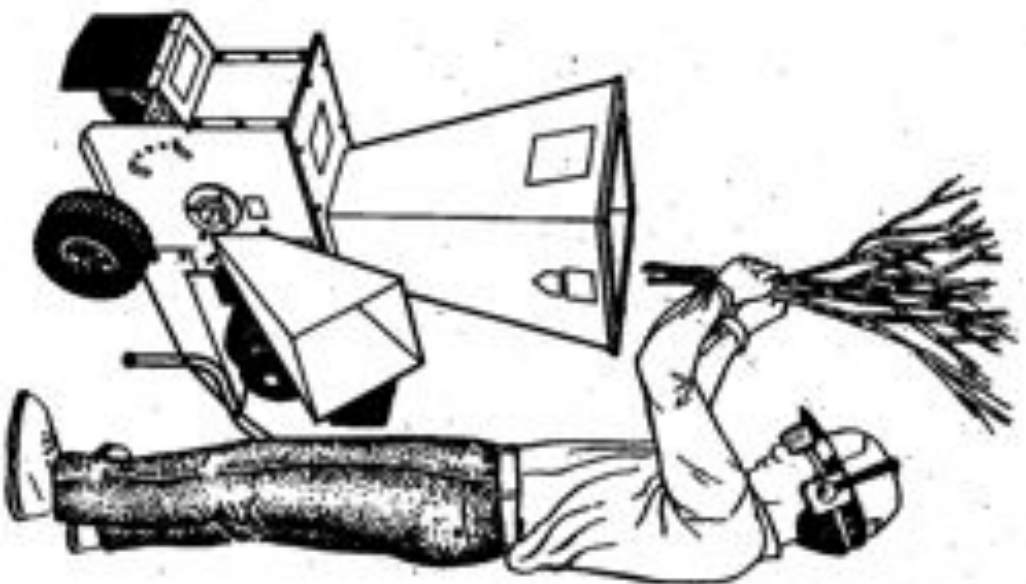
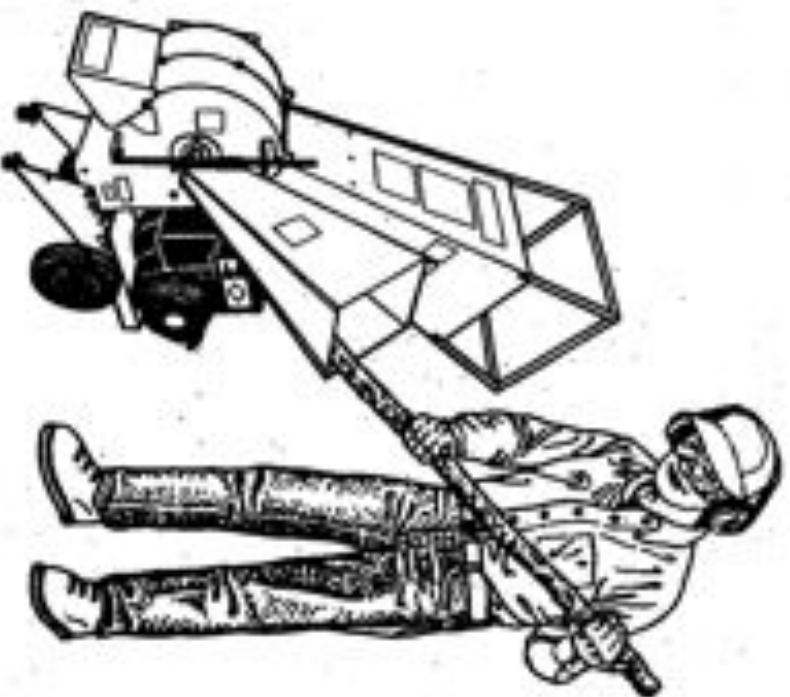
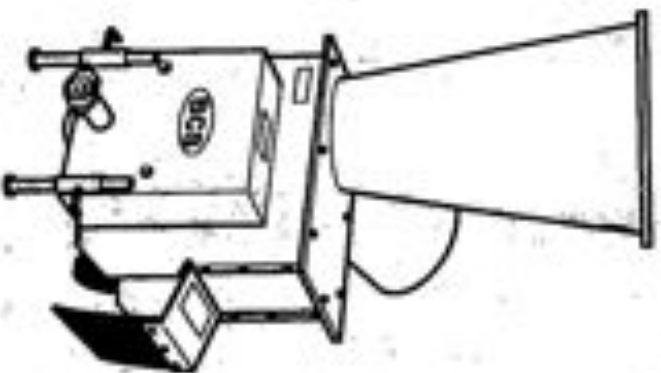


BCS Chipper/Shredder

Owners Manual



READ THIS OWNER'S MANUAL BEFORE ATTEMPTING TO ASSEMBLE AND OPERATE THE CHIPPER/SHREDDER.

GENERAL PRECAUTIONS AND INSTRUCTIONS FOR USE OF CHIPPER/SHREDDER

TRAINING

READ THIS MANUAL PLUS THE ENGINE MANUAL BEFORE ASSEMBLING AND OPERATING THIS BCS CHIPPER/SHREDDER.

This unit is designed for operation by properly instructed adults only. Make sure that any person operating this equipment has read these manuals.

DO NOT LET CHILDREN OPERATE THE CHIPPER/SHREDDER.

KEEP THE OPERATING AREAS CLEAR OF PEOPLE AND ANIMALS. BE CAREFUL THAT CHILDREN DO NOT COME NEAR.

Do not operate this equipment in enclosed areas. Engine exhaust contains carbon monoxide. Carbon

monoxide is an odorless, deadly poisonous gas.

Do not allow hands to enter the Shredder hopper or the Chipper feed chute when the engine is running or the Chipper/Shredder shut is rotating. When necessary to put hands and fingers into any opening of the unit, shut down engine, disconnect spark plug wire and wait until all movement stops. Check point slash on the shaft of model Bco 100 Chipper/Shredder to be sure there is no movement.

When storing unit or leaving it unattended, make the engine unstartable by disconnecting the spark plug wire from the spark plug.

PREPARATION

The following body protection should be worn during operation of the Chipper/Shredder:

1. Wear snug-fitting clothing that protects body surfaces, and allows freedom of movement without being baggy. Never wear ties, scarfs or jewelry that could be caught in the machine.
2. Wear hearing protection.
3. Wear eye protection goggles stamped "Z87" (for ANSI Standard Z87.1).
4. When working in strong sunlight, protect your body with clothing and apply a sun block to exposed areas of skin. Wear sunglasses under the safety goggles.

Take the following precautions for the safe storage and handling of gasoline fuel:

1. Keep fuel supplies in approved type, properly labeled fuel containers.
2. Do not store fuels or fueled units in closed (unventilated) areas, or in garages or shops connected to human living quarters. Do not store fuel or fueled units where there are flames or sources of sparks such as electrical appliances and switches.

3. Obey all local regulations for the storage and handling of fuel.

4. Do not smoke when fueling, or fuel where flames could be ignited by fire or sparks.

5. Do all fueling outdoors over non-flammable surfaces. If fuel is spilled on unit, wipe the unit dry and properly dispose of the wiping rag. **ALWAYS MOVE THE UNIT AT LEAST 10 FEET (3 meters) from the fueling spot and fuel supplies before starting the engine.**

6. Always remove the engine fuel cap very slowly to equalize tank pressure and avoid spurling of fuel. Keep your face and eyes away from the tank while loosening the cap.

7. Do not fuel a running or hot engine. Do not loosen the fuel cap until the engine has stopped. Then wait several minutes for the engine to cool before pouring fuel.

Operate the Chipper/Shredder only on a level surface. Do not operate the unit on paved or gravel surfaces.

Before starting, check that all screws, nuts, bolts and other fasteners are properly secured.

OPERATION

All chute safety covers and hand stops, detectors and feed chutes must be in proper position. Do not operate if any safety devices or fastening parts are missing from the unit.

Before starting make sure that the grinding chamber contains no foreign objects that could interfere with operation or eject from the intake openings at high speed.

Operate only when there is good visibility. Do not operate at dusk or at night.

Do not let hands or any other part of your body, or your clothing, enter either of the Chipper/Shredder intake openings, or go near the discharge opening unless the engine spark plug wire is disconnected and Chipper/Shredder shaft is not rotating.

The zone of operation is anywhere except on the discharge side or in front of the Chipper chute. Do not stand directly in front of the Chipper feed chute. Do not peer down into the Shredder hopper. Materials can be thrown back out of the intakes. Do not go on the discharge side of the unit during operation.

Allow engine to warm up. Then operate at maximum

throttle speed setting. Never change the engine governor setting or overspeed the engine to gain power.

Side branches should be lopped off to avoid clogging the hopper or chute.

DISCONNECT THE SPARK PLUG WIRE FROM THE SPARK PLUG TO ENSURE AGAINST ACCIDENTAL STARTING DURING ANY OF THE FOLLOWING OPERATIONS:

1. Repairs or adjustments to unit or engine.
 2. Before transport or storage, or whenever you are going to leave the unit unattended.
 3. Before removing a foreign object from the unit, or before starting cleaning, inspection or maintenance work.
 4. If the machine starts to vibrate or suddenly run erratically. A poorly running unit should be inspected by an authorized BCS servicing dealer before further use.
- Do not touch the engine when it is running or when surfaces are still hot from operation.

MAINTENANCE AND STORAGE

Clean leaves, debris and fuel off the unit to avoid the possibility of fire.

Keep the unit in good working condition. Clean the unit at regular intervals, and check each time for loose or missing parts.

Do all items of maintenance explained in this Chipper/Shredder Owners Manual. Do not attempt disassembly or repairs not included in instructions from BCS or the engine manufacturer. Some adjustments and internal servicing of both engine and the BCS Chipper/Shredder should be done by BCS trained service personnel at an authorized BCS servicing dealer or distributor.

Shut down the engine immediately if a foreign object gets into the grinding chamber, or the unit suddenly makes loud noises or vibrates excessively.

When the Chipper/Shredder is stopped for servicing, inspection, storage or to change an accessory, make sure the spark plug wire is disconnected from the spark plug. Allow the machine to cool before making any inspections, adjustments, etc.

Allow the unit to cool before putting it away. Keep it out of the reach of children, and where sparks cannot ignite the gasoline burner.

Do not store the unit with fuel in the system. Disconnect the fuel line at the carburetor inlet and drain the fuel into a fuel container. Then reconnect the fuel line. Start and run the engine until it stops from lack of fuel. Dispose of the drained gasoline safely.

Store the cleaned and drained Chipper/Shredder in a well-ventilated place, protected from dampness and the weather.

