

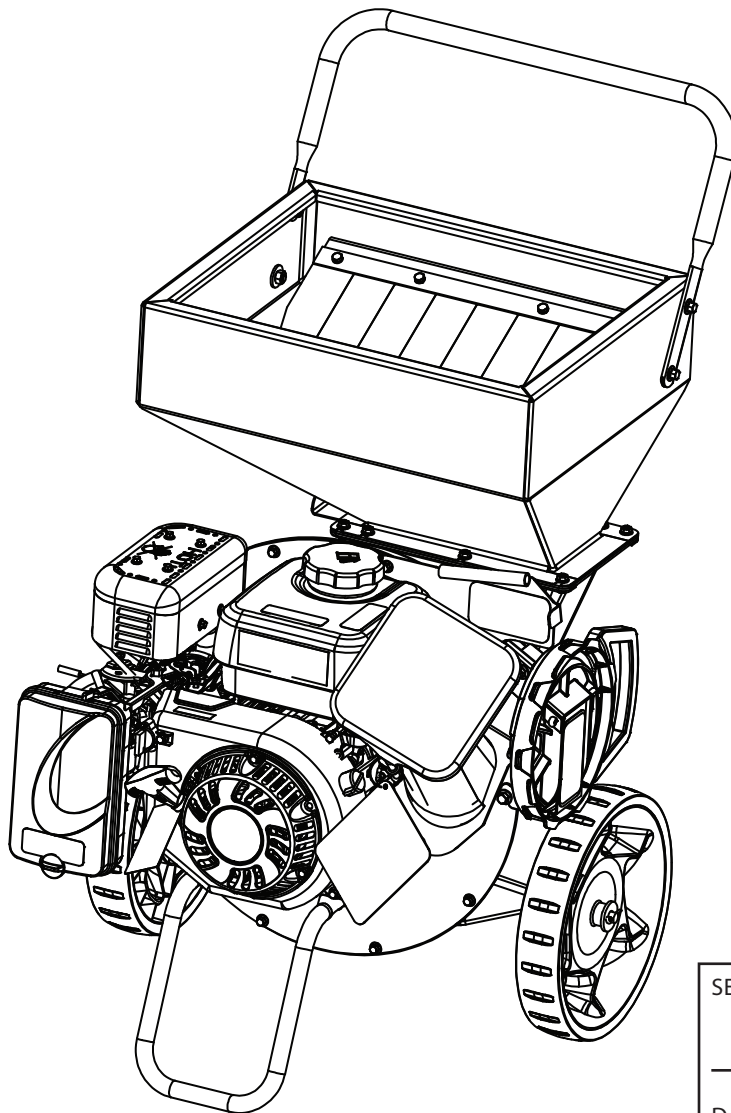


Owner's Manual

CHIPPER SHREDDER

Model #'s: 18493 / 22752 /
22754 / 30520 / 32013

ENGLISH



SERIAL NO.

DATE OF PURCHASE:

THIS INSTRUCTION BOOKLET CONTAINS **IMPORTANT** SAFETY INFORMATION. PLEASE READ AND KEEP FOR FUTURE REFERENCE.



STOP! ACTIVATE YOUR WARRANTY BEFORE USE

All products must be registered *within 30 days* from the date of purchase in order to be covered under warranty. For more information regarding Warranty and Registration please review the Warranty and Registration terms and conditions expressed in the warranty insert.

INTRODUCTION

Thank you for purchasing your product from Earthquake®. We have worked to ensure that this product meets the highest standards for usability and durability. With proper care, your purchase will provide many years of service.

Please read this entire manual before installation and use. Earthquake® reserves the right to change, alter or improve the product and this document at any time without prior notice. Due to continuous product improvements, product images may not be exact. Some assembly may be required.

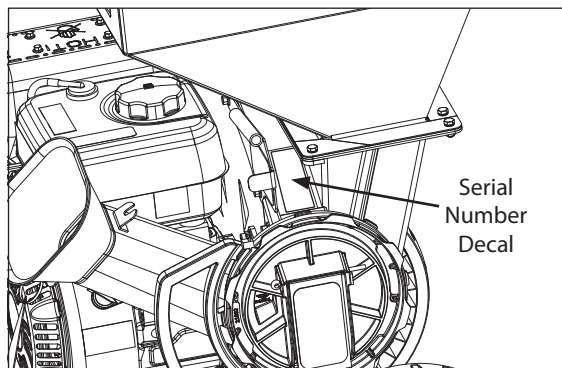
Read and keep this manual for future reference. This manual contains important information regarding safety, assembly, operation and maintenance. The owner must be certain that all the product information is included with the unit. This information includes the manual, the replacement parts and the warranties. This information must be included to make sure state laws and other laws are followed. All persons to whom rent/loan this unit must have access to and understand this information. This manual should remain with the product even if it is resold.

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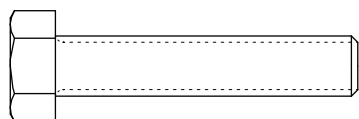
REGISTRATION AND SERVICE

Record the product model number and serial number in the space provided for easy reference when ordering parts or requesting technical support. Excluding emissions-related warranty items, the warranty is valid only if the completed registration is received by Ardisam within 30 days of purchase. You can register your warranty online by visiting www.GetEarthquake.com, or by mailing it to: Ardisam, 1160 8th Avenue, Cumberland, WI 54829. You may also call our Customer Service department at (800) 345-6007 Mondays through Fridays from 8 a.m. to 5 p.m. CST.

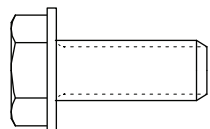


BOLT IDENTIFICATION CHART

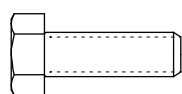
Bolts shown are for size reference only. Extra hardware may be included in the parts bag.



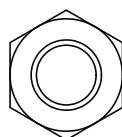
(A)
M8 x 40 MM Bolt
Qty 4



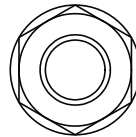
(B)
M8 x 20 MM Flange Bolt
Qty 4



(C)
M6 x 16 MM Bolt
Qty 3



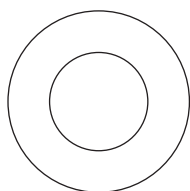
(G)
M8 Nut
Qty 8



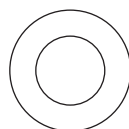
(H)
M8 Nyloc Nut
Qty 3



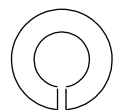
(I)
M6 Nut
Qty 3



(D)
12 X 24 MM Washer
Qty 2

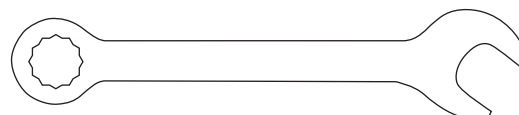


(E)
M8 Washer
Qty 12

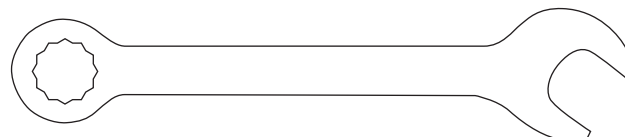


(F)
M6 Spring Lock Washer
Qty 3

TOOLS NEEDED - NOT INCLUDED



8 MM Wrench - Qty 1



10 MM Wrench - Qty 1

WARNINGS AND SAFETY PRECAUTIONS

OWNER'S RESPONSIBILITY


Accurate assembly and safe and effective use of the machine is the owner's responsibility.

- Read and follow all safety instructions.
- Carefully follow all assembly instructions.
- Maintain the machine according to directions and schedule included in this Earthquake® operator's manual.
- Ensure that anyone who uses the machine is familiar with all controls and safety precautions.

SPECIAL MESSAGES

Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.

NOTE: *General information is given throughout the manual that may help the operator in the operation or service of the machine.*

-  This symbol points out important safety instructions which if not followed could endanger your personal safety. Read and follow all instructions in this manual before attempting to operate this equipment.

BEFORE OPERATING EQUIPMENT:

Please read this section carefully. Read entire operating and maintenance instructions for this product. Failure to follow instructions could result in serious injury or death. Operate the machine according to the safety instructions outlined here and inserted throughout the text. Anyone who uses this machine must read the instructions and be familiar with the controls.

NOTICE

NOTICE INDICATES YOUR EQUIPMENT CAN BE DAMAGED IF THE SAFETY INSTRUCTIONS THAT FOLLOW THIS SIGNAL WORD ARE NOT OBEYED.


IMPORTANT

IMPORTANT INDICATES HELPFUL INFORMATION FOR PROPER ASSEMBLY, OPERATION OR MAINTENANCE OF YOUR EQUIPMENT.

CAUTION

 CAUTION INDICATES A HAZARD WHICH, IF NOT AVOIDED, COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE.


WARNING


 WARNING INDICATES A HAZARD WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY AND/OR PROPERTY DAMAGE.

DANGER

 DANGER INDICATES A HAZARD WHICH, IF NOT AVOIDED, CERTAINLY WILL RESULT IN DEATH OR SERIOUS INJURY AND/OR PROPERTY DAMAGE.

WARNING

 YOU MUST READ, UNDERSTAND AND COMPLY WITH ALL SAFETY AND OPERATING INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO SETUP AND OPERATE YOUR MACHINE.

 FAILURE TO COMPLY WITH ALL SAFETY AND OPERATING INSTRUCTIONS CAN RESULT IN LOSS OF MACHINE CONTROL, SERIOUS PERSONAL INJURY TO YOU AND/OR BYSTANDERS, AND RISK OF EQUIPMENT AND PROPERTY DAMAGE. THE TRIANGLE IN THE TEXT SIGNIFIES IMPORTANT CAUTIONS OR WARNINGS WHICH MUST BE FOLLOWED.

