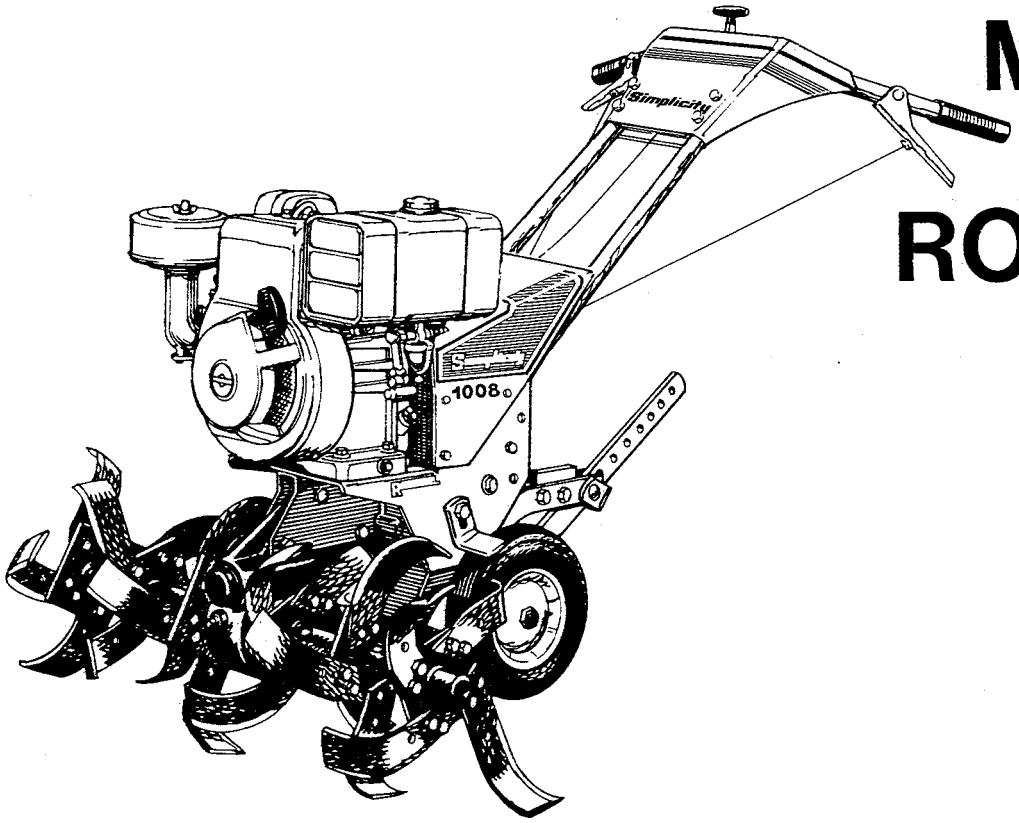
Simplicity®
AN ALLIS-CHALMERS COMPANY

OPERATOR'S MANUAL



MODEL 1008 ROTICUL

8 H.P. TILLER
MFG. NO. 1690239

CAUTION: READ MANUAL THOROUGHLY BEFORE OPERATING

FORM — 1657226-03
PRINTED IN U.S.A.
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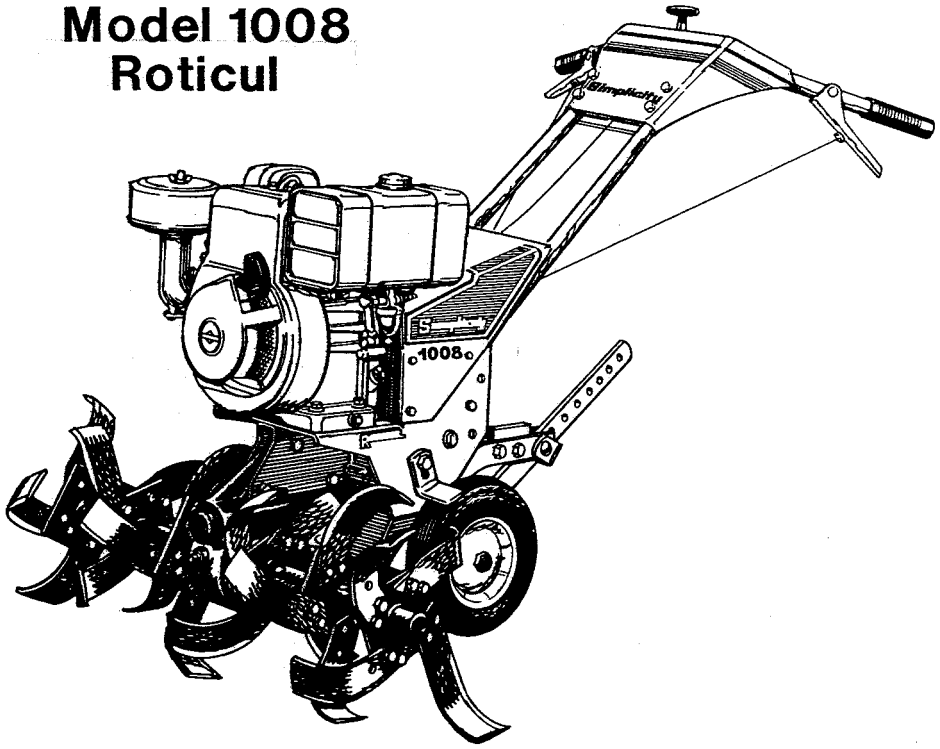
Model 1008
Roticul



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WARNING

Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of machine, severe personal injury to yourself or bystanders, or damage to property or equipment affecting safety.

Safety Rules

This notation preceding Cautions and Warnings in the text signifies important precautionary steps which, if not properly followed, could result in personal injury or damage to your equipment affecting safety.

General

- Read the Operator's Manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
- Never allow children to operate the machine. Do not allow adults to operate it without proper instruction.
- Use only attachments or accessories designed for your machine. See your dealer for a complete list of recommended attachments or accessories.
- Keep the area of operation clear of all persons, particularly small children, and pets.
- Make sure:
  a. tiller is in good operating condition,
  b. all safety devices or shields are in place and in good working condition, and
  c. all adjustments have been made.

Preparation

- Never attempt to make any adjustments while engine is running.
- Thoroughly inspect the area where the tiller is to be used and remove all wires, sticks, and other foreign objects.
- Wear heavy footwear. Do not operate tiller when barefoot or when wearing canvas shoes or open sandals.
- Handle gasoline with care – it is highly flammable.
  a. Use approved gasoline container.
  b. Never remove the cap of the fuel tank or add gasoline to a running or hot engine, or fill the fuel tank indoors. Wipe up spilled gasoline.
- Do not run the engine indoors. Exhaust fumes are deadly.

Operation

- Release the clutch levers and stop the engine before cleaning tines, removing obstacles, making adjustments, or when leaving the operating position.
- Use caution to avoid slipping or falling, especially when operating tiller in reverse.
- Be especially careful not to touch tiller parts which might be hot from operation. Allow such parts to cool before attempting to maintain, adjust, or service.
- Stay alert for holes in the terrain and other hidden hazards.
- The tiller should be stopped and inspected for damage immediately after striking a foreign object, and the damage should be repaired before restarting and operating the equipment.
- Never operate the rotary tiller without good visibility or light.
- Always operate tiller across the face of slopes, and never up and down the face. Use extreme caution when changing direction on slopes. Do not attempt to clear steep slopes.

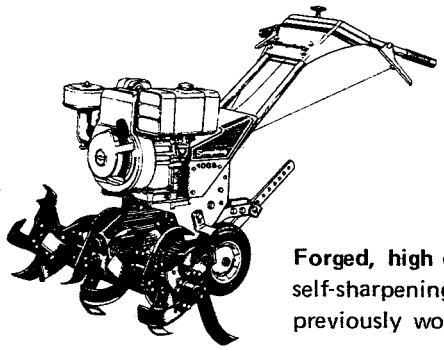
- If the unit should start to vibrate abnormally, disengage the drive, stop the engine, and check immediately for the cause. Vibration is generally a warning of trouble.
- Do not alter or in any way attempt to defeat the safety feature of the deadman type clutch controls.

Maintenance and Storage

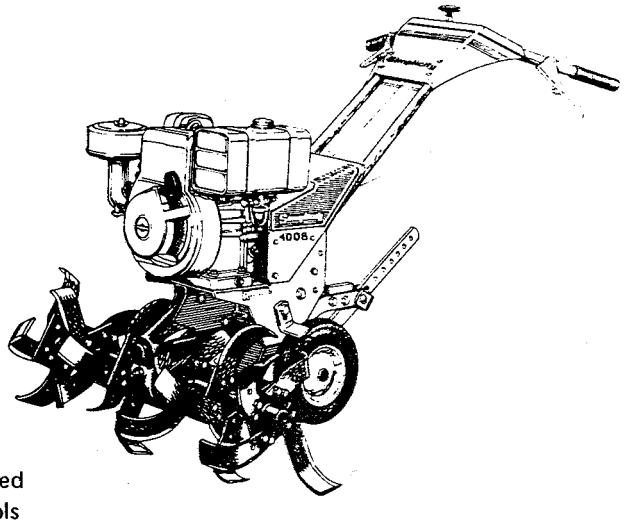
- Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
- Always refer to the operator's manual for important details if rotary tiller is to be stored for an extended period.
- Never store machine with fuel in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
- Do not change the engine governor settings or overspeed the engine.