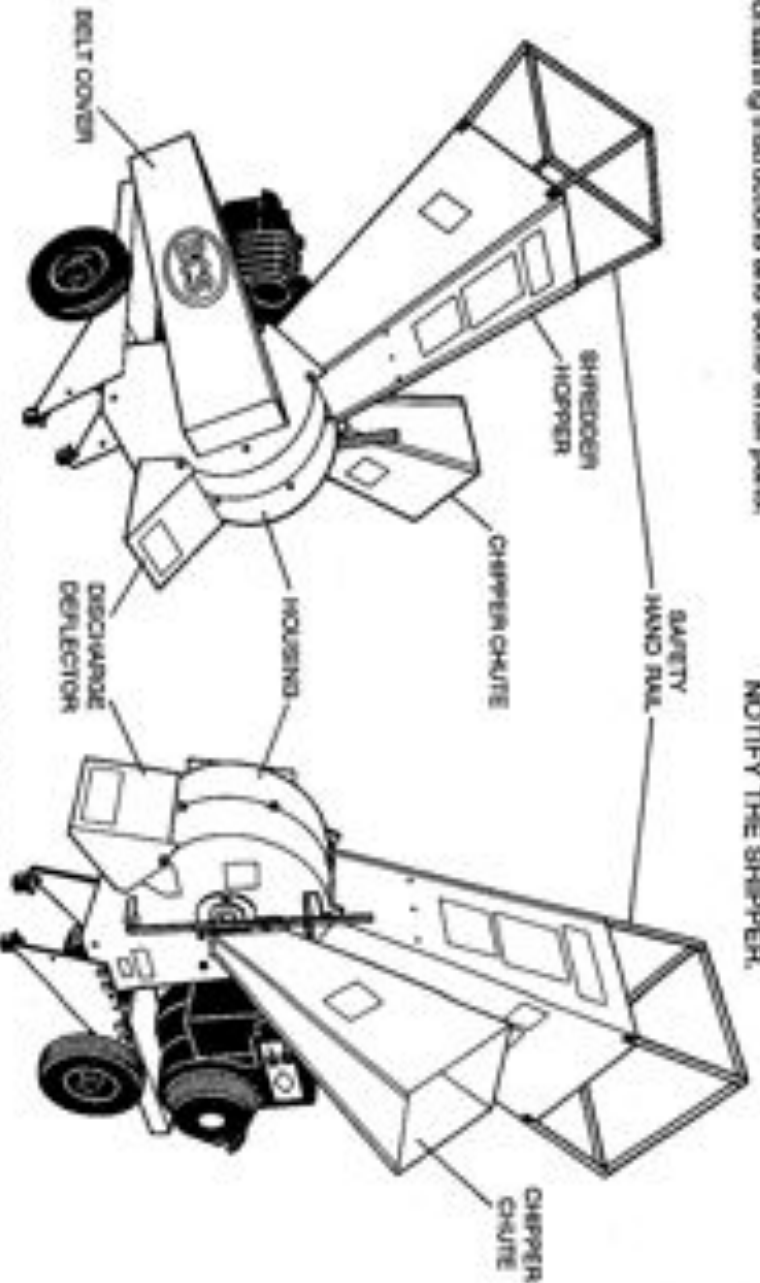
UNPACKING THE Bio 80

1. Open the top of the carton, and lift out the first piece you see. This is the hand shield that goes onto the Shredder hopper at the top of the unit.
2. Remove the bubble packing and lift out the large Shredder hopper. Remove the Chipper discharge deflector that is inside the hopper.
3. Reach into the carton and pull out the bag containing instructions and some small parts.

4. Sit the corners of the carton on the engine side (the side away from the belt cover). Lay the side of the carton down flat. Remove the two wheels, then slide the unit free of the carton.

IMPORTANT

EXAMINE ALL PARTS OF THE UNIT FOR SHIPPING DAMAGE. IF THERE IS DAMAGE, NOTIFY THE SHIPPER.



ASSEMBLING THE Bio 80

1. Mount the two wheels on the sides. Insert the pins (from bag) and turn down their crimps over the wheel hubs.
2. With a #17 metric wrench, remove hex lock nuts and flat washers from upper mounting. Bolts on the Chipper/Shredder housing. Pull out the long bolts.
3. Position the Shredder hopper onto the housing. The side with the model name and instruction decals goes toward the curved end of the unit housing.
4. Shove the long bolts back through the housing and the hopper. Secure with the flat washers and nuts that were removed in step 2.
5. With a #10 wrench, install the safety hand rail to the top of the hopper with four M8 x 16mm bolts and hex lock nuts.
6. With a #13 wrench, remove the two hex lock nuts

and flat washers from the mounting studs, and mount the Chipper intake chute to the housing with these fasteners.

7. The position of the discharge deflector on the Chipper/Shredder housing must be adjusted before first use. Loosen the hex lock nuts on each side with a #13 wrench. Raise and lock the deflector in a position where discharge can occur only below the deflector.

NOTE

Position of deflector may be adjusted to direct the discharge as desired. But do not adjust so low that unit discharges above the deflector.

8. With a #13 wrench, use flat washers and hex-locks to secure the two rubber feet to the frame.

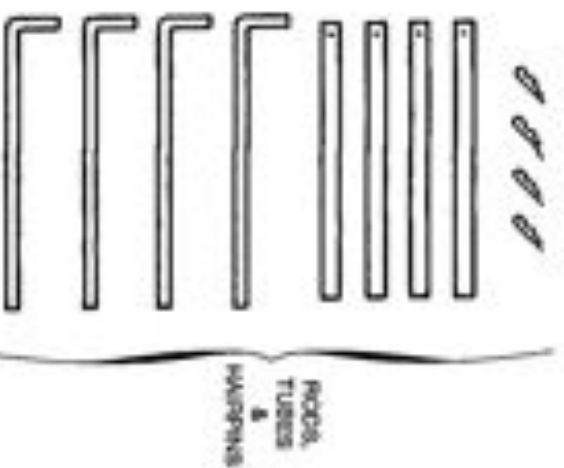
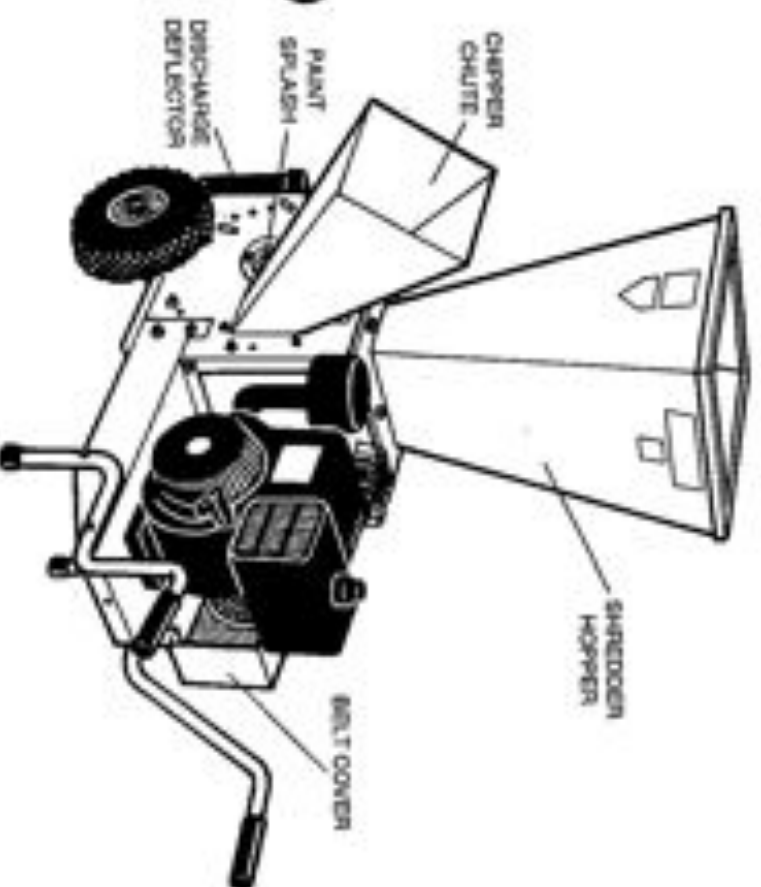
UNPACKING THE Bio 100

1. Cut the strapping and lift the top and sides of the box off the wooden sled base.
2. Remove the wheels.
3. Remove and strip the Shredder hopper of its packing material. Take two handlebars, a bag of parts, an instructions package and the wheel axle from the hopper.
4. Remove the package containing three rods and handles and five tubes. These parts are for optional

- use. They replace the curved discharge screen now on the unit.
5. Free the unit from the wooden sleds by pulling out the two nails.

IMPORTANT

BEFORE ASSEMBLING THE UNIT, CHECK THE CONTENTS. NOTIFY THE SHIPPER OR DEALER IF THERE ARE ANY MISSING OR DAMAGED PARTS.



ASSEMBLING THE Bio 100

1. Block up front of unit off the wooden sleds. Slide the sled under the base and hold in position with the studs of axle protruding through the four holes in the base. Start a flat washer and M8 hex-lock nut onto each stud. Tighten all four nuts with a #13 wrench.
2. Slide the wheels partway onto the axles. Then remove the blocking. Pick up the engine end and walk the unit clear of the sled base. Using large handles (from parts bag) on both sides of each wheel, pin the wheels in position.
3. Block up the engine end for attachment of the

- handle bars at threaded holes on each side of the base. With a #13 wrench, install M8 flat washers and hex-lock nuts at the four holes. Tap the rubber grips onto the handlebar ends.
4. Mount the Shredder hopper onto the unit. Slip a flat washer onto each of eight M8 x 20mm bolts. Drop the bolts through the eight holes in the hopper. Secure with a flat washer and M8 hex-lock nut on each bolt.
5. Mount the Chipper chute on the three studs surrounding the intake, on side of unit, and secure with flat washers and M8 hex-lock nuts.

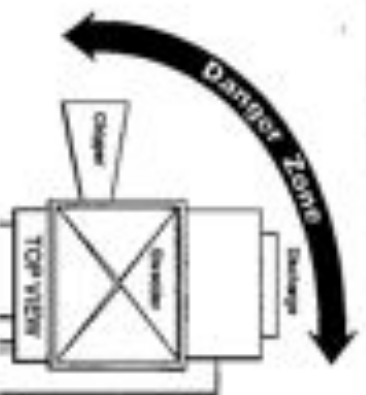
CHIPPER/SHREDDER OPERATION

SETTING UP FOR OPERATION

▲ DANGER

Material can be thrown out from both feed and discharge openings.

1. Wear safety goggles and a hat.
2. Do not look into shredder hopper or place your head over it when the unit is running.
3. Do not go on the discharge side of the unit or directly in front of the Chipper chute.



1. The unit rests on rubber tires and bumpers, but should be further cushioned by setting it only on firm, level ground. Do not place it on paved or gravel surfaces. The unit may be placed on a blanket or tarp to catch the processed material.

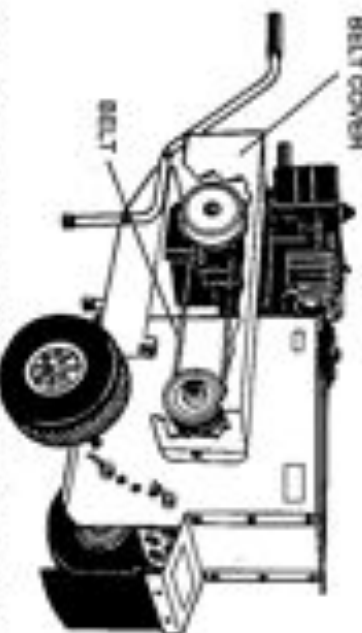
CHIPPING WOOD

▲ DANGER

DO NOT PUT HANDS INTO THE CHUTE WHEN THE UNIT IS RUNNING.



