

# Operator's Manual

## Maxim Chain Drive Tillers

TP50B • MT50B • RMT50B • RMT55H • RMT50IC • RMT60R



### **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.

# MAXIM

## MAXIM MANUFACTURING CORPORATION

20195 S. Diamond Lake Rd., STE 100 • Rogers, MN 55374 • [www.maximmfg.com](http://www.maximmfg.com)



## WARNING!! Read these and all safety and operating instructions before operating your tiller.

### Training

1. Read the operating and service instruction manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment before use. Know how to stop the unit and disengage the controls quickly.

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

3. Keep the area of operation clear of all persons, particularly small children and pets.

Preparation  
1. Thoroughly inspect the area where the equipment is to be used and remove all foreign objects.

2. Disengage all clutches and shift into neutral before starting the engine.

3. Do not operate the equipment without wearing adequate outer garments. Wear footwear that will improve footing on slippery surfaces.

4. Handle fuel with care; it is highly flammable.

- Use an approved fuel container.
- Never add fuel to a running or hot engine.
- Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
- Replace gasoline cap securely and clean up spilled fuel before restarting.

5. Never attempt to make any adjustments while the engine is running except where specifically recommended by the manufacturer.

### Operation

1. Do not put hands or feet near or under rotating parts.

2. Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic. Do not carry passengers.

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

4. Exercise caution to avoid slipping or falling.

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

6. Stop the engine when leaving the operating position, before unclogging the tines, and when making any repairs, adjustments, and inspections.

7. Take all possible precautions when leaving the

machine unattended. Disengage the power take off, lower the attachment, shift into neutral, stop the engine and remove the key.

8. Before cleaning, repairing, or inspecting, shut off the engine and make certain all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the plug to prevent accidental starting. Disconnect the cord on electric motors.

9. Do not run the engine indoors. Exhaust fumes are dangerous.

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

11. Keep children and pets away.

12. Do not overload the machine capacity by attempting to till too deep at too fast a rate.

13. Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when backing.

14. Never allow bystanders near the unit.

15. Use only attachments and accessories approved by the manufacturer of the tiller.

16. Never operate the tiller without good visibility or light.

17. Be careful when tilling in hard ground. The tines may catch in the ground and propel the tiller forward. If this occurs, let go of the handlebars and do not restrain the machine.

### Maintenance and Storage

1. Keep machine, attachments, and accessories in safe working condition.

2. Check shear bolts, engine mounting bolts, and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working order.

3. Never store the machine with fuel in the fuel tank inside a building where ignition sources are present, such as hot water and space heaters, clothes dryers, and the like. Allow the engine to cool before storing in any enclosure.

