

# **SC185 BRUTE SHREDDER – CHIPPER**

## **SAFETY AND OPERATING INSTRUCTION MANUAL**



This manual contains information concerning proper and improper operation procedures, warnings, maintenance, troubleshooting, and assembly tips. Everyone who operates this machine should read these instructions and be thoroughly familiar with them.

**THIS MACHINE IS CAPABLE OF INFLECTING  
SERIOUS INJURY IF OPERATED IMPROPERLY  
- READ WARNING & CAUTION LABELS -**

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## SECTION I – SAFETY

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**This symbol points out important safety instructions**, which, if not followed, could endanger the personal safety and/or property of yourself and others. Read and follow all instructions in this manual before attempting to operate your shredder/chipper. Failure to comply with these instructions may result in personal injury. When you see this symbol - **heed its warning**.

**THIS MACHINE IS CAPABLE OF INFLICTING SERIOUS INJURY IF OPERATED IMPROPERLY -- READ WARNINGS & CAUTION LABELS.**

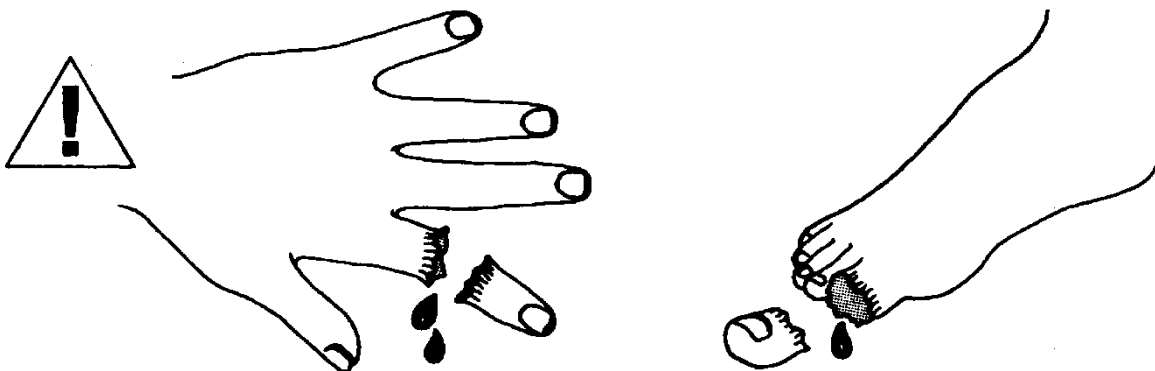
### INTENDED USE

**Never** use your shredder/chipper for any other purpose than shredding and chipping limbs or other lawn and garden debris. It is designed for this use and any other use many cause serious injury.



**DANGER: *Rotating cutting blade.***

Keep hands and feet out of inlet and discharge opening while machine is running.



**DANGER:** This machine can **CRUSH, GRIND, CUT**, and **SEVER** parts of your body if they enter the inlet or discharge area of your shredder/chipper.

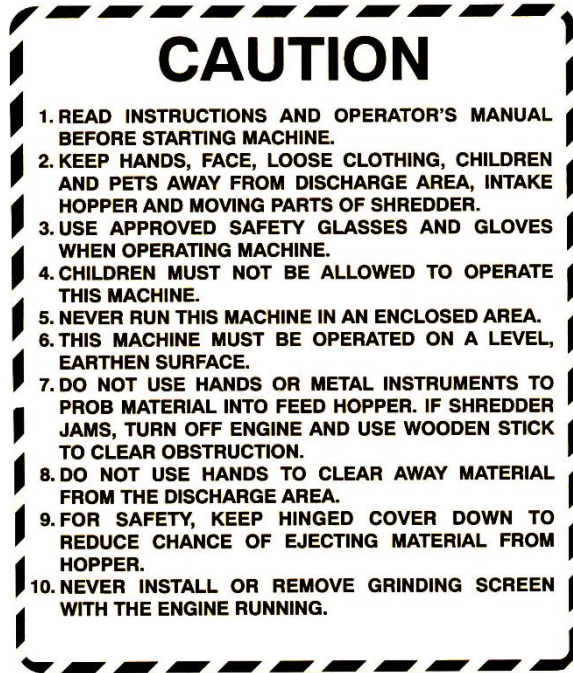


**DANGER:** Your shredder/chipper was built to be operated according to the rules for safe operation in this manual. **As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury.** If you violate any of these rules, you may cause serious injury to yourself or others.



**WARNING:**  
CANCER AND REPRODUCTIVE HARM  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**MAKE CERTAIN THAT ALL SAFETY LABELS ON THIS EQUIPMENT ARE KEPT CLEAN AND IN GOOD CONDITION. IF YOU NEED REPLACEMENT LABELS, ORDER BY PART NUMBER.**



080-0962



080-0967




091-0044



091-0088



091-0057

	 <b>WARNING</b>
	<p><b>Avoid electric shock.</b></p> <p>Sparking from battery cables can cause shock, burns, and damage the machine.</p> <p>If the battery is removed do NOT operate the machine without insulating the positive (+) battery cable.</p>

930-0006

930-0006

	 <b>DANGER</b>
	<p><b>Avoid death or serious injury.</b></p> <p>Read and understand operator's manual before servicing or operating this machine.</p>

930-0002




930-0002

 <b>WARNING</b>

<p><b>Rotating parts inside can cause severe injury.</b></p> <p>Shut down engine, wait for all moving parts to come to a complete stop, remove spark plug wire, then wait 5 minutes before opening.</p>

No. 930-0009

930-0009

  	<b>! WARNING</b>
	<p>Rotating parts inside can cause severe injury.</p> <p>Improper use can cause fire and clutch damage.</p> <p>Keep hands, body parts and loose clothing clear of this area while machine is running and parts are moving.</p> <p>Do NOT start or operate machine without all guards in place.</p> <p>Shut down engine, wait for all moving parts to come to a complete stop, remove spark plug wire, then wait 5 minutes before opening.</p>
	<small>Reorder No. 930-0004</small>
	930-0004

	<b>! WARNING</b>
	<p><b>Burn Hazard.</b></p> <p><b>Hot Surface.</b></p> <p><b>Do NOT Touch.</b></p>
	<small>Reorder No. 930-0007</small>

930-0007

 	<b>! WARNING</b>
	<p><b>High speed discharge and debris can cause severe injury.</b></p> <p>Stand clear of the discharge chute while machine is running and parts are moving.</p> <p>Keep bystanders, children, and pets 100 ft. from machine while in use.</p> <p>Always wear approved safety glasses when using this machine.</p> <p>Be aware of your surroundings, wind can cause the discharge and debris to change direction.</p>
	<small>930-0010</small>
	930-0010

<b>! WARNING</b>	
	<p><b>Rotating knife and flywheel can cause severe injury.</b></p> <p>Do NOT start or operate machine without all guards in place.</p> <p>Shut down engine, wait for all moving parts to come to a complete stop, remove spark plug wire, then wait 5 minutes before opening</p>

940-0001

940-0001

<b>! DANGER</b>	
  	<p><b>Rotating knife and flywheel can cause death or severe injury.</b></p> <p>Do NOT place hands, body parts or other objects in or near the discharge chute while machine is running and parts are moving.</p> <p>Do NOT start or operate machine without discharge chute in place.</p> <p>Do NOT try to clear clogs while machine is running and parts are moving.</p> <p>Shut down engine, wait for all moving parts to come to a complete stop, remove spark plug wire or on tractor mounted units disconnect PTO shaft from tractor, then wait 5 minutes before opening.</p>

940-0011

940-0011

<p><b>WARNING: Check Oil Before Starting Engine</b></p> <p style="text-align: right; font-size: small;">091-0043</p>
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091-0043



091-0062



091-0093



930-0014



**⚠ DANGER**

**Avoid death or serious injury.**

Rotating cutting blades.

Do NOT insert hands, body parts, or metal objects in the hopper or discharge chute while the machine is running and parts are moving.



Shut down engine, wait for all moving parts to come to a complete stop, remove spark plug wire, then wait 5 minutes before clearing obstruction.



Keep hands, all body parts, and loose clothing away from moving parts.

Always wear approved safety glasses, hearing protection and gloves when using this machine.



Keep stones, nails, and other objects except branches out of the hopper.

Keep bystanders, children and pets 100 ft. from machine while in use.



Do NOT operate machine without the hopper, blow back shield, discharge chute and all guards securely in place.

Read and understand the operator's manual before servicing or operating this machine.



Reorder No. 930-0013

930-0013

# **SAFE OPERATION PRACTICES**

## **TRAINING**

- Read this owner's manual carefully in its entirety before attempting to assemble this machine. Read, understand, and follow all instructions on the machine before operation. Be completely familiar with the controls and the proper use of the machine before operating it. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
- Know how to stop the unit and disengage the controls quickly.
- Never allow children to operate the unit. Never allow adults to operate the equipment without proper instruction. Only responsible individuals who are familiar with these rules of safe operation should be allowed to use your unit.
- Keep the area of operation clear of all persons, particularly small children and pets. Stop the engine when they are in the vicinity of the unit. Keep work area clean and clear of branches or obstacles, which could cause you to stumble or fall.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people, their property, and themselves.
- Your shredder/chipper is a powerful tool, not a plaything. Exercise extreme caution at all times. Your unit has been designed to shred and chip. Do not use it for any other purpose.
- If situations occur which are not covered in this manual, use care and good judgment. Contact your place of purchase for additional assistance.

## **PREPARATION**

- Thoroughly inspect the area where the equipment is to be used and remove all foreign objects.
- Do not operate the machine without wearing adequate outer garments and safety goggles. Always wear safety glasses or goggles during operation and while performing any adjustment or repair, to protect eyes from foreign objects that may be thrown from the machine. Be sure your glasses or goggles fit properly.
- Avoid loose-fitting clothes and use protective footwear that will improve footing on slippery surfaces. Shirt and slacks that cover the arms and legs and steel-toed shoes are recommended. Secure hair above shoulders. Do not wear loose clothes or jewelry that can be caught in moving parts. Never operate a unit in bare feet, sandals or sneakers. Wear gloves when feeding material into the shredder hopper or chipper chute. Be sure your gloves fit properly and do not have loose cuffs or drawstring.
- Warning: Fuel is highly flammable and the vapors are explosive. Take the following precautions.
  - Store fuel and oil in approved containers.
  - Keep away from heat and open flame, and out of the reach of children.
  - Refuel outdoors only and do not smoke while refueling.
  - Check and add fuel before starting the engine. Never remove gas cap or add fuel while the engine is running or when the engine is hot. Allow engine to cool before refueling.
  - 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 store the machine or fuel container inside where there is an open flame or spark, such as a gas hot water heater, space heater, clothes dryer or furnace.
  - To reduce fire hazard, keep engine and muffler free of debris build-up. Clean up fuel and oil spillage. Allow unit to cool at least five minutes before storing.
- Never attempt to make any adjustments while the engine is running.

