

Limited Warranty

Maxim Manufacturing Corporation, through its dealers will repair or replace any part, or parts of the MS50B, MS30B, or MS50BR or handles that are defective in material or workmanship or both. **Transportation charges on parts submitted for repair or replacement under this Warranty must be borne by the purchaser.** The original sales receipt must be submitted as proof of purchase date. The sales receipt will be returned. Maxim Manufacturing Corporation assumes no liability for labor charges made in performance of this warranty.

The Warranty Periods are as follows:

- A. Frame for 1 year
- B. Handles for 1 year
- C. Transmissions for 1 year

The Throttle Cable, Tires, Fasteners, and belt are not warranted because during normal service they are subject to wear.

The Warranty on the Frame is Void if:

- A. Frame is broken or bent due to abuse.
- B. Wheels are bent or broken due to impact.
- C. Altering of engine or its components has occurred.

All warranties are voided if the Tiller has been altered, used under abnormal conditions, or subject to abuse, misuse, neglect, improper maintenance, or rented.

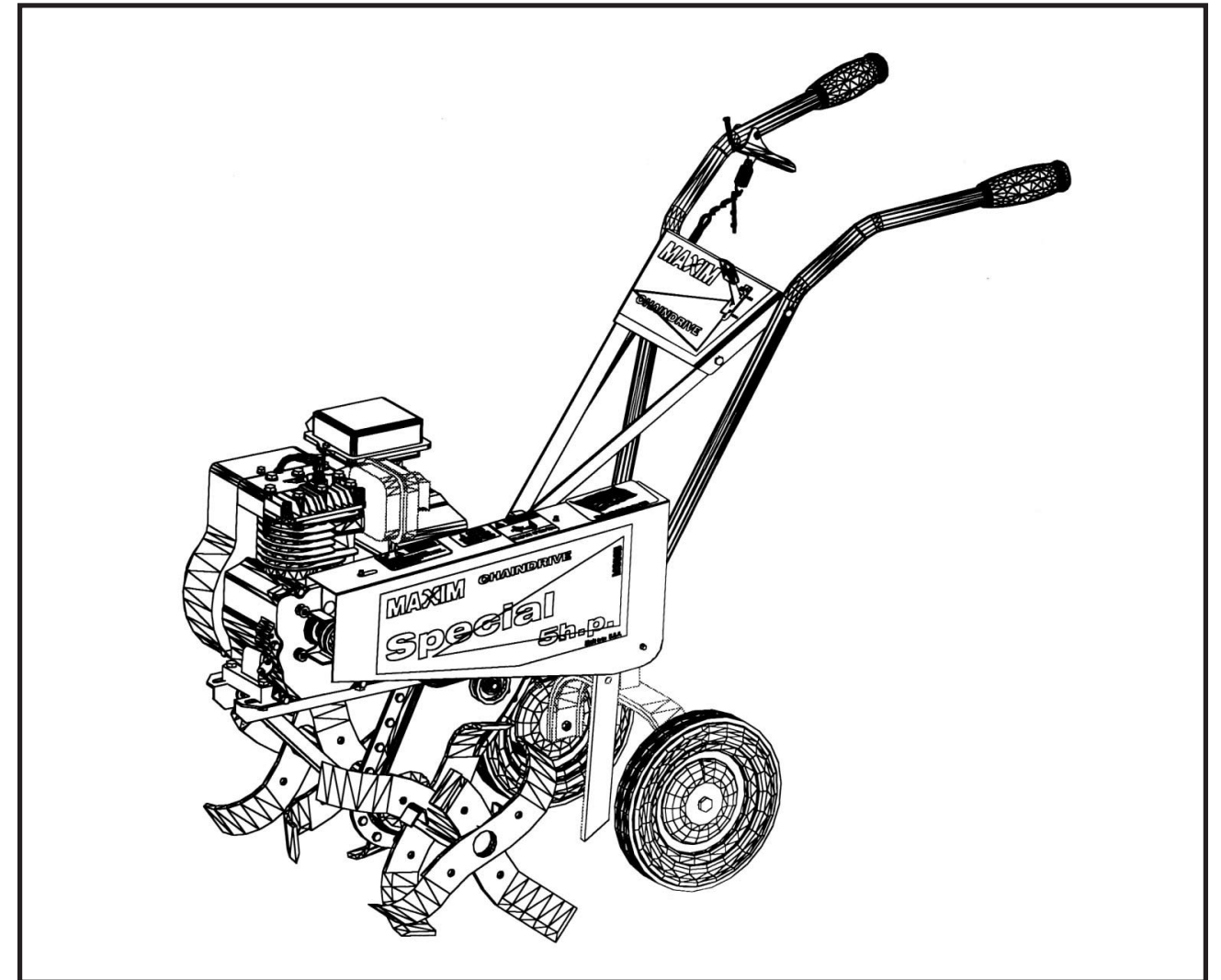
The Engine is warranted by the engine manufacturer, not by Maxim Manufacturing Corporation. See Engine Owner's Manual for information regarding engine warranty.

Should you experience problems with your tiller take it back to your authorized Maxim dealer or distributor to make warranty claims.

Maxim Manufacturing is not liable for any damage claim or liability claim, personal or otherwise, resulting from the operation of this tiller in any way.

Maxim Chain Drive Tiller

Operator's Manual and Parts List



MS50B • MS30B • MS50BR

⚠ WARNING ⚠

If incorrectly used this machine can cause severe injury. Those who use and maintain the machine should be trained in its proper use, warned of its dangers, and should read the entire manual before attempting to set up, operate, adjust or service the machine.

**READ THIS MANUAL.
RETAIN IT FOR FUTURE REFERENCE.**

SAFE PRACTICES FOR GARDEN TILLERS

TRAINING

Regard your tiller as a piece of power equipment and teach this respect to all who operate it.

Read the owner's manual carefully. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the unit and disengage the controls quickly.

