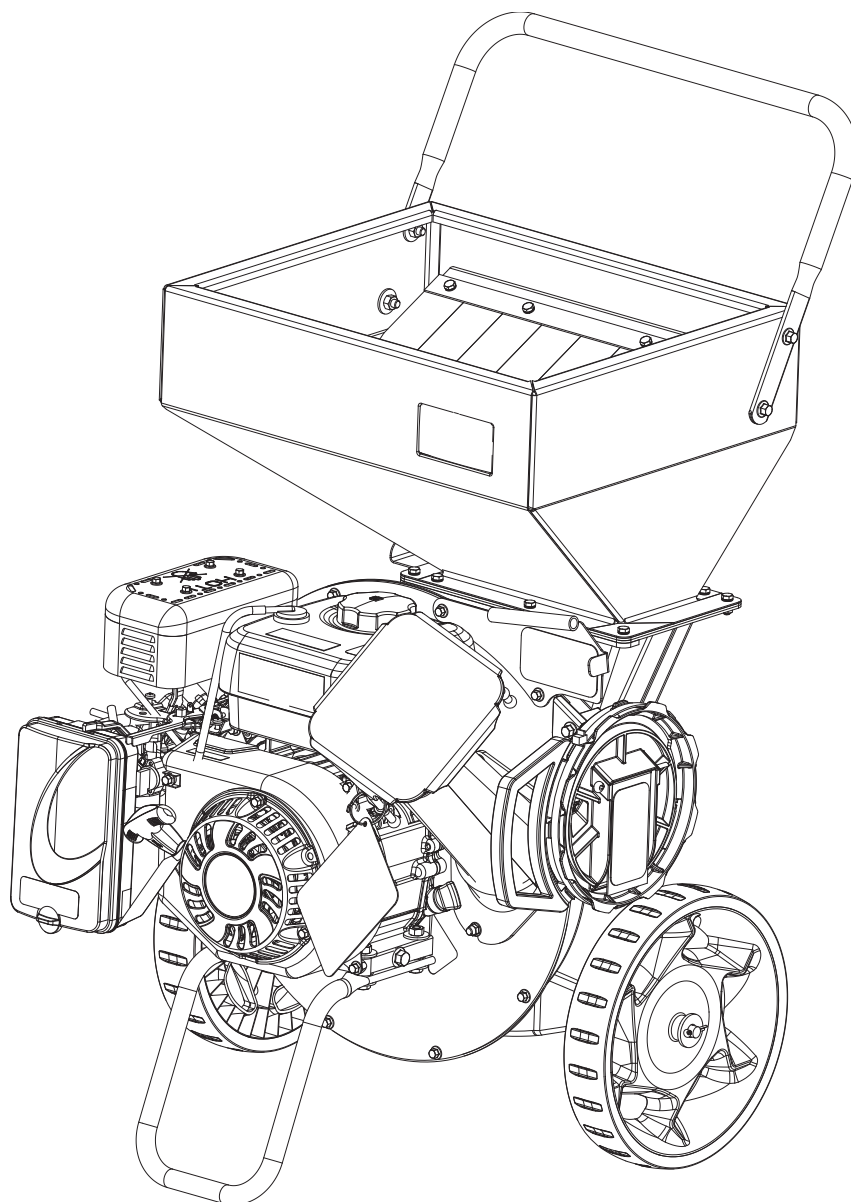




Operator's Manual
Original Operating Instructions
Chipper Shredders

SN



INTRODUCTION

Congratulations on your investment in quality. Thank you for purchasing a Chipper Shredder from *Earthquake*. We have worked to ensure that your product meets the highest standards for usability and durability. With proper care, your Chipper Shredder 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.

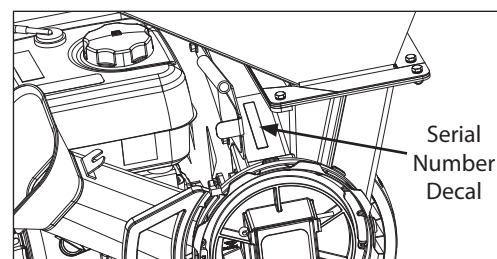
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When contacting your authorized dealer or Earthquake for replacement parts, service, or information you MUST have these numbers. Do not take this product back to the store from which it was purchased

Record your model name/number, manufacturer's identification numbers, and engine serial numbers in the space provided for easy access.

NOTE: For location of engine identification numbers, refer to the engine owner's manual.



REGISTRATION AND SERVICE

Record the product 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 Earthquake within 30 days of purchase. **(SEE WARRANTY SECTION FOR MORE INFORMATION.)** You can register your warranty online by visiting www.getearthquake.com, or by mailing it to: Warranty Department, 1160 Eighth Avenue, Cumberland, WI 54829. If you do not have access to www.getearthquake.com, call our customer service department at (800) 345-6007 Mondays through Fridays from 8 a.m. to 5 p.m. CST.

OWNERSHIP RECORDS		
Owner's Name:		
Owner's Address:		
City:	State/Province:	Zip Code/Postal Code:
Model Number:	Serial Number:	
Engine Model:	Engine Serial Number:	
Date of Purchase:		
Notes:		

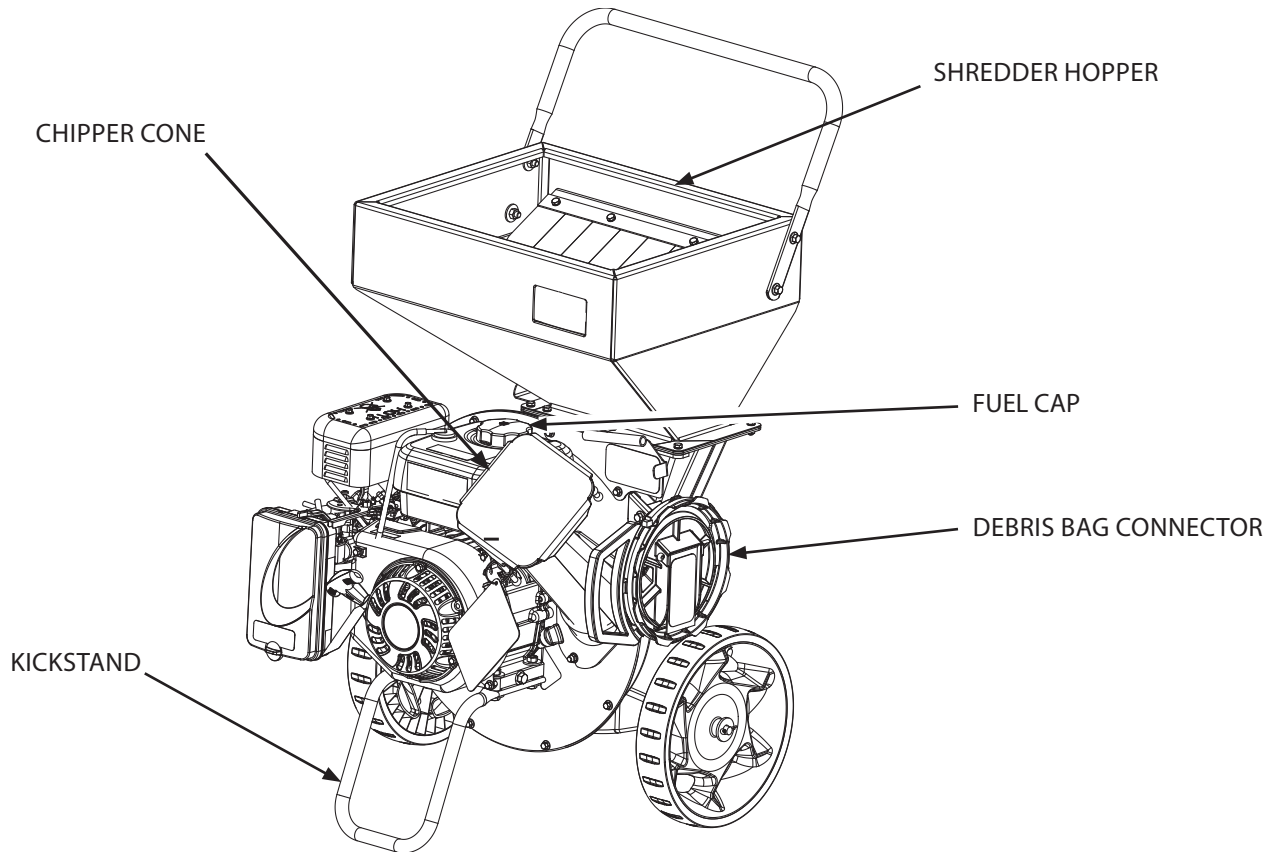
This manual may contain information for several models. Read and keep this manual for future reference. This manual contains important information on SAFETY, ASSEMBLY, OPERATION, AND MAINTENANCE. The owner must be certain that all the product information is included with the unit. This information includes the MANUAL, the REPLACEMENT PARTS and the WARRANTIES. This information must be included to make sure state laws and other laws are followed. This manual should remain with the unit even if it is resold.

FEATURES & 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

CHIPPING CAPACITY	APPROXIMATELY 3" (7.6 CM)
SHREDDING CAPACITY	1/2"X 18" LONG
CHIPPING KNIVES	2
SHREDDING HAMMERS	2 J-HAMMERS; 2 TRIANGLE HAMMERS
WASTE REDUCTION RATIO	20:1
START TYPE	RECOIL
ROTOR MATERIAL	STEEL
HOPPER DIMENSIONS (IN)	16.75 x 13.25
BAG DIMENSIONS (IN)	24 x 36
LIMB CHUTE	YES
TIRE DIAMETER	11
TIRE WIDTH (IN)	2
TIRE MATERIAL	RUBBER
WHEEL TYPE	NEVER FLAT
NET WEIGHT (LB)	121
GROSS WEIGHT (LB)	125
ASSEMBLED DIMENSIONS (IN)	25.4 x 29.9 x 51.9
BOXED DIMENSIONS (IN)	32.2 x 23.9 x 23.1
VACUUM KIT	YES
VACUUM MEASUREMENT	20 INCHES OF WATER
VACUUM AIR GATE	YES
ROTOR DIAMETER (IN)	14
QUICK ATTACH BAG SYSTEM	YES
ANSI B71.6-2000	YES

NOTE: Specifications are correct at time of printing and are subject to change without notice.

