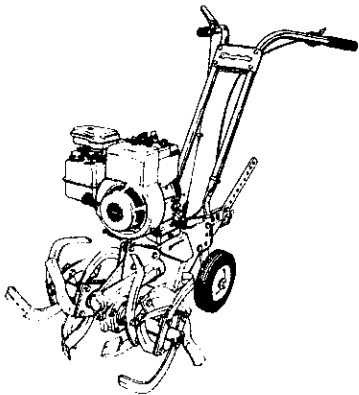


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# ***Simplicity***®

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## **OWNER'S MANUAL**

### **ROTICUL ROTARY TILLER**

3 H.P. MFG. NO. 936

MFG. NO. 212 TINE EXTENSION SET  
MFG' NO. 340 FURROW OPENER

SIMPLICITY MANUFACTURING COMPANY, INC.



SER. FORM - 177905  
PRINTED IN U.S.A.

TP-1640

## CONGRATULATIONS!

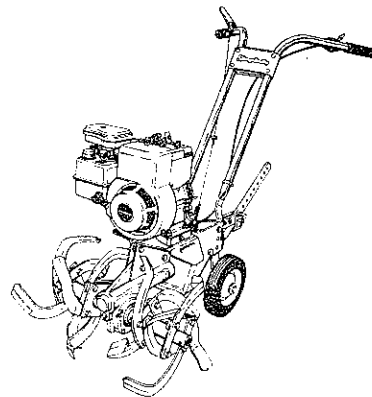
... on your choice of *SIMPLICITY* equipment.

*This great new product is engineered with imagination and built with integrity to assure you maximum service and performance for years to come. To completely understand the operation of your equipment and to take full advantage of its many fine built-in features, study this instruction manual thoroughly before operating the machine. The little time you spend reading now will repay you many times over in the time you save and the satisfaction you gain in using your equipment properly and safely.*

## SAFETY FIRST

### PROTECT YOURSELF AND OTHERS BY FOLLOWING THESE SAFETY RULES

- \* **ALWAYS** keep children and pets a good, safe distance away.
- \* **ALWAYS** know your controls and how to stop quickly in an emergency – read the owner's manual thoroughly.
- \* **NEVER** allow anyone to operate the equipment without full instruction and knowledge of safe operating procedures.
- \* **NEVER** handle gasoline carelessly. Use an approved container and fill the tank out of doors. Wipe up spilled gasoline. Do not smoke while fueling the engine.
- \* **NEVER** add gasoline to a running engine. Stop engine and allow it to cool a few minutes before adding fuel. Replace filler cap securely.
- \* **NEVER** operate equipment unless all guards and shields are in place.
- \* **ALWAYS** keep hands, feet and clothing away from power driven parts.
- \* **ALWAYS** stop the engine before servicing or adjusting machine or equipment. Remove the spark plug wire on walk behind mowers.
- \* **ALWAYS** stop the engine and inspect for damage immediately after striking an obstruction or foreign object. Repair damage before restarting.
- \* **NEVER** overspeed the engine or alter governor settings. Excessive speed is always unsafe and shortens engine life.
- \* **ALWAYS** properly maintain the equipment. Check all fasteners, guards and parts.
- \* Do not operate the engine where carbon monoxide can collect.



**BUILT IN SAFETY FEATURES CAN BE  
EFFECTIVE ONLY IF PROPERLY  
MAINTAINED AND UTILIZED.**

**TOUCH-O-MATIC CLUTCH CONTROL.** Simply squeeze the lever to engage the tiller drive, release to stop.

**HANDLE-MOUNTED THROTTLE LEVER.** Combined On-Off-Start and speed control, handle-mounted for convenience and safety.

**3 H.P. BRIGGS & STRATTON ENGINE.** Four-cycle, one cylinder air-cooled power with Lo-Tone muffler, recoil starting, mechanical governor.

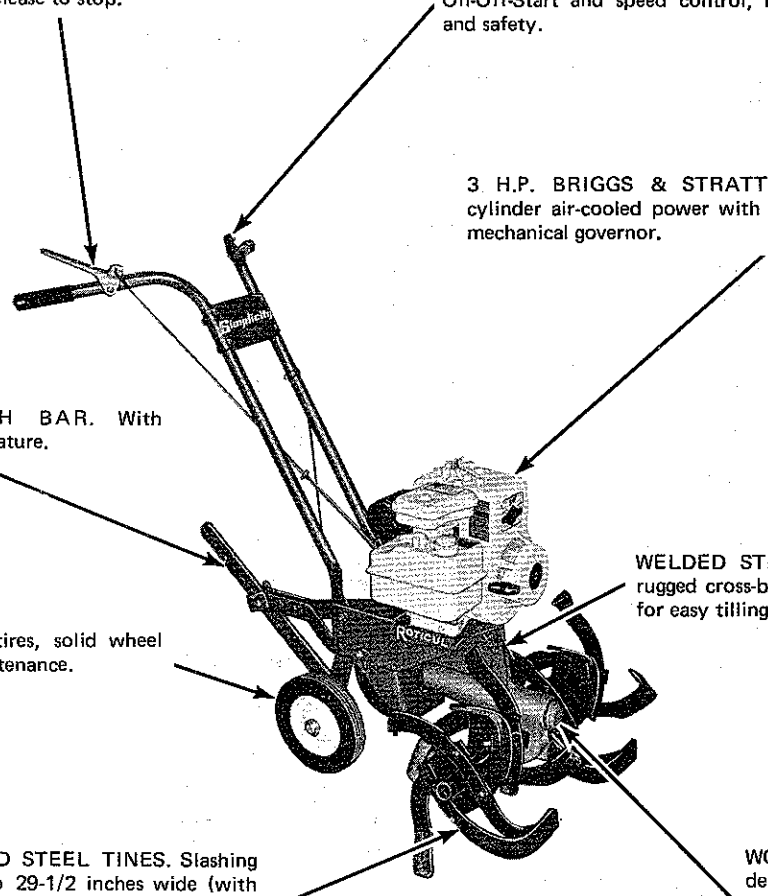
**ADJUSTABLE DEPTH BAR.** With Simplicity quick-change feature.

**WHEELS.** Solid rubber tires, solid wheel bearings requiring no maintenance.

**HIGH-CARBON, FORGED STEEL TINES.** Slashing type design, adjustable to 29-1/2 inches wide (with extensions). Slice into the hardest baked, crusty surface to 7 inches deep, kneading the soil with smooth, spading action, leaving a crumbly texture perfect for planting.

**WELDED STEEL FRAME.** Heavy-duty with rugged cross-bracing, yet compact and balanced for easy tilling.

**WORM GEAR DRIVE.** Unique design requiring Special Worm Gear lubricant to eliminate maintenance and assure durability. Tapered roller bearings front and rear.