Never allow children to operate equipment. Never allow adults to operate equipment without proper instruction.

Keep the area of operation clear of all persons, especially small children.

Exercise caution to avoid slipping and falling.

PREPARATION

Check the tiller to make certain it is in good operating condition.

Check tines to be sure they are free of any obstruction.

Check engine crankcase oil level.

Unless there is very good artificial light operate during daylight hours only.

Do not operate power tools in wet soil, which clogs the cutter and increases the danger of your slipping and falling and possibly coming into contact with the tines.

Thoroughly inspect the area where the equipment is to be used and remove all large stones, boards, wires, and other foreign objects.

Do not operate machine when barefoot or wearing open sandals. Wear strong work-type footwear which will improve footing and provide optimum protection. Provide leg protection by means of long, heavy denim trousers and brogues.

Check that clutch is disengaged before starting engine.

Handle fuel with care; it is highly flammable.

- Use approved fuel container.
- Never add fuel to a running engine or hot engine.
- Fill fuel tank outdoors with extreme care. Never fill fuel tank while smoking.
- Replace gasoline cap securely and wipe up spilled fuel.

Never attempt to make any adjustments while engine is running except carburetor mixture as instructed in the engine owner's guide.

Allow engine sufficient warm-up period before tilling.

OPERATION

Give complete and undivided attention to the job at hand.

Familiarize yourself with the controls. Be sure you know how to stop your machine quickly. Do not start engine until you set machine on ground to be tilled.

Hold the handle with your left hand while pulling the starter rope with your right. Be sure the machine will not tip or roll during the starting operation.

Stay clear of the front of self-propelled machine during and after starting. Do not put hands or feet near rotating tines or belt when machine is operating. Once machine is started stand behind it with hands on handles at all times. Keep in step with machine. Do not lag behind or let it pull

you so you will not be in full command of the machine.

Control the direction of the machine by hand pressure on the handle, not by foot pressure on the machine housing.

Stay alert for hidden hazards.

When operating over uneven terrain and slopes, use extreme care and make sure of solid and firm footing at all times.

Exercise special care when operating around objects to prevent the tines from striking them and never deliberately operate over any object.

After striking a foreign object, stop the engine, remove wire from spark plug, thoroughly inspect the tiller for any damage and repair the damage before restarting and operating the tiller.

If the unit should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.

Stop operation when another person approaches.

Stop the engine whenever you leave the operating position before making any repairs, adjustment, or inspections.

Stop the engine whenever leaving the tiller unattended.

When cleaning, repairing, or inspecting make certain tines and all moving parts have stopped. Disconnect spark plug wire and keep wire away from plug to prevent accidental starting.

Do not run engine indoors.

Exercise extreme caution when changing direction on slopes. Do not attempt to till steep slopes.

Never operate tiller without guards, plates, or other safety protective devices in place.

Never operate tiller near glass enclosure, automobiles, window wells, drop-offs, or bystanders. Keep children and pets away.

Do not over load machine capacity by attempting to till ground at too fast a rate.

Use care when backing.

Never allow anyone in front of unit. Disengage clutch, when someone approaches, when transporting or when not in use.

Use only attachments and accessories approved by manufacturer of tiller.

Never operate tiller without good visibility or light. Always be sure of your footing and keep a firm hold on the handles and walk, never run.

MAINTENANCE AND STORAGE

Follow the recommendations for maintenance described in this manual and engine literature.

Have a competent service man make a thorough inspection of the tiller before the season begins.

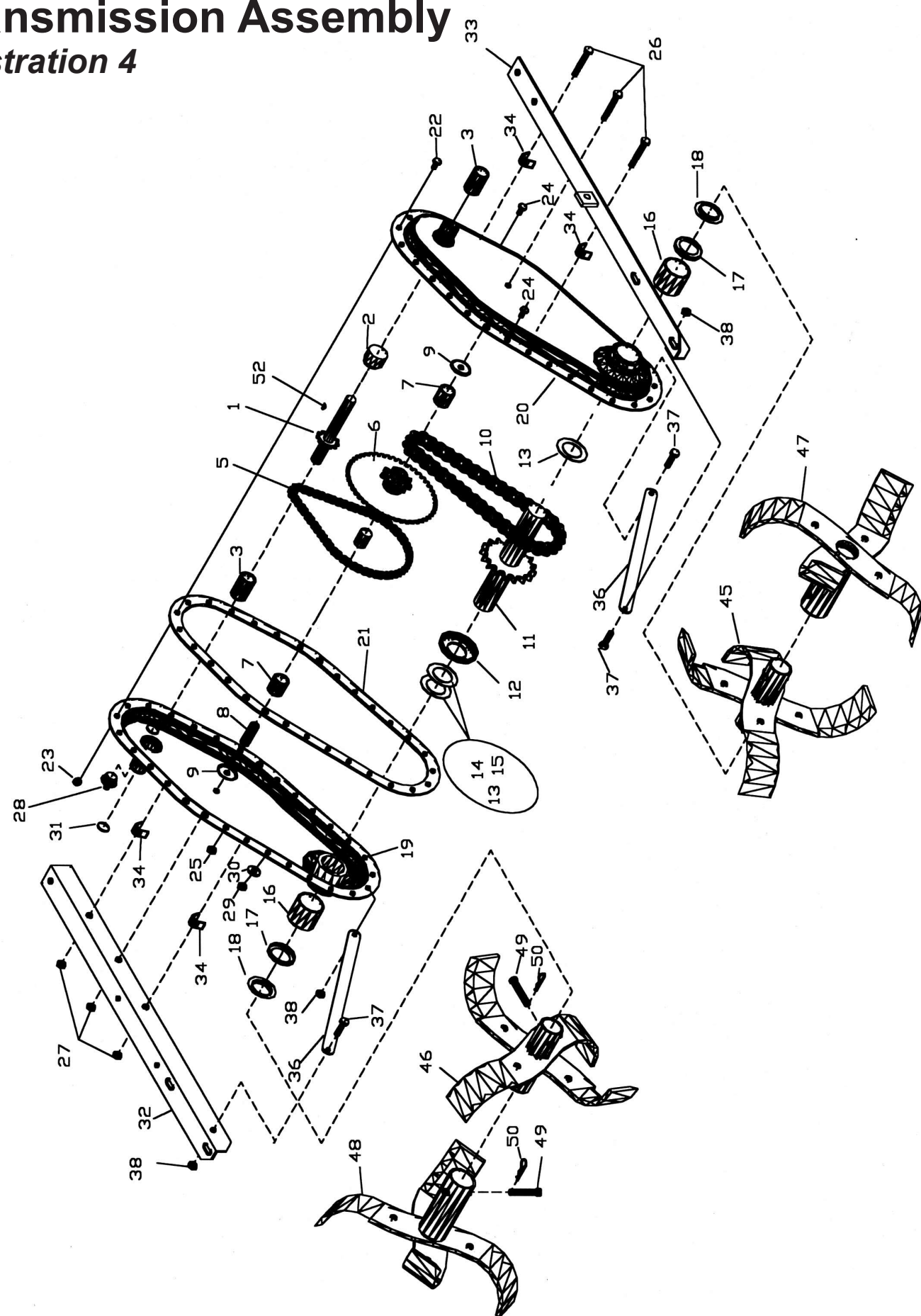
Check shear bolts and engine mounting bolts at frequent intervals for proper tightness to be sure equipment is in safe working condition. Check that the engine stop circuit is intact.