GENERAL OPERATING SAFETY

- Read the operating and service instruction manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
- Do not operate the equipment without wearing adequate outer garments and safety goggles. Avoid loose-fitting clothes and use protective footwear that will improve footing on slippery surfaces.
- Dress appropriately when operating the chipper shredder. Always wear sturdy footwear and safety goggles. Never wear sandals, sneakers or open shoes, and never operate the chipper shredder with bare feet. Do not wear loose clothing that might get caught in moving parts.
- Never allow children to operate the equipment. Never allow adults to operate the equipment without proper instruction.
- Only allow responsible adults, who are familiar with the instructions, to operate the unit (local regulations can restrict operator age).
- Keep the area of operation clear of all persons, particularly small children and pets.
- Always maintain secure footing and solid balance while starting or operating the chipper shredder. Never lean directly over the machine.
- Never operate the machine at high transport speeds on hard or slippery surfaces.
- Operate the machine only in daylight or good artificial light.
- Do not operate the unit while under the influence of alcohol or drugs.
- Exercise caution to avoid slipping or falling.
- Always wear eye and hearing protection when operating this unit.
- Keep in mind the operator is responsible for accidents occurring to other people or property.
- Never operate the machine without proper guards, plates, or other safety protective devices in place.
- Do not put hands or feet near or under rotating parts or at inlet or discharge openings.
- Thoroughly inspect where equipment is to be used and remove all foreign objects.



DANGER

- ⚠ THE CHIPPER SHREDDER HAS SPINNING BLADES THAT CAN AMPUTATE HANDS AND FEET. DO NOT PLACE HANDS OR FEET IN THE HOPPER OR CHIPPER CONE, OR DISCHARGE CHUTE.



WARNING

- ⚠ COMBUSTIBLE DEBRIS CAN CATCH FIRE. IT IS A VIOLATION OF CALIFORNIA PUBLIC RESOURCE CODE, SECTION 4442, TO USE OR OPERATE ENGINE-POWERED PRODUCTS ON ANY FOREST-COVERED, BRUSH-COVERED, OR GRASS-COVERED LAND UNLESS THE EXHAUST SYSTEM IS EQUIPPED WITH A SPARK ARRESTER, AS DEFINED IN SECTION 4442, MAINTAINED IN EFFECTIVE WORKING ORDER. OTHER STATES OR FEDERAL JURISDICTIONS MAY HAVE SIMILAR LAWS. CONTACT THE ORIGINAL EQUIPMENT MANUFACTURER, RETAILER, OR DEALER TO OBTAIN A SPARK ARRESTER DESIGNED FOR USE WITH THIS PRODUCT.



WARNING

- ⚠ THIS UNIT DISCHARGES DEBRIS AT HIGH SPEEDS. ALWAYS WEAR PROTECTIVE GOGGLES AND DO NOT OPERATE WITHOUT THE DEBRIS BAG IN PLACE.
- ⚠ DO NOT ALLOW ANYONE IN THE AREA WHILE THE UNIT IS RUNNING. IF SOMEONE DOES ENTER THE AREA, SHUT THE UNIT OFF IMMEDIATELY UNTIL THEY LEAVE. ORGANIZE THE WORK AREA PRIOR TO STARTING WORK.
- Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic.
- Never allow bystanders near the unit while running.
- Do not put hands or feet near rotating parts or under the machine. Keep clear of the discharge opening at all times.
- Always operate the chipper shredder outdoors, on a firm, level, earthen or grassy surface where the unit will be stable and stay in position. Never attempt to operate the unit on a slope, or on a wet or slippery surface where you could slip and fall toward the chipper cone or hopper openings.
- If the machine should start to vibrate abnormally, stop the engine (motor) and check immediately for the cause. Vibration is generally a warning sign of trouble.

- Do not operate without the debris bag in place because this unit discharges debris at high speeds. If the unit is operated on hard ground, asphalt, concrete, or other hard surfaces without the collection bag in place. Material can ricochet off of the hard surface and cause an unsafe condition for users and bystanders.
- Always obey the size limitations for tree limbs and branches stated in the Waste Materials Guide portion of this manual.
- Never leave the machine running unattended. Always turn off the engine, wait for the rotor to come to a complete stop, and disconnect the spark plug before leaving the area. Always move the unit to a safe storage area when not in use.
- Never direct discharge material toward anyone. Avoid discharging material against a wall or obstruction. Material may ricochet back toward the operator.
- Always stand to the side of the chipper cone when feeding tree limbs and branches into the unit, as tree limbs, branches, and harder woods may kick back while being chipped.
- Always keep hands out of the chipper cone and shredder hopper when feeding materials. Never wrap fingers tightly around branches as you are feeding them into the unit, as a sudden inward surge could pull your hands and arms into the unit.
- Never allow material to build up in the discharge area or shredding chamber, as this may cause new material being fed into the machine to kickback with sufficient force to injure you or other bystanders.
- Never allow material to build up around the engine during chipper shredder operation. This could result in a fire, or overheating of the engine.
- Take all possible precautions as recommended by the manufacturer when leaving the machine unattended.
- Do not overload the machine by attempting to chip or shred any material beyond manufacturers recommendations.
- Use extreme caution when reversing or pulling the machine towards you.
- Do not change the engine governor settings or overspeed the engine.
- Never attempt to reposition or move the chipper shredder unit while it is running. Doing so could cause the machine to tip over, and reaching to steady the unit could result in accidental insertion of your hands into the chipper cone or shredder hopper areas.
- Never continue to operate the machine if it starts making unusual noise or vibration. Shut the engine off immediately, allow the rotor to stop, disconnect the spark plug wire and secure the wire away from the spark plug. Inspect the unit for any signs of damage or foreign material in the chipping or shredding areas. Remove any solid material that may be preventing the unit from operating properly.
- Never attempt to clear clogs from the chipper cone, shredder hopper or discharge chute while the unit is running. Always shut the engine off, allow the rotor to come to a complete stop, and remove the spark plug wire from the spark plug before removing excess materials.
- Never attempt to perform any maintenance, repairs, or attachment of accessories while the unit is running. Always shut the unit off, allow the rotor to come to a complete stop, and remove the spark plug wire from the spark plug before beginning these activities.
- Always make sure that the shredding chamber, shredder hopper, and chipper cone are empty before starting the unit after it has been idle. Attempting to start the unit with material in these areas could cause the engine starting cord to stop suddenly, injuring your hand and fingers, or toppling the unit over. Vibration is generally a warning sign of trouble.
- Use only attachments and accessories approved of by the manufacturer of the machine.
- Make sure chipper shredder is free of debris before starting the engine.
- Never attempt to make any adjustments while the engine is running.
- After striking a foreign object, stop the engine (motor), remove spark plug wire, and wait for all moving parts to come to a complete stop. Thoroughly inspect the machine for any damage, repair the damage before restarting and operating the machine.
- Start the engine or switch on the motor carefully according to the manufacturers instructions. Keep hands and feet away from inlet and discharge areas.
- Never pick up or carry the machine while the engine is running.

ENGINE SPECIFIC SAFETY

- Before cleaning, repairing, or inspecting, shut off the engine and make certain that all moving parts have come to a complete stop. Disconnect the spark plug wire and secure the wire away from the spark plug to prevent accidental starting.
- Stop the engine (motor) when leaving the operating position and when making any repairs, adjustments and inspections.

MAINTENANCE AND STORAGE

- Keep machine, attachments, and accessories in safe working condition.
- Check engine mounting bolts and other hardware at frequent intervals for proper tightness to be sure the equipment is in safe working condition.
- Never store machine with fuel in the fuel tank inside a building where ignition sources are present, such as hot water and space heaters, clothes dryers and the like. Allow the engine to cool before storing in any enclosure.
- Always refer to the operator's manual for important details if the machine is to be stored for an extended period.
- If the fuel tank has to be drained, do this outdoors.
- Follow the manufacturer's recommendations for safe loading, unloading and storage of machine.

PREVENTING CARBON MONOXIDE POISONING

- Always start and run engine outdoors. Do not start or run engine in an enclosed area, even if doors or windows are open.
- Never try to ventilate engine exhaust indoors. Carbon monoxide can reach dangerous levels very quickly.
- Never run engine outdoors where exhaust fumes may be pulled into a building.
- Never run engine outdoors in a poorly ventilated area where the exhaust fumes may be trapped and not easily taken away. (Examples include: in a large hole or areas where hills surround your working area.)
- Never run engine in an enclosed or partially enclosed area. (Examples include: buildings that are enclosed on one or more sides, under tents, car ports or basements.)
- Always run the engine with the exhaust and muffler pointed in the direction away from the operator.



WARNING

- ▲ **ENGINE GIVES OFF CARBON MONOXIDE, AN ODORLESS, COLORLESS, POISON GAS. CARBON MONOXIDE MAY BE PRESENT EVEN IF YOU DO NOT SMELL OR SEE ANY ENGINE EXHAUST. BREATHING CARBON MONOXIDE CAN CAUSE NAUSEA, FAINTING OR DEATH, IN ADDITION TO DROWSINESS, DIZZINESS AND CONFUSION. IF YOU EXPERIENCE ANY OF THESE SYMPTOMS, SEEK FRESH AIR AND MEDICAL ATTENTION IMMEDIATELY.**
- ▲ **IF YOUR MACHINE COMES WITH A SEPARATE ENGINE MANUAL, BE SURE TO READ AND FOLLOW ALL SAFETY AND WARNING PRECAUTIONS OUTLINED THERE, IN ADDITION TO ANY IN THIS MANUAL.**



WARNING

- ▲ **FUEL IS HIGHLY FLAMMABLE. TAKE THE FOLLOWING PRECAUTIONS:**
 - **STORE FUEL IN CONTAINERS SPECIFICALLY DESIGNED FOR THIS PURPOSE.**
 - **REFUEL OUTDOORS ONLY AND DO NOT SMOKE WHILE REFUELING.**
 - **ADD FUEL BEFORE STARTING THE ENGINE. NEVER REMOVE THE CAP ON THE FUEL TANK OR ADD FUEL WHILE THE ENGINE IS RUNNING OR WHEN THE ENGINE IS HOT.**
 - **IF FUEL IS SPILLED, DO NOT ATTEMPT TO START THE ENGINE BUT MOVE THE MACHINE AWAY FROM THE AREA OF SPILLAGE AND AVOID CREATING ANY SOURCE OF IGNITION UNTIL FUEL VAPORS HAVE DISAPPEARED.**
 - **REPLACE ALL FUEL TANK AND CONTAINER CAPS SECURELY.**

- Never point the exhaust muffler towards anyone. People should always be many feet away from the operation of the engine and its attachments.
- Do not change the engine governor settings or over-speed the engine.
- Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.

