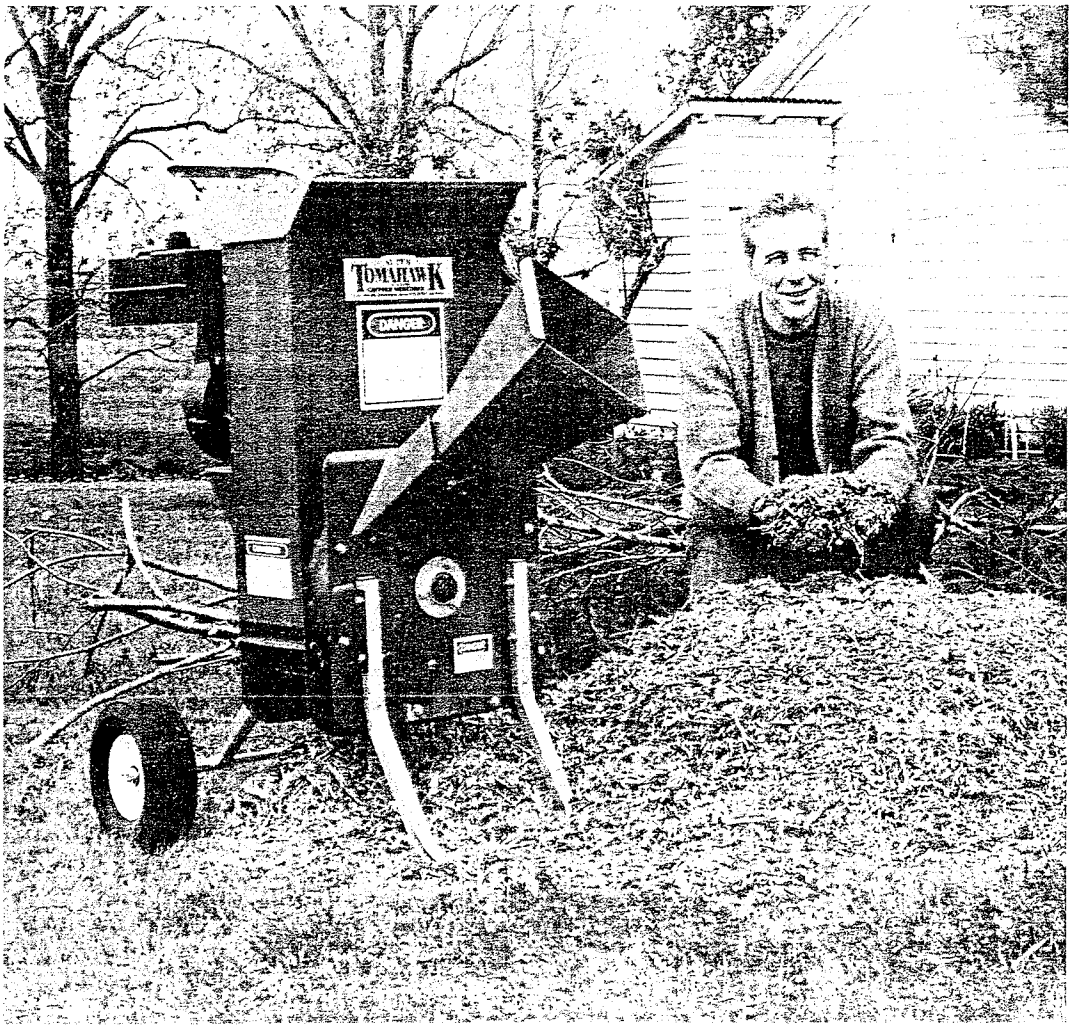
OWNERS OPERATION MANUAL

THE GARDEN WAY 8HP & 5HP SUPER TOMAHAWK Chipper/Shredder



OCTOBER 1985 EDITION

GARDEN WAY MANUFACTURING COMPANY • 102nd STREET & 9th AVENUE, TROY, NY 12180

INTRODUCTION

Dear Owner,

Your Garden Way SUPER TOMAHAWK Chipper/ Shredder (or TOMAHAWK Shredder) is so ruggedly built and of such high quality, we're sure it will meet, even exceed, your expectations. There are so many things it will do to make gardening, landscaping and property improvement projects truly easier and faster. From making mulches...to compost...to decorative wood chip dressings around plantings...and on and on. You'll find it a pleasure to use too, like all equipment from Garden Way.

We've prepared this Owner's Manual to guide you in the proper use of your Chipper/Shredder (or Shredder) and we've included a special section on Safety Instructions which we urge you to read completely. Your safety, and the safety of others around you, make the Safety Instructions and the entire Manual "must reading" before you put this equipment to work. There's a section on Maintenance and Service too, so you'll be able to keep your Chipper/Shredder (or Shredder) running at peak performance all the time.

Of course, if you have any questions or problems with operation or service, please contact our Technical Service Department right away. Don't hesitate to ask us for help. We want to do everything we can to make the time you spend using your equipment as productive and as enjoyable as possible.

WE'RE HERE TO SERVE YOU...

The whole idea behind our Factory Service Policy is to provide you with direct access to the parts and service information you may need as quickly as possible, and to answer all questions you may have.

Nothing is more important to all of us here at the Factory than making sure that every customer is completely satisfied at all times. You're always entitled to first-rate service. Please be assured that we will do our very best to see that you receive it.

Thank you,

Dean Leith, Jr.

Dean Leith, Jr.
Sales Manager

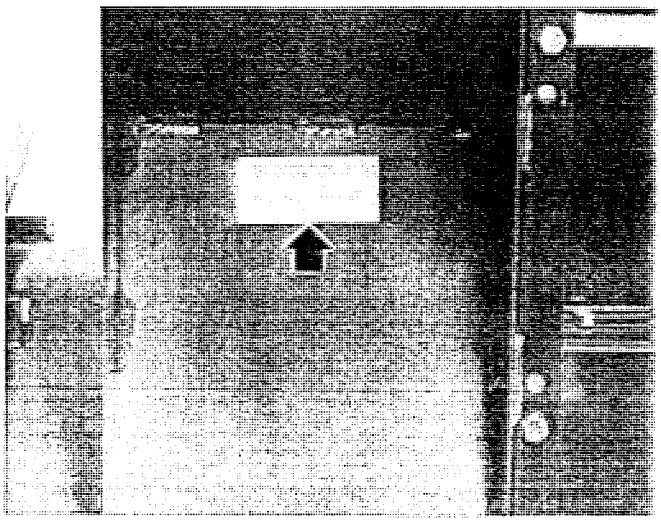
IMPORTANT — WRITE THE SERIAL NUMBER OF YOUR SUPER TOMAHAWK OR TOMAHAWK MODEL IN THE SPACE BELOW...

To provide fast and efficient service, should you contact us, we'll need to know the SERIAL NUMBER of your Chipper/Shredder or Shredder. Photo 4 shows you where to look to find this number. For ready reference, please record your Serial Number, specific Model ordered, and delivery date below.

Check Model:
- ☐ 8HP SUPER TOMAHAWK Chipper/Shredder
- ☐ 5HP SUPER TOMAHAWK Chipper/Shredder
- ☐ 5HP TOMAHAWK Shredder

Serial Number _____

Delivery Date _____



(Photo 4) Your Serial Number is located here.

WARNING TO CALIFORNIA OWNER/OPERATORS

Under California Law, you are not permitted to operate an internal combustion engine using hydrocarbon fuels on any forest covered, brush covered or grass covered land; or on land covered with grain, hay, or other flammable agricultural crop without an engine spark arrestor muffler in continuous effective working order. The engine on your Chipper/Shredder (or Shredder model), like most garden equipment, is an internal combustion engine that burns gasoline (a hydrocarbon fuel); therefore, it must be equipped with a spark arrestor muffler in proper working order. The spark arrestor must be attached to the engine exhaust system in such a manner that flames or heat from the system will not ignite flammable material. Failure of the operator to comply with this regulation is a misdemeanor under California Law.

For Chipper/Shredder (or Shredder) *Service*:

You'll find helpful service and maintenance procedures in this Owner's Manual, so be sure to look here first... all the help you need may be right in the Manual. Just look at the Table Of Contents below for subject areas and page number references.

If you do not find the answers you need in this Manual, please contact us either by letter or phone, whichever you prefer. Remember, we'll need the Serial Number of your equipment to give you the most efficient service possible.

SEND SERVICE LETTERS TO:

Garden Way Manufacturing Company
c/o *Technical Service Dept.*
102nd St. & 9th Ave.,
Troy, NY 12180

OR TELEPHONE:

USE OUR TOLL-FREE NUMBER
CALL 1-800-833-6990
(From Alaska, CALL COLLECT:
CALL 518-235-6010)
(In Canada, CALL COLLECT:
CALL 416-674-1502)

When calling, ask for our Technical Service Dept. Our Technical Service Representatives are available from 8:00 A.M. to 7:00 P.M. (Eastern time) Monday through Friday, and from 9:00 A.M. to 4:30 P.M. on Saturdays, except on holidays.

For Chipper/Shredder (or Shredder) *Parts*:

For parts, please write or telephone, using the address or telephone number given at left. Ask for the *Customer Service Dept.* Before writing or calling, refer to the Parts Listing you received to find out the Part Description and the Part Number of each item you'll be ordering. Be sure to include this information in your letter, or have it on hand if you're calling us.

For *Engine* Service & Repairs:

Please contact your nearest authorized Briggs & Stratton or Tecumseh engine dealer if engine service or repair is needed. This listing is in the phone book "Yellow Pages" under "Engines, Gasoline" or "Gasoline Engines". The Service Outlet will need to know the Model and Serial Number of your engine — Section 5 in this Manual shows you how to locate these numbers.

Your local Briggs or Tecumseh Dealer can handle all repairs, parts orders and warranty service concerning the engine alone. If you wish to contact us before seeing the local Engine Dealer, or if you have difficulty getting engine service or parts locally, be sure to let us know. See the enclosed Engine Manufacturer's literature for full terms of the Limited Warranty on the engine and other details about the engine.

TABLE OF CONTENTS

SECTION 1:

Easy Assembly & Preparation

Now that your SUPER TOMAHAWK Chipper/ Shredder or TOMAHAWK Shredder Model has arrived, you'll find that assembly steps to get it ready for operation are very simple and go quickly. Be Sure To Follow All Assembly And Preparation Steps In This Section To Assure Proper Operation. Note: Keep your equipment on the shipping platform until you reach Step 7 in this section (adding motor oil to the engine).

IMPORTANT: Motor Oil Must Be Added To The Engine Before Starting! See Step 7 In This Section For Full Instructions. Do Not Operate Your Equipment Until You Have Read This Owner's Manual Completely.

STEP 1: Inspection After Delivery

Inspect your equipment while it's still secured to the shipping platform. If you find or suspect any damage (on your equipment or the carton), phone the trucking company (carrier) right away. Inform them of the damage and tell them you wish to file a claim. *Be sure to put this in writing to the carrier within 15 days.* The carrier will let you know how to proceed with a claim. Of course, let us know if you need assistance.

STEP 2: Parts Checklist

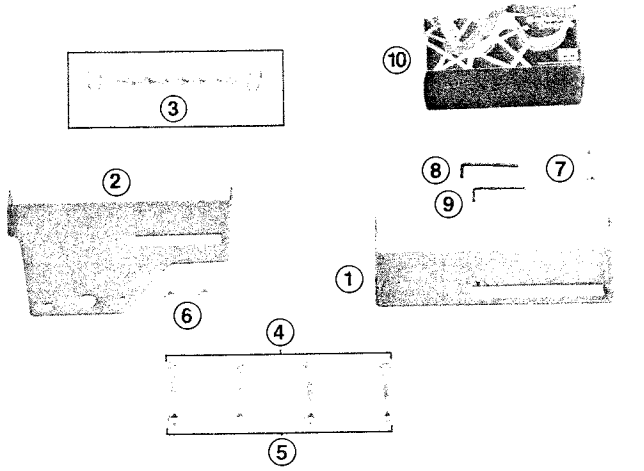
First cut the retaining bands and remove the clamp which secure the Chipper/Shredder (or Shredder Model) to the wood shipping platform. Then remove the SUPER TOMAHAWK chipper feed hopper and the transport handle which are secured to the shipping platform. Also empty the plastic package containing general assembly hardware.

Checklist for Hardware, Parts, Accessories

You should have received the following items in addition to the Chipper/Shredder (or Shredder Model), the chipper feed hopper (Super Tomahawk Model only), and the handlebar (with clutch lever attached):

Photo 5 Ref. #	Item Description	Qty.
1	CLUTCH ARM GUIDE-PLATE (for 5HP Tecumseh Engine only)	1
2	CLUTCH ARM GUIDE-PLATE (for 8HP Briggs & Stratton Engine only)	1
3	CLUTCH HARDWARE — Incl. chain and two S-hooks	1
4	CAPSCREW — hex head, 5/16"-18 x 1 3/4"	4
5	NUT — flange-locking, 5/16"-18	4
6	NUT — flange-locking, 5/16"-18 (clutch guide-plate to Briggs & Stratton engine)	2
7	* NUT — flange-locking, 1/4"-20 (to attach chipper hopper)	2
8	HEX KEY WRENCH — 5/32" (for repairs)	1
9	HEX KEY WRENCH — 1/8" (for repairs)	1
10	SAFETY GOGGLES (universal fit)	1

* Super Tomahawk Model Only



(Photo 5) See that you received everything above. Note: one style of clutch arm guide-plate is sent for the 5HP Tecumseh engine; another style is sent if you have the 8HP Briggs & Stratton engine. Also: the detached chipper feed hopper and two 1/4"-20 nuts are sent only with the Super Tomahawk Model.

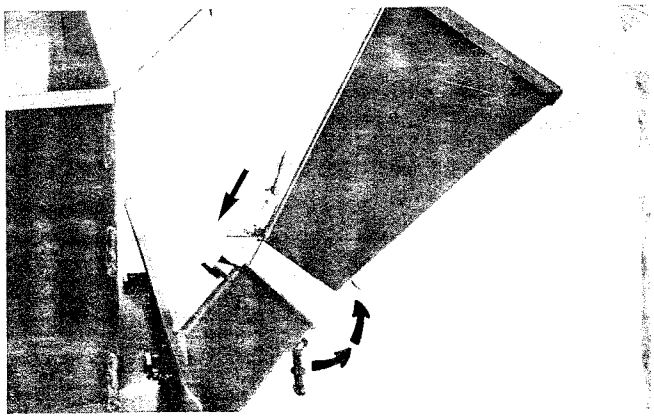
STEP 3: Attach The Chipper Feed Hopper (SUPER TOMAHAWK Model Only)

To attach the Chipper Hopper to the chipper base on the side of your equipment (opposite the engine), please do the following.

Align the Chipper Hopper with the chipper base as shown in Photo 6. The movable hinge on the hopper must face UP. Slide the hopper into the base until the hinge holes fit over the two fixed bolts on the base.

Using the two, small 1/4"-20 nuts (flange-lock type) that came in your hardware package, secure the hopper hinge to the fixed bolts. Tighten the nuts securely with a 7/16" open end wrench.

Lock the Chipper Hopper in operating position by connecting the rubber draw latch on the underside of the base (see Photo 6) to the latch bracket on the underside of the hopper.