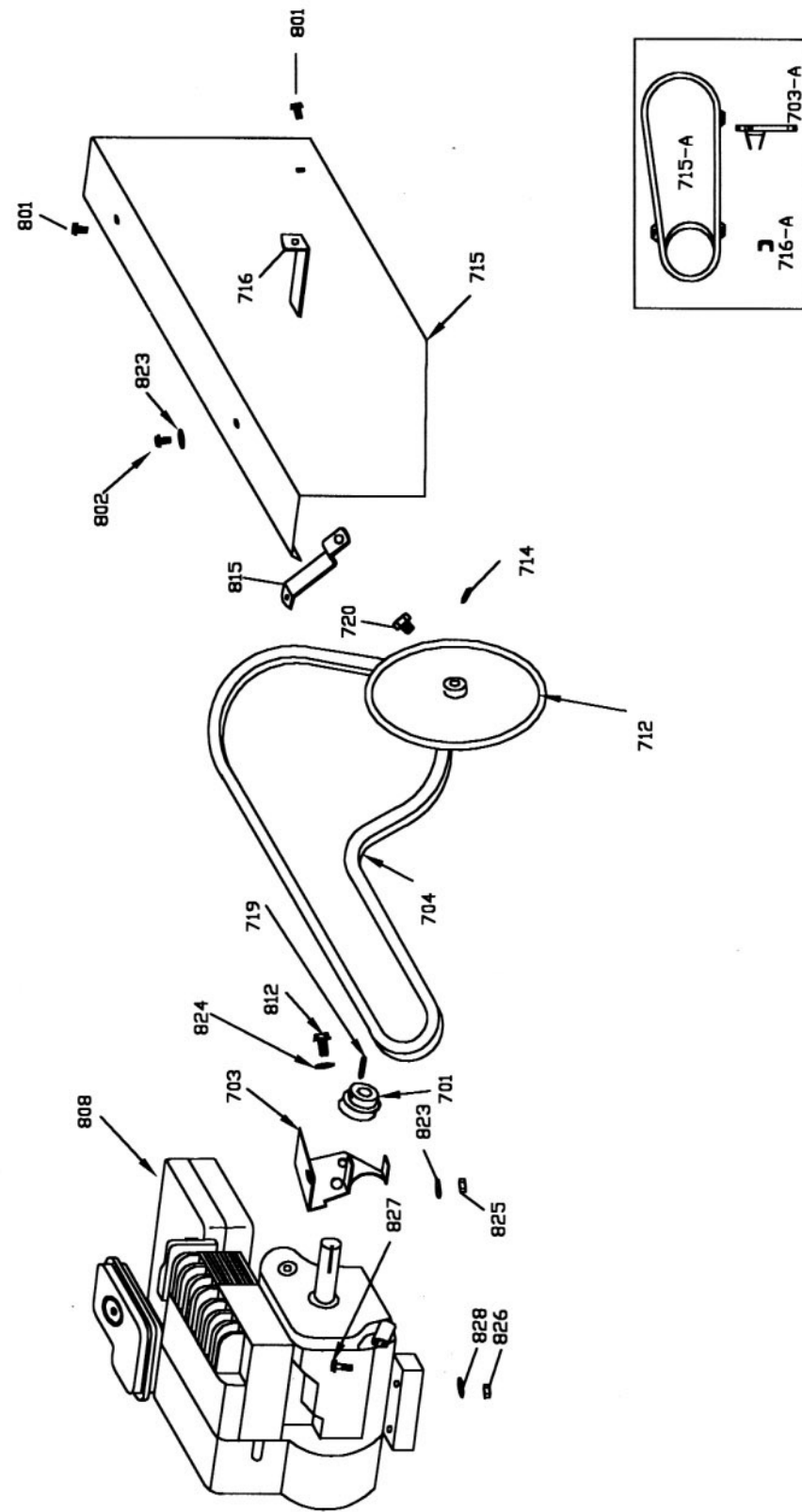
### BELT COVER, BELTS, AND PULLEY

REF	PART #	QUAN	DESCRIPTION
701	271686	1	Crankshaft Pulley, 5 hp
703	162035	1	Belt Bracket Assembly ( TP, RMT)
	162067		Belt Bracket Assembly (RMT55H)
703-A	359215		Belt Bracket Assembly (MT)
704	272201	1	Belt, V Drive for Units with 9" Pulley
	272213	1	Belt, V Drive for Units with 7" Pulley
712	336671	1	Pulley, 9" for TP and MT
	336665	1	Pulley, 7" for RMT
714	463017	1	Key, 3/16" x 3/4" Woodruff #9
715	130733	1	Guard
	130791	1	Guard, Round MT model
716	359341	1	Bracket, Lower for RMT
	359216	1	Bracket, Lower for MT
719	359383	1	Key, Pulley
720	415562	2	Set Screw 5/16"
801	400176	2	Self Tapping Bolt 1/4" x 1/2"
802	400104	1	Bolt, 1/4" - 20 x 1/2
808			Engine
812	400235	1	Screw, 1/2" x 24 x 3/4"
815	359343	1	Bracket, Upper
823	445245	2	Flat Washer
824	446145	1	Lockwasher, 1/2" Heavy
825	444715	1	Locknut, 1/4" - 20
826	443106	4	Nut, 5/16" - 18
827	400194	4	Screw, 5/16" - 18 x 1 1/2" Hex Head Cap
828	446136	4	Lockwasher, 5/16"

