in place.

Feeding too large or too much material at once may plug the chipper. To clear a plugged rotor, proceed as follows:

1. Stop engine, disengage rotor and allow machine to come to a complete stop. Remove the spark plug wire.
2. Remove the 3/8" carriage bolts securing the rotor access cover. Turn discharge tube so it points toward the ground as you open the cover.
3. Clean the debris out of the shredding rotor and/or chipper top discharge area and tube. Turn the rotor by hand to be sure it is free to rotate.
4. Replace spark plug wire, restart engine and resume operation.

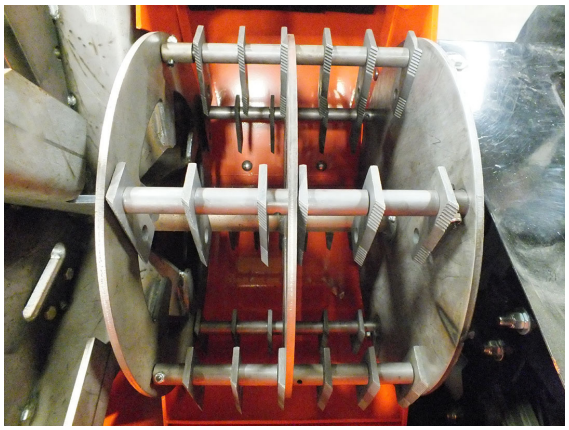


Figure 5.6, Rotor Access

5.13 REMOVING THE ROTOR

Loosen and remove the 3/8" carriage bolt securing the knife access cover.

1. Stop engine, disengage rotor and allow machine to come to a complete stop. Remove the spark plug wire.
2. Remove the 3/8" carriage bolts securing the rotor access cover. Turn discharge tube so it points toward the ground as you open the cover.
3. Loosen the bushing bolts holding the drive pulley to the shaft and remove the pulley.
4. Loosen the set screw in the lock collars. Using a punch and hammer, tap the lock collars in a direction opposite of normal rotation so that they can be removed.
5. Unbolt bearings and lift rotor out of machine.
6. Remove bearings from rotor shaft.
7. Re-install rotor assembly and bearings and tighten bolts to proper torque.

5.14 DRIVE BELT

Check the condition of the drive belt annually or after every 25 hours of operation, whichever comes first. If the belt is cracked, worn, frayed, or stretched, replace it. To replace the belt:

1. Stop engine, disengage rotor and allow machine to come to a complete stop. Remove the spark plug wire.
2. Place the engagement handle in the START position.
3. Remove the 5/16 × 3/4" bolts and washers securing the shields in place and remove shields.
4. Slip the drive belt off the pulleys. If necessary, loosen the engine bolts and slide the engine forward to allow the belt to slip off the pulley.
5. Inspect pulleys for wear. Replace the pulleys if they are cracked or worn enough that the belt contact area is not smooth and flat.
6. Place new belt over pulleys. Do not force or pry the belt over pulleys as this may cause cord breakage. If necessary, loosen engine mounting bolts and tip the engine forward to allow the belt to be easily placed over the pulley.
7. Align the engine so the crankshaft is parallel to the rotor shaft. Tighten engine mounting bolts to 20 ft-lbs. torque.

⚠ 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.

8. Check pulley alignment. Place a straightedge across the face of both pulleys to inspect. If necessary, loosen the set screws on both pulleys and move them so that they are directly in line. Be sure that the idler pulley contacts near the center of the belt. Retighten the pulley set screws.
9. Replace upper and lower belt guards. Allow 1/8 inch clearance between top of belt and inside of lower belt guard. Make sure all bolts, nuts and fasteners are properly torqued to 20 ft-lbs.

NOTE

With a new drive belt, the rotor may rotate with the engagement handle in START position. Within a short period, the belt will relax and the rotor should disengage. If the rotor does not disengage even after a short period, check pulley alignment and idler mechanism or return to your dealer for service.