## OPERATION

- Never place your hands, feet, or any part of your body in the shredder hopper, chipper chute, discharge opening, or near or under any moving part while the shredder/chipper is running. Keep clear of the discharge opening at all times. If it becomes necessary to push material into the shredder hopper or chipper chute, use a small diameter stick, NOT YOUR HANDS.
- Keep your face and body back from the shredder hopper and chipper chute to avoid accidental bounce back of any material.
- The machine should only be operated on a level surface. Never operate your unit on a slippery, wet, muddy, or icy surface.
- Exercise caution to avoid slipping or falling.
- Stay alert for hidden hazards or traffic. Do not carry passengers.
- If the cutting mechanism strikes a foreign object or if your machine should start making an unusual noise or vibration, immediately stop the engine, remove the spark plug wire(s) and wait for all moving parts to come to a complete stop. After the machine has come to a complete stop proceed as follows:
  - Inspect for any damage.
  - Repair or replace any damaged parts before restarting and operating the machine.
- If the machine should start to vibrate abnormally, immediately stop the engine, remove the spark plug wire(s) and wait for all moving parts to come to a complete stop and inspect for the cause. Vibration is generally a warning sign of trouble.
- Stop the engine when leaving the operating position, and when making any repairs, adjustments and inspections.
- Take all possible precautions as recommended by the manufacturer when leaving the machine unattended. Stop the engine and remove the key if so equipped.
- Before cleaning, repairing, or inspecting, shut off the engine and make certain the flywheel and all moving parts have come to a complete stop. Disconnect the spark plug wire and keep the wire away from spark plug to prevent accidental starting. Do not use flammable solutions to clean air filter.
- Never run this machine in an enclosed area as the exhaust from the engine contains carbon monoxide, which is an odorless, tasteless, and deadly poisonous gas.
- Keep all guards and safety devices in place and operating properly. Do not operate the machine if all safety guards are not in place.
- Do not use the unit with the shredder hopper or chipper hopper removed.
- The muffler and engine become hot and can cause a severe burn. Do not touch.
- Keep children and pets away.
  - Tragic accidents can occur if the operator is not alert to the presence of small children.
  - Keep children out of the work area and under the watchful eye of a responsible adult other than the operator.
  - Be alert and turn the unit off if a child enters the area.
  - Never allow children to operate the shredder/chipper.
- Do not overload or attempt to shred or chip material beyond manufacturers recommendation. Personal injury or damage to the machine could result.
- Never operate the machine at high transport speeds or on hard or slippery surfaces.
- Never allow bystanders near the unit while running.
- Only use accessories approved for this machine by the manufacturer. Read, understand, and follow all the instructions provided with the approved accessory.
- Only operate unit in good daylight. Do not operate unit at night or in dark areas where your vision may be impaired.
- Use extreme caution when reversing or pulling the machine towards you.
- Do not tamper with the engine's governor setting. The governor controls the maximum safe operation speed and protects the engine. Over-speeding the engine is dangerous and will cause damage to the engine and to the other moving parts of the machine. See your authorized dealer for engine governor adjustments.
- Start the engine according to the manufacturer's instructions. Keep hands and feet away from inlet and discharge areas.
- Never pick up or carry the machine while the engine is running.
- Do not operate while under the use of alcohol, drugs, or medication. A clear mind is essential for safety.
- Do not allow anyone who is not alert to operate this machine.
- When feeding material into this equipment, be extremely careful that pieces of metal, rocks, or other foreign objects are not included. Personal injury or damage to the machine could result.

- Keep area of discharge clear of people, animals, buildings, glass or anything else that will obstruct clear discharge, cause injury or damage. Wind can also change discharge direction, so be aware.
- Do not allow an accumulation of processed material to build up in the discharge area as this will prevent proper discharge and can result in kickback from the shredder hopper or chipper chute.
- Do not allow any part of the engine, especially around the cooling fans and muffler, to become clogged with processed material, leaves, oil, grease or any other combustible material.
- Do not operate engine if air cleaner or cover over carburetor air-intake is removed, except for adjustment. Removal of such parts could create a fire hazard.

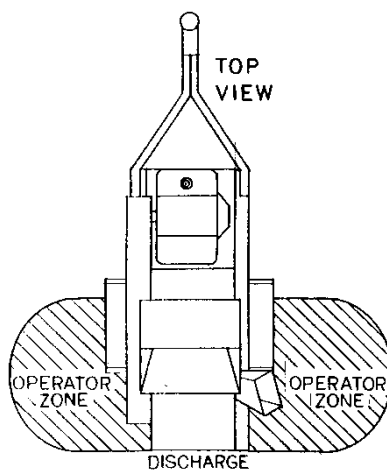
## **TOWING**

- Obey all state and local regulations when towing on public roads and highways.
- Before towing, be certain the chipper is correctly and securely attached to the towing vehicle and the safety chains are in place. Leave slack in the chains to allow for turning.
- Do not allow anyone to sit or ride on the shredder/chipper. This can cause serious injury.
- Stay alert for hidden hazards or traffic. Do not carry passengers.
- Never carry any cargo or wood on your shredder/chipper. It may fall off and endanger following vehicles.
- Allow for added length when turning, parking, and crossing intersections and in all driving situations.
- Be careful when backing up. You can easily jackknife your shredder/chipper.
- Adjust towing speed for terrain and conditions. Do not exceed 45 MPH when towing.
- Because there is no suspension on the shredder/chipper, it will tend to bounce more on rough roads. Be extra cautious when towing over bumpy or rough terrain including railroad crossings.

## **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. Never operate your shredder/chipper in poor mechanical condition or when in need of repair. Be sure all safety guards and shields are in proper position. These safety devices are for your protection.
- 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 is to be drained, do this outdoors.
- Follow the manufacturer's recommendations for safe loading, unloading and storage of machine.
- If it is necessary for any reason to unclog the feed intake or discharge openings or to inspect or repair the machine where a moving part can come in contact with your body or clothing, shut the machine off, allow all moving parts to come to a complete stop and disconnect spark plug wire(s) before attempting to unclog, inspect or repair.
- Check the knife mounting screws at frequent intervals for proper tightness. Also, visually inspect the knife for wear or damage. Replace the knife with parts that meet original equipment specifications.
- Knives should be checked for sharpness and the bolts attaching them to the flywheel for tightness every 8-10 hours of operation.
- Check the gap between the knife and wear plate every time you sharpen or replace the knife, or every 8-10 hours of operation.
- Never tamper with safety devices. Check their proper operation regularly.
- Inspect the belt each time you use the unit. Look for damage, worn areas or tears. Do not use the unit if this condition exists.
- Do not tamper with the engine's governor setting. The governor controls the maximum safe operation speed and protects the engine. Over-speeding the engine is dangerous and will cause damage to the engine and to the other moving parts of the machine. See your authorized dealer for engine governor adjustment

- Only operate your shredder/chipper from the operator zone.
- Know how to turn your unit off.
- Never move your chipper or leave it unattended with the engine running.
- Follow engine owner's manual for engine maintenance and repair.



### YOUR RESPONSIBILITY

- Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

SAVE THESE INSTRUCTION  
FOR FUTURE REFERENCE



is

**HAZARD:** This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester used, the operator should maintain it in effective working order.

In the State of California, the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your Briggs & Stratton servicing dealer.

## SECTION II – ASSEMBLY INSTRUCTIONS

### PACKAGE CONTENTS

SKID	POLYBAG	BOLT BAG	PART #	WHERE USED
SHREDDER/CHIPPER	OWNER'S MANUAL	(x1) KNIFE GAUGE	030-0384	GAUGING KNIFE
SHREDDER HOPPER	ENGINE MANUAL	(x1) 3/8-16 x 3-1/2" HHCS PLTD	090-0018	HITCH ASSEMBLY
CHIPPER HOPPER	WARRANTY CARD	(x2) 1/2-13 GRIPCO LOCKNUT	090-0050	HITCH ASSEMBLY
HITCH TUBE	HITCH LEG	(x4) 5/16-18 x 1" HHCS PLTD	090-0088	SHREDDER HOPPER ASSEMBLY
HITCH	BOLT BAG	(x3) 3/8-16 x 3" HHCS PLTD	090-0116	HITCH ASSEMBLY
POLYBAG	SAFETY CHAINS	(x8) 5/16" USS FLATWASHER PLTD	090-0233	CHIPPER HOPPER ASSEMBLY
		(x2) 3/8" USS FLATWASHER PLTD	090-0234	HITCH ASSEMBLY
		(x2) 1/2-13 x 3" HHCS PLTD	090-0370	HITCH ASSEMBLY
		(x8) 5/16-18 NYLON INSERT LOCKNUT	090-0460	SHREDDER + CHIPPER HOPPER ASSEMBLY
		(x4) 3/8-16 NYLON INSERT LOCKNUT	090-0461	HITCH ASSEMBLY
		(x4) 5/16-18 x 3/4" CARRIAGE BOLT	090-0462	CHIPPER HOPPER ASSEMBLY
		(x1) 3/8" x 2-3/4" RING PIN ZP	090-0749	HITCH ASSEMBLY
		(x1) HAIR SPRING COTTER PLTD	706-0924	HITCH ASSEMBLY
		(x2) 1/4 USS FLAT WASHER PLTD	090-0232	BATTERY
		(X2) 1/4-20 X 3/4" HHCS PLTD	090-0066	BATTERY
		(X2) 1/4-20 NYLON INSERT LOCKNUT	090-0470	BATTERY

#### TOOLS REQUIRED FOR ASSEMBLY

- 3/4" WRENCH
- 3/4" RATCHET AND SOCKET
- 9/16" WRENCH
- 9/16" RATCHET AND SOCKET
- 1/2" WRENCH
- 1/2" RATCHET AND SOCKET

#### ASSEMBLY

##### STEP I – UNPACKING AND CHECKING CONTENTS

- Remove the all items from the crate.
- After unpacking the crate, compare the contents with the list above.
- If any parts are missing, contact your place of purchase.
- Assembly should be done on a clean, level surface.

## STEP II – ATTACHING THE HITCH ASSEMBLY

- Place the base on Jack Stands so that the frame is level with the ground (Figure 2).
- Position the Support Leg in the down position and secure using the Pin and Hitch Clip (Figure 3).
- Attach the rear of the Tow Bar to the Rear Frame Support using a 3/8"-16 x 3" bolt and a 3/8-16 Nylon Locknut and secure loosely.
- Attach the Tow Bar to the Front Frame Support using a 3/8"-16 x 3" bolt and 3/8-16 Nylon Locknut and tighten using two 9/16" wrenches.
- Using two 9/16" wrenches, tighten the loose bolt from Step 3 to secure the rear of the Tow Bar.
- Remove the Jack Stands.