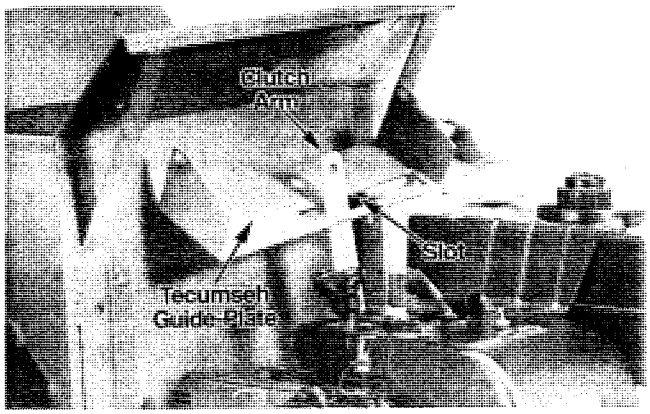
(Photo 6) Align chipper hopper with chipper base as shown. *Hinge holes fit over the two fixed bolts. Secure hinge to bolts with two 1/4"-20 nuts. Also connect rubber draw latch on base to latch bracket on hopper.*

STEP 4: Position And Attach The Clutch Arm Guide-Plate

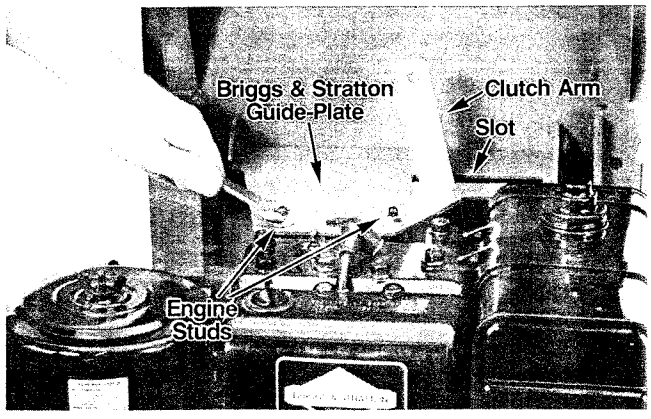
The 8HP Briggs & Stratton engine and the 5HP Tecumseh engine have different style Clutch Arm Guide-Plates. Depending upon which engine you ordered, follow the directions given for your engine.

Guide-Plate for 5HP Tecumseh Engine: Position the guide-plate as Photo 7 shows so the slot in the plate fits down over the clutch arm. The two mounting holes in the plate allow the plate to be connected later to the handlebar. Proceed to Step 5 for handlebar mounting instructions.

Guide-Plate for 8HP Briggs & Stratton Engine: Position the guide-plate as Photo 8 shows. The slot in the plate goes over the clutch arm. The two plate holes nearest the engine go on the two vertical threaded studs on the top of the engine. Secure the plate to those studs with two of the 5/16"-18 flange-locking nuts you received. The other end of the plate connects later to the handlebar. Proceed to Step 5 for handlebar mounting instructions.



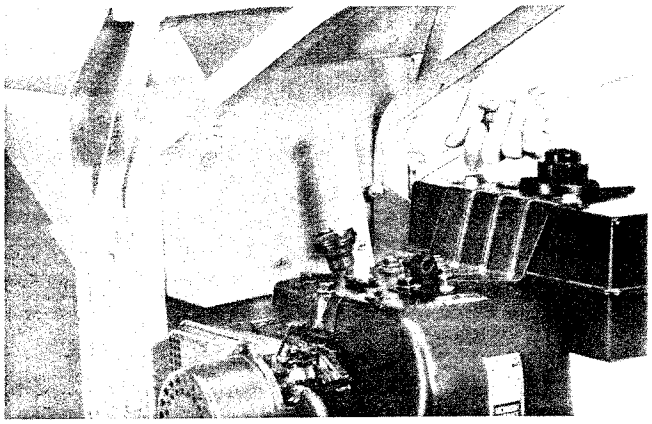
(Photo 7) Position Clutch Arm Guide-Plate for the 5HP Tecumseh engine as shown. When you mount the handlebars later, it will connect to the handlebar assembly.



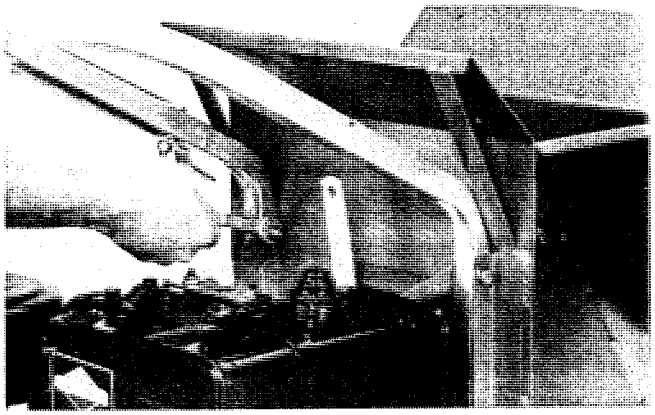
(Photo 8) Position the 8HP Briggs & Stratton Clutch Arm Guide-Plate as above. Plate holes nearest engine go over the two vertical engine studs. Secure the guide-plate to the studs with two locknuts. Other end of guide-plate will be connected later to handlebar.

STEP 5: Attach The Handlebar To The Frame

Place the Handlebar up against the handlebar bracket on the Chipper/Shredder (or Shredder model) as in Photo 9. Insert four bolts (two on each side) through the bracket and handlebar holes. Also make sure the bolts go through the holes in the guide-plate which you positioned previously (in Step 4). Photo 9 shows the correct positioning of these parts on the 5HP Tecumseh engine. Photo 10 shows the correct placement of the parts on the 8HP Briggs & Stratton engine.



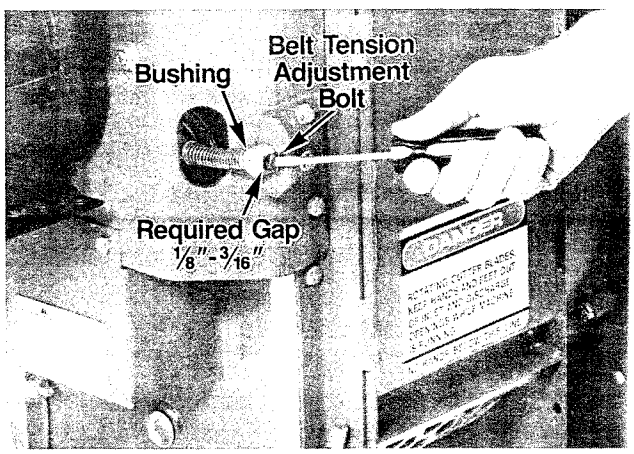
(Photo 9) Handlebar and Guide-Plate properly mounted on the 5HP Tecumseh engine. Tighten hardware securely.



(Photo 10) Handlebar and Guide-Plate properly mounted on the 8HP Briggs & Stratton engine. Tighten hardware.

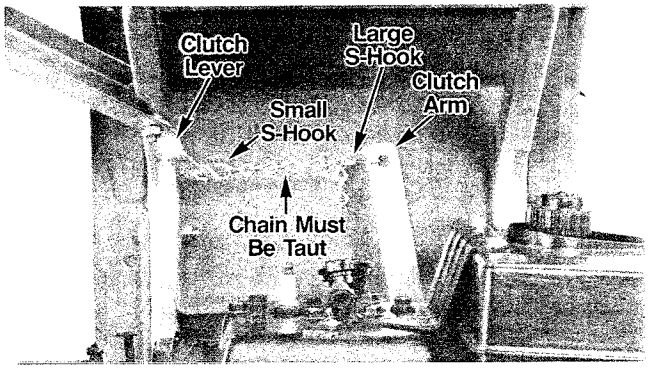
STEP 6: Check Belt Tension Adjustment Bolt, Then Connect Clutch Hardware

Check Belt Tension Adjustment Bolt — The bolt head, shown in Photo 11, must be from 1/8"-to-3/16" away from the bushing next to it. Measure from the bottom of the bolt head to the bushing. Turn the bolt head counterclockwise to back it away — clockwise to bring it closer.



(Photo 11) Belt Tension Adjustment Bolt must be 1/8"-3/16" from bushing. Turn bolt in or out to within this range.

Connect Clutch Hardware— The steel chain and the two "S-Hooks" you received allow the clutch lever to operate the clutch arm. See Photo 12. First take the small S-hook and insert either end through the hole in the clutch lever (position lever away from handlebar). Then connect the chain to the other end of the S-hook. Crimp both ends of this smaller S-hook. Now take the larger S-hook and insert one end through the hole in the clutch arm. Crimp that end. Finally, connect the chain to the larger S-hook. *The chain has to be very tight to operate properly.* There should be no slack at all. Select the link in the chain that makes it tight. See Photo 12. Be sure to recheck the belt tension adjustment bolt for the proper gap (⅛"-3⁄16").



(Photo 12) Install clutch hardware (small S-hook, chain and large S-hook) between clutch lever and clutch arm. Chain must be very tight for clutch lever to operate properly. Crimp ends of S-hooks except the end of the large S-hook that's attached to the chain.

STEP 7: Add Motor Oil To Engine

Your engine was shipped "dry". So the proper type and amount of motor oil must be added to the crankcase before starting. The procedure is different for the 8HP Briggs & Stratton engine and the 5HP Tecumseh engine. Use the instructions which follow that apply specifically to your engine. Note: please move the equipment to a flat surface before beginning — the engine must be *level* for you to get an accurate oil reading (see Section 4 in this manual for instructions on how to transport your equipment).

Adding Motor Oil To The 8HP Briggs & Stratton Engine:

Motor oil specifications for this engine as recommended by the engine manufacturer are as follows: Use High-Quality Detergent Oil classified for Service "SF", "SE", "SD", or "SC". *In Summer* (40°F and above): use SAE 30 weight oil (substitutes are SAE 10W30 and SAE 10W40). [Note: 10W30 and 10W40 oils may be used from 0°F to 100°F.] *In Winter* (approx. 20°F and below): use SAE 5W20 or SAE 5W30 weight oils. Nothing should be added to the recommended oil.

Oil Sump Capacity: 39 ounces.

1. Remove the Oil Fill Plug from the Fill Tube (see Photo 13A). Turn the plug counterclockwise. If necessary, use a screwdriver as a lever to loosen it.

2. Slowly pour about 39 ounces of quality motor oil through a clean funnel into the Fill Tube. Add oil until it is right up to the very top of the Fill Tube. **NOTE**: It's important to add oil to the brim of the Fill Tube, otherwise there will be insufficient oil in the engine which could result in engine damage!

3. Replace the Oil Fill Plug securely.

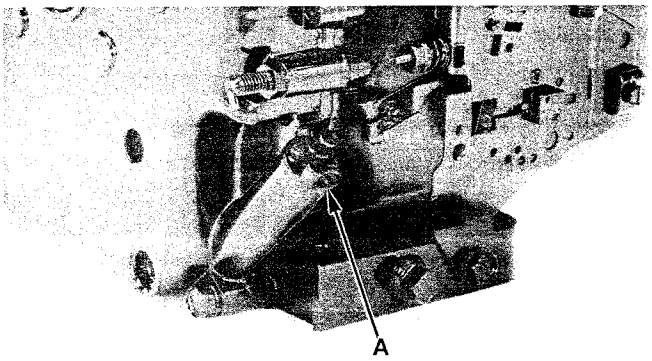
Adding Motor Oil To The 5HP Tecumseh Engine:

Motor oil specifications for the 5HP Tecumseh engine as recommended by the engine manufacturer are as follows: Use Clean High Quality Detergent Motor Oil with an Engine Service Classification rating of "SF", "SE", "SD", or "SC". *In Summer* (above 32°F): use SAE 30 weight oil (SAE 10W30 can be substituted). *In Winter* (below 32°F): use SAE 5W20 or SAE 5W30 weight oils (SAE 10W is an acceptable substitute). DO NOT USE SAE 10W40 OIL! **NOTE**: Below 0°F ONLY, SAE 10W weight oil diluted with 10% kerosene is acceptable.

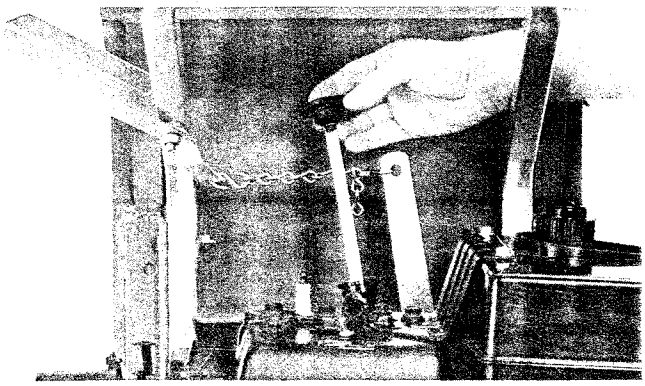
Oil Sump Capacity: 19 ounces.

1. Remove Oil Level Dip Stick from Oil Fill Tube on top of engine (see Photo 13B). Turn dip stick counterclockwise and pull up to remove.

2. Place a clean funnel in the Oil Fill Tube, then slowly pour about 19 ounces of the correct motor oil into the fill tube. Note: Do Not Overfill Engine With Oil. Check Level Frequently While Adding Motor Oil. Add Oil Until It Reaches The "FULL" Mark On The Dip Stick. To check oil with dip stick, insert the stick all the way into the Fill Tube and tighten it.



(Photo 13A) To put motor oil in the 8HP Briggs & Stratton engine, remove oil fill plug, then add oil right up to the top of the oil fill tube ("A"). Approximately 39 ounces will be needed.



(Photo 13B) To put motor oil in the 5HP Tecumseh engine, remove oil dip stick from oil fill tube, then use a funnel to add approximately 19 ounces of motor oil. Fill to "FULL" mark on dip stick. Don't overfill!

SECTION 2:

Safety Instructions

DANGER	**KEEP HANDS, FEET AND CLOTHING AWAY FROM SHREDDER HOPPER AND CHIPPER HOPPER OPENINGS AND DISCHARGE AREAS AT ALL TIMES. FAILURE TO DO SO CAN RESULT IN SERIOUS PERSONAL INJURY OR PROPERTY DAMAGE.**

The "DANGER" statement above is one of the safety statements in this section intended to inform you and other operators that the Chipper/Shredder (or Shredder Model), like other powerful outdoor equipment, must always be operated with the utmost attention paid to safety procedures. Please read and follow all of the safety instructions in this safety section. Failure to comply can result in serious injury or property damage. If you have questions, or you're not completely sure about any of the information found here or elsewhere in the Manual, please call us for assistance before you operate your equipment. We want you to be a safe equipment operator.

SAFETY BEFORE STARTING THE ENGINE

1. Become familiar with the Owner's Manual before attempting to operate your equipment.
2. Know where the shut-off control is located and how to use it.
3. Always wear approved safety glasses, work gloves, sturdy footwear and hearing protection while operating your equipment. Do not wear loose-fitting clothing, jewelry, long-sleeve shirts, scarves, ties, etc.
4. The engine must be OFF and allowed to cool for several minutes before filling the fuel tank with gasoline. Gasoline and its vapors are highly flammable and explosive. Keep matches, flame, and smoker's materials far away from fueling area. Fill fuel tank outdoors. Wipe up spills right away.
5. Before starting the engine, make a visual check to see that all screws, nuts, bolts and other fasteners are properly secured. The Discharge Screen (or Bar Grate) must be in place. Disconnect the spark plug wire before you do this. This check is recommended before each usage.
6. Before starting the engine, be sure that the feed hoppers are empty.