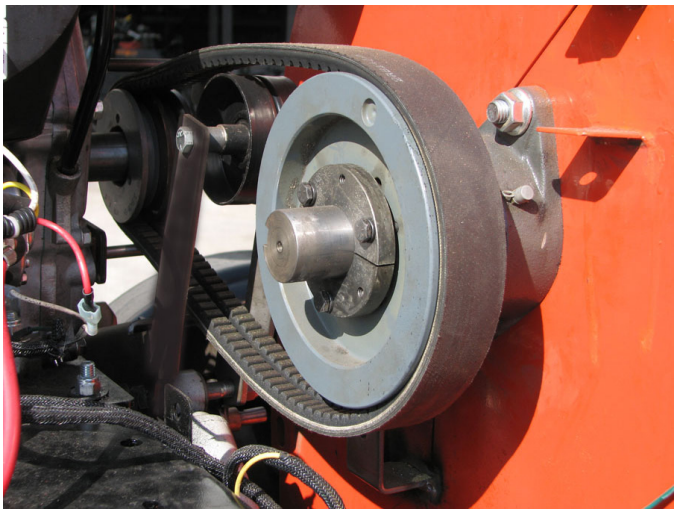


Figure 5.7, Drive Belt on Rotor Pulley

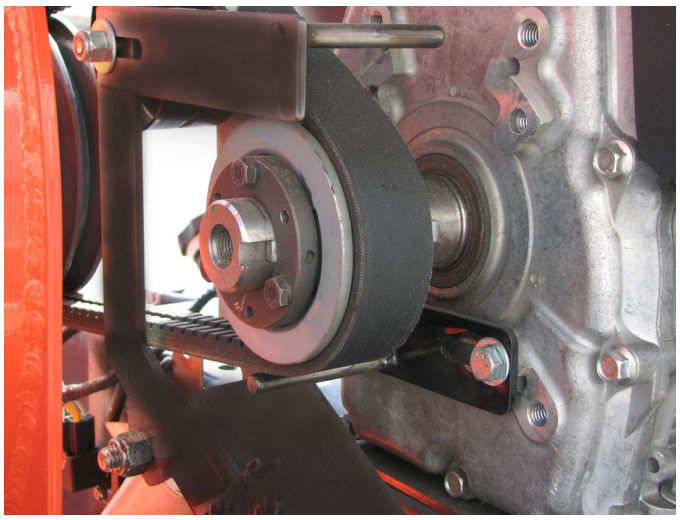


Figure 5.8, Drive Belt on Engine Pulleys

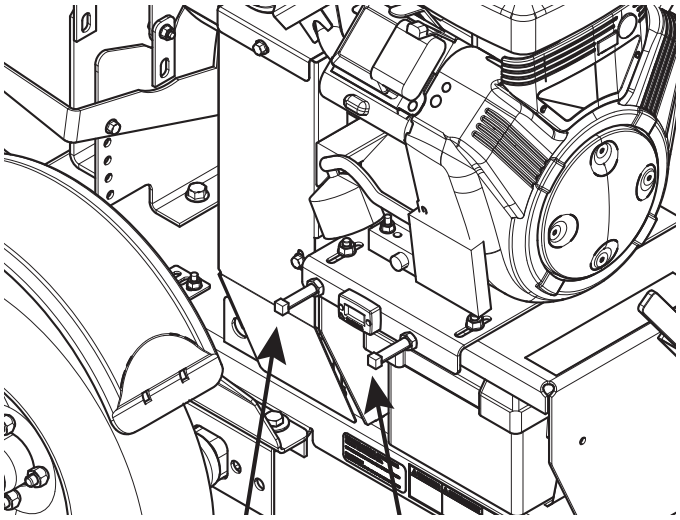


Figure 5.9, Engine Plate Adjustment Bolts

5.15 CHANGE OIL

Check the oil level before each use. Change oil as directed in the engine owner's manual.

⚠ 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.

5.16 LUBRICATION

⚠ WARNING ⚠

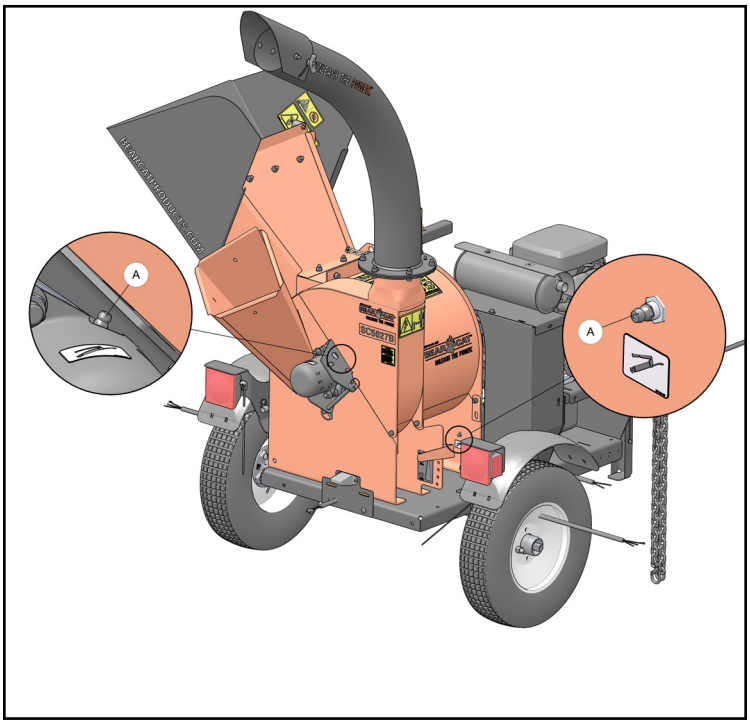
Polyurea and lithium-based greases are not compatible. Mixing the two grease types may lead to premature failure.