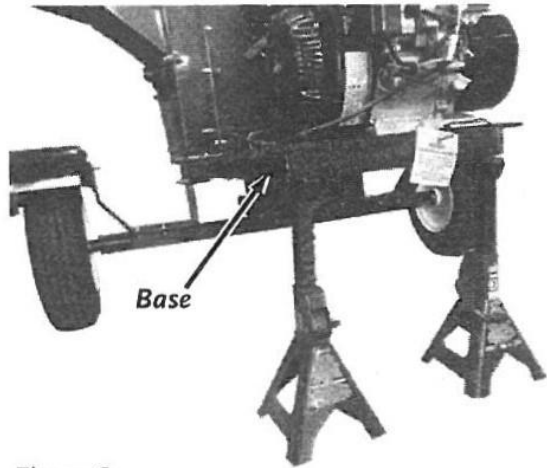


Figure 2

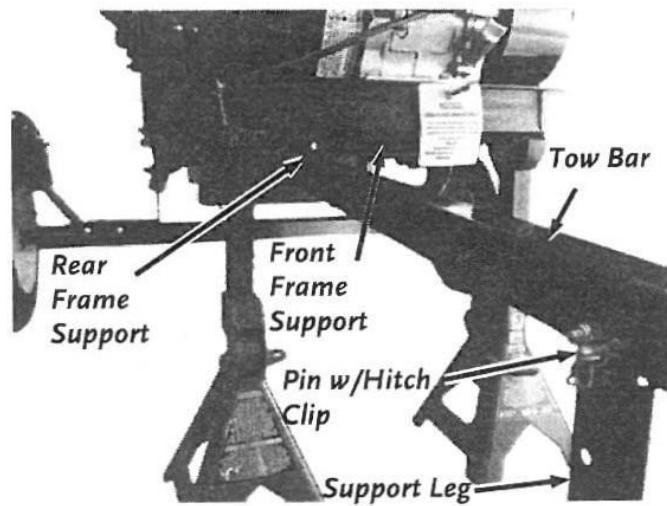
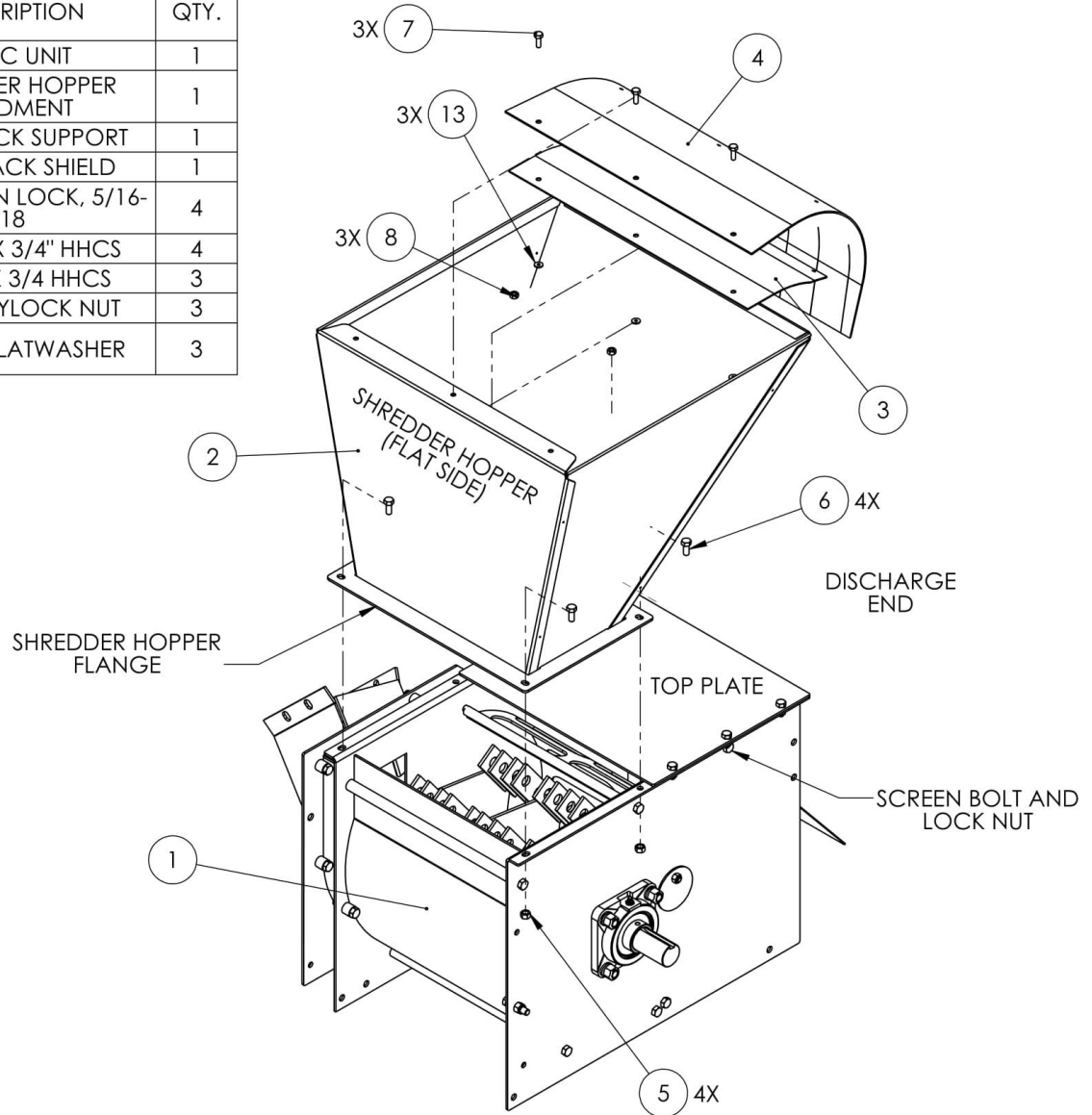


Figure 3

### STEP III – ATTACHING THE SHREDDER HOPPER

- Place the shredder hopper (item #2) onto the basic unit (item #1) making sure the shredder hopper flange is up against the top plate allowing minimal or no gap.
- Secure the front two bolts (item #6) and locknuts (item #5) towards the discharge end.
- Secure the rear two bolts and locknuts which is the flat side of the shredder hopper.
- Tighten the top screen bolt and locknut on the basic unit so at least 2 threads of the bolt stick out beyond the lock nut.

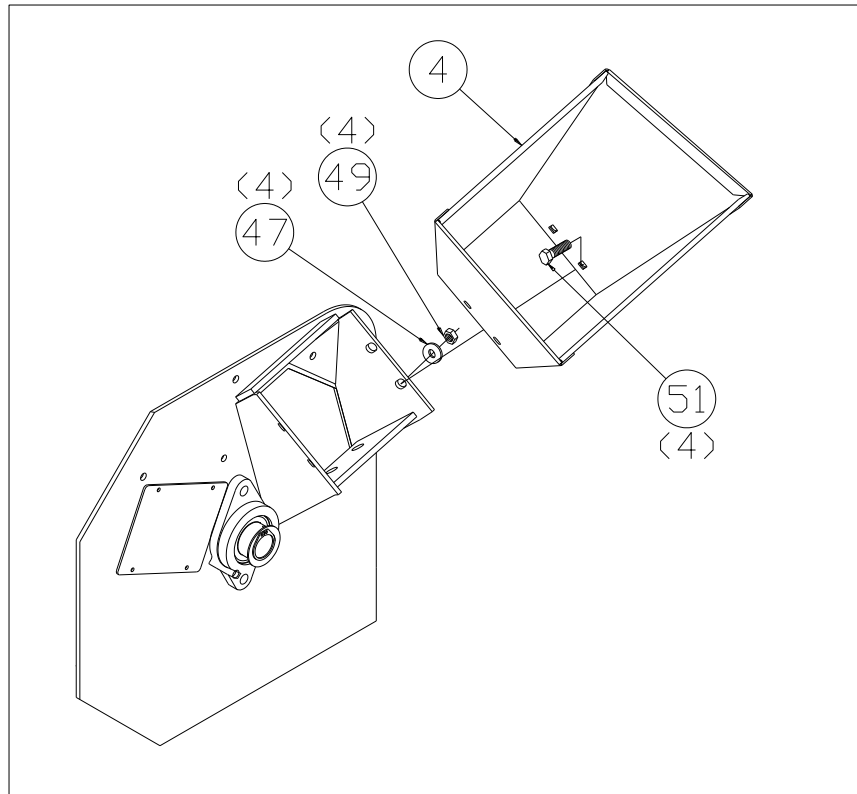
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	911-0400	BASIC UNIT	1
2	921-0028	SHREDDER HOPPER WELDMENT	1
3	921-0297	BLOWBACK SUPPORT	1
4	810-0298	BLOWBACK SHIELD	1
5	090-0460	NUT, NYLON LOCK, 5/16-18	4
6	090-0066	5/16-18 X 3/4" HHCS	4
7	090-0012	1/4-20 X 3/4 HHCS	3
8	090-0470	1/4-20 NYLOCK NUT	3
13	090-0232	1/4 USS FLATWASHER	3





#### STEP IV – ATTACHING THE CHIPPER HOPPER

- Attach the chipper hopper (item #4) to machine using four each 5/16"-18 x 3/4" carriage bolts (item #51), 5/16" flatwashers (item #47) and 5/16"-18 nylock nuts (item #10). Put head of bolt inside hopper with threads sticking out. Tighten all hardware with a 1/2" wrench.



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## SECTION III – LUBRICATION & ENGINE START UP

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### BEFORE STARTING ENGINE, ALWAYS CHECK OIL LEVEL!

Refer to the engine owner's manual for further details regarding OPERATION AND MAINTENANCE OF the engine.

**NOTE:** ENGINE IS SHIPPED *WITHOUT* OIL! FILL CRANKCASE WITH OIL BEFORE STARTING ENGINE. BE VERY CAREFUL NOT TO ALLOW DIRT TO ENTER THE ENGINE WHEN CHECKING OR ADDING OIL OR FUEL.

**NOTE:** IF YOU START THE ENGINE WITHOUT OIL, THE ENGINE WILL BE DAMAGED BEYOND REPAIR AND WILL NOT BE COVERED UNDER WARRANTY.

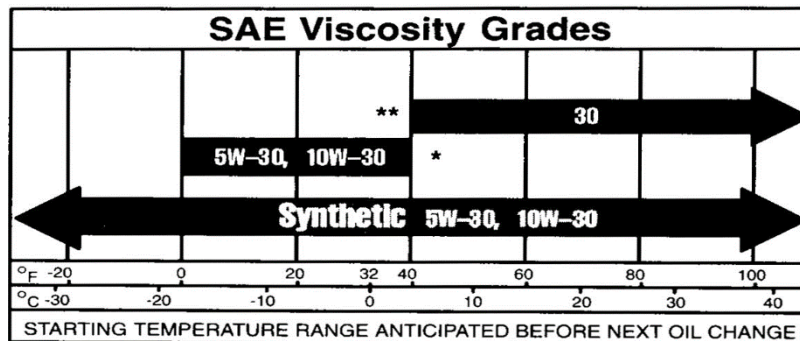
### BEFORE STARTING: Oil and Gas Fill-Up

Oil Capacity: 1 ½ quarts (48 ounces)

Fuel Capacity: 9 quarts

### OIL

- Use a high-quality detergent oil classified "For Service SF, SG, SH, SJ" or higher.
- Do not use special additives.
- Choose a viscosity according to the following table.



\* **CAUTION:** Air cooled engines run hotter than automotive engines. The use of non-synthetic multi-viscosity oils (5W-30, 10W-30, etc.) in temperatures above 40 deg. F (4 deg. C) will result in higher than normal oil consumption. When using a multi-viscosity oil, check oil level more frequently.

\*\* **CAUTION:** SAE 30 oil, if used below 40 deg. F (4 deg. C), will result in hard starting and possible engine bore damage due to inadequate lubrication.

## CHECKING AND ADDING OIL

- Check oil level before starting the engine.
- Check level daily, or after every eight hours.
- Keep oil level at FULL.
- Do not overfill.