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## SIMPLICITY 3 H.P. ROTICUL SPECIFICATIONS

<b>ENGINE</b>	<b>MAKE:</b> BRIGGS & STRATTON	<ul style="list-style-type: none"> <li>■ MODEL NO: 80200</li> <li>■ CYCLES: 4</li> <li>■ CYLINDERS: 1</li> <li>■ BORE: 2-3/8 Inches</li> </ul>	<ul style="list-style-type: none"> <li>■ STROKE: 1-3/4 Inches</li> <li>■ DISPLACEMENT: 7.75 Cu. In.</li> <li>■ CRANKSHAFT</li> <li>PLANE: Horizontal</li> </ul>
	<b>STARTER</b>	Manual Rewind Up-Angle Side Pull	
	<b>CHOKE</b>	Manual	
	<b>GOVERNOR</b>	Remote Controlled Mechanical	
	<b>IGNITION</b>	Patented, High-Tension Magneto with Ceramic Magnets	
	<b>LUBRICATION</b>	Gear Impeller System - 40% Slope Operation	
		CRANKCASE CAPACITY: 1-1/4 Pints	
	<b>FUEL CAPACITY</b>	2 Quarts	
	<b>AIR CLEANER</b>	Sealed Joint Housing, Reusable Oiled Foam Element	
<b>MUFFLER</b>	Quiet, Low Back Pressure Type, Side Discharge		
<b>TRANSMISSION</b>	<b>TYPE</b>	Worm and Gear	
	<b>MATERIAL</b>	WORM: Carburized Steel	
		GEAR: Bronze	
	<b>BEARINGS</b>	FRONT: Tapered Roller Bearing	
		REAR: Tapered Roller Bearing	
	<b>SEALS</b>	DOUBLE LIP: Dirt Excluding	
	<b>LUBRICATION</b>	Special Simplicity Worm Gear Oil	
<b>HOUSING</b>	Cast Iron		
<b>CLUTCH</b>	Touch-O-Matic V-Belt		
<b>TINES</b>	<b>TYPE</b>	Slashing	
	<b>MATERIAL</b>	Forged, High-Carbon Steel	
	<b>TILLING WIDTH</b>	22-1/2 In. Standard, 32-1/2 In. with Tine Extensions	
	<b>TILLING DEPTH</b>	0 to 7 Inches, Adjustable	
	<b>ATTACHMENTS</b>	TO HUB: Bolted	
		TO SHAFT: Pin and Spring Clip	
	<b>DRIVE</b>	INNER: Pin Type Floating Drive	
		OUTER: Pin and Torsion Plate Floating Drive	
<b>SPEED</b>	75 RPM at Full Engine Speed		
<b>DEPTH BAR</b>	<b>ATTACHMENT</b>	Pin and Spring Clip	
	<b>ADJUSTMENT</b>	0 to 7 Inches Tilling Depth	
<b>CONTROLS</b>	<b>LOCATION</b>	FORWARD CLUTCH: Right Handle, Top	
		THROTTLE: Left Handle	
		REWIND STARTER AND CHOKE: On Engine	
<b>CHASSIS</b>	<b>FRAME</b>	Heavy-Duty, Electrically Welded with Cross-Bracing	
	<b>TIRES</b>	8 x 1.75 Solid Rubber	
	<b>WHEEL BEARINGS</b>	Solid, Sintered Iron	
<b>OVERALL DIMENSIONS</b>	<b>LENGTH</b>	51 Inches	
	<b>WIDTH</b>	26 Inches (Without Tine Extensions)	
	<b>HEIGHT</b>	TO TOP OF HANDLE: 38-1/4 Inches	
		TO TOP OF ENGINE: 27-3/4 Inches	
	<b>WEIGHT</b>	NET (DRY): 113 Lbs.	
SHIPPING (DRY): 123 Lbs.			

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

## SAFETY FIRST

In addition to the basic safety rules appearing on the inside front cover, follow these safety tips.

■ Release the clutch lever and stop the engine before cleaning the tines, removing obstacles, making adjustments or when leaving the operating position.

■ Never allow children or pets to cross your path or cause distractions in the area while operating.

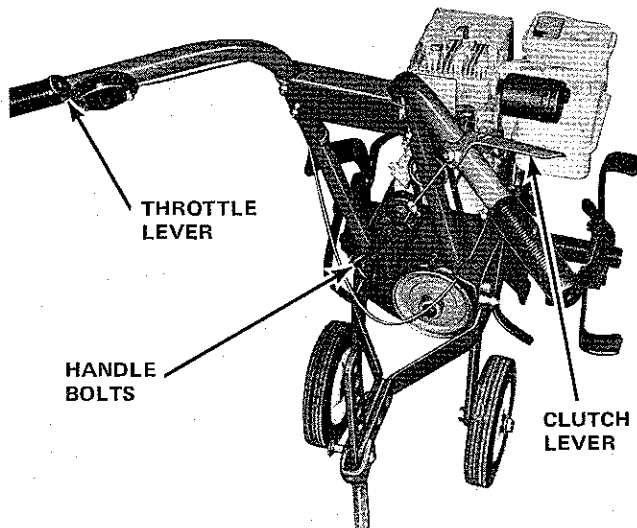
■ Use caution to avoid slipping or falling, especially when operating in reverse.

## CONTROLS

1. **THROTTLE LEVER:** To adjust engine speed or to stop the engine, move the lever forward or back.

2. **CLUTCH LEVER:** Squeeze the lever to engage the tiller drive, release to stop.

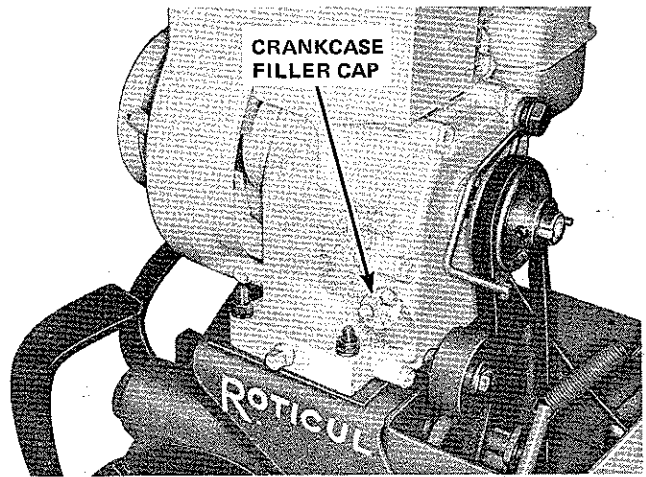
3. **HANDLES:** Loosen the capscrews at the lower end of the handles and pivot the handle assembly to desired height. Tighten screws securely. The most convenient height is best judged under operating conditions.



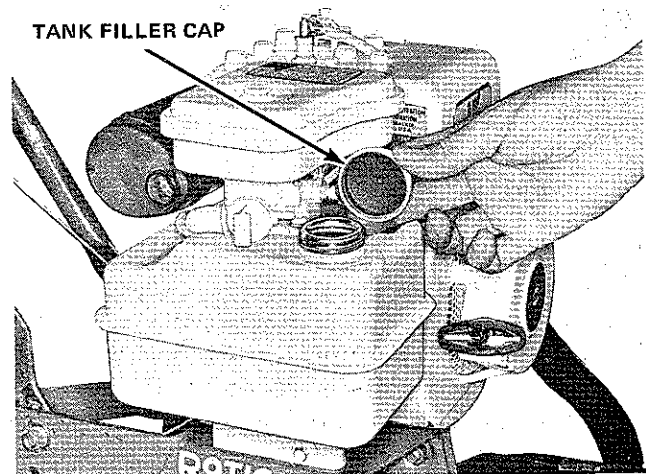
## BEFORE STARTING

Before attempting to start the engine, read the engine owner's manual thoroughly. Be sure to have on hand sufficient quantities of clean, fresh "Regular" grade gasoline, and 10W-30 grade MS engine crankcase oil.

1. Remove the crankcase filler cap, located on the left side of the engine, by turning counterclockwise. Fill with 10W-30 oil until level with the top of the neck. Reinstall filler cap securely. Check the oil level every time fuel is added.



