

STUMP GRINDER OWNER'S MANUAL

SGXTR

Honda GX270®

P/N: 78407-00

Revision: 20230314

Serial Range: L03107 - Current

Companion to P/N: 78405-00



BEARCATPRODUCTS.COM// **888.625.4520**

ENGLISH



WARNING: Cancer and Reproductive Harm
www.P65Warnings.ca.gov

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/](https://www.bearcatproducts.com/support/product-registration/) OR CALL OUR CUSTOMER SERVICE LINE AT (888) 625-4520 FOR ASSISTANCE IN REGISTRATION.

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.

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 and on the warranty registration card.

VEHICLE IDENTIFICATION NUMBER

MANUFACTURED BY CRARY INDUSTRIES
WEST FARGO, NORTH DAKOTA 58078 U.S.A.
SERIAL NUMBER
MANUFACTURED IN U.S.A.

HOW TO CONTACT Crary Bear Cat

ADDRESS	PHONE	E-MAIL	HOURS
237 NW 12th Street P.O. Box 849 West Fargo, ND 58078	888-625-4520 701-282-5520 Fax: 701-282-9522	sales@bearcatproducts.com service@bearcatproducts.com	Monday - Friday 8 a.m. to 5 p.m. Central Time

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	1
	1.1 SAFETY ALERT SYMBOL	1
	1.2 FIRE HAZARD INFORMATION	1
	1.3 BEFORE OPERATING	1
	1.4 OPERATION SAFETY	2
	1.5 MAINTENANCE/STORAGE SAFETY	2
	1.6 SAFETY DECALS	3
	1.7 SAFETY DECAL LOCATIONS	4
2	ASSEMBLY	5
	2.1 ADJUST UPPER HANDLE BAR POSITION	5
	2.2 ADD OIL TO ENGINE	5
	2.3 FILL THE FUEL TANK	5
3	FEATURES & CONTROLS	6
4	OPERATION	9
	4.1 STARTING INSTRUCTIONS	9
	4.2 STUMP REMOVAL	10
	4.3 TRANSPORTING THE STUMP GRINDER	11
5	SERVICE & MAINTENANCE	12
	5.1 MAINTENANCE SCHEDULE	12
	5.2 GREENTEETH® SYSTEM	13
	5.3 CUTTING TEETH MAINTENANCE	13
	5.4 ROTATING CUTTING TEETH	14
	5.5 SHARPENING CUTTING TEETH	14
	5.6 REPLACING CUTTING TEETH	16
	5.7 REPLACING THE POCKETS	17
	5.8 DRIVE BELTS	19
	5.9 ADJUSTING BRAKE TENSION	20
6	TROUBLESHOOTING	21
7	SPECIFICATIONS	22
	7.1 BOLT TORQUE	23
8	PARTS & OPTIONS	24
	8.1 REPLACEMENT PARTS	24
	8.2 OPTIONS	24

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.

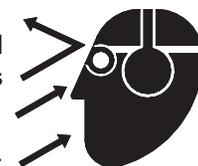
The standard muffler installed on the engine is spark arrestor capable. Spark arrestors require regular maintenance. See the Service & Maintenance section of this manual for more information.

Metal cutting components can also create sparks if they strike rocks, metal, or other hard objects. Contact local fire authorities for laws or regulations regarding fire prevention requirements.

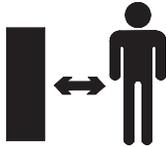
1.3 BEFORE OPERATING



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 operate with handle bar in one of the five operating positions. Stand behind the handle bar in the Operating Zone (see Starting Instructions in the Operation section).
2. Keep hands and feet away from rotor and discharge area 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 that the cutting teeth are sharp and rotor hardware is tight before starting the machine. See Service & Maintenance section for more information on cutting teeth maintenance.
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.
7. Only grind tree stumps. Grinding other materials could cause damage to the machine.
8. Remove metal, rocks, bottles, cans or any other foreign material from around stump before starting.
9. Ensure debris does not blow into traffic, parked cars, or pedestrians.
10. Keep the machine clear of debris and other accumulations.
11. If 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. After the machine stops: A) inspect for damage, B) replace or repair any damaged parts, and C) check for and tighten any loose parts.

1.5 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.
2. Replace any missing or unreadable safety decals. Refer to Safety Decals 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 SAFETY DECALS

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: 33883-00

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



3 P/N: 34717-00

Read and understand your owner's manual before operating. If owner's manual was not included or you have any questions, please call 800-247-7335 or 701-282-5520 (U.S.A.).

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.



4 P/N: 34718-00

Obtain and wear safety glasses and use hearing protection at all times when operating this machine.

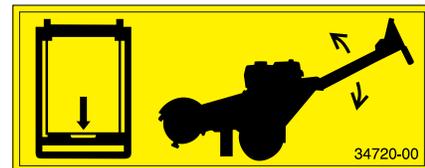
Keep hands and feet out of inlet and discharge openings while machine is operating to avoid serious personal injury. Stop and allow machine to come to a complete stop before clearing obstructions.

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.



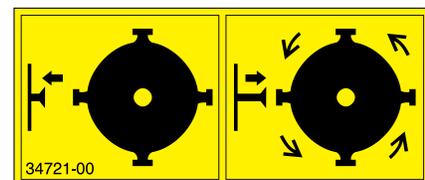
5 P/N: 34720-00

Use the adjustment pin to select one of the five operating positions. Select a handle bar setting that allows safe grinding. Do not operate machine with the handle in the storage/transport position.



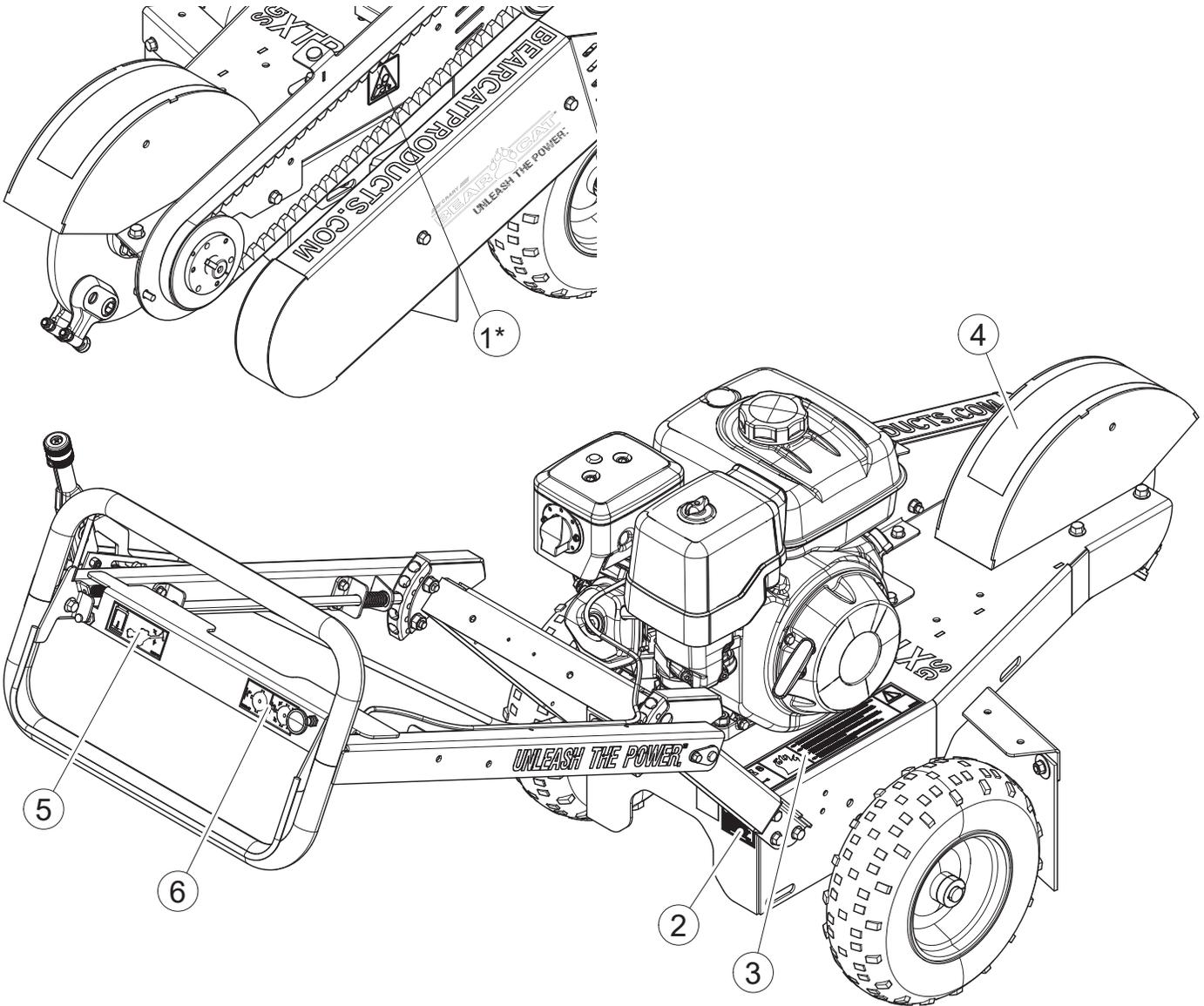
6 P/N: 34721-00

Only engage the rotor when the rotor is off the ground and ready to start grinding a stump. Always disengage the rotor when not grinding a stump.