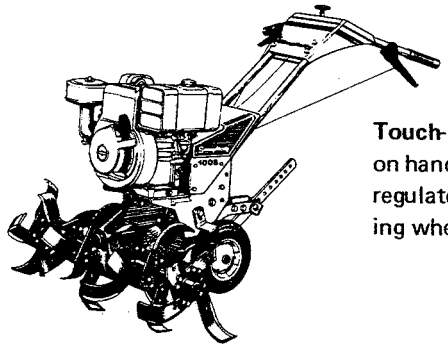
Owner Benefits

Model 1008 Roticul



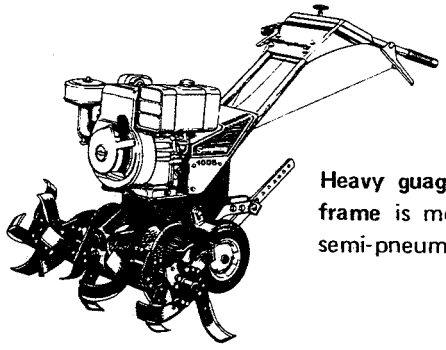
Forged, high carbon steel tines are self-sharpening to break up turf or previously worked soil.





Touch-O-Matic controls are located on handles for easy reach. Controls regulate tine direction and stop tilling when released.

Dependable, worm and gear type transmission has roller and needle bearings inside a cast iron housing.

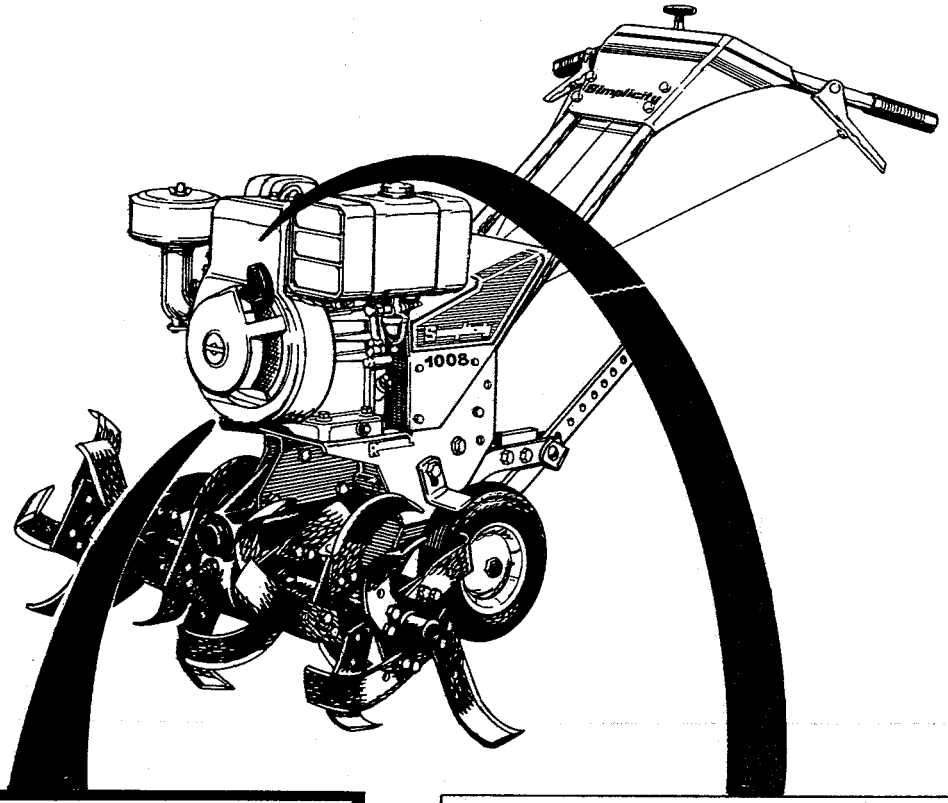


Heavy guage, welded steel channel frame is mounted on heavy duty, semi-pneumatic rubber tires.

Briggs & Stratton 8 horsepower engine has easy-spin starting. Horizontal crankshaft and upward angled, side pull recoil starter are designed for natural motion. No mixing of oil and gasoline.

Identification

When requesting information or ordering replacement parts for your rotary tiller, be prepared to give your dealer the identification numbers found on the tiller and engine identification plates shown below. The tiller ID plate is located on the right-hand side of the frame. The engine ID plate is located on the engine housing.



SIMPLICITY MANUFACTURING CO.
A DIVISION OF ALLIS-CHALMERS CORPORATION
PORT WASHINGTON, WI U.S.A.
Refer to ID no. when writing or ordering parts
ID NO.

TILLER IDENTIFICATION PLATE

MODEL	TYPE	CODE

ENGINE IDENTIFICATION PLATE

Accessories & Attachments

See your dealer to purchase any accessories or attachments available for your rotary tiller. The following will help make your tilling jobs easier:

TINE EXTENSION KIT — Increases overall tilling width to 35 inches (889 mm).

FURROW OPENER — Opens furrows behind tiller to plant crops in rows.

Models illustrated in this manual may vary slightly from the model you have.

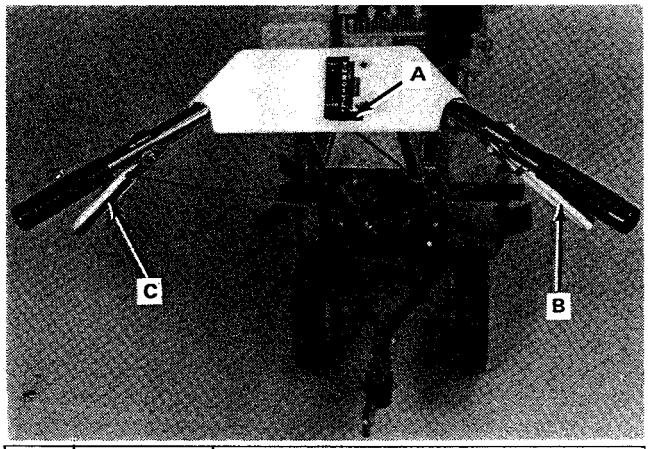
Operation

CONTENT OF SECTION

A brief description of the rotary tiller controls, followed by the basic operating procedures, is given in this section to help you get to know your rotary tiller and how to operate it safely and efficiently.

ROTARY TILLER CONTROLS

The rotary tiller is operated using controls located on the handlebars. Figure 1 shows the locations, names and functions of these controls. The control names given in figure 1 are used throughout this manual.



Item	Name	Function
A	Throttle Lever	Used to adjust engine speed or stop engine.
B	Forward Clutch Lever	Controls forward action of tiller. Squeeze lever to engage drive. Release to stop.
C	Reverse Clutch Lever	Controls reverse action of tiller. Squeeze lever to engage drive. Release to stop.

Figure 1. Locations and Functions of Controls

OPERATING PROCEDURES

The rest of this section describes how to operate the rotary tiller. The directions assume that your machine is assembled and working properly. Your dealer has performed all necessary assembly procedures, but proper assembly should still be checked according to the Assembly Section at the end of this manual.

If your rotary tiller does not work properly during operation, refer to the Troubleshooting and Adjustments sections of this manual. When operating the tiller for the first time read and become familiar with all operating directions in the order given in this section.

Checks Before Starting

Read this manual completely before the first use of your rotary tiller, and thereafter as often as necessary to ensure safe and efficient operation.

The checks listed below should be performed before each use of the tiller.

1. Be sure to follow all safety precautions and know the locations and uses of operating controls.
2. Be sure that all safety guards are in place and that all nuts, bolts, and spring clips are secure.
3. Refer to Normal Care section of this manual to determine and perform any needed care. Be sure to check engine crankcase oil.
4. Check both clutch levers (figure 1) for free movement. Any binding must be repaired before starting engine.
5. Check your fuel supply. Be sure that you have enough fuel for the job you intend to do. If more fuel is needed, fill the tank as follows.

WARNING

Gasoline is highly flammable and must be handled with care. Never fill the tank when the engine is still hot from recent operation. Do not allow open flame, smoking or matches in the area. Avoid overfilling and wipe up any spills.

   a. Remove fuel cap (see figure 2 on next page).
   b. Use a funnel or gas can with telescoping spout when filling tank to prevent fuel spilling.
   c. Fill fuel tank with clean, fresh, leaded or lead-free regular grade gasoline.
   d. Install and hand tighten fuel cap.

6. Clear the area you intend to till of all wire, sticks, and other items which may get caught in or be thrown by the rotating tines of your machine.

Stopping the Rotary Tiller

Your rotary tiller is equipped with Touch-O-Matic controls as a safety feature. All that is necessary to stop the tiller motion is to release the handlebar clutch lever being used. When the Touch-O-Matic control lever is released, all mechanical movement stops except the engine. To stop the engine, move the throttle lever to the STOP position.

Starting the Rotary Tiller

Complete the "Checks before Starting"procedures, then proceed as follows:

WARNING

For your personal safety, do not start or run the engine in an enclosed area. Exhaust fumes are deadly.

1. Set the throttle lever halfway between the STOP and FAST positions.
2. Make sure the fuel shut-off valve is open (see figure 2).

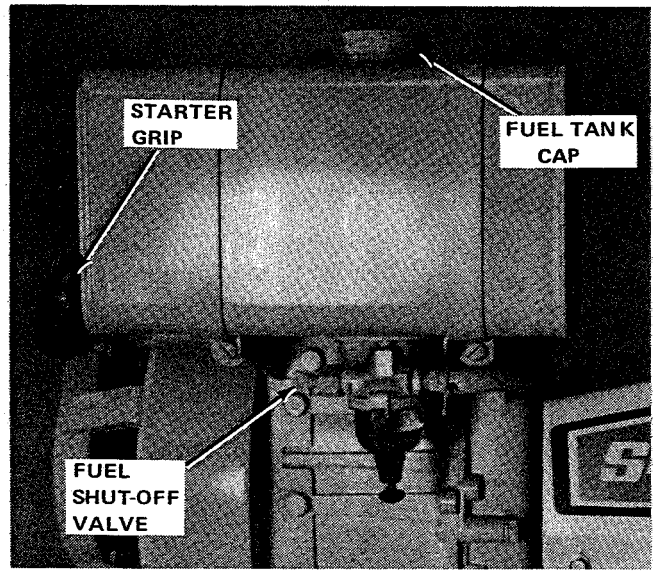


Figure 2. Fuel Tank and Fuel Valve

3. Move the engine choke lever fully forward to the CHOKE position (see figure 3). When engine is warm, it may not be necessary to use the choke.