### DECALS

TYPE	PART #	QUANTITY
HOLD HANDLE GRIPS WHILE CRANKING	336776	1
TINE ENGAGE LEVER	336777	1
HANDLE CROSS BRACE (TP50B)	336768-A	1
HANDLE CROSS BRACE (MT50B)	336913	1
HANDLE CROSS BRACE (RMT)	336916	1
DO NOT OPERATE WITHOUT GUARD	336720	1
TINE WARNING	336784	2
MADE IN USA	336924	1
BELT GUARD (TP50B)	336894	1
BELT GUARD (MT50B)	336914	1
BELT GUARD (RMT)	336917	1
FAST SLOW OFF (TP50B)	336766-A	1
CAUTION (OPERATOR)	336799	1

# Belt and Belt Cover



**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 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 ARRESTER.

**WARNING**

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

## SET UP INSTRUCTIONS

### UNPACKING

To assure proper operation of your Maxim Tiller, read and follow the following instructions carefully.

**DO NOT ATTEMPT TO LIFT THE TILLER FROM THE CARTON.**

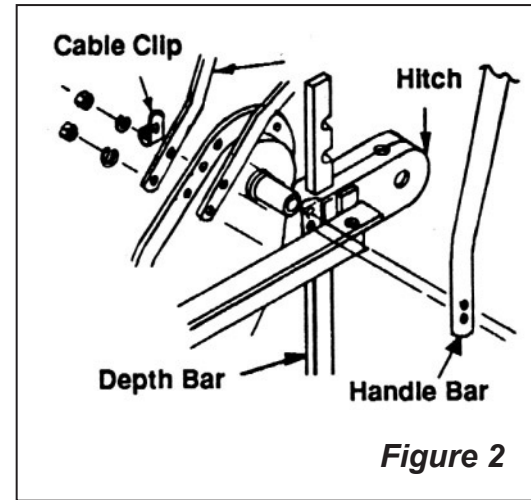
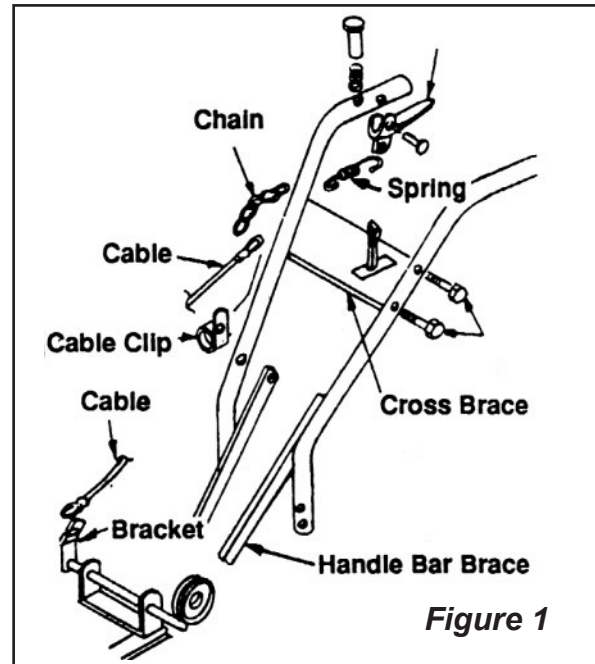
1. Do not attempt to lift the tiller from the carton. After opening the top, cut all four corners and lay the sides flat on the floor or working space. Take out all unassembled parts, bag of parts, and protective packing. Be careful not to kink the control cables.
2. Tiller model TP50B comes in two cartons. All other models are delivered in one carton. Carton #1 will have the complete tiller unit and the cultivator mounting bar. Carton #2 will have all the plow attachments and tractor tires. Remove all parts from carton #1. You should have the following items:
 

1 each box of 4 rotor assemblies	1 each Throttle Control Assembly
1 each Pair of Handle Bars	1 each Clutch Control Cable
1 each Handle Cross Brace	1 Bag of small parts (nuts and bolts)
2 each Handle Bar Braces	1 each Cultivator Mounting Bar (TP50B only)
3. Install rotor assemblies on shaft using 4 tine pins and 4 cotter hair pins. Be sure that all cutting edges are facing toward the front as they rotate.
4. Install right and left handle bars to hitch using two 5/16" 18 x 3 1/2" hex bolts, nuts and lock washers. Do not tighten any bolts until all are started. Be sure the handle bar which has the clutch lever is on the

**SET UP INSTRUCTIONS CONTINUED**

right as you stand in an operating position. See Figure 1 and 2.