1.7 SAFETY DECAL LOCATIONS

The numbers below correspond to the decals listed in the Safety Decals section. 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.

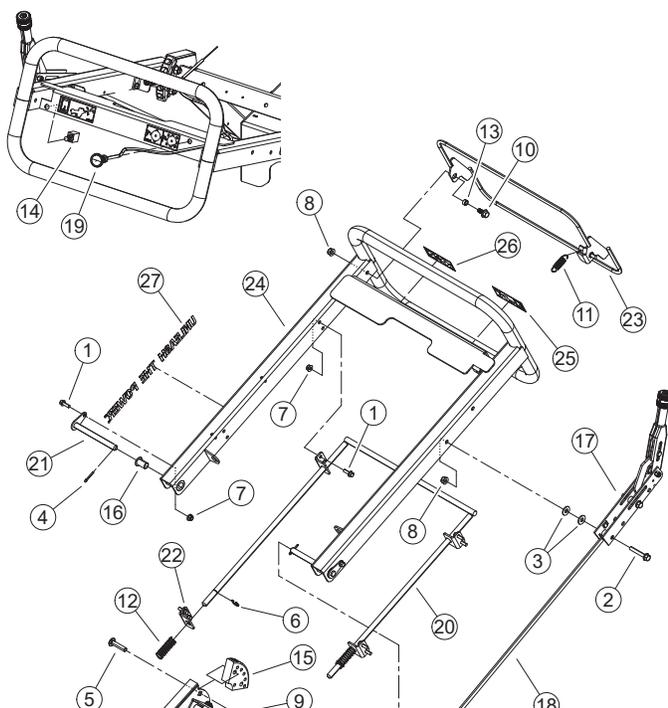


2 ASSEMBLY

Section

2.1 ADJUST UPPER HANDLE BAR POSITION

1. Remove machine from shipping crate. There is protective packaging material on the cutouts in the body (see Transporting the Stump Grinder in the Operation section) that can be removed and discarded.
2. Pull the handle bar adjustment pin and lift handle. Select one of the five operating positions and release the handle bar adjustment pin.
3. Remove zip-tie from brake lever and operator presence bail.



2.2 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.

2.3 FILL THE FUEL TANK

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. 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.



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.

3 FEATURES & CONTROLS

Section

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

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

1. FUEL CAP

Open to refill fuel.

2. RECOIL STARTER

Pull recoil starter handle out smoothly to start engine. Repeat if necessary.

3. ROTOR ENGAGEMENT CABLE

The rotor engagement cable engages and disengages the rotor. When engaging pull quickly. Slowly engaging the rotor will cause the clutch to slip. When disengaging, the rotor will continue to spin until it loses momentum and comes to a stop.

4. OPERATOR PRESENCE BAIL

Hold the bail to the handle bar during operation. Releasing the bail will stop the engine.



WARNING



Releasing the bail will not stop the rotor from spinning immediately.

5. BRAKE LEVER

Brake lever stops the wheel from rotating and allows the machine to pivot off of the locked wheel while grinding. When transporting in a vehicle or on a trailer, apply brake. Brake should be applied in addition to straps that are used to secure the machine during transport.

6. HANDLE BAR ADJUSTMENT PIN

Pin is spring loaded. Pull pin and move handle bar to desired position, release pin.

7. DEFLECTOR

Deflector channels discharged chips to both sides of the machine and protects operator from being hit. Check integrity of deflector and replace as necessary.

8. Greenteeth®

The tip of the cutting teeth is made of carbide, which is many times harder than steel. The sharpness of the teeth should be checked every 2-8 operating hours. Teeth can be rotated twice before sharpening. See Service Parts in the Service & Maintenance section for optional and replacement teeth kits.

9. CHOKE LEVER

When starting a cold engine, slide choke lever to the choke position. Once engine is started, slowly slide choke lever to the run position. Refer to engine manual for further engine operating instructions.

10. ENGINE ON/OFF SWITCH

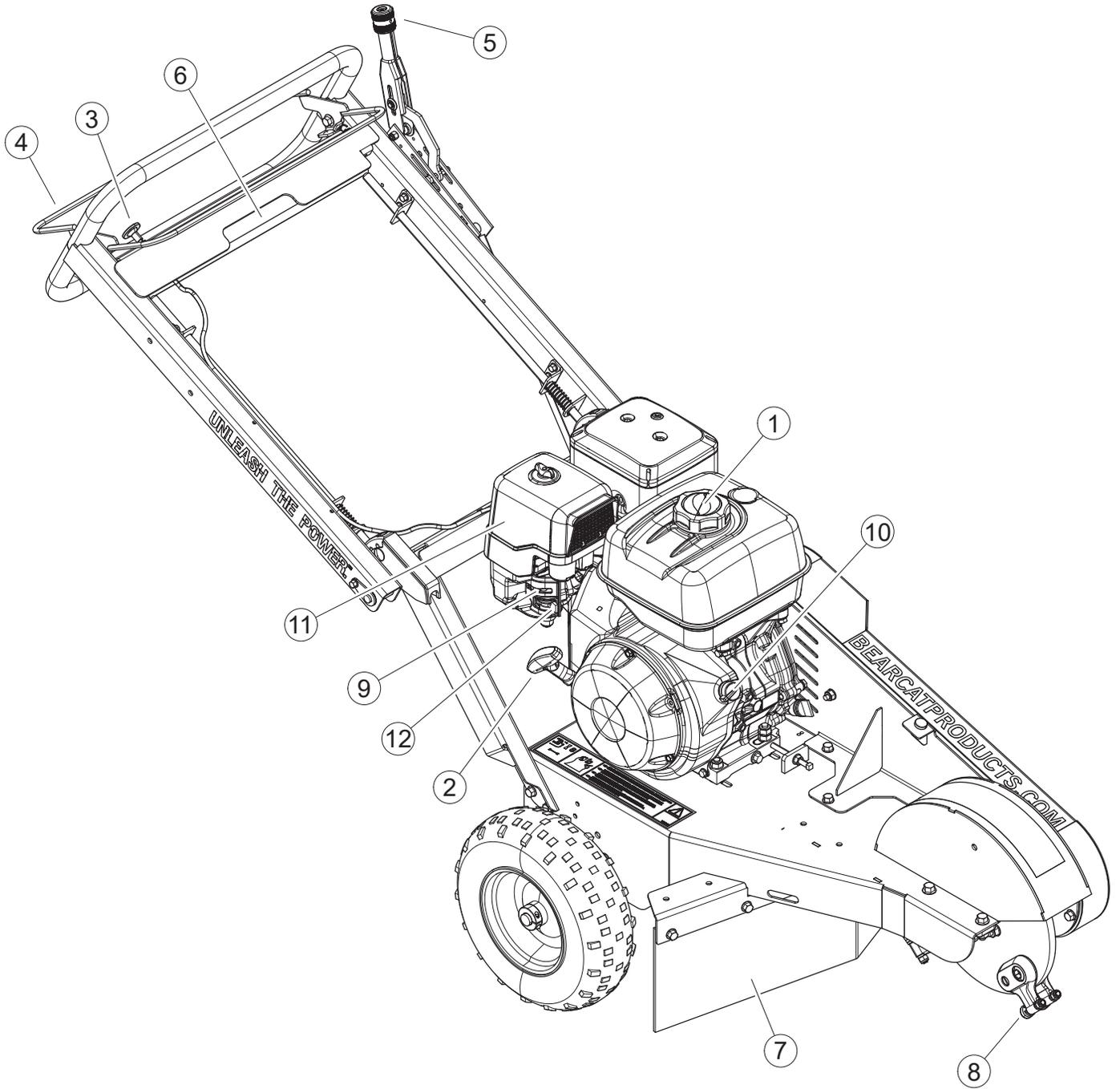
Engine switch should be in the ON position in order for the engine to start. Engine can be turned off by releasing the operator presence bail or by moving the engine switch to OFF. Refer to engine manual for further engine operating instructions.

11. AIR FILTER

Cyclonic air filter for improved engine protection. Refer to engine manual for engine service information.

12. FUEL VALVE

Fuel valve should be open when starting and operating the stump grinder. Close fuel valve when transporting. When the stump grinder will not be used for more than a few days it is recommended to shut the fuel valve while the engine is running and let the carburetor run out of fuel.