**Oil filling procedure:** first add 1 quart. Start and run engine at idle for 30 seconds. Shut engine off and wait 30 seconds. Then add more oil slowly to bring level to **Full** mark on dipstick.

**Oil checking procedure:** before starting engine, check oil level.

- Place engine level. Clean around oil fill and dipstick.
- Remove dipstick and wipe clean with cloth.
- Push dipstick back in and remove to check oil level.
- Remove oil fill cap. Pour oil slowly.
- Fill to **Full** line on dipstick – recheck.
- Replace dipstick firmly.

## FUEL

- Use clean, fresh, regular unleaded gasoline with a minimum of 85 octane. Fresh fuel prevents gum from forming in the fuel system or on essential carburetor parts. Purchase fuel in quantity that can be used within 30 days.
- Do not use gasoline which contains Methanol.
- Do not mix oil with gasoline.

<p><b>CAUTION:</b> Some fuels, called oxygenated or reformulated gasoline, are gasoline blended with alcohols or ethers. Excessive amounts of these blends can damage the fuel system or cause performance problems. If any undesirable operating symptoms occur, use gasoline with a lower percentage of alcohol or ether.</p>
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## ADDING FUEL

- Fill tank outdoors or in a well-ventilated area, away from sparks, open flames, pilot lights, heat and other ignition sources
- If fuel spills, wait until it evaporates before starting engine.
- Turn engine OFF and let engine cool at least 2 minutes before removing gas cap.
- Remove cap. Fill tank to approximately 1-½ inches below top of neck to allow for fuel expansion. Be careful not to overfill.
- Replace cap before starting.

## STARTING AND STOPPING

### STARTING AND OPERATING TIPS

- Store and fuel equipment in level position.
- Use fresh fuel.
- Use correct type of oil for expected starting temperature.
- Remove external equipment/engine loads.
- Periodically remove any debris buildup from the machine.
- After engine has started, let it warm up several seconds to several minutes, depending on outside temperature.
- For maximum performance and life, operate engine with choke in RUN and throttle in FAST.

### TO START ENGINE

- Check oil level.
- Open fuel shut-off valve.
- Move choke control to CHOKE position.
- Move throttle to FAST position. Operate engine with throttle in FAST.
- Insert key and turn to START. **CAUTION:** to prolong starter life, use short starting cycles, 5 seconds maximum, then wait one minute.
- Let engine warm up. Slowly adjust choke control toward RUN position. Wait until engine runs smoothly before each choke adjustment.

### TO STOP ENGINE

- Move throttle to SLOW.
- Turn key to off. Remove key and store out of reach of children.
- Close fuel shut-off valve.

**CAUTION:** Do not stop engine by moving choke control to CHOKE. Backfire, fire or engine damage could occur.

### Operation Notes

- At engine start-up, the engine of your shredder/chipper operates under no load until approximately 1200-1400 RPM'S at which speed the centrifugal clutch engages and begins driving the rotor assembly.
- Proper rotor speed is 2400 RPM +/- 200 RPM.
- When viewed from the chipper hopper side, the flywheel turns in a clockwise direction. This rotation pulls material into the shredder hopper and chipper hopper.
- Always wear protective gloves and safety glasses during operation of the shredder/chipper.
- If it becomes necessary to push material into either hopper, only use a wood stick, never your hands or anything steel.
- Never assume you know where the knife is. You don't know where it is. Always keep hands out of the shredder and chipper hopper.
- Keep area of discharge clear of people, animals, buildings, glass or anything else that will obstruct clear discharge, cause injury or damage. Wind can also change discharge direction, so be aware.

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## SECTION IV – SHREDDING & CHIPPING

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**THIS SHREDDER/CHIPPER WAS DESIGNED FOR SHREDDING LEAFY GARDEN OR ORGANIC MATERIAL AND CHIPPING LIMBS OR BRANCHES. NEVER USE THIS MACHINE FOR ANY OTHER PURPOSE AS IT COULD CAUSE SERIOUS INJURY.**

**CONTACT WITH INTERNAL ROTATING HAMMERS WILL CAUSE SERIOUS PERSONAL INJURY. DO NOT PUT HANDS, FACE, FEET OR CLOTHING INTO THE SHREDDER HOPPER, CHIPPER CHUTE, DISCHARGE OPENING OR NEAR THE DISCHARGE AREA AT ANY TIME.**

**MAINTENANCE AND SERVICE SHOULD ONLY BE PERFORMED AFTER THE ENGINE IS OFF AND ALL MOVING PARTS HAVE COME TO A COMPLETE STOP. USE ONLY A WOODEN STICK TO CLEAR JAMMED MATERIAL AFTER ALL MOVING PARTS HAVE STOPPED COMPLETELY.**

### **SAFETY FIRST**

- Always wear protective gloves and safety glasses during operation of the shredder/chipper.
- Never allow your hands or any part of your body or clothing inside the feed hoppers or discharge area of the shredder/chipper.
- Keep all protective guards and warning labels on the machine and in good working condition.
- Always stand clear of the discharge area when the shredder/chipper is running.
- Keep your face and body back from the feed hoppers to avoid being struck by any material that may bounce back.
- Keep proper balance and footing while operating the shredder/chipper.
- If it becomes necessary to push material into the feed hoppers, only use a wood stick, never your hands or anything steel.
- Never assume you know where the chipper knife is. You do not know where it is.
- Keep area of discharge clear of people, animals, buildings, glass or anything else that will obstruct clear discharge, cause injury or damage. Wind can also change discharge direction, so be aware.
- Always keep hands out of the feed hoppers.
- Never operate the shredder/chipper without the chipper hopper in place.
- Do not transport the shredder/chipper with the engine running.

### **PROCESSING MATERIAL**

- Your shredder/chipper can process dry or green material.
- Green material will process quicker and easier than dry material.
- Soft wood processes easier the hard wood.
- Your operator experience will teach you how different materials shred and chip.
- Your operator experience will teach you how fast you can process different materials.
- Most materials process well with the standard screen provided with the unit.

- When chipping branches, sometimes a tail will be left at the end of a branch. To avoid this, rotate the branch as it is fed into the chute.
- Rotating the branch as you feed it into the machine will improve chipping performance.
- An optional screen is available for greater reduction of the material being processed through the shredder hopper.

## USING THE SHREDDER HOPPER

- The shredder hopper is located on the top of the unit and is the opening into which all materials to be shredded should be fed. Most organic materials can be shredded. A flex guard, or blowback shield is secured to the hopper. Material must be pushed past this flap using a wooden stick in order to enter the main shredding chamber where revolving steel hammers do the shredding. **The blowback shield is an important feature. It prevents kickback of materials! Do not use your machine unless the blowback shield is securely fastened in place.**
- Due to the wide variety of materials that can be shredded, and their very different physical characteristics, only feed limited quantities of any material into the hopper at first. The amount and length of material can be increased if you find that the material is being processed without any difficulty. Your judgment and operator experience is very important. Be sure not to overload the machine by feeding too much material into the hopper at one time. If you hear the RPM's decreasing, stop feeding material into the machine at once. Do not resume feeding the machine until it has returned to full speed.
- The maximum diameter of material that can be shredded is 1 ½". Any larger material should be fed through the chipper-hopper. Material larger than 1 ½" can cause serious damage to any of the internal parts of the shredding chamber. The unit should be inspected after every use for bent hammers, missing spacers, damage to the screen or any other obvious problems. If damage occurs, the rotor assembly can become unbalanced causing excessive vibration. If used in this state, damage can occur. Do not use the machine if vibration is present. Vibration is generally a warning sign of trouble.
- Several small branches can be fed into the shredder-hopper at once providing their combined diameter is less than 1 ½". Branches longer than three feet should be cut to make them more manageable. Green materials should be allowed to dry, or processed in small batches with dry materials to avoid winding around the rotor assembly.
- Wet materials will clog the machine easily. They are best processed with the optional bar screen.

## MATERIALS BEST SUITED FOR SHREDDING

- |                   |                   |                   |
|-------------------|-------------------|-------------------|
| • Leaves          | • Flowers         | • Corn Stalks     |
| • Roots           | • Soil            | • Palm frond tops |
| • Grass clippings | • Garden debris   | • Potato vines    |
| • Straw           | • Hedge clippings | • Tomato vines    |
| • Hay             | • Kitchen Waste   | • Paper           |
| • Small branches  | • Manure          |                   |

**NOTE - The hammers within the shredding chamber can tug suddenly at material being fed into the shredder-hopper. Do not hold on tightly to branches and vines, and don't feed material straight down into the hopper with your arm pointing downward toward the opening. Instead, keep your arms parallel to the ground and several inches above the top edge of the hopper.**

## USING THE CHIPPER HOPPER

- This chipper-hopper is mounted on the side of the machine and is designed to chip the larger, heavier materials that the shredder-hopper isn't designed to handle. Branches fed into the chute are turned into "chips" by the revolving chipper knife mounted on a flywheel. The chipper-hopper can chip branches and vines ranging in size from 1" to 4 ½" in diameter. Cut your materials into manageable lengths before feeding them into the chipper. **Note: The chipper hopper must be securely bolted to the side of your equipment before using the machine!**
- Do not force material into the chipper. If the machine does not chip well, the chipper knives need replaced or sharpened or the gap between the knives and the wear plate needs adjusting.
- Extremely hard knots will not process very well. Short stubs that have not self-fed through the chipper can be pushed through with the next branch to be chipped. **DO NOT THROW REMAINING STUBS OR UNCHIPPABLE KNOTS INTO THE SHREDDER-HOPPER. DAMAGE WILL RESULT.**
- Cut chipping material into manageable lengths of no more than five or six feet long before chipping them.
- Overloading the shredder/chipper will cause the rotor speed to decrease. If you hear the RPM's decreasing, stop feeding material into the machine until the machine has returned to full speed.

## MATERIALS BEST SUITED FOR CHIPPING.

- Branches, vines or stalks from 1 ½" to 4 ½" in diameter.

**USE COMMON SENSE WHEN USING YOUR SHREDDER/CHIPPER.**

- **LEARN TO RECOGNIZE THE CHANGE IN THE SOUND OF YOUR MACHINE WHEN IT IS OVERLOADED.**
- **BECOME FAMILIAR WITH SUCCESSFUL OPERATING CONDITIONS AND AVOID THOSE THAT CAN OVERLOAD AND DAMAGE THE MACHINE.**
- **IF THE MACHINE BECOMES JAMMED BY OVERLOADING OR ANY OTHER CAUSE, STOP THE MACHINE IMMEDIATELY.**
- **IF YOU JAM THE MACHINE AND DO NOT STOP THE ENGINE, IT CAN DAMAGE THE MACHINE. THIS DAMAGE CAN BE COSTLY AND IT MAY NOT BE COVERED UNDER WARRANTY. FOR THIS REASON, IT IS IMPORTANT THAT YOU IMMEDIATELY STOP THE ENGINE IF THE MACHINE BECOMES JAMMED.**
- **ONLY YOUR OPERATOR EXPERIENCE WILL TELL YOU HOW FAST TO FEED MATERIAL TO BE PROCESSED.**
- **CHECK TO SEE THAT THE FLYWHEEL WILL TURN FREELY BEFORE YOU START THE SHREDDER/CHIPPER.**
- **VISUALLY CHECK CHIPPER KNIFE FOR DAMAGE EACH TIME YOU USE YOUR SHREDDER/CHIPPER.**
- **CHECK KNIFE CONDITION, WEAR PLATE CONDITION, GAP SETTING AND THE NUTS AND BOLTS THAT HOLD THE KNIFE IN PLACE FOR TIGHTNESS EVERY 8-10 HOURS OF OPERATION.**
- **DO NOT ALLOW PROCESSED MATERIAL TO BUILD UP WITHIN 3" OF DISCHARGE CHUTE OPENING. MOVE SHREDDER/CHIPPER OR PILE AS NEEDED. FAILURE TO DO THIS COULD RESULT IN UNNECESSARY JAMMING OF THE MACHINE.**
- **TO MOVE PILE OF PROCESSED MATERIAL, USE SPADE, RAKE, OR LONG HANDLE TOOL. NEVER USE YOUR HANDS OR FEET!**



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## SECTION V – MAINTENANCE & STORAGE

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**IMPORTANT:** The knife should be checked for sharpness and the bolts attaching them to the flywheel for tightness every 8-10 hours of operation.