BELT COVER



2. Inspect the hopper before starting the engine. On the model Bio 80, pull the starter rope very slowly to see if the engine and Chipper/Shredder turn over freely. On the model Bio 100, reach under the belt cover, grasp and pull belt to the left and right to see if the Chipper/Shredder shaft is free to turn.

▲ WARNING

Inspect what you plan to feed into the hopper. Remove glass, metal, brick, stones, long or thick branches, or anything else that could damage the machine or fly out at high speed.

3. ALWAYS OPERATE THE CHIPPER/SHREDDER AT FULL THROTTLE.
4. Chipping and shredding may be done simultaneously.

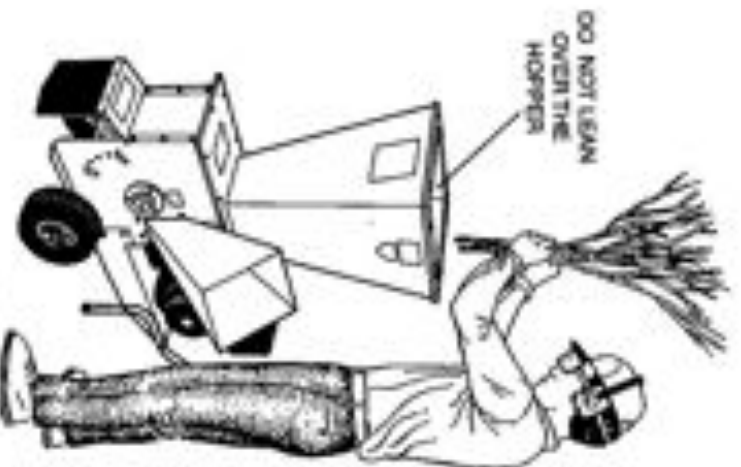
1. Wood in diameters up to 2-1/2" for the Bio 80 and 3-3/4" for the Bio 100 can be fed through the Chipper chute.
2. Put the thickest end of the branch into the chute. Side branches must be either bent to fit or lopped off. Find just the right feed pressure to apply not too much! Do not let the chipper overfeed itself. Pull back when engine bogs down and wait for speed to resume before feeding wood. On the Bio 100 unit, the engine must maintain high speed under load to keep the centrifugal clutch solidly engaged. Proper feed pressure and engine speed are important for the life of both models.

▲ WARNING

Do not go on the discharge side of the unit or stand directly in front of the intake chute when feeding the Chipper. Keep to one side of the chute.

3. NEITHER PULL OUT NOR PUSH IN the short end pieces with your hands. Use the next log or branch to feed the short end through the Chipper each

SHREDDING



▲ DANGER
Shredder grapps and pulls material down into hopper with surprising speed. Do not wear rings, bracelets, jewelry, watches or any other items that could be caught in the material and draw your hands into the Shredder. Hold the material very lightly. Do not use a hard throwing or spearing force. Gloves, when worn for shredding, should be large enough to slip off your hands if caught in the material.

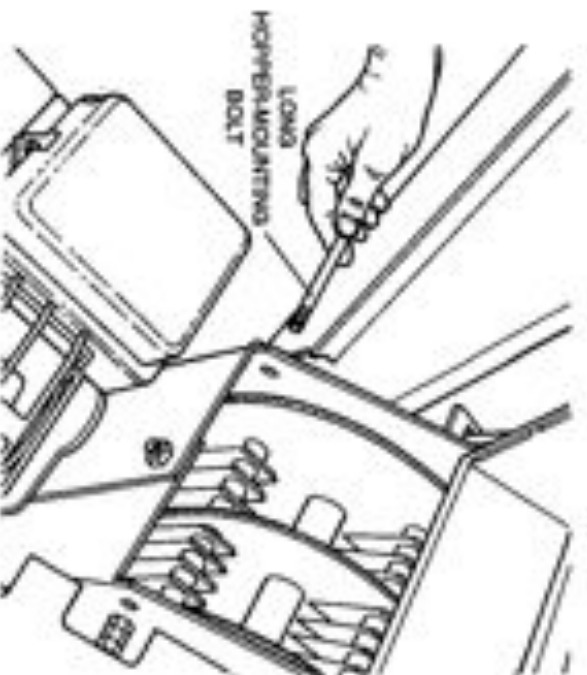
1. Be very careful what you put into the hopper. The Shredder cannot handle cloth, string, plastics, glass, rubber, rocks or paving, brick, large wood chunks, metal, thick branches and long vines. Any material more than two centimeters (about 3/4") thick can jam the Shredder.
2. Soggy soil, green garden wastes and wet grass clippings may require mixing in with some dry wood chips or leaves to avoid clogging the Shredder.
3. Preparation of the material may help in feeding it through the hopper. Cutting side branches off stems, for example, helps the mass of material slide down the hopper walls. Adding too much material at a time can clog the works. Throwing

long, short ends sometimes feed themselves through the chipper, but very often are thrown out.

thick weeds or branches into the hopper with force overloads the falls (rotor blades) and jams the Shredder. Rocks and tubes can replace the curved "swiss cheese" screen on model Bio 100 for improved shredding of wet materials or finer chips (see "Changing Screen on Bio 100").

▲ WARNING
Always shut down the engine and wait until all movement stops before clearing the hopper or discharge screen, and before removing the hopper to remove a blockage.

4. To clear Bio 80 discharge: Shut down the unit and disconnect the spark plug wire. Fire up and move the screen latch lever forward to open the discharge screen. Clear out material with wooden tool handle or brush. Do not reach inside with fingers because the falls (rotor blades) are very sharp. Pull the starter rope to feel whether the shafts turn freely. If so, latch screen with the lever and connect the wire to the spark plug.

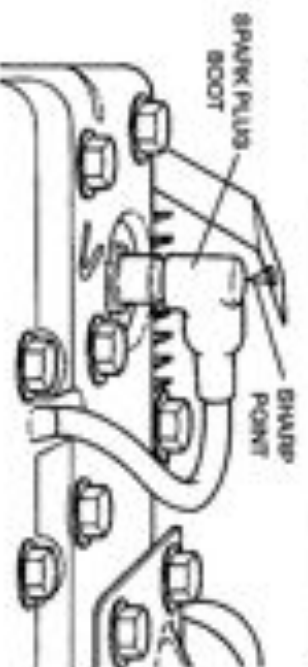


5. To clear Bio 80 blockage: Shut down the unit and disconnect the spark plug wire. Remove the nut and flat washer stud on the right side of the Chipper chute. Loosen the other stud nut. Remove the lock nut and flat washer from the long hopper-mounting bolt nearest the engine. Pivot the hopper forward for access to the grinding chamber. Release lever

CHANGING SCREEN ON BIO 100

▲WARNING
On the centrifugal clutch-equipped Bio 100 the Chipper/Shredder shaft may continue to rotate silently after engine shut-down. After shutting down engine, check the paint slash on the end of the Chipper/Shredder shaft. Be sure the shaft has stopped rotating before you work on the unit.

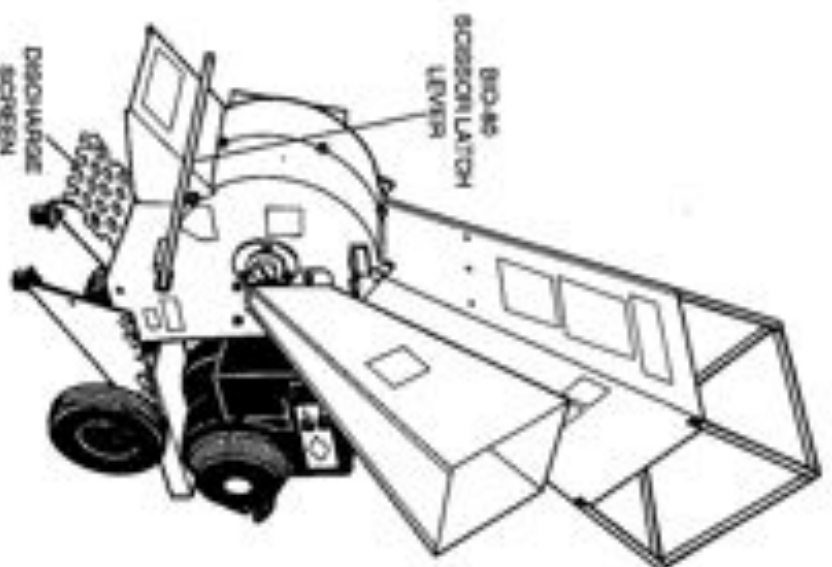
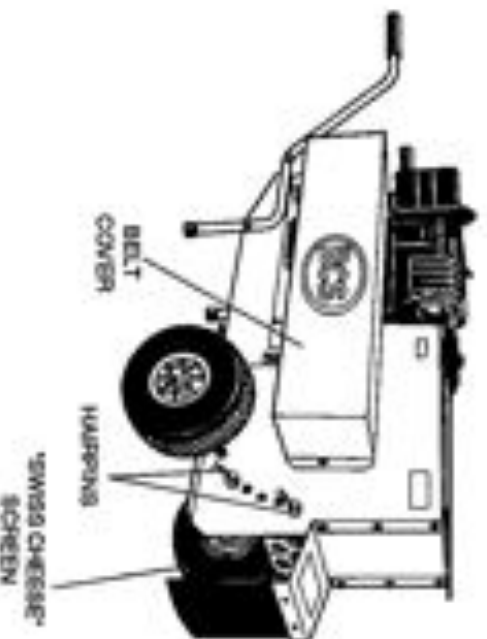
▲WARNING
The engine-grounding lever over the spark plug boot on the Bio 100 has a sharp point to penetrate the boot and ground the ignition. Be careful of this point when disconnecting the spark plug wire.



IMPORTANT

THIS DISASSEMBLY ROUTINE SHOULD BE FOLLOWED TO REMOVE THE SCREEN EITHER FOR CLEARING OUT DEBRIS OR REPLACEMENT WITH RODS AND TUBES.

1. Shut off engine, disconnect spark plug wire and wait for unit rotation to stop before doing this work.
2. Remove the belt cover, held in two places by M8 bolts, flat washers and hex nuts.



to open the discharge screen (see previous paragraph). Wear heavy work gloves while clearing the blockage. Check that the engine and Chipper shafts turn freely before you reassemble hopper and chute to the unit and connect the spark plug wire.

IMPORTANT

ANY TIME THE CHIPPER/SHREDDER AND ENGINE SEEM TO BOG DOWN, SHUT DOWN THE UNIT, AND CLEAR THE GRINDING CHAMBER, PER ABOVE INSTRUCTIONS. OR SEE "TROUBLESHOOTING" ON PAGE 9 FOR POSSIBLE CAUSES AND REMEDIES.