GASOLINE FIRES AND HANDLING FUEL SAFELY

- Use extra care in handling gasoline and other fuels. They are flammable and vapors are explosive.
- When storing extra fuel be sure that it is in an appropriate container and away from any fire hazards.

- Prevent fire and explosion caused by static electric discharge. Use only nonmetal, portable fuel containers approved by the Underwriter's Laboratory (U.L.) or the American Society for Testing & Materials.
- Always fill fuel tank outside in a well ventilated area. Never fill your fuel tank with fuel indoors. (Examples include: basement, garage, barn, shed, house, porch, etc.) Never fill tank near appliances with pilot lights, heaters, or other ignition sources. If the fuel has to be drained, this should be done outdoors. The drained fuel should be stored in a container specifically designed for fuel storage or it should be disposed of carefully.
- Never remove the fuel cap or add fuel with the engine running. Stop engine and allow to cool before filling.
- Do not smoke while refueling or operating engine.
- Never drain fuel from the engine in an enclosed area.
- Always wipe up excess (spilled) fuel from engine before starting. Clean up spilled fuel immediately. If fuel is spilled, do not start the engine but move machine and fuel container from area. Clean up spilled fuel and allow to evaporate and dry after wiping and before starting.
- Allow fuel fumes/vapors to escape from the area before starting engine.
- Test the fuel cap for proper installation before starting and using engine.
- Always run the engine with fuel cap properly installed on the engine.
- During storage, keep machine so gas cap is up.
- Never siphon fuel by mouth to drain fuel tank.
- Always have an adult fill the fuel tank and never allow children to fill the engine.
- Never allow an adult or anyone under the influence of drugs or alcohol to fill engine.
- When storing gasoline or equipment with fuel in the tank, store away from furnaces, stoves, water heaters or other appliances that have a pilot light or other ignition source because they can ignite gasoline vapors.
- Never fill containers inside a vehicle or on a truck bed with a plastic bed liner. Always place containers on the ground away from your vehicle before filling.
- Remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then re-

fuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.

BURNS AND FIRES

- The muffler, muffler guard and other parts of the engine become extremely hot during the operation of the engine. These parts remain extremely hot after the engine has stopped.

PREVENTION OF BURNS AND FIRES

- Never remove the muffler guard from the engine.
- Never touch the muffler guard because it is extremely hot and will cause severe burns.
- Never touch parts of the engine that become hot after operation.
- Always keep materials and debris away from muffler guard and other hot parts of the engine to avoid fires.

CHILDREN AND BYSTANDERS

- Tragic accidents can occur if the operator is not alert to the presence of children and/or bystanders. Never assume that others will remain where you last saw them.
- Keep the area of operation clear of all persons, especially small children and pets. Keep children under the watchful care of a responsible adult.
- Be alert and turn the machine off if children enter the area.
- Before and while moving backwards, look behind and down for small children.
- Never allow children to operate the machine



- A: Warning!
- B: Read Owner's Manual Before Operating Machine.
- C: Do Not Operate While Others Are Around.
- D: Remove Objects that Could Be Thrown By This Machine.
- E: Never Operate Machine Up and Down Slopes, ALWAYS Operate Mower Across Slopes.
- F: Beware of Moving and Rotating Parts.
- G: Wear Ear and Eye Protection At All Times.
- H: Do Not Service or Adjust Moving Parts Unless Engine is Stopped and Spark Plug Wire is Disconnected.
- I: Direction of Rotating Mower Lines.
- J: Toxic Fumes—Do Not Operate in Unventilated Areas.
- K: Hot Surfaces.
- L: Fire Hazards.
- M: Do Not Use In Thunderstorms--For severe weather, stop operation of this machine and seek shelter.
- N: Team Lift--For your safety, always have at least two people when lifting this machine.
- O: Never Fit Metal Cutting Parts--Do not attach any metal parts to the cutting head of this machine.
- P: Do Not Operate When Children Or Others Are Around.

SAFETY DECALS

This unit has been designed and manufactured to provide you with the safety and reliability you would expect from an industry leader in outdoor power equipment manufacturing.

Although reading this manual and the safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively, we have placed several safety labels on the unit to remind you of this important information while you are operating your unit.

All DANGER, WARNING, CAUTION and instructional messages on your unit should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed. The information is for your safety and it is important! The safety decals below are on your unit.

If any of these decals are lost or damaged, replace them at once. See your local dealer or contact Earthquake directly for replacements.

These labels are easily applied and will act as a constant visual reminder to you, and others who may use the equipment, to follow the safety instructions necessary for safe, effective operation.

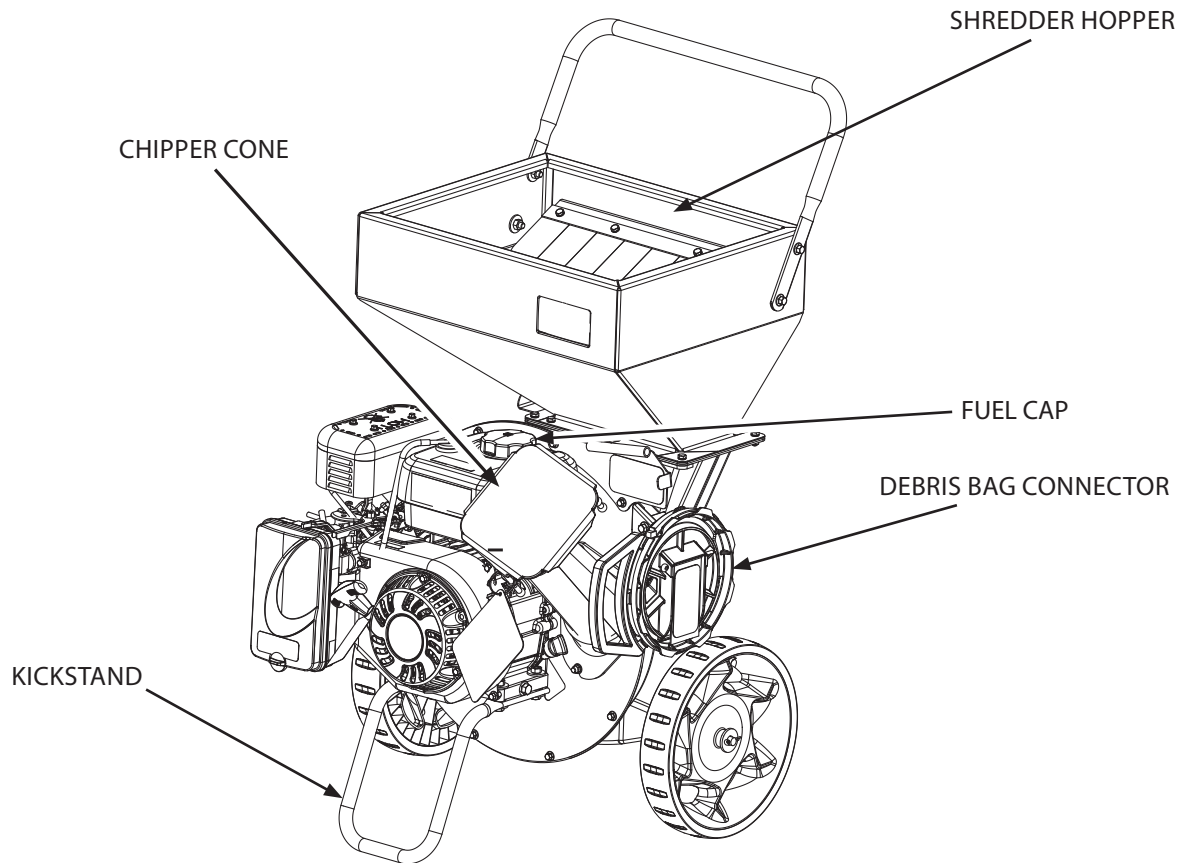


FEATURES AND CONTROLS

CONTROL FUNCTIONS

The information below briefly describes the function of individual controls. Operating requires the combined use of several controls applied in specific sequences. To learn what combination and sequence of controls to use for various tasks see the OPERATION section.

*For engine features and controls see engine manual.



CHIPPER CONE/SHREDDER HOPPER

Chipper Cone: The chipper cone is located on the front of the unit next to the engine. Insert branches and tree limbs up to approximately 3" (7.6 cm) in diameter into the chipper cone. NEVER insert hands past the mouth of the cone.

Shredder Hopper: The shredder hopper is on top of the unit. Leaves and other light waste can be loaded into the shredder hopper. Nothing over 1/2 inch in diameter should go into shredder. NEVER insert hands into the hopper.

Debris Bag: Use the debris bag to collect the material discharged from the unit. Do not operate the unit without the debris bag in place.