MOVING THE BRAKE

The brake can be moved to the opposite side of the machine if preferred, or a second brake (kit 78209-00) can be ordered for added versatility.

To move the brake to the other side of the stump grinder:

1. Place blocks under the stump grinder at the rear of the machine.
2. Loosen clamping collars (1) on axle shaft.
3. Slide each wheel (2) off of the shaft.
4. Remove the hardware (3) attaching the brake band (4) to the body.
5. Remove the hardware (5) attaching the brake cable bracket (6) to the body.
6. Remove the hardware (7) attaching the brake cable (8) to the handle bar.
7. The clevis and cotter pin in the brake lever need to be reversed. See Figure 3.2.3.
8. Install the brake lever (8) on the opposite side of the handle bar.

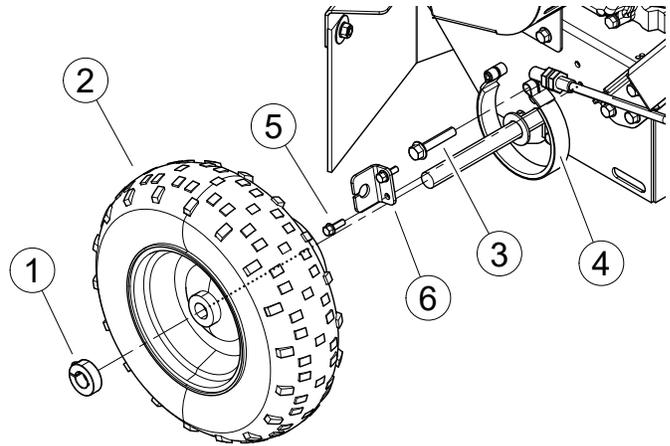


Figure 3.2.1

NOTE

The holes that each component is removed from has a matching hole on the opposite side of the machine.

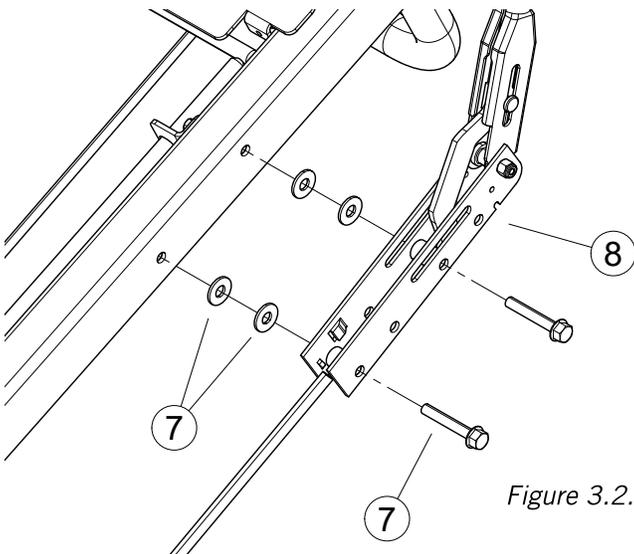


Figure 3.2.2

9. Install the brake cable bracket (6) to the body.
10. Fasten the brake band (4) to the body. Tighten until snug, but do not over tighten. It may be necessary to loosen the cable where it attaches to the brake cable bracket (6) and rotate to undo any twist that may be in the cable.
11. Attach wheels. The wheel (2) that was on the left side should now be installed on the right side.
12. Install clamping collars (1) and tighten.

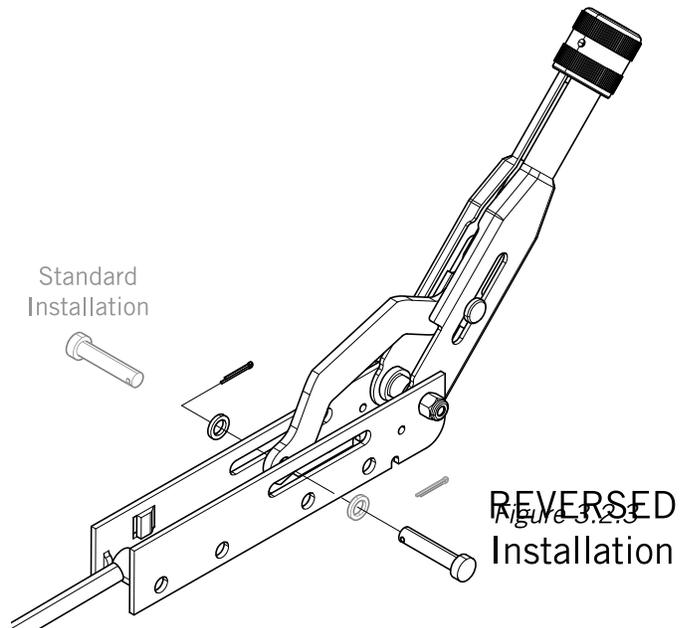


Figure 3.2.3
REVERSED Installation

4 OPERATION

Section

4.1 STARTING INSTRUCTIONS

! DANGER !

- Become familiar with the safety instructions in this manual before starting the Stump Grinder.
- **WEAR EYE PROTECTION** at all times when operating the Stump Grinder.
- Do not operate without all guards in place.

! CAUTION !

Fill engine with oil before starting. Make sure machine is level when filling oil and fuel. See engine owners manual for amount and type of oil to use.

Move machine to a clear, level area outdoors before starting. Bystanders should remain at least 50 feet away from the operating area.

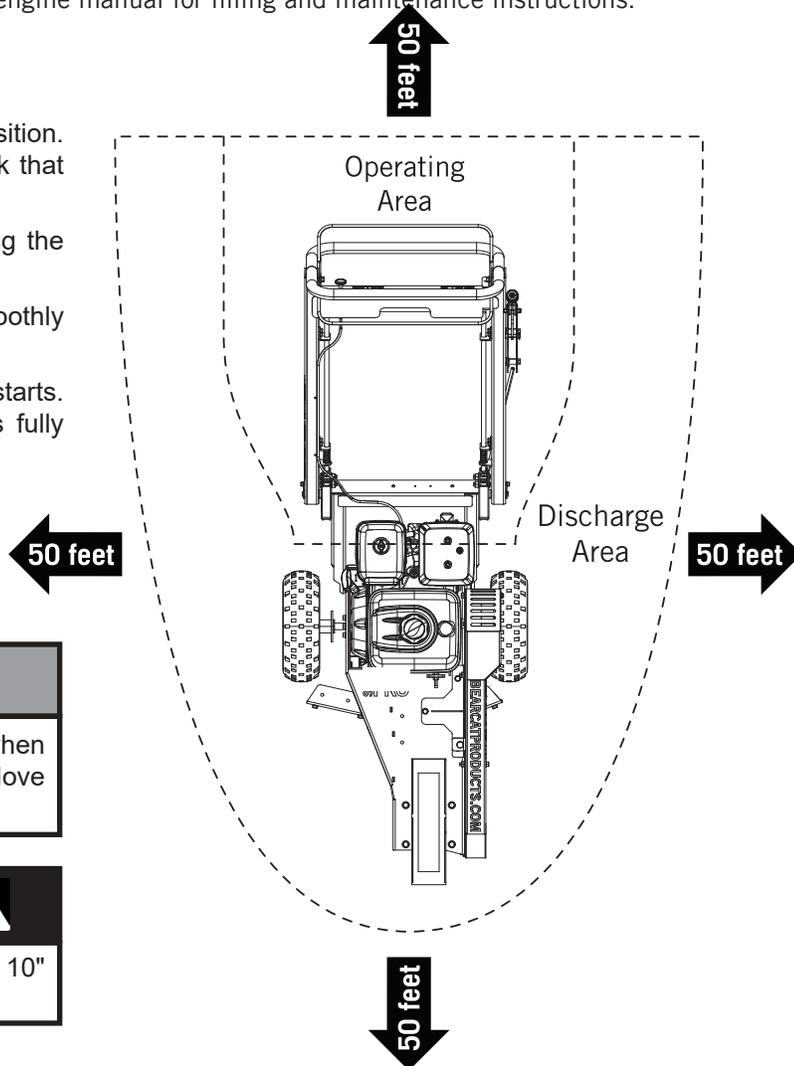
1. Check engine oil level and fill if necessary. See engine manual for filling and maintenance instructions.
2. Fill fuel tank with fresh, clean unleaded fuel.
3. Make sure engine fuel valve is in ON position.
4. Place engagement cable in the disengaged position. Move choke lever to the choke position. Check that throttle lever is set to low.
5. Hold the bail against the handle bar. Releasing the bail will automatically stop the engine.
6. Grasp the recoil starter handle and pull out smoothly to start the engine. Repeat if necessary.
7. Move choke lever to run position after engine starts. The engine may need partial choke until it is fully warmed up.