2. Remove the fuel tank filler cap and fill tank completely with clean, fresh "Regular" grade gasoline.



**DO NOT MIX OIL WITH GASOLINE.**

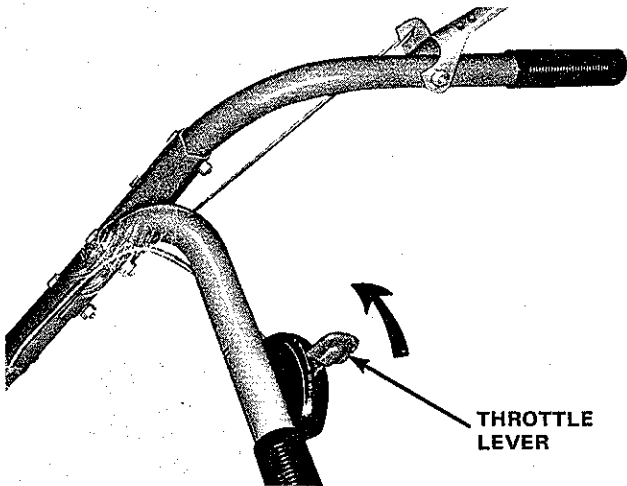
## CAUTION

**GASOLINE IS HIGHLY INFLAMMABLE. AVOID OVERFILLING AND WIPE UP ANY SPILLED FUEL. ALLOW NO OPEN FLAME, SMOKING OR MATCHES NEAR THE AREA WHEN REFUELING.**

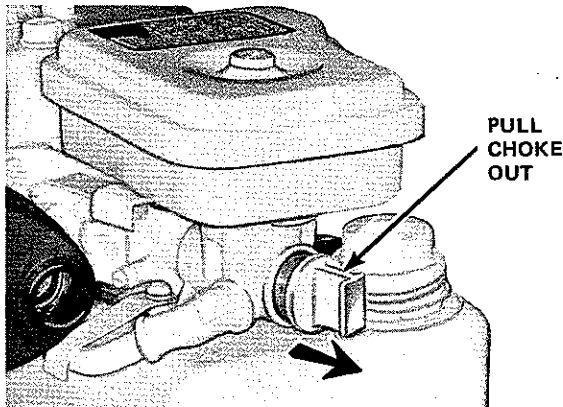
Replace the filler cap securely. Store gasoline only in small quantities - prolonged storage produces gum and harmful deposits. If it is necessary to store gasoline for long periods, add STA-BIL brand gasoline stabilizer, available at your Simplicity dealer. (See "Off-Season Storage.")

## STARTING

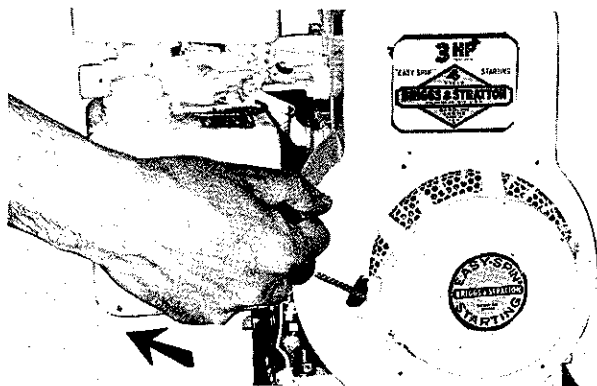
1. Move the throttle lever 1/2 way forward.



2. Pull choke plunger out to "CHOKE" position.

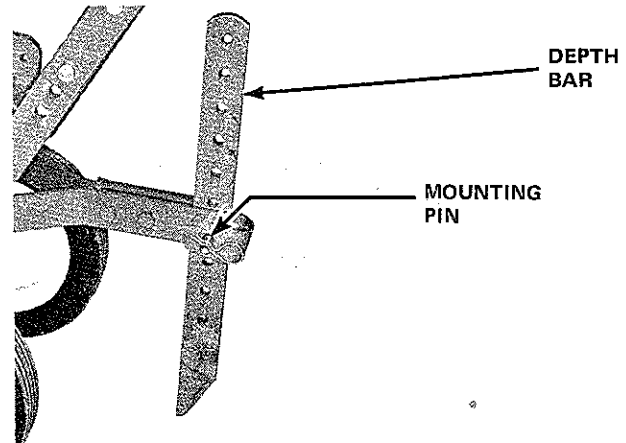


3. Grasp the recoil starter handle firmly in your right hand and pull sharply straight out to start the engine. After the engine starts, return the choke to "OFF" position. If the engine fails to start after 4 or 5 pulls it may be flooded. Return the choke to "OFF" position and pull recoil starter handle to clear the excess fuel. Always return the handle by hand - DO NOT RELEASE THE HANDLE WITH THE ROPE EXTENDED. To stop the engine, pull the throttle lever all the way back.

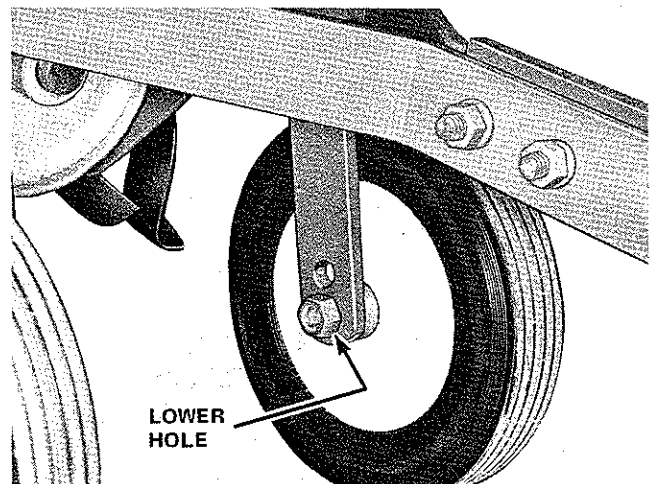


## BEFORE OPERATING

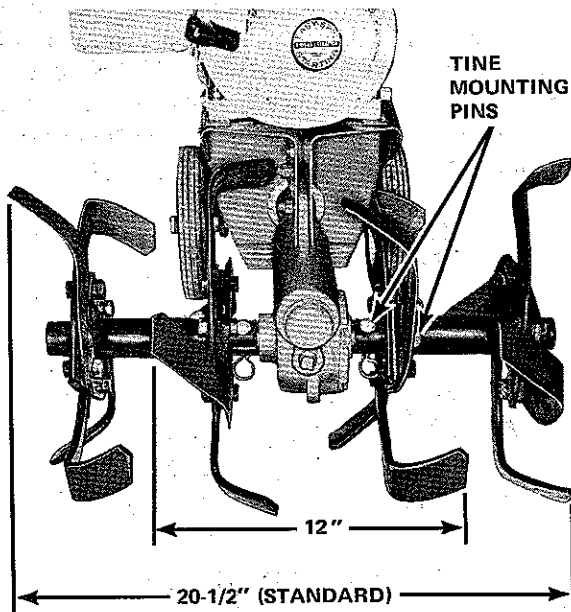
1. The depth bar setting determines the depth of tilling. To till 4 to 6 inches deep, install the bar mounting pin in the second or third hole from the TOP. Simply pull out the hairpin cotter to change pin location. Be sure to install the bar with the digging tip as shown. THE DEEPER THE DEPTH BAR IS SET INTO THE SOIL, THE DEEPER THE TINES WILL DIG.