SAFETY DURING OPERATION

7. Do not allow children or untrained adults to operate the equipment.
8. Do not run the engine in an enclosed area. The exhaust fumes from the engine contain carbon monoxide gas. Carbon monoxide is colorless, odorless, tasteless and deadly poisonous.
9. Do not operate your equipment when bystanders or pets are nearby. Keep bystanders at least 25 feet away from this equipment.
10. Do not operate the Chipper/Shredder or Shredder on a paved or gravel surface. Material from the discharge areas may bounce from a hard surface and cause personal injury. Select a level, earthen surface at all times.
11. Do not stand in front of the discharge areas when operating your equipment.
12. Do not put face, hands, feet, or any part of your body or clothing near the Feed Hoppers or Discharge Areas while the engine is running. Rotating cutter blades are in operation when the engine is running.
13. If Chipper or Shredder becomes jammed or clogged, shut the engine off. Make sure all moving parts have come to a complete stop and disconnect the spark plug wire before inspecting the hoppers, chambers and discharge areas. Use only a wooden stick to clear away jammed material.
14. When feeding material into the Chipper or Shredder hoppers, be extremely careful that pieces of metal, rocks, bottles, nails, cans and any other non-organic objects are not included. Please use organic materials only!
15. Shut off the engine immediately if the Chipper/Shredder (or Shredder Model) develops any unusual noises or vibrations. Make sure the equipment has stopped completely. Then, disconnect the spark plug wire from the spark plug and take the following steps: **a.** Inspect for damage. **b.** If a foreign object is present, remove it. **c.** Check for loose parts or hardware, and tighten if loose. **d.** Replace or repair damaged parts.
16. Do not allow the engine, especially around the cooling fins, to become clogged with debris, oil, grease or any other material.
17. Do not allow chipped or shredded material to build up in, or clog, a Discharge Area; this may prevent the proper discharge of materials.
18. Keep all safety shields, guards, screens and deflectors securely in place and in good condition. Do not operate the Chipper unless the Chipper feed hopper (chute) is bolted and latched in place.

19. Do not overreach when feeding material into the Feed Hoppers. Keep proper footing and good balance at all times. Obey the safety decals on your equipment at all times.
20. Do not transport or move your equipment while the engine is running.
21. Do not tamper with the governor setting on the engine. The governor controls the maximum safe operating speed and protects the engine and other moving parts from damage that can be caused by engine overspeeding.

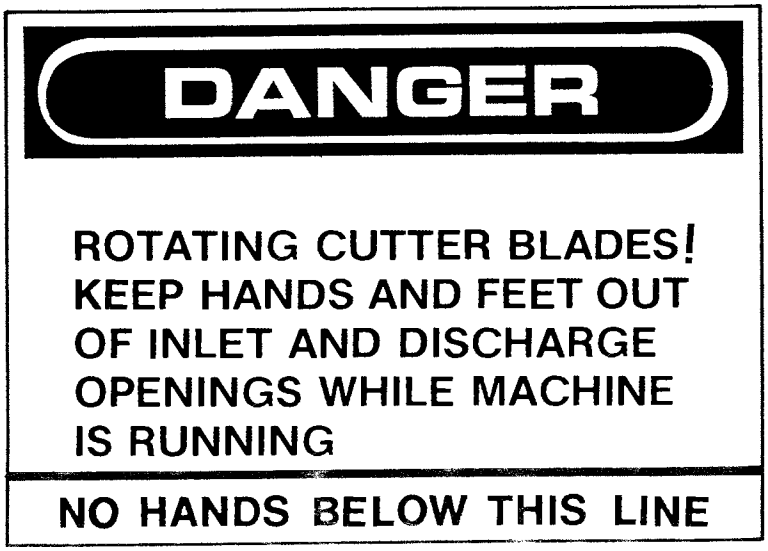
SAFETY INSTRUCTIONS FOR MAINTENANCE AND STORAGE

22. Before service, maintenance, cleaning, inspection, changing Shredder Discharge Screens or work of any other kind is to be done, be sure the engine is stopped, all moving parts are still, and the spark plug wire is disconnected. If the engine had been running, allow the hot muffler to cool off before working near it.
23. Store this equipment where children will not have access to it. Always disconnect the spark plug wire.
24. Be sure the Chipper/Shredder or Shredder is stored in an area where any gasoline vapors (fumes) from the engine can not reach an open flame, sparks, or flame-producing equipment such as a hot water heater pilot light, a woodstove, or a furnace.
25. For permanent storage, drain all gasoline from the fuel tank. Then run the engine until the small amount of gasoline left in the carburetor and fuel line has been used up. Disconnect the spark plug wire.

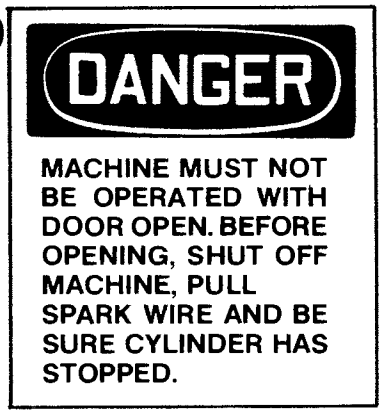
MAKE SURE THE SAFETY DECALS ON YOUR EQUIPMENT ARE KEPT CLEAN SO YOU CAN FOLLOW THE INSTRUCTIONS ON THEM!

#1. Appears Once On Chipper And Once On Shredder Feed Hopper Inlets, And Twice Above Shredder Discharge Screen.....
#2. Appears Once Next To Chipper Knife Access Door.....
#3. Appears Once On Chipper Discharge Door.....

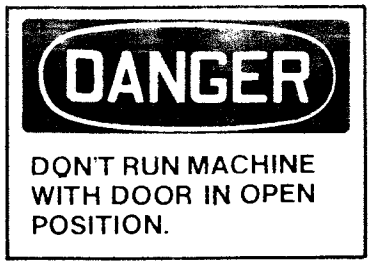
#1



#2



#3



(Decals shown are 65% of actual size.)

(Illustration 14) Please contact us for replacement decals if they become worn or unreadable.

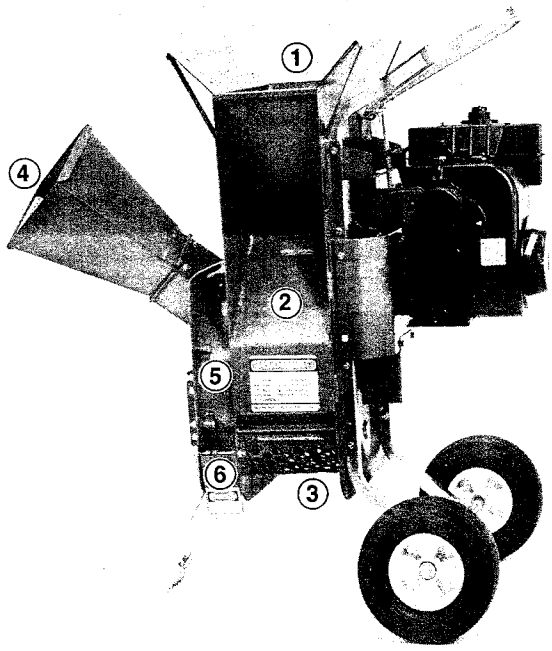
SECTION 3:

Features & Controls On The Chipper Shredder And Engine

Before putting your SUPER TOMAHAWK Chipper/Shredder or TOMAHAWK Shredder Model to work, please read this section completely so you'll know how your equipment works and the location and function of all features and controls.

SUPER TOMAHAWK AND TOMAHAWK Features & Controls

1. Shredder Feed Hopper (both Models)
2. Shredder Chamber/Flail Cutter Blades (both Models)
3. Shredder Discharge Screen (both Models)
4. Chipper Feed Hopper (Super Tomahawk only)
5. Chipper Chamber/Cutting Blade (Super Tomahawk only)
6. Chipper Discharge Door (Super Tomahawk only)

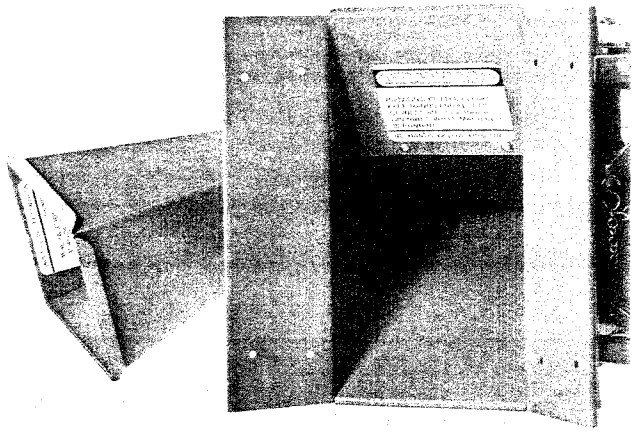


(Photo 15)

1. Shredder Feed Hopper

The Shredder Feed Hopper (see Photo 16) is located on top of the Chipper/Shredder (or Shredder Model) and is the entranceway to the shredding chamber. Once inside the chamber, material is quickly shredded.

⚠DANGER: Do Not Put Hands, Face Or Clothing Into The Feed Hopper Entrance At Any Time. To Clear Jammed Material Or For Service, Be Sure The Engine Is Off, The Spark Plug Wire Disconnected, And All Moving Parts Have Come To A Complete Stop. Use Only A Wooden Stick To Clear Jammed Material.



(Photo 16) The top-loading Shredder Feed Hopper can be used to shred a variety of organic materials.

IMPORTANT: When you feed any materials, such as pieces of vines, branches (up to 1" diameter in SUPER TOMAHAWK; to ½" in TOMAHAWK Model), tree bark, leaves or brush into the Shredder Feed Hopper, don't "hold on" to these materials. Release them. The Shredder is designed to be practically self-feeding ... all you have to do is start the material down into the hopper and the flail cutters (blades) inside the shredding chamber will draw the materials in. Short pieces of material can just be tossed into the hopper. Longer and tough materials (cut vines into small lengths) can be directed and fed so as not to overload the Shredder, but be prepared to let go once the self-feeding action begins or if your hand begins to come near the very top of the Feed Hopper. Always cut vines into short lengths before shredding.

2. Shredder Chamber/Flail Cutters (Blades)

Inside the steel main-frame Shredder chamber (see Photo 17) is a cylinder assembly that holds four parallel rows of evenly spaced flail cutters (blades), each row having four cutting blades. With the engine ON, the 16 cutting blades revolve with a tip speed in excess of 100 MPH, breaking down and shredding all material within the chamber. The 3/16" thick cutter blades are made of hardened steel for strength and durability.

3. Shredder Discharge Screen

Once shredded, the particles in the shredder chamber are forced out through the Discharge Screen at the bottom of your equipment. The Discharge Screen (see Photo 18) has 3/4" diameter holes which let all but the wettest and heaviest materials exit easily and quickly (a Bar Grate Attachment is recommended for wet, heavy material).

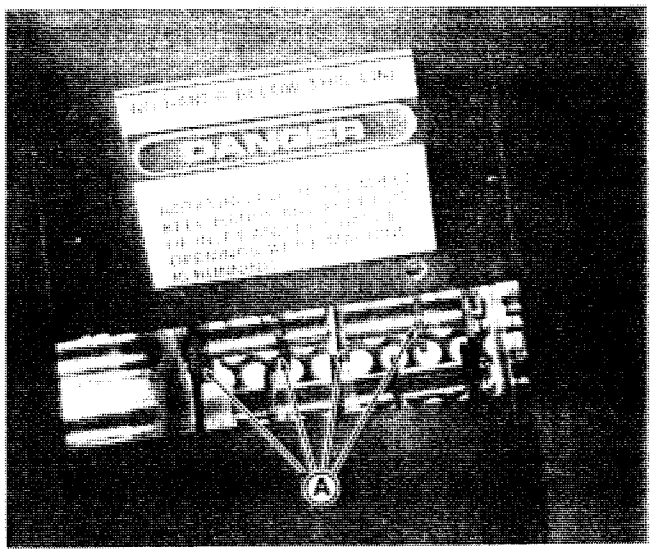
⚠DANGER: Keep Hands, Feet And Clothing Away From The Discharge Screen At All Times. Rotating Cutter Blades Inside The Screen Are Turning When The Engine Is Running. To Clear Jammed Material Or For Service, Be Sure The Engine Is Off, The Spark Plug Wire Is Disconnected, And All Moving Parts Have Come To A Complete Stop.

As Photo 19 shows, the Discharge Screen can be lowered (at either end) to allow any blockages to be removed. [ALWAYS SHUT THE ENGINE OFF, DISCONNECT THE SPARK PLUG WIRE AND LET ALL MOVING PARTS COME TO A COMPLETE STOP BEFORE LOWERING THE DISCHARGE SCREEN.] Just remove the hitch pin, slide out the screen rod, then lower the screen. After cleaning the screen and/or Shredder chamber with a stick, replace the screen securely.

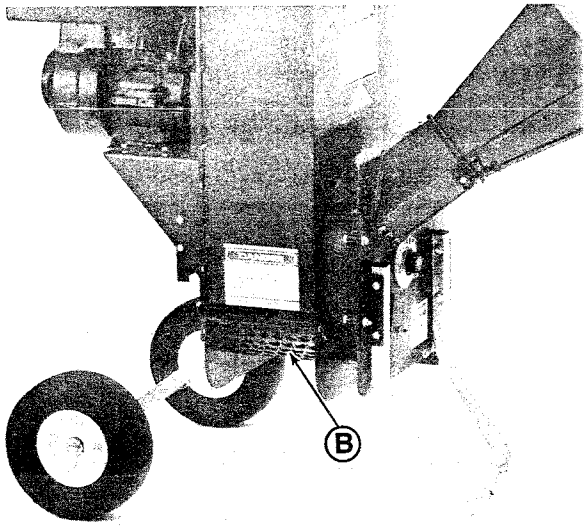
4. Chipper Feed Hopper

If you purchased the SUPER TOMAHAWK Chipper/Shredder, the side-mounted Chipper will allow you to process larger, heavier materials that the Shredder wasn't designed to handle. We recommend that items from 1" in diameter up to 3" in diameter be put into the Chipper, which will produce small chips. The Chipper Feed Hopper (see Photo 20) leads directly to the Chipper chamber, which is a separate chamber from the Shredder chamber.

⚠DANGER: Do Not Put Hands, Face Or Clothing Into The Feed Hopper Entrance At Any Time. To Clear Jammed Material Or For Service, Be Sure The Engine Is Off, The Spark Plug Wire Disconnected, And All Moving Parts Have Come To A Complete Stop.

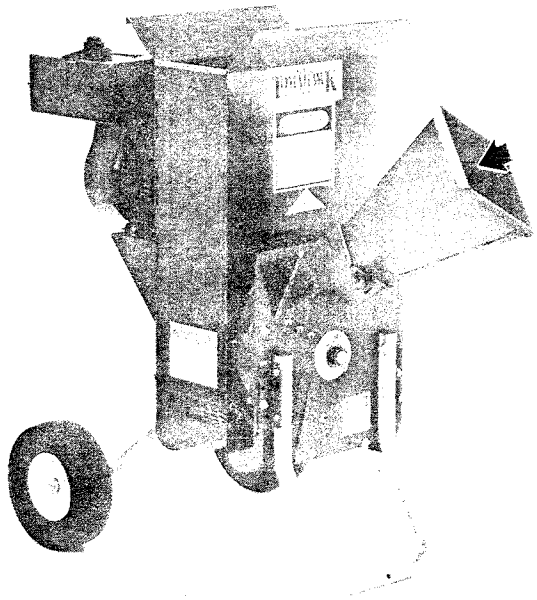


(Photo 17) The Shredder cylinder assembly inside the shredding chamber has four rows of flail cutters("A") — 16 cutters in all — that revolve at high speed to shred and grind materials. (The Retaining Flap has been removed for clarity to show the flail cutters.)



(Photo 18) Shredded material exits from the Discharge Screen("B") shown above. Never run your equipment unless the screen is attached.