PARTS & ACCESSORIES

Replacement Parts

Replacement parts are available from your authorized *Earthquake* dealer or directly from *Earthquake*. Always use genuine *Earthquake* Service Parts.

OPTIONAL ACCESSORIES

Vacuum Kit Model No.22518

Tow Bar Kit Model No. 1692327



Tow Kit



Vacuum Kit

WARNINGS AND SAFETY PRECAUTIONS

Owner's Responsibility

Accurate assembly, and safe and effective use of the chipper shredder is the owner's responsibility.

- Read and follow all safety instructions.
- Carefully follow all assembly instructions.
- Maintain the chipper shredder according to directions and schedule included in this *Earthquake* operator's manual.
- Ensure that anyone who uses the chipper shredder 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.

Important Safety Precautions

Please read this section carefully. Operate the chipper shredder according to the safety instructions and recommendations outlined here and inserted throughout the text. Anyone who uses this chipper shredder must read the instructions and be familiar with the controls. Learn how to control the chipper shredder at all times.



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.

- Do not allow children to operate this chipper shredder. Keep small children away from the area while chipper shredder is in use. Do not allow adults to operate the chipper shredder without proper instruction.



Intended Use / Foreseeable Misuse

This is a petrol engine-powered chipper shredder that breaks up leaves and wooded pieces such as tree branches, brush, and limbs into smaller volume via a high-speed rotor containing chipping blades and shredding hammers. It shall not be used for any other purpose.



DANGER

DANGER INDICATES A SERIOUS INJURY OR FATALITY WILL RESULT IF THE SAFETY INSTRUCTIONS THAT FOLLOW THIS SIGNAL WORD ARE NOT OBEYED.



WARNING

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



CAUTION

CAUTION INDICATES YOU CAN OR YOUR EQUIPMENT CAN BE HURT 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.



WARNING

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

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.



WARNING

CALIFORNIA PROPOSITION 65 WARNING

ENGINE EXHAUST, WOOD DUST, AND GASOLINE VAPORS FROM THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

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.

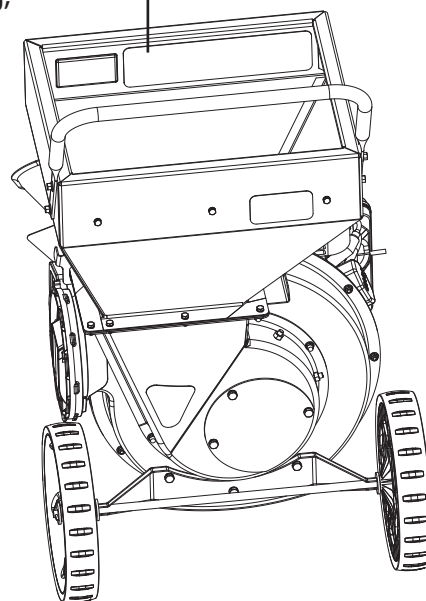
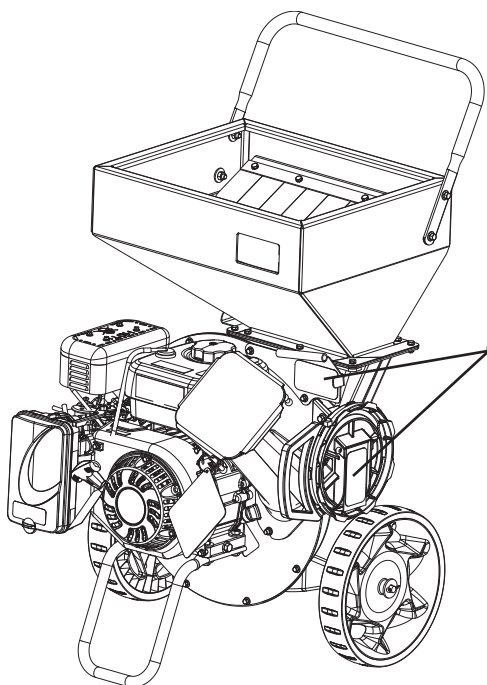
If any of these decals are lost or damaged, replace them at once. See your local dealer or contact Earthquake directly for replacements. These labels are easily applied and will act as a constant visual reminder to you, and others who may use the equipment, to follow the safety instructions necessary for safe, effective operation.



22417
DECAL - OPERATING INSTRUCTIONS



22416
DECAL - Danger,
Rotating Cutting
Blades, Warning,
Debris



GENERAL OPERATING SAFETY

- Read, understand, and follow all instructions in the manual and on the unit before starting
- 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.
- Only allow responsible adults, who are familiar with the instructions, to operate the unit (local regulations can restrict operator age).
- Be sure the area is clear of other people before operating. Stop the unit if anyone enters the area.
- Always maintain secure footing and solid balance while starting or operating the chipper shredder. Never lean directly over the machine.
- Operate the machine only in daylight or good artificial light.
- Do not operate the unit while under the influence of alcohol or drugs.
- 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.
- It is a violation of California Public Resource Code Section 4442 to use or operate the engine on or near any forest-covered, brush-covered, or grass-covered land unless the exhaust system is equipped with a spark arrester meeting any applicable local or state laws. Other states or federal areas may have similar laws.
- Never operate the machine without proper guards, plates, or other safety protective devices in place.
- Thoroughly inspect where equipment is to be used and remove all foreign objects.
- Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic.

PRODUCT-SPECIFIC SAFETY

- 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.

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

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.

- 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.

- 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.
- Use only attachments and accessories approved by the manufacturer of the machine.

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.

WARNING

Engines give 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.

- Handle fuel with care; it is highly flammable.
 - a. Use an approved fuel container.
 - b. Never add fuel to a running engine or hot engine.
 - c. Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
 - d. Replace gasoline cap securely and clean up spilled fuel before restarting.

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.
- 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 refuel 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

ASSEMBLY

Install Kick Stand (SEE FIGURE 1)

1. Position the kick stand (A) underneath the engine with the loop of the kick stand pointing away from the wheel axle (B).
2. Using the four M8-1.25 X 40 bolts (C), eight M8 washers (D) and four M8-1.25 nuts (E), secure the kick stand to the base plate of the engine.

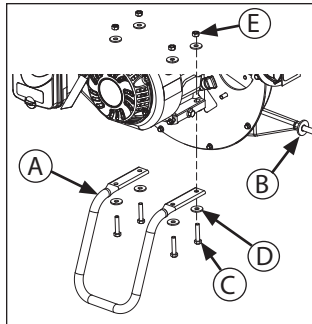


FIGURE 1

Install the Wheels (SEE FIGURE 2)

1. Slide the wheel onto the axle (B).
2. Slide the 12mm washer (A) onto the axle so that it sits against the wheel.
3. Insert the cotter pin (C) into the hole in the end of the axle. Bend the cotter pin over to secure the wheel to the axle.

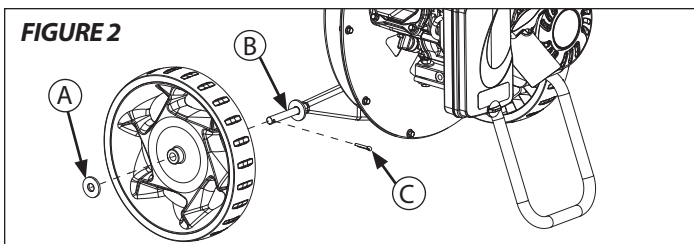


FIGURE 2

Install Chipper Cone (SEE FIGURE 3)

1. Position the chipper cone (A) over the three M8-1.25 threaded studs protruding from the engine plate, and attach using three M8-1.25 flange nuts (B).
2. Rotate cone and cone base away from engine so cone does not contact engine.
3. Tighten the flange nuts securely.

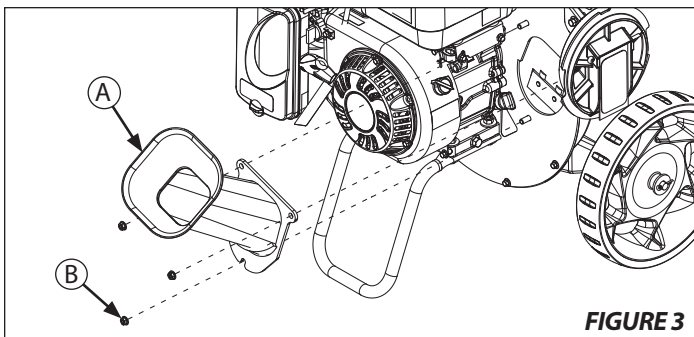


FIGURE 3

Install the Hopper

1. Remove back four M6-1.0 nuts (A) and set nuts and rear stud plate (B) aside. Loosen front four M6-1.0 nuts (C), do not need to remove. Install damper (D). **SEE FIGURE 4**
2. Install hopper (E) by sliding slotted holes (F) on the front side of hopper onto the four front studs (G) with loosened nuts. **SEE FIGURE 5**
3. Reinstall rear stud plate (H) and four back M6-1.0 nuts (I) that were previously removed in Step 1. **SEE FIGURE 5**
4. Tighten all eight M6 nuts.