SPECIFICATIONS

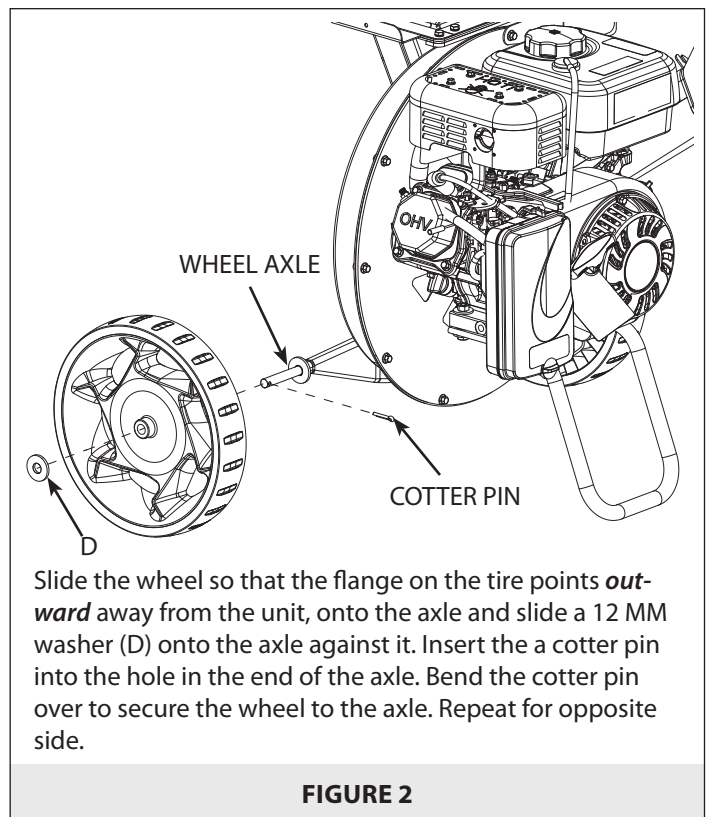
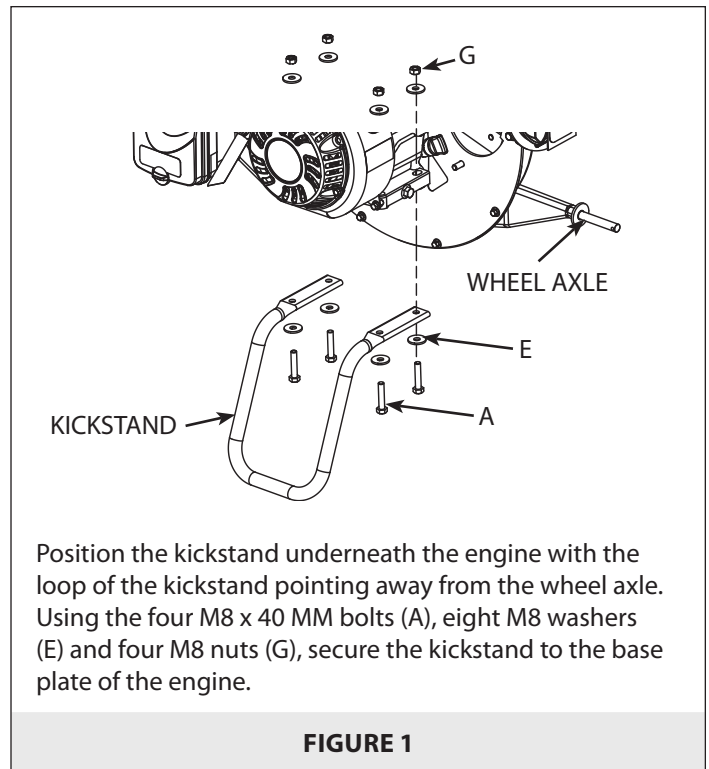
| Model # | 18493 / 30520 | 22752 | 32013 | 22754 |
|--------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Chipping Capacity | Approx. 3" | Approx. 3" | Approx. 3" | Approx. 3" |
| Shredding Capacity | 1/2" x 18" long | 1/2" x 18" long | 1/2" x 18" long | 1/2" x 18" long |
| Chipping Knives | 2 | 2 | 2 | 2 |
| Shredding Hammers | 2 J-Hammers, 2 Triangle-Hammers | 2 J-Hammers, 2 Triangle-Hammers | 2 J-Hammers, 2 Triangle-Hammers | 2 J-Hammers, 2 Triangle-Hammers |
| Waste Reduction Ratio | 20:1 | 20:1 | 20:1 | 20:1 |
| Start Type | Recoil | Recoil | Recoil | Recoil |
| Rotor Material | Steel | Steel | Steel | Steel |
| Hopper Dimensions | 16.75" x 13.25" | 16.75" x 13.25" | 16.75" x 13.25" | 16.75" x 13.25" |
| Bag Dimensions | 24" x 36" | 24" x 36" | 24" x 36" | 24" x 36" |
| Limb Chute | Yes | Yes | Yes | Yes |
| Tire Diameter | 11" | 11" | 11" | 11" |
| Tire Width | 2" | 2" | 2" | 2" |
| Tire Material | Rubber | Rubber | Rubber | Rubber |
| Wheel Type | Non-pneumatic | Non-pneumatic | Non-pneumatic | Non-pneumatic |
| Net Weight | 121 lb | 118 lb | 126 lb | 119 lb |
| Gross Weight | 131 lb | 131 lb | 139 lb | 129 lb |
| Assembled Dimensions | 25.4" x 29.9" x 51.9" | 25.4" x 29.9" x 51.9" | 25.4" x 29.9" x 51.9" | 25.4" x 29.9" x 51.9" |
| Boxed Dimensions | 32.2" x 23.9" x 23.1" | 32.2" x 24.6" x 24.6" | 32.2" x 23.9" x 23.1" | 32.2" x 23.9" x 23.1" |
| Vacuum Kit | Yes | Yes | Yes | Yes |
| Vacuum Measurement | 20" of Water | 20" of Water | 20" of Water | 20" of Water |
| Vacuum Air Gate | Yes | Yes | Yes | Yes |
| Rotor Diameter | 14" | 14" | 14" | 14" |
| Quick Attach Bag System | Yes | Yes | Yes | Yes |
| ANSI | Yes | Yes | Yes | Yes |

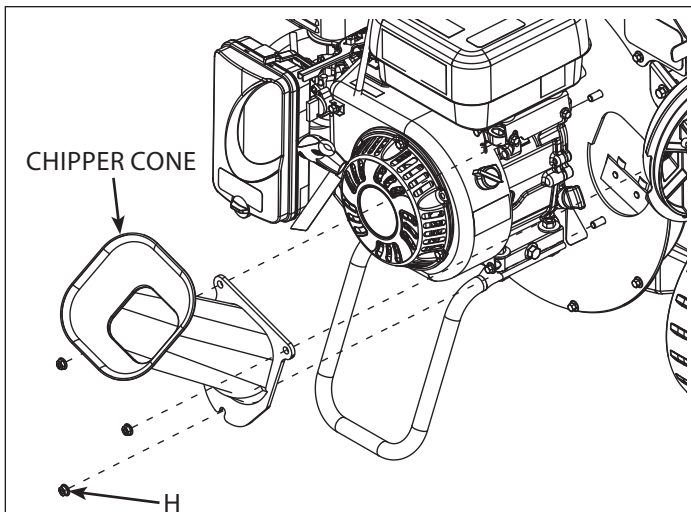
UNPACKING AND ASSEMBLY

CARTON CONTENTS

TILLER ASSEMBLY

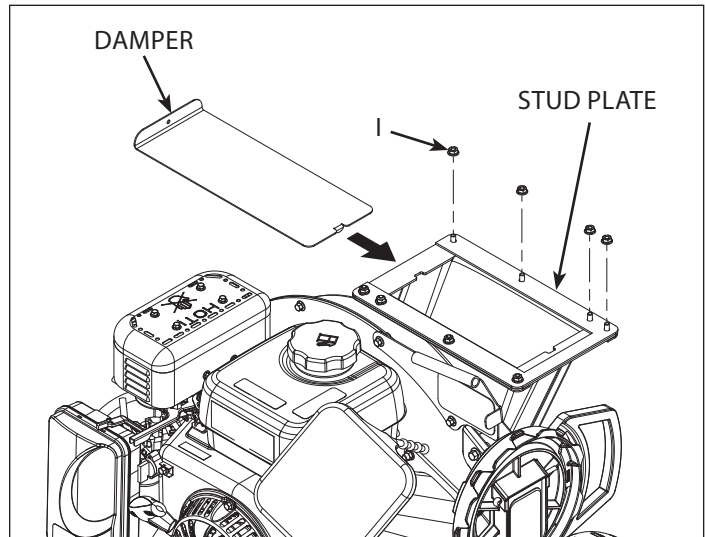
- Manual Parts Bag:
 - Hardware Parts Bag:
 - A - (4) M8 x 40 MM Bolts
 - B - (4) M8 x 20 MM Bolts
 - C - (3) M6 x 16 MM Bolts
 - D - (2) 12 x 24 MM Washers
 - E - (12) M8 Washers
 - F - (3) M6 Spring Lock Washers
 - G - (8) M8 Nuts
 - H - (3) M8 Nyloc Nuts
 - I - (3) M6 Nuts
- Cone Cover
- Debris Bag
- Safety Goggles
- (2) Wheels
- Hopper
- Bag Connector
- Bottle of 4-cycle Engine Oil
- Cone
- Chipper Assembly
- Handlebar
- Kickstand
- Hopper Guard
- Bag Support Rod





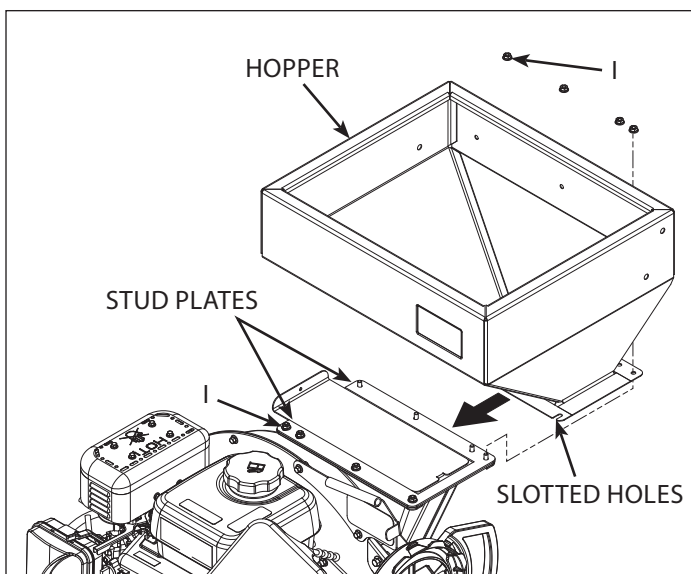
Position the chipper cone over the three M8 x 1.25 threaded studs protruding from the engine plate, and attach using three M8 nyloc nuts (H). Rotate cone and cone base away from engine so cone does not contact engine. Tighten the three M8 nyloc nuts (H) securely.