2. Check to be sure that the wheels are mounted in the LOWER holes of the frame legs as shown.



3. The standard tine arrangement shown allows a tilling width of 20-1/2 inches. The two outer sets of tines can be removed to narrow the width to 12 inches if desired. Simply pull out the cotter pins and remove the mounting pins. Tine assemblies are left and right hand. Switch the two inner tines for an 8-1/2 inch wide path. Switch the outer tines and add them to change the width to 16 inches. Always be sure when rearranging tines that the sharpened edges face forward. A set of tine extensions is available to extend the width to 29-1/2 inches. See your Simplicity dealer.

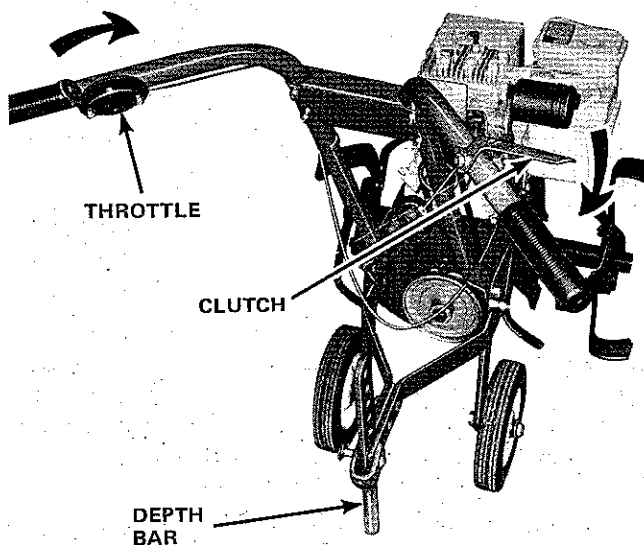


### OPERATION

After starting, move the throttle lever to 3/4 forward.

To engage the tiller drive, squeeze the clutch lever. To stop, merely release the clutch lever.

Use the depth bar to furnish the necessary drag rather than pulling back on the handles. Push DOWN on the handles to LOWER the depth bar, slowing forward speed, and deepening the bite of the tines. Upward thrust on the handles increases forward speed and raises tilling depth.



**LET THE DEPTH BAR  
DO THE WORK**

The Roticul is scientifically designed to cultivate the soil with a minimum of physical effort on the part of the operator. When operating for the first time, proceed slowly and carefully to get the "feel". Experience will determine the best speed for your requirements, the correct handle pressure and depth bar setting. Experiment with the clutch lever, using the quick response for positive control in close areas.

Do not till when the soil is very wet. This causes lumps which are difficult to work up. If the soil is extremely hard and dry it may be desirable to cross-till an area at shallow depth first, then till in the direction of planting rows on the second pass at the final depth.

A furrow opener shovel is available from your Simplicity dealer for use in digging furrows for crops which are planted in rows, such as potatoes. See "Accessories".

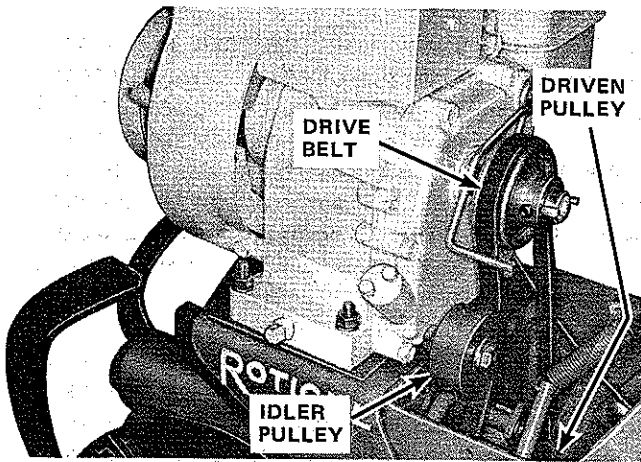
### TROUBLE SHOOTING

IF ENGINE FAILS TO START, check the following:

1. Fuel tank is full.
2. Throttle lever is set to 1/2 open.
3. Spark plug cable is securely connected.
4. Choke plunger is pulled out to "CHOKE" position or in "OFF" position (in) if engine appears to be flooded. To clear a flooded engine, push the choke in and pull the starter rope several times to clear the excess fuel.

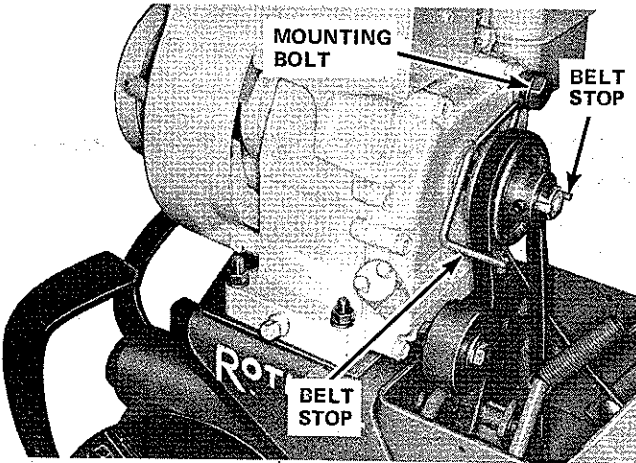
IF BELT SLIPPAGE OCCURS, check the following:

1. Belt may be stretched or worn excessively.
2. Belt may be greasy or oily. If so, use Energine or a similar cleaning fluid on a rag to clean. An alternate method is to sprinkle a handful of Drizit or Kitty-Litter compound on the belt while running.
3. Pulleys may be misaligned.
4. Belt Tension may be too tight. (See "Adjustments.")

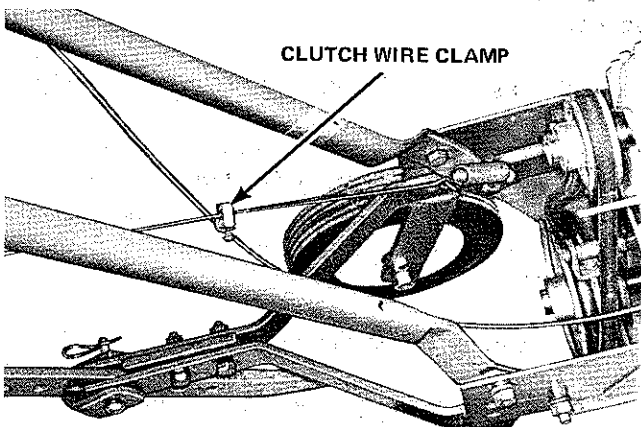


### ADJUSTMENTS

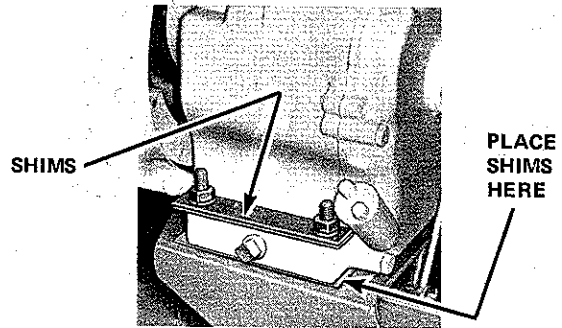
**BELT STOPS:** Make sure the belt stops are as near as possible to the belt when running. Loosen the stop mounting bolt to adjust position or bend the stops where necessary to within 1/8 inch of belt when running.



**CLUTCH ADJUSTMENT:** Check for proper clutch engagement. Belt must not be running when the clutch lever is released and must not slip when lever is engaged. If adjustment is required, loosen the round head screw in the control wire clamp and remove excess slack in the wires. Tighten the screw securely.