Ref.	Part	QTY	Description
32	336680	1	Support RH
33	162027	1	LH Support Assembly
34	359311	4	Frame Spacer
36	359339	2	Brace
37	400108	3	Screw, 1/4-20 x 3/4 Hex
38	455768	3	Flanged Nut, 1/4 - 20
45	130715	1	LH Inner Tine Assembly
46	130716	1	RH Inner Tine Assembly
47	130711	1	LH Outer Tine Assembly
48	130712	1	RH Outer Tine Assembly
	130717		Slasher Tine Set Complete
49	461466	4	Pin, 3/8 x 2 - 1/8 Clevis
50	460312	4	Hairpin, Lhcot #2
52	463017	1	Key, 3/16 x 3/4 Wooddruff #9
	130500	1	Transmission Complete

Ref.	Part	QTY	Description
1	162039	1	Shaft & Sprocket Assembly
2	359350	1	Spacer
3	359293	2	Bushing
5	359295	1	Chain
6	162024	1	Sprocket Cluster Assembly
7	359297	2	Bearing, Needle
8	359298	1	Bushing
9	359299	2	Washer
10	359300	1	Chain
11	162025	1	Shaft & Sprocket Assembly
12	359303	1	Spacer
13	359313	AR	Washer
14	359314	AR	Shim, .03
15	359315	AR	Shim, .02
16	359304	2	Bearing, Needle
17	359305	2	Seal, Oil
18	359306	2	Shield
19	130696	1	RH Case Assembly
20	130697	1	LH Case Assembly
21	336674	1	Gasket
22	400104	21	Screw, 1/4-20 x 1/2 Hex
23	445768	21	Flanged Nut, 1/4 - 20
24	400179	4	Screw, 5/16-18 x 2 1/2 Hex
25	445765	4	Flanged Nut, 5/16 - 18 Hex
26	400200	3	Screw, 5/16 - 18 x 1/2 H
27	443106	3	Nut, 5/16 - 18 Hex
28	359312	1	Cap Plug
29	408883	1	Screw, 1/4 x 1/2 Hex Wash
30	359336	1	Washer, Rubber Seal
31	359310	1	Plug

Transmission Assembly

Illustration 4



Continued from page 2

Never adjust the machine or change attachments until the engine has been turned off and the spark plug wire disconnected. It is possible that the engine could start while making an adjustment or repair.

If carburetor adjustment is necessary, stand to one side and keep feet and hands in the clear while making adjustments.

Keep engine free from accumulations of grass, leaves, or excessive grease. An accumulation of these combustible materials may result in a fire.

Store gasoline in a safe container. Store the container in

a cool, dry place, not in the house or near heating appliances.

Never store machine with fuel in the fuel tank inside a building where open flame or sparks are present. Allow engine to cool before storing in any enclosure.

Keep the machine and fuel container in locked storage to prevent children from playing and tampering with them.

Maximum operating results and safety can only be expected if the machine is maintained and operated correctly.

Always refer to operator's manual for important details if tiller is to be stored for extended period.

IMPORTANT: THIS UNIT IS EQUIPPED WITH AN INTERNAL COMBUSTION ENGINE, AND SHOULD NOT BE USED ON OR NEAR ANY UNIMPROVED FOREST-COVERED, BRUSH COVERED OR GRASS COVERED LAND UNLESS THE ENGINE'S EXHAUST SYSTEM IS EQUIPPED WITH A SPARK ARRESTER MEETING APPLICABLE LOCAL LAWS (IF ANY). IF A SPARK ARRESTER IS USED, IT SHOULD BE MAINTAINED IN EFFECTIVE WORKING ORDER BY THE OPERATOR.

IN THE STATE OF CALIFORNIA A SPARK ARRESTER IS REQUIRED BY LAW (SECTION 4442 OF THE CALIFORNIA PUBLIC RESOURCES CODE). OTHER STATES MAY HAVE SIMILAR LAWS. FEDERAL LAWS APPLY ON FEDERAL LANDS. SEE YOUR AUTHORIZED SERVICE CENTER FOR A SPARK ARRESTER.



WARNING



The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Specifications

Engine: Briggs & Stratton 4 cycle
5.5 Intek, 1264120226E1C1032 -- Horiz.
3.5HP #91202 Type 1264

Air Cleaner: Replaceable Paper Element

Fuel Tank: 3 Quarts

Throttle: On Handle Panel

Transmission: Roller chain and sprocket, sealed and running in oil.