**IMPORTANT:** Every time you perform maintenance or any kind of service or check on the knife, be sure to check the gap between the knife and wear plate for proper setting.

If the cutting mechanism strikes any foreign object or if your machine should start making an unusual noise or is vibrating, stop the engine, disconnect the spark plug wire(s) from the spark plug(s). Allow the engine to cool before you:

- a. Inspect and examine for damage.
  - b. Check for loose nuts, bolts or parts.
  - c. Repair or replace any damaged parts before restarting and operating the machine.
1. When not in use, your shredder/chipper should be stored out of the reach of children. Be sure that there are no gasoline fumes in the storage area. For long periods of storage (over the winter), refer to the engine owner's manual.
  2. After every 8 hours of operation, lubricate the chipper side and drive side bearings. To do this, wipe all dirt, etc., from the grease fittings with a clean cloth, then apply no more than 3 shots of quality general-purpose grease with a hand-pumped grease gun. Over lubrication can also damage bearings. Also, check the bearing collar set screws regularly to be sure they are tight. If they are loose, reset them with Loctite 243, obtainable at any hardware store.
  3. You will find information included referring to operation and maintenance of the engine. Look it over carefully. **BE CERTAIN TO ADD OIL BEFORE STARTING IT.**
  4. When the steel chipping knife needs replacing or sharpening, refer to the section on removal, sharpening and re-installation.
  5. Care must be exercised when sharpening the knife to maintain the correct bevel and a straight edge. Refer to sharpening directions. When you install a knife, the clearance between the knife and wear plate must be checked and set. This clearance or gap should be set to 1/16" (see figure 1).

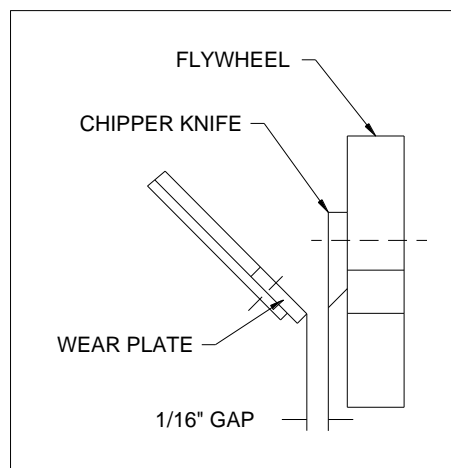


Figure 1

6. To adjust this clearance, loosen the three 1/4" nuts and bolts holding the wear plate in place. The wear plate can be slid up or down (in or out) to achieve the correct gap setting. Tighten the nuts and bolts when the wear plate is in the correct position. Be certain the flywheel rotates without hitting anything before starting the chipper.
7. If the gap between the wear plate and the knife is not set correctly, you will have excessive vibration when chipping and the blade will seem to be dull. This should be checked every 8-10 hours of operation.
8. If at any time it becomes necessary to disassemble the chipper for repairs, the chipper disk must be re-installed in exactly the same position on the rotor shaft.

## REMOVAL, SHARPENING AND RE-INSTALLATION OF CHIPPER KNIFE

### HOW TO REMOVE THE KNIFE

- Stop the engine.
- Remove spark plug wire(s) and keep away from spark plug(s).
- Disconnect battery at negative terminal.
- Open the access cover on the chipper basic machine.
- Rotate the chipper disk until the three countersunk screws attaching the knife to the flywheel are visible through the access door.
- Clean out the heads of the allen screws with an awl or sharp tool.
- Insert a 3/16" allen wrench into the heads of the screws.
- While applying pressure with the allen wrench, apply heat from a propane torch to the screws to break loose the Loctite on the screws.
- Remove the heat once the screws have loosened.
- Remove all three allen screws in this manner.

### KNIFE SHARPENING

- You should never attempt to sharpen the chipper knife (or knives) freehand.
- It is extremely important that the 45-degree angle be maintained consistently for proper performance.
- The chipper knife (or knives) should be taken to a machine shop for proper sharpening.
- Excessive heat generated during the sharpening process will damage knives and weaken the metal. Be sure the knife is not overheated.

### KNIFE INFORMATION

- The chipper knife should be checked routinely for sharpness.
- Using a dull knife will decrease performance and cause excessive vibration that will cause damage to the shredder/chipper.
- How many times a knife can be sharpened is determined by how much material needs to be taken off to sharpen or to compensate for dents or gouges.
- A new chipper knife has 5/16" measurement between the short side bevel edge and the knife mounting holes. See figure 2.

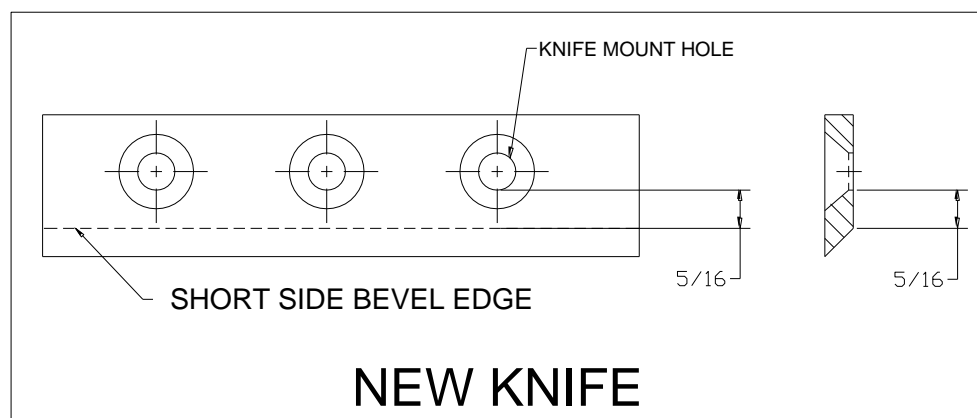


Figure 2

- The knife should never be sharpened to the extent that more than  $3/32$ " is taken off this measurement.
- Once this measurement is below  $7/32$ " (see figure 3) the knife should be replaced.
- If you are unable to remove dents or gouges with these guidelines, replace the knife.

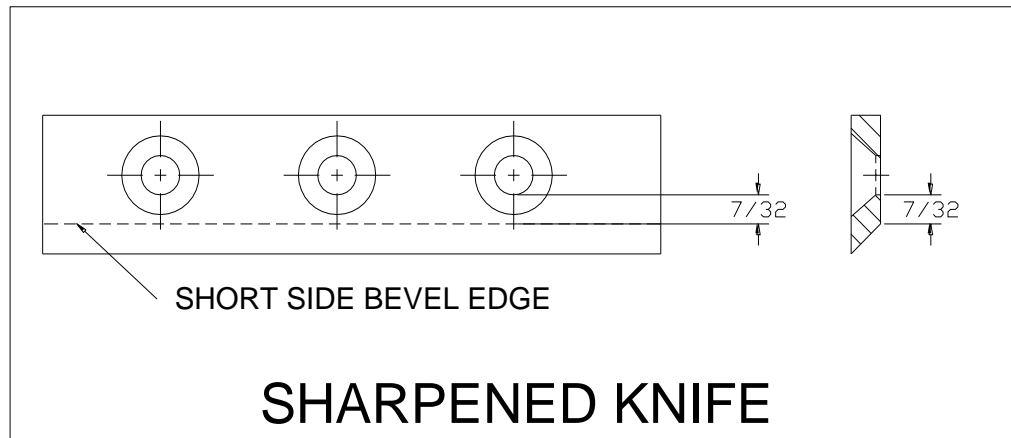


Figure 3

### KNIFE INSTALLATION

- Clean chipper disk where knife is going to be attached.
- Visually inspect the chipper disk slot and knife mounting area and be sure they are clean and that the knife will be able to mount flush against the chipper disk.
- Visually inspect and clean the knife.
- Apply Loctite 243 to the screws that hold the knife in place.
- Hand tighten the knife to the chipper disk. If you are installing a new knife, use the new hardware that comes with the knife when attaching it to the chipper disk.
- Tighten the center bolt.
- Tighten the outer bolt.
- Tighten the inner bolt.
- Double check all three for tightness one more time.

### WEAR PLATE

- The wear plate should have a square edge and be free of dents or gouges.
- The wear plate can be sharpened by hand, but as with the knife, do not overheat during the sharpening process. This will change the characteristics of the steel and it should be replaced.
- Check the gap between the knife and wear plate every time any adjustments are done to either piece, or every 8-10 hours of operation.

**AFTER ANY BLADE OR WEAR PLATE MAINTENANCE OR ADJUSTMENT, ROTATE THE CHIPPER DISK BY HAND. WATCH AND LISTEN CAREFULLY FOR ANY UNUSUAL NOISES, CLICKING OR VIBRATION. IF ANY OF THESE ARE DETECTED, INSPECT THE MACHINE FOR DAMAGE, REPAIR OR REPLACE ANY DAMAGED PARTS AND CHECK FOR ANY LOOSE PARTS AND RETIGHTEN.**

**KNIVES MUST BE CHECKED AND MAINTAINED!**

**KNIVES MUST BE SHARP!**

**BE SURE TO REINSTALL THE KNIFE CORRECTLY AND DOUBLE CHECK FOR TIGHTNESS!**

### **HAMMERS**

When the hard steel hammers of the rotor assembly become dull or round on the cutting edge, they may be rotated or reversed. **These hammers have four cutting edges that may be used before replacement is necessary.** To reverse the hammers, proceed as follows.

- Remove belt guard.
- Remove round cover plate from behind belt guard.
- Remove the top plate.
- Remove shredder hopper.
- Turn rotor assembly until hammer rod is facing up.
- Turn hammer rod until small end of groove pin is facing up.
- Drive the groove pin from the hammer rod with a punch.
- Remove hammer rod through access hole on side of machine.
- Reverse hammers and reinstall with spacers on hammer rod.
- Replace old groove pin with new groove pin.

**NOTE: Be sure the hammers and spacers are reinstalled in exactly the order in which they were removed. Refer to the rotor assembly drawing for the correct order.**

## INSTRUCTIONS FOR ADJUSTING OR REPLACING BELT

### **BELT ADJUSTMENT**

The belt on your chipper should deflect 3/8" under three pounds of pressure as shown in figure 1 below. If it doesn't, adjust per the following directions.