5. Install the two handle bar tie braces between the holes in the transmission and the lower holes in the handle bars. Fasten the braces to the transmission using one 5/16" - 18 x 1" and one 5/16" x 1 1/4" hex



bolts, nuts and lock washers. The left brace bolts between the belt guard bracket and the transmission. The braces are mounted to the handle bars using one 1/4" - 20 x 1 1/2 and one 1/4" - 20 x 1 3/4" hex bolts, nuts, and lock washers. The clutch cable guide mounts on the outside of the right handle bar. Route the clutch cable through guide with the adjustment at the top. See Figure 1.

6. Install the handle bar cross brace between the handle bars using four 1/4" - 20 x 1 1/2" hex bolts, nuts, and lock washers. See Figure 1.

7. Route the throttle control cable under the handle passing under the cross brace.

8. Tighten all bolts at this time.

9. Install clutch cable by hooking loop at bottom into notch in clutch arm. Hook spring into clevis and into hole in clutch lever. The clutch cable should be adjusted so that the belt will slip when released and the spring will be extended 1/4" when lever is engaged.

10. Install handle bar grips (Some type of lubricant such as liquid soap will be helpful).

**FINAL SETUP**

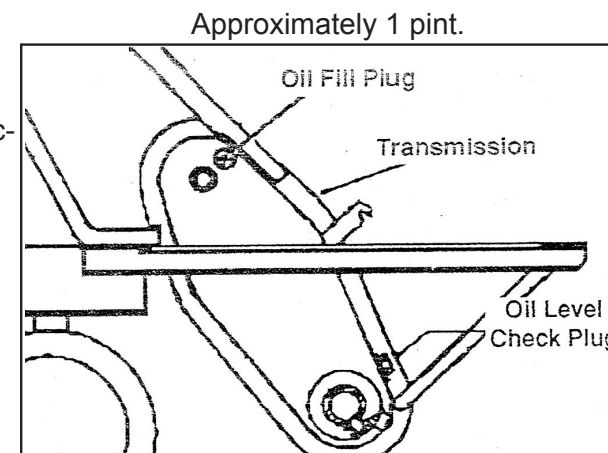
1. Check the transmission to that it is full. See Figure 3.

- a. Remove check plug.
- b. Use 90 wt. gear lube or 50 weight motor oil.
- c. Fill until **check** plug overflows.
- d. Replace plug.