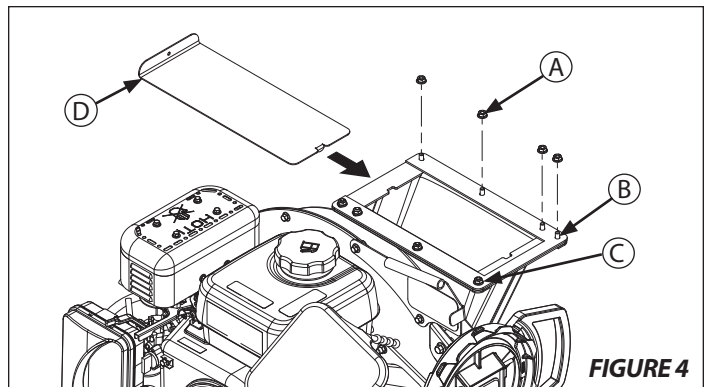


FIGURE 4

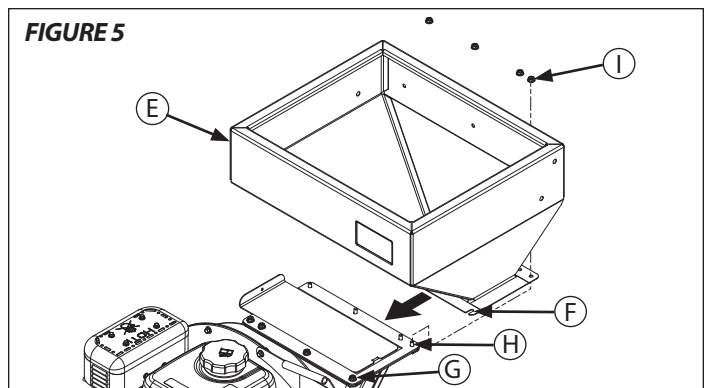
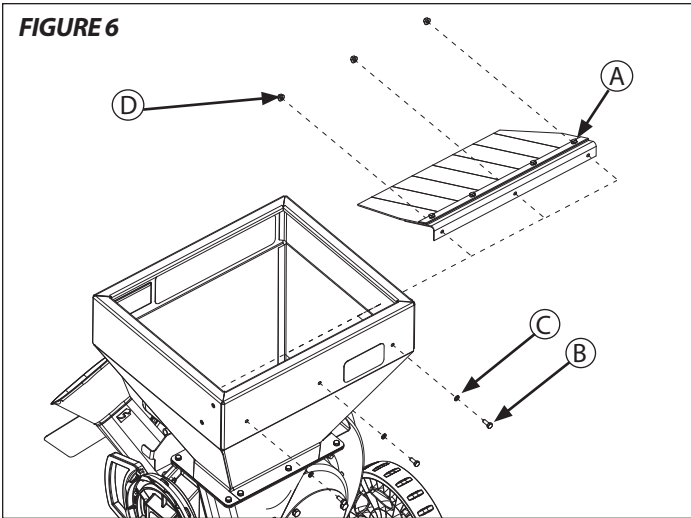


FIGURE 5

Install the Hopper Guard (SEE FIGURE 6)

1. Hold the hopper guard assembly (A) so that the rubber guard is directed down towards the bottom of the hopper. Align the assembly holes with the holes in the hopper.
2. Using the three M6-1.0 x 16 bolts (B), M6 springlock washers (C) and M6-1.0 nuts (D), secure the guard assembly (A) to the hopper. Insert the bolts with washers from the outside of the shredder hopper.

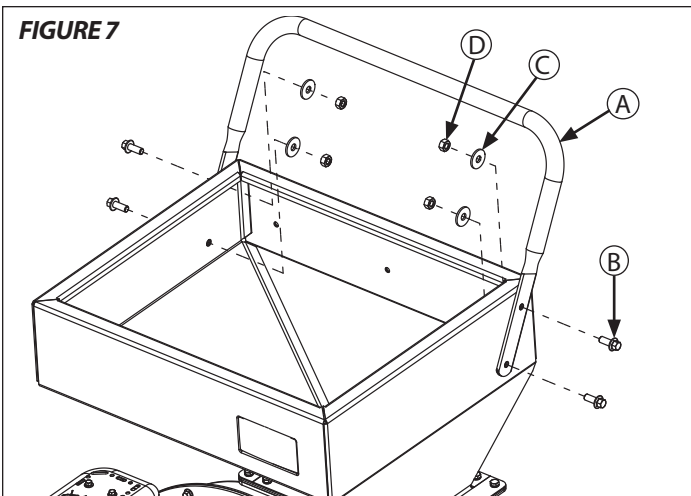
FIGURE 6



Install the Handle (SEE FIGURE 7)

1. Hold the hopper handle (A) up so that the outer holes in the handle align with the holes in the hopper and secure with four M8-1.25 x 20 bolts (B), M8 washers (C) and M8-1.25 nuts (D). Insert the screws from the outside of the hopper.

FIGURE 7



Install Debris Bag

1. Slide the support rod (A) into the bracket (B). **SEE FIGURE 8.** Rotate the rod so that it sits below the front tab (C) of the bracket. **FIGURE 9**
2. Slide the tabs (D) on the debris bag onto the support rod. **FIGURE 10**
3. Secure the bag connector (E) onto the chipper by rotating the connector until locked in. **SEE FIGURE 10**

FIGURE 8

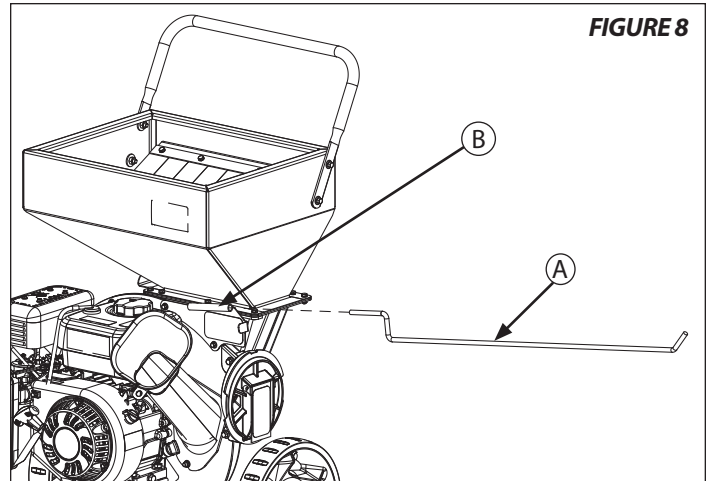


FIGURE 9

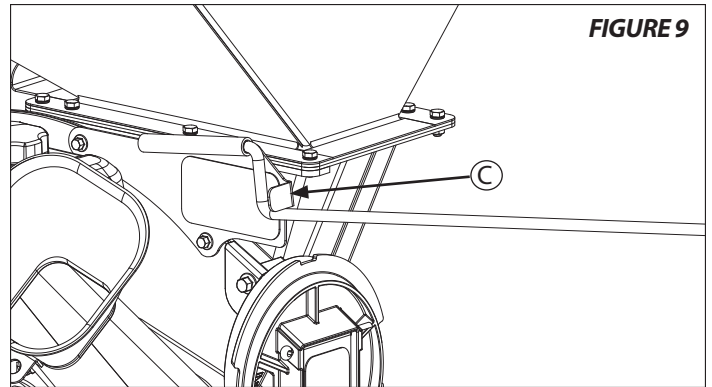
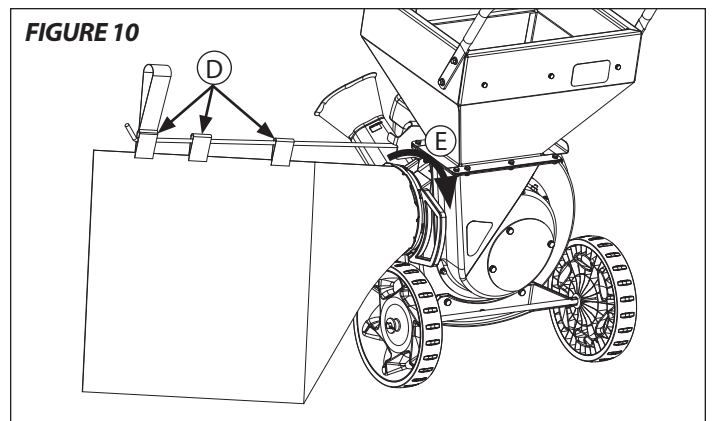


FIGURE 10



GENERAL OPERATION

Be sure to read all information in the Safety and Operation sections 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. (See Vacuum Kit parts explosion on page 28.)

The optional Earthquake vacuum kit part number is 22518 and can be ordered by contacting Earthquake customer service or ordering online at Earthquakechippers.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.

Adding Oil

Refer to engine manual for information on adding oil.

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.

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS INJURY OR DEATH

WARNING

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

WARNING

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.

WARNING

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 Fuel

To add 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

1. See engine manual for shut down procedure.
2. Stopping the engine is the only way to stop the rotor from turning. With engines equipped with an adjustable throttle, move the throttle to the SLOW position and wait for engine to be running a slow RPM. Then switch to STOP ENGINE as shown in the engine manual.

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.

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:

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

TRANSPORTING AND STORAGE

1. Always observe safe refueling and fuel handling practices when refueling the unit after transportation or storage.
2. 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.
3. 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.
4. Always follow the engine manual instructions for storage preparations before storing the unit for both short and long term periods.
5. Always follow the engine manual instructions for proper start-up procedures when returning the unit to service.
6. 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.

CHIPPING AND SHREDDING RECOMMENDATIONS

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	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.

MAINTENANCE

Schedule & Procedures

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

SAFETY ITEMS	BEFORE EACH USE	EVERY 5 HOURS	EVERY 25 HOURS	EVERY 100 HOURS	EVERY 250 HOURS	SPRING & FALL
Check for loose hardware		x				x
Check all safety labels						x
Inspect cone, hopper, and guards	x					x
CHIPPER MAINTENANCE ITEMS	BEFORE EACH USE	EVERY 5 HOURS	EVERY 25 HOURS	EVERY 100 HOURS	EVERY 250 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. Always check oil level before starting engine. Refer to engine manual for capacity and type of oil to use.
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 yearly or every 50 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. Sample illustrations and part numbers of the decals can be found on page 6. Replace any damaged or missing decals.

Inspect Cone, Hopper, & 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.

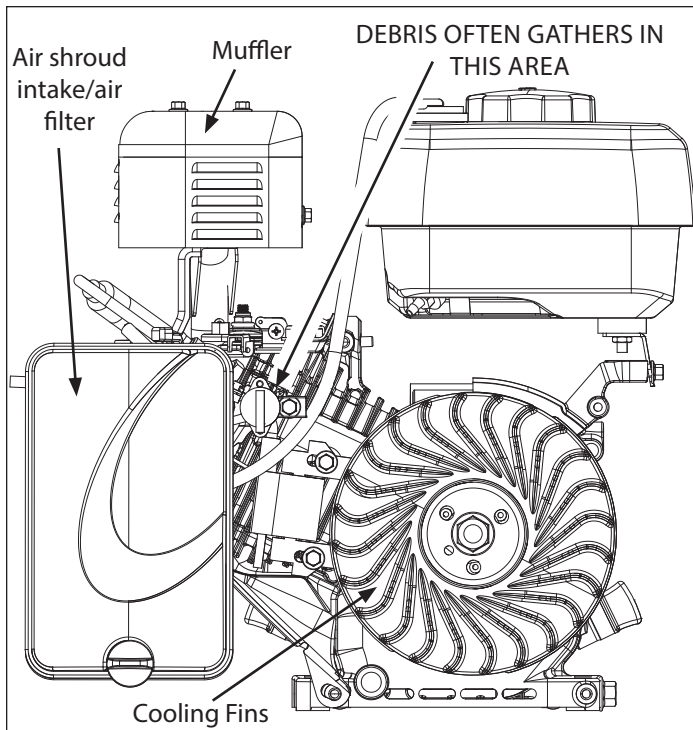


FIGURE 8 - Clean Debris from Engine Cooling Fins
NOTE: Engine air shroud removed from Figure 8

Clean Debris from Engine & 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 8**). We recommend having this service performed by an authorized dealer.