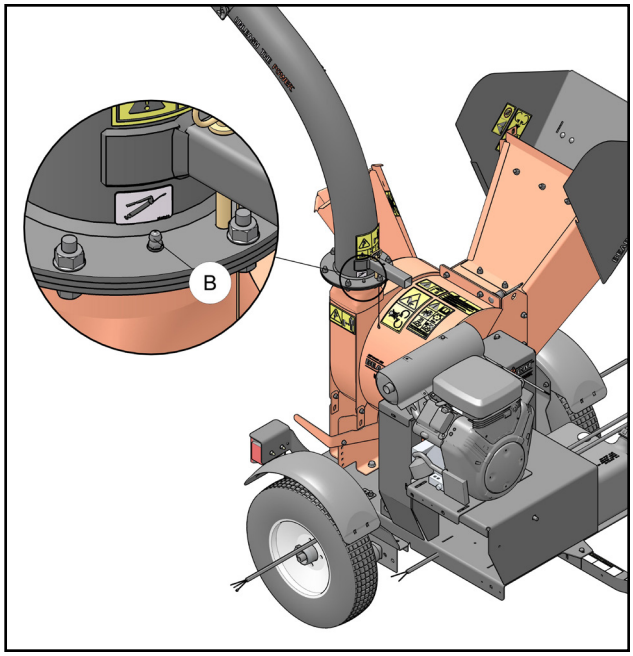
NOTE

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.

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

Grease Interval				
	8 Hours	50 Hours	100 Hours	As Needed
Number of Zerks		2 Rotor Assy Bearings (A)		1 Discharge Chute (B)





Visit https://qrco.de/CBCGreaseZerks to learn how to properly locate grease points and grease your Crary Bear Cat machine for maintenance.

6 Section TROUBLESHOOTING

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 Crary Bear Cat® 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 that is too large	Reduce size of material
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 5 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.
Engine runs, but dies or does not accelerate properly	Air filter dirty	Clean or replace
	Fuel filter dirty	Replace
	Fuel vent plugged	Clean or replace
	Spark plug dirty/worn	Clean and adjust or replace
	Carburetor vibration	Adjust
	Cooling system dirty/plugged	Clean
	Spark arrestor* plugged	Clean or replace
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

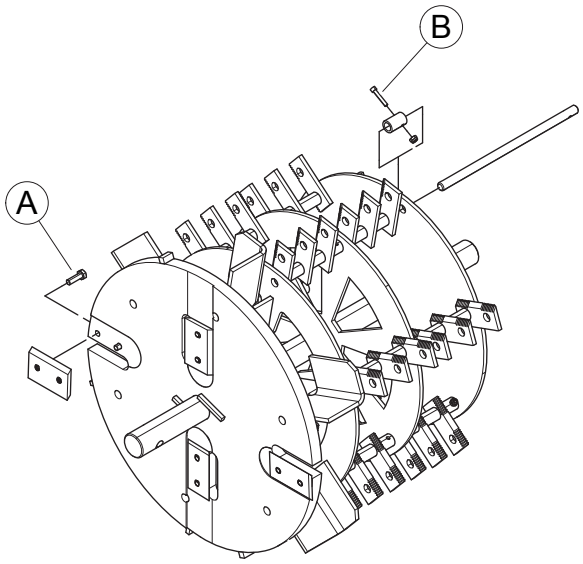
*If equipped

PROBLEM	POSSIBLE CAUSES	REMEDY
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
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
Trailer sways during towing	Tire air pressure not correct	Check tire sidewall for inflation limits