Tines: 14" slasher, self-sharpening

Tine Speed: Approximately 78 RPM maximum

Tilling Width: 14" to 26" standard

Tilling Depth: Up to 12"

Handle: 14 gauge seamless tubular steel with braces

Clutch: Hand controlled belt tightener

Frame: All steel, welded and braced

Wheels: 10 x 1.75

Approximate Shipping Weight:

5hp -- 134 lbs.

3hp -- 125 lbs.

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SET UP INSTRUCTIONS

UNPACKING

Do not attempt to lift the tiller from the carton. After opening the top, cut all four corners and lay the sides flat on the floor or working space. Take out all unassembled parts, bag of parts, and protective packing. Be careful not to kink the control cables.

DEFINITION OF DIRECTIONS

As used throughout this manual, the following definitions apply: "Right" and "Left" refer to the operator's right and left when standing behind the machine in the normal operating position. "Forward" and "Rearward" likewise to directions from the viewpoint of the operator.

ASSEMBLY OF HANDLE BARS (Figures 2 & 3)

1. Attach the lower end of the handle bars to the rear of the chassis using four bolts, lock washers, and nuts supplied. Assemble nuts but do not tighten. Note that the lower belt cover bracket goes under the chassis on the left rear handle bar bolt.

2. Assemble the handle bar support brackets to the transmission. Note the location of the clutch cable guide. Assemble nuts but do not tighten.

3. Assemble the Handle Panel to the handle bars and supports. Note the location of the clutch cable guide.

4. Tighten all bolts and nuts.

5. Assemble the throttle control to the underside of the panel. Secure the cable to the left handle bar with the clip supplied.

6. Assemble the clutch spring to the clutch lever on the handle bar. Crimp lightly so it cannot come off.

7. Route the loop in the end of the clutch cable down through the two cable guides and attach it level on the idler arm weldment. Attach the chain on the other end to the spring on the clutch lever. Select a loop that will stretch the spring slightly when the clutch lever is pulled against the handle bar.

8. With the throttle control in the "OFF" position and the clutch lever released, pull the engine starter rope several times to be sure that the tines do not turn.

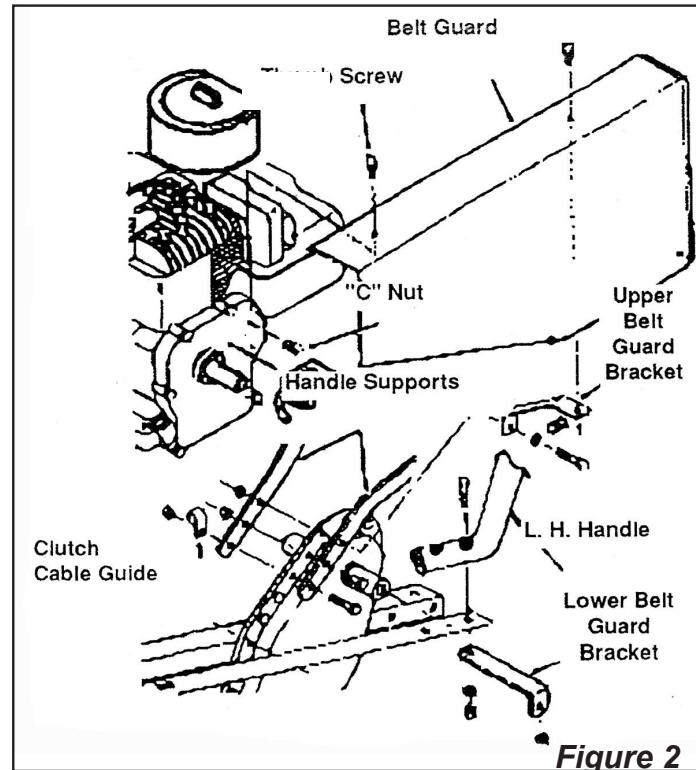


Figure 2

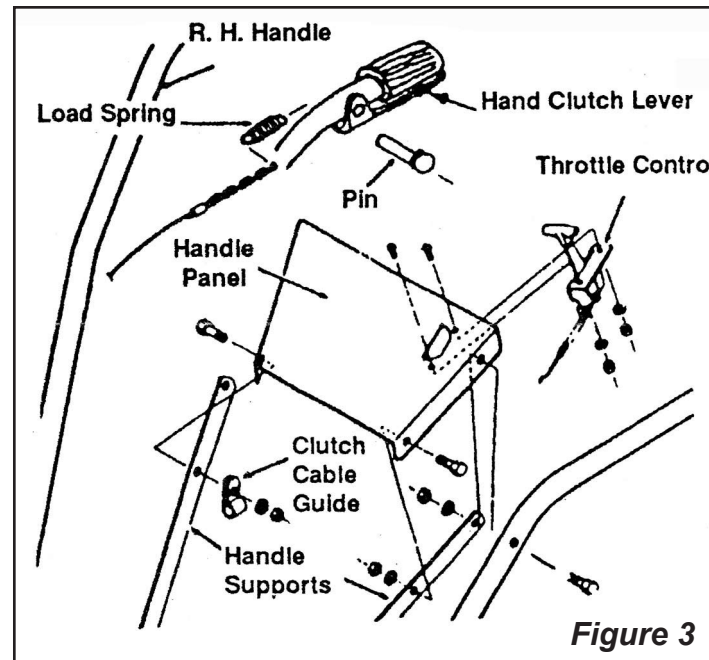
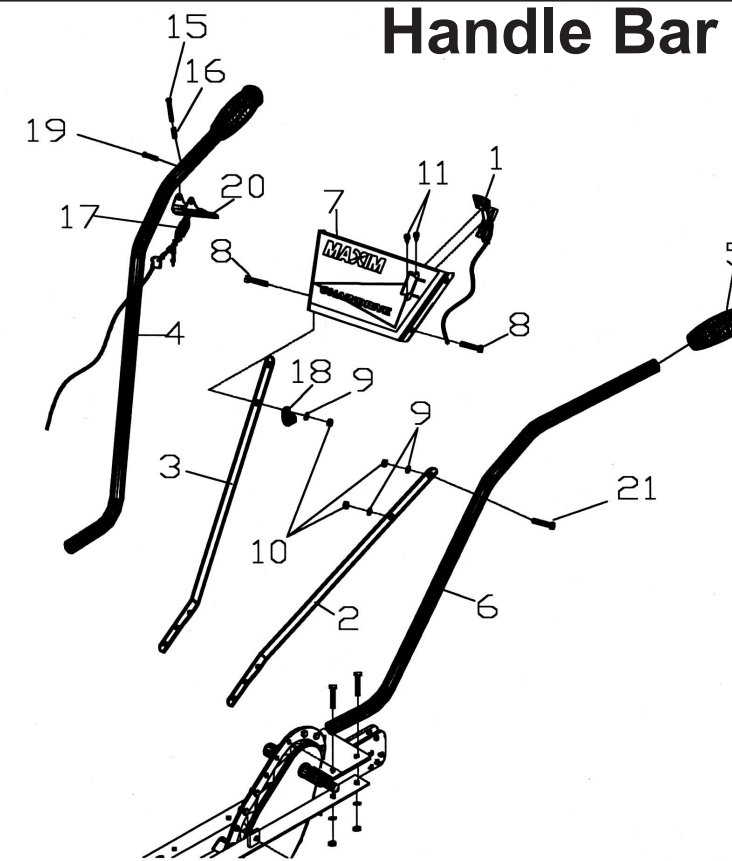