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 12** (on page 16)
2. Remove the small circular access panel (B) from the back of the shredder housing. **SEE FIGURE 9**
3. Inspect the cutting edges of the triangular hammers (A) and J-hammers (A). **SEE FIGURES 9 AND 10**

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

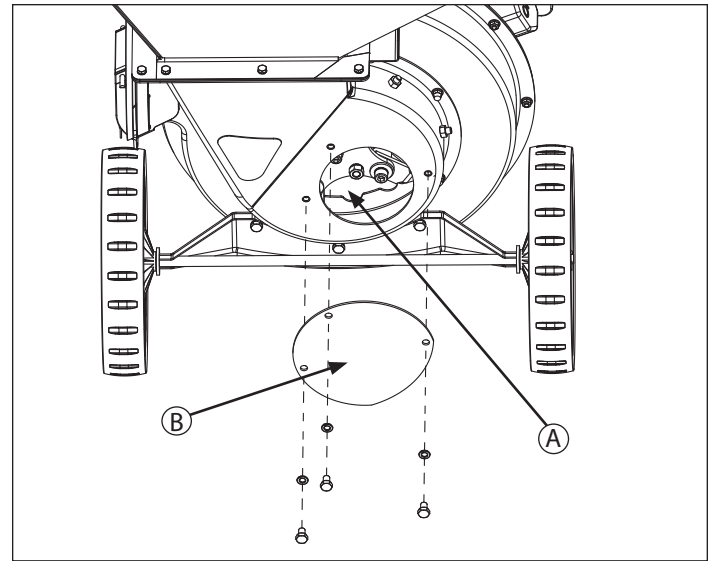


FIGURE 9 - Inspect / Rotate Shredding Hammers

- A. J-Hammer Wear Area
- B. Access Panel

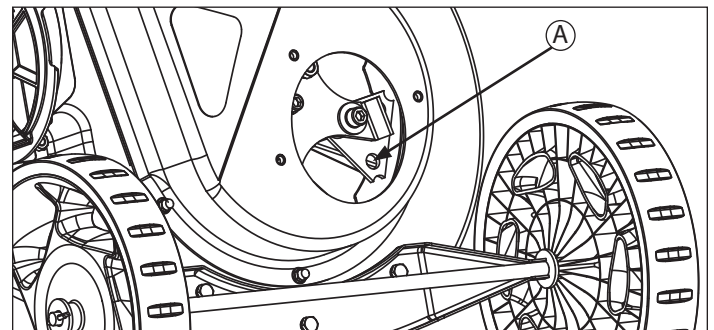


FIGURE 10 - Inspect / Rotate Shredding Hammers

- A. Triangular Hammer Wear Area

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.

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 12**
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 11**
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 Trouble-shooting 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 dealer to perform this service.

Oil Maintenance

Refer to engine manual for oil maintenance.

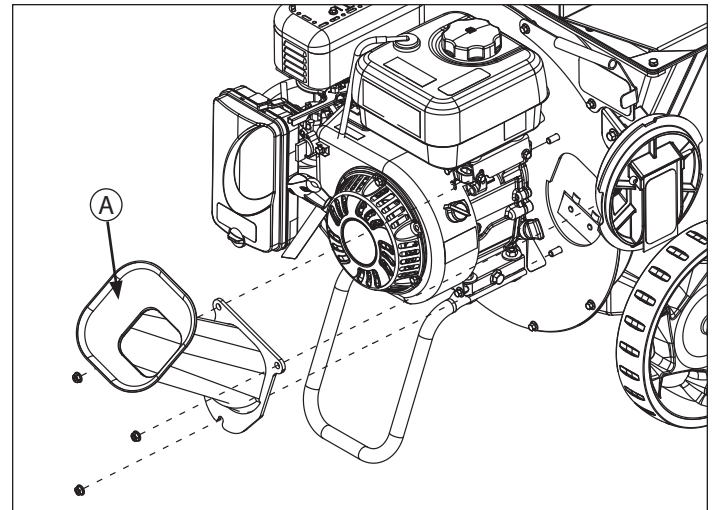


FIGURE 11- Inspect Chipper Knives

A. Chipper Cone

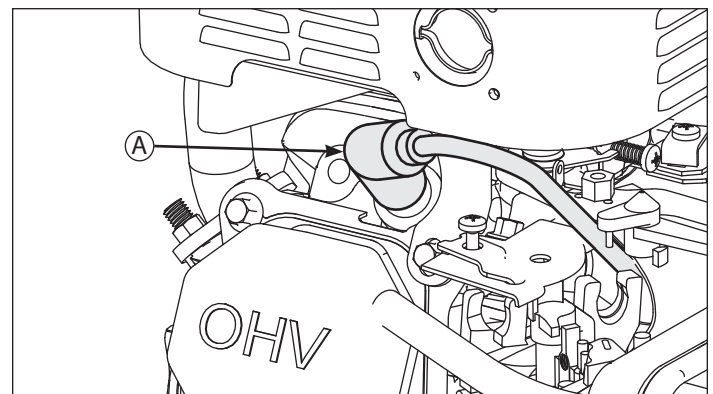


FIGURE 12

A. Spark Plug Cap/Wire

⚠ IMPORTANT

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

⚠ 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.

TROUBLESHOOTING CHART

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. If you prefer, all of these procedures can be performed for you by your local authorized dealer.

WARNING

TO AVOID SERIOUS INJURY, PERFORM MAINTENANCE ON THE UNIT ONLY WHEN THE ENGINE IS STOPPED.

ALWAYS DISCONNECT THE SPARK PLUG WIRE AND FASTEN IT AWAY FROM THE PLUG BEFORE BEGINNING THE MAINTENANCE, TO PREVENT ACCIDENTAL STARTING OF THE ENGINE.

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 dealer or service center. 6. See your authorized dealer or service center. 7. See your authorized dealer or 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 dealer or 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 dealer or service center.

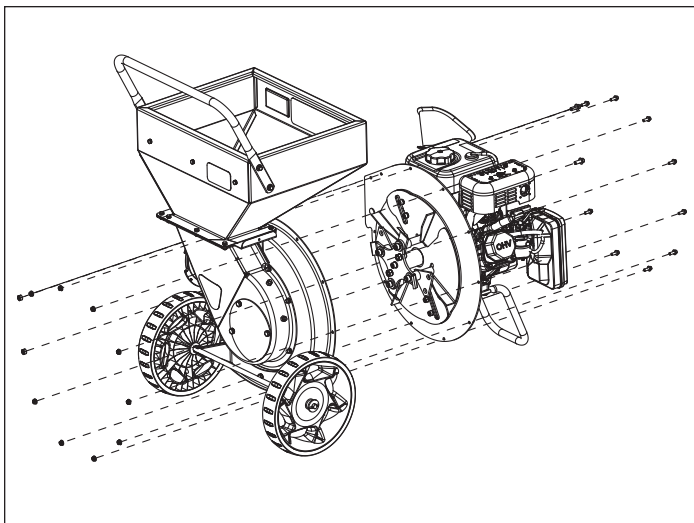


FIGURE 13 - Gaining access to the knives and hammers

REPAIR

Shredding Hammer Rotation and Replacement

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.

Triangular hammers can be rotated twice after the first edge dulls, then flipped over once and rotated again for a total of 6 edges. J-hammers can be flipped over once for a total of two cutting edges.

To rotate the shredding hammers:

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 12**
3. Detach the rotor housing and hopper from the rotor plate. **SEE FIGURE 13**
4. Note the assembly sequence of the hardware used to secure the hammers. Using an 8mm allen wrench remove the socket head cap screw (A) and related hardware. **SEE FIGURE 14**
5. Inspect the hammers (C, G), spacer tubes (D, E), and hardware. If the spacer tube (D, E) shows signs of wear, replace it. Inspect and flip, or replace the hammers (G, C).
6. Reassemble the hammers, spacers, washers, and cap screws. Torque the socket head cap screws (A) to 30-35 ft. lbs. (41-47 N.m.) The J-hammer (G) on the opposite side of the rotor faces outward for balanced rotation.
7. Repeat for all the hammers.

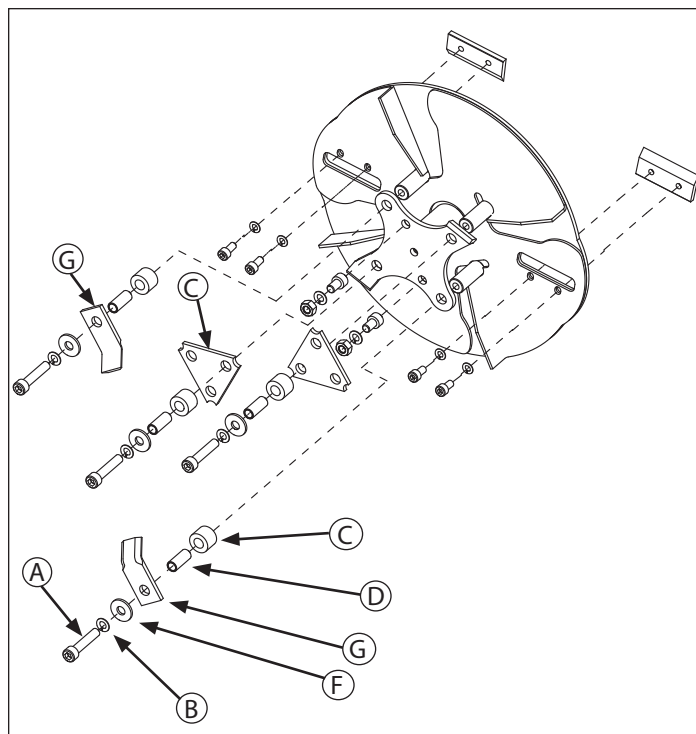


FIGURE 14- Rotor Housing

A. Socket Hd. Cap Screw	E. Spacer, Short
B. Lock Washer	F. Washer
C. Triangular Hammer	G. J-Hammer
D. Spacer, Long	

Chipping Knives Sharpening and Replacement

The chipping knives should be sharpened or replaced when tree limbs require extra force to feed into the chipper cone.