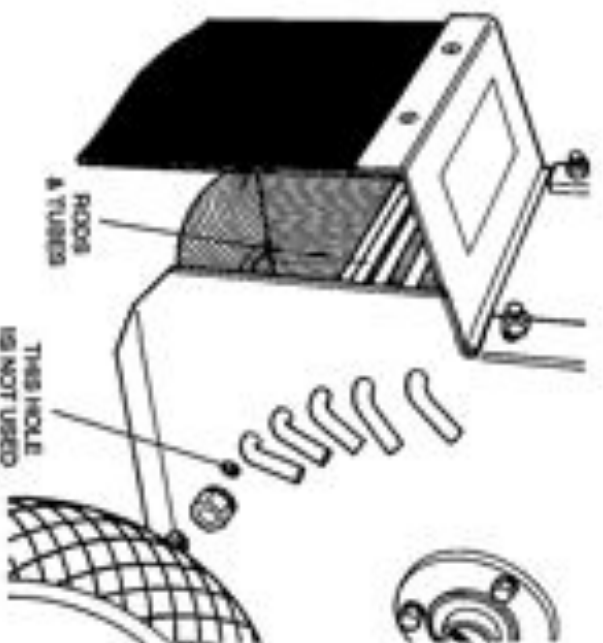
6. To clear Bio 100 discharge screen or internal blockage: These processes require temporary removal of the belt cover and the discharge screen. Removal of the hopper may be required to remove internal blockage. Removal of objects between the Chipper hopper and the rotating members, requires removing the hopper assembly, held by eight sets of M8 x 20 bolts, lock washers and hex nuts.

- Lock all the series of six holes on the chute side of the unit. Two of these holes have long rods running through the curved discharge screen to the back of the unit. Remove the halpins and slide out the rods. The curved screen will be replaced by five sets of rods and tubes in the next step.

- The bottom hole of the series of six will not be used. Start one rod into the top position hole. Slip a tube onto the rod and push the rod through the hole on the rear side (see figure at right). Lock in place with a halpin. Install the four other rods and tubes in the same manner, leaving the bottom hole empty.

⚠ DANGER

Do not use this Chipper/Shredder with the discharge left unscreened. Discharge must be covered either with the rods and tubes or the standard screen.



MAINTENANCE, ADJUSTMENT AND TROUBLESHOOTING

⚠ WARNING

Shut off engine. Wait for the unit to stop. Then remove the spark plug wire from the spark plug before working on the unit. Do not bring fuel or a fueled engine near flame or sparks.

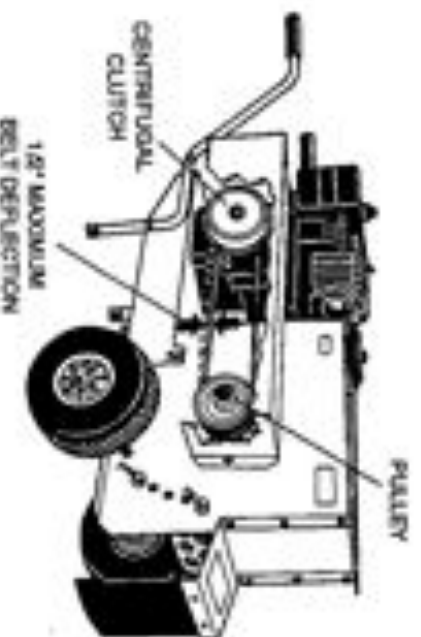
- Wipe exterior of the unit clean after each use. Check for loose or missing parts.
- Clean out the hopper and the discharge screen before next use.
- Do not remove the spark plug unless there is trouble starting the engine. Try starting with a new, properly gapped plug.
- If a new spark plug does no good, drain fuel tank and safely dispose of fuel that may not be fresh. Fill tank with fresh gasoline and try starting engine.

- If a new spark plug and fresh gasoline does not start the engine, consult the operator's manual supplied by the engine manufacturer. Various detailed service publications for your engine are available from the engine manufacturer.

- If Chipper/Shredder output (volume) drops off while engine runs at working speed, check tension of the drive belt. Belt should be taught enough not to slip, but not so tight as to fray. To increase belt tension: loosen the four engine mounting bolts; pull engine back on the mount to increase tension and tighten the bolts.

- On the Bio 100 only: If tightening the belt tension does not restore proper Chipper/Shredder volume, the centrifugal clutch may be worn and slipping. Have this checked by your BCS servicing dealer or authorized distributor can disassemble the unit and sharpen or replace the knives.

- Do not keep fuel in the unit for a longer than one month. Before storing the unit, disconnect the fuel line at the carburetor inlet and drain the fuel into an approved fuel container. Reconnect the fuel line and run engine until it stops from lack of fuel. Dispose of the gasoline safely. Store unit in a well-ventilated place, protected from dampness and the weather.



USE AND CARE OF CHIPPER/SHREDDER

Be sure to read the BCS Chipper/Shredder Owner's Manual which comes with the attachment and also obey the safety messages posted on the unit and the Chipper/Shredder attachment.

This unit reduces thick branches to chips, and pulverizes lawn and garden waste for mulching or adding to your compost pile. Careless or improper use can be very dangerous.

Wear safety goggles of the type specified by ANSI Safety Standard Z87. Also wear a hat.

Work gloves may be worn when feeding the Chipper, but not when feeding the Shredder, because they can pull your hands into the hopper if snagged by the material.

Remove jewelry or clothing articles which could be drawn into the machine.

Set up on firm ground, but not on gravel, concrete, brick or other surfaces which provide no cushion.

▲ DANGER

Do not start engine when there is material in the Shredder. Shut off engine and disconnect the spark plug wire before cleaning a jammed hopper, changing screens or performing any maintenance or service.



After latching the clutch and stop switch and starting the engine, leave the unit in neutral.

Disengage the clutch lever while pulling down the stop switch lever (See drawing). Engage the PTO when ready to operate.

Be careful what you put into the Shredder hopper. The machine can shred most organic materials. However, objects of certain shape, size, or texture may cause trouble even if organic.

The Shredder cannot handle thick branches or large chunks of wood. Neither Shredder nor Chipper can handle cloth, strings, glass, rubber, metal, rocks or paving, or long vines.



DO NOT
GO ON THIS
DISCHARGE
SIDE OF
MACHINE



DO NOT
LEAN OVER
THE HOPPER

Soggy soil, green garden wastes and wet grass clippings can be processed through the Shredder by raking dry leaves and wood chips with the wet stuff.

For wet processing, the standard curved screen with the "Swiss cheese" holes should be replaced with the set of five rods and tubes supplied with the attachment.

▲ DANGER

Do not use the Chipper/Shredder with an unsecured discharge. The discharge must be covered either with the rods and tubes or the standard screen.

IMPORTANT

Always disengage the PTO lever before stopping the engine. If the PTO remains in engagement during engine shutdown, the rotating Chipper/Shredder shaft may motorize and restart the engine.

After shutdown, always check the paint splash across the drive shaft (near Chipper chute) to be sure all movement has stopped.

CHIPPER/SHREDDER MAINTENANCE

1. Clean out the hopper before each use.
2. Clean the exterior at regular intervals, and apply a light oil or wax to prevent rust.
3. Shaft bearings are the sealed, self-lubricating type requiring no further lubrication.
4. Check all fasteners frequently and tighten loose parts.

Replace missing or worn parts. See the illustrated parts list in your Chipper/Shredder owner's manual for parts information.

WARRANTY INFORMATION

Limited Warranty

PERIOD OF WARRANTY COVERAGE

Personal, Family, or Household

The BCS No-Time-Limit Warranty is available on units sold from Sept. 1992 and beyond to the original owner. The BCS No-Time-Limit Warranty applies to all transmission components. This will include all components located inside the transmission housing excluding the clutch assembly and PTO coupling.

BCS Chipper/Shredders and all remaining parts on BCS tractors and attachments are warranted for a period of three (3) years from the date of purchase.

All engines (Acme, Honda, Kohler, Briggs & Stratton, and Lombardini) are covered by a separate warranty issued by the individual engine manufacturers. Please refer to the engine warranty for details.

Commercial, Professional, and Rental Use

BCS tractors and attachments are warranted for a period of one (1) year from the date of purchase.

All engines (Acme, Honda, Kohler, Briggs & Stratton and Lombardini) are covered by a separate warranty issued by the individual engine manufacturers. Please refer to the engine warranty for details.

WARRANTY SERVICE

For warranty service, return the defective BCS product together with proof of date of purchase and the serial number of your BCS product to an authorized BCS servicing dealer or BCS factory recommended service station. Transportation of your BCS product to and from the place where warranty service is performed shall be at your expense and risk.

See the yellow pages or call (800) 543-1040 for the name and address of the BCS servicing dealer or service station near you. You may also obtain warranty information by writing:

BCS America LLC,
8111 NE Columbia Blvd.
Portland, OR, 97218

WARRANTY COVERAGE, CONDITIONS, EXCLUSIONS, AND LIMITATIONS

BCS agrees to cover the cost of parts and a specified labor for any repair from a failure that was caused in the judgment of BCS to be a defect in materials or workmanship.

This warranty is given to the first retail purchaser (other than for purposes of resale) only and is not transferable. This warranty does not cover damage resulting from other than defects in material or workmanship, or damage caused by unreasonable use including the failure to provide reasonable and necessary maintenance as prescribed in your BCS owner's manual.

This warranty does not cover tune-ups or replacement on non-defective parts that may wear out with reasonable use within the warranty period which may require replacement in connection with normal maintenance, such as, by way of example, tiller tires, lawn mower blades, clutches, and control cables.

In addition, this warranty does not cover repairs performed due to neglect, abuse or use of the equipment other than the application it is designed for.

This warranty is void if the serial number of your BCS machine is removed or defaced or if service for defects covered under this warranty is performed by other than an Authorized BCS Servicing Dealer or BCS Factory Recommended Service Station.

This warranty applies only to BCS machines sold within the United States of America and Canada.