Figure 3

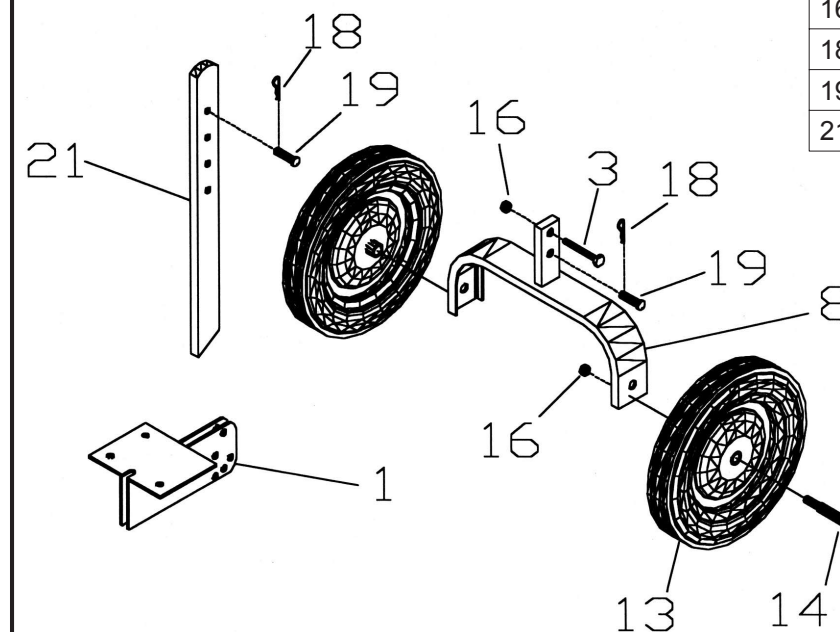
IMPORTANT
ENGINE IS SHIPPED FROM
FACTORY WITHOUT OIL. DO
NOT START ENGINE WITHOUT
ADDING OIL.

Handle Bar Assembly -- Illustration 2



Ref.	Part	Qty	Description
1	162007	1	Throttle Control Assembly
2	336677	1	Support LH
3	336676	1	Support RH
4	130698	1	RH Handle Assembly
5	313786	2	Grip
6	130699	1	LH Handle Assembly
7	130731	1	Handle Cross Brace
8	400186	2	Screw 5/16 - 18 x 1" Hex
9	446136	4	Lockwasher 5/16 Heavy
10	443106	4	Nut, 5/16 - 18 Hex
11	402014	2	#10 x 3/8" Slot Tapping Scr.
14	162029	1	Cable and Chain Assembly
15	359346	1	Clutch Locking Pin
16	359359	1	Spring
17	359327	1	Spring
18	359326	1	Clip
19	359345	1	Pin
20	336683	1	Lever
21	400208	2	5/16 x 18 x 1 3/4 Hex Cap