The chipping knives may be sharpened at a 30 degree angle until the distance between the edge of the blade bevel and the mounting hole is less than 1/16" (1.6mm). **SEE FIGURE 15.**

To inspect, sharpen, or replace the chipping knives:

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 12** (page 16)
3. Detach the rotor housing and hopper from the rotor plate. **SEE FIGURE 13**
4. Remove the rotor by removing the hardware that secures it to the engine crank shaft. **SEE FIGURE 15**

NOTE: Do not lose spacer. During reassembly Be sure to place spacer is installed inside rotor. Without spacer, rotor will interfere with housing components.

5. Using a hex wrench, remove the two socket head cap screws and the chipper knife. **SEE FIGURE 16**
6. Inspect, rotate, sharpen, or replace the chipper knife. **SEE FIGURE 17**
7. Reinstall the chipper knife and tighten the socket head cap screws to 18-20 ft-lb (24-27 N.m.). We recommend the use of high strength threadlocker on screws.

⚠ WARNING

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

⚠ WARNING

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

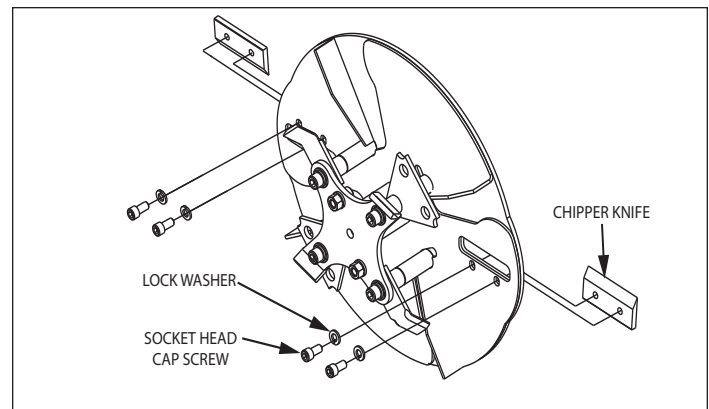


FIGURE 16 - Removing the Chipper Knives

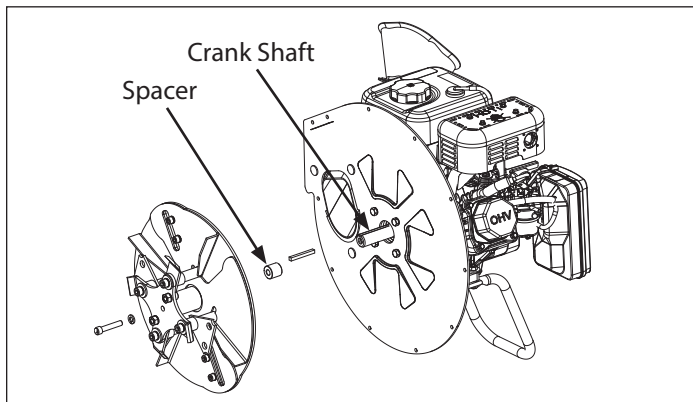


FIGURE 15- Removing the Rotor Housing

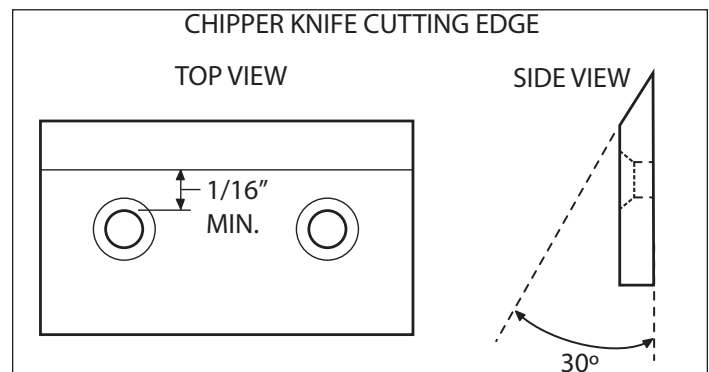


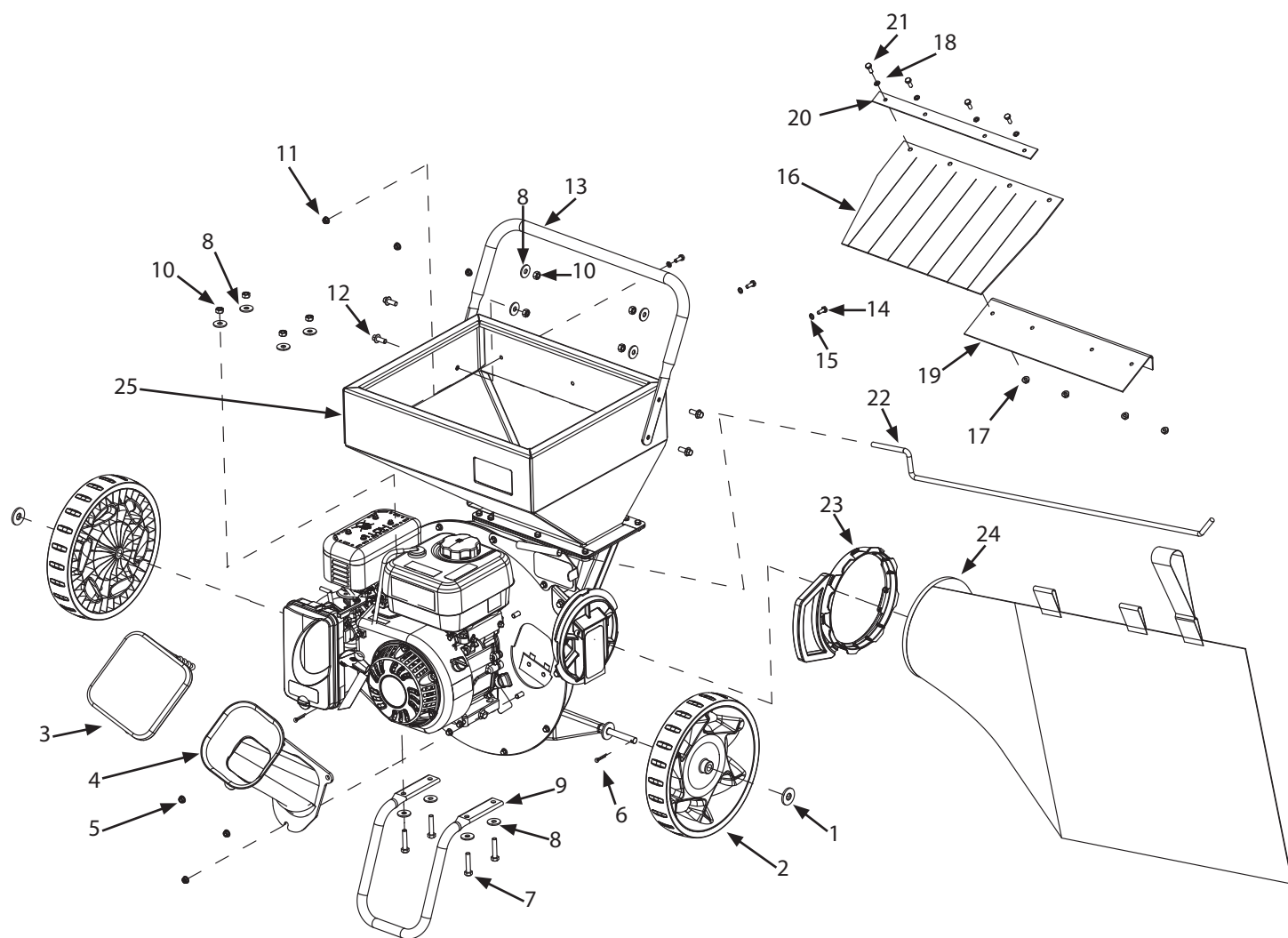
FIGURE 17- Chipper Knife Minimum Cutting Edge



NOTES

Lined area for notes, consisting of 20 horizontal lines.