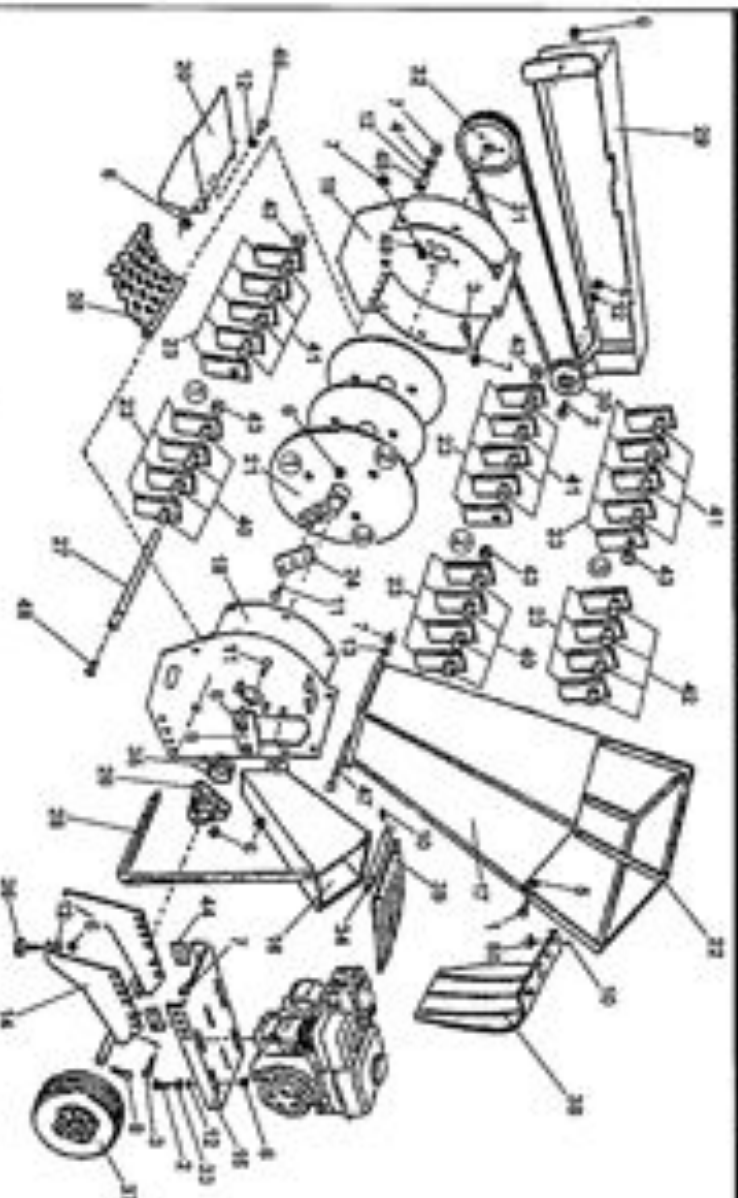
THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES. ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURCHASE, MERCHANTABILITY, OR OTHERWISE, APPLICABLE TO THIS PRODUCT, SHALL BE LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY. BCS SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON LOST GOODWILL, LOST PROFITS, WORK STOPPAGE IMPAIRMENT OF OTHER GOODS OR OTHERWISE.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG ANY IMPLIED WARRANTY LASTS SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

This warranty supersedes any other warranty on your BCS machine, including any warranty contained in your owner's manual.

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

This warranty is given by BCS America LLC, 8111 NE Columbia Blvd, Portland, OR 97218
Phone: (800) 543-1040



ID	PART NO	QTY	DESCRIPTION	ID	PART NO	QTY	DESCRIPTION
1	311.12080		SCREW/MIX16	26	581.58212		SUPPORTS
2	311.12154		SCREW/MIX10	27	581.58213		ROD
3	311.12218		SCREW/MIX025	28	581.58214		SCREEN
4	312.11900		NUT M10	29	581.58215		CRANKCASE
5	312.41080		NUT, SELF LOCKING M8	30	581.58216		PULLEY
6	312.41080		NUT, SELF LOCKING M8	31	581.58217		BELT A49
7	312.41100		NUT, SELF LOCKING M10	32	581.58218		PULLEY
8	580.02082		PIN	33	581.58219		PLATE
9	581.27424		STATIONARY BLADE	34	581.58220		ANGLE BAR S-9M
10	581.27422		RIVET 4.8X18	35	581.58221		
11	581.27433		COUNTER BUNK BOL.T, M8X35	36	581.58222		RUBBER FOOT
12	581.27484		WASHER	37	581.58223		WHEELS
13	581.27491		WASHER	38	581.58224		FLAP
14	581.58209		FRAME	39	581.58225		FLAP
15	581.58231		ENGINE SUPPORT	40	581.58226		SPACER
16	581.58232		CHIPPER CHUTE	41	581.58227		SPACER
17	581.58233		HOPPER	42	581.58228		SPACER
18	581.58234		RIGHT SIDE WALL	43	581.58229		SPACER
19	581.58235		LEFT SIDE WALL	44	581.58230		SPACER
20	581.58236		FLAP	45	581.58232		SPACER
21	581.58237		FLYWHEEL	46	581.58233		SCREW/MIX20
22	581.58238		PROTECTION	47	581.58234		SCREW/MIX030
23	581.58239		KNIVES	48	581.58235		SCREW/MIX15
24	581.58210		BLADE	49	581.58236		SCREW/MIX16
25	581.58211		SCREEN LEVER	50	581.58237		FLATWASHER

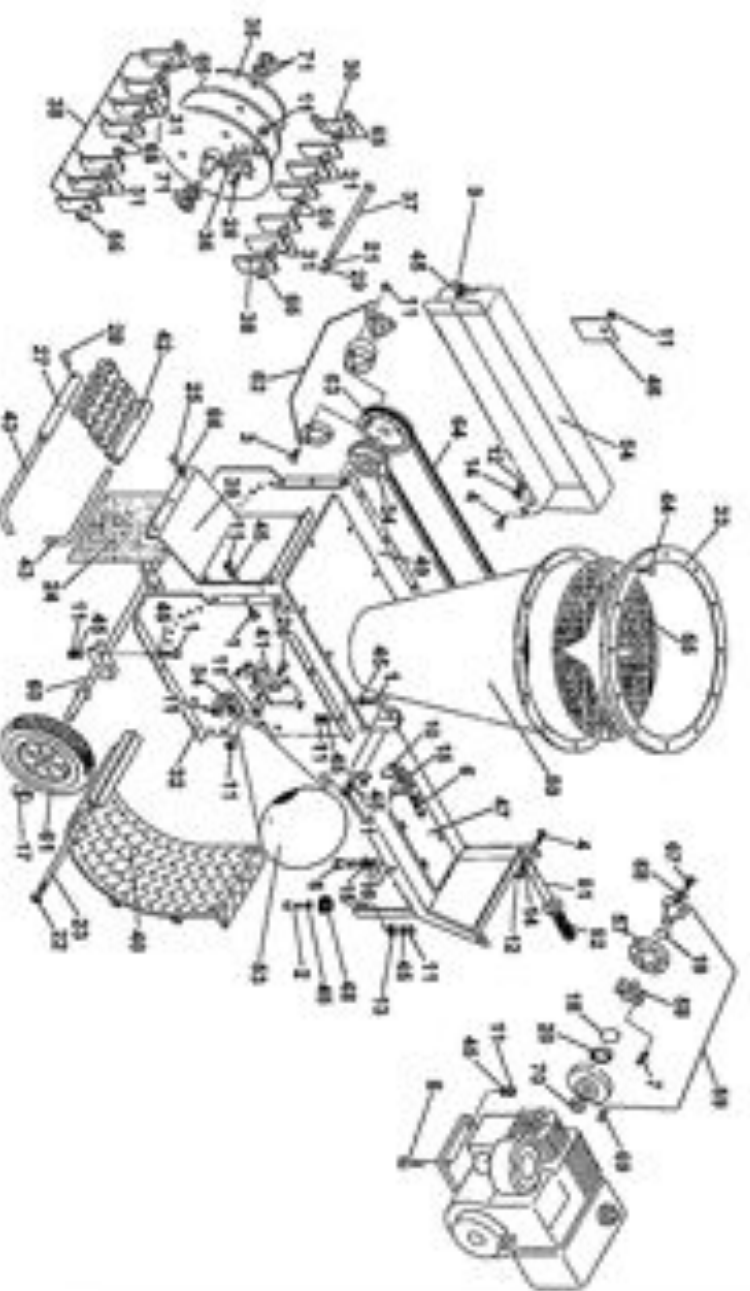
* THESE PARTS ARE INTERCHANGEABLE WITH THE GENERATION I UNITS

Engine Driven
Chipper Shredder

Generation I - 8HP
Bio 100 Round Hopper

Serial Number Range

03.00



ID	PART NO	QTY	DESCRIPTION	ID	PART NO	QTY	DESCRIPTION
1	311.13150		SCREW, WOOD	36	581.27460		BLADE **
2	311.13153		SCREW, WOOD	37	581.27461		SHAFT HAMBUR-WEDGAP POND **
3	311.13157		SCREW, WOOD	38	581.27461		KNIVES **
4	311.13211		SCREW, WOOD	39	581.27470		DEFLECTOR, DISCHARGE **
5	311.13286		SCREW, WOOD	40	581.27471		PANEL, BOTTOM **
6	311.13295		SCREW, WOOD	41	581.27474		BLADE, STATIONARY **
7	311.50360		SCREW, WOOD	42	581.27475		SCREWS **
8	311.50363		SCREW, WOOD	43	581.27476		ROD **
9	312.00301		W/ NUT	44	581.27464		SCREW, 1/8" X 1/8"
10	312.11720		NUT, 1/2"	45	581.27464		WASHER
11	312.47580		NUT, SELF LOCKING, 1/8"	46	581.27466		FLATE
12	312.41769		NUT, SELF LOCKING	47	581.58201R		ENGINE PLATE
13	314.11590		WASHER, FLAT, 1/8" X 1/4"	48	581.58202R		MISERENFOOT
14	314.11592		WASHER	49	581.58201		LEFT SIDE WALL
15	314.11520		WASHER, FLAT, 1/12"	50	581.58202		HOPPER
16	314.23120		WASHER, LOCK, 1/12"	51	581.58203R		HANDLE STEU
17	342.40661		CLIP, PIN	52	581.58203R		HANDLE PIN
18	361.11582		CIRCLIP, LARGE, CLUTCH	53	581.58207		OVERNIGHT, ROUND
19	361.21823		CIRCLIP, CLUTCH	54	581.58205		BEARING CASE
20	371.13235		BEARING, MISERENFOOT, CLUT	55	581.58204R		HOPPER FLAP
21	580.48597		WASHER	56	581.58204		SPACER
22	581.27427		NUT, 1/12"	57	581.58203		CLUTCH, LIND
23	581.27428		ROD	58	581.58203		STAR, CLUTCH
24	581.27431		5-BUILD **	59	581.58204		CLUTCH, ASSEMBLY
25	581.27432		ROSET, 4.8X1.8	60	581.58205		WHEEL, SUPPORT
26	581.27433		COMPUTER SWAN, SOL. T. MIDGE	61	581.58206		WHEELS
27	581.27435		BLESSIE	62	581.58207		PALETTE ASSEMBLY
28	581.27437		COTTER PIN	63	581.58207R		PULLEY, PULLEY ONLY
29	581.27439		CIRCLIP	64	581.58208		BELT
30	581.27440		L. BLADE **	65	581.58209		WAD-62R
31	581.27441		SPACER **	66	581.58270		WAD-62R
32	581.27453		RIGHT SIDE WALL	67	581.58271		WASHER
33	581.27450		DEFLECTOR, SUPPORT	68	581.58273		WASHER
34	581.27456		SUPPORT & BEARING **	69	581.58274		KEY
35	581.27459		CRIM	70	581.58275		SPACER
				71	581.58277		5-6M