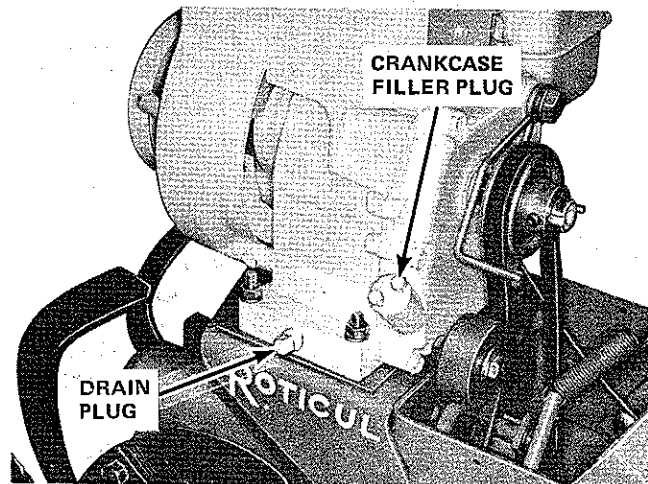
**DRIVE BELT SLACK:** After some use, the drive belt may stretch so that clutch adjustment cannot be made at the control wire clamp. If this occurs, remove the engine mounting nuts, remove the shims shown and install one or more of them under the engine. Tighten the mounting nuts securely.



### MAINTENANCE

To keep your Simplicity Roticul at peak operating efficiency, these maintenance procedures must be followed regularly:

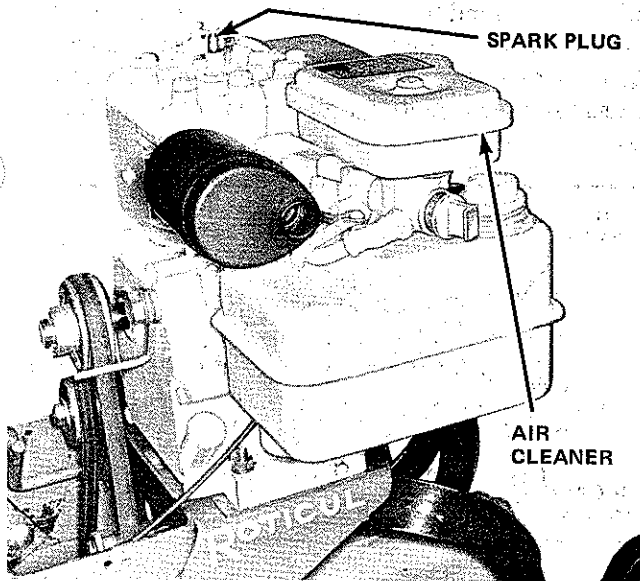
1. Read the engine owner's manual thoroughly. Always check the engine oil level before starting. Add 10W-30 grade MS oil until level with the top of the tiller neck. Change crankcase oil and re-oil the air cleaner foam element every 25 hours of operation, more often under extremely dusty or dirty conditions.



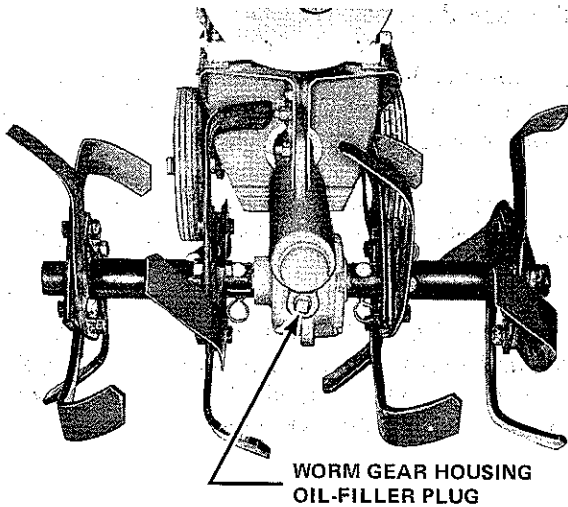
2. Turn the screw on the air cleaner cover counterclockwise to loosen. Remove the cover. Wash the foam air cleaner element in Kerosene or liquid detergent and dry it thoroughly. Saturate it with engine oil, squeeze out the excess and reinstall.

3. Clean and re-gap the spark plug every 100 hours of operation. Gap to .030 inches. DO NOT clean plug by sandblasting. Grease the plug threads before reinstalling.





**WORM DRIVE HOUSING:** The worm gear drive on the Roticul is lubricated with special worm gear oil available from your Simplicity dealer.



**DO NOT USE ORDINARY TRANSMISSION OIL.** Any other oil except Simplicity Worm Gear Oil may cause gear failure. The worm drive housing is filled at the factory, but the level must be checked every 1 to 5 hours of operation. To add oil, tip the Roticul back until the handles rest on the ground, remove the filler plug and add worm gear oil. **FILL UNTIL THE OIL IS LEVEL WITH THE PLUG HOLE WHEN THE TINES ARE RESTING ON THE GROUND. DO NOT OVERFILL.** Screw the plug back in securely.

**CAUTION**

*DAMAGE TO THE WORM GEAR DRIVE WHICH RESULTS FROM USE OF ANY OTHER LUBRICANT THAN SIMPLICITY BRAND SPECIAL WORM GEAR OIL WILL AUTOMATICALLY INVALIDATE THE WARRANTY.*

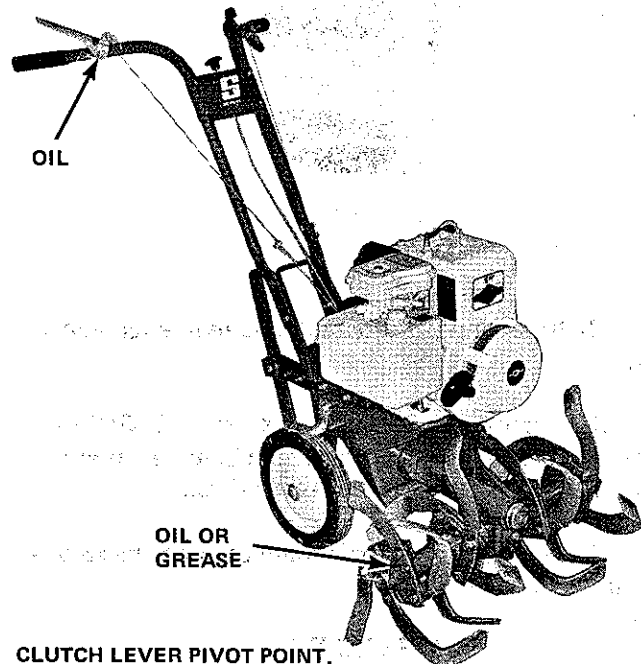
**NOTE**

*The worm drive housing may become quite warm while operating. This is completely normal and no harm to gears will occur if the housing is kept filled as specified with the special Worm Gear Oil.*

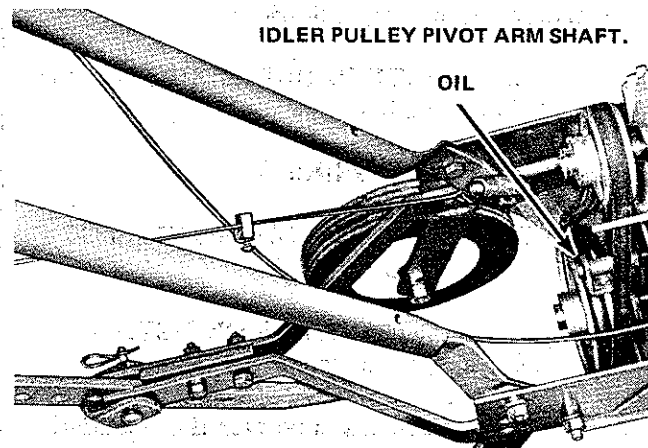
There is an Oilite bronze filter in the vent hole located at the rear of the worm drive housing. **DO NOT REMOVE** the filter for any reason.