2. Remove the engine dipstick and fill crankcase with oil according to engine owner's manual.

3. Fill fuel tank. Use clean, fresh, lead-free, gasoline. Fill the tank completely.

**DO NOT MIX OIL WITH GASOLINE.**



Ref#	MT and TP Models			RMT		
	Part #	Quan.	Description	Part #	Quan.	Description
101	336682	1	Main Frame Rail LH			
102	336681	1	Main Frame Rail RH			
103	359335	2	Frame Spacer			
302	130695	1	Handle Bar LH	162081	1	Handle Bar Left Hand
303	336678	2	Handle Bar Brace			
304	130730	1	Handle Cross Brace			
305	313786	2	Handle Grip		4	
308	130694	1	Handle Bar Right Hand	162082	1	Handle Bar RH Heavy Duty
402	162077	1	Intek Throttle Control			
403	402014	2	#10 - 3/8" Slot Tapping Screw			
404	336683	1	Clutch Lever			
405	359345	1	Clutch Lever Pin			
407	359346	1	Clutch Locking Pin			
408	359359	1	Clutch Locking Spring			
409	359327	1	Clutch Cable Spring			
410	162041	1	Clutch Cable and Adjustment			
413	359326	2	Clutch Cable Guide			
414	359323	1	Throttle Cable Clip			
601	162031	2	Wheel, 10" x 1.75	162065	2	Wheel, 10" x 1.75" Heavy Duty
605	461467	1	Wheel Yoke Locking Pin			
606	359362	1	Lock Pin Spring			
607	461468	1	Cotter Pin			
609	162032	1	Wheel Yoke Assembly	162033	1	Wheel Yoke Assembly
615	130701	2	Hitch Casting			
618	336686	1	Depth Bar			
621	359363	1	Depth Bar Adjust. Spring			
625	461469	1	Depth Bar Adjust. Pin			
705	359321	1	Idler Pulley	338009	1	Idler Pulley
706	162069	1	Idler Shaft			
708	359325	1	Idler Shaft Arm			
709	400290	1	Capscrew NC, 3/8" x 1 3/4"			
802	359330	2	Wheel Shoulder Bolt			
804	400184	2	Cap Screw, NC 5/16" x 3/4"			
805	400186	1	Cap Screw, NC 5/16" x 1"	400190		Cap Screw, NC 5/16" x 1 1/4"
806	400197	1	Cap Screw, NC 5/16" x 2 1/4"			
807	400200	4	Cap Screw, NC 5/16" x 2 1/2"			
809	400207	2	Cap Screw, NC 5/16" x 3 3/4"			
811	400275	1	Cap Screw, NC 3/8" x 3"			
813	400115	5	Cap Screw, NC 1/4" x 1 1/2"			
814	400109	1	Cap Screw, NC 1/4" x 1 3/4"			
816	443101	6	Nut, NC 1/4"			
817	443106	11	Nut, 5/16"			
818	443110	2	Nut NC, 3/8"			
819	444721	4	Locknut NC, 3/8"			
820	444720	1	Locknut NF, 3/8"			
821	446130	6	Lockwasher, 1/4"			
822	446136	11	Lockwasher, 5/16"			
825	455050	1	Washer SAE Flat, 1/2"			
830	162096	Optional	LH Tine Shield			
831	162095	Optional	RH Tine Shield			
833				359853	1	Engine Guard



4. Repeat steps Number 2 and 3 above until the engine starts. If the engine fails to start after 3 pulls on the rope, repeat Step 1 above as necessary. Close choke after engine has responded.

5. As the engine warms up, move the throttle lever to desired position. Allow engine warm-up period before operating tiller.


NOTE: A warm engine may start without choking. Do not use the choke if engine is hot.


### Stopping Engine

1. Move the throttle control to rear position.
2. Push stop switch at spark plug.
3. Disconnect the wire from the spark plug to prevent accidental starting of the machine while it is unattended.

### OPERATION OF THE CHAIN DRIVE TILLER

1. When the ground is hard (especially during spring and fall plowing), place wheels in up position by pulling spring loading pin and lifting wheels. Release pin. For weeding or cultivating, wheels may be left down if you prefer.
2. Adjust the drag stake for comfortable operation. This is done by depressing 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 hand comfortably with the elbows slightly bent.
3. Move 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 more 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 handle.

	<b>DANGER</b>
<p><b>To prevent personal injury, the chain drive must disengage immediately when clutch lever is released. If it does not, stop the tiller, adjust belt and cable tension as described in Adjustments section of this manual. Never leave the tiller unattended with the engine running. Children are attracted to a running tiller and could be injured if struck by the rotating tines.</b></p>	

	<b>WARNING</b>
<p><b>Keep hands clear of belt and tines while engine is running. Never attempt to adjust or clean tines while engine is running, at risk of severe injury.</b></p>	

When you find the right amount of downward pressure so that the tines are digging and tiller is not moving forward, release the pressure slightly. As you release it you'll notice the tiller beginning to move forward.