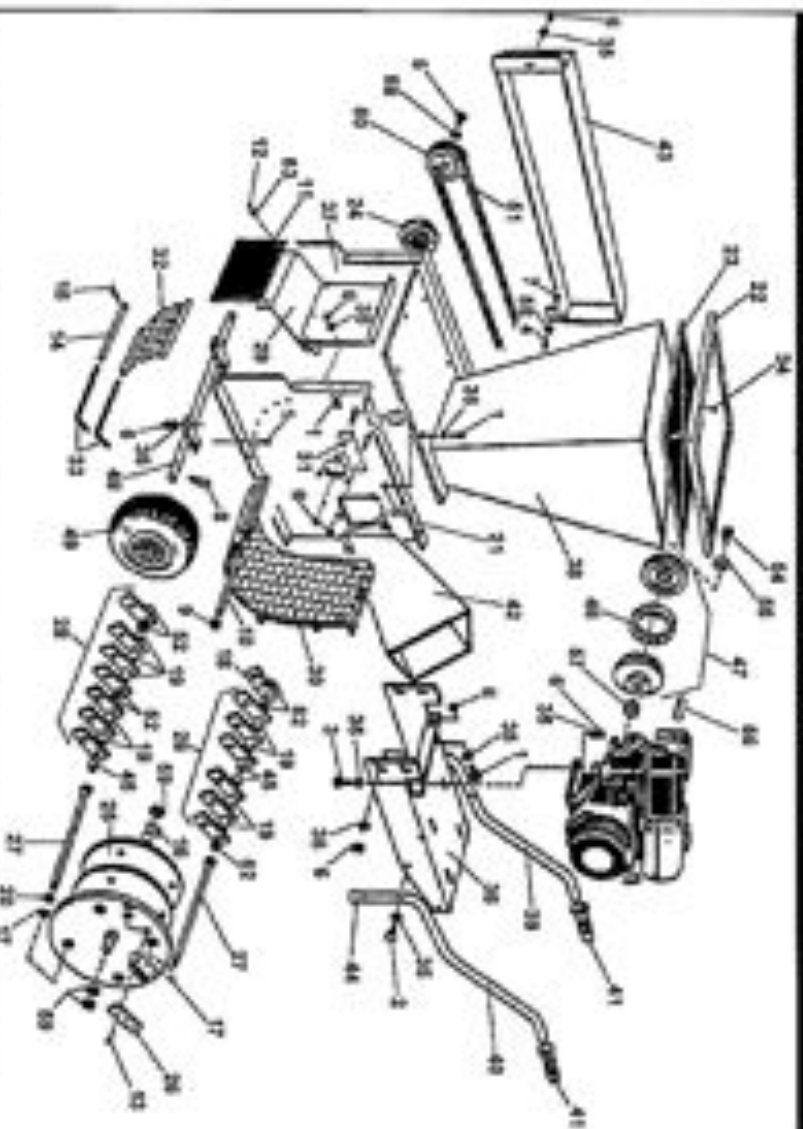
** THESE PARTS ARE
INTERCHANGEABLE WITH
THE GENERATION I PARTS

Engine Driven
Chipper Shredder

Generation I - 8HP
Bio 100 Square Hopper

Serial Number Range

02.00



ID	PART NO	QTY	DESCRIPTION	ID	PART NO	QTY	DESCRIPTION
1	311.12150		SCREW, HEXCO	31	581.27474		BLADE STATIONARY**
2	311.12154		SCREW, HEXCO	32	581.27475		SCREEN **
3	311.12181		SCREW, HEXCO	33	581.27476		ROD **
4	311.12211		SCREW, M10X30	34	581.27479		SCREW, M6, SX19
5	311.12219		SCREW, M10X25	35	581.27484		WASHER
6	312.41080		NUT, SELF LOCKING, M8	36	581.58250		ENGINE PLATE
7	312.41160		NUT, SELF LOCKING, M10	37	581.58261		LEFT SIDE WALL
8	580.02052		PIN **	38	581.58252		HOPPER
9	581.27427		NUT, M12	39	581.58253		RIGHT HANDLE STEM
10	581.27428		ROD	40	581.58254		LEFT HANDLE STEM
11	581.27431		SHIELD **	41	581.58255		HANDLE KNOB
12	581.27432		RIEVE, 4,9X16	42	581.27451		CHIPPER CHUTE, SQUARE
13	581.27433		COUNTER SUNK BOLT, NIXCS	43	581.58256		BELT CRANKCASE
14	581.27436		SLEEVE	44	581.58261		RUBBER FOOT
15	581.27437		COTTER PIN	45	581.58262		SPACER
16	581.27438		KEY	46	581.58263		CLUTCH LINK
17	581.27439		CIRCLIP	47	581.58264		CLUTCH ASSEMBLY
18	581.27440		L BLADE **	48	581.58265		WHEEL SUPPORT
19	581.27441		SPACER **	49	581.58266		WHEELS
20	581.27442		SPACER	50	581.58267		PULLEY ASSEMBLY
21	581.27453		RIGHT SIDE WALL	51	581.58268		BELT
22	581.27454		DEFLECTOR SUPPORT **	52	581.58269		WASHER
23	581.27455		HOPPER FLAP **	53	581.58270		WASHER
24	581.27458		SUPPORT & BEARING **	54	581.58271		SCREW
25	581.27459		DRUM **	55	581.58272		WASHER
26	581.27460		BLADE **	56	581.58274		KEY
27	581.27461		SHAFT HAMMER WISNAP RING **	57	581.58275		SPACER
28	581.27462		KNIVES **	58	581.58276		WASHER
29	581.27470		DEFLECTOR, DISCHARGE **	59	581.58277		WASHER
30	581.27471		PANEL, BOTTOM **	59	581.58277		SHIM