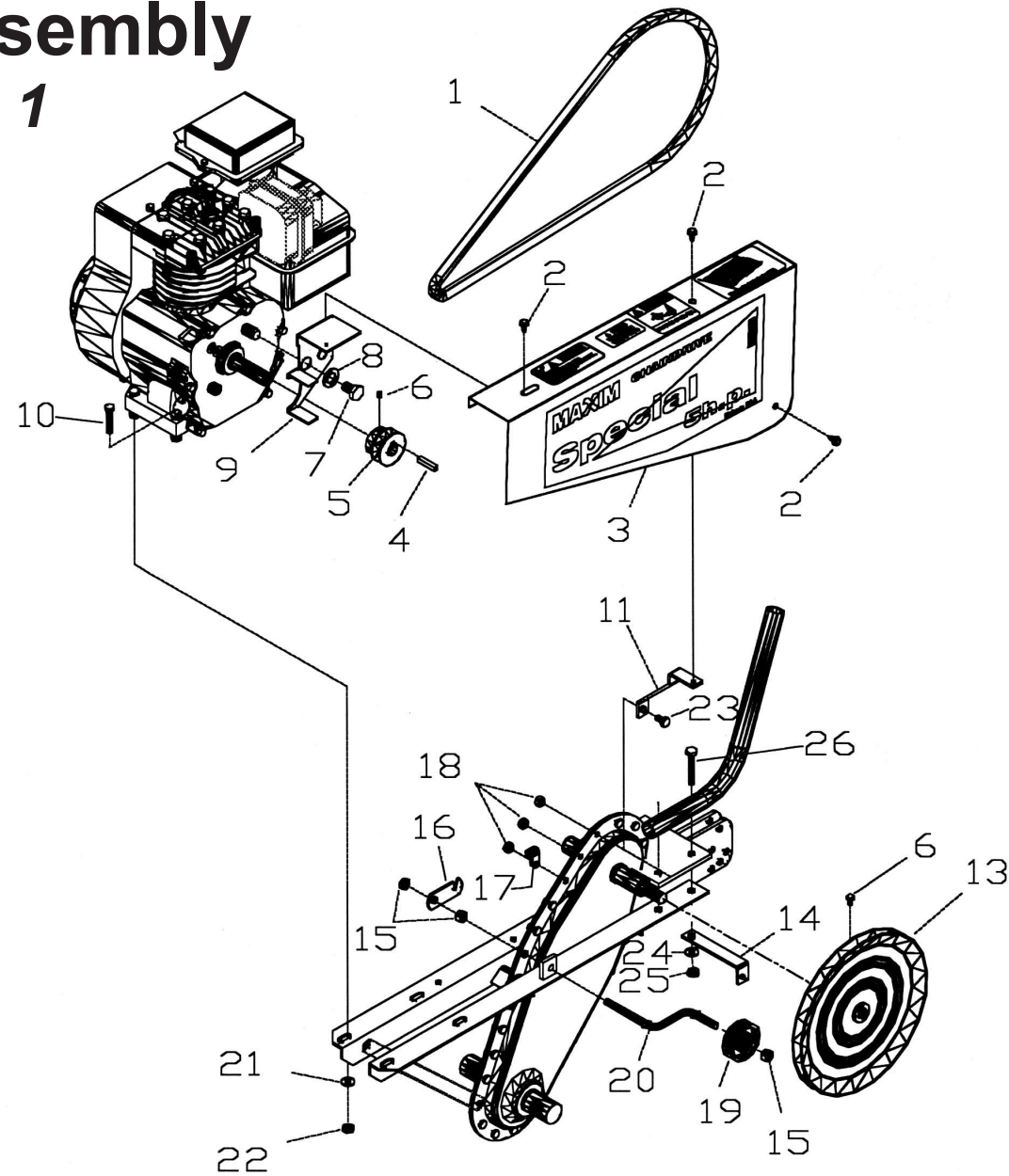
Hitch Assembly Illustration 2



Ref	Part	Qty	Description
1	130670	1	Rear Support Assembly
3	400265	1	Screw, 3/8" - 16 x 1 1/2
8	162034	1	Wheel Yoke Assembly
13	162031	2	Wheel
14	359330	2	Bolt, Wheel
16	444721	3	3/8" Center Locknut
18	460312	2	Hairpin
19	461466	2	Pin, 3/8" x 2 1/8" Clevis
21	336685	1	Drag Stake

Drive Assembly

Illustration 1



Ref.	Part	Qty	Description	Ref.	Part	Qty	Description
1	359328	1	Belt, V-Drive				
2	408883	3	Screw, 1/4" - 20 x 1/2" Hex Cap	15	443109	3	Nut 3/8" - NF5 Hex
3	130733	1	Guard	16	359325	1	Lever
4	359383	1	Key, Pulley Mtg.	17	359326	1	Clip
5	271686	1	Pulley, Crankshaft (5 hp)	18	445768	3	Flange Nut, 1/4" - 20 Hex Cap
6	415562	2	Screw, 5/16" - 18 x 5/16" Socket Head Cap Pt.	19	359321	1	Idler
7	400235	1	Screw, 1/2" x 3/4" Hex Head	20	162069	1	Idler Shaft
8	446145	1	Lock washer, 1/2 Heavy	21	446136	4	Lock washer, 5/16" Heavy
9	162035	1	Belt Guide (Honda 162067)	22	443106	8	Nut, 5/16" - 18 Hex
10	400194	4	Screw, 5/16" x 1 1/2" Hex Cap	23	400112	3	1/4" - 20 x 1 1/4" Hex Head
11	359343	1	Bracket Upper	24	446136	4	Lock washer, 5/16" Heavy
13	336672	1	Pulley	25	443106	1	Nut, 5/16" - Hex
14	359340	1	Bracket Lower	26	400208	4	Screw, 1/4" - 20 x 1 1/4" Hex

SET UP INSTRUCTIONS CONTINUED

TINE ASSEMBLY (Figure 4)

Assemble the inner tine assemblies to the transmission. Secure with clevis and hair pins. The short end of the tube goes next to the transmission. Be sure the cutting edge of the blade faces the direction of rotation. Assemble the out tines to the inner tine tubes and secure with hair pins and clevis pins.

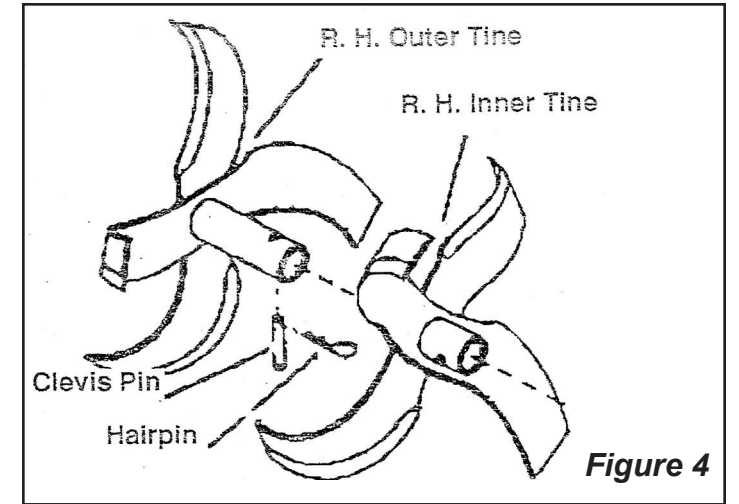


Figure 4

FINAL SETUP (Figure 5)

1. Remove the oil fill plug from the engine. With the unit sitting level, fill the crankcase with oil. See the engine instruction manual for type and further directions (Figure 5).
2. Fill the gas tank with clean, fresh, regular grade gasoline. Do not mix oil and gas.
3. When cranking the unit, be sure no one is standing in front or near the unit. Check for proper operation of the clutch lever (see page 7).