**The whole tilling operation is controlled by the amount of pressure you put on the drag stake. Do not fight the tiller. Stand between the handles and press down to go slower and dig deeper, and release the downward pressure to move forward faster. In normal soil, the actual up and down movement of the handles will be no more than an inch or two.**

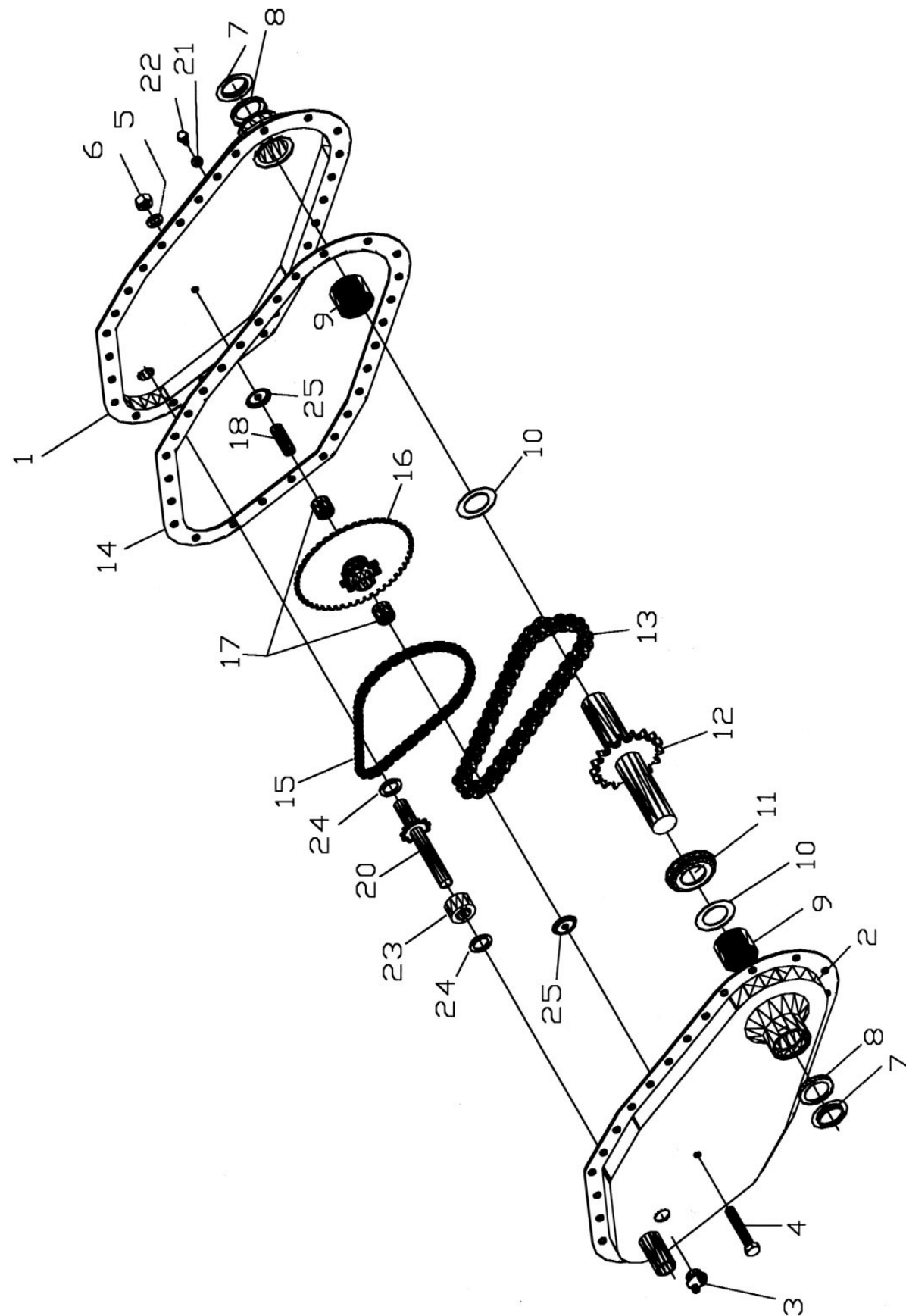
### TRANSPORT

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.