**GENERAL LUBRICATION:** Apply light motor oil occasionally at the points indicated to reduce wear and assure free movement. Be careful not to get oil on the drive belts. **DO NOT** oil wheel bearings which are self-lubricated. Additional oil collects dirt and causes extra wear.

Apply a light coat of grease or oil to the inside of the tine hubs and on the tine shaft to prevent rust.



**CLUTCH LEVER PIVOT POINT, TINE HUBS AND TINE SHAFT.**



**IDLER PULLEY PIVOT ARM SHAFT.**

**GENERAL REPAIRS:** To prevent rust, sand off and paint any parts or areas which become chipped or damaged. Tighten all bolts, nuts and fasteners securely.

**OFF-SEASON STORAGE**

1. Drain the fuel tank completely by running the engine until it stops. If desired, fuel can be stored in containers or in the tank by using STA-BIL brand gasoline stabilizer, available at your Simplicity dealer. Add a can capful to the fuel in the tank or follow the directions on the can for containers of other capacity. This additive prevents formation of gum and varnish for up to one year, providing easier starting and a clean fuel system.



2. Drain and refill crankcase while engine is warm.
3. Remove spark plug, pour 1 oz. 10W-30 oil into cylinder through plug hole. Crank engine a few times to distribute oil. Reinstall plug.
4. Clean dirt and chaff from cylinder head fins and engine housing.

**SERVICE**

For replacement parts, engine service and machine maintenance, see your Simplicity dealer.

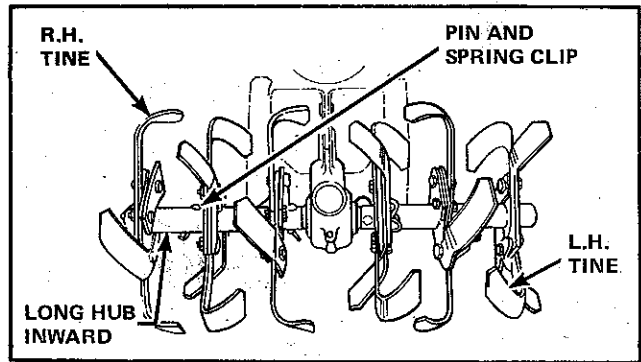
**USE ONLY SIMPLICITY DRIVE BELTS AND REPLACEMENT PARTS.**

**ACCESSORIES**

**AVAILABLE FROM YOUR SIMPLICITY DEALER.**

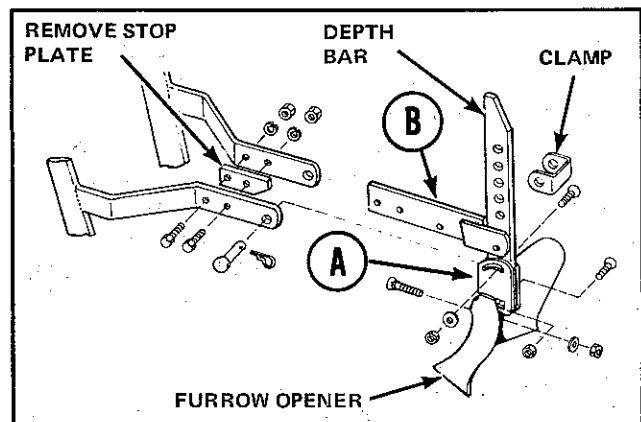
**MFR'S. NO. 212 - TINE EXTENSION SET.** The set consists of a left hand and a right hand tine assembly with mounting pins and spring clips. Mount the long hub of each tine over the outside

end of the standard tine assembly and install the pin and spring clip. Be sure that the sharpened edges of the tines on top face forward. This set increases the effective tilling width to 32-1/2 inches.



**MFR'S. NO. 340 - 8 INCH FURROW OPENER.** The furrow opener is intended for digging furrows for crops which must be planted in rows. To install, proceed as follows:

1. Remove the depth bar, turn it upside down and bolt it to the tool holder (A) with the carriage bolts, washers and nuts provided.
2. Remove the stop plate from between the frame supports and install the extension support (B) with the old hardware.
3. Position the depth bar in the extension support and reinstall the depth bar clamp using the pin and spring clip provided. Bolt the furrow opener to the tool holder as shown.



**MFR'S. NO. 281 - WORM GEAR OIL.** Case of 12 cans of special Simplicity Worm Gear Oil for Roticuls.

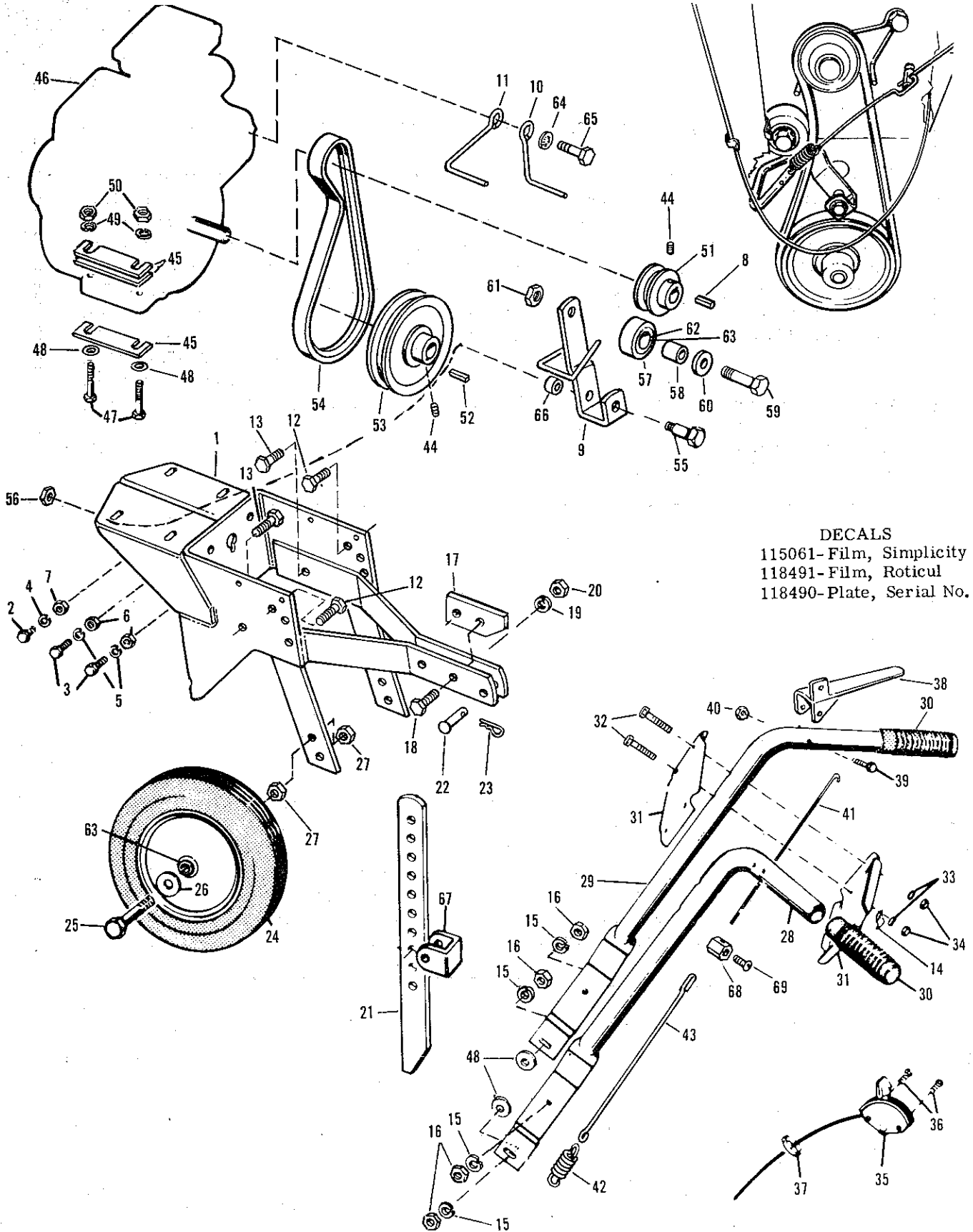
### **SIMPLICITY'S NEW EQUIPMENT WARRANTY**