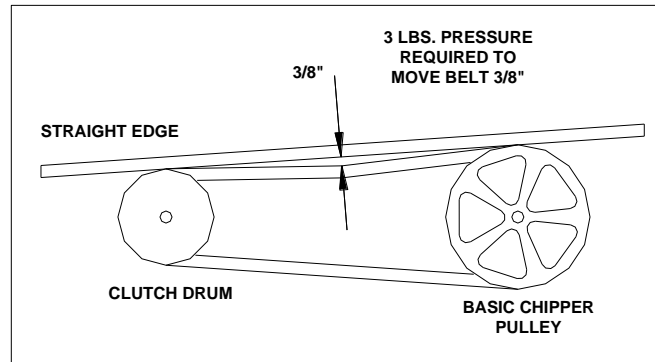


Figure 1

- Remove belt guard.
- Loosen engine bolts.
- Tighten or loosen the nut on the belt tensioner until you have the correct tension as shown in figure 1.
- Retighten engine bolts.
- Check alignment of the clutch with the drive pulley by placing a straightedge across both faces as shown in figure 2. If adjustment is necessary, correct alignment by moving rotor pulley in or out on the rotor shaft. **Do not make adjustment by moving the clutch on the engine shaft.**
- Replace belt guard.



Figure 2

### **BELT REPLACEMENT**

- To replace the belt, follow the above belt adjustment directions.
- After you have loosened the engine bolts, remove the old belts and replace them with new belts. **Always replace both belts as they come in a matched set. This is required for proper operation.**
- Set belt tension and alignment per above directions.

**NOTE: Check and re-tighten belts after initial break-in period, one hour of use.**

## CENTRIFUGAL CLUTCH TECH TIPS

### CLUTCH PART NO. 030-0612

**THE SHOES AND SPRINGS ON THE CLUTCH ARE NORMAL WEAR ITEMS. IF YOU NOTICE DECREASED PERFORMANCE OF THE CLUTCH THEY SHOULD BE CHECKED AND REPLACED IF NECESSARY.**

The clutch on your machine is designed for rugged, dependable service, however, it is important to understand the limitations of a clutch. A clutch is designed to provide load free starting of the engine, and slippage under excessive overloading of the driven application. These features help protect the engine from damages such as broken crankshafts and starters.

The clutch obtains its power from engine RPM's. The lower the engagement speed, and the higher the maintained engine speed, the more torque the clutch can transfer to the driven unit. **Do not operate at less than full RPM's.**

- At engine start-up, the engine of your chipper operates under no load until approximately 1600-1800 RPM'S at which speed the centrifugal clutch engages and begins driving the rotor.
- Proper rotor speed is 2400 RPM +/- 200 RPM.
- Do not tamper with the engine's governor setting. The governor controls the maximum safe operation speed and protects the engine. Over-speeding the engine is dangerous and will cause damage to the engine and to the other moving parts of the machine. See your authorized dealer for engine governor adjustments.
- Become familiar with successful operating conditions and avoid those that can overload and damage the machine.
- Do not overload or attempt to shred or chip material beyond manufacturers recommendation. Personal injury or damage to the machine could result.
- Learn to recognize the sound of the machine when it is overloaded.
- If the machine becomes jammed by overloading or any other cause, stop the machine immediately.
- If you jam the machine and do not stop the engine, it can:
  - Burn the belt.
  - Ruin the clutch.
- Only your operator experience will tell you how fast you can successfully feed material into the machine.
- **Clutch damage can be costly and it may not be covered under warranty. For this reason, it is important that you immediately shut off the machine if it becomes jammed.**

## **CLUTCH MAINTENANCE**

The centrifugal clutch on this machine is permanently lubricated and does not require oil or grease. If, after long periods of use, the drum wobbles excessively, replace the drum assembly. Always replace shoes and springs in sets. Whenever shoes are changed, replace all springs.

## **CLUTCH REMOVAL**

1. Remove clutch from shaft by removing bolt and washers.
2. Slide clutch off shaft.
3. Remove key from keyway.

## **DISASSEMBLY OF EXISTING CLUTCH**

1. Remove retainer ring and slide off drum assembly.
2. Unhook one spring from its shoe. Use tape wrapped pliers to avoid nicking spring.
3. Carefully note position of shoes. Remove shoes from hub.

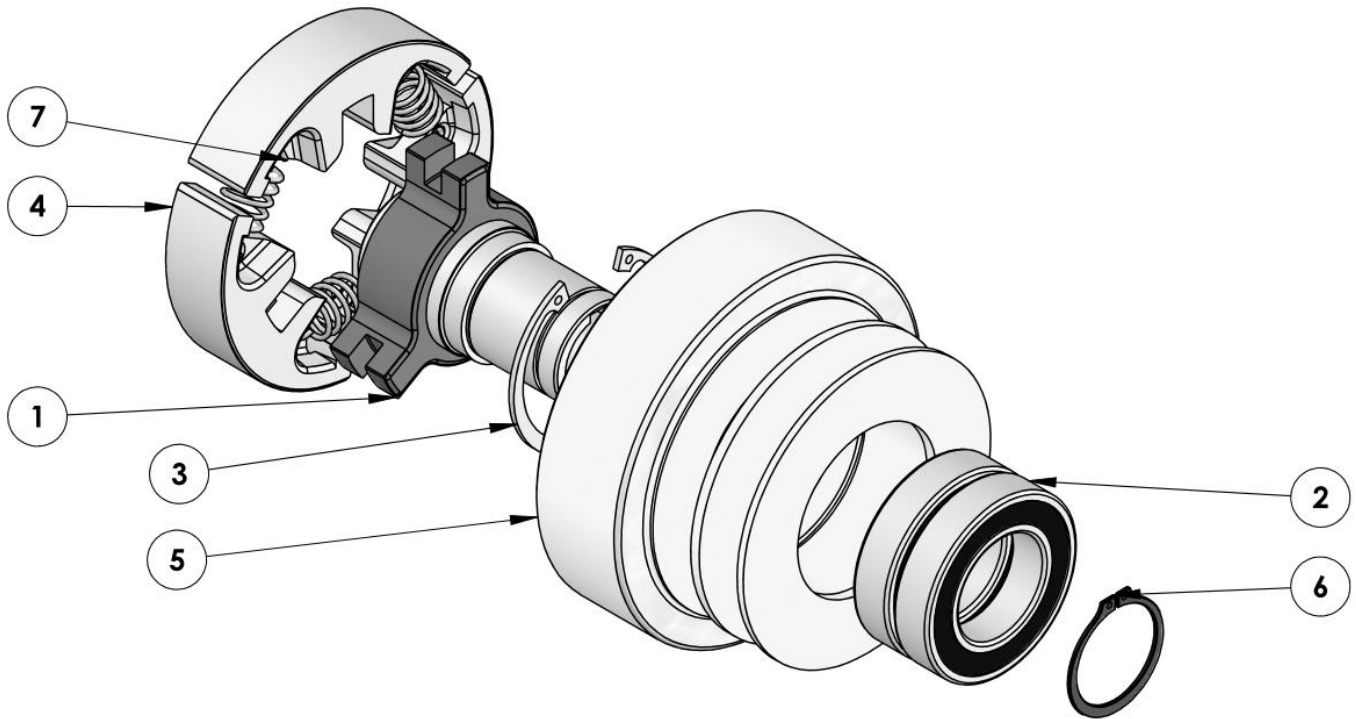
## **REASSEMBLE**

1. Locate shoes correctly on hub for rotation required.
2. Place one end of each spring over a shoe pin, stretch spring just enough to clear pin on the other shoe. Use tape wrapped pliers to avoid nicking spring. Avoid over stretching that may damage spring. Repeat for all shoes.
3. Replace washer on hub shaft.
4. Reassemble drum to hub, secure with retaining ring.
5. Locate key in keyway of hub.
6. Slide clutch onto crankshaft, then washers.
7. Secure hub by tightening cap screw and allen head set screws.

## **INSTALLATION OF A NEW CLUTCH**

1. Clean shaft and remove any burrs.
2. Apply anti-seize compound to the shaft.
3. Place key in keyway on shaft.
4. Slide clutch onto shaft, secure with bolt, flat washer and lock washer (items 40, 41, and 42).
5. Tighten two allen head set screws.

## 030-0612 CLUTCH BREAKDOWN



ITEM NO.	PART NO.	DESCRIPTION	QTY
1	030-0612-1	HUB ASSEMBLY	1
2	030-0612-2	BEARING	2
3	030-0612-3	SNAP RING	1
4	030-0612-4	SHOE	3
5	030-0612-5	DRUM	1
6	030-0612-6	RETAINING RING	1
7	030-0612-7	SPRING	3



## TROUBLESHOOTING

SYMPTOM	PROBLEM	CORRECTION
Clutch overheats.  Belt burns.  Flywheel won't turn.	Clutch is slipping or rotor is jammed or stopped.	<ul style="list-style-type: none"> <li>• Immediately stop engine.</li> <li>• Remove spark plug wires.</li> <li>• Turn flywheel by hand to be sure it turns freely.</li> <li>• Check belt tension.</li> <li>• Clear chipper chamber.</li> </ul>
Shredding and chipping action seems too slow or flywheel stalling.	Engine speed is too slow. Belts are slipping.	<ul style="list-style-type: none"> <li>• Run engine at full throttle.</li> <li>• Check for loose or missing belt &amp; tighten.</li> </ul>
When chipping, log seems to vibrate excessively & "hammers" hands.	Knife is dull. Gap between knife & wear plate is too great.	<ul style="list-style-type: none"> <li>• Remove knife &amp; sharpen - be sure to maintain same bevel of 45 degrees.</li> <li>• Adjust gap as per instructions.</li> </ul>
Chipper knife is hitting wear plate.	The gap between the knife and wear plate is set incorrectly.	<ul style="list-style-type: none"> <li>• Adjust gap per directions in the front of this section.</li> </ul>
Engine runs but flywheel doesn't rotate.	Inner shoes of clutch worn. Retaining springs weak or broken. Loose drive belt.	<ul style="list-style-type: none"> <li>• Replace worn or broken clutch parts.</li> <li>• Check belt tension.</li> <li>• Clear chipper chamber.</li> </ul>
Machine has excessive vibration.	Rotor is out of balance.	<ul style="list-style-type: none"> <li>• Check rotor assembly for any missing or broken hammers or spacers. Replace if necessary.</li> </ul>

## LUBRICATION AND MAINTENANCE

OPERATION TIME	PROCEDURE	COMMENTS
BREAK IN	<ul style="list-style-type: none"> <li>• Change engine oil and filter after first five hours.</li> <li>• Check belt tension.</li> <li>• Check all nuts and bolts for tightness.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow oil recommendations per the engine &amp; owner's manual.</li> <li>• Adjust per directions.</li> <li>• Tighten if necessary.</li> </ul>
8 HOURS	<ul style="list-style-type: none"> <li>• Check engine oil.</li> <li>• Check chipper knife for sharpness.</li> <li>• Check knife and wear plate gap.</li> <li>• Clean air filter.</li> <li>• Grease bearings in basic chipper. *</li> <li>• Check for broken rotor hammers or spacers.</li> </ul>	<ul style="list-style-type: none"> <li>• Per recommendations. Do not overfill.</li> <li>• See knife information.</li> <li>• See gap setting information.</li> <li>• Per engine recommendations.</li> <li>• Use high quality multi-purpose lithium grease.</li> <li>• Replace with new parts.</li> </ul>
40 HOURS	<ul style="list-style-type: none"> <li>• Change engine oil. **</li> <li>• Check tire pressure.</li> <li>• Remove and sharpen or replace chipper knife.</li> <li>• Sharpen wear plate.</li> </ul>	<ul style="list-style-type: none"> <li>• Per recommendations. Do not overfill.</li> <li>• Add or adjust as required.</li> <li>• See knife information.</li> <li>• See wear plate information.</li> </ul>
100 HOURS	<ul style="list-style-type: none"> <li>• Replace belt.</li> <li>• Change engine oil.</li> <li>• Reverse hammers.</li> </ul>	<ul style="list-style-type: none"> <li>• Order replacement belts.</li> <li>• Per recommendations. Do not overfill.</li> </ul>
200 HOURS	<ul style="list-style-type: none"> <li>• Change engine oil filter.</li> <li>• Clean and adjust, or replace spark plugs.</li> </ul>	<ul style="list-style-type: none"> <li>• Per recommendations in engine manual.</li> <li>• Per recommendations in engine manual.</li> </ul>

\* No more than 3 shots from a hand grease gun. Do not over-grease as this may damage the bearing.