NOTE

It may not be necessary to use full choke when restarting a warm engine after a short shutdown. Move lever to run or partial choke if engine fails to start.

! IMPORTANT !

This stump grinder is designed to grind stumps 10" above grade to 4" below grade.



4.2 STUMP REMOVAL



DANGER



- Become familiar with the safety instructions in this manual before starting the Stump Grinder.
- **WEAR EYE PROTECTION** at all times when operating the Stump Grinder.
- Do not operate without all guards in place.

1. Remove rocks, dirt, landscape fabric, or other foreign material from around the base of the stump.
2. Position the stump grinder so the rotor is adjacent to the stump. Start the stump grinder and hold the operator presence bail.
3. Pull back on brake lever to apply the brake.
4. Gradually, using the locked left tire as a pivot point, pivot the stump grinder until the cutting teeth contact the stump. When the stump grinder is correctly positioned, pull out on the rotor engagement cable to engage the rotor. Pull quickly to prevent the clutch from slipping as it engages.
5. Pivot the stump grinder on the left wheel in a slow, smooth sweeping motion from right to left as the teeth grind the stump. Do not force the cutting teeth.



CAUTION



Starting in the middle or the far side of the stump will allow the rotor to grab and pull the stump grinder across the stump, which can lead to injury.

NOTE

If the stump grinder wants to pull away and crawl across the stump, push down on the handle bar to decrease the depth of cut. It may also be necessary to adjust the tension on the brake cable. See Adjusting Brake Tension in the Service & Maintenance section.

If the engine RPMs are dropping too low while grinding, the depth of cut needs to be decreased.

NOTE

Use plywood or tarps to block chips from entering areas where chips are not desired such as flower beds, gardens, children's play sets, egress windows, etc. The side deflector kit is also designed to help contain chips from deflecting out to the sides of the machine. See Optional Features & Accessories section in Features & Controls.



IMPORTANT



It is recommended to have a utility locate done in the area of any stumps that are to be ground. Utilities that were once buried well below the surface can be brought closer to the surface by the roots of a tree over the years of growing.

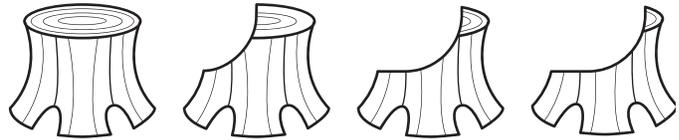


Figure 4.2.1, Larger Stump Removal



IMPORTANT



When grinding large stumps it will be necessary to reposition the stump grinder to grind the entire stump. It may be necessary to remove ground material and dirt away from the stump in order to reposition the stump grinder.



Figure 4.2.2, Smaller Stump Removal

6. Work across the stump from left to right or right to left, starting at the front edge of the stump closest to the stump grinder. Inch the stump grinder forward to work across to the far edge of the stump.
7. Grind the stump down to a maximum of 4" below ground level. If a depth deeper than 4" is desired, dirt can be removed from below the stump grinder. For example: if a depth of 6" below ground level is desired, 2" of dirt must be removed from below the stump grinder.
8. Release the bail to shut down the engine. Keep the rotor elevated as it will keep spinning until it loses momentum. It is safe to rest the machine on the ground once the rotor has stopped spinning.
9. The cutting teeth dull over time. Check for dullness every 2-8 hours of operation, or when it becomes noticeably harder to push the stump grinder into the stumps. The teeth can be rotated to utilize the three cutting surfaces before sharpening is required. For sharpening instructions, see Sharpening Cutting Teeth.

4.3 TRANSPORTING THE STUMP GRINDER

Before you transport the stump grinder:

1. Move the fuel valve to OFF.
2. Move the handle bar to the transport/storage position.
3. Engage the brake.

There are four cutouts in the body of the stump grinder that can be used for securing the stump grinder during transport. See Figure 4.3.1 for locations.



IMPORTANT



Avoid running nylon straps through the cutouts on the body of the stump grinder when securing the machine to a trailer. It is recommended to use a hook at the body and at the trailer to avoid wear or damage to the straps. Worn or damaged straps can affect the safe transportation of your machine.

Figure 4.3.1

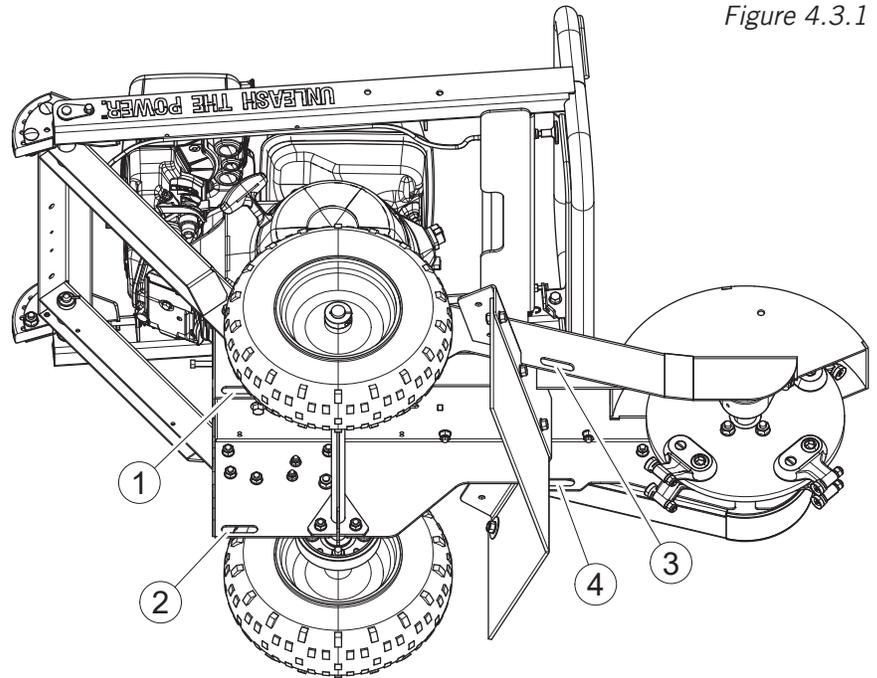
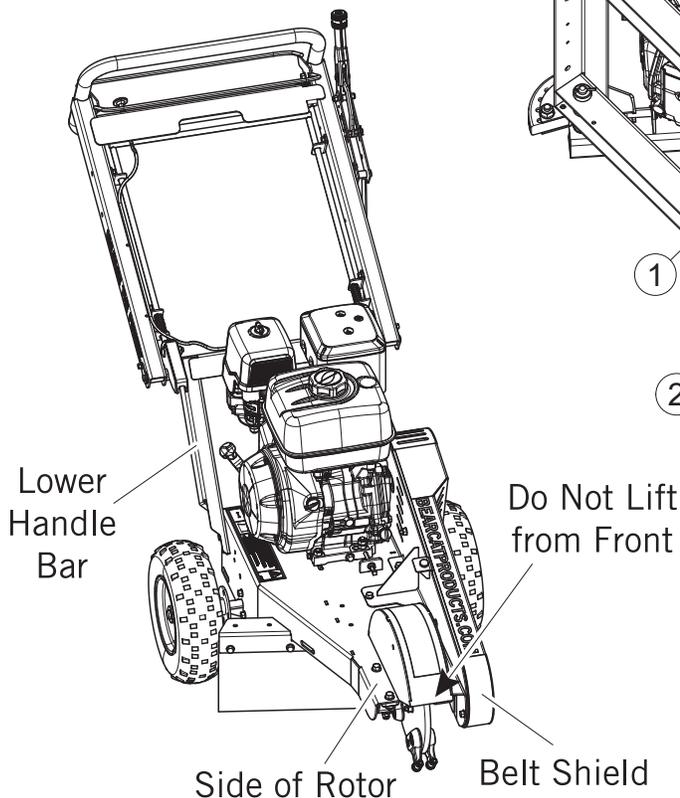


Figure 4.3.2



If the stump grinder needs to be lifted, be sure to have enough people to safely lift without causing injury. The SGACE is 180 lbs. without fuel. Safe lifting points are the lower handle bar and the front of the stump grinder on either side of the rotor. See Figure 4.3.2.



CAUTION



Do not lift from the front of the stump grinder above the rotor. When lifted the rotor will be free to rotate. The carbide cutting teeth are sharp and can cut your fingers.

5 SERVICE & MAINTENANCE

Section



WARNING



Disconnect the spark plug wire from the spark plug and make sure all moving parts are completely stopped before inspecting or servicing any part of this machine.



WARNING



The cutting teeth are sharp! Use care when working on the machine to avoid injury.

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.

NOTE

All fasteners, whether they are nuts or bolts, will loosen up from time to time due to vibration. Be diligent and check your bolts weekly.