WARNING

For your personal safety, do not attempt to start engine unless Touch-O-Matic handle levers are disengaged (released). Do not attempt to defeat the safety feature of the Touch-O-Matic controls.

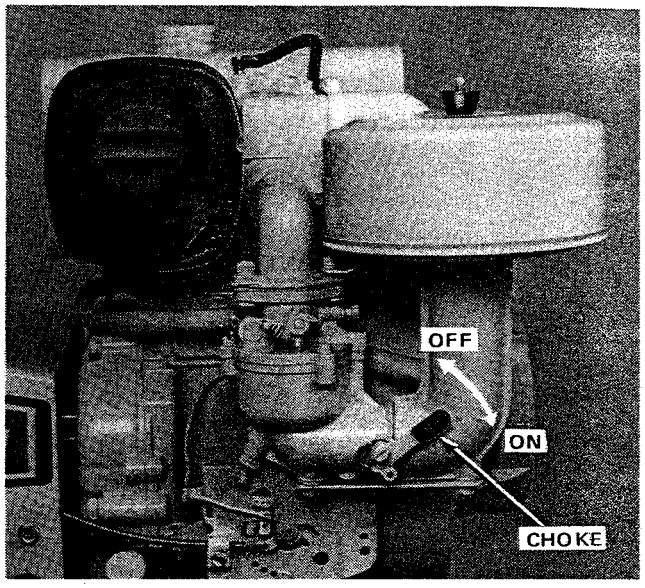


Figure 3. Engine Choke

5. Grasp the starter rope handle and pull outward. The engine should start. If it does not start in three to five pulls, the engine may be flooded. Move the choke to the "OFF" position and try starting the engine again. Always return the starter rope slowly by hand.
6. After the engine has started, move the choke to "OFF" slowly. Warm up the engine by running it for about a minute before engaging the drive.

Before Leaving the Rotary Tiller

Perform the following steps before leaving your tiller:

1. Stop tiller motion by releasing the clutch lever being used.
2. Set the throttle lever at SLOW and idle engine for about one minute. Stopping a hot engine too suddenly can cause engine damage.
3. Move the throttle lever to STOP and wait for all engine movement to stop before leaving the operator's position.

TILLER OPERATION

To transport the tiller to the work site or from one work site to another without tilling, slow engine speed, raise depth bar to highest position, and engage the forward clutch. The tiller will move across the ground without tilling.

WARNING

For your personal safety, always stop the engine before attempting to adjust, service, or maintain your rotary tiller.

For tilling, adjust the depth bar for the desired tilling depth (see figure 4). The depth bar is adjusted by removing the spring clip and pin, selecting the desired height, and then reinstalling the pin and spring clip. To till 4 to 6 inches (100 to 150 mm) deep, install the pin in the second or third hole from the top.

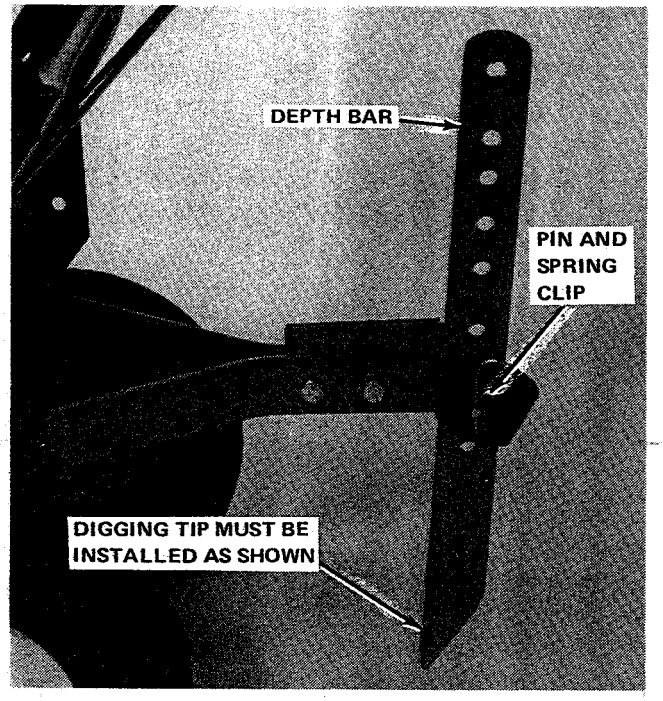


Figure 4. Depth Bar

NOTE

To avoid possible damage to your machine, NEVER engage both the forward and reverse clutch levers at the same time.

Adjust the engine speed to fit the soil conditions, usually from three-quarters to full speed. Then engage the forward clutch by squeezing the lever on right handle. The tines will rotate to till the soil and also to pull the tiller forward.

Forward speed of the tiller and the tilling depth are closely related. When the forward speed is too fast, the tilling depth is shallow. The depth bar controls the tilling depth by creating a drag that slows the forward motion of the tiller. You can vary the drag created by the depth bar with slight upward or downward pressure on the handles. Downward pressure increases the drag to reduce forward speed. Upward pressure produces the opposite results. Note that only slight pressures are required.

Do not attempt to slow the forward speed by pulling back on the handles. Doing so will create upward pressure on the handles, reducing depth bar drag and adding to the original problem. Let the depth bar do its job. If it is properly adjusted and used, you need do little more than guide the machine.

Experience will help you learn the correct use of the depth bar. When you begin, proceed slowly and carefully to get the feel of the machine. Remember that the desired depth will not be reached until the tiller moves forward and the depth bar enters a previously tilled area. As you proceed, experiment with the clutch lever so you learn to gauge the responses needed in close areas.

WARNING

For your personal safety, release the clutch lever immediately when striking a foreign object. Stop the engine and thoroughly inspect the tiller before restarting and operating again.

Operating on Slopes

The chances of an operator slipping towards the tiller are greatest when tilling up and down the face of slopes, especially downhill in freshly churned soil. **For your personal safety, always till across the face of slopes, and never up and down the face.** Do not attempt to till steep slopes, and always use extreme caution when changing direction on any slope.

Never attempt to operate your tiller on slopes greater than 20 percent (11.3 degrees) — which is a rise of 2 feet in 10 feet forward — and always operate across the slope.

TILLING HINTS

One of many tilling considerations is to adjust engine speed to fit both the soil condition and the job. When doing seedbed preparation, you will normally want to use full or nearly full engine power. When cultivating between rows of plants, control is most important and a much slower speed is desired.

You will want to till to a depth that suits the seed you will plant. As a rule, till at least 2 inches (50 mm) deeper than the normal planting depth for the seed. The usual planting depth for corn, as an

example, is 2 to 3 inches (50 to 76.2 mm). Using the rule above for this example, till the soil to a depth of 5 inches (127 mm) or more.

Plan ahead and determine the best tilling pattern before you start. Consider the size and shape of the area to be tilled. Keep in mind the hardness of the soil. Under normal conditions, tilling is best done by making long passes alongside previous ones (item A, figure 5). In hard-packed soil, steering problems can be reduced by skipping one tiller width from the previous one (item B).

In places where rows are slightly wider than the tines, it is possible to wiggle the front of the tiller back and forth slightly as the tiller moves forward to enable the tines to pick up the small area that otherwise would be missed.

Turning the tiller around at the end of a row for the next pass in the opposite direction is best learned by experience. One method is to disengage the forward clutch, lift up on the handles and pivot the tiller on the tines. A combination of the forward and reverse clutch together with pivoting of the handles may be used.

Do not till when the soil is very wet. This causes lumps which are difficult to remove. Soil that is moist enough to roll into a ball is too wet. If the soil is extremely hard and dry, it may be desirable to cross-till an area (item C, figure 5) at shallow depth first. Then till deeper in the direction the rows will be planted at desired depth. Soil that is tilled at scheduled intervals is usually much easier to till.