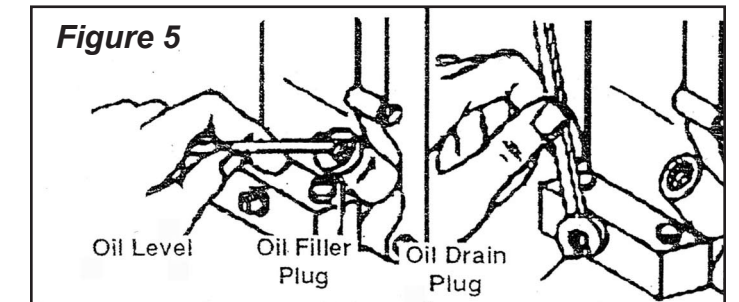


Figure 5

GENERAL INFORMATION

The Maxim Chain Drive is the most versatile power unit ever developed for the home gardener and does a soil preparation job second to none, so a few minutes spent in studying the following instructions will pay many dividends.

The tiller will dig deeper and move forward slower by pushing down on the handles, and it will go ahead faster but at a shallower depth by raising up on the handles. The speed of the rotors is controlled by the use of the throttle.

To control the depth of tilling, the tiller must be operated with both the proper throttle speed and correct up and down hand pressure on the handles. Raising up means going forward. This action releases the grip of the drag stake in the soil, allowing the tiller to progress ahead. Pushing down means slowing down or even standing still. This directs the drag stake into the soil, thus holding the tiller back. Adjust throttle for desired speed of rotors.

When a person is first learning the proper use of the tiller, it is not unlikely that he will encounter an uneven or "buckling" action in the operation of this machine. A little practice will accustom the operator on how to overcome this. Never push on the machine if it has dug itself into a depth of six or more inches in order to get it to move forward. This is accomplished by slightly raising up on the handles and tilting the machine slowly from one side to the other.

Your tiller has been carefully designed in both workmanship and material. However, by the very nature of its operation, common sense and caution must be employed at all times. Read carefully and abide by the safety suggestions stated in this operators guide.

OPERATION



DANGER



For safe operation, the tine drive must disengage immediately when clutch lever is released. If it does not, adjust belt and cable tension as described in "ADJUSTMENT" section of this manual.

Never leave the tiller unattended with the engine running because children might be attracted to a running tiller and could be injured if struck by the rotating tines.

OPERATION OF CHAIN DRIVE TILLER

1. When ground is hard (especially during spring and fall plowing), place wheels in up position by removing the clevis pin from the wheel clevis, and repositioning the wheel frame bar. Replace the clevis pin and the pin clip (Figure 6). For weeding or cultivating, wheels may be left down if you prefer.

2. Adjust the drag stake for comfortable operation. This is done by removing the pin clip from the drag stake clevis pin, removing the clevis pin, and sliding the drag stake up or down. The drag stake should be set so that when it is firmly in the ground, and your hands are on the tiller handle, your arms hang comfortably with the elbows slightly bent.

3. Move the throttle control to center position. Start the engine and allow it to warm up, then set the throttle at about half speed. After you have become familiar with the tiller, you may want to run the engine a little faster.

4. Press down firmly on the handles, and then squeeze the clutch lever. The tines will begin to turn, but the tiller should not move forward. If it does, don't pull backwards -- merely press down harder on the handles. When you find the right amount of downward pressure so that the tines are digging and the tiller is not moving forward, release the pressure slightly. As you release it you'll notice the tiller beginning to move forward.

OPERATING TIPS

To acquire the knack of letting the tiller do the work without effort on the part of the operator, we offer the following suggestions:

1. Adjust drag stake so the handles are at such a height that your arms hang straight down to contact them. Rear wheels should be in up position for deep tillage or ease of turning in confined areas.
2. Operate the tiller at about three fourths (3/4) throttle.
3. Don't hurry the job -- proceed at a slow walk -- give the

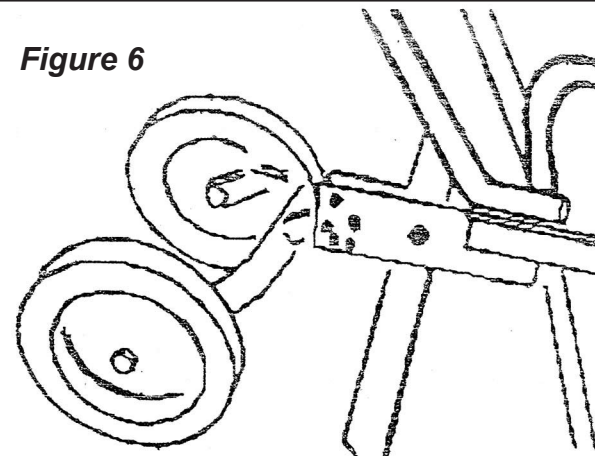


Figure 6

machine time to do its job.

4. Concentrate on keeping your arms relaxed (There is a natural tendency for any beginner to tense up.). Operating the tiller actually takes very little effort. Let the tiller do the work.

5. When tilling on sloping ground, turn the front of the machine uphill to sufficiently counteract the tendency to run downhill.

6. For best results, operate at reduced throttle settings when ground is extremely hard or rough.

7. When cultivating, raise drag stake until the handles are the proper height as described in Item 1 or set rear wheels in position. Proceed at a slow walk, watching the rotor as it tills along the row.