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

SERVICE AND MAINTENANCE SCHEDULE					
COMPONENT	MAINTENANCE REQUIRED	REFER TO ENGINE OPERATOR'S MANUAL	FREQUENCY		
			BEFORE EACH USE	EVERY 8 HOURS	EVERY 25 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		•		
Cutting teeth	Check sharpness		•		
All internal and external nuts and bolts	Check tightness		•		
Spark arrestor*	Clean		•		
Entire machine	Clean			•	
Drive belt	Check				•
Belt tension	Check				•
Belt/pulley alignment	Check				•
(1) Perform more frequently under extremely dusty conditions.					
*If equipped					
<p>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 grinding REQUIRES THE OWNER TO PERFORM THE ABOVE LISTED NORMAL MAINTENANCE. Special consideration to maintain and re-torque the CUTTING TEETH, POCKETS, 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.</p>					

⚠ 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 GREENTEETH® SYSTEM

The SGXTR comes equipped with a Greenteeth cutting system. It is important to note that when maintaining the rotor, only Greenteeth recommended hardware and components should be used. This includes Greenteeth's: 700 series cutting teeth, pockets, spacers, and LoPro™ bolts.

5.3 CUTTING TEETH MAINTENANCE

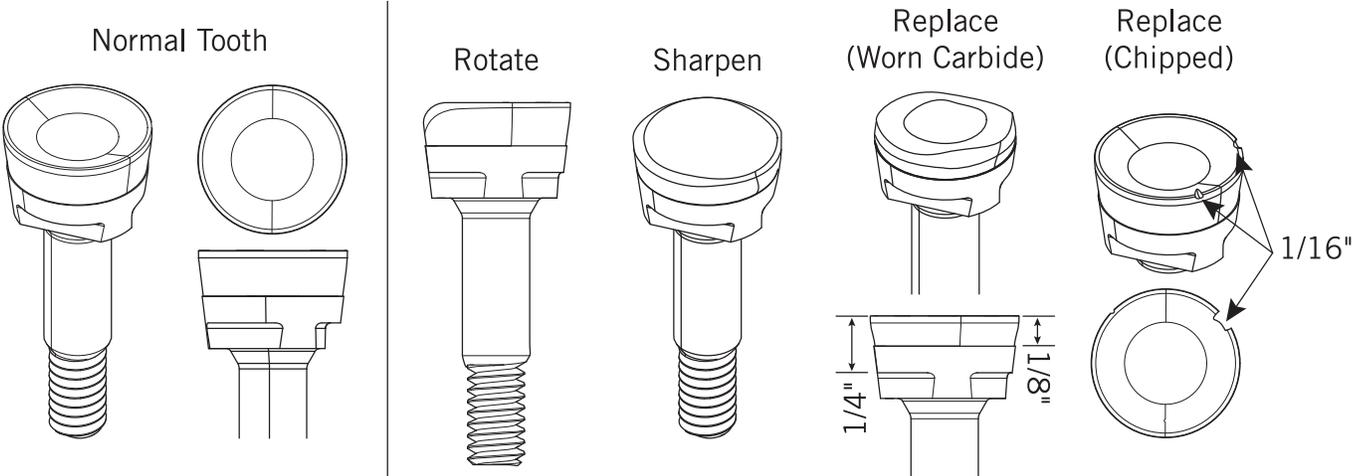


Figure 5.3.1

The cutting teeth will start to show signs of wear. It is important to maintain the cutting teeth by rotating (see Rotating Cutting Teeth), sharpening (see Sharpening Cutting Teeth) and replacing (see Replacing Cutting Teeth) the teeth as necessary. Teeth should wear or dull evenly.

⚠ IMPORTANT ⚠

The SGXTR comes standard with 700 Series Wearsharp™ teeth which are meant for dirt. If you are operating in rocky soil it is recommended that you use 700 Series Green teeth. If you are operating in sand or clay, it is recommended that you use 700 Series Red teeth. Choosing the proper tooth for your soil type will prolong the life of your teeth. Available options can be found under Teeth Kits.

⚠ CAUTION ⚠

Whether using 700 Series Wearsharp, 700 Series Green, or 700 Series Red, always use eight of the same kind of tooth. Greenteeth teeth are meant to be used and maintained, as a set. Do not neglect to replace a missing tooth and do not combine the three types of teeth. This can cause rotor imbalance which can lead to injury and damage the stump grinder.



WARNING



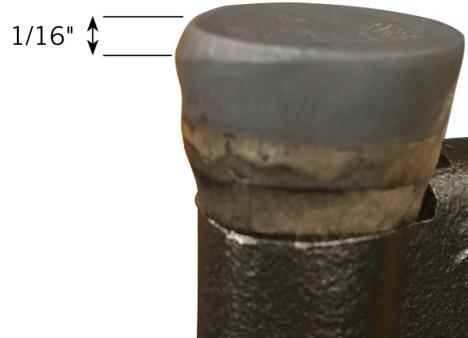
BEFORE INSPECTING OR SERVICING ANY PART OF THIS MACHINE, SHUT OFF POWER SOURCE AND MAKE SURE ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.

5.4 ROTATING CUTTING TEETH

Rotate the teeth when a tooth has worn approximately 1/16" or swing speed is noticeably reduced.

If you dull or damage a cutting edge, you can rotate your tooth by following these steps:

1. Loosen the nut with a standard wrench.
2. Tap the tooth down.
3. Rotate the tooth a third of a turn.
4. Reposition the tooth in its seat.
5. Retighten the nut to the proper torque specifications.



5.5 SHARPENING CUTTING TEETH

It is important to maintain the cutting teeth by replacing (see Replacing Cutting Teeth) and sharpening them as necessary. The carbide cutting teeth stay sharp for approximately 2-8 hours of operation. A person familiar with sharpening carbide should use the following instructions to sharpen the cutting teeth when they become dull.

Materials needed for sharpening:

- A. 1/2" (13 mm) drill press
- B. 1/2 hp (0.37 kW) bench grinder
- C. 3/4" (19 mm) piece of plywood
- D. Drill chuck in the drill press
- E. Dead weight (approximately 2.2 lbs. [1 kg])
- F. 4" (100 mm) diamond wheel, 1/4" (6 mm) thickness



IMPORTANT



Only sharpen the dished carbide face of the tooth. Do not sharpen the side edge of the tooth. If you sharpen the side edge of the tooth, it will decrease the diameter of the tooth and this will lead to poor stump cutting and premature wear of the pockets.



WARNING



SHARPENING CARBIDE CAN BE HAZARDOUS TO YOUR HEALTH. YOU MUST USE APPROVED BREATHING APPARATUS AND EYE PROTECTION WHEN SHARPENING ANY TUNGSTEN CARBIDE STUMP TEETH.



CAUTION

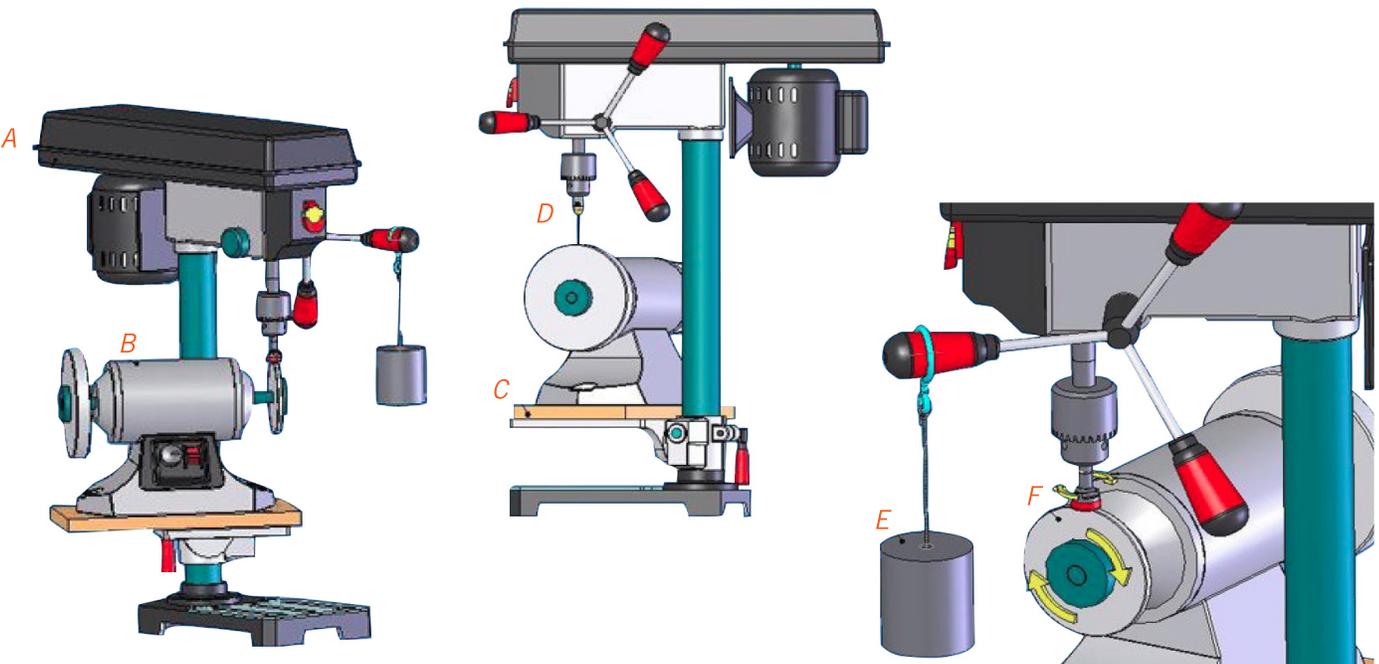


It is important to sharpen the cutting teeth as a set to maintain rotor balance. Having an imbalanced rotor can cause injury and damage the stump grinder.