FIGURE 3



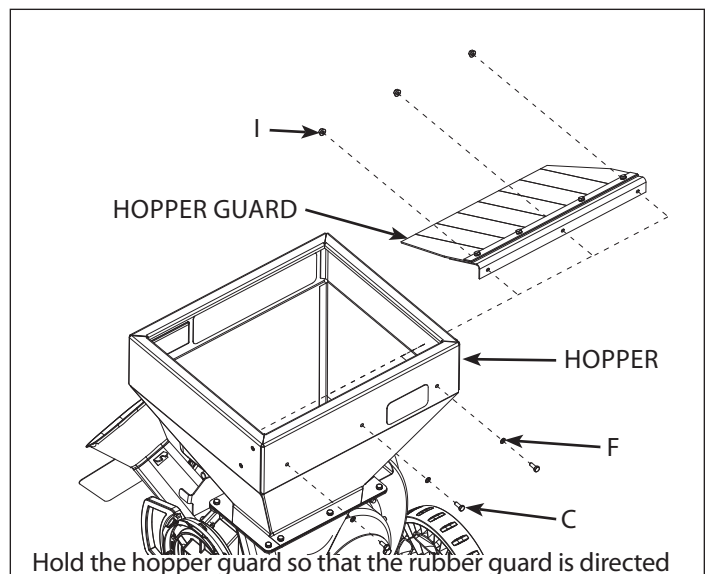
Remove back four M6 nuts (I) and set nuts and rear stud plate aside. Loosen front four M6 nuts (I). **Note: These will not need to be removed.** Install the damper between the stud plates as shown.

FIGURE 4



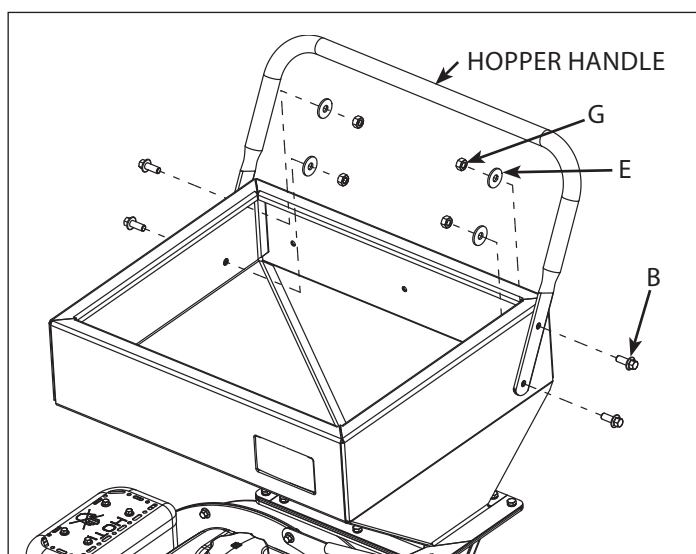
Install hopper by sliding slotted holes on the front side of hopper onto the four studs on the front stud plate with the previously loosened four M6 nuts (I). Reinstall rear stud plate and back four M6 nuts (I) that were previously removed in Figure 4. Tighten all eight M6 nuts (I).

FIGURE 5



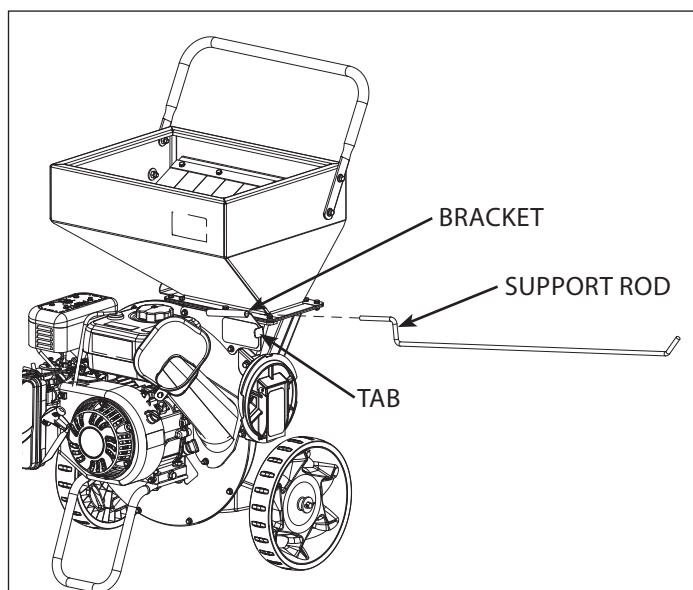
Hold the hopper guard so that the rubber guard is directed down towards the bottom of the hopper. Align the assembly holes with the holes in the hopper. Using the three M6 x 16 MM bolts (C), three M6 spring lock washers (F) and three M6 nuts (I), secure the hopper guard to the hopper. Insert the bolts with washers from the outside of the hopper.

FIGURE 6



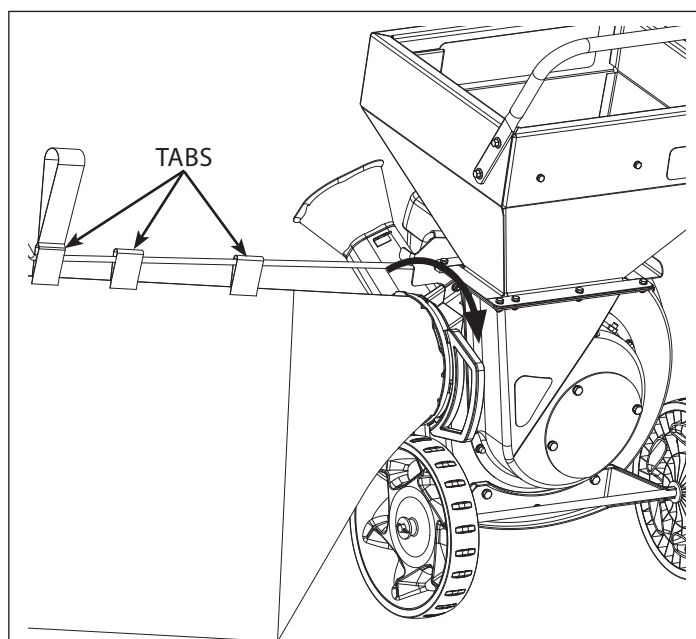
Hold the hopper handle up so that the outer holes in the handle align with the holes in the hopper and secure with four M8 x 20 MM bolts (B), four M8 washers (E) and four M8 nuts (G). Insert the screws from the outside of the hopper.

FIGURE 7



Slide the support rod into the bracket. Rotate the rod so that it sits below the front tab of the bracket.

FIGURE 8



Slide the tabs on the debris bag onto the support rod. Secure the bag connector onto the chipper by rotating the connector until locked in.

FIGURE 9

OPERATION

Be sure to read all information in the Safety and Operation section before attempting to operate this unit. Become familiar with all of the controls and how to stop the unit.

Check all hardware (bolts, screws, etc) before every use for tightness to be sure machine is in safe working condition.

Upon start-up and shut-down, you may hear the metal-to-metal sound of the triangular hammers and J-hammers positioning themselves on the rotor. This is normal. If this sound continues after the machine has reached full speed, contact your dealer or Earthquake for an inspection of the unit. Overloading the equipment will shorten its life, and can cause mechanical failures.

CHIPPER OPERATION

The chipper is designed to handle tree limbs and branches up to approximately 3" (7,6 cm) in diameter. The chipping knives also permit the processing of course organic matter like corn stalks. Tree branches must be inserted large-end first into the chipper cone. Since occasional kick-backs may occur, always stand off to the side of the unit. Allow the self-feeding action of the unit to draw the sticks in.

SHREDDER OPERATION

The shredder is designed to shred light brush, leaves, and other soft but bulky organic waste. As material (no larger than 1/2 inch in diameter) is loaded into the shredder hopper it is pulled into the path of the triangular and J-hammers by air flow.

VACUUM ATTACHMENT (OPTIONAL)

In addition to the chipper cone and hopper, loose debris may be processed by the Vacuum hose adapter kit. Leaves may be raked directly into the leaf tray where vacuum action will draw them into the shredder. For hard-to-reach areas, the nozzle and hose assembly may be used. The strength of the Vacuum may be changed using the rotating sleeve on the nozzle.

The optional Tazz vacuum kit and can be ordered by contacting Earthquake customer service or ordering online at getearthquake.com as listed below.

OPERATING LOCATION

Select an area with firm, level ground, covered by dirt or grass. Do not operate on wet or slick surfaces, or near bystanders. Locate and organize the materials to be processed so that you don't have to walk in front of the inlet or discharge openings, and so you have adequate room to work safely.

DANGER

⚠ THE EXHAUST FROM THIS PRODUCT CONTAINS CARBON MONOXIDE GAS. CARBON MONOXIDE IS A COLORLESS, ORDERLESS AND TASTELESS GAS THAT CAN CAUSE DIZZINESS, NAUSEA, UNCONSCIOUSNESS OR EVEN BRAIN DAMAGE AND DEATH IF INHALED FOR PROLONGED PERIODS.