(Photo 19) The Discharge Screen is attached with two steel rods and hitch pins. Remove one rod to lower either end of the screen for cleaning. Remove both rods to change the screen.



(Photo 20) Chipper Feed Hopper is side-mounted and designed to process bigger and bulkier materials than the Shredder. Use the Chipper to turn 1" –3" diameter branches into chipped particles.

The Chipper Hopper folds neatly up and out of the way when it's time to put your equipment back in storage. Just pull up and out on the Draw Latch and the Feed Hopper swings inward (see Photo 21). When you do this, you'll see that the bottom portion of the Feed Hopper will automatically be guarded by a plate that swings into position as the top half of the Feed Hopper is folded.

⚠CAUTION: Do Not Operate Chipper Unless Feed Hopper Is Secured In Operating Position With Draw Latch.

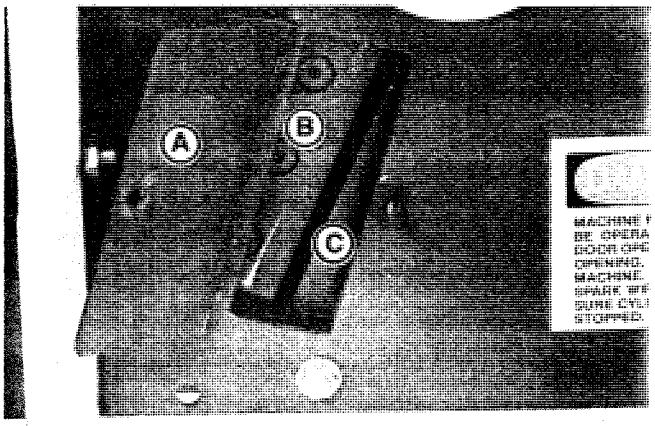
5. Chipper Chamber/Cutting Blade

As you feed material down into the Chipper Hopper, it will enter the chipping chamber where a hardened, tool-steel blade (5HP Model has one blade; 8HP Model has two blades) revolving at 3400 revolutions per minute does a quick and efficient job of making small, even-sized chips.

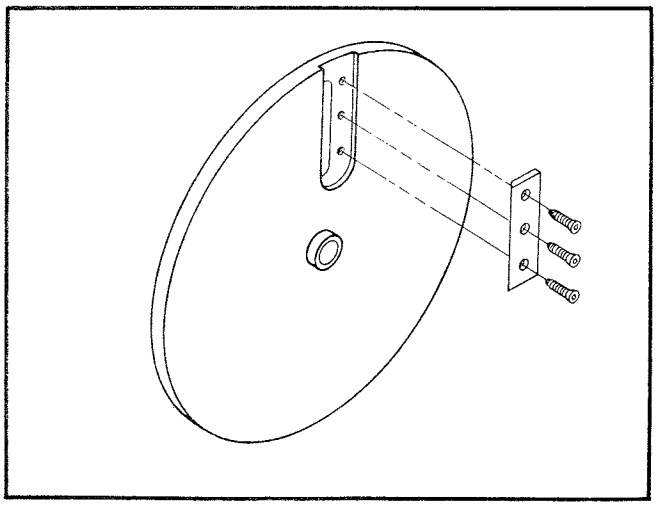
You'll find that the Chipper operates so smoothly because the chipper blade is attached to a large, 14" diameter flywheel that develops great torque as it revolves. The blade is recessed into the flywheel for secure attachment and strength. Photo 22 shows the chipper blade access door opened and the chipper blade attached to the flywheel. Illustration 23 shows you what the flywheel looks like and how the removable blade is secured to the flywheel.

⚠DANGER: Do Not Start Engine Unless Access Door To Chipper Blade Is Closed And Securely Bolted Shut.

(Photo 21) Release the Draw Latch and the top half of the Chipper Feed Hopper can swing inward, reducing the amount of space needed for storage.



(Photo 22) Chipper Blade Access Door("A") allows inspection of the tool-steel chipper blade("B") mounted on the flywheel("C"). Blade and flywheel revolve at 3400 RPM for very fast chipping. 8HP Model has two blades.



(Illustration 23) Blade removes from flywheel for sharpening. See Maintenance — Section 5.

6. Chipper Discharge Door

The chipped material in the Chipper Chamber exits through a single Discharge Door at the bottom of the chamber (see Photo 24). The rate of discharge out the door can be fast, so please keep all persons and pets away from this area.

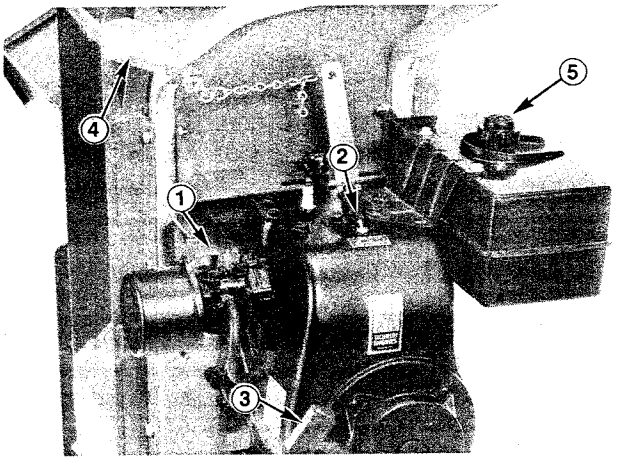
As a pile of chipped material begins to increase, make regular visual checks to be sure that the door doesn't get blocked shut or stuck in an open position. The door must always have enough clearance to swing open to discharge chips and freedom to close. If the door becomes blocked or stuck, shut off the engine, wait for all moving parts to come to a complete stop, then disconnect the spark plug wire. Shovel the pile of chips away. Use a stick — not your hands — to clear out any clogged material.

⚠ DANGER: Keep Hands, Feet And Clothing Away From The Discharge Door At All Times. To Clear Jammed Material Or For Service, Be Sure The Engine Is Off, All Moving Parts Have Come To A Complete Stop, And The Spark Plug Wire Is Disconnected.

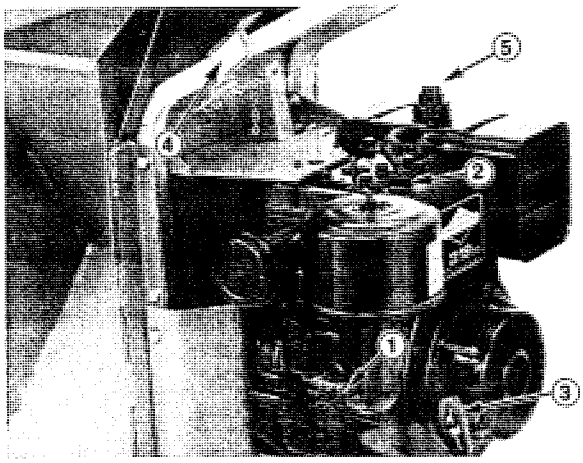
(Photo 24) Chipped materials exit from the Chipper Discharge Door shown above. Keep hands away!

Engine Features & Controls

1. Carburetor Choke Control
2. "Run-Stop" Switch (5HP Tecumseh engine)
   "On-Off" Switch (8HP Briggs & Stratton engine)
3. Engine Recoil Starter
4. Clutch Lever
5. Fuel Tank



(Photo 25) Controls on the 5HP Tecumseh engine: Choke Lever ("1"); Run-Stop Switch ("2"); Recoil Starter ("3"); Clutch Lever ("4"); Fuel Tank ("5").



(Photo 26) Controls on the 8HP Briggs & Stratton engine. Choke Lever ("1"); On-Off Switch ("2"); Recoil Starter ("3"); Clutch Lever ("4"); Fuel Tank ("5").

1. Carburetor Choke Control

Both the 5HP Tecumseh and the 8HP Briggs & Stratton engines have a Choke Control Lever located on the carburetor. This lever lets you regulate the air-fuel mixture to make starting a cold engine easier. Use the FULL CHOKE position when starting a cold engine; switch to PARTIAL CHOKE (Half Choke) for a few seconds once the engine is started; use the NO CHOKE position when warming up the engine and during general operation. Important: if engine falters when the choke lever is in the NO CHOKE position, switch back to PARTIAL CHOKE temporarily. ALWAYS HAVE THE CHOKE LEVER IN THE NO CHOKE POSITION DURING GENERAL OPERATION. Failure to do this will allow harmful deposits to build up inside the engine.

Tecumseh 5HP Choke Control Lever: see Photo 25 for its location on the engine. This lever has an "arrowhead" shape — the point of the arrow indicates the direction in which the lever must swing for the FULL CHOKE position.

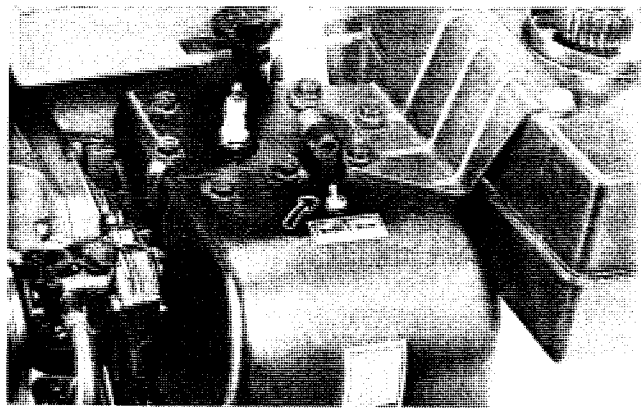
Briggs & Stratton 8HP Choke Control Lever: see Photo 26 which shows the location of the lever. Move the lever DOWNWARD all the way for the FULL CHOKE position.

2. 5HP Tecumseh "Run-Stop" Switch And 8HP Briggs & Stratton "On-Off" Switch

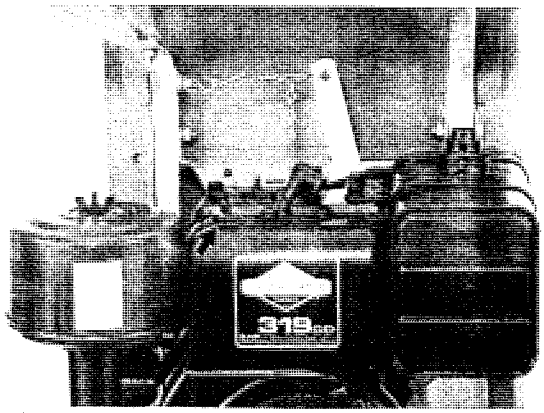
This switch, located on top of your engine near the engine's identification number, must be activated before the engine can be started, and must also be used to shut off the engine. The ideal operating speed for your engine has been pre-set at the factory by the engine manufacturer, allowing your engine to always provide sufficient power to the Chipper/Shredder regardless of the job it's doing. Please do not attempt to alter the pre-set engine speed in any way. A speed higher than the one that's pre-set could result in damage to the engine.

Tecumseh 5HP Run-Stop Switch: see Photo 27 for the location of this "toggle-style" switch. It must be in the "Run" position before you try to start the engine with the recoil start rope. Move the switch to the "Stop" position when you wish to shut off the engine.

Briggs & Stratton 8HP On-Off Switch: Photo 28 shows you where this dial-type switch is located on top of your engine. Turn it to the "On" position and use the recoil start rope to start the engine. To stop the engine, turn the switch to "Off".



(Photo 27) Run-Stop switch on 5HP Tecumseh engine.



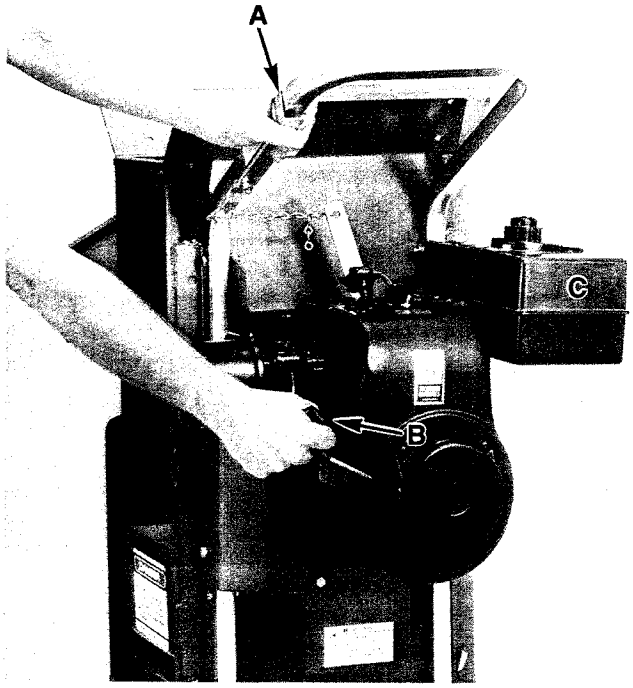
(Photo 28) On-Off switch on 8HP Briggs engine.

3. Engine — Recoil Starter

Your engine is equipped with a manual recoil starter. The recoil start rope is located at the very front of the engine on both the Tecumseh and Briggs & Stratton engines. Grasp the starter rope handle (see Photo 28A) and slowly pull the rope out until you feel resistance... then pull the rope out rapidly to start the engine. Note: the Clutch Lever must be held closed before using the start rope (see statement #4). Always let the starter rope back in slowly to prevent damage to the recoil start assembly. You may have to repeat this starting procedure with the recoil starter if the engine doesn't start the first time. This is not unusual.

4. Clutch Lever

While pulling the recoil start rope, you must also fully close the Clutch Lever on the handlebar. See Photo 28A for the location of the Clutch Lever. When you close this lever, tension on the drive belt is disengaged, making starting with the recoil start rope much easier. Once the engine starts, release the Clutch Lever very slowly and proper tension will be put on the drive belt once again to transfer power from the engine to your equipment. Information on adjusting and servicing the Clutch Lever (and belt tension adjustment) are covered in Section 5 of this manual.



(Photo 28A) To start your engine, first close the clutch lever ("A"), then pull starter rope ("B"). Engine shown is the 5HP Tecumseh. The fuel tank is also shown ("C").

5. Engine — Fuel Tank

⚠ CAUTION: When Filling Fuel Tank, Engine Must Be OFF. Leave ½" Air Space At Top Of Tank For Fuel Expansion. Use An Approved Gasoline Storage Container, A Clean Funnel, And Wipe Up Any Fuel Spillage Before Starting Engine.

Be sure to use gasoline that meets the requirements of the engine manufacturer literature you received. The fuel tank on both the 8HP Briggs & Stratton engine and the 5HP Tecumseh engine is located on the upper right-hand side of the engine (see Photo 28A). Each tank features a 4-quart capacity.

SECTION 4:

Operating Instructions

This section provides you with detailed information on the use of your Chipper/Shredder (or Shredder), lots of helpful tips to make jobs go faster and smoother, and an important Checklist of Pre-Starting Steps and Engine Starting Steps that you should always use. **Please read all of the information in this section before you start the engine.**

Use The Shredder For Most Materials; Use The Chipper For the Biggest, Toughest Jobs

To get the greatest benefits from your equipment, it's important to know which materials are best to feed into the Shredder hopper and which ones are best to feed into the Chipper hopper. (Note: If you purchased the TOMAHAWK Shredder Model, which has no Chipper, please use only those materials recommended below for the Shredder.)

Materials Best Suited For Shredding:

- Twigs and smaller branches — up to 1″ diam. in SUPER TOMAHAWK Shredder hopper; to ½″ diam. in TOMAHAWK Shredder hopper. Several branches can be fed in the Shredder hopper at once if all are less than the recommended maximum diameter.
- Leaves, grass clippings, and all other light, loose materials.
- Organic waste materials and organic garbage.
- Short sections of vines (less than 1″ thick).
- Wood chips processed by the Chipper if even finer particles are needed.
- All paper trash.
- Pieces of sod, chunks of soil.
- Partially finished compost.
- Stalks and most brush.
- A mixture of any of the materials above.