Greenteeth® and Crary Bear Cat® are not responsible for injuries regarding use or misuse of tools and machines. If you are unsure of the operation or function of these sharpening instructions, do not build or use this sharpening device. Always put safety first.

**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.

**IMPORTANT**

Do not pull down too hard on the drill handle. Be gentle. Observe closely to get a fundamental understanding of how the machines work and how long it takes to sharpen the teeth. Usually light pressure for approximately one minute will be enough to sharpen a tooth.

NOTE

It is better to give Greenteeth® a light sharpen more often than it is to let them get badly rounded and blunt before sharpening. Tooth life will be longer with faster and smoother stump cutting.

The tooth can be sharpened to a minimum of 1/8" (.125") carbide thickness or 1/4" (.250") as measured from the top of the carbide down to the steel shank flat (see Figure 5.3.1). Each tooth may be sharpened up to 3 times depending on how severe the tooth was worn prior to sharpening.

1. Cut plywood so it is larger than the base of bench grinder.
2. Mount bench grinder to plywood.
3. Mount plywood to drill press table.
4. Mount diamond wheel(s) (see Service Parts) and tighten down.
5. Swivel the table so the drill press chuck is centered over the diamond wheel. Remember to leave enough room between the wheel and the chuck for tooth removal and installation. Tighten the drill press table down.
6. Find a dead weight weighing about 2.2 lbs. (1 kg) and tie a rope to it. Tie the other end of the rope to one of the drill press handles. To increase or decrease down pressure on the tooth, move the rope in or out on the handle.
7. With the machines shut off and not running, lower the chucked tooth onto the diamond wheel. Check that you are happy the tooth is tight in the chuck and centered with the wheel and performs as it should.
8. Once everything is tight and performing as it should, start the drill press and bench grinder. Let the machines run for approximately one minute before you lower the tooth onto the bench grinder.
9. Sharpen the first tooth. Let the 2.2 lb. (1 kg) dead weight act as the gentle down pressure needed to sharpen the tooth against the diamond wheel.
10. Teeth should be sharpened as a set. Continue sharpening teeth until full set has been sharpened.



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.

5.6 REPLACING CUTTING TEETH

It is important to maintain the cutting teeth by sharpening (see Sharpening Cutting Teeth) and replacing them as necessary.

- Replace a tooth if chip is greater than 1/16" (.0625") or if chip has caused an imbalance of the rotor (rotor imbalance will cause a vibration to be felt at the handle bar). A chipped tooth can be replaced individually.
- Replace a tooth if carbide thickness is less than 1/8" (.125") or 1/4" (.250") as measured from top of carbide down to the steel shank flat (see Figure 5.3.1).
- Worn teeth should be replaced as a set to maintain rotor balance.



IMPORTANT



Over-tightening the nut will stretch the threads and degrade the fastener's ability to retain the tooth.

1. Move fuel valve to the off position.
2. Place handle in the fifth position. Tip machine backward until machine rests on the handle bar.
3. Remove nut that holds tooth to the pocket.
4. Install the teeth with the carbide facing down. The shoulder of the tooth will meet the flat indent of the pocket and the tooth will not rotate. See Figure 5.6.1. Insert the spacer over the shank, with the chamfer down, then thread one of the lock nuts onto the top portion of the tooth. See Figure 5.6.2. Hand tighten for now. Repeat until all teeth are installed.

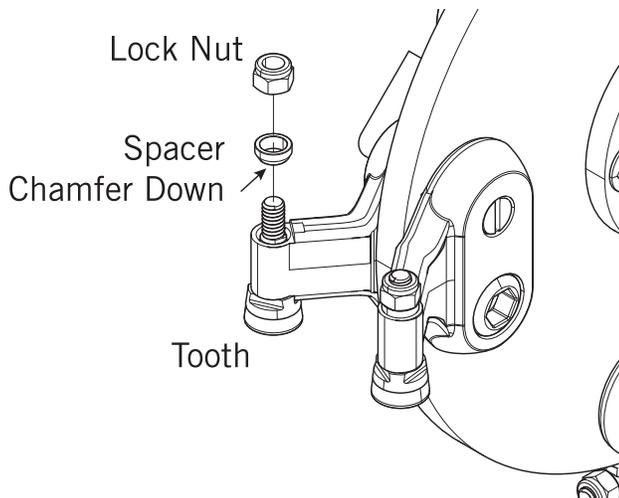


Figure 5.6.1

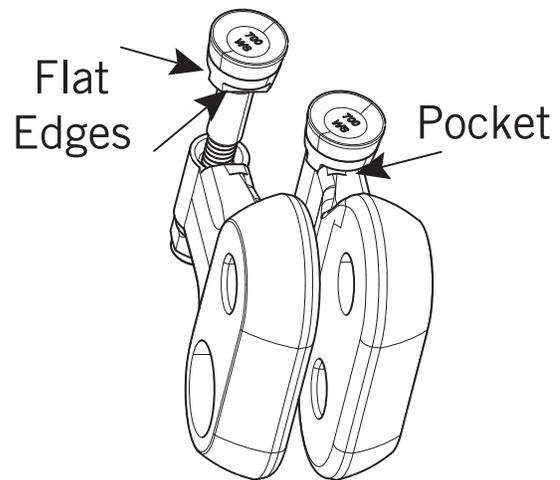


Figure 5.6.2

5. Before torquing the tooth down, make sure that the tooth is seated properly in the pocket. Tighten the top nut until the tooth is firmly seated and torque to the appropriate specification for the series. The tooth may need to be held in place. Repeat until all teeth are properly torqued.

Once all teeth are torqued properly, manually rotate the cutter disk to ensure there is adequate clearance for the newly installed setup. If any teeth are rubbing or hitting on any part of the machine, do not proceed further. Remove the obstructed tooth (or teeth).

If determined that there are no obstructions, start the machine engine and engage the rotor.

Ensure there are no unusual noises emanating from the machine.

TOOTH	TORQUE
700 Series Wearsharp™	20 ft-lbs. (27 Nm)
700 Series Green/Red	25 ft-lbs. (34 Nm)

**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.

5.7 REPLACING THE POCKETS

1. Move fuel valve to the off position.
 2. Place handle in fifth position. Tip machine backward until machine rests on the handle bar.
 3. Install rotor lock pin that was included in the owner's kit (see Figure 5.7.1). The installed pockets will contact the rotor lock pin and stop the rotor from moving while loosening and tightening the pocket bolts.
 4. Using a 1/2" hex socket to loosen bolts that attach the pockets, remove one set of pockets (angled or straight).
 5. Using a wire brush, clean both sides of the disk where it will come in contact with the pockets. Be sure to remove all dirt and debris so the pocket is seated tightly against the disk.
 6. Apply anti-seize to the threaded end of two LoPro™ bolts.
 7. Install a LoPro bolt into the counter-bored hole and then do the same of adjacent pocket of that set.
 8. Slide the LoPro bolts through the empty holes in the disk and thread them into the adjacent pocket's threaded holes. For now, firm up the LoPro bolts until pockets are seated. See Figure 5.7.2.
 9. Remove the rotor lock pin, rotate the disk 1/4 turn, and reinstall the rotor lock pin to replace the next set of pockets.
- Repeat steps 4-9 until all pockets are installed.