ILLUSTRATED PARTS BREAKDOWN

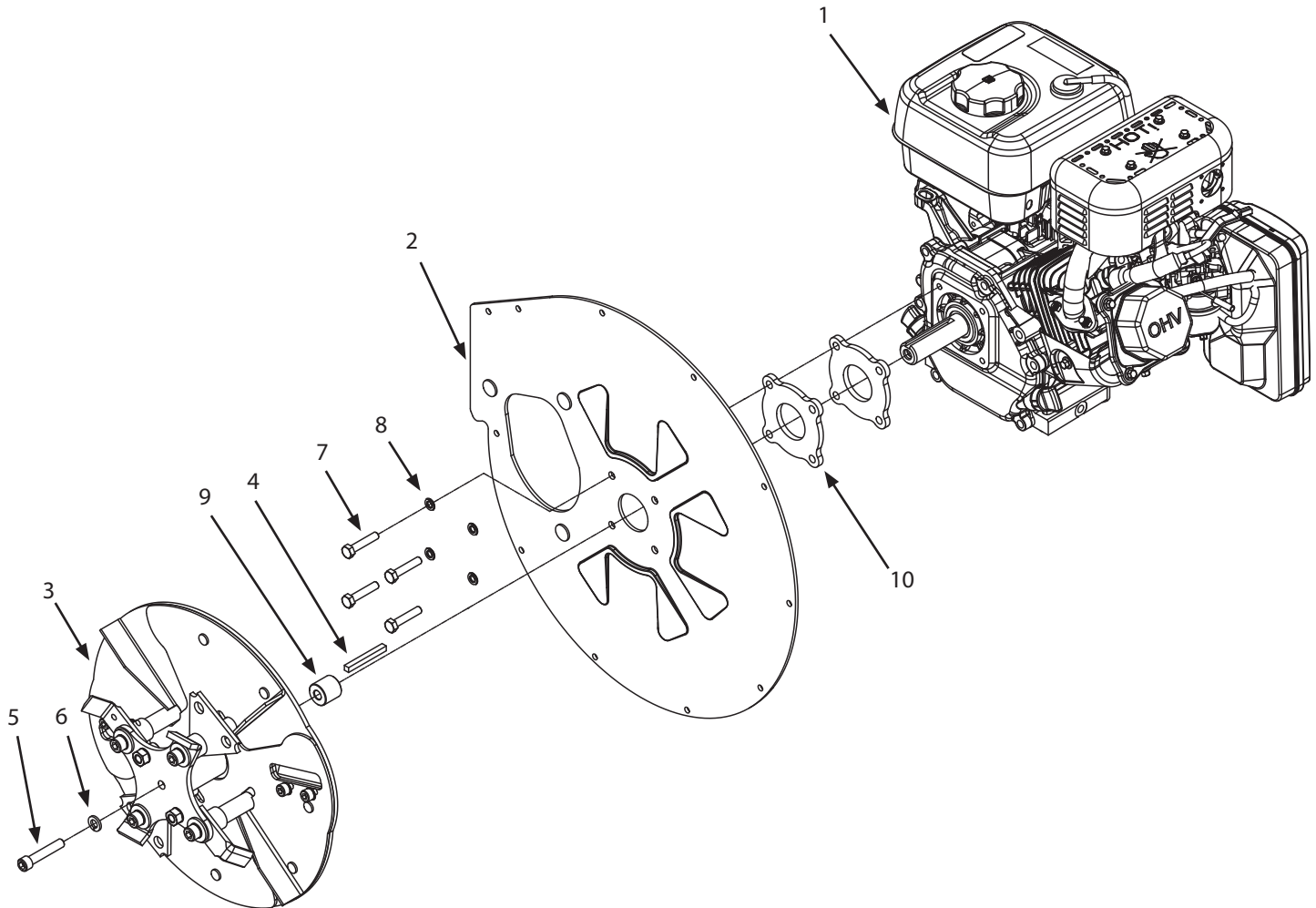


ILLUSTRATED PARTS BREAKDOWN

ITEM #	PART #	DESCRIPTION	QTY.
1	50175	WASHER 12MM TILLER	2
2	22243	CHIPPER WHEEL 11X 2	2
3	22245	CONE COVER	1
4	21930	WELDMENT CHIPPER CONE	1
5	16400	NUT M8 X 1.25 HSF NYLOC GR8.8 ZN	8
6	22097	COTTER PIN HAIRPIN 2MM X 50MM	2
7	12770	M8 X 1.25 X 40 MM 88 ZN	4
8	20143	WASHER M8 X 16 X 1.6 FLAT ZN	12
9	23680	KICKSTAND CHIPPER RED WITH VINYL	1
10	W1256V0900	NUT M8 X 1.25 HNYLK GR8.8 ZN	8
11	14109	NUT M6 X 1.0 HHFNYLK GR8.8 ZN	3
12	13906	BOLT M8 X 1.25 X 20 SFH GR 8.8 ZN	4
13	23678	HANDLEBAR CHIPPER RED	1
14	670890	BOLT M6 X 1.0 X 16 HH GR8.8 ZN	3
15	18130	WASHER M6 X 1.5 SPRLK ZN	3
16	1095100	GUARD HOPPER 10.25 X 1.00 X 0.10 BLACK	1
17	14109	NUT M6 X 1.0 HHFNYLK GR8.8 ZN	4
18	18130	WASHER M6 X 1.5 SPRLCK ZN	4
19	22091	FLANGE HOPPER GUARD	1
20	22110	RETAINER HOPPER GUARD	1
21	67089	BOLT M6 X 1.0 X 16 HH GR 8.8 ZN	4
22	21942	ROD BAG SUPPORT	1
23	21932	CONNECTOR BAG	1
24	23679	BAG CHIPPER EQ 840MM X 560MM	2
25*	---	CHIPPER ASSEMBLY	---

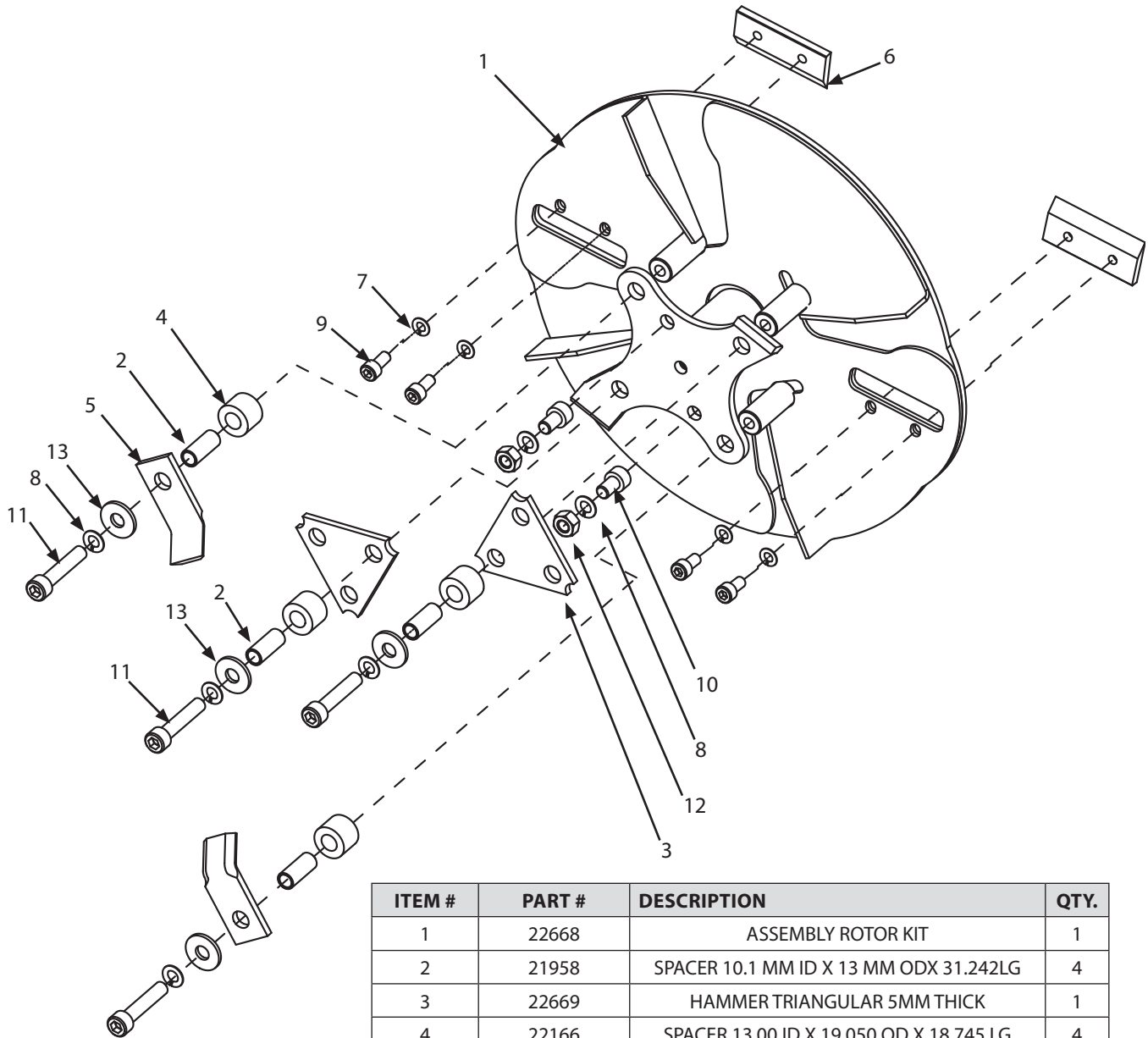
**Item shown for illustrative purposes only.*

ILLUSTRATED PARTS BREAKDOWN - ENGINE AND ROTOR GROUP (MODEL 23666)