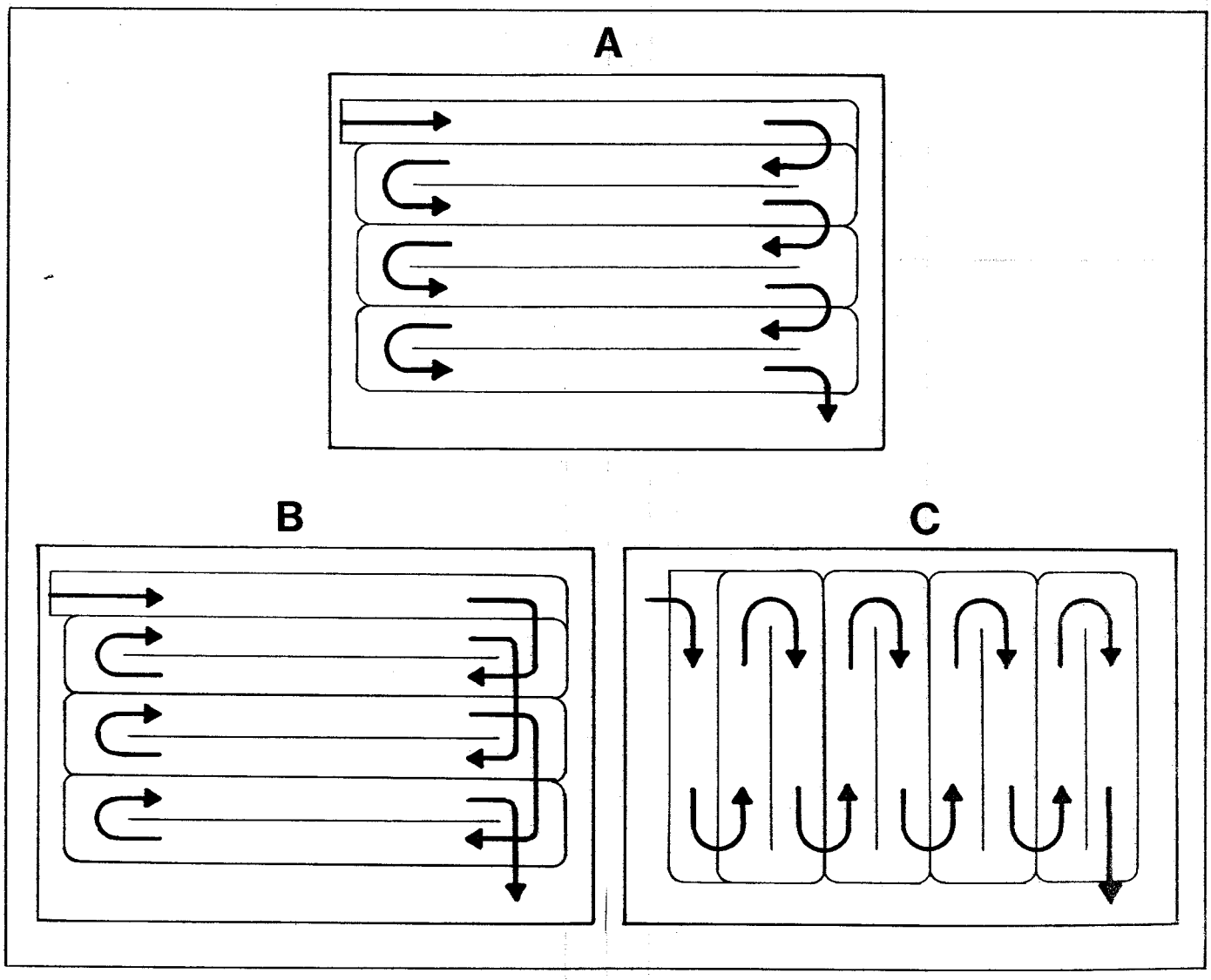


Figure 5. Suggested Tilling Patterns

Normal Care

CONTENT OF SECTION

Your rotary tiller was designed and built to provide years of service with only minor care. Certain tasks, however, must be performed to keep the tiller in good operating condition and to avoid costly repairs. This section describes and provides procedures for the necessary care of your rotary tiller.

WARNING

For your personal safety, either remove spark plug or remove cable from spark plug and insert terminal in V-notch on cylinder cover before servicing or adjusting your tiller (see figure 14 if necessary).

SCHEDULED CARE

A schedule for routine care is provided in figure 6. Your dealer has performed the tasks required before the first use of the rotary tiller. We suggest that you at least check these items to ensure that the tiller is ready for use. Performing the checks will also help you become familiar with the care of the rotary tiller.

All other scheduled care is performed after operating the rotary tiller for a specific amount of time. See figures 6 through 11. Remember to perform the "every 25-hour check" when you perform the "every 100-hour check."

Because the schedule is based on operating time, it will be necessary to estimate and keep a record of all operating time. A Maintenance Record (figure 24) is provided to help you keep track of all operating hours and maintenance repair actions.

NORMAL STORAGE

To protect your rotary tiller, store it in an enclosed, dry area. Do not store it in an enclosure where fumes from the fuel tank could reach an open flame without first running the fuel tank dry.

OFF-SEASON STORAGE

When the tiller is to be stored for thirty days or longer, take precautions as follows:

WARNING

For your personal safety, keep open flame or spark away from flammable gasoline when working near the fuel tank. Never store tiller where gasoline fumes may reach an open flame or spark.

1. To empty or prepare fuel tank:
   a. Run tiller engine until it stops from lack of fuel, or
   b. Use a gasoline stabilizer. This additive, available from your dealer, prevents formation of gum and varnish for up to one year. With the additive, fuel may remain in your tiller tank for long periods.
2. Change engine oil while the engine is still warm. (See figure 7.)
3. Remove spark plug. Pour one ounce (30 ml) of 10W-30 oil into engine through spark plug hole. Crank engine a few times to distribute oil and then reinstall the spark plug.
4. Lubricate tiller. (See figure 9.)

Care Required	See Figure	Schedule			
		Before First Use	Every 5 Hours	Every 25 Hours***	Every 100 Hours
Check Engine Oil Level	7	•	•		
Change Engine Oil*	7			•	
Check Worm Gear Oil	8			•	
Lubrication	9			•	
Clean Engine and Air Filter**	10			•	
Clean and Gap Spark Plug	11				•

*Change original oil after first 5 hours of operation.
***Or yearly, whichever occurs first.
**More often under dirty or dusty conditions.

Figure 6. Summary of Scheduled Care

5. Clean dirt and chaff from entire tiller. Coat all exposed metal parts with a good quality paint (available from your dealer) or a light film of grease, oil, or automotive wax.
6. At end of storage period, follow instructions in "Starting After Storage."

Starting After Storage

Before starting the tiller after a period of storage, proceed as follows:

1. Clean engine fins and air cleaner (figure 10).
2. Remove spark plug and wipe dry. Crank engine a few times to blow excess oil out of plug hole. Then reinstall the plug.
3. Fill fuel tank with fresh gasoline (unless a fuel stabilizer was used).
4. Start the engine outdoors. Do not run engine at high speeds immediately after starting.

Check tiller and engine (5-hour care)

1. Check tiller and engine for loose screws, pins, bolts, oil leaks, etc.
2. Clean area around oil fill plug.

NOTE

Engine must be level.

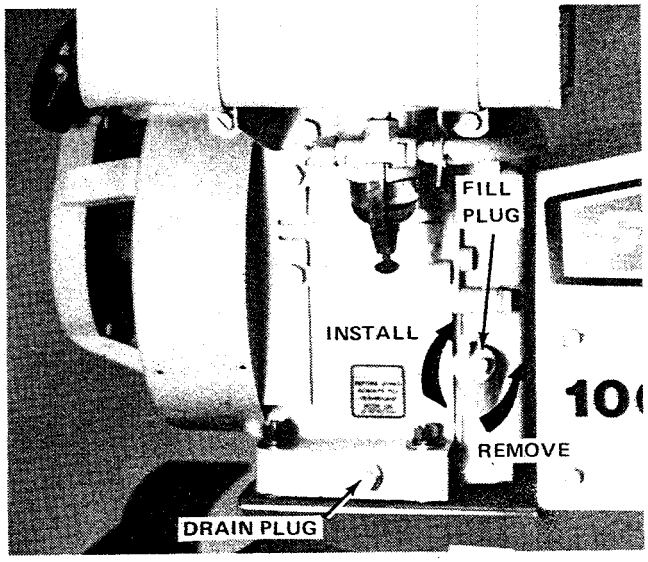
3. Check/add engine oil as follows:
   A. Remove oil fill plug.
   B. Oil level should be almost to top of fill plug hole. If not, add oil using same weight and grade as used at last oil change.
   C. Reinstall and tighten oil fill plug.

Change Engine Oil (25-hour care)

NOTE

Change oil when unit is level and engine is still warm from operation. Don't pollute: dispose of old oil properly.

1. Clean area around oil fill plug.
2. Remove oil drain plug and allow oil to drain from engine. Tip unit if necessary to be sure oil is completly drained.
3. Reinstall oil drain plug.
4. Remove oil fill plug.



NOTE

To avoid engine damage, use only quality detergent oil of the correct grade and weight. The grade (service) marking on the can may be SC, SD, SE, or MS. The correct recommended weight is SAE 30 or, if unavailable, SAE 10W-30.

5. Fill crankcase with new oil to overflowing. Pour slowly. Capacity: about 2-3/4 pints (1.3 L).
6. Reinstall and tighten fill plug.

Figure 7. Check/Change Oil

To check or add worm gear oil:

1. Remove fill plug.

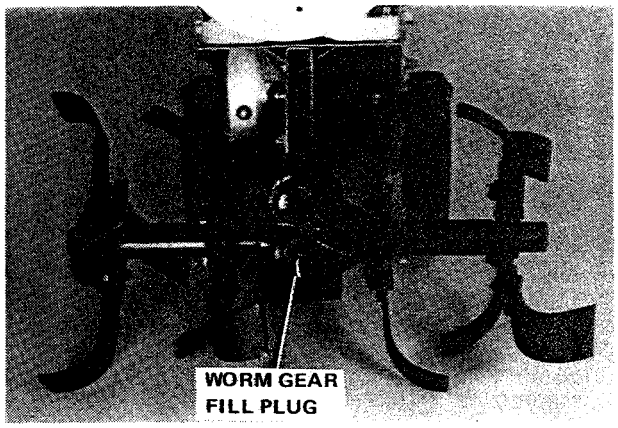
NOTE

There is a breather in a vent hole at rear of worm drive housing. Do not remove breather for any reason.

2. Oil should be level with plug hole when tines are resting on ground (housing level). If not, add special worm gear oil (available from your dealer) through plug hole until full. Do not overfill.

NOTE

Damage to the worm gear drive which results from use of any lubricant other than special worm gear oil as specificed by the manufacturer, or its equivalent, will automatically invalidate the warranty.