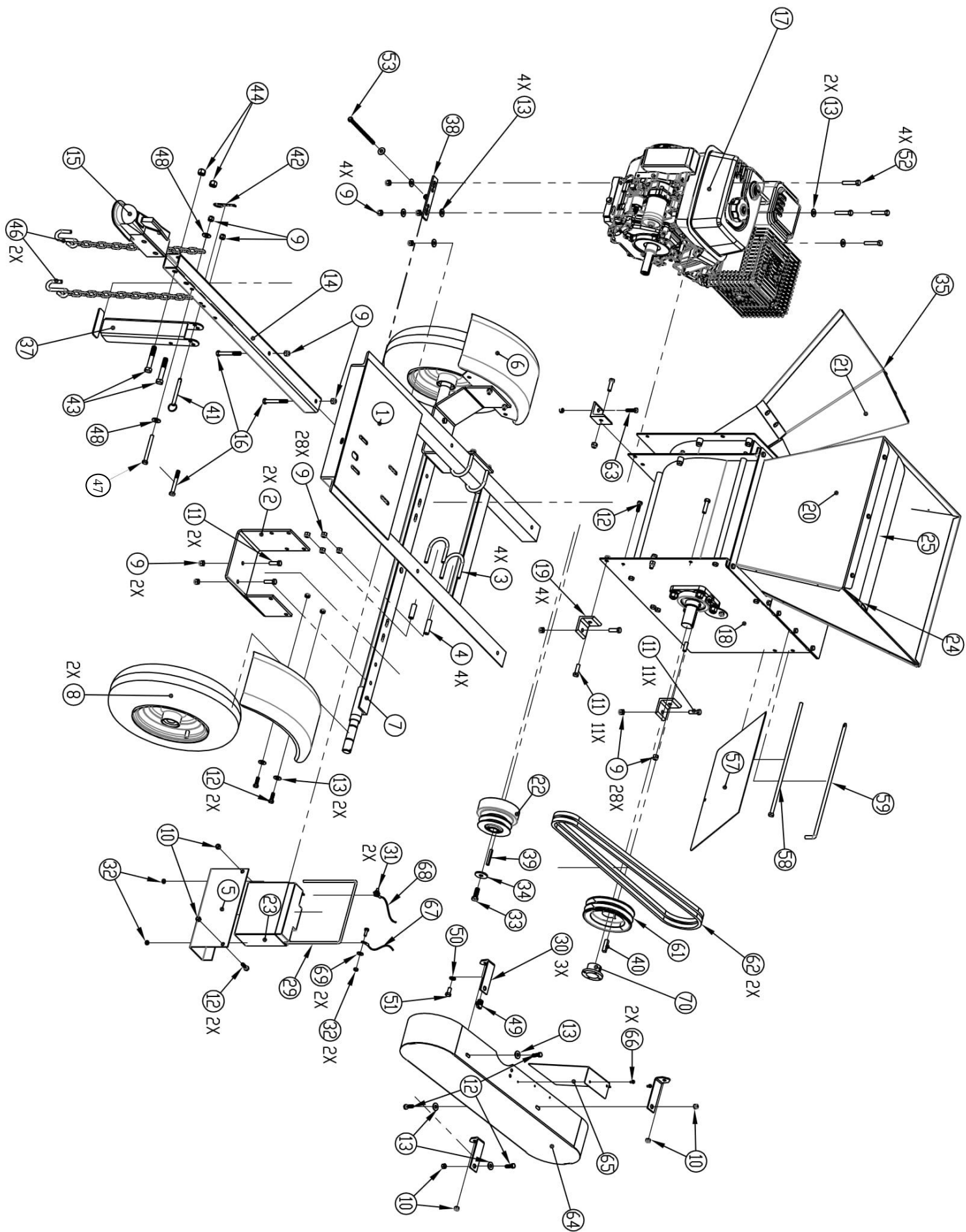
\*\* Lubrication schedule may vary depending on working environment. Overly dirty and dusty situations will require more frequent oil changes to protect the engine.

## SECTION VI - PARTS

### SC185 PARTS LIST

ITEM NO.	COMPONENT	DESCRIPTION	QTY
1	921-0239	Frame Weldment	1
2	911-0212	Axle Bracket	2
3	911-0229	U-Bolt, 3/8-16 X 3 Dp X 2 Betw	4
4	709-3140	Frame Rail Spacer	4
5	911-0213	Battery Box	1
6	930-2122	450/550 Fender Wldmnt	2
7	911-0070	Axle Weldment	1
8	702-0040	Wheel & Tire Assy W/ Hub	2
9	090-0461	3/8-16 Nylon Insert Locknut P	28
10	090-0460	5/16-18 Nylon Insert Locknut P	18
11	090-0111	3/8-16 X 1 1/4 Hhcs Gr5 Pltd	11
12	090-0088	5/16-18 X 1" Hhcs Gr 5 Pltd	10
13	090-0233	5/16" Uss Flatwasher Pltd	17
14	921-0220	Hitch Tube	1
15	913-0218	Trailer Hitch	1
16	090-0116	3/8-16 X 3 Hhcs Gr 5 Pltd	3
17	030-0607	2100 Series Electric Start Eng	1
18	911-0400	SC185 Basic Unit	1
19	921-0206	Angle, Basic To Frame	4
20	921-0028	Shredder Hopper Weldment	1
21	921-0375	Chute Hopper Weldment	1
22	030-0612	1" Clutch A/B 2grv Pulley 4"	1
23	911-0250	Battery-Wet/Sealed	1
24	921-0297	Blow Back Support	1
25	810-0298	Blowback Shield	1
29	930-3086	Battery Hold Down	1
30	921-0027	Belt Guard Bracket	3
31	090-0012	1/4-20 X 3/4 Hhcs Gr5 Pltd	5
32	090-0470	1/4-20 Nylok Locknut Pltd	7
33	090-0153	7/16-20 X 1 1/4 Hhcs Gr 8 Pltd	1
34	090-0709	Washer 1.5 Od .453 Id .156 Thk	1
35	913-0376	Hopper Blow Back Shield	1
36	090-0739	10-24 X 3/4 Lg. Hhms Zp	3
37	921-0035	Highway Hitch Leg	1
38	900-0360	Belt Tensioner Weldment	1
39	703-0424	1/4 Sq X 2" Key	1
40	080-0084	3/8 Sq X 1 1/2 Shaft Key	1
41	090-0749	3/8" X 2 3/4" Ring Pin Zp	1
42	706-0924	PIN, HITCH CLIP, 1/2 TO 9/16, .12 W	1
43	090-0370	1/2-13 X 3 Hhcs Gr5 Pltd	2
44	090-0050	1/2-13 Gripco Locknut Gr B Plt	2
45	090-0537	Washer .205 Id X 3/4 Od X .060	6

46	408-0078	3/16 Class 1 Trailer Safety Ch	2
47	090-0123	3/8-16 X 3 1/2 Hhcs Gr 5 Pltd	1
48	090-0234	3/8 Uss Flatwasher Pltd	2
49	090-0438	5/16-18 J-Nut Plain	1
50	090-0228	3/8 Med Split Lockwasher Pltd	1
51	090-0098	3/8-16 X 3/4 Hhcs Gr5 Pltd	1
52	090-0114	3/8-16 X 2 Hhcs Gr5 Pltd	4
53	090-0755	5/16-18 X 6" HH TAP BOLT	1
55	090-0703	10-24 Nylock Nut Zp	3
57	911-0033	Baffle Weldment	1
58	911-0050	3/8-16 X 15"Lg Hhcs Pltd (Tie	1
59	911-0036	Screen & Baffle Rod	1
60	500-0039	3/16" Hair Spring Cotter - Plt	1
61	030-0626	2bk62h Sheave	1
62	030-0617	5l640 Belt (Matched Set Of 2)	2
64	940-3093	Belt Guard Weldment	1
65	921-1097	Inner Belt Guard, Bend Down	1
66	090-0162	10-32 X 3/8 Self Tap Type 23	2
67	913-0223	8-1/4" Negative Battery Cable	1
68	913-0266	32-1/2" Positive Battery Cable	1
69	090-0245	1/4 SAE FLATWASHER	2
70	030-0624	Bushing H-1-1/4"	1