The Company warrants Simplicity products to be free from defects in material and workmanship, except the Company makes no warranty, express or implied, with respect to tires, engines, generators and voltage regulators, which are warranted by their respective manufacturers. Any part covered by this warranty which is proven defective within one year (45 days for equipment used for rental, municipal or commercial purposes) under normal use, from date of purchase, will be replaced without charge, provided such part is returned to the factory, (if requested), and is found to be defective upon examination at the factory. This warranty does not apply to any Simplicity products altered outside of the Simplicity factory. THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, PERFORMANCE, OR OTHERWISE. The Company's obligation under its warranty is strictly and exclusively limited to the replacement of such parts, and in no event shall the Company be liable for any other damages, whether direct, immediate, incidental, special, or consequential. Simplicity Manufacturing Company, Inc., reserves the right to modify or change specifications without prior notification. There are no warranties which extend beyond the description of any Simplicity product.

### **TINE WARRANTY**

Simplicity Manufacturing Company warrants rotary tiller tines against breakage for the period not to exceed the normal life of the rotary tiller; and will replace broken tines directly to the customer at no charge; provided broken tines are returned prepaid to the Company's service department, Port Washington, Wisconsin.

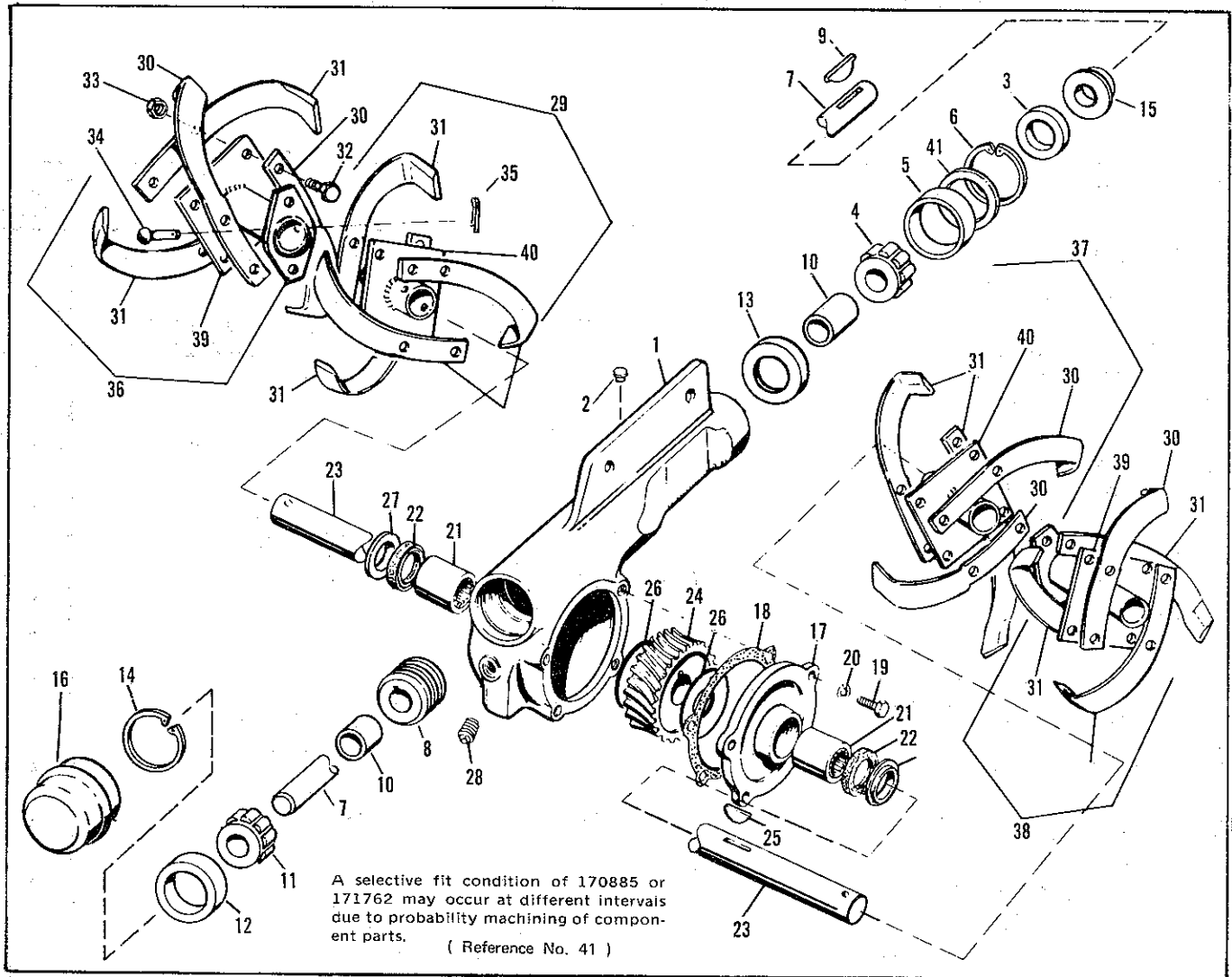
# FRAME, HANDLES & CONTROLS



# FRAME, HANDLES & CONTROLS

Ref. No.	Part No.	Description	Quant. Req'd.	Ref. No.	Part No.	Description	Quant. Req'd.
1	170879	Body Assembly	1	36	715102	Self-Tapping Screw, No. 10-24 x 1-1/4"	2
2	705004	Hex. Capscrew, 3/8"- 16 x 3/4"	1	37	8061108	Cable Clip	1
3	715011	Hex. Capscrew, 7/16"- 20 x 1-1/4"	2	38	118431	Clutch Grip	1
4	720002	Lock Washer, 3/8"	1	39	705025	Hex. Capscrew, 1/4"- 20 x 1-1/2"	1
5	720006	Washer, Lock, 3/8"	2	40	717513	Hex. Lock Nut, Full, 1/4"- 20	1
6	717009	Nut, Hex., Full, 7/16"- 20	2	41	161090	Spring Extension	1
7	717003	Hex. Nut, Full, 3/8"- 16	1	42	118495	Spring	1
8	8061081	Key	1	43	118455	Extension Wire	1
9	172751	Idler Lever Assembly	1	44	713503	Set Screw, 5/16"- 18 x 5/16"	1
10	106545	Belt Stop	1	45	118463	Shim	6
11	118037	Belt Stop	1	46		Engine	
12	705031	Hex. Capscrew, 3/8"- 16 x 7/8"	2	47	705020	Hex. Capscrew, 5/16"- 18 x 2	4
13	705016	Hex. Capscrew, 3/8"- 16 x 1-1/4"	2	48	719002	Plain Washer, 5/16"	8
14	106786	Clamp	1	49	720001	Lock Washer, 5/16"	4
15	720002	Lock Washer, 3/8"	4	50	717001	Hex. Nut, Full, 5/16"- 18	4
16	717003	Hex. Nut, Full, 3/8"- 16	4	51	118027	Engine Pulley	1
17	118207	Stop Plate	1	52	118439	Key	1
18	705009	Hex. Capscrew, 3/8"- 16 x 1-1/2"	2	53	118470	Pulley (Driven)	1
19	720002	Lock Washer, 3/8"	2	54	118312	V-Belt	1
20	717003	Hex. Nut, Full, 3/8"- 16	2	55	171337	Pivot Bolt	1
21	118081	Depth Bar	1	56	718033	Nut, Special, Whiz-Lock	1
22	105249	Pin	1	57	101002	Idler Pulley Assembly	1
23	8161045	Spring Clip	1	58	819020	Spacer	1
24	118469	Wheel & Tire Assembly	2	59	705009	Hex. Capscrew, 3/8"- 16 x 1-1/2"	1
25	715108	Hex. Capscrew, 1/2"- 13 x 3	2	60	719002	Plain Washer, 5/16"	1
26	719004	Plain Washer, 1/2"	2	61	717524	Hex. Nut, Lock, 3/8"- 16	1
27	176941	Hex. Jam Nut, 1/2"- 13	4	62	8161243	Bearing	1
28	176940	Handle, L.H.	1	63	118132	Bushing	4