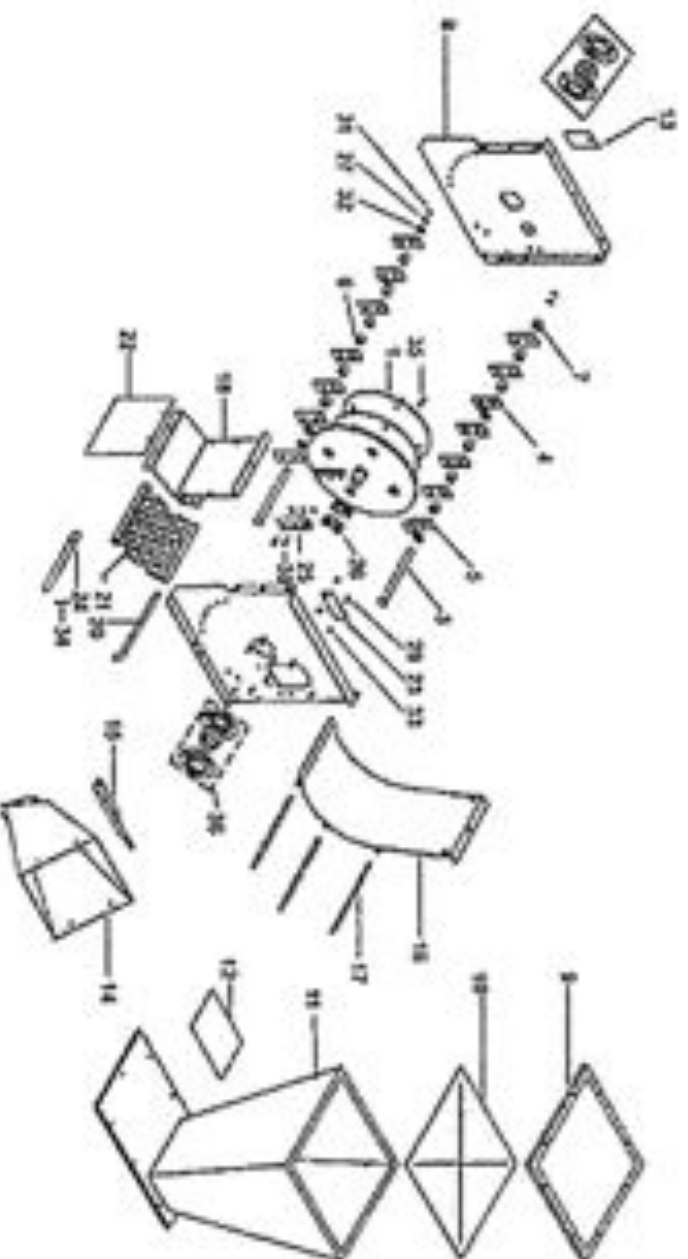
** THESE PARTS ARE INTERCHANGEABLE WITH THE GENERATOR 8 UNITS

Chipper
Shredder

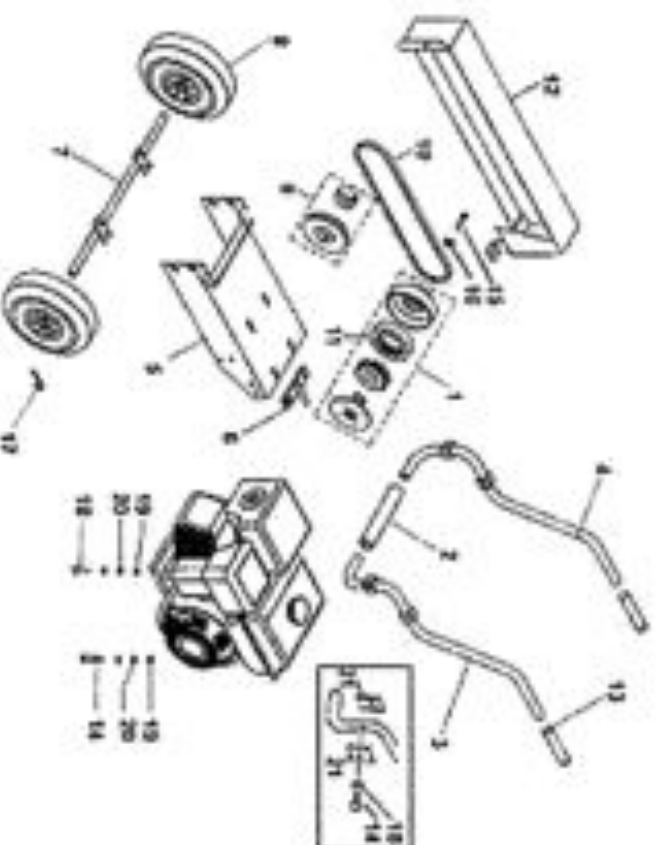
Generation II
Chipper Unit

Serial Number Range
915694 +

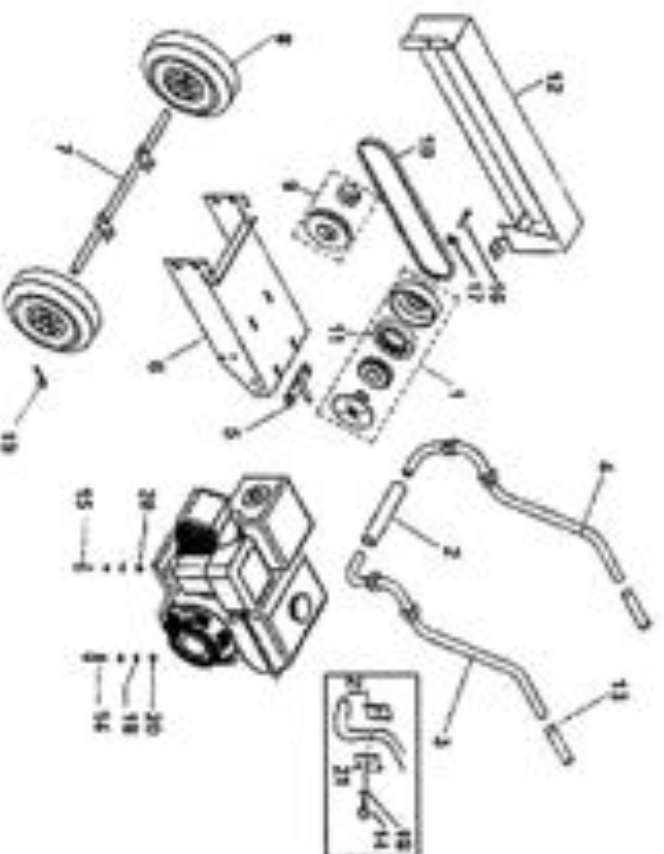
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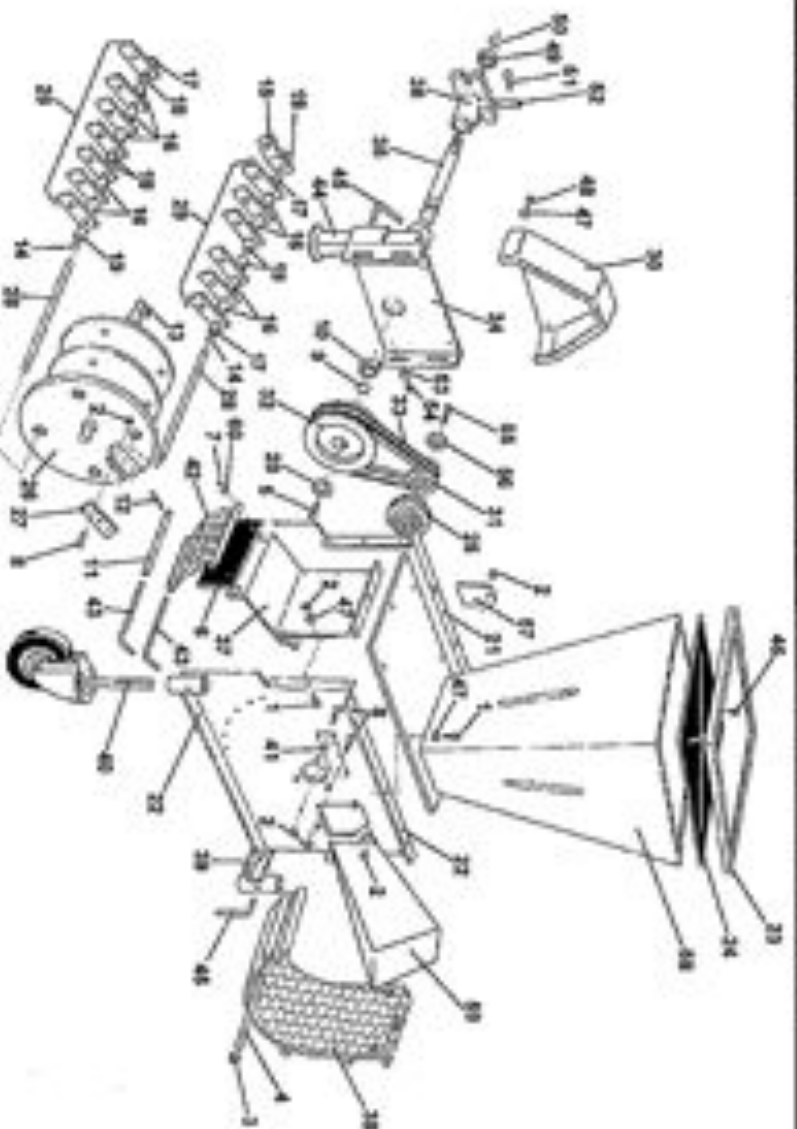
ID	PART NO	QTY	DESCRIPTION	ID	PART NO	QTY	DESCRIPTION
1	0161010000	1	ROTOR	21	0126000000	1	SCREEN
NI	0161010001	1	ROTOR COMPLETE	22	0126000000	1	SHIELD
3	0161020000	4	SHAFT, HAMMER	23	0133000000	1	BLADE, STATIONARY
4	0161030000	26	HAMMER, STRAIGHT	24	0133000000	5	SLEEVE
5	0161040000	2	HAMMER, L-SHAPED	25	0133000000	1	BLADE
6	0161060000	56	SPACER	26	0211000002		
7	0161080001	12	SPACER	27	0860000016	4	SHIM
8	0161141000	1	PANEL	NI	2056000000	1	
9	0162000000	1	DEFLECTOR SUPPORT	29	6000110006	2	BOLT
10	0162000000	1	HOPPER FLAP	30	6000120006	3	BOLT
11	0163040000	1	HOPPER	31	5190120000	4	CRIPCLIP
12	0166100000	1	DECAL	32	5111200000	50	WASHER
13	0113000000	1		33	5200002006	3+2	NUT
14	0118000000	1	CHIPPER CHUTE	34	5300000000	5	COTTER PIN
15	0118000001	1	SUPPORT PLATE, CHUTE	35	5300040000	1	KEY
16	0122000000	1	PANEL, BOTTOM	36	5500000000	2	BEARING ASSEMBLY
17	0121100000	3	SLEEVE				
18	0122000000	1	DISCHARGED DEFLECTOR				
19	0125000001	1	PANEL				
20	0127000000	5	RCD				



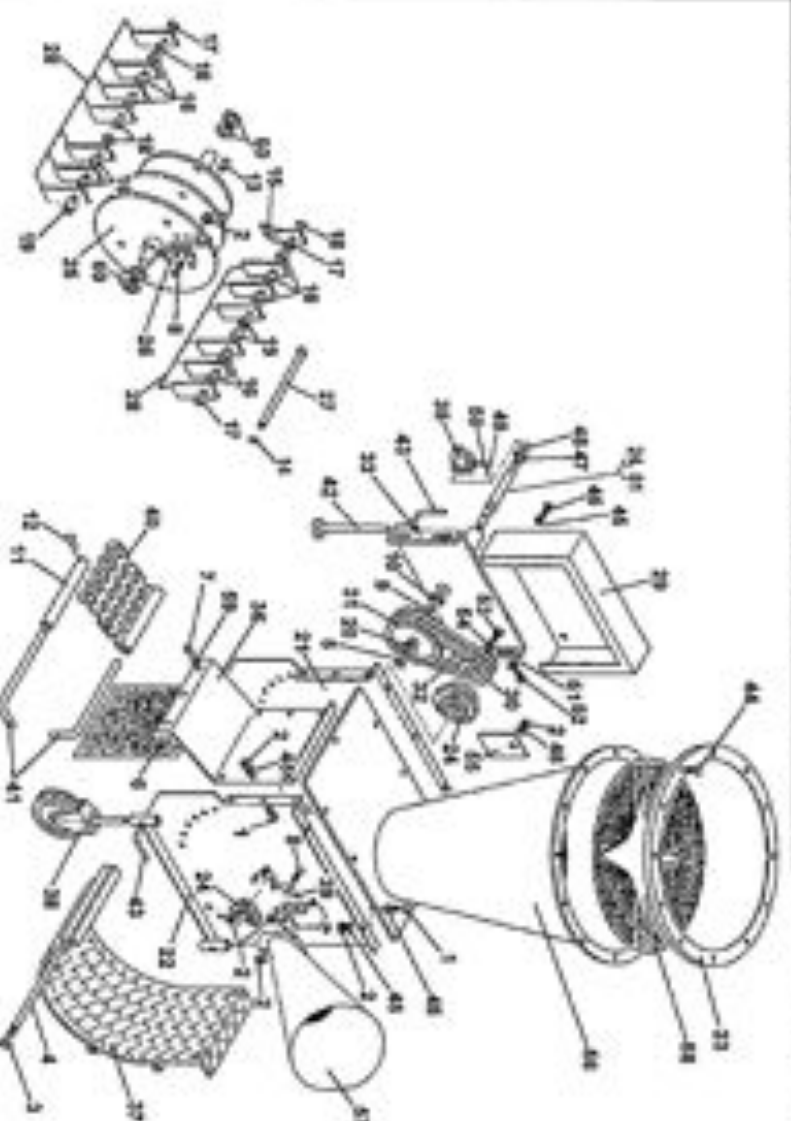
ID	PART NO	QTY	DESCRIPTION	ID	PART NO	QTY	DESCRIPTION
1	013800000	1	CLUTCH COMPLETE	16	510000043	1	WASHER
2	013900001	1	RUBBER HOSE	17	520001000	4	LYNCH PIN
3	014300032	5	HANDLEBAR/LK	18	5300002610	2	BOLT M10X50 HONDA
4	014300033	4	HANDLEBAR/RH	19	520007010	4	BLACK M10 HONDA
5	014500001	1	DECK, ENGINE SUPPORT HONDA	20	530001800	6	WASHER M10 HONDA
6	014500005	1	BELT TENSIONER	21	013900008	5	BLACK
7	014600000	5	AXLE WHEEL	PLEASE NOTE THAT REF# 21 WAS ONLY USED ON A FEW EARLY UNITS. AFTER THAT REF #21 WAS WELDED TO THE INDIVIDUAL HANDLEBARS.			
8	014700000	2	WHEEL				
9	014800000	5	PULLEY W/TAPER LOCK				
10	014900056	1	BELT, HONDA				
11	019400000	1	CLUTCH RUBBER, STAR				
12	019700000	1	BELT SHIELD HONDA				
13	020003000	2	HANDLE GRIP				
14	500001060	2	BOLT M10X60 HONDA				
15	507160134	1	BOLT 7/16X 1.5" UNF HONDA				



ID	PART NO	QTY	DESCRIPTION	ID	PART NO	QTY	DESCRIPTION
1	0138000000	1	CLUTCH COMPLETE	16	5038800152	1	BOLT 3/8 X 1.5" UNF. BASE
2	0135000001	1	RUBBER HOSE	17	51005006K3	1	WASHER
3	044200282	1	HANDLEBAR LH	18	314.11090	8	WASHERS
4	044200282	1	HANDLEBAR RH	19	520001000	4	LYNCH PIN
5	0145000005	1	BELT TENSIONER	20	520002000	4	BLOCK BASE
6	0145000111	1	DECK, ENGINE SUPPORT BASE	21	913988000	8	BLOCK
7	0146000006	1	AXLE WHEEL	PLEASE NOTE THAT REF# 21 WAS ONLY USED ON A FEW EARLY UNITS. AFTER THAT REF #21 WAS WELDED TO THE INDIVIDUAL HANDLEBARS.			
8	0147000000	2	WHEEL				
9	0148000000	1	PULLEY W/TAPER LOCK				
10	0149000052	1	BELT BASE				
11	0194000000	1	CLUTCH RUBBER, STAR				
12	0197000001	1	BELT SHIELD BASE				
13	0209000000	2	HANDLE GRIP				
14	5039070000	6	BOLT MAX90 BASE				
15	501840010	2	BOLT MAX90 BASE				