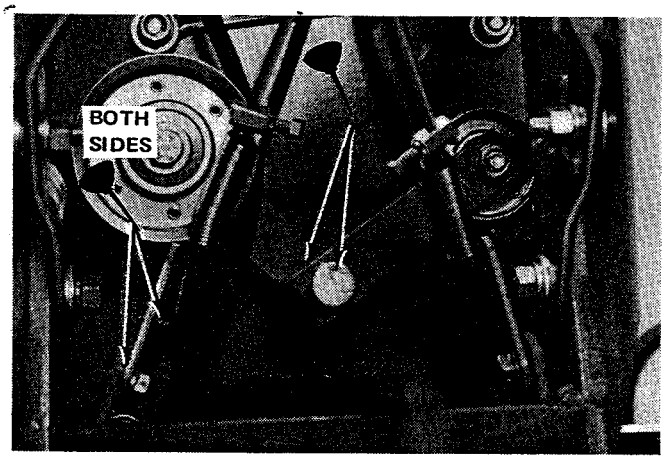


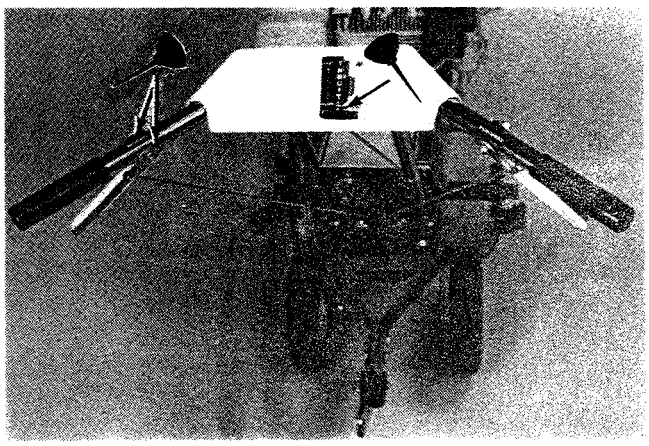
3. Reinstall and tighten fill plug.

NOTE

The worm drive housing may become warm from operation. This is completely normal and no harm to gears will occur if the housing is kept full as specified with the special worm gear oil.

Figure 8. Check/Add Worm Gear Oil (25-Hour Care)





NOTE

Use oil sparingly. Excess oil only collects dirt which causes extra wear.

NOTE

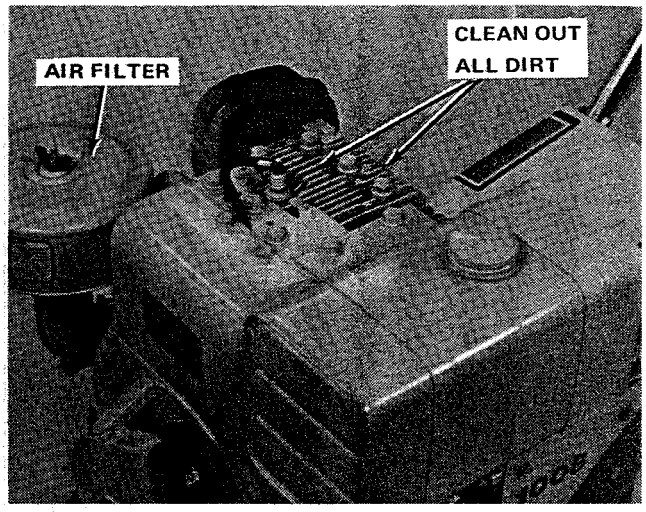
Do not oil wheel bearings. Keep oil off pulleys and belts.

Symbol	Use	Apply With	Procedure
	Medium weight (SAE 30) oil	Oil can	1. Brush and wipe dirt and grass from area. 2. Apply a few drops of oil. 3. Wipe up any drips or spills.

Figure 9. Lubrication (25-Hour Care)

1. Clean all dirt and grass from engine fins.

2. Clean engine air filter.
   A. Remove wing nut and cover.
   B. Lift foam element with cup from base.
   C. Remove cup from foam element.
   D. Wash foam in kerosene or liquid detergent and water to remove dirt.
   E. Wrap foam in cloth and squeeze dry.
   F. Saturate foam with engine oil. Squeeze to remove excess oil.
   G. Reinstall cup in foam. Be sure foam sealing lip is over both ends of cup.
   H. Reinstall air filter on engine.



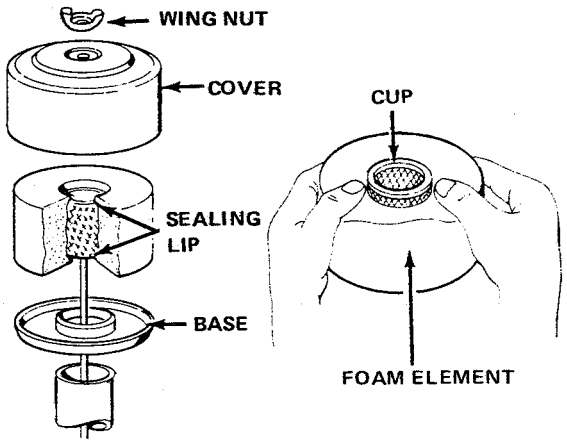


Figure 10. Clean Engine and Air Filter (25-Hour Care or as Required)

1. Disconnect plug wire and fasten it in V-notch on cylinder cover. See figure 14 if necessary.

NOTE

Do not clean spark plug by sandblasting; sand or grit that remains on plug may damage engine.

2. Clean spark plug. If plug shows signs of defects, it should be replaced with a new plug.
3. Set gap at .030 inch (.76 mm).
4. Reinstall spark plug and torque it to 19 Ft. Lbs. (25 N-m). Reconnect plug wire.

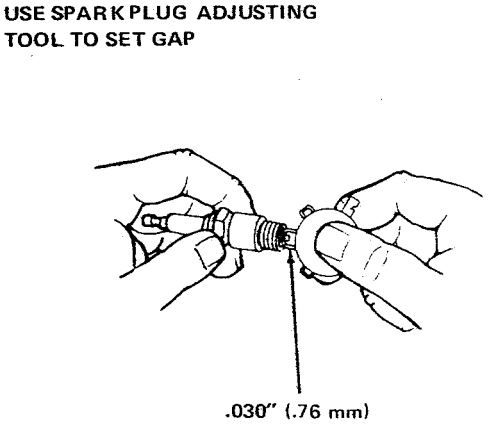


Figure 11. Clean or Replace Spark Plug (100-Hour Care)

Troubleshooting

CONTENT OF SECTION

This section of the manual provides troubleshooting and repair instructions for the more common and easily corrected rotary tiller problems. For other problems, it is recommended that you contact your dealer.

TROUBLESHOOTING PROCEDURES

Troubleshooting procedures are provided in figure 12. To use these procedures, first locate the problem description that best describes the trouble that you have encountered. Check the possible causes one at a time in the order that they are listed. Correct any problems that are found and try to operate the rotary tiller again to see if you have eliminated the trouble.

WARNING

To avoid serious injury, perform maintenance on the tiller only when the engine is stopped. Also, remove the spark plug or remove spark plug wire and insert terminal in V-notch on cylinder cover. (See figure 14 if necessary).

Problem	Cause/Remedy
1. Engine fails to start.	A. Out of fuel. Fill fuel tank. B. Choke lever not on. Move choke to on position and set throttle lever at half speed. C. Spark plug wire off or loose. Install fully. D. Engine flooded. Move choke to off position and try starting engine again. E. Spark plug or points faulty, fouled, or incorrectly gapped. See figure 11 and your engine manual. F. Water in fuel. Drain tank and refill with fresh fuel. G. Old, stale gas. Drain tank and refill with fresh fuel.
2. Engine starts hard or runs poorly.	A. Fuel mixture too rich. Be sure choke is off. Clean air filter. B. Spark plug or points faulty, fouled, or incorrectly gapped. See figure 11 and your engine manual. C. Carburetor needs adjustment. See your engine manual.
3. Engine exhaust is black or smoky.	A. Dirty air filter. Clean filter (figure 10). B. Choke not fully open. Be sure choke is in full off position. Check carburetor adjustment.
4. Belt slippage occurs.	A. Belt tension may be too loose. Refer to clutch adjustments in Adjustments Section. B. Belts may be stretched or worn excessively. Replace belts. C. Belts may be greasy or oily. Clean belts. D. Pulleys may be misaligned. Check according to Adjustment Section.

Figure 12. Troubleshooting Procedures

Problem	Cause/Remedy
5. Rotary tiller does not operate.	A. Rotary tiller drive belt broken. Replace. B. Spring for idler pulley loose or broken. Reconnect or replace.
6. Tills too shallow.	A. Ground too hard. Make several passes, tilling deeper on each pass. B. Depth bar set improperly. See Operation Section.
7. Tiller leaves ground rough with large clods.	A. Ground too wet. Wait for dryer conditions. B. Tilling too deep for one pass. Raise depth bar.

Figure 12. Troubleshooting Procedures (Cont'd)

Drive Belt Replacement

If the tiller drive belts become worn or break, replace them as follows (NOTE: To replace only the inner V-belt, the outer V-belt still has to be removed).

WARNING

For your personal safety, stop tiller engine. Remove spark plug or remove spark plug wire and insert terminal in V-notch on cylinder cover. (See figure 14 if necessary.)

To remove the outer (forward) drive belt:

1. Loosen the two belt stops at the large worm drive pulley (item G, figure 13) as needed.
2. Remove the outer V-belt from the engine pulley (item A), and then off the worm drive pulley.
3. If the inner V-belt is not to be removed, install the new outer V-belt in the reverse order of its removal. Then check the belt stop and clutch adjustments according to the Adjustment Section. If the inner V-belt is to be removed, proceed to the following instructions.

To remove the inner (reverse) drive belt:

1. With the outer V-belt already removed, unhook both control rod springs from the bellcranks (items E and H, figure 13).
2. Remove the two flange locknuts (items F and I) and remove the bellcranks from the studs.
3. Remove the inner drive belt from the engine pulley (item B).
4. Turn the belt sideways, lift the reverse idler pulley (item C), and work the inner V-belt out around that idler pulley and over the bellcrank (item H).