29	118467	Handle, R.H.	1	64	721506	Lock Washer, 1/2"	1
30	106558	Handle Grip	2	65	706017	Hex. Capscrew, 1/2"- 20 x 1"	1
31	118298	Handle Cover, Upper	2	66	118472	Spacer	1
32	705025	Hex. Capscrew, 1/4"- 20 x 1-1/2"	4	67	118447	Clamp	1
33	720003	Lock Washer, 1/4"	4	68	161092	Clamp, Wire	1
34	717005	Hex. Nut, Full, 1/4"- 20	4	69	710006	Rd. Hd. Screw, No. 10-24 x 3/8"	1
35	118300	Throttle Control Assembly	1				

# TINE ASSEMBLY & GEAR HOUSING



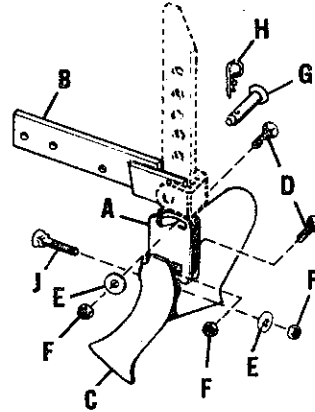
Ref. No.	Part No.	Description	Quant. Req'd.	Ref. No.	Part No.	Description	Quant. Req'd.
1	118392	Worm Drive Housing	1	22	118118	Oil Seal	2
2	118462	Vent Plug	1	23	118021	Worm Gear Shaft	1
3	118393	Oil Seal	1	24	118022	Worm Gear R.H.	1
4	154486	Roller Bearing	1	25	725005	Woodruff Key No. 91-1/4" x 3/4" Dia.	1
5	154393	Bearing Cup	1	26	118315	Thrust Washer	2
6	118396	Snap Ring	1	27	118403	Shield	2
7	170888	Worm Shaft	1	28	726003	Pipe Plug	1
8	118492	Worm R.H.	1	29	118324	Tine Assembly Inner R.H.	1
9	725502	Key	1	30	118294	Tine Blade, L.H.	8
10	118398	Spacer	1	31	118295	Tine Blade, R.H.	8
11	154486	Roller Bearing	1	32	706009	Hex. Capscrew, 7/16"- 20 x 1-1/4"	32
12	154393	Bearing Cup	1	33	717512	Hex. Lock Nut, Full, 7/16"- 20	32
13	118399	Cup	1	34	118053	Pin	4
14	118396	Snap Ring	1	35	722009	Cotter Pin, 1/8" x 3/4"	4
15	118400	Shield	1	36	118326	Tine Assembly Outer R.H.	1
16	154487	Cup	1	37	118323	Tine Assembly Inner L.H.	1
17	118402	Cover	1	38	118325	Tine Assembly Outer L.H.	1
18	118024	Gasket	1	39	118046	Plate Assembly, Outer	2
19	715018	Hex. Capscrew 1/4"- 20 x 5/8"	4	40	118084	Plate Assembly, Inner	2
20	720003	Lockwasher 1/4"	4	41	170885	Ring, Backing	1
21	118020	Needle Bearing	2	41	171762	Ring, Backing	1

## ACCESSORIES

### FURROW OPENER -- MFR.'S NO. 340

A furrow opener shovel is available which mounts on the depth bar. You will find this shovel very handy for digging furrows for crops such as potatoes that are planted in rows. When installing the furrow opener, turn the depth bar upside down and bolt to the tool holder with the carriage bolts, washers and nuts supplied. Remove the stop plate from between the support assemblies on the Roticul and install the extension support assembly with the same hardware. The depth bar is then positioned in this extension, the clamp installed and these pieces secured with the pin and clip supplied.

Ref. Let.	Part No.	Description
A	8271503	Tool Holder
B	118287	Extension Support Assembly
C	103010	8" Furrow Opener
D	703002	Carriage Bolt, 3/8-16 x 1-1/4" lg.
E	719001	Plain Washer, 3/8"
F	717003	Hex Nut, Full, 3/8-16
G	118053	Pin
H	8161045	Spring Clip
J	704002	Plow Bolt



### TINE EXTENSION SET MFR.'S NO. 212

The tine extension set consists of a left hand and right hand tine assembly. These additional extensions will allow an increase from the standard 20-1/2" tilling width to a width of 29-1/2" as shown in Figure 3. To install the extension tines, place long hubs of extension tines over hubs of tines previously installed, and secure with pin and spring clip. Be sure the extension tines are so mounted that the sharp edges of the tines on top face forward.

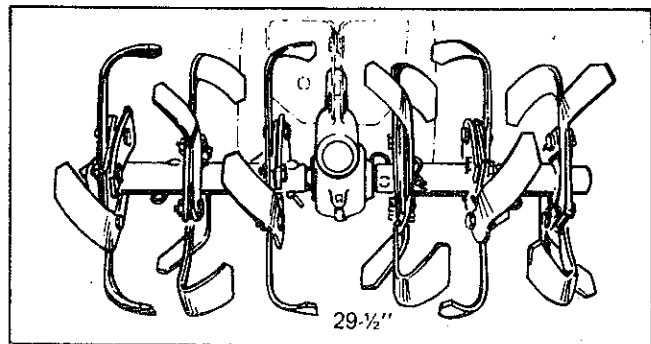


Figure 3.

Ref. Let.	Part No.	Description
A	105222	Left Hand Tine Blade Extension Assembly, Complete
B	105221	Plate Assy., Tine Extension
C	105223	Right Hand Tine Blade Extension Assembly, Complete
D	118053	Pin
E	8161045	Spring Clip
F	8152001	Left Hand Tine Blade
G	8152002	Right Hand Tine Blade
H	706009	Hex Capscrew, 7/16-20 x 1-1/4" lg.
J	717512	Hex Nut, Full, 7/16-20