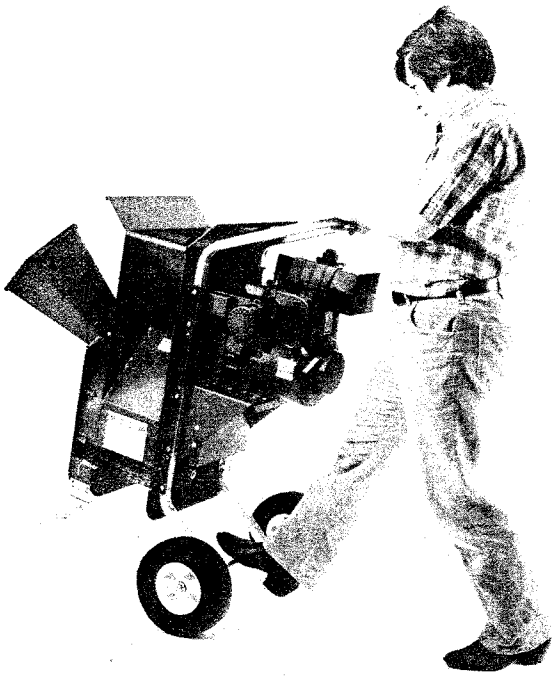
Materials Best Suited For Chipping:

- Larger branches — from 1″ in diameter up to 3″ in diameter, depending upon hardness of wood.
- Tough 1″+ stalks and vines.

Transporting The Chipper/Shredder

When you move your equipment, we recommend that you do so with the following suggestions in mind. Remember — the SUPER TOMAHAWK Chipper/Shredder is over 200 pounds, and the TOMAHAWK Shredder is over 150 pounds. **This weight must be properly balanced over the wheel axle to move the equipment safely and easily.** Follow these steps:

- First shut the engine OFF. Then get a firm grip on the handlebar with both hands evenly spaced.
- Put one foot on top of the wheel axle, halfway between the ends of the axle.
- While steadying the unit with your foot to keep it from rolling, pull the handlebar toward you. See Photo 29.
- As the equipment tilts back toward you, find the "balance point" and then hold the equipment at this angle. Remove your foot from the axle.
- Slowly push or pull the Chipper/Shredder (or Shredder model) toward your destination. Be sure the path you're taking is clear of obstacles and that you have a firm grip on the handlebar. Backing up over any obstacles is easiest and is recommended.
- At the work area, make a complete stop, put your foot back on the wheel axle to steady the wheels, then lower the handlebar slowly until the front stand reaches the ground. Remember — your equipment should only be used on an earthen, level surface...not on hard driveways, patios or gravel.



(Photo 29) Plant one foot on the axle, tilt equipment back with handlebar until "balance point" is reached, then push or pull equipment to work area.

Pre-Starting Steps

1. Move the Chipper/Shredder to the location of your work area. Be sure it is on a level, earthen surface... it should never be used on a hard surface like concrete, macadam, brick, patio blocks, gravel or rocks.
2. Disconnect the spark plug wire from the plug temporarily. Check the engine for correct oil level. Add motor oil if necessary (see Section 1 for instructions and oil recommendations).
3. Add gasoline to the fuel tank. See Section 3 for fuel specifications and procedure.
4. Put on your safety goggles and work gloves.
5. Be sure all bystanders are at least 25 feet away from the area of operation.
6. Visually check the Chipper Feed Hopper and the Shredder Feed Hopper to be sure they're empty.
7. Reconnect the spark plug wire. You're now ready to start the engine.

Engine Starting Steps

⚠ DANGER: ROTATING CUTTER BLADES IN CHIPPER AND SHREDDER CHAMBERS ARE IN OPERATION ONCE ENGINE STARTS. KEEP HANDS, FEET AND CLOTHING AWAY FROM FEED HOPPERS AND DISCHARGE AREAS AT ALL TIMES. FAILURE TO DO SO COULD RESULT IN SEVERE PERSONAL INJURY.

1. Turn the Carburetor Choke Control Lever to FULL CHOKE position (see Photo 25 or Photo 26) if the engine is cold.
2. Move the 8HP Briggs & Stratton On-Off Switch to the "On" position. If you have the 5HP Tecumseh engine, move its Run-Stop Switch to the "Run" position. See Photo 27 or Photo 28.
3. While standing on the left-hand side of the engine, use your left hand to fully close the Clutch Lever (see Photo 28A). Hold the Clutch Lever in the closed position against the handlebar. With your right hand, grip the starter rope handle (see Photo 28A). Pull the handle out slowly until resistance is felt. Then quickly pull the rope firmly all the way out to start the engine. Several rope pulls may be needed. After the engine starts (continue to keep the clutch lever closed), let it warm for a few seconds with the choke lever in the Full Choke position, then move the choke lever to the Partial Choke position for a few more seconds. Now move the choke lever to the No Choke position.
4. Slowly release the Clutch Lever with your left hand. Do not release it suddenly or all at once, or the engine may stall. As you slowly let the clutch lever out you will hear the engagement sound of the shredder and chipper assemblies as they start to revolve. Keep releasing the clutch lever slowly until it is all the way out. If you stall the engine because the clutch lever was released too quickly, repeat the starting steps beginning with Step 1 again.
5. The operating speed of the engine is pre-set by the engine manufacturer. IMPORTANT: Do not put materials in the chipper or shredder hoppers unless the engine is running at full power. The engine is designed to operate at fast speed in order to deliver proper power to the chipper and shredder assemblies. If running at less than fast speed, your equipment will not do the proper job. To correct an engine speed problem, please contact your Tecumseh or Briggs & Stratton engine dealer.
6. With the engine running, the chipper blade in the chipper chamber and the flail cutters (blades) in the shredder chamber are now fully operational and rotating at high speed, ready to chip or shred materials fed into either hopper.

TO STOP All Shredding And Chipping Action, First Close The Clutch Lever, Then Shut The Engine OFF By Moving The On-Off Switch (On Briggs & Stratton Engine) To The OFF Position Or By Moving The Run-Stop Switch (On Tecumseh Engine) To The STOP Position. Keep The Clutch Lever CLosed Until The Engine And All Other Moving Parts Stop Completely.

How To Use The Chipper (SUPER TOMAHAWK Model Only)

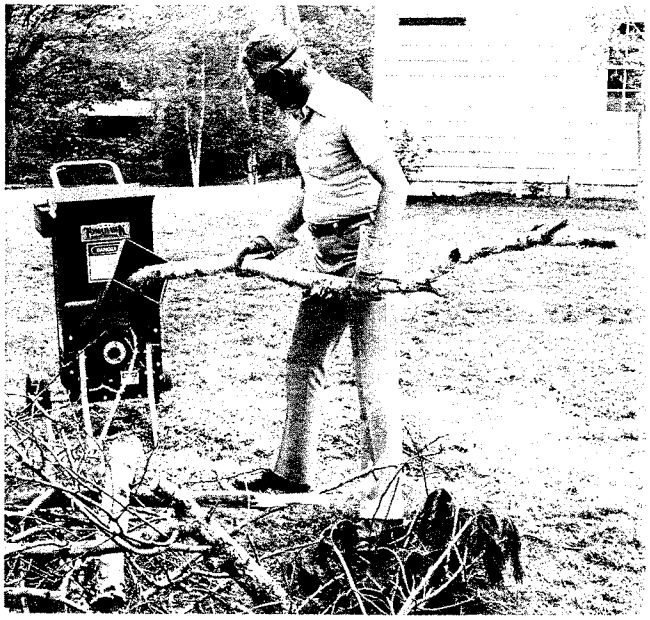
As soon as the engine is started and achieves full speed, the chipper blade inside the chipper chamber is revolving at 3400 RPM and the Chipper is ready to use. Be sure to wear safety goggles and gloves!

Position yourself on the right or left side of the Chipper Feed Hopper (Photo 30). Your Chipper will chip branches from 1″ in diameter up to 3″ in diameter. To reduce branches to small chips, simply grip one end of a branch with both hands and feed the other end of the branch into the chipper hopper. Keep the branch away from your body to avoid any bounceback from the branch. Also, hold the branch firmly so you can control the feed rate at all times. See Photos 31 and 32.

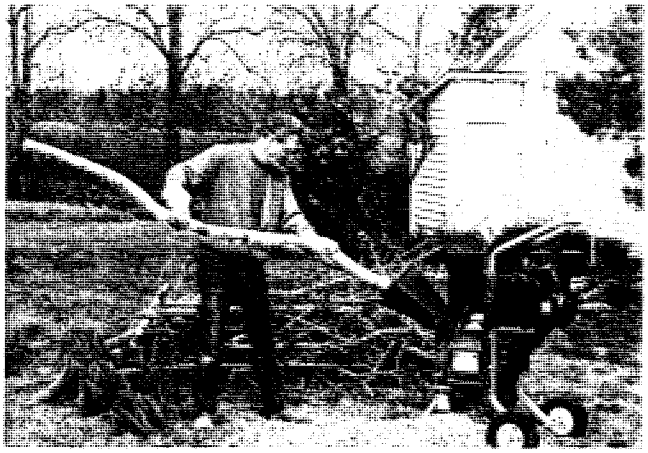
All branches should be *evenly rotated* when fed into the Chipper. This will help to prevent the bark from turning into long strips or strings that can get tangled around the internal cylinder shaft. To minimize this, please rotate branches.

Feed the branch in until it is reduced to the length of the chipper feed hopper. **Never put your hands into the chipper hopper. Short stubs of branches may be pushed through the chipper with the next branch.** Pay close attention to the engine RPM. If the engine slows down, reduce feed pressure and let the engine build up speed again before you continue. Avoid overloading the Chipper.

⚠ DANGER: BE SAFE—ALWAYS KEEP YOUR HANDS AWAY FROM THE HOPPER OPENING.



(Photo 30) Feed material into Chipper at proper angle.



(Photo 31) Hold branches firmly; feed in smoothly.

(Photo 32) If engine speed starts to slow down, reduce feed pressure and let engine speed build up.

How To Use The Shredder

Once the engine on the SUPER TOMAHAWK or TOMAHAWK Model is started and builds up to full speed, the flail cutters (blades) inside the shredder chamber are revolving at a high rate of speed and the Shredder is ready to use. Of course, you must always be wearing safety goggles and sturdy work gloves.

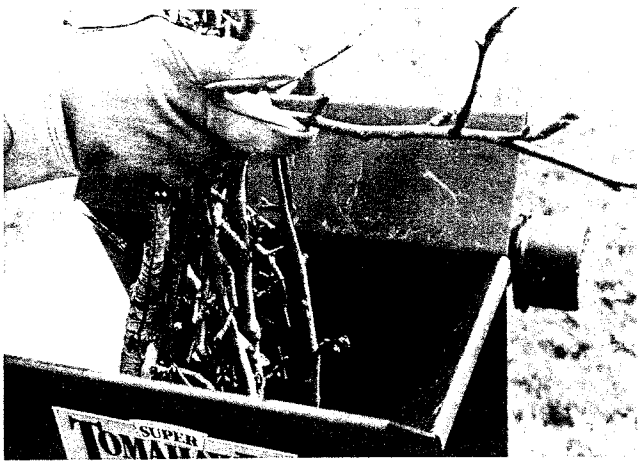
Position yourself anywhere near the Shredder, except next to the engine where the hot muffler is located (see Photo 33). You'll be able to see the Safety Decal and the rubber Retaining Flap in the Shredder Feed Hopper on top of the unit.

(Photo 33) When using the Shredder, stand a foot or two away from the hopper and release materials into it. Remember: the engine muffler gets very hot, so keep your arms away from that area.

⚠ DANGER: Never put Hands, Feet or Clothing Into The Shredder Feed Hopper Opening. Cutter Blades Inside The Shredder Chamber Are Revolving When The Engine Is Running.

A steady flow of materials into the Shredder Feed Hopper provides the most effective results. See Photo 34. The rate of feed for branches, vines and brush can be controlled by lightly pushing and guiding the material until it extends above the top of the hopper. At this point, **let go** of the material.

IMPORTANT: the Shredder can tug suddenly at material being fed into it, so don't 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 arm parallel to the ground and several inches above the top edge of the hopper.



(Photo 34) Feed materials in steadily, but don't overload your equipment.

Under certain conditions, it may become necessary to push bulky material into the Shredder hopper. **DO NOT USE YOUR HANDS — instead, use a small diameter stick of a size that will be shredded if it gets into the cutting area.**

When you have loose materials to process, such as leaves or grass clippings, just drop them into the hopper opening. See Photo 35. When working with sod or sand, use a shovel to feed it slowly down the hopper opening. **IMPORTANT** — If the engine slows down while feeding material, stop right away and give the engine time to come back up to full speed.

Feed the Shredder slowly until you are very familiar with its operation. Materials and conditions vary. After a short learning period you will know how to process many different materials.

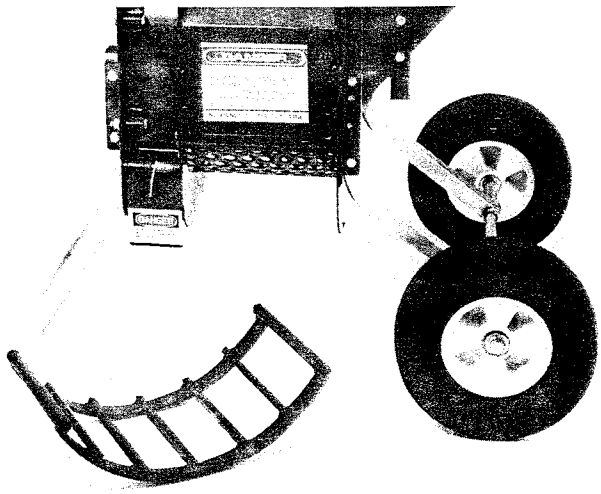
(Photo 35) Just drop loose material into the hopper.

All shredded material will be discharged through the Shredder Discharge Screen at the bottom of the unit. See Photo 36. Always keep clear of the discharge area since the material exits with considerable velocity. The standard screen that came with your Chipper/ Shredder (or Shredder Model) is a perforated screen with ¾" holes. This screen is generally best for making compost.

When shredding wet materials, build-ups will occur at the screen. To avoid or reduce any clogging, always mix wet and dry material to keep the discharge area open. The dry material provides a self-cleaning action. *NOTE: Wet, gummy material should not be used in the Shredder with the standard ¾" Discharge Screen* — it will very quickly become clogged. We recommend that you use the optional Bar Grate Attachment in place of the standard screen for material like this (see Photo 37).

If clogging does occur at the Discharge Screen, stop the engine, let all moving parts stop and remove the spark plug wire. Then slide out one of the screen rods (see Photo 19, Section 3) to lower the screen. Clean out any clogged screen holes with a small stick.

(Photo 36) Finely shredded material ready to use.



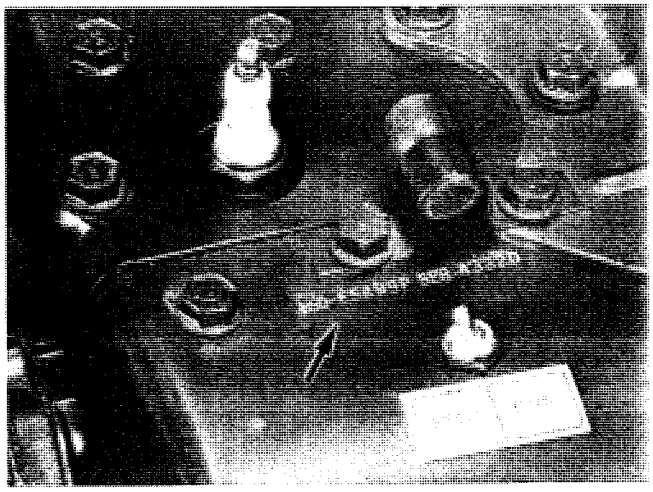
(Photo 37) Optional Bar Grate Attachment is recommended for shredding wet, organic material.