8. **Tighten all nuts and bolts periodically.**

TILLING PATTERN

Whenever possible till the soil in the direction in which the planting or rows will run. If the soil is extremely hard and dry, it may be advisable to till across the plot on the first digging and then obtain the depth you want by tilling in the direction the planting will be done.

TRANSPORT

To transport tiller from garden to storage area, lift the handles until the drag stake is above ground level, set the engine throttle at slow speed and walk the tiller on the tines.

ADJUSTMENTS and MAINTENANCE

CLUTCH ADJUSTMENT (Figure 7)

Proper clutch adjustment is very important. Minor adjustment, if needed, can be made by using the links on the clutch cable chain only. However, the friction type clutch may need further adjustments as the "V" belt stretches. Adjust as follows:

1. Remove belt guard.
2. Loosen 4 engine mount bolts. Slide engine forward or backwards as required.
3. Unhook clutch cable from load spring.
4. Push upward on idler pulley to take all slack from the drive belt. Distance between the inside of belt at the idler pulley should be between 2 7/8 and 3 1/8 of an inch.
5. Retighten engine mounting bolts.
6. Remove all the slack from clutch cable and hook spring in proper chain link.
7. Check your adjustment by starting the tiller and holding the tines off the ground. If the tines turn without any hand pressure on the clutch lever, the adjustment is too tight. Unhook the clutch load and hook into next chain link to lengthen clutch cable. If the cable spring on the clutch handle doesn't stretch when you hold the clutch handle all the way in, the adjustment is too loose. Unhook spring end from chain and hook next link to shorten clutch cable.

CHECK TRANSMISSION OIL

Check transmission oil by removing oil level check plug (See Figure 8). If you cannot see oil from the check plug. Refit plug and add 90 weight gear oil from the oil fill plug. Do not overfill. This will cause leakage. Recheck level. Oil should just ooze from Oil level check plug.

CLEAN COOLING SYSTEM (Figure 9)

Grass or chaff may clog cooling system after prolonged service. Continued operation with a clogged cooling system causes severe overheating and possible engine damage. Remove blower housing and clean regularly.

BELT REPLACEMENT

The drive belt is located on the left side of the machine. To replace a worn or slipping belt proceed as follows:

1. Remove belt guard.
2. Make sure clutch lever is in disengaged position.
3. Start at the top of 10" pulley and begin removing belt in clockwise direction (facing tiller from left side). If tension on belt is too great the idler pulley may be pulled downward to relieve pressure on belt.
4. Once belt is off 10" pulley, remove it from smaller pulley.
5. Replace belt by reversing sequence of steps above.
6. Replace belt guard with screws.

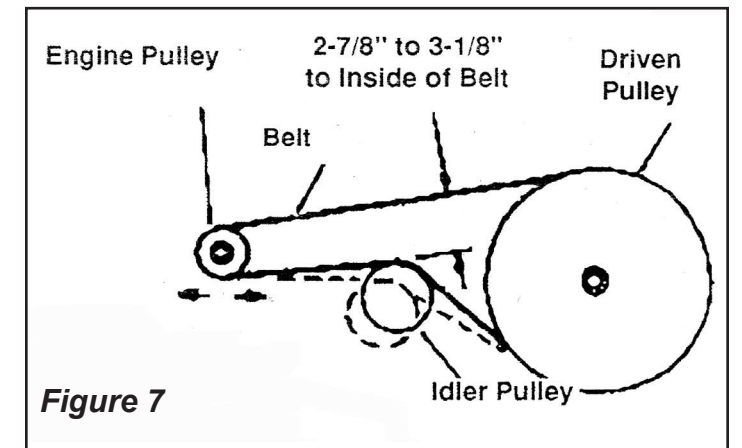


Figure 7

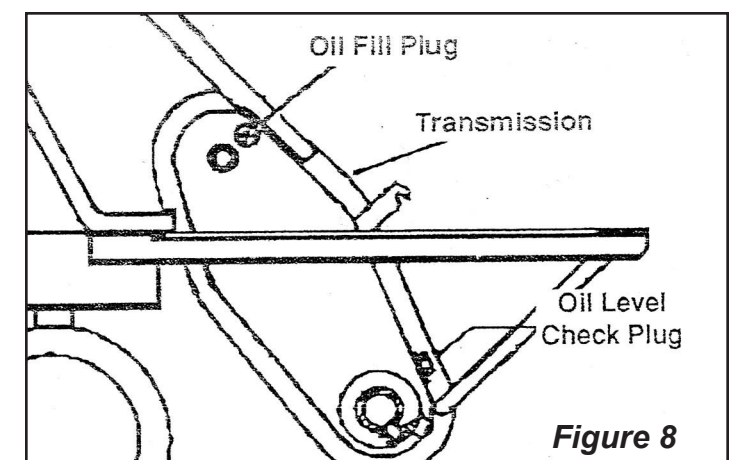


Figure 8

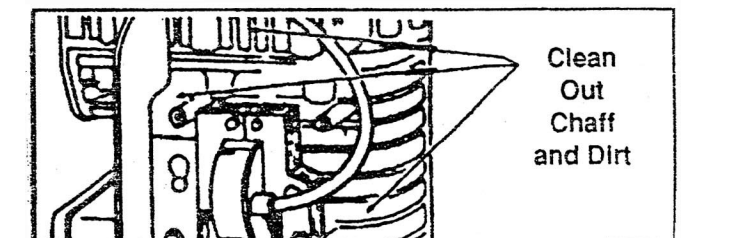


Figure 9



DANGER



To avoid possible serious bodily injury, when performing any adjustments other than carburetor adjustment on engine, remove the spark plug wire and place the wire away from the plug to prevent accidental starting.

IMPORTANT!
KEEP HANDS CLEAR OF BELT AND
TINES WHILE ENGINE IS RUNNING.