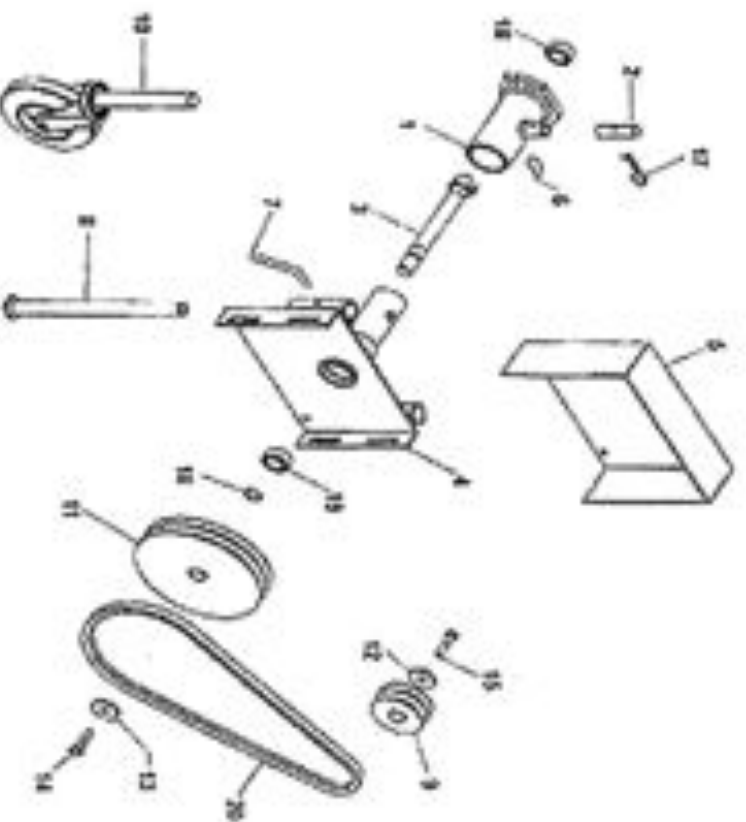


ID	PART NO	QTY	DESCRIPTION	ID	PART NO	QTY	DESCRIPTION
1	581.27450		SCREW, MIXCO	31	581.27464		PULLEY ** THESE PARTS ARE
2	312.41086		NUT, SELF LOCKING, M8	32	581.27465		PULLEY ** INTERCHANGEABLE WITH
3	581.27427		NUT, M12	33	581.27466		THE CONSTRUCTION & UNITS
4	581.27428		ROD	34	581.27467		REAR SUPPORT **
5	581.27430		SCREW, MIXCO	35	581.27468		DRIVE SHAFT FOR SPLINE DRIVE
6	581.27431		SHIELD **	36	581.27469		SUPPORT **
7	581.27432		RVNUT, 4.8X1/8	37	581.27470		DEFLECTOR, DISCHARGE **
8	581.27433		COUNTER SUNK BOL.T, MIXCO	38	581.27471		PANEL, BOTTOM **
9	581.27434		CIRCLIP	39	581.27472		SUPPORT
10	581.27435		BEARING	40	581.27473		WHEEL ASSEMBLY
11	581.27436		SLEEVE	41	581.27474		BLADE STATIONARY **
12	581.27437		COTTER PIN	42	581.27475		SCREEN **
13	581.27438		KEY	43	581.27476		ROD **
14	581.27439		CIRCLIP	44	581.27477		STAND **
15	581.27440		L. BLADE **	45	581.27478		ADJUSTING SCREW **
16	581.27441		SPACER **	46	581.27479		SCREW, M6, 3X 1/2
17	581.27442		SPACER	47	581.27484		WASHER
18	581.27443		SPACER	48	581.27485		SCREW, M6, 1/8
19	581.27444		SPACER	49	581.27487		BEARING
20	581.27447		WASHER **	50	581.27488		CIRCLIP
21	581.27452		PANEL	51	581.27489		COTTER PIN
22	581.27453		RIGHT SIDE WALL	52	581.27490		PIN **
23	581.27454		DEFLECTOR SUPPORT **	53	581.27491		WASHER
24	581.27456		HOPPER FLAP **	54	581.27492		SCREW, MIXCO
25	581.27458		SUPPORT & BEARING **	55	581.27493		SCREW, MIXCO
26	581.27459		DRUM **	56	581.27494		WASHER
27	581.27460		BLADE **	57	581.27495		PLATE
28	581.27461		SHAFT HAMMER WISNAP RING **	58	581.58252		HOPPER
29	581.27462		KNIVES **	59	581.27451		CHPPER CHUTE, SQUARE
30	581.27463		BELT COVER **	60	581.58270		WASHER
				61	581.59471		DRIVE SHAFT FOR 3 DOG DRIVE



ID	PART NO	QTY	DESCRIPTION	ID	PART NO	QTY	DESCRIPTION
1	315.12150		SCREW, M8X30	31	501.27465		PULLEY **
2	312.41080		NUT, SELF-LOCKING, M8	32	501.27466		BELT
3	501.27427		NUT, M12	33	501.27467		REAR SUPPORT **
4	501.27428		ROD	34	501.27468		DRIVE SHAFT
5	501.27430		SCREW, M8X30	35	501.27469		SUPPORT **
6	501.27431		SHIELD **	36	501.27470		DEFLECTOR, DISCHARGE **
7	501.27432		RIVET, 4.9X16	37	501.27471		PANEL, BOTTOM **
8	501.27433		COUNTER SUNK BOL.T., M8	38	501.27473		WHEEL ASSEMBLY
9	501.27434		CIRCLIP	39	501.27474		BLADE STATIONARY **
10	501.27435		BEARING	40	501.27475		SCREEN **
11	501.27436		SLEEVE	41	501.27476		ROD **
12	501.27437		COTTER PIN	42	501.27477		STAND **
13	501.27438		KEY	43	501.27478		ADJUSTING SCREW **
14	501.27439		CIRCLIP	44	501.27479		SCREW, M6.3X19
15	501.27440		L. BLADE **	45	501.27484		WASHER
16	501.27441		SPACER **	46	501.27485		SCREW, M8X15
17	501.27442		SPACER	47	501.27487		BEARING
18	501.27443		SPACER	48	501.27488		CIRCLIP
19	501.27444		SPACER	49	501.27489		COTTER PIN
20	501.27447		WASHER **	50	501.27490		PIN **
21	501.27452		PANEL	51	501.27491		WASHER
22	501.27453		RIGHT SIDE WALL	52	501.27492		SCREW, M10X25
23	501.27454H		DEFLECTOR SUPPORT	53	501.27493		SCREW, M10X30
24	501.58258		SUPPORT & BEARING **	54	501.27494		WASHER
25	501.27495		DRUM **	55	501.27496		PLATE
26	501.27499		BLADE **	56	501.58252		HOPPER
27	501.27491		SHAFT HAMMER WINDUP BIND **	57	501.58257		CHUTE
28	501.27492		KNIVES **	58	501.58209		HOPPER FLAP
29	501.27493		BELT COVER **	59	501.58270		WASHER
30	501.27494		PULLEY **	60	501.58277		SHIM

** THESE PARTS
ARE INTERCHANGE-
ABLE WITH THE
GENERATION 3
UNITS



ID	PART NO	QTY	DESCRIPTION	ID	PART NO	QTY	DESCRIPTION
1	0102201000	1	PTO ADAPTER FLANGE	11	0131000000	1	PULLEY
2	0102200000	1	PIN	12	0135000000	1	WASHER
3	0102200000	1	PTO DRIVE SHAFT 3 DOG	13	0136000000	1	WASHER
4	0102204000	1	ADAPTER PLATE	14	9000100110	1	BOLT
5	0107000000	1	SHIELD	15	9000120006	1	BOLT
6	0109000000	1	DECAL	16	5100110000	1	SNAP RING
7	0110000000	4	LOCKING HANDLE	17	5000010000	1	LYNCH PIN
8	0111000000	4	STABILIZER LEG	18	5400010000	1	BEARING
9	0112000000	2	PULLEY	19	5400020000	1	BEARING
10	0128000000	1	CASTER WHEEL ASSEMBLY	20	0200000004	2	BELT

Chipper Shredder Decal Sheet Part 1
S81.27445

OPERATING INSTRUCTIONS

1. READ SAFETY RULES AND OPERATING INSTRUCTIONS BEFORE STARTING UNIT.
 2. KEEP HAIR, FACE, CLOTHING, CHILDREN AND PETS AWAY FROM INTAKE HOPPER, DISCHARGE AREA AND MOVING PARTS.
 3. USE APPROVED SAFETY GLASSES AND GLOVES. AVOID WEARING LOOSE-FITTING CLOTHING.
 4. USE JAWB, TONGUE POWER OR DISCONNECT BRAKE PLUS WIRE AND MAKE SURE ALL MOVING PARTS HAVE COME TO A COMPLETE STOP. USE ONLY A WOODEN STICK TO CLEAR.
 5. KEEP ALL SHIELDS IN PLACE.
 6. DO NOT + USE HANDLE TO CLEAN DISCHARGE AREA.
 - DO NOT + INSTALL WOOD, SCREWS, ADJUST OR SERVICE WHILE OPERATING.
 - DO NOT + OPERATE ON UNEVEN GROUND OR PAVED OR GRASSY SURFACE.
 - DO NOT + OPERATE GAS UNIT IN ENCLOSED AREA.
- *FAILURE TO HEED MAY RESULT IN SERIOUS PERSONAL INJURY



▲ DANGER
ROTATING CHIPPER
BLADE CAN CAUSE
SERIOUS PERSONAL
INJURY. DO NOT
OPERATE UNLESS
CHIPPER CHUTE IS
BOLTED IN PLACE.



Chipper Shredder Decal Sheet Part 2
581.27445

! DANGER

ROTATING CUTTING BLADES.
KEEP HANDS AND FEET OUT
OF INLET AND DISCHARGE
OPENINGS WHILE MACHINE
IS RUNNING TO AVOID
SERIOUS PERSONAL INJURY.
NO HANDS BELOW THIS LINE

! WARNING

DO NOT START ENGINE UNLESS BELT
COVER IS ATTACHED. Failure to Comply
Could Result in Personal Injury From Moving
Belts and Pulleys. See Operator's Manual For
Full Safety And Maintenance Instructions.



! DANGER

Rotating Cutter Blades Slow
Gradually After Engine is Off And
Clutch Lever is Disengaged.
To Avoid Personal Injury, Let
Blades Stop Completely.

MADE IN ITALY

BCS America LLC.
8111 NE Columbia Blvd.
Portland, OR. 97218