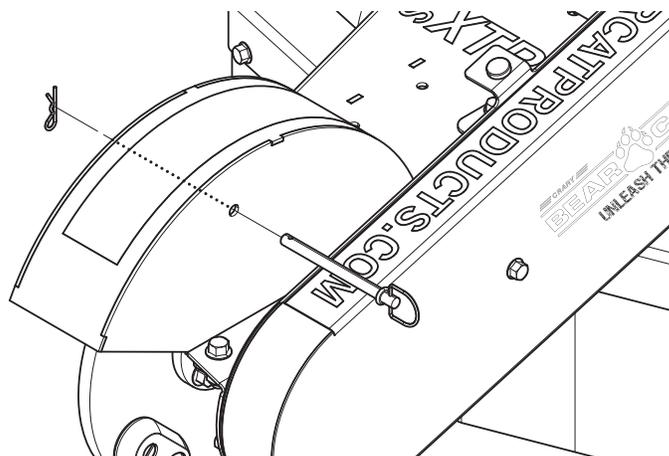


Figure 5.7.1

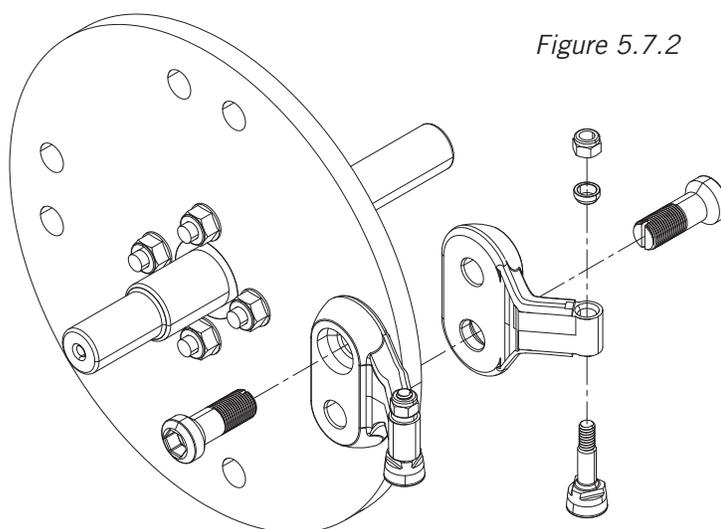


Figure 5.7.2

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.

Torque all LoPro bolts to 180 ft-lbs. If anti-seize was not used, torque to 240 ft-lbs. After each bolt is properly torqued, mark the head of the bolt with a paint pen or marker. When finished, check to ensure that all bolts have been marked.

Once all pockets are torqued properly, manually rotate the cutter disk to ensure there is adequate clearance for the newly installed setup.

If determined that there are no obstructions, start the machine engine and engage the rotor.

Ensure there are no unusual noises emanating from the machine.

IMPORTANT

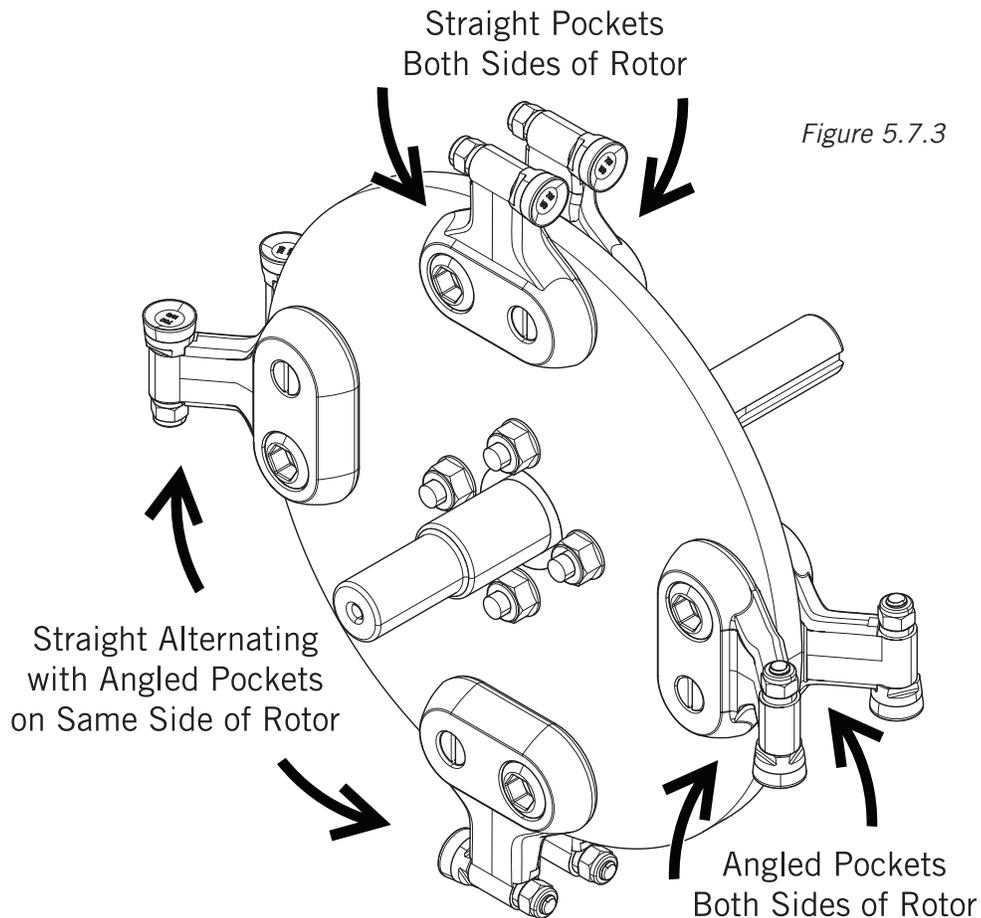
Over-tightening the nut will stretch the threads and degrade the fasteners ability to retain the tooth.

NOTE

LoPro bolts have a slot in the threaded end of the bolt. If a LoPro bolt breaks, a flat head screwdriver can be used to remove the threaded portion of the bolt.

CAUTION

To maintain rotor balance, it is important to install the pockets correctly. The straight and angled pockets alternate, but they also need to match up on both sides of the rotor (see Figure 5.7.3). Do not install an angled pocket with a straight pocket. Having an imbalanced rotor can cause injury and damage the stump grinder.



**WARNING**

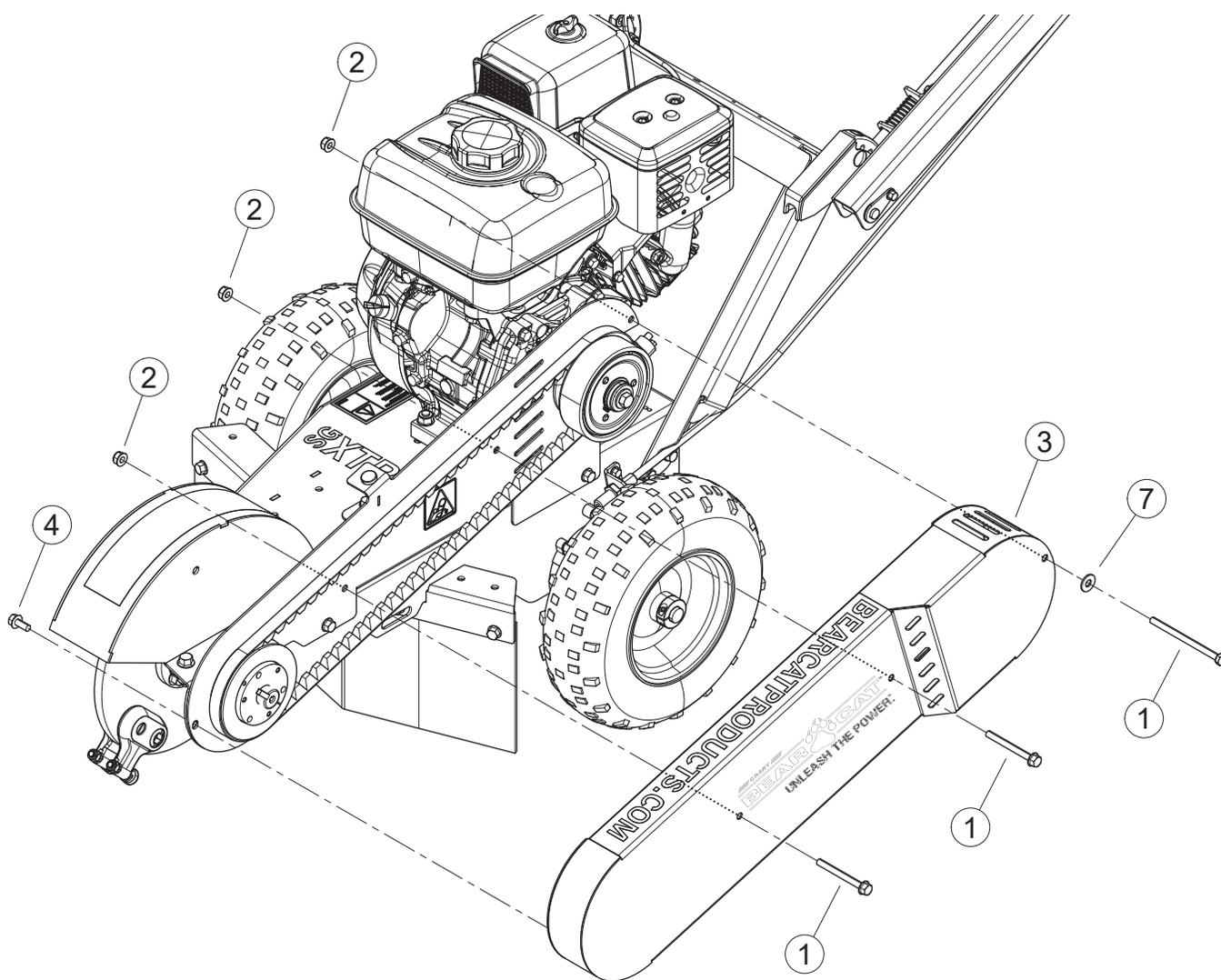
BEFORE INSPECTING OR SERVICING ANY PART OF THIS MACHINE, SHUT OFF POWER SOURCE AND MAKE SURE ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.