SECTION 5:

Maintenance & Service

Engine Maintenance/Service

Your SUPER TOMAHAWK Chipper/Shredder is equipped with either an 8HP Briggs & Stratton engine or a 5HP Tecumseh engine. The TOMAHAWK Shredder comes only with the 5HP Tecumseh engine. Both engines are four-cycle, air-cooled, and gasoline powered. DO NOT MIX OIL WITH YOUR GASOLINE. Read and follow all of the service and maintenance information given here and in the accompanying engine manufacturer literature to keep the engine running at peak performance. If you need engine repairs or parts, contact your local authorized Briggs dealer or Tecumseh dealer for assistance. The dealer will need to know the engine identification numbers to help you. The Briggs & Stratton engine has MODEL, TYPE AND CODE NUMBERS; the Tecumseh engine has MODEL and SERIAL NUMBERS. They are located on top of the engine blower housing, near the spark plug, per Photo 39.



(Photo 39) Location of Tecumseh engine I.D. numbers. Briggs & Stratton I.D. numbers in similar location.

⚠ WARNING: Engine Must Be Off And Spark Plug Wire Disconnected Before Any Maintenance Or Service Procedures Are Performed.

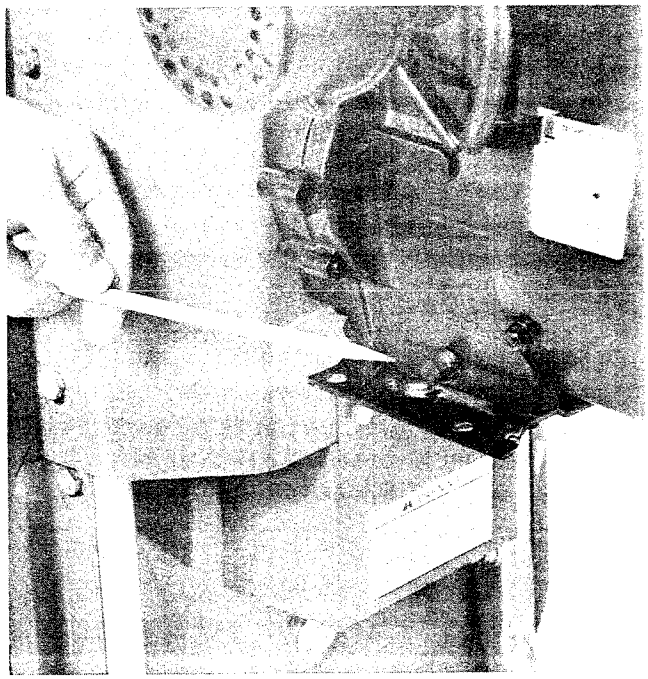
Change Engine Oil As Recommended

Remember to *check* the engine oil level prior to each usage and at least every two hours during continuous operation. The oil level must always be up to the "Full" mark on the 5HP Tecumseh dip stick and at the top of the oil fill tube on the 8HP Briggs & Stratton engine.

Oil Change Schedule For Your Engine
Initial Oil Change — After First 2 Hours of Operation
Schedule Thereafter — Every 10 Hours of Operation

To Change The Engine Oil On Either The 8HP Briggs & Stratton Engine Or The 5HP Tecumseh Engine:

1. Run the engine a few minutes to warm the oil. Then stop the engine and disconnect the spark plug wire.
2. The Briggs & Stratton and the Tecumseh engines have two oil drain plugs on opposite sides of the engine near the engine base. Either drain plug may be used. Photo 40 shows a 5HP Tecumseh drain plug — the drain plug location is similar on the Briggs engine.



(Photo 40) Oil drain plug location on Tecumseh engine. Similarly located on the Briggs engine.

3. **On the Briggs & Stratton engine:** clean thoroughly around the Oil *Fill* Cap, then remove the fill cap to vent crankcase for fast drainage. **On the Tecumseh engine:** clean around the Dip Stick, then remove the dip stick on top of the engine. Also — prop up one wheel with a wood 2"x4" on the opposite side of the engine from which you'll be draining the oil.
4. Place an oil collection pan beneath the Oil Drain Plug. Now remove the drain plug and allow all the dirty oil and sludge to drain out completely. Replace the drain plug — put gasket sealant on the threads.
5. You're now ready to add fresh oil. **In the 8HP Briggs engine:** add oil until the level is right up to the top of the Oil Fill Tube (about 39 ounces — see Photo 13A). Replace the oil fill cap. **In the 5HP Tecumseh engine:** add oil until the level is up to the "Full" mark on the dip stick atop the engine (about 19 ounces — see Photo 13B).
6. Start the engine outdoors and let it warm up. Check the level again and be sure there is no leakage around the drain plug. If leaking, tighten it.

Air Cleaner Service

The air cleaner prevents dirt and dust from entering the engine through the carburetor. It is very important that the air cleaner filter be replaced if dirty and properly installed at all times. This will prevent premature wear or damage to the engine. A clean filter also avoids starting and overheating problems.

8HP Briggs & Stratton Air Filter Service Schedule & Replacement Procedure:

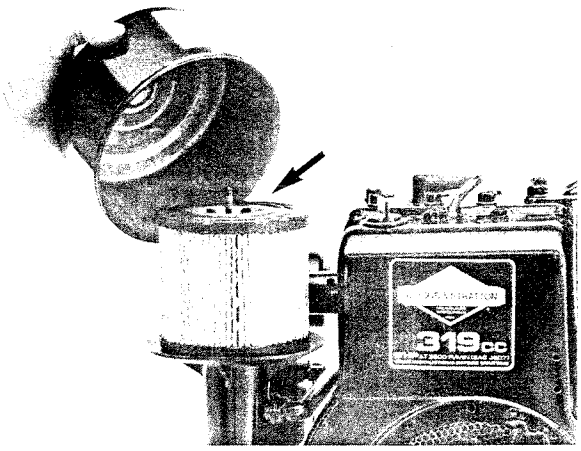
Service Schedule — Inspect and clean "dry" filter every 3 months or 25 operating hours. See engine literature for cleaning instructions. Replace the filter annually or every 100 operating hours.

To Replace Air Filter — 1) Remove external wing nut from air cleaner outer cover and remove cover (see Photo 41); 2) Remove wing nut securing paper cartridge air filter and lift filter off; 3) clean outer cover and plate on which filter sits; 4) install new filter, its wing nut, outer cover and the external wing nut.

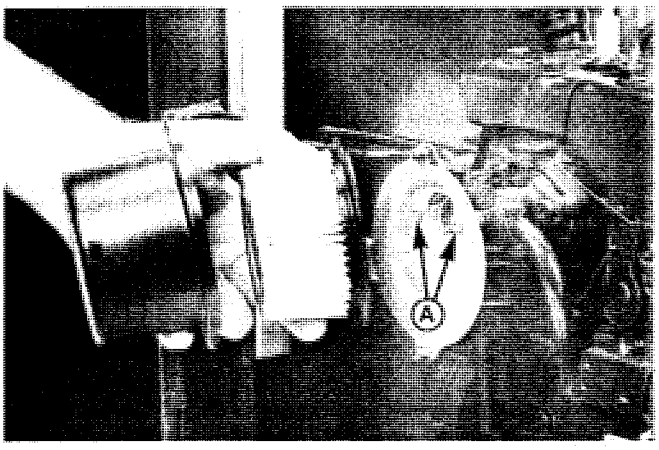
5HP Tecumseh Air Filter Service Schedule & Replacement Procedure:

Service Schedule — Inspect filter every 10 operating hours, sooner if needed. See engine literature for full instructions. Replace the filter annually, or more often with extremely dusty or dirty conditions.

To Replace Air Filter — 1) Loosen both outer screws holding air cleaner cover in place; 2) Twist cover to the left, then remove cover with the air filter inside it (see Photo 42); 3) Check tightness of mounting screws on back mounting plate (Photo 42); 4) Clean the back plate and the outer cover, then install the new air filter and reassemble the components.



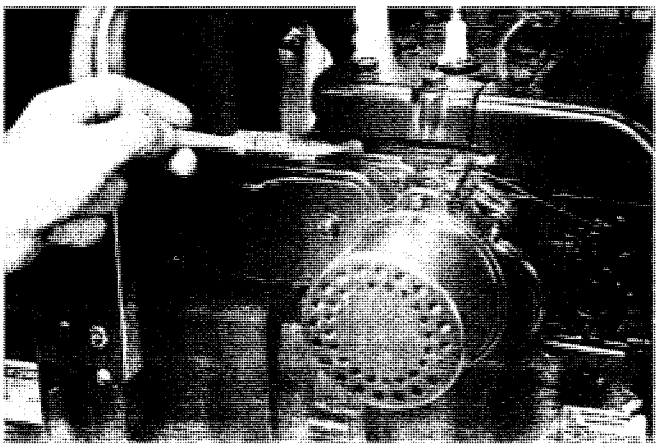
(Photo 41) Briggs & Stratton 8HP air filter.



(Photo 42) 5HP Tecumseh air filter. Note screws ("A") in back mounting plate — they must be tight.

Engine Cooling Fins

Your equipment has an air-cooled engine, so it is important that air be able to circulate freely to keep the engine cool while running. Always remove dirt, grass and debris from the following areas: the cooling fins; engine covers; the air intake screen just behind the starter rope. Use a brush for thorough cleaning regularly. See Photo 43 for reference.



(Photo 43) Keep the engine cooling fins clean.

Spark Plug And Ignition System Information

8HP Briggs & Stratton Specifications — Use a Champion RCJ-8 spark plug or its equivalent. Clean and re-set spark plug gap (to .030") annually or every 100 operating hours. Do not blast clean the spark plug. If spark plug is damaged or badly worn, please install a new plug. Your engine needs no ignition tune-up — it has the Magnetron$_{TM}$ ignition which eliminates condenser and points.

5HP Tecumseh Specifications — Use a Champion J-8 or the equivalent. Proper electrode gap is .030". (Note: Canadian owners must use a Champion RJ-17LM Resistor Plug to comply with government standards.) Your engine has a dependable, maintenance-free solid-state ignition, eliminating the need for points and condenser.

For further information on spark plugs and ignition systems, see separate engine manufacturer literature.

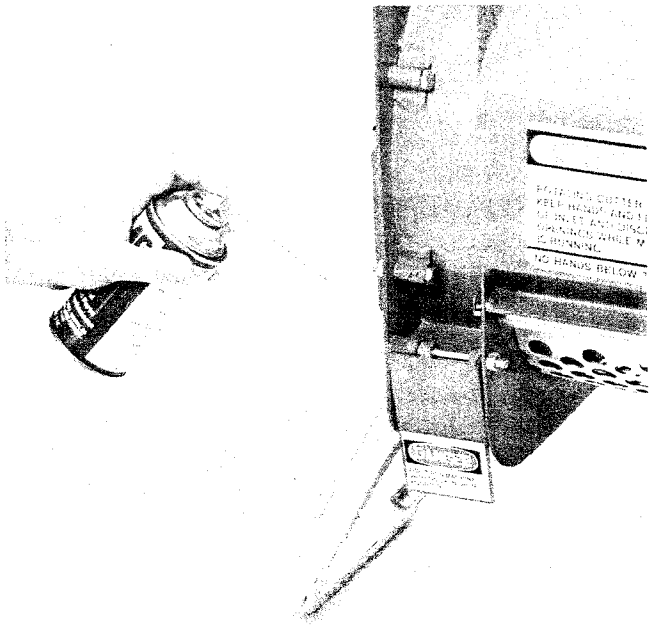
Carburetor Adjustment, Engine Storage & Other Engine Maintenance/Service

Please refer to the engine manufacturer brochure which was included in your literature package for further details and coverage on topics such as carburetor adjustment, etc. Remember: your closest authorized engine dealer is fully equipped to handle all repairs, parts orders and engine warranty service.

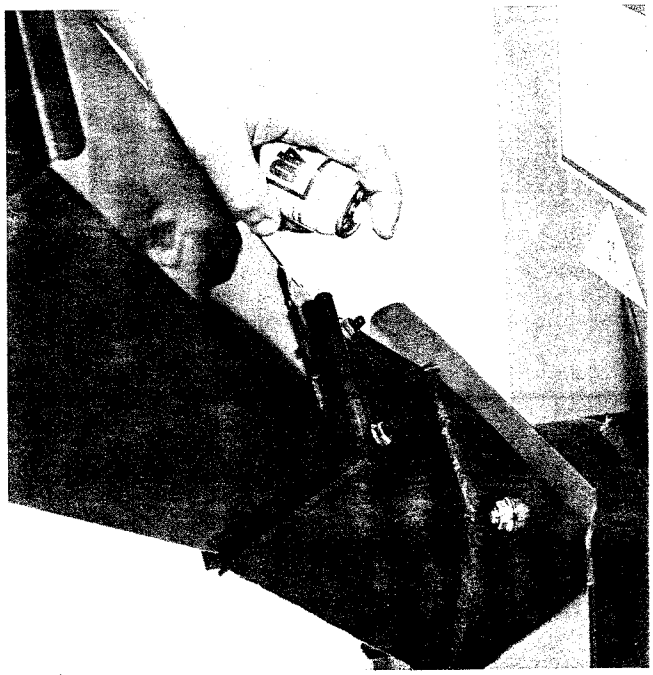
Chipper/Shredder Maintenance And Service

Lubrication Recommendations

An all-purpose spray-type lubricant should be used regularly, at least a few times a year, to keep moving parts in good condition and operating smoothly. Apply lubricant to these areas: 1) the clutch lever (see Photo 28A); 2) the wheels and axle spacers; 3) the hinge on the chipper discharge door (Photo 44); 4) the hinge on the chipper hopper (Photo 45); 5) and the belt tension adjustment bolt (Photo 11). Note: a good quality grease containing a metal lubricant may be substituted for the spray-type lubricant.



(Photo 44) Lubricate chipper discharge door hinge.



(Photo 45) Lubricate the chipper hopper hinge too.

Belt Tension Adjustment & Replacement

⚠CAUTION: The Engine Must Be Off, All Parts Completely Stopped And The Spark Plug Wire Disconnected From The Spark Plug Before You Check, Adjust Or Change The Belt.

The single belt on your Chipper/Shredder (or Shredder Model) is a high-quality, heavy-duty belt. To perform properly, however, it must have the correct tension applied to it to transfer engine power fully. Belt tension is fully adjustable with just a single belt tension adjustment bolt. After the first few hours of operation, we suggest you check belt tension and make a tension adjustment if necessary. Checking and adjustment steps follow.