⚠ OPERATE THE UNIT OUTDOORS IN A WELL VENTILATED LOCATION ONLY. KEEP CHILDREN, PETS AND BYSTANDERS AWAY.

WARNING

⚠ TO AVOID SERIOUS PERSONAL INJURY FROM ROTATING CUTTING BLADES, KEEP HANDS OUT OF INLET WHILE MACHINE IS RUNNING.

⚠ GASOLINE IS HIGHLY FLAMMABLE AND MUST BE HANDLED WITH CARE. NEVER FILL THE TANK WHEN THE ENGINE IS STILL HOT FROM RECENT OPERATION. DO NOT ALLOW OPEN FLAME, SMOKING OR MATCHES IN THE AREA. AVOID OVER-FILLING AND WIPE UP ANY SPILLS.

⚠ DO NOT USE GASOLINE CONTAINING METHANOL, GASOLINE CONTAINING MORE THAN 10% ETHANOL, GASOLINE ADDITIVES OR WHITE GAS BECAUSE ENGINE/ FUEL SYSTEM DAMAGE COULD RESULT.

IMPORTANT

ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE.

ADDING OIL

Refer to engine manual for information on adding oil.

ADDING FUEL

1. Remove the fuel cap. (*See Features and Controls*)
2. Fill the tank. Do not overfill. Leave room in the tank for fuel expansion. Refer to your engine manual for specific fuel recommendations.
3. Install and hand tighten the fuel cap.

STARTING THE ENGINE

1. See engine manual for start up instructions.
2. Ensure engine is running full throttle before beginning

chipping operation. On some engines, the throttle may not be adjustable.

STOPPING THE ENGINE

See engine manual for shut down procedure.

PROCESSING MATERIALS

Most materials to be processed can be handled more efficiently by following these tips.

CHIPPING TIPS:

- Prune branches down close to the main branch to make feeding them into the chipper cone easier.
- Large, hard, dried tree branches that resist chipping can be processed by rotating them as you alternately insert and retract them.
- If the material to be chipped is extremely hard, kicks back forcefully when being fed into the chipper cone, or cannot be easily controlled, remove the material immediately and set it aside.
- If additional force is required to insert materials into the chipper, the blades probably need to be sharpened.

Consult the Troubleshooting and Repair section of this manual, or see your authorized dealer.

- Maintain control of the materials you are feeding to prevent them from whipping around.
- Do not insert short pieces of material into the chipper cone by hand. Use a larger piece of material to feed them into the chipper cone.

SHREDDING TIPS:

- Don't overload the shredder by dumping large volumes of material into the hopper opening.
- Alternate loads of wet and dry material to prevent the discharge from becoming plugged.
- Never use any object to force material into the shredding chamber. It could get caught in the shredding hammers and damage the unit.

| OPERATION | TYPE OF WASTE PERMITTED | SIZE LIMITATIONS | NOTES |
|--|--|---|--|
| Shredding | Dry or moist organic material including leaves, plants, flowers, fruits, or vegetables. | Branches and twigs up to 1/2" diameter and 18" long. | Alternately chip or shred moist green waste with dry waste to avoid plugging of the discharge chute. Process at a feeding rate that allows the rotor to keep up and maintain a high rate of speed. |
| Chipping | Long, thicker tree limbs or small bunches of smaller sticks grouped together for ease of handling. | Tree limbs and branches, or bundles of small sticks grouped for easier handling. Maximum diameter of approximately 3" (7,6 cm). | Bulky tree limbs should be pruned close to the main stem. Always use a shorter piece of wood to push end pieces into the chipper cone. Never place hands in the chipper cone. Never chip very hard or dry materials such as kiln dried dimensional lumber (2x4's etc.) or other building materials. Never use the chipper to process pressure-treated wood products. |
| Vacuum Attachment (Optional Accessory) | Light, loose, dry waste such as leaves, grass clippings, or sawdust. | Small materials that will not obstruct the vacuum hose. | The vacuum is engineered for small, loose waste and for cleaning around decorative landscaping and flower beds. Twigs, wet leaves, and other bulky materials will clog the hose or obstruct the shredding chamber. |

TRANSPORTING AND STORAGE

- Always observe safe refueling and fuel handling practices when refueling the unit after transportation or storage.
- Never store the unit (with fuel) in an enclosed poorly ventilated structure. Fuel vapors can travel to an ignition source (such as a furnace, water heater, etc.) and cause an explosion. Fuel vapor is also toxic to humans and animals.
- Always use the hopper handle and built-in wheels to move the chipper shredder. Never lift the unit using the fuel tank for support. If the unit must be lifted, always use at least two people, and always grip the unit securely using the front leg and hopper handle.
- Always follow the engine manual instructions for storage preparations before storing the unit for both short and long term periods.
- Always follow the engine manual instructions for proper start-up procedures when returning the unit to service.
- Never store the unit or fuel container inside where there is an open flame or pilot light, such as in a water heater. Allow unit to cool before storing.

STORAGE

Perform engine maintenance and storage measures listed in the engine owner's manual. This includes draining the fuel system, or adding stabilizer to the fuel.

NOTE: Do not store a fueled unit in an enclosed structure. (See *Gasoline Fires and Handling Fuel Safety*)

BEFORE STARTING THE UNIT AFTER IT HAS BEEN STORED:

1. Check all fluid levels. Check all maintenance items.
2. Perform all recommended checks and procedures found in the engine owner's manual.
3. Allow the engine to warm up for several minutes before use.



WARNING

⚠ AMPUTATION HAZARD. TO AVOID SERIOUS INJURY FROM ACCIDENTAL STARTING, ALWAYS DISCONNECT THE SPARK PLUG WIRE AND SECURE IT AWAY FROM THE SPARK PLUG WHEN SERVICING THE UNIT.

MAINTENANCE

SCHEDULE AND PROCEDURES

The following schedule should be followed for normal care of your unit.

| SAFETY ITEMS | BEFORE EACH USE | EVERY 5 HOURS | EVERY 25 HOUR | SPRING & FALL |
|--|-----------------|---------------|----------------|---------------|
| Check for loose hardware | | x | | x |
| Check all safety labels | | | | x |
| CHIPPER MAINTENANCE ITEMS | BEFORE EACH USE | EVERY 5 HOURS | EVERY 25 HOURS | SPRING & FALL |
| Clean debris from engine and chipper. ** | x | | | |
| Inspect/Rotate Shredding Hammers | | | x | |
| Inspect/Rotate Chipping Knives | | | x | |

** More often in hot (over 85° F: 30° C) weather or dusty operating conditions.

ENGINE MAINTENANCE

Refer to the engine manual included in your parts packet for information on engine maintenance. Your engine manual provides information and a maintenance schedule for performing the following tasks:

1. Check oil level before each use or after every 8 hours of operation.
2. Change oil after first 5-8 hours of operation. Change oil while engine is warm. Refill with new oil of recommended grade.
4. Check spark plug seasonally or every 100 hours of operation.
5. Service air cleaner.
6. Keep engine and parts clean.
7. Check engine and equipment often for loose nuts and bolts, keep these items tightened.

CHECK FOR LOOSE HARDWARE

Service Interval: Every 5 hours; every spring and fall.

Inspect the unit, checking for loose hardware or components. Pay special attention to the hardware attaching the chipper cone, hopper, axle, and front leg.

CHECK SAFETY LABELS

Service Interval: Every spring and fall.

Check that the safety labels are in place and undamaged. Replace any damaged or missing decals.

INSPECT CONE, HOPPER AND GUARDS

Service Interval: Every spring and fall.

Check that the chipper cone, shredder hopper, and discharge guards are in place, undamaged, and secure. Replace any damaged or missing parts.

CLEAN DEBRIS FROM ENGINE AND CHIPPER

Service Interval: Before each use and every 100 hours.

The engine requires air flow to cool itself and for combustion. Before each use, clean any debris from the unit especially from around the air shroud intake, air filter, and muffler. Every 100 hours, remove the engine air shroud and clean out any debris from the engine cooling fins **SEE FIGURE 10**. We recommend having this service performed by an authorized repair center.

INSPECT / ROTATE SHREDDING HAMMERS

Service Interval: Every 25 Hours, or As Necessary

The shredding hammers of this unit can be rotated to provide a new cutting surface as required. The triangular hammers can be rotated twice, then flipped over for a total of 6 sharp cutting surfaces. The J-hammers can be flipped over once. To inspect the shredding hammers:

1. Disconnect the spark plug wire and secure it away from the spark plug. **SEE FIGURE 14** (on page 19).
2. Remove the small circular access panel (B) from the back of the shredder housing. **SEE FIGURE 11**.
3. Inspect the cutting edges of the triangular hammers (A) and J-hammers (A). **SEE FIGURES 11 AND 12**.

To rotate or replace the shredding hammers, see the Troubleshooting and Repair section.