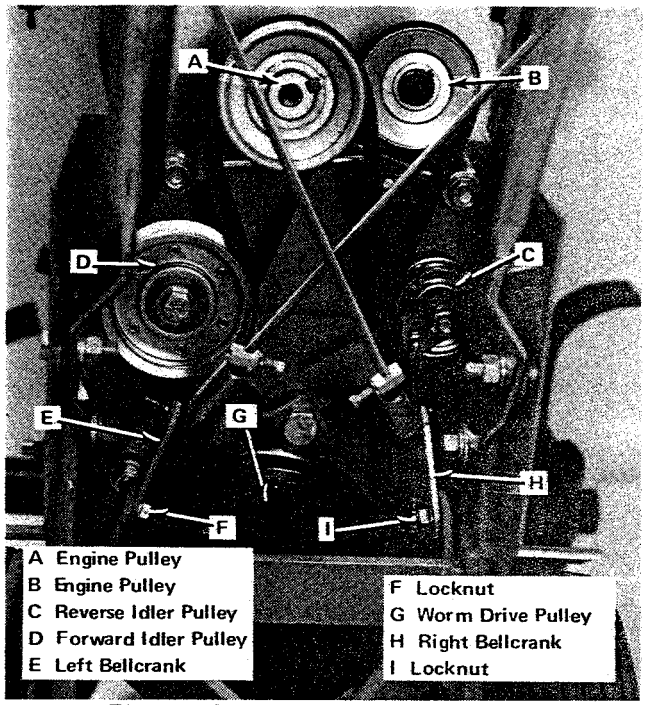


Figure 13. Drive Belt Replacement

5. Lift the forward idler pulley (item D), and work the inner V-belt out around that pulley, over the bellcrank (item E), and off the tiller.
6. Install the new inner V-belt in the reverse order of its removal.
7. Place the bellcranks (items E and H) on the studs and reinstall the flange locknuts (items F and I). The locknuts should be flush with the ends of the studs.
8. Install the outer V-belt.
9. Hook the control rod springs back into the bellcranks as shown.
10. Check all belt stops and clutch tension according to the Adjustment Section of this manual.

Adjustments

CONTENT OF SECTION

This section contains adjustment procedures for the rotary tiller. These adjustments are made during assembly and thereafter are normally performed only to correct specific problems. Follow all instructions in the order given.

WARNING

To avoid serious injury, perform adjustments on tiller only when the engine is stopped. Always remove spark plug or remove spark plug wire and insert terminal in V-notch on cylinder cover. See figure 14.

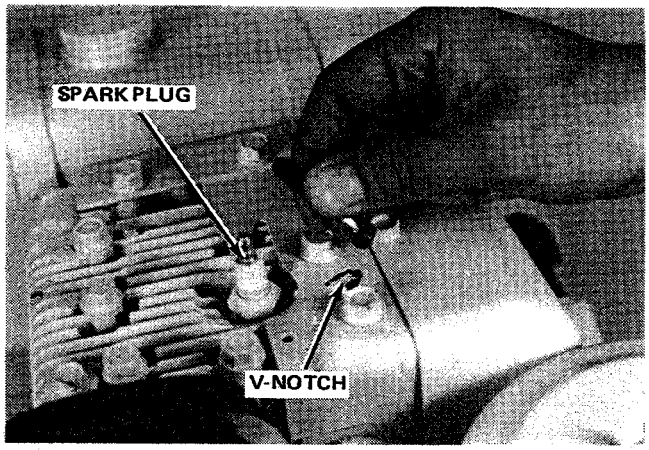


Figure 14. Inserting Terminal in V-Notch

ADJUSTMENT PROCEDURES

For access to some adjustment points, the belt guard (figure 15) must be removed. To remove the belt guard, remove the three taptite screws from each side (see figure 15). Reinstall belt guard when adjustments are completed.

SCRAPERS

The scrapers (see figure 15) at each wheel help to keep the wheels free of dirt, stones, and mud. They should be adjusted for maximum cleaning, but should never interfere with wheel movement. To adjust a scraper, loosen the hex nut, set scraper for 1/8 to 1/4 inch (3 to 6 mm) clearance, and retighten the nut while holding scraper in position parallel to wheel surface.

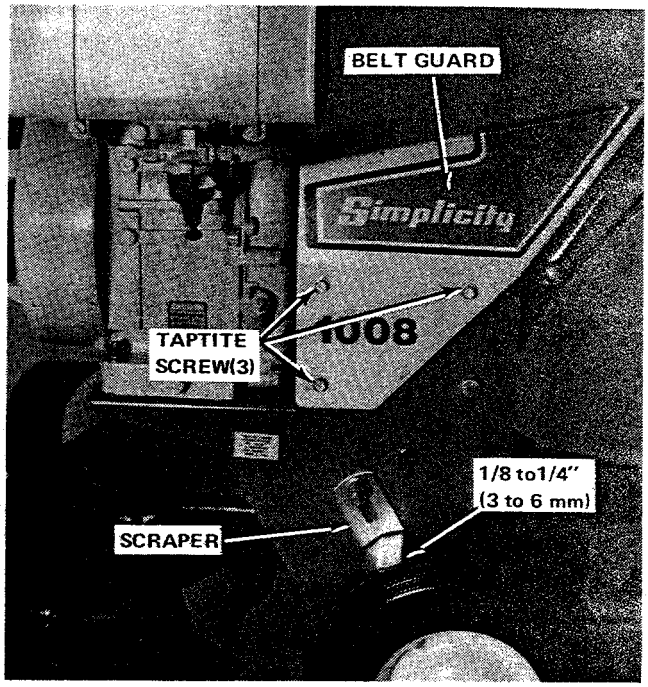


Figure 15. Belt Guard and Scrapers

BELT STOPS

The purpose of the belt stops is to disengage the belts when the clutch lever is released. Incorrectly adjusted belt stops may prevent the drives from disengaging.

All of the belt stops except two (items C and D, figure 16) should be adjusted for a 1/16 inch (1.5 mm) clearance from the belts when the clutch levers are engaged (belts tight). Belt stop C, however, should be adjusted for a 7/16 inch (11 mm) clearance when the forward clutch is engaged, and belt stop D should be adjusted for a 1/4 inch (6 mm) clearance when the reverse clutch is engaged.

To measure the clearance and adjust the belt stops, proceed as follows:

1. Push both idler pulleys (items E and F) together to firmly seat belts, and hold them with one hand.
2. With the other hand measure the gaps between the belt stops and both belts. With the exception of the two belt stops (items C and D, figure 16) mentioned earlier, all gaps should be 1/16 inch. Belt stop C should have a 7/16 inch gap, and belt stop D should have a 1/4 inch gap. Don't forget to check the belt stop behind the engine pulley and the two belt stops at the large worm drive pulley (item G).

3. To adjust a belt stop, loosen the nut holding it and correctly position the belt stop. Then hold it in place and retighten the nut.
4. Start the engine and raise the tines off the ground by pressing down on the handlebars. If tines do not stop rotating when the clutch lever is released, then belt stops are too far from belts and need further adjustment.

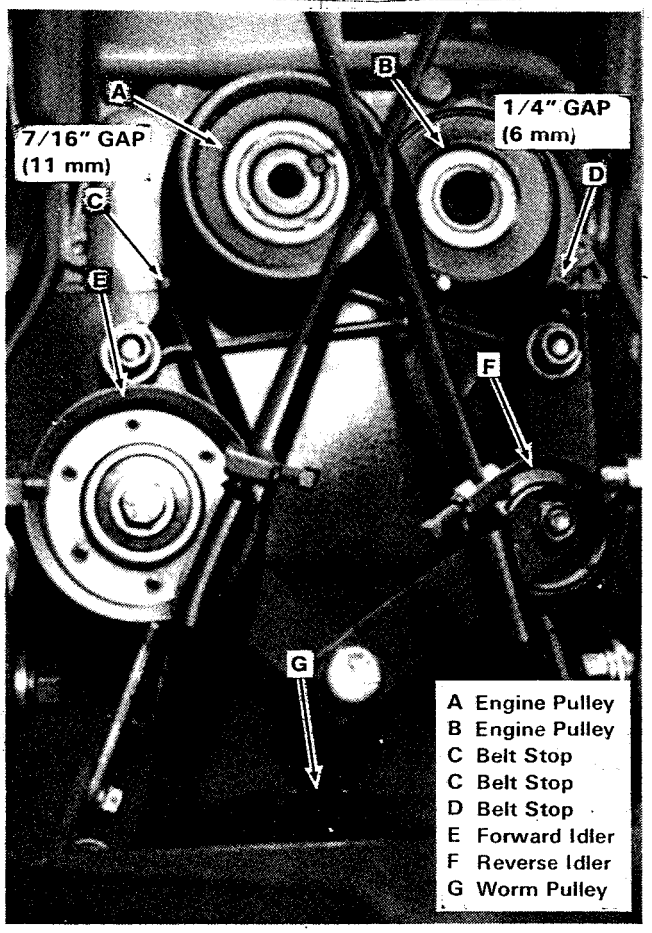


Figure 16. Belt Stop Adjustments

PULLEY ALIGNMENT

Correct pulley alignment is important to belt life and smooth clutch operation. The correct pulley positions are as follows:

1. The hub of the forward drive engine pulley (item A, figure 16) should be flush (even) with the end of the engine shaft.
2. The hub of the reverse drive engine pulley (item B, figure 16) should be 3/16 inch (4.7 mm) inward from the end of the engine shaft.
3. The large worm drive pulley (item G, figure 16) should be positioned so its shaft is recessed 3/16 inch (4.7 mm) from outer edge of pulley hub.

If any pulley is out of alignment, loosen the setscrew in the pulley and correctly reposition it. Be sure to retighten the setscrew.

CLUTCH ADJUSTMENT

The two clutch levers operate separate idler pulleys. When a clutch handle is squeezed to engage the clutch, the idler pulley (items A or B, figure 17) must tension the related belt. Power should then be transferred from an engine pulley to the driven pulley without belt slippage. If a clutch is not disengaging properly or if belt slippage occurs, adjust the clutch as follows:

1. Loosen the setscrew (item D, figure 17) for the clutch desired.
2. Slide the wire clamp (item C) up the clutch rod slightly to increase the tension or down the rod slightly to decrease belt tension.
3. Retighten setscrew while holding wire clamp in place.
4. Check operation and, if necessary, repeat adjustment procedures.