To Check And Adjust Belt Tension:

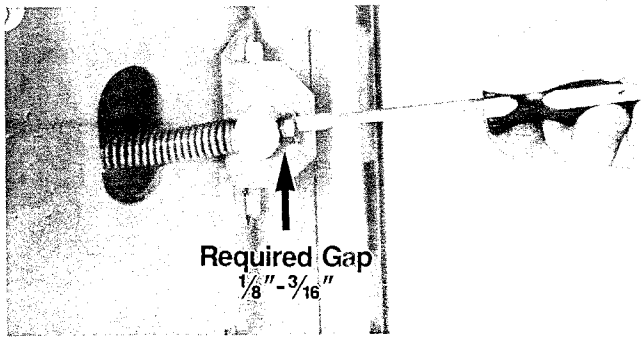
Tools Required —

one screwdriver (if adjustment bolt has a slotted head)

or one open-end wrench (if adjustment bolt head is not slotted)

1. If the bolt head shown in Photo 46 measures between 1/8"-3/16" away from the bushing next to it, then belt tension should be ideal. This is a very important measurement, so be sure the *bottom* of the bolt head is no less than 1/8" from the bushing and no more than 3/16" away from it. If the bolt head is too close to the bushing, not enough tension is being applied to the belt by the idler pulley. If the bolt is too far away from the bushing, too much tension is being applied to the belt. In either case, full engine power would not be transferred properly to the chipper and shredder assemblies. If an adjustment to belt tension is needed, please follow the instructions in "2." following.

2. If belt tension is not correct, all you have to do is move the belt tension adjustment bolt in or out. To move the bolt head farther away from the bushing, turn the bolt head counterclockwise (to the left). Turn the bolt head clockwise if it should be closer to the bushing (see Photo 46).



(Photo 46) The tension adjustment bolt controls the amount of tension the idler pulley applies to the belt. The bottom of the bolt head should be from 1/8"-3/16" away from the bushing next to it.

Belt Replacement Instructions:

Tools Required —

one flathead screwdriver or adjustable wrench for belt tension adjustment bolt

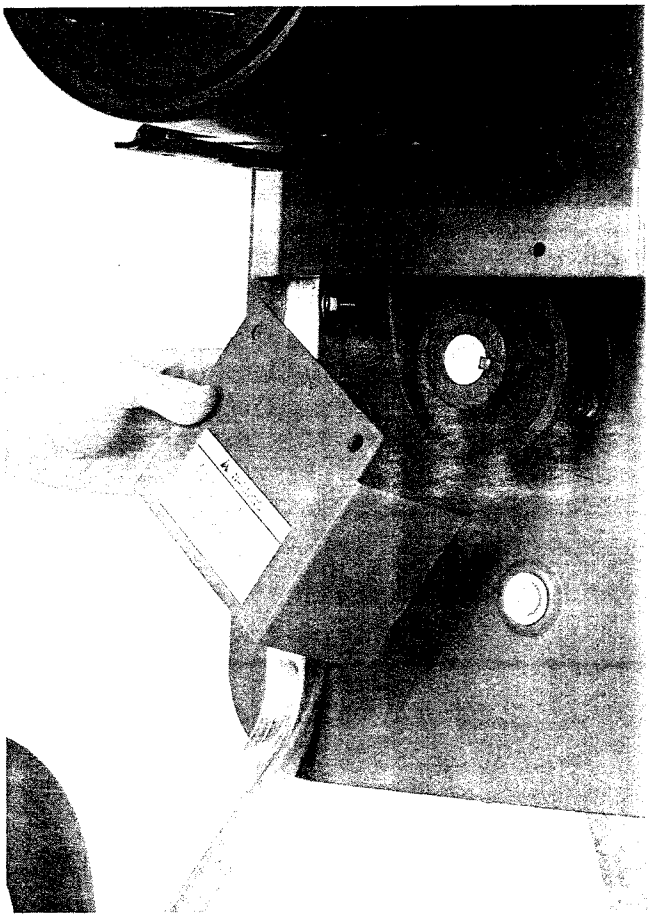
one adjustable wrench (for belt cover bolts)

If the drive belt on your equipment ever becomes noticeably worn (has chips, cracks or is frayed), or develops too much stretch to adjust for proper belt tension, please replace the belt right away. Contact us for the new belt. Replacement steps are as follows.

1. The engine must be OFF, all parts must be completely stopped, and the spark plug wire must be disconnected.

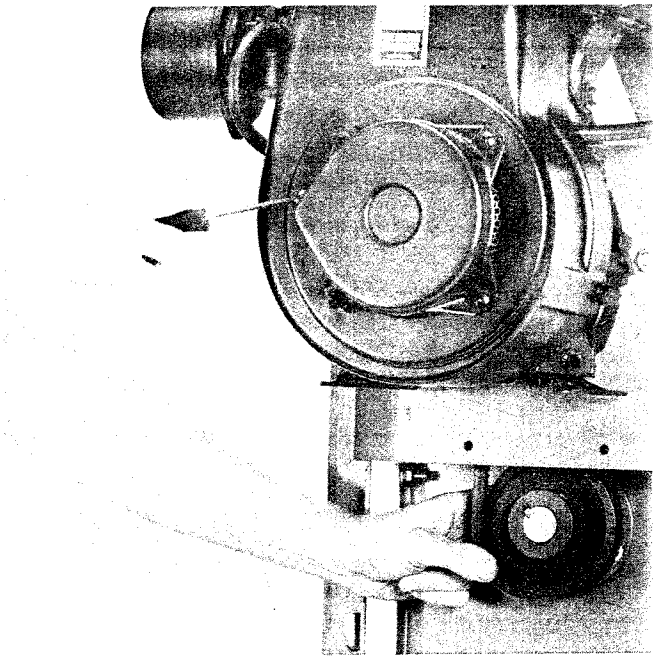
2. Turn the belt tension adjustment bolt clockwise (to the right) all the way. This will take much of the tension off the belt. See Photo 46. Also disconnect the chain from the *large S-hook* on the clutch arm. Then, tie one end of a length of string or twine around the top of the clutch arm. Pull the clutch arm as far as possible in the direction of the clutch lever and keep it in that position until you secure the other end of the string around the handlebar. This will take off the last bit of tension that the idler pulley assembly puts on the belt.

3. Next, remove the belt cover (shield) under the engine which covers the lower pulley and the belt. See Photo 48. Just remove the two bolts and locknuts that hold the cover in place.



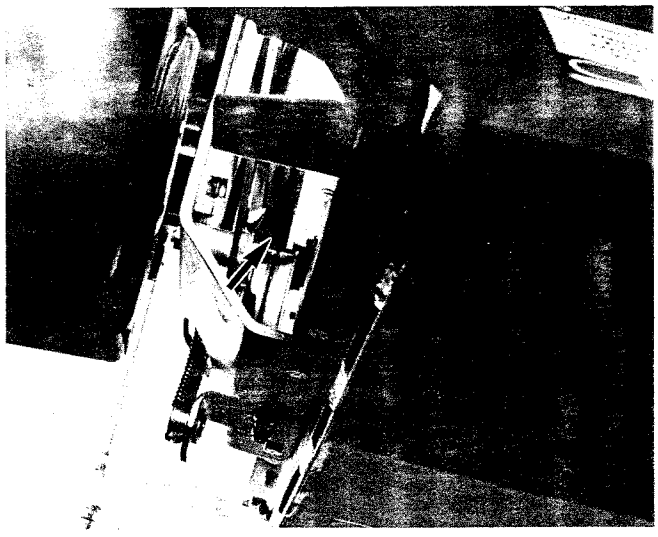
(Photo 48) Remove belt cover held in place by two bolts and locknuts. The lower pulley and belt are behind it.

4. Look down between the rear of the engine and the shredder frame. You will see the drive belt mounted on the upper pulley (engine pulley) and the lower pulley (driveshaft pulley). You'll also see the idler pulley about halfway down, which is what puts tension on the drive belt. Remove the belt from the lower pulley first because it's the fastest and easiest way. To do this, kneel down next to the lower pulley, then turn the pulley (rotate it) with one hand and use your other hand to "ride" the belt off the pulley. See Photo 49. NOTE: another way to cause pulley rotation is to pull out the starter rope while you guide the belt off the pulley.



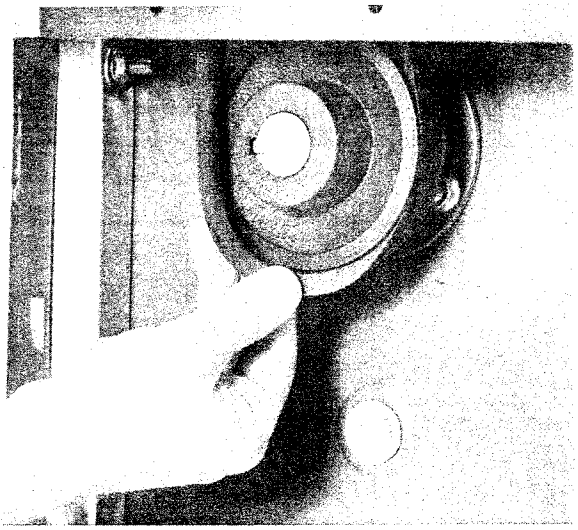
(Photo 49) Turn (rotate) lower pulley with one hand; use your other hand to guide the belt off the pulley. You can also use the starter rope to cause pulley rotation.

Once the belt is off the lower pulley, move the belt away from the idler pulley (see Photo 50), then slide the belt upward and off the upper pulley. You can now remove the old belt from your equipment.



(Photo 50) Work the belt away from the idler pulley, off the upper pulley, then remove it.

5. To install a new belt, just reverse the steps you took to remove the old belt. Insert the new belt from the bottom of your equipment; position it over the upper pulley; make sure it's positioned properly inside the idler pulley; then "ride" the belt back on the lower pulley by turning the lower pulley as you guide the belt on it. See Photo 51.



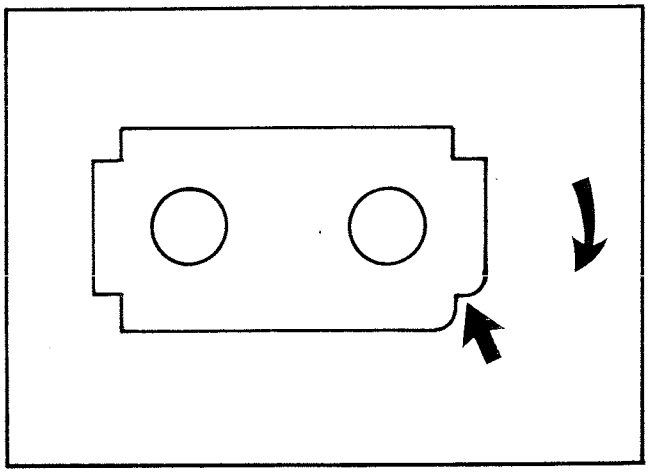
(Photo 51) Once the belt is on the upper pulley and positioned alongside the idler pulley, guide it back on the lower pulley while using pulley rotation to guide it.

After the new belt is on, remove the string or twine holding the clutch arm. Then turn the belt tension adjustment bolt to put the proper tension on the new belt (bottom of bolt head should be 1/8"-3/16" away from the bushing next to it). Remember to reconnect the chain to the S-hook, making sure the chain is stretched tight. Also replace the belt cover securely and reconnect the spark plug wire. The job is done.

The Shredder Flail Cutters (Blades) — Rotation Of Cutting Edges And/Or Blade Replacement

The 16 steel flail cutters inside the Shredder chamber are subject to wear over time because of the constant grinding action they provide. To lengthen their lifespan, these blades have been designed with four separate cutting surfaces (one at each corner) — when one edge becomes dull, you can simply rotate that blade to use one of the three other fresh cutting edges (see Illustration 52). When all four cutting edges have been dulled, it's time to replace that blade(s).

To rotate a blade in order to use another cutting edge (or to replace blades), please follow the instructions below.



(Illustration 52) There are four cutting edges on each of the 16 flail cutters. When one edge becomes dulled, the blade can be rotated so another edge can do the work.

⚠ DANGER: ENGINE MUST BE OFF, ALL MOVING PARTS MUST HAVE COME TO A COMPLETE STOP, AND SPARK PLUG WIRE MUST BE DISCONNECTED BEFORE ANY SERVICE OR MAINTENANCE PROCEDURES ARE PERFORMED. SEVERE PERSONAL INJURY CAN OCCUR OTHERWISE.

Tools Required — 1 Drift Pin
1 Mallet or Hammer
1 Flathead Screwdriver

1. First remove the Shredder Discharge Screen at the bottom of your equipment so there will be enough room to work from underneath the equipment.

2. Looking up at the blades from ground level, you'll see four free-swinging blades mounted on each of four cylinder pins. The blades are separated by spacers. Turn the entire cylinder assembly slowly — inspect the blades hanging from one cylinder pin, then on the next cylinder pin, and so on. If the cutting edges appear to be in good condition, your inspection is finished. If one or more cutting edges is badly worn (Illustration 52), or any of the spacers are damaged, continue with step 3.

3. If any blades must be rotated (or replaced), first remove the small metal conduit plug shown in Illustration 53. Carefully pry out the plug with your flathead screwdriver. Then turn the cylinder assembly until the cylinder pin holding the worn blade(s) is aligned with the conduit plug hole (Illustration 54).

4. Use your mallet and drift tool to drive out the roll pin that secures the cylinder pin to the cylinder assembly. The roll pin is located approximately mid-way between the ends of the cylinder pin.

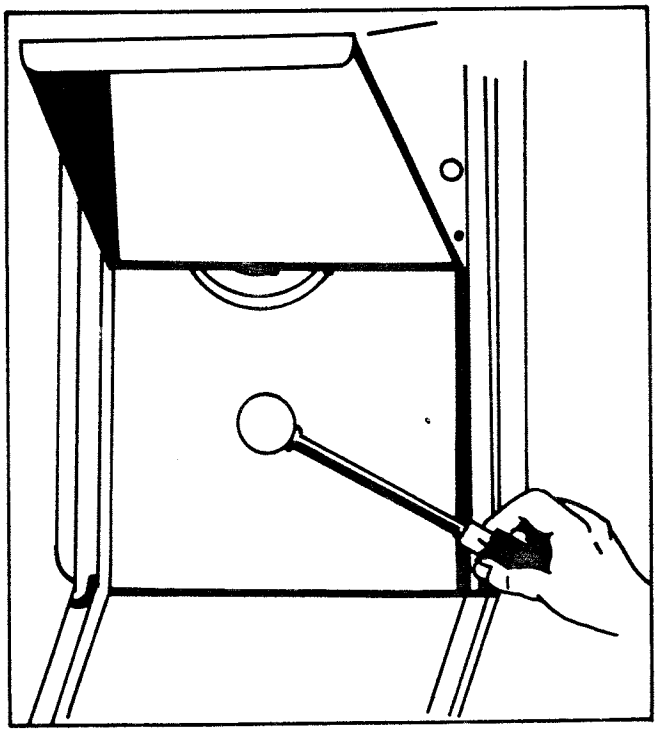
5. Be sure to note the exact placement of the blades (and spacers between them) before removing the cylinder pin. You must later reassemble the blades and spacers exactly the same way. Slowly slide the cylinder pin out the conduit hole. Any blade that is worn on one corner can now be turned end-to-end or just flipped over so a new cutting edge is in place.

NOTE: Two of the cylinder pins have their blades and spacers arranged one way; the other two cylinder pins have blades and spacers arranged a second way. See Illustration 55 for details.