5.8 DRIVE BELT

This machine is equipped with a BX58-X5 single band belt. Check the condition of the drive belt annually or after every 30 hours of operation, whichever comes first. If the belt is cracked, frayed, or worn, replace it.

REPLACING THE DRIVE BELT

1. Shut off engine and allow all moving parts to come to a complete stop.
2. Remove the three bolts (1), washer (7), and nylock nuts (2) from the front side of the belt shield (3). Remove the bolt (4) from the back side of the belt shield, near the rotor and bearings.





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.

3. Loosen the four engine mounting bolts (5). The front left mounting bolt closest to the belt shield has a second nut that secures the wire harness. This nut should also be loosened, but not removed.
4. Loosen the tensioning bolt (6) at the front of the engine. Slide the engine forward toward the rotor.
5. Remove drive belt and discard.
6. Install new belt.
7. Tighten the belt tensioning bolt (6) to move the engine to the rear of the machine and apply belt tension.
8. Adjust front and rear tensioning bolts as needed to achieve proper belt tension and pulley alignment.
9. Tighten engine mounting bolts (5) and nut that secures wire harness.
10. Loosen belt tension bolts (6) so that they just contact the engine. Tighten jam nut to keep bolts (6) in place.
11. Install belt shield (3). Start all four bolts (1)(4), including washer (7), and then tighten.

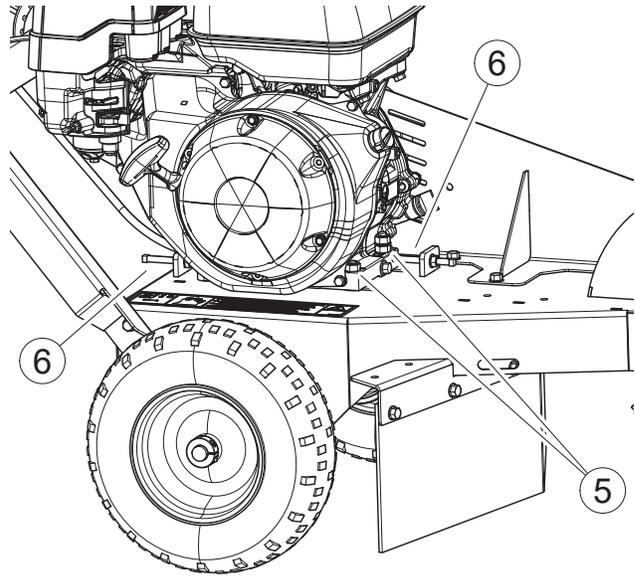


Figure 5.8.2

TENSIONING A LOOSE BELT

1. Loosen rear belt tension bolt by 1/2 turn.
2. Tighten front belt tension bolt by 1/2 turn to increase belt tension.
3. Turn both belt tension bolts equally to maintain pulley alignment.
4. Repeat steps 1 and 2 until proper belt tension and alignment is achieved.

5.9 ADJUSTING BRAKE TENSION

1. Disengage brake.
2. Loosen screw on side of adjustment knob on top of brake lever.
3. Turn knob clockwise 1/2 a turn and apply brake. Repeat procedure until desired tension is achieved.
4. Tighten screw on side of adjustment knob.

NOTE

Do not over tension brake as leverage from brake lever could overcome the set screw that secures the cable to the brake band.

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 Crary Bear Cat® for service problems with the machine.

PROBLEM	POSSIBLE CAUSES	REMEDY
Cutting teeth do not turn	Broken or damaged belt	Tension or replace belt
	Broken drive shaft	Repair drive shaft
	Failed bearings	Replace bearings
	Worn clutch	Inspect clutch, replace shoes and springs if needed
Cutting is slow or rough	Dull cutter teeth	Sharpen, rotate, or replace teeth
	Worn clutch	Inspect clutch, replace shoes and springs if needed
Stump grinder requires excessive power or stalls	Dull cutter teeth	Sharpen, rotate, or replace teeth
Drive belt squealing or smoking	Drive belt is loose or worn	Replace or tighten drive belt
	Depth of cut is too large	Limit depth of cut
	Cutting swath is too large	Limit size of swath
Engine won't start or is hard to start	Gas tank is empty	Fill gas tank
	Spark plug wire is disconnected	Connect loose wire to spark plug
	Spark plug is defective	Replace spark plug
	Gas line is obstructed	Remove gas line at carburetor and check for obstruction. Drain gas tank and refill with fresh, clean gasoline.
	Dirty, stale, water-contaminated gas	Drain tank and fill with fresh, clean unleaded gasoline
	Flooded engine	Put throttle control in run position and crank engine several times to clear out excess gas
	Dirty or plugged air cleaner	Clean air cleaner and replace
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
	Cooling system dirty/plugged	Clean
	Spark arrestor* plugged	Clean or replace
Excessive vibration due to rotor being out of balance	Chipped teeth	Replace chipped teeth
	Dirt buildup on rotor	Clean rotor
	Bent/damaged pocket	Replace damaged pockets
	Missing tooth	Replace missing tooth and inspect set. Rotate, sharpen, or replace other teeth as necessary.

*If equipped

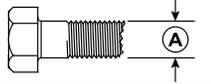
7 SPECIFICATIONS

Section

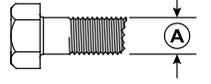
DESCRIPTION	ENGLISH	METRIC
Engine	Honda GX270 269cc Cyclonic Air Filter	
Fuel Capacity	5.6 quarts (1.4 gallons)	
Starter	Recoil	
Teeth	8 Wearsharp™ Greenteeth®	
Rotor Size	14" diameter	35.6 cm diameter
Rotor Speed	3100 RPM	
Rotor Weight (includes bushing and pulley)	31.5 lbs.	14.3 kg
Tires	13/500 × 6, 13" diameter	13/500 × 6, 33 cm diameter
Drive	BX58-X5 Single Band Belt with Centrifugal Clutch	
Weight	230 lbs.	104.3 kg
Transport/Storage Dimensions (L×W×H)	44.9" × 26.4" × 30.4"	114 cm × 67.1 cm × 77.2 cm

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 PARTS & OPTIONS

Section

8.1 REPLACEMENT PARTS

FOR MACHINE SERVICE OR PARTS

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

ORDERING PARTS

Only genuine Cray 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 Cray Bear Cat dealer.

Provide the following when ordering parts:

- The SERIAL NUMBER of your machine.
- The PART NUMBER of the part.
- The PART DESCRIPTION.
- The QUANTITY needed.

8.2 OPTIONS

PART NUMBER	DESCRIPTION
14787-00	HOSE ASSEMBLY, CRANKCASE DRAIN
34739-00	1/2" HEX SOCKET POCKET BOLTS
34740-00	4" DIAMOND WHEEL
78114-00	KIT, CLUTCH REBUILD
78115-00	KIT, WEARSHARP TOOTH
78116-00	KIT, Green (Rocky Soil) Tooth
78121-00	KIT, Red (Sand/Clay) Tooth
78184-00	KIT, Dura-Tire™ SG (foam-filled)
78187-00	KIT, SG HOUR METER
78209-00	KIT, SG BRAKE
78213-00	KIT, MANUAL HOLDER SG FAMILY
78218-00	KIT, TOW BAR SG FAMILY
78219-00	KIT, 2" COUPLER FOR 2" HITCH (for use with 78218-00)
78224-00	KIT, SIDE FLAPS SGXTR
78283-00	KIT, STUMP GRINDER TRAILER



P/N: 78182-00



Manual Holder Kit, 78213-00



SG Hour Meter Kit, 78187-00



SGACE Side Flaps Kit, 78287-00



Optional Brake Kit, 78209-00



Dura-Tire Kit, 78184-00



SG Family Tow Bar Kit, 78218-00

⚠ WARNING ⚠
Not for highway use. Towing at high speeds could result in death or serious injury as well as damage to the machine.



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

For customer service or for your nearest Crary Bear Cat dealer call 888.625.4520 | For International call 701.282.5520
BEARCATPRODUCTS.com

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