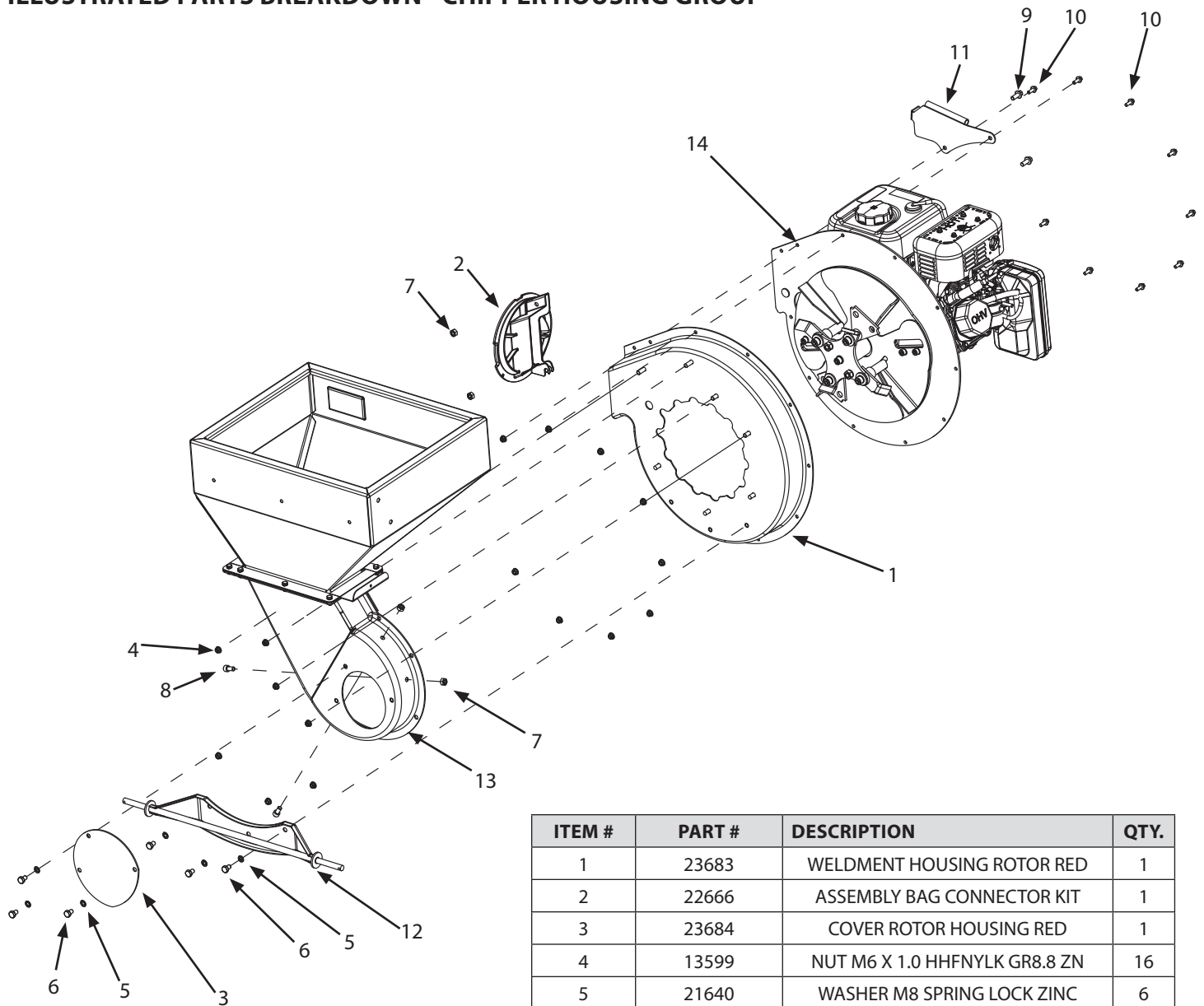
ITEM #	PART #	DESCRIPTION	QTY.
1	13434	ENGINE HRZ 1 IN SHAFT 212CC VPR R210 EPA3	1
2	23685	WELDMENT PLATE ENGINE RED	1
3	21959	ASSEMBLY ROTOR HAMMERS AND KNIVES METRIC	1
4	905100	KEY 1/4 SQ X 2-1/4 PARALLEL PLN	1
5	6516100	BOLT 3/8-24 X 2 SHCS GR8 BLK ZN	1
6	1916965	WASHER LOCK SPRING 3/8	1
7	813	BOLT 5/16-24 X 1-1/4 HH GR8.8 ZN	4
8	21640	WASHER M8 SPRLK ZN	4
9	1713200	SPACER .41 X 1.00 X .95 THK STEEL	1
10	22848	SPACER ENGINE R210	2

ILLUSTRATED PARTS BREAKDOWN - ROTOR GROUP



ITEM #	PART #	DESCRIPTION	QTY.
1	22668	ASSEMBLY ROTOR KIT	1
2	21958	SPACER 10.1 MM ID X 13 MM ODX 31.242LG	4
3	22669	HAMMER TRIANGULAR 5MM THICK	1
4	22166	SPACER 13.00 ID X 19.050 OD X 18.745 LG	4
5	22670	ASSEMBLY J HAMMER KIT	1
6	21962	KNIFE CHIPPER 76.2 MM LG M8 TAP	2
7	21640	WASHER M8 SPRING LOCK ZINC	4
8	13559	WASHER M10 SPRING LOCK	6
9	21963	BOLT M8-1.25 X 16 SHCS GR8 ZN F-T	4
10	21964	BOLT M10-1.5 X 16 SHCS GR8 ZN F-T	2
11	21965	BOLT M10-1.5 X 50 SHCS GR8 ZN F-T	4
12	W1265V0903	NUT M10 HNYLK GR8.8 ZN	2
13	19905	WASHER M10 X 20MM X 2MM X FLAT ZN	4

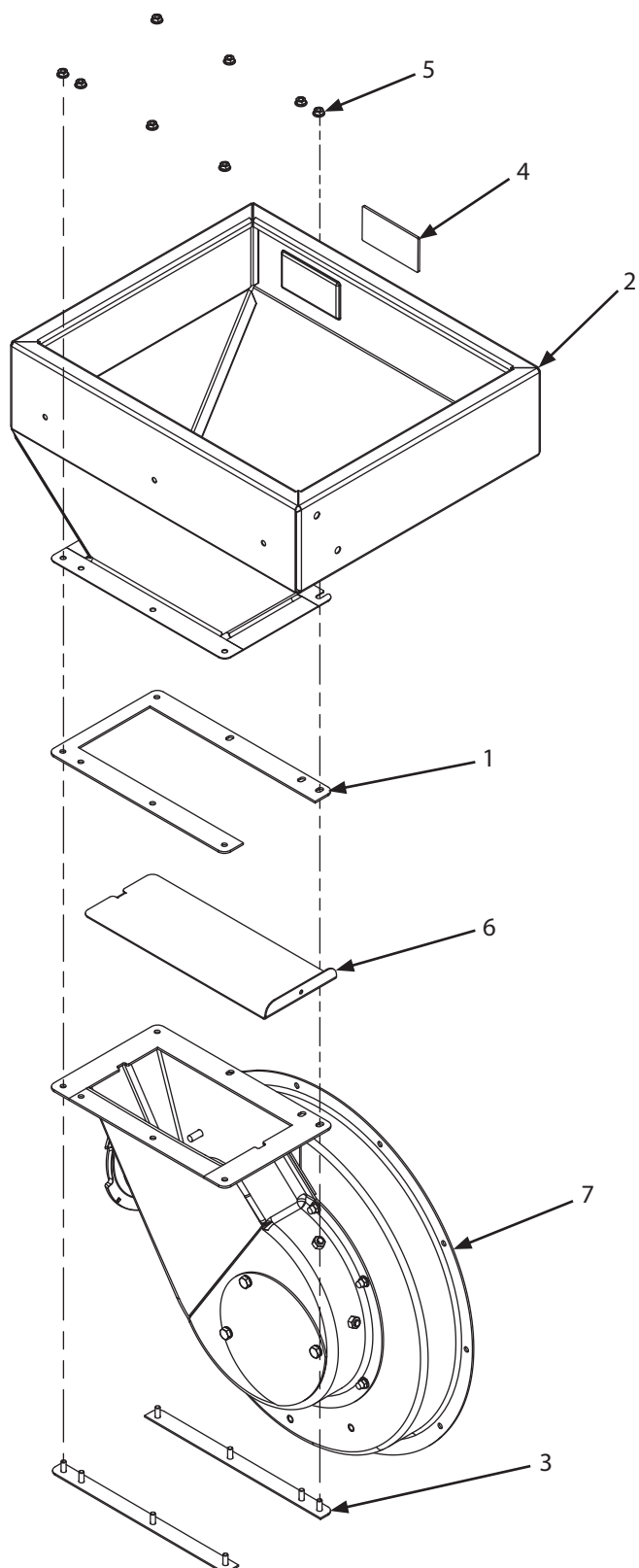
ILLUSTRATED PARTS BREAKDOWN - CHIPPER HOUSING GROUP



ITEM #	PART #	DESCRIPTION	QTY.
1	23683	WELDMENT HOUSING ROTOR RED	1
2	22666	ASSEMBLY BAG CONNECTOR KIT	1
3	23684	COVER ROTOR HOUSING RED	1
4	13599	NUT M6 X 1.0 HHFNYLK GR8.8 ZN	16
5	21640	WASHER M8 SPRING LOCK ZINC	6
6	3241	BOLT M8 X 1.25 12 HHCS GR8.8 ZN	6
7	W1265V0900	NUT M8 X 1.25 HNYLK GR8.8 ZN	4
8	21963	BOLT M8-1.25 X 16 SHCS GR8 ZN F-T	2
9	22027	BOLT M8-1.25 X 20 SFH GR8.8 ZN F-T	2
10	22025	BOLT M6-1.0 X 16 SFH GR8.8 ZN F-T	9
11	22539	WELDMENT BAG SUPPORT	1
12	21935	WELDMENT AXLE MOUNT CHIPPER	1
13	23682	WELDMENT CHIPPER BACK COVER	1
14*	---	ENGINE AND ROTOR GROUP	---

**Item shown for illustrative purposes only.*

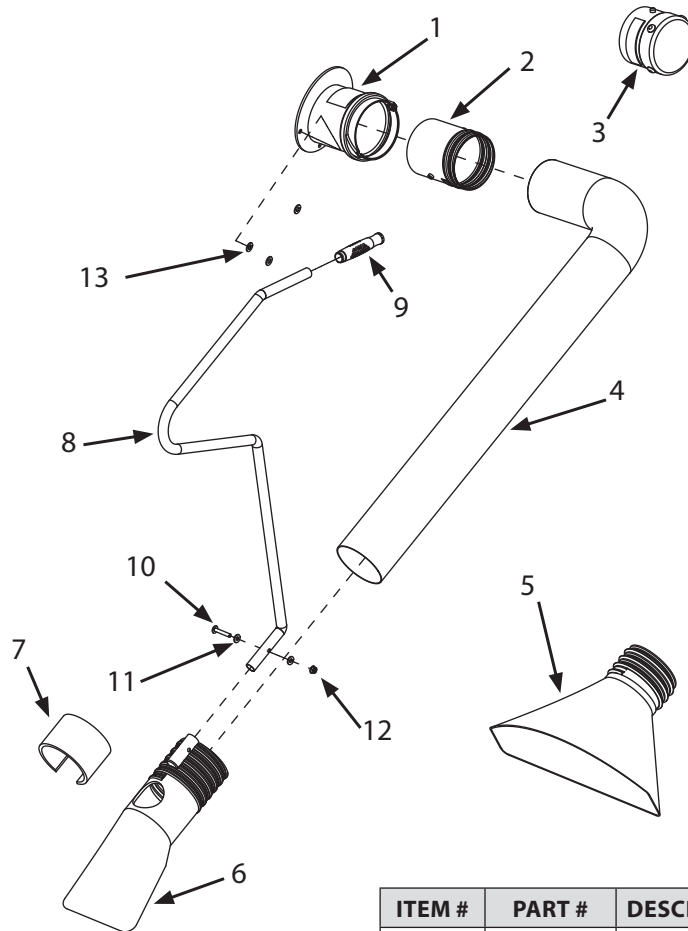
ILLUSTRATED PARTS BREAKDOWN - HOPPER GROUP



ITEM #	PART #	DESCRIPTION	QTY.
1	23686	SHIM HOPPER RED	1
2	22557	WELDMENT CHIPPER HOPPER	1
3	27077	STUD PLATE	2
4	23688	BADGE EQ BRANDING	1
5	27308	NUT M6 X 1.0 HFNYLK GR8.8 STNLYS	8
6	23687	DAMPER VACUUM RED	1
7*	—	CHIPPER HOUSING GROUP	—