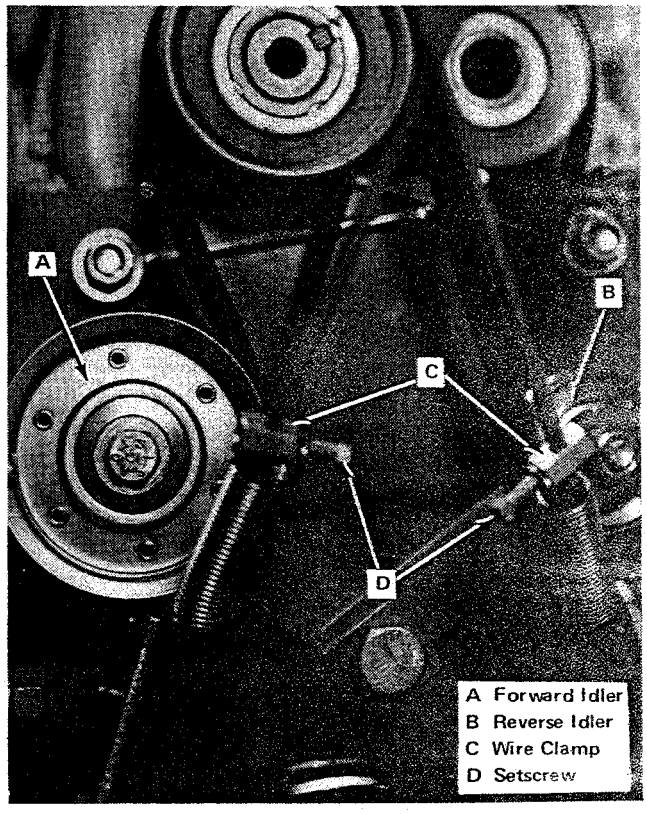


Figure 17. Clutch Adjustment

Assembly

CONTENT OF SECTION

The rotary tiller is shipped only partially assembled for packaging reasons. This section provides the necessary instructions for assembling the rotary tiller and for preparing it for operation.

TO UNCRATE: Open the top of the shipping carton and remove all loose parts. Then slit the sides of the carton and slide the tiller out of the box on the skid. Cut banding and remove unit from skid.

HANDLE ASSEMBLY

Open the skin pack and arrange all parts by size and type. For access during assembly, remove the belt guard (see figure 15). To install the handle assembly, proceed as follows:

1. Install the right handle post as shown in figure 18. The top capscrew has two plain washers between the frame and post and is secured with a lockwasher and hex nut. The bottom capscrew has a plain washer, lockwasher, and hex nut as shown. Tighten all hardware.
2. Install the left handle post using the same hardware arrangement as for the right handle post.

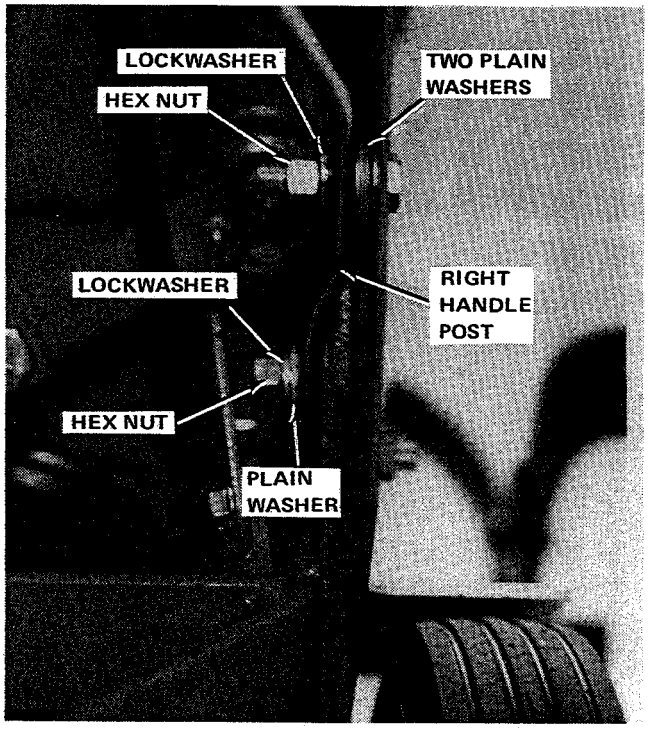


Figure 18. Installing Handles

3. Disassemble the control panel and install parts on the handles (see figure 20). Install the four capscrews through front panel, handle posts, and then the back plate for the panel. Tighten a lockwasher and hex nut on each capscrew.

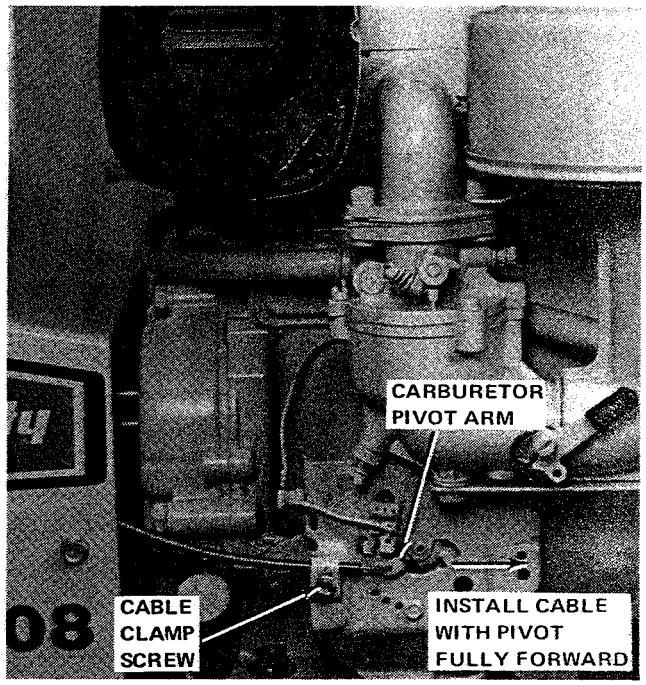


Figure 19. Installing the Cable

4. Set throttle lever fully in FAST position and run throttle cable between handles to right side of engine.
5. Loosen cable clamp screw on engine (see figure 19). Then hook cable end in carburetor pivot arm and place throttle cable under the clamp.
6. Push carburetor pivot arm forward as far as it will go and tighten cable clamp to hold throttle cable. Test operate throttle lever and check to be sure pivot arm travels throughout its full range.
7. Install cable clip on right handle post to hold throttle cable (see figure 20).

CONTROL ROD ASSEMBLY

1. Install a control rod through forward clutch lever on right handle (see figure 20).
2. Insert hook end of one of the springs provided into the left bellcrank shown in figure 21. There are two different styles of bellcranks. For proper connections, see figure 24 or 25.
3. Start setscrew into wire clamp and slip clamp onto forward control rod (see figure 21).

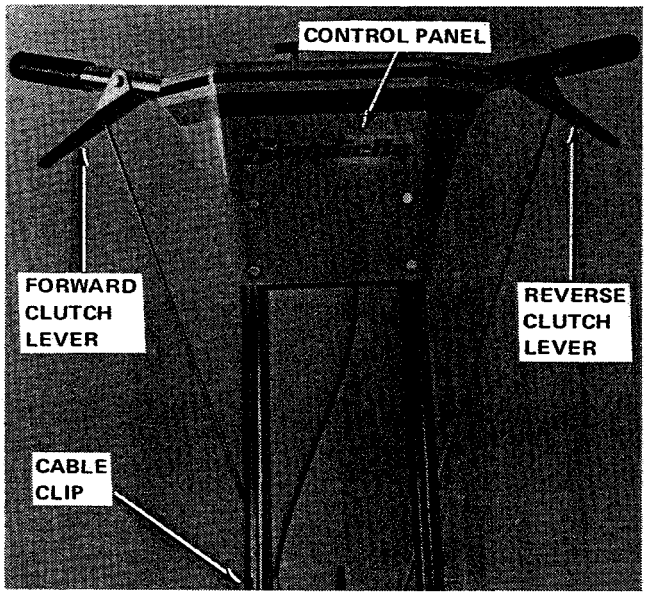


Figure 20. Installing Control Rods

4. Feed end of rod into spring as shown in figure 21, and hook eyelet end of spring over the setscrew.
5. With forward idler pulley resting on left frame and forward clutch lever completely down, slide wire clamp up control rod to take all play out of bellcrank and idler pulley connections. Then tighten setscrew in wire clamp.
6. Install remaining clutch rod through reverse clutch lever (see figure 20).
7. Insert hook of remaining spring into right bellcrank shown in figure 21. For connections, see figure 24 or 25.

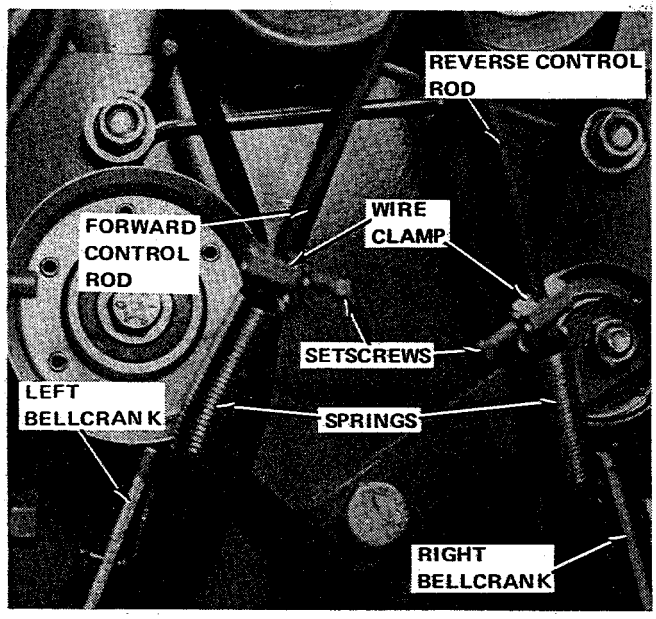


Figure 21. Connecting Control Rods

8. Start setscrew in remaining wire clamp and slip clamp onto the reverse control rod (see figure 21).
9. Feed end of rod into spring as shown in figure 21, and hook eyelet end of the spring over setscrew.
10. With reverse idler pulley resting on right frame and reverse clutch lever completely down, slide wire clamp up control rod to take all loose play out of bellcrank and idler pulley connections. Then tighten setscrew in wire clamp.