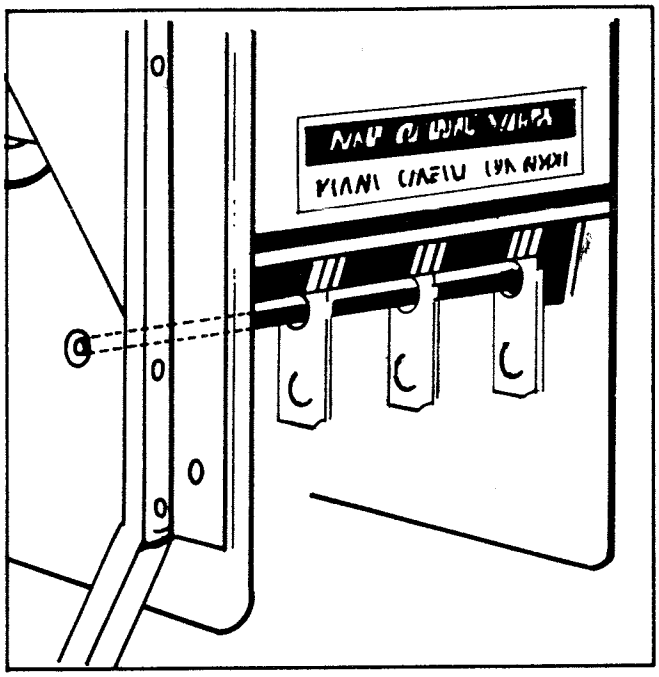
6. Reassemble the blades and spacers on the cylinder pin as you slowly feed the pin back into the cylinder assembly. Use your mallet and drift tool to drive the roll pin back in securely. If you need replacement roll pins, please refer to the Parts List you received.

7. Repeat steps 4 through 6 with the other three cylinder pins if blades need rotation or replacement.

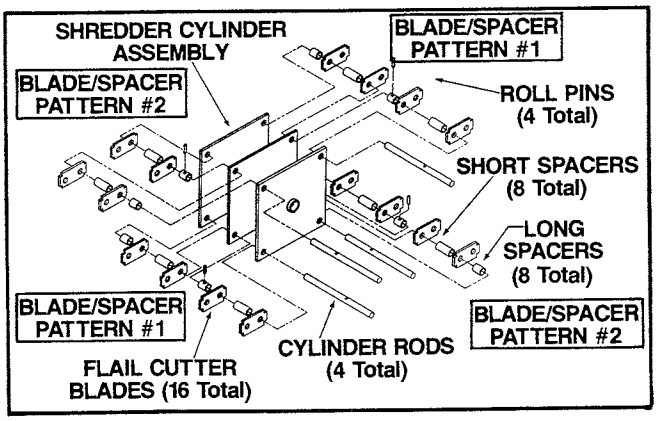
8. After all blades, spacers, and cylinder pins have been securely reassembled, reinstall the conduit plug and Shredder Discharge Screen, then reconnect the spark wire to the spark plug.



(Illustration 53) Pry out round plug with a screwdriver.



(Illustration 54) Align cylinder pin (holding worn blade) with plug hole.



(Illustration 55)

Chipper Blade Removal & Anvil Adjustment

Over time, the tempered steel chipper blade will dull with hard use. You'll know if the blade needs sharpening when wood chips aren't as consistent in size and shape as they used to be, or when the branches you feed into the chipper hopper take longer to process. Owners of the Chipper/Shredder Model will find removal of the chipper blade, for sharpening or replacement, to be a quick and easy job.

⚠ DANGER: ENGINE MUST BE OFF, ALL MOVING PARTS MUST HAVE COME TO A COMPLETE STOP, AND SPARK PLUG WIRE MUST BE DISCONNECTED BEFORE ANY SERVICE OR MAINTENANCE PROCEDURES ARE PERFORMED. SEVERE PERSONAL INJURY CAN OCCUR OTHERWISE.

Chipper Blade Removal

Tools Required — 7/16" wrench
5/32" hex key wrench

1. Use your 7/16" wrench to remove the whiz (lock) nut holding the chipper blade access door closed (Photo 56). Swing the door open, revealing the chipper flywheel. The blade is mounted on the flywheel. Turn the flywheel slowly — and carefully — by hand until the blade comes into view.

2. Three Allen screws hold the chipper blade to the flywheel. Remove all three with a 5/32" hex key wrench (Allen wrench) to free the blade.

3. Inspect the blade's cutting edge carefully. If dull or nicked, it should be sharpened at a 45° angle (see Illustration 57). Note — if you do not have the equipment needed to sharpen a tempered steel blade properly, see a professional sharpener in your local area. If the blade is cracked or damaged, please replace the blade right away.

4. Reinstall your newly sharpened blade with the three Allen screws. Tighten them very firmly.

5. Close the access door and secure it with the whiz nut. Tighten securely.

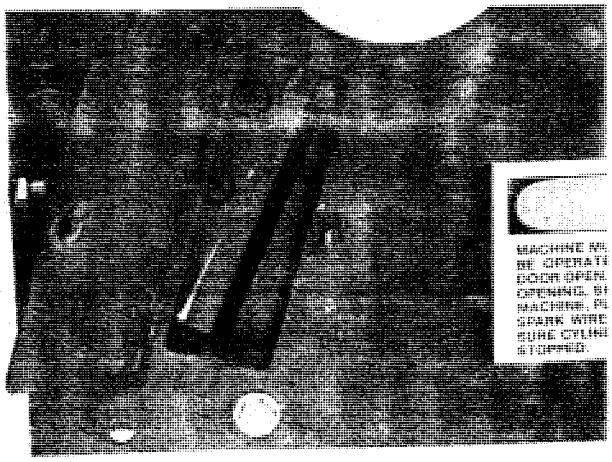
NOTE: After the chipper blade is sharpened, the anvil inside the chipper hopper may have to be adjusted so the distance from the blade edge to the anvil remains within 1/16" – 3/16". See anvil adjustment instructions below.

Anvil Adjustment

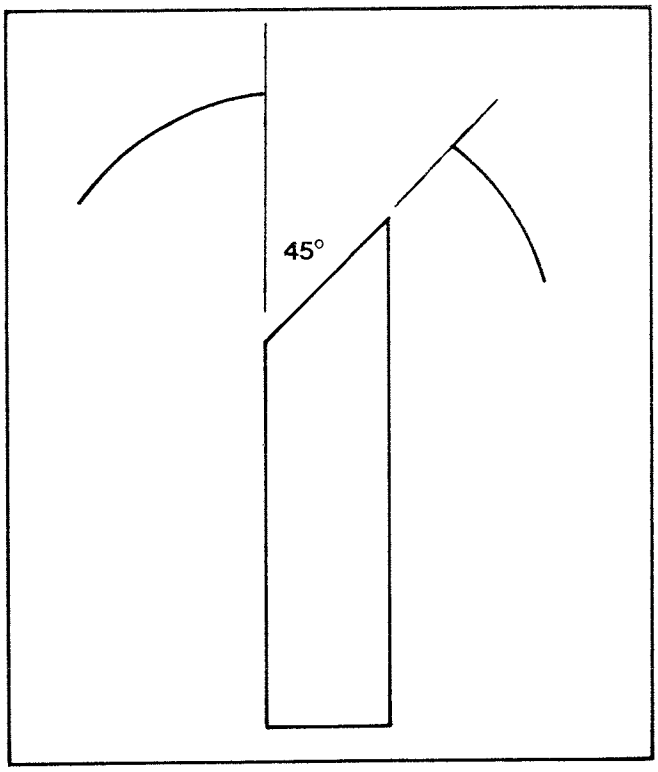
Tools Required — 7/16" wrench

The distance between the chipper blade edge and the anvil inside the hopper is important for good chipping. The distance should be checked after you sharpen the chipper blade, or it may be adjusted if coarser or finer wood chips are desired. To do this, proceed as follows:

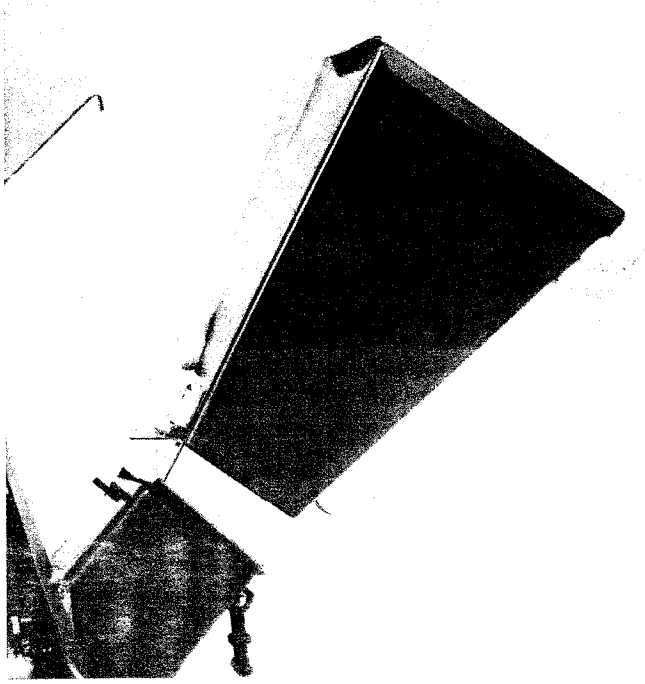
1. Remove the top section of the chipper hopper from the chipper base. Just remove the two whiz nuts near the hinge (use a 7/16" wrench) and take off the hopper top entirely. See Photo 58. Set hopper aside for now.



(Photo 56) Open chipper blade access door by removing whiz nut with a 7/16" wrench. Turn flywheel, by hand, until you see the chipper blade. Be very careful — the blade is extremely sharp!

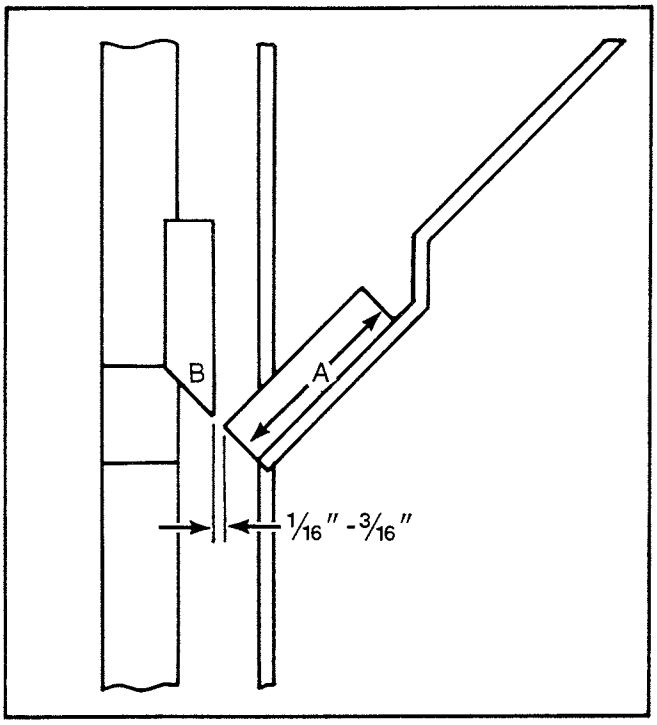


(Illustration 57) The chipper blade should be sharpened at a 45° angle.



(Photo 58) Remove top section of chipper hopper. Two whiz nuts secure it to the bottom section.

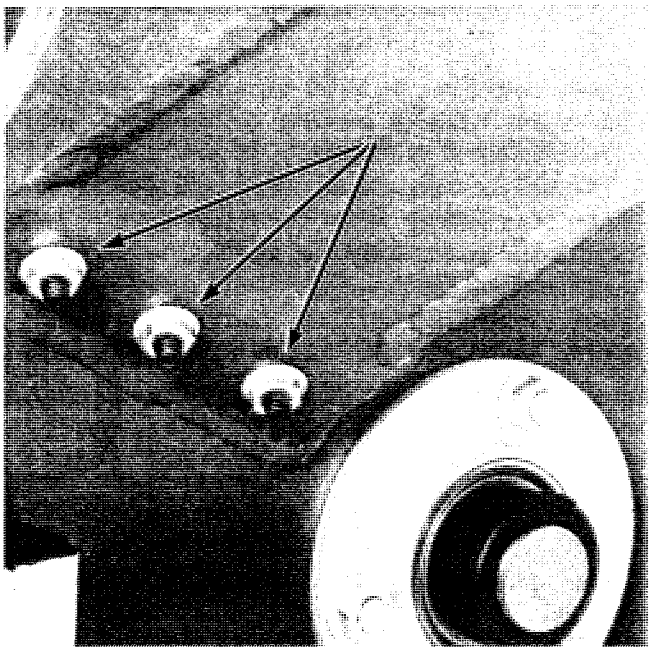
2. Look down into the bottom half of the hopper. You'll see the anvil at the bottom, all the way inside. It's a shiny, rectangular piece of tempered steel right next to the flywheel. Turn the flywheel by hand, slowly, until the chipper blade on the flywheel starts to pass by the anvil. Estimate the distance between the edge of the blade and the anvil. It should be between 1/16" – 3/16". The closer the anvil is to the blade, the finer the wood chips produced. The further away, the coarser the chips. However, when adjusting the distance, always use 1/16" as a minimum and 3/16" as a maximum. See Illustration 59.



(Illustration 59) Distance between anvil("A") and edge of chipper blade("B") must be between 1/16" – 3/16".

3. To move the anvil, use a 7/16" wrench to loosen the three external whiz nuts on the outside-bottom of the hopper. Just loosen the nuts — do not remove them or the screws to which they're attached. Hardware removal is necessary only if you wish to replace the anvil, but is not needed to adjust its position. See Photo 60.

4. You can now slide the anvil up or down to position it at precisely the distance you want it from the chipper blade. Hold the anvil in that position and retighten the three whiz nuts with your 7/16" wrench. Tighten very securely. Replace the top section of the hopper and then reconnect the spark plug wire and you're finished.



(Photo 60) Loosen the three nuts at the base of the hopper in order to move the anvil closer to or further away from the chipper blade.

SPECIFICATIONS

	SUPER TOMAHAWK CHIPPER/SHREDDER MODEL	TOMAHAWK SHREDDER MODEL
Capability:	1"-3" diam. materials in chipper; up to 1" diam. materials in shredder.	Up to ½" diam. materials in shredder.
Frame:	Heavy-gauge steel; double-wall steel shredding chamber.	Heavy-gauge steel; double-wall steel shredding chamber.
Shredder Flail Cutters (Blades)	Sixteen 3/16" thick, hardened steel blades (4 cutting edges on each)	Sixteen 3/16" thick hardened steel blades (4 cutting edges on each)
Chipper Blade:	Hardened tool steel (revolves @ 3400 RPM)	N/A
Chipper Flywheel:	14" diam. steel flywheel	N/A
Measurements:		
Length—	35" (hopper folded up) 43" (hopper down and latched)	30" (no hopper)
Width—	26"	26"
Height—	45½"	45½"
Tires:	10" x 4"	10" x 4"

ENGINES

Manufacturer & General Specs:	Tecumseh, Model H50, four-cycle single-cylinder, air-cooled. Horizontal crankshaft. Manual choke. Recoil start.	Briggs & Stratton, Model 190412 four-cycle single-cylinder, air-cooled. Horizontal crankshaft. Manual choke. Recoil start.
Horsepower:	5HP	8HP
Motor Oil Requirements:	Summer — SAE 30 (substitute: SAE 10W30). Winter — SAE 5W20 or SAE 5W30. Use Service Classification SF or SE.	Summer — SAE 30 (substitutes: SAE 10W30 or SAE 10W40). Winter — SAE 5W20 or SAE 5W30. Use Service Classification SF or SE.
Motor Oil Quantity:	19 ounces	39 ounces
Fuel Tank Capacity:	4 quarts	4 quarts
Fuel Recommendation:	Use Unleaded Regular automotive gasoline. Leaded Regular is an acceptable substitute.	Use Unleaded Regular automotive gasoline. If not available, Leaded Regular may be used.
Spark Plug:	Champion J-8 or its equivalent. Spark plug gap — .030". Canadian Owners use Champion RJ-17LM.	Champion RCJ-8 or its equivalent. Spark plug gap — .030".
Ignition System:	Maintenance-free solid state system (no points or condenser).	Maintenance-free Magnetron™ solid-state system (no points or condenser).

(See your engine manufacturer literature for further specifications and details)