7 Section SPECIFICATIONS

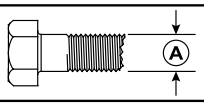
DESCRIPTION	ENGLISH	METRIC
Overall size (L × W × H)	93" × 51" × 89"	236 cm × 130 cm × 226 cm
Overall weight	885 lbs.	401 kg
Max chipper capacity	5" dia.	12.7 cm dia.
Chipper blades	4 reversible (3.14" × 2" × 0.25")	4 reversible (8 cm × 5.1 cm × 0.64 cm)
Max shredder capacity	0.75"	1.9 cm
Shredder Knives	36	
Rotor speed	2000 RPM	
Rotor size	20.6" dia.	52.3 cm dia.
Rotor weight	121 lbs.	54.9 kg
Discharge tube size	6"	15.3 cm
Discharge tube height	89"	226 cm
Drive type	Belt	
Drive belt size	Double banded 2RB40	
Tire size	ST5.30-12	
Engine	627cc Briggs & Stratton® Vanguard®	
Fuel tank capacity	9 gal.	34.1 L

SPECIAL TORQUE REQUIREMENTS			
LOCATION	HARDWARE DESCRIPTION	TORQUE (UNIFIED INCH)	TORQUE (METRIC)
A – On rotor plate, blade mounting bolts	5/16 × 1" hex HD, grade 8 bolts	25 ft-lbs.	34 Nm
B – On rotor knife shafts	10-24 × 1-1/8" screw	36 in-lbs.	4 Nm

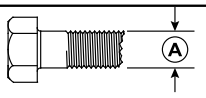


7.1 BOLT TORQUE

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)	BOLT TORQUE*					
	SAE 2		SAE 5		SAE 8	
	NM	FT-LB.	NM	FT-LB.	NM	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)	BOLT TORQUE*							
	4.8		8.8		10.9		12.9	
	NM	FT-LB.	NM	FT-LB.	NM	FT-LB.	NM	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%.

8 Section PARTS & OPTIONS

8.1 REPLACEMENT PARTS

FOR MACHINE SERVICE OR PARTS

For service assistance, contact your nearest authorized Crary Bear Cat dealer or the factory. For parts, contact your authorized dealer. The parts manual for your machine is available at bearcatproducts.com/Product-Support/Find-A-Product-Manual. Your dealer will need to know the serial number of your machine to provide the most efficient service. See below for information on how to identify and record the serial number for your machine.

FOR ENGINE SERVICE OR PARTS

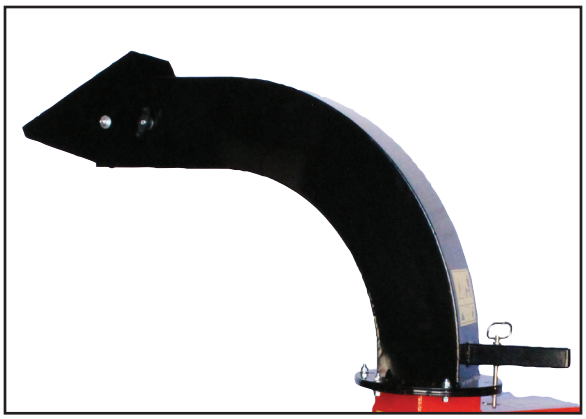
For engine service or parts, contact your nearest authorized engine dealer. Crary Bear Cat does not handle any parts, repairs or warranties for engines.

ORDERING PARTS

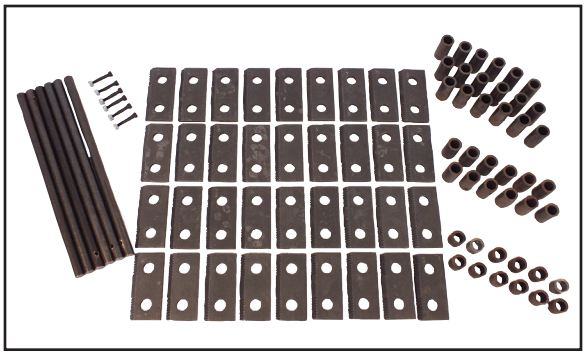
Only genuine Crary Bear Cat replacement parts should be used to repair the machine. Replacement parts manufactured by others could present safety hazards, even though they may fit on this machine. Replacement parts are available from your Crary Bear Cat dealer.

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.



Low Profile Discharge Chute, 71930-00



Shredder Knife Kit, 77613-00

Chipper Blade Kit, 72493

8.2 OPTIONS

PART NUMBER	DESCRIPTION
71930-00	KIT, 6" LOW PROFILE DISCHARGE
72493	KIT, CHIPPER BLADE
77613-00	KIT, SC5627B SHREDDER KNIVES

Crary Bear Cat® • 237 12th St. NW, West Fargo, ND 58078
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