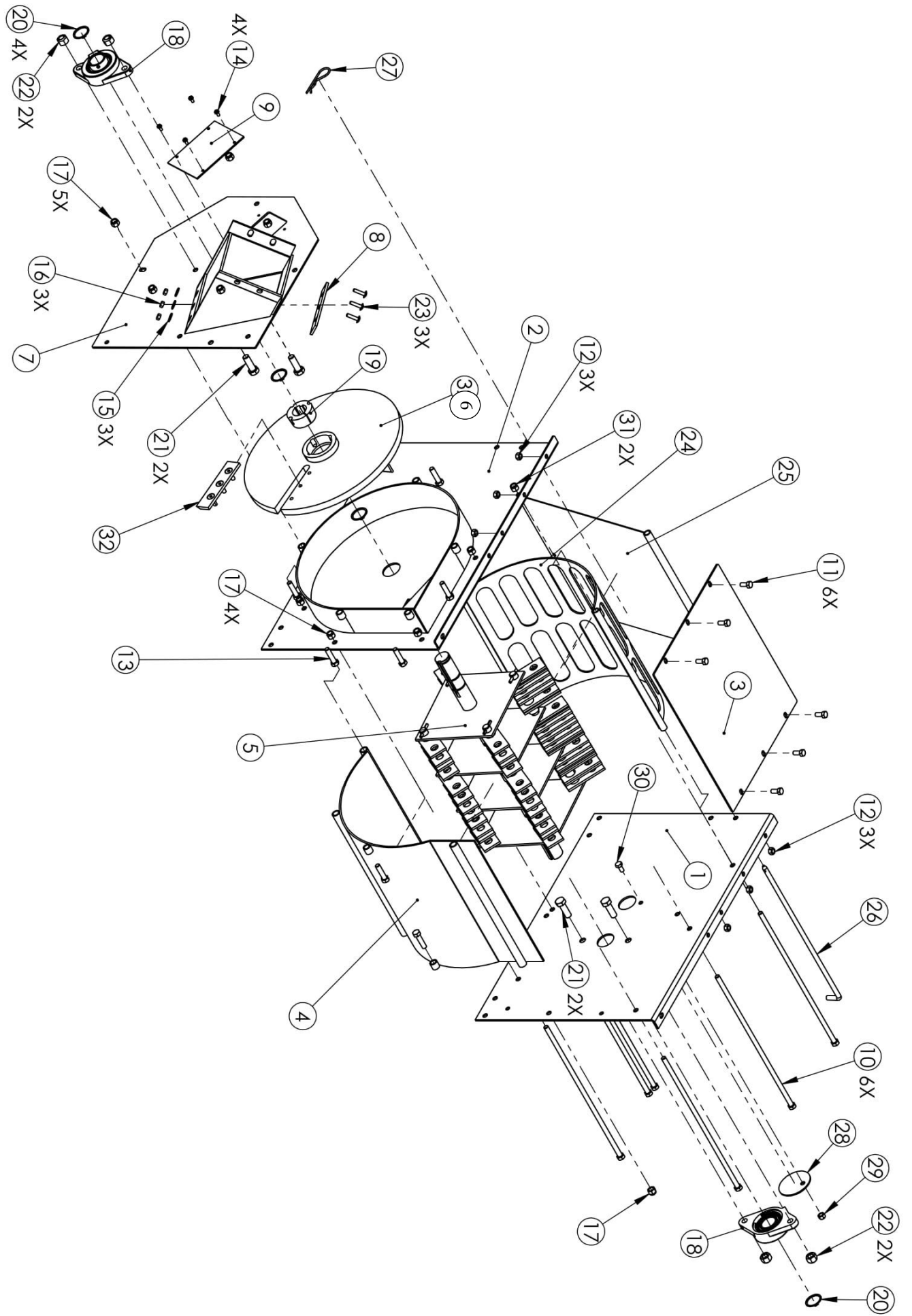


## 911-0400 BASIC MACHINE

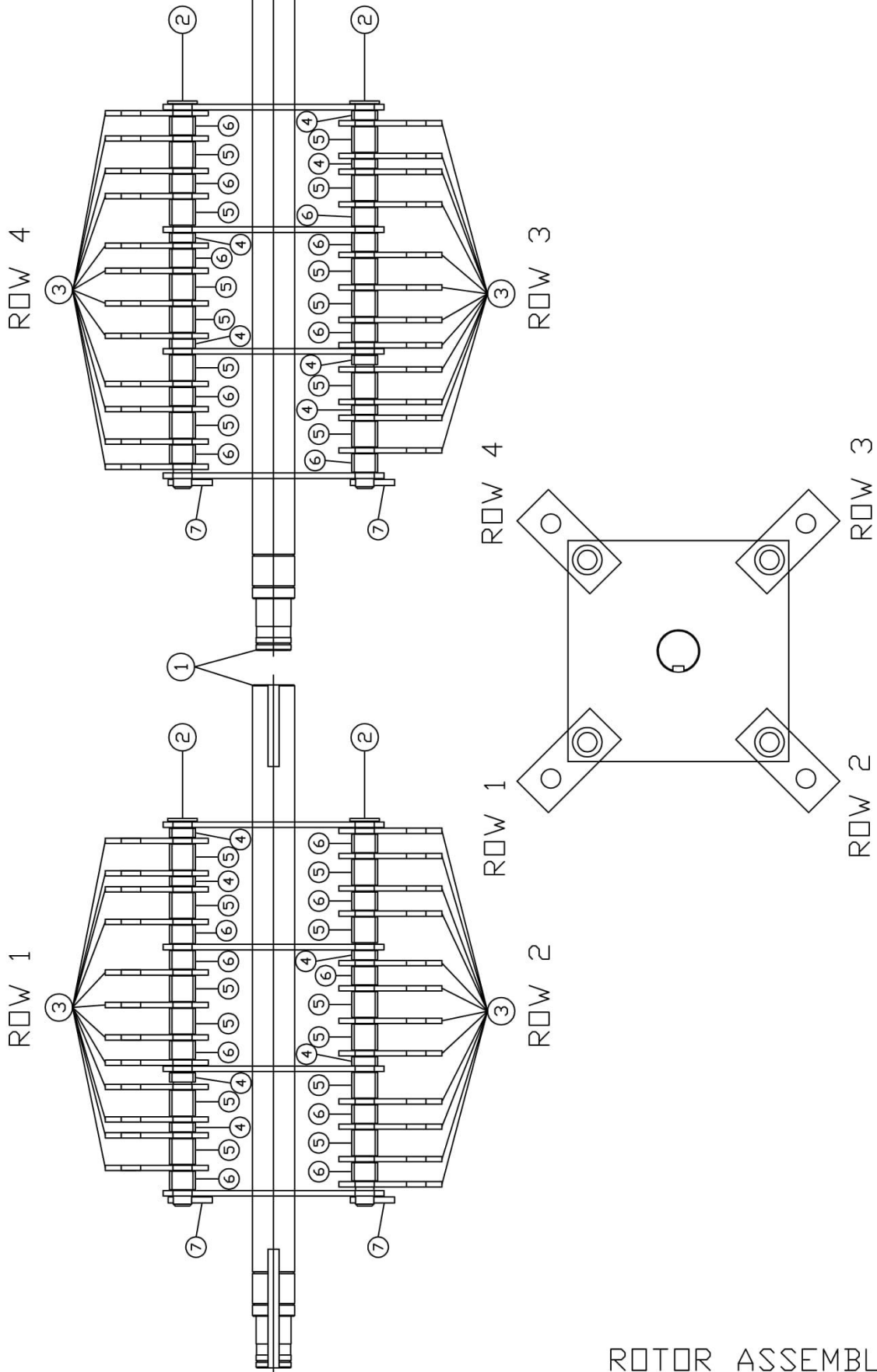
ITEM NO.	COMPONENT	DESCRIPTION	QTY
1	911-0316	Drive Side Plate	1
2	911-0317	Chipper Side Plate Weld (Td)	1
3	921-0026	Top Plate	1
4	921-0003	Scroll Weldment	1
5	911-0315	Rotor Weldment	1
6	921-0267	Chipper Disk Balanced	1
7	911-0318	Chipper Chute Side Weldment	1
8	913-0326	Wear Plate	1
9	913-0210	Access Cover	1
10	911-0050	3/8-16 X 15"Lg Hhcs Pltd (Tie	6
11	090-0066	5/16-18 X 3/4 Hhcs Gr 5 Pltd	6
12	090-0048	5/16-18 Gripco Locknut Gr B Pl	6
13	090-0112	3/8-16 X 1 1/2 Hhcs Gr5 Pltd	7
14	090-0162	10-32 X 3/8 Self Tap Type 23	4
15	090-0245	1/4 Sae Flatwasher - Zp	3
16	090-0470	1/4-20 Nylok Locknut Pltd	3
17	090-0049	3/8-16 Gripco Locknut Gr B Plt	10
18	030-0530	1 1/4" Bore 2 Bolt Bearing	2
19	030-0442	1 1/4" TI Bushing Dodge 119223	1
20	030-0449	1.25 In Retaining Ring Shr-125	4
21	090-0141	1/2-13 X 1 1/2 Hhcs Gr 5 Pltd	4
22	090-0050	1/2-13 Gripco Locknut Gr B Plt	4
23	090-0677	1/4-20 X 1 Gr 5 Carriage Bolt	3
24	921-0054	Oblong Hole Screen	1
25	911-0033	Baffle Weldment	1
26	911-0036	Screen & Baffle Rod	1
27	706-0924	1/8" Hair Spring Cotter - Pltd	1
28	900-0040	Cover Plate	1
29	090-0460	5/16-18 Nylon Insert Locknut P	1
30	090-0067	5/16-18 X 5/8 Hhcs Gr 5 Pltd	1
31	090-0461	3/8-16 Nylon Insert Locknut P	3
32	913-0260	Knife Kit	

## 911-0451 ROTOR ASSEMBLY

ITEM #	PART #	DESCRIPTION	QTY.
1	911-0315	ROTOR WELDMENT	1
2	900-0100-4	HAMMER ROD	4
3	500-0008	HAMMER	48
4	500-0010	SPACER-5/16"	12
5	500-0011	SPACER-7/8"	24
6	500-0012	SPACER-5/8"	18
7	030-0153	13/64" DIA X 1 1/2" LG DRIVE PIN	4



ROTOR ASSEMBLY



ROTOR ASSEMBLY



## LIMITED WARRANTY

Any product manufactured by MacKissic, Inc. and found, in the judgment of MacKissic, Inc. to be defective in material or workmanship, will be repaired or replaced by an Authorized MacKissic Service Dealer without charge for parts and labor to the original owner of the MacKissic product.

The MacKissic product including any defective part must be returned to an Authorized MacKissic Service Dealer within the warranty period. The expense of delivering the product to the dealer for warranty work and the expense of returning it back to the owner after repair or replacement will be borne by the owner. MacKissic's responsibility is limited to making the required repairs or replacements only. No claim of breach of warranty shall be cause for cancellation or rescission of the sales contract of any MacKissic product. Proof of purchase will be required by the dealer to substantiate any warranty claim. All warranty work must be performed by an Authorized MacKissic Service Dealer.

This warranty is limited to two years from the date of original retail purchase for any MacKissic product that is used for consumer purposes or one year for commercial and rental use.

This warranty does not cover any product that has been subject to misuse, abuse, neglect, negligence, or accident, or that has been operated in any way contrary to or inconsistent with the operating instructions as specified in the owner's manual. The warranty does not apply to any damage to the product that is the result of improper maintenance, or to any product or parts that have not been assembled or installed as specified in the owner's manual.

The warranty does not cover any product that has been altered or modified. In addition, the warranty does not extend to repairs made necessary by normal wear, or by the use of parts or accessories which, in the judgment of MacKissic, Inc. are either incompatible with the MacKissic product or adversely affect its operation, performance or durability. This warranty does not cover engines, electric starters, batteries, tires, and debris bags which are warranted separately by their manufacturer and for a different period of time.

MacKissic, Inc. reserves the right to change the design of any product without assuming any obligation to modify any product previously manufactured.

THE DURATION OF THE LIMITED WARRANTY IS TWO YEARS CONSUMER, 90 DAYS COMMERCIAL AND RENTAL USE. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. MACKISSIC, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXCEPT THE LIMITED WARRANTY DESCRIBED ABOVE, ALL IMPLIED WARRANTIES (MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE SPECIFICALLY DISCLAIMED.

MACKISSIC, INC. ASSUMES NO RESPONSIBILITY FOR INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, EXPENSE FOR GASOLINE, OIL, EXPENSE OF DELIVERING THE PRODUCT TO AN AUTHORIZED MACKISSIC SERVICE DEALER AND EXPENSE OF RETURNING IT BACK TO THE OWNER, MECHANIC'S TRAVEL TIME, TELEPHONE OR TELEGRAM CHARGES, RENTAL OF A LIKE PRODUCT DURING THE TIME WARRANTY REPAIRS ARE BEING PERFORMED, TRAVEL, LOSS OR DAMAGE TO PERSONAL PROPERTY, LOSS OF REVENUE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME OR INCONVENIENCE.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

08/29/2022