TINE ASSEMBLY

1. Install key in keyway on each side of rotor shaft.
2. Tip tiller backwards so it rests on handles.
3. Install tines on rotor shaft so cutting edges are the forward leading edge as rotor turns. Secure tines on shaft with pins (the two shorter pins) and cotter pins (see figure 22). Spread cotter pin legs.

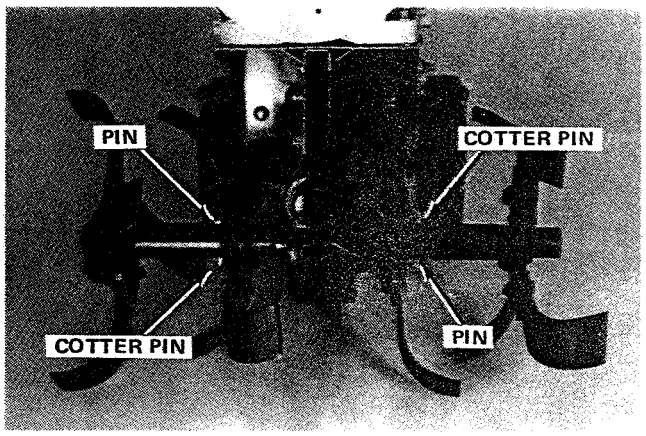


Figure 22. Installing Tines

DEPTH BAR

Install depth bar and U-shaped support bracket with pin and spring clip as shown in figure 23. Be sure digging tip is installed as shown.

FINAL PREPARATION AND ADJUSTMENT

To complete the final, fine adjustment of the clutches and to prepare the tiller for operation, proceed as follows:

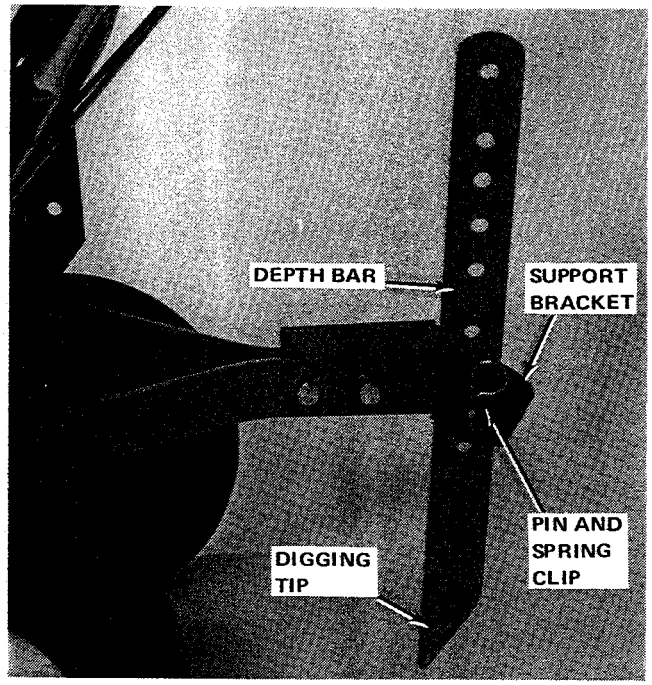


Figure 23. Installing Depth Bar

1. Final handle height adjustment. The slotted holes at the lower ends of the handle posts are for adjusting handle height. To change handle height loosen the four handle capscrews, select a desired height, and then retighten all four capscrews.
2. Check all capscrews, nuts, and other hardware for tightness. Pay particular attention to engine, wheel, and worm gear housing mounting bolts. The worm gear housing bolts are located under the engine mounting plate at the front of the tiller.
3. Check pulley alignment (see Adjustment Section).
4. The worm gear housing is filled with special oil at the factory, but still should be checked. See figure 8 in Normal Care section to check or add worm gear oil.
5. Fill engine crankcase with SAE 30, grade MS detergent oil. Capacity: about 2-3/4 pints (1.3 L). See figure 7 in Normal Care section.
6. Fill fuel tank with clean, fresh, leaded or lead-free regular grade gasoline.
7. Start engine to test operate clutch controls. See starting procedures in Operation section if necessary.
8. If a clutch is not disengaging properly or if belt slippage occurs, see the Adjustment section of this manual.
9. Check for oil and gasoline leaks.
10. Reinstall belt guard (see figure 15). The throttle cable runs through the belt guard.
11. Check to be sure that all decals are undamaged and that there are no scratches or mars in painted surfaces. Touch up paint as needed.
12. Keep instruction packet with tiller to avoid losing it.

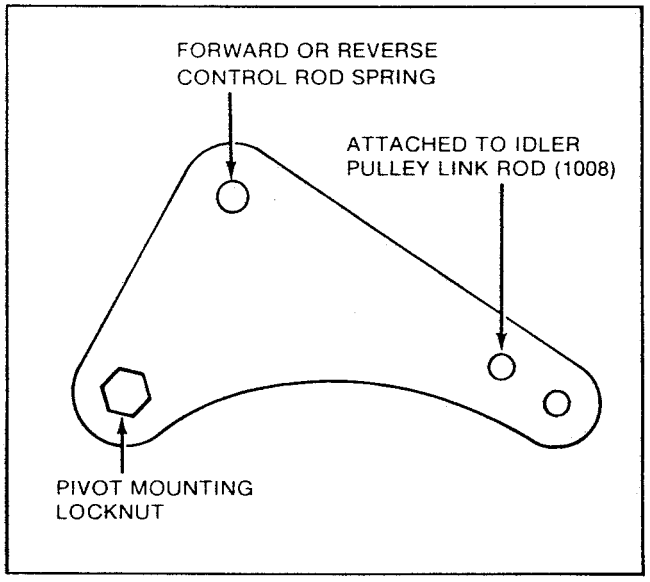


Figure 24. Early Style Bellcrank

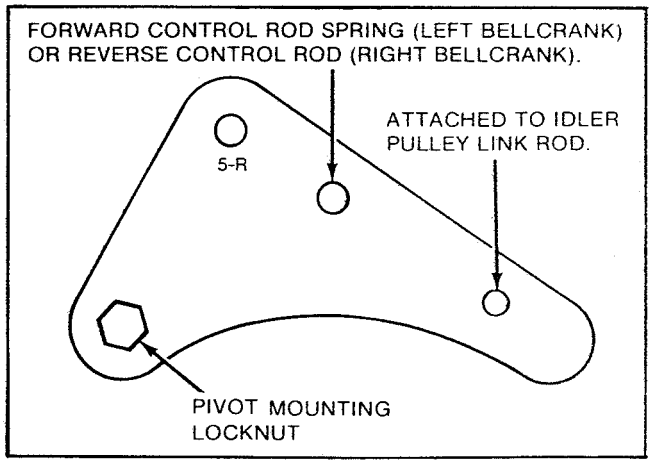


Figure 25. 1008 Bellcrank Connections - New Style

Specifications

ENGINE	MAKE: BRIGGS & STRATTON	MODEL NO: 190492 HORSEPOWER: 8 (5.96 kW) CYCLES: 4 CYLINDERS: 1 BORE: 3 Inches (76.2 mm) STROKE: 2-3/4 Inches (69.8 mm) DISPLACEMENT: 19.44 Cu.In. (318.5 cc) CRANKSHAFT: Horizontal
	Starter	Manual Rewind, Easy-Spin
	Choke	Manual
	Governor	Adjustable Mechanical Type, 1800 - 3400 rpm Range
	Ignition	Magneto
	Lubrication	Gear Impeller System
		CRANKCASE CAPACITY: 2-3/4 Pints (1.3 L)
	Fuel Tank	CAPACITY: 4 Quarts (3. 7 L)
	Air Cleaner	Reusable Oiled Foam Element
	Muffler	Quiet, Low Back Pressure Type, Side Discharge
TRANSMISSION	Type	Worm and Gear
	Material	WORM: Steel
		GEAR: Bronze
	Bearings	Tapered Roller and Needle Anti-Friction Bearings
	Seals	Double Lip – Dirt Excluding
	Lubrication	Special Worm Gear Oil, 12 Ounces (355 ml)
	Housing	Cast Iron
	Speeds	One Forward, One Reverse
	Clutch	Touch–O–Matic V-Belt
TINES	Type	Self-Sharpening, Slasher Type
	Material	Forged, High Carbon Steel
	Tilling Width	23-1/2 Inches (597 mm) Standard: 35 Inches (889 mm) with Tine Extension
	Tilling Depth	0 to 8 Inches (0 to 203 mm), Adjustable
	Attachment	TO SHAFT: Keys and Pins with Cotter Pins
	Speed	116 rpm at Full Engine Speed
DEPTH BAR	Type	Adjustable – Pivots in Reverse
	Attachment	Pin and Spring Clip
CONTROLS	Location	FORWARD CLUTCH: Right Handle
		REVERSE CLUTCH: Left Handle
		THROTTLE: Center of Handle Panel
		REWIND STARTER AND CHOKE: On Engine
	Handles	HEIGHT: Adjustable
CHASSIS	Frame	Heavy Guage, Welded Steel Channel
	Tires	Semi-Pneumatic, 2.75 x 10 Inches (70 x 254 mm)
OVERALL DIMENSIONS	Length	53 Inches (1.34 m)
	Width	26 Inches (660 mm) without Tine Extensions
	Height	TO TOP OF HANDLE: 36 Inches (914 mm)
	Weight	NET: 164 Lbs. (74.4 kg)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Maintenance Record

Date	Hours Used	Lubrication	Maintenance/Repair

Figure 24. Maintenance Record