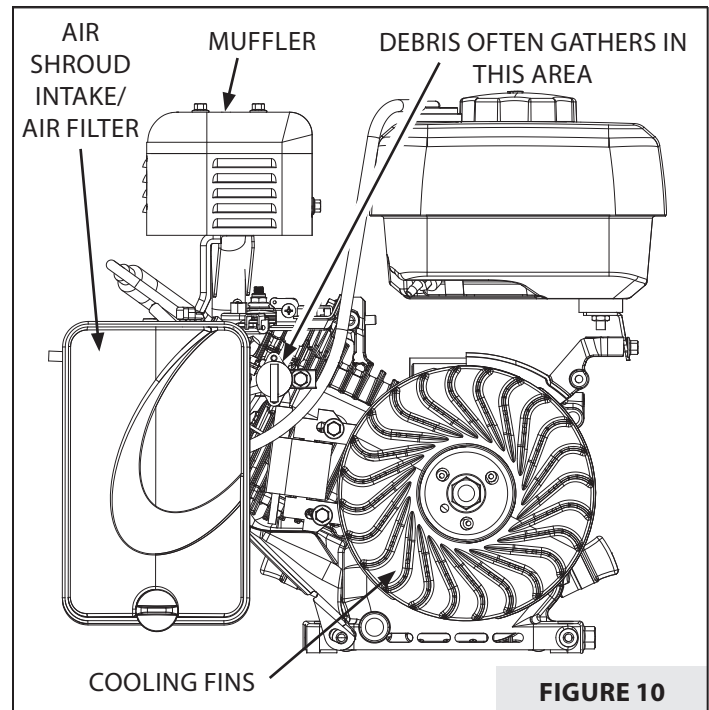


FIGURE 10

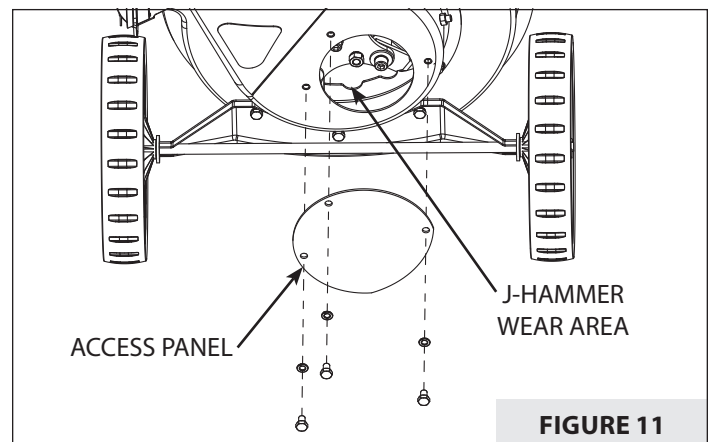


FIGURE 11

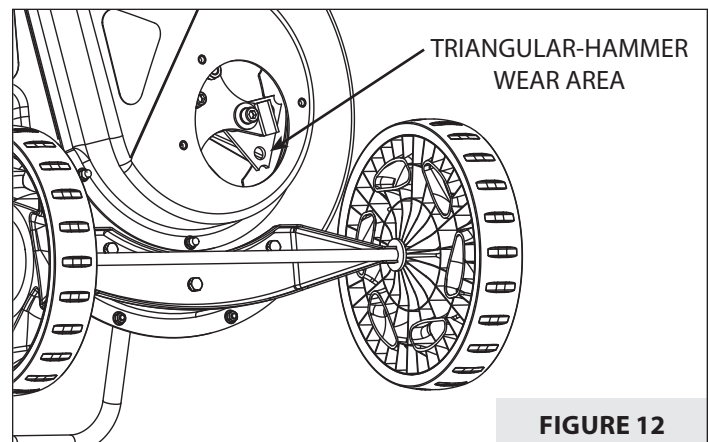


FIGURE 12

INSPECT CHIPPING KNIVES

Service Interval: Every 25 hours, or as necessary

The chipping knives of this unit can be rotated or sharpened to provide a new cutting surface as required. When inspecting the knives be careful to avoid touching the sharpened edges. To inspect the chipping knives:

1. Disconnect the spark plug wire and secure it away from the spark plug. **SEE FIGURE 14.**
2. Remove the nuts securing the chipper cone to the front of the chipper. Remove the chipper cone (A) to access the knives. **SEE FIGURE 13.**
3. Using the recoil starter, slowly pull the starter rope to rotate the rotor into position so the blades can be seen.

To sharpen or replace the chipper knives, see the Troubleshooting and Repair section.

CHECK / CHANGE ENGINE AIR CLEANER

Service Interval: Every 25 hours

The engine air cleaner assembly should be opened, inspected, and the filter element replaced every 25 hours, or as required if debris has built up in the assembly.

To replace the air filter, see engine manual.

REPLACE SPARK PLUG

Please contact your authorized repair center to perform this service.

OIL MAINTENANCE

Refer to engine manual for oil maintenance.

CAUTION

⚠ FOR THE SAFETY OF THE USER, AND TO MAXIMIZE THE LIFE OF THE ENGINE, IT IS CRUCIAL TO TAKE TIME TO CHECK THE CONDITION OF THE ENGINE. PROBLEMS MUST BE CORRECTED BEFORE OPERATING.

⚠ AVOID INJURY! ENGINE OIL IS HAZARDOUS TO YOUR HEALTH. DISPOSE OF OIL APPROPRIATELY. USE A SAFE DISPOSAL/RECYCLING CENTER.

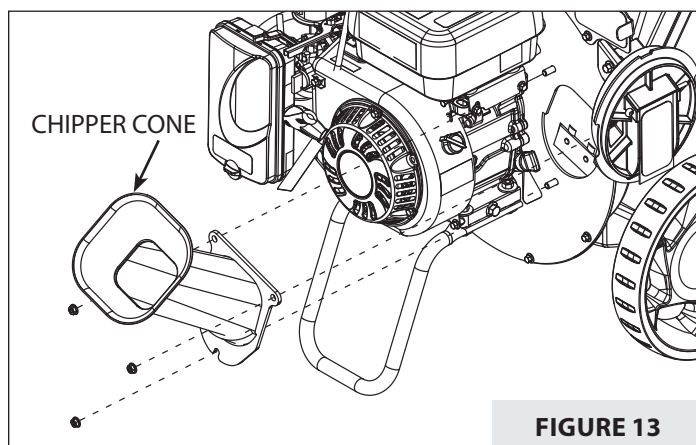


FIGURE 13

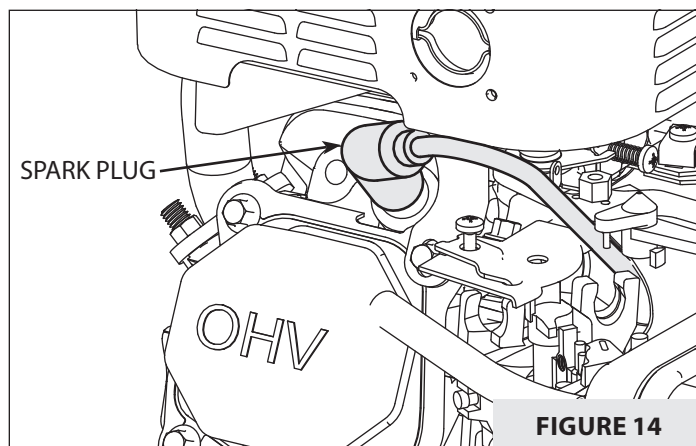


FIGURE 14

TROUBLESHOOTING

While normal care and regular maintenance will extend the life of your equipment, prolonged or constant use may eventually require that service be performed to allow it to continue operating properly.

The troubleshooting guide below lists the most common problems, their causes, and remedies.

See the information on the following pages for instructions on how to perform most of these minor adjustments and service repairs yourself or by your local authorized repair center.

| PROBLEM | CAUSE | REMEDY |
|--|--|---|
| Engine will not start. | <ol style="list-style-type: none"> 1. Out of fuel. 2. Spark plug wire disconnected. 3. Engine controls not set correctly. 4. Spark plug fouled. 5. No compression. Recoil starter pulls with no resistance. 6. No spark. Ignition problems. 7. Old or stale fuel. | <ol style="list-style-type: none"> 1. Add Fuel. 2. Reconnect spark plug wire as recommended in engine manual. 3. Refer to STARTING in the engine manual. 4. Remove spark plug. Clean/replace as recommended in engine manual. 5. See your authorized service center. 6. See your authorized service center. 7. See your authorized service center. |
| Engine exhaust is black. | <ol style="list-style-type: none"> 1. Dirty air filter 2. Choke closed. | <ol style="list-style-type: none"> 1. Replace air filter. See engine manual. 2. Open choke. |
| Engine runs but no material is discharged. | <ol style="list-style-type: none"> 1. Discharge chute clogged. 2. Engine not running at full speed. | <ol style="list-style-type: none"> 1. Clean out debris. 2. Set throttle control to FAST if equipped. For fixed throttle engines see your authorized service center. |
| Excessive branch vibration when chipping materials. | <ol style="list-style-type: none"> 1. Chipper knives dull. 2. Tree limbs are extremely hard or dried out. | <ol style="list-style-type: none"> 1. Sharpen/Replace chipper knives. 2. Material is not suitable for chipping. |
| Unusual noise or vibration when chipping materials. | <ol style="list-style-type: none"> 1. Rotor overloaded with material. 2. Hammers are broken, bent, or loose. 3. Hammers frozen in place. | <ol style="list-style-type: none"> 1. Allow unit to clear itself before adding more material to the hopper. 2. Check assembly. Tighten or replace as necessary. 3. Check for obstructions and debris. Repair or replace as necessary. |
| Vacuum not working. | <ol style="list-style-type: none"> 1. Hopper gate not closed. 2. Cone cover not installed. 3. Hose not attached properly. 4. Hose obstructed or damaged. 5. Engine not running at full RPM. | <ol style="list-style-type: none"> 1. Slide gate to closed position. 2. Allow material to dry. 3. Attach hose per instructions (See Hose Kit). 4. Clear blockage or replace. 5. Set throttle control to FAST if equipped. For fixed throttle engines see your authorized service center. |

REPAIR

ROTOR REMOVAL

NOTE: The rotor does not need to be removed to change the hammers and knives. However, the removal and installation of the knives will be easier with the rotor removed.

NOTE: If using a unit that has socket head bolts with no locking plates on them, the hardware will need to be upgraded to new hardware kit.