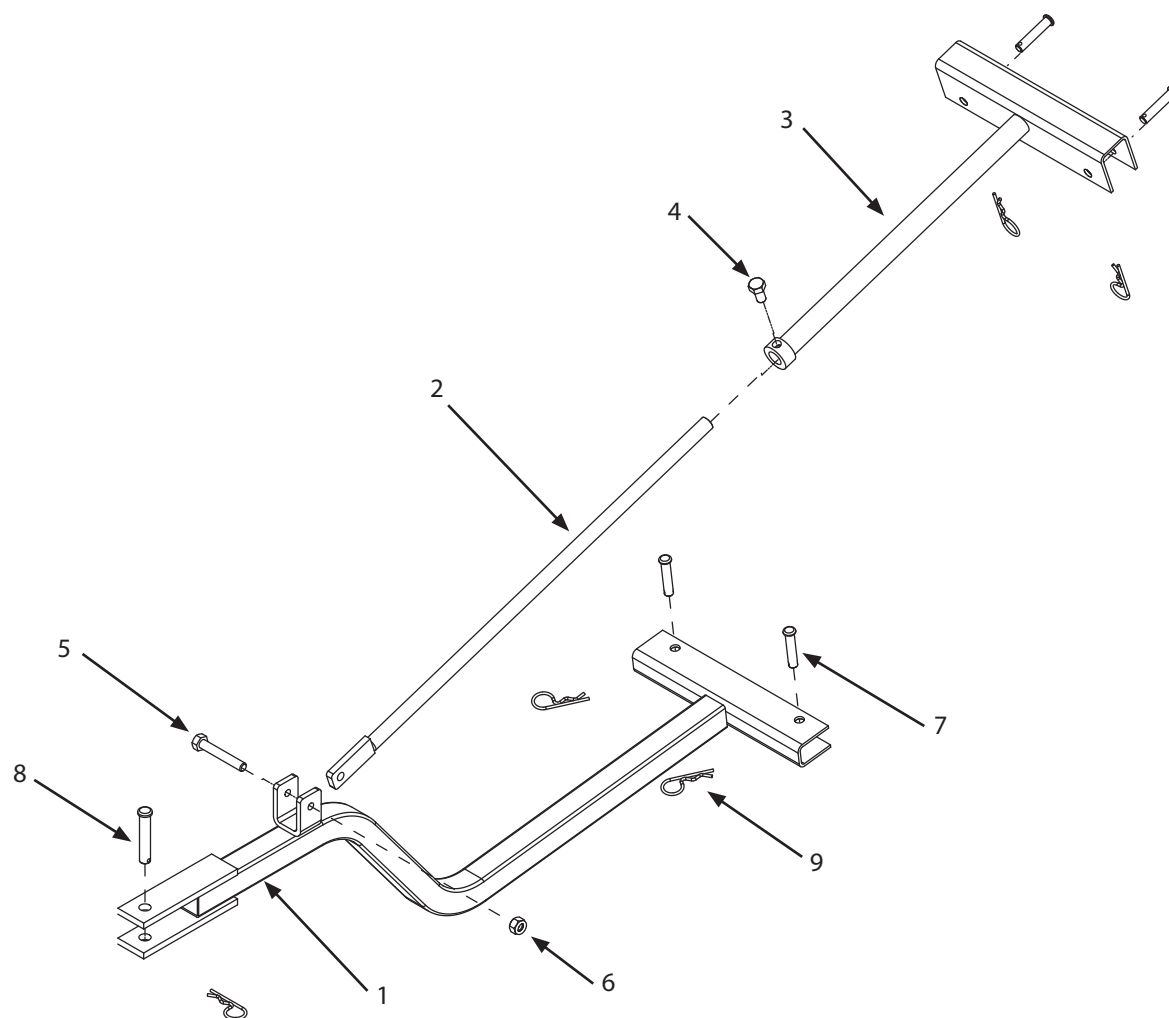
**Item shown for illustrative purposes only.*

ILLUSTRATED PARTS BREAKDOWN - VACUUM KIT (OPTIONAL ACCESSORY) MODEL NO. 22518



ITEM #	PART #	DESCRIPTION	QTY.
1	1021100	ADAPTER 4IN VAC COL HOSE	1
2	1023100	COUPLER VAC COL HOSE TO ADAPTER 2C 3	1
3	1025100	CAP PLUG 4IN VOL HOSE 2C HOSE 2C 3C 5C	1
4	1035100	HOSE VAC COL 4.00DIA X 10 FT LG 5C	1
5	1027100	LEAF TRAY 2C 3C 5C VACUUM COL	1
6	1030100	NOZZLE VAC COL FOR 5C CHIPPERS	1
7	1024100	RING PLASTIC 5IN DIA 3IN LG NOTCHED	1
8	1026100	HANDLE VAC COL 0.75IN DIA TUBE	1
9	1028100	GRIP HANDLE 10IP BLACK VINYL 3/4	1
10	6041612	BOLT 1/4-20 X 1-1/2 PTH ZN	1
11	1921319	WASHER 1/4 0.27 IDX0.620DX.05THK	2
12	1960294	NUT 1/4-20 HSFBW BLK ZN	1
13	1919326	WASHER-0.312 0.34ID X 0.75ODX 0.06THK	3

ILLUSTRATED PARTS BREAKDOWN - TOW BAR KIT (OPTIONAL ACCESSORY) MODEL NO. 1692327



ITEM #	PART #	DESCRIPTION	QTY.
1	1713352	BENT ARM ASSEMBLY, TOW BAR	1
2	1713414	ROD ASSEMBLY-TOW VAR SWING ARM	1
3	1713357	ROD HOLDER ASSY-TOW BAR	1
4	1925205	BOLT 5/16-18 5/8 HHCS GR5	1
5	1423B	BOLT 5/16-18 X 2 HHCS GR5 BLK ZN	1
6	1919438	NUT 5/16-18 NYLOCK BLK ZN	1
7	1710726	PIN-CLEVIS .308DIA X 1.500LG .43DIA	4
8	118053	PIN-RND HD DRILLED .375 X 2.000	1
9	1918196	PIN-QUICK .091DIA WIRE 1.875LG	5



WARRANTY TERMS AND CONDITIONS

Limited 5 Year Chipper Shredder Warranty

Ardisam, Inc. (Ardisam) warrants this chipper shredder under a five-year limited warranty to be free from defects in the material or workmanship or both for a period not exceeding sixty consecutive months from the date of original purchase by the first retail consumer or first commercial end user. This warranty does not apply to the engine mounted on the product. "Consumer use," means personal recreational use by a retail consumer. "Commercial use," or "commercial application," means all other uses, including use for commercial, income producing or rental purposes. Once a product has experienced commercial use, it shall thereafter be considered as a commercial use product for the purpose of this warranty. This warranty applies to the original owner that provides a proof of purchase. This warranty is not transferable. The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the sixty month consecutive period thereafter. Any unit used in a commercial application is covered for a period of 90 days after purchase by the first commercial end user. For the warranty to be valid, the product must be registered online within 30 days of purchase, or the warranty card must be filled out and received by Ardisam within 30 days of purchase. Ardisam shall not be obligated for transportation charges that result from repair or replacement under the terms of this warranty. Transportation charges are the sole responsibility of the purchaser.

This warranty excludes parts that are worn or damaged due to normal wear, such as bearings, wheels, tires, tri hammers, J hammers, chipper knives, routine maintenance items such as O-rings, seals, and lubricants, accessory parts such as nylon collection bag and collection bag mounts. Negligent use such as using the chipper shredder for a purpose other than for which it was designed and manufactured, continued use of chipper shredder after sudden change in vibration do to foreign bodies adhering to chipper rotor, using the chipper shredder in violation of local codes, ordinances and good trade practices voids this warranty. *These warranties apply only to products which have not been subjected to negligent use, abuse, misuse, overload, improper installation, alteration, accident, acts of God (or other events beyond Ardisam's control), vandalism, unauthorized parts, or if repairs have been performed at a non-authorized service facility. These warranties shall not cover damage from normal wear and tear, normal maintenance parts and services, lightning; nor improper installation, operation, storage, or maintenance; nor operating the equipment above recommended maximums as stated in this manual and the accompanying engine manual.

This limited warranty applies to defects in the material or workmanship of the product only. This warranty policy applies only to product which have not been subjected to misuse including but not limited to operating the product with excessive vibration causing loose hardware, uses other than those indicated in the product manual, alteration, accident, use of unauthorized parts, failure to perform periodic maintenance as specified in product manual, normal wear and tear, use of unauthorized parts or repairs performed at unauthorized service centers. There is no other express warranty. Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one year from purchase, or to the extent permitted by law. All other implied warranties are excluded. Liability for incidental or consequential damages are excluded to the extent exclusion is permitted by law. Ardisam does not assume, and does not authorize any other person to assume for Ardisam, any liability in connection with the sale of Ardisam products. **To be at "No Charge," warranty work must be sent directly to and performed by Ardisam or an Ardisam Authorized Warranty Service Facility.** To obtain warranty service and/or replacement instructions, contact the Ardisam Customer Service Department at 800-345-6007. If you choose to ship your product to Ardisam for warranty repair, you must first have prior approval from Ardisam by calling the Ardisam Customer Service Department for a return material authorization number (RMA#). Under these circumstances, all items must be shipped prepaid. Ardisam will, in its discretion, at no charge, repair or replace any defective part to which this warranty applies. Ardisam retains the right to change models, specifications and price without notice. Ardisam shall not be obligated to ship any repair or replacement product to any location outside of the United States of America or Canada. Some states and countries do not allow the limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.



NOTES

Lined area for notes, consisting of 20 horizontal lines.



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All weights, specifications and features are approximate and are subject to change without notice. Due to continuous product improvements, product images may not be exact. Items used for props not included. Some assembly may be required.

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