To remove the rotor from the drive shaft:

1. Turn the engine off and wait for all moving parts to stop.
2. Disconnect the spark plug wire and secure it away from the spark plug. **SEE FIGURE 15.**
3. Detach the rotor housing and hopper from the rotor plate. **SEE FIGURE 16.**
4. Bend the side tabs away from the center mounting bolt and remove the bolt (8).
5. Carefully remove the rotor plate, spacer, and key (10) from the crankshaft. **SEE FIGURE 17.**

HAMMER REMOVAL AND INSTALLATION

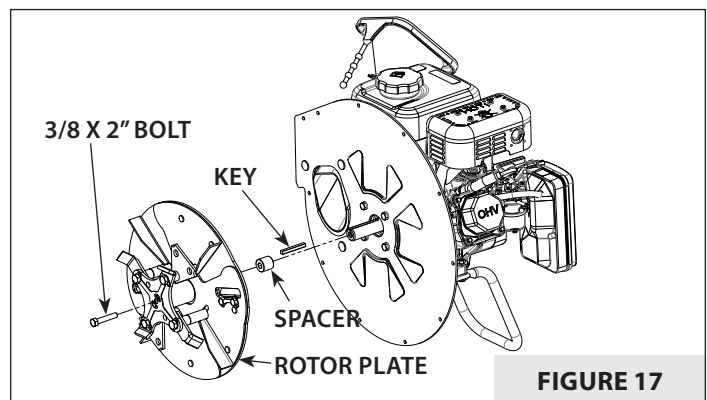
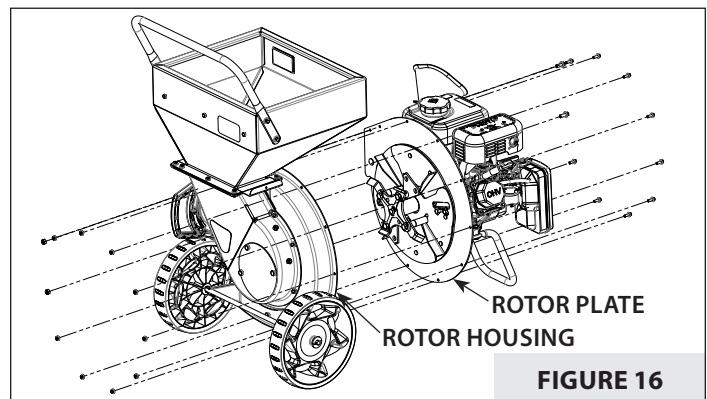
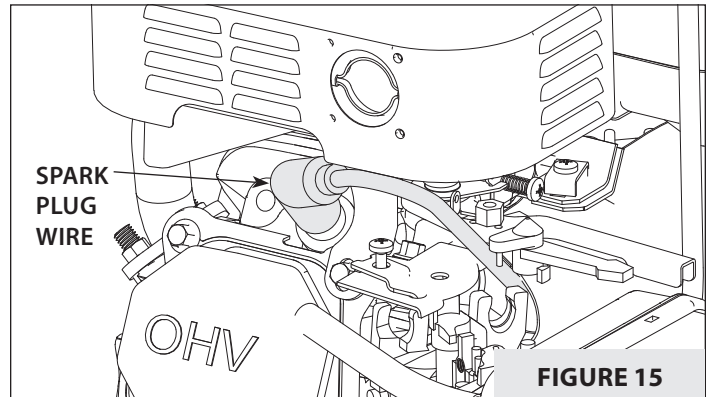
NOTE: The cutting edges of the shredding hammers may eventually wear out requiring rotation of the hammer or replacement if all cutting edges have been dulled.

NOTE: Triangular hammers can be rotated twice after the first edge dulls, then flipped over once and rotated again for a total of six edges. J-hammers can be flipped over once for a total of two cutting edges.

1. Remove the hammers by first bending the lock plate tabs down away from the hex head bolt securing the hammers. Remove the bolt. **SEE FIGURES 18 AND 19** (next page).
- NOTE:** the assembly sequence of the hardware used to secure the hammers.
2. Inspect the hammers, spacers, and hardware. If the spacer tube shows signs of wear, replace it. Inspect and flip, or replace the hammers. The lock plate should always be replaced when replacing or rotating hammers.
 3. Inspect the hammers, spacers, lock plate and bolts. Torque the bolt to 30-35 ft -lb (41-47 N.m.). The J-hammer on the

WARNING

▲ CUTTING HAZARD. TO AVOID SERIOUS INJURY, AVOID CONTACTING THE SHARP CUTTING EDGES OF THE CHIPPING KNIVES.



opposite side of the rotor faces outward for balanced rotation. Two faces of the bolt should align in parallel with the lock plate tabs.

NOTE: We recommend the use of high-strength thread locker on mounting bolts.

4. Bend the lock plate tabs up to secure the bolt and preventing rotation. The tabs should sit flat on a face of the bolt. **SEE FIGURE 18.**
5. Repeat for all hammers.

CHIPPING KNIFE REMOVAL AND INSTALLATION

To inspect or replace the chipping knives:

1. Bend the lock plate tabs away from the bolts securing the chipping knives.
2. Remove the two bolts and the chipping knife. **SEE FIGURE 20.**
3. Inspect or replace the chipper knife.
4. Reinstall the chipper knife and tighten the bolts to 18-20 ft-lb (24-27 N.m.). Ensure that the knife is sitting squarely against the stop that has been formed into the rotor. If it is not sitting square, the knives will perform as if they are extremely dull. Always use a new lock plate when installing knives. Two of the bolt faces should align in parallel with the lock plate tabs.

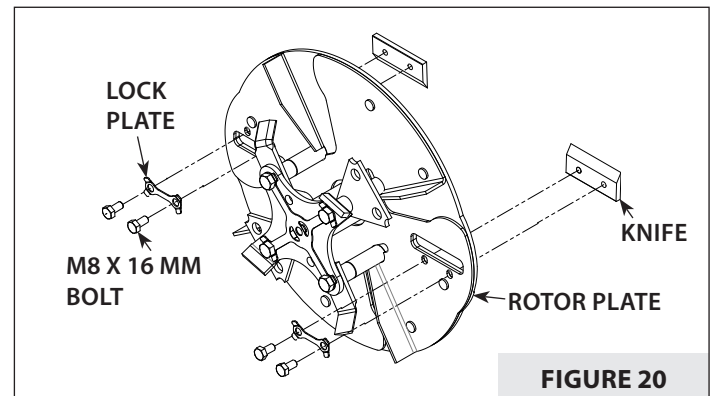
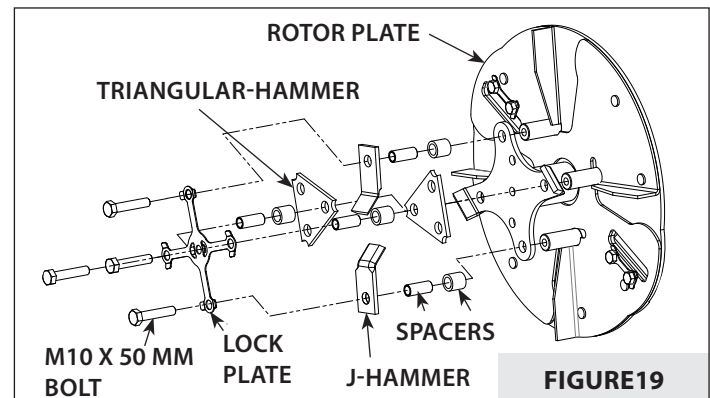
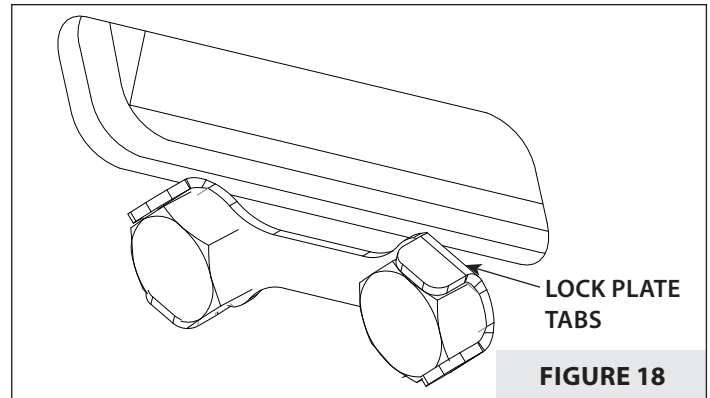
Note: We recommend the use of high-strength thread locker on mounting bolts.

5. Bend the lock plate tabs up to prevent bolt rotation. The tabs should sit flat on a face of the bolt. **SEE FIGURE 18.**

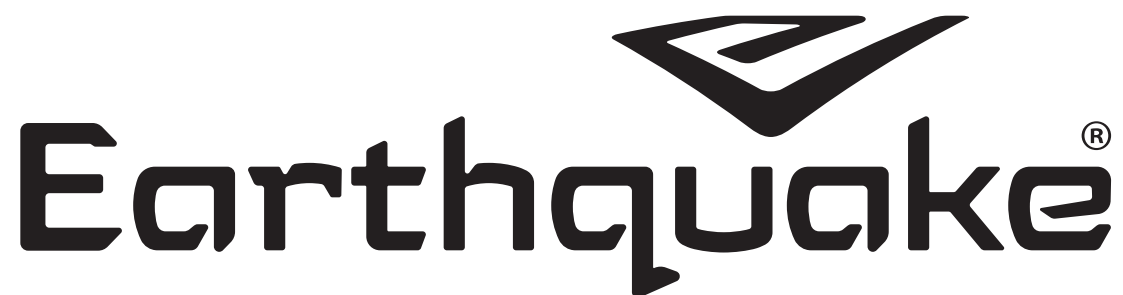
INSTALL THE ROTOR ON THE CRANKSHAFT

To install the rotor on the crankshaft:

1. Replace the rotor onto the crankshaft, careful to replace the spacer and key. **SEE FIGURE 17.**
2. Torque the mounting bolt to 30-35 ft-lb (41-47 N.m.).
3. Bend the lock plate tabs up to secure the mount bolt and prevent rotation. The tabs should sit flat on the face of the bolt.
4. Reinstall rotor housing and hopper. **SEE FIGURE 16.**



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ARDISAM, INC.
1160 Eighth Avenue
PO Box 755
Cumberland, WI 54829

Phone: (800) 345-6007
Fax: (715) 822-2124
www.GetEarthquake.com