<b>TRANSMISSION 130400</b>			
REF #	PART #	QUAN.	DESCRIPTION
1	130693	1	Left hand Case Assembly
2	130692	1	Right Hand Case Assembly
3	359312	1	Oil Fill Plug
4	400201	1	5/16" x 2 3/4" Bolt
5	455041	1	5/16" Washer
6	443106	1	5/16" Nut
7	359306	2	Dust Shield
8	359305	2	Oil Seal
9	359304	2	Bearing, Needle
10	359313	AR	Washer
11	359303	1	Spacer
12	162038	1	Shaft and Sprocket Assembly
13	359302	1	Chain
14	336675	1	Gasket
15	359296	1	Chain
16	162023-A	1	Idler Sprocket Cluster
17	359297	2	Input Bearing
18	359298	1	Bushing, Idler Cluster
20	162037	1	Input Shaft/Sprocket
21	359339	1	Washer Rubber Seal
22	408883	1	1/4" x 1/2" Screw
23	359351	1	Input Shaft Spacer
24	455049	AR	Shim Washer 41/64 x 1 x .0625
	455062	AR	Shim Washer 41/64 x 1 x .032
25	359299	2	Transmission Washer

**\*AR -- As Required**

# TRANSMISSION



## 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 raised for deep tillage or ease of turning in confined areas.
2. Operate the tiller at about 3/4 throttle.
3. Don't hurry the job - proceed at a slow walk - give the machine time to do its job.
4. Concentrate on keeping your arms relaxed (There is a natural tendency for any beginner to tense up.). Operation 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 down hill.
6. For best results, operate at reduced throttle settings when the ground is extremely hard or rough.
7. When cultivating, raise the 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 rotors as it tills along the row.
8. TIGHTEN ALL NUTS AND BOLTS PERIODICALLY.

## TILLING PATTERNS

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.

## ADJUSTMENTS

### TINE ADJUSTMENT

The standard tilling width is 26" with both inner and outer tine assemblies mounted. Tilling width is 14" with outer assemblies removed.

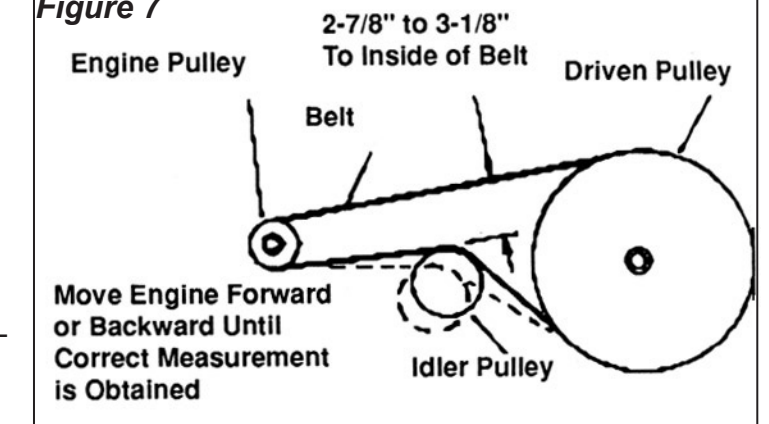
To remove outer tine assemblies from inner tine assemblies, remove pin clip from clevis pin. Slide clevis pin out and remove outer tine assembly. Extension tines provide a tilling width of up to 38".

### CLUTCH ADJUSTMENT

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

Figure 7



## DANGER

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

## Adjustments continued

- Re-tighten engine mounting bolts.
- Remove all the slack from clutch cable and hook spring in proper chain link.
- 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 spring 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.

# MAINTENANCE

## PERIODIC CHECK

- Regularly check all bolts and nuts for tightness.
- If the belt begins to bottom out on the engine pulley, then replacement of the pulley is needed. This is noticeable by the pulley "V" bottom becoming shiny.

## BELT REPLACEMENT

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

- Remove belt guard.
- Make sure clutch lever is in disengaged position.
- Start at the top of 9" or 7" pulley and begin removing belt in clockwise direction (facing tiller from the left side). If tension on belt is too great the idler pulley may be pulled downward to relieve pressure on belt.
- Once belt is off 9" or 7" pulley remove it from smaller pulley.
- Replace belt by reversing sequence of steps above.
- Replace belt guard, "C" nuts, and thumb screws.

## LUBRICATION

**1. Wheels** -- Lubricate wheels and wheel support shafts once a month or every 40 operating hours with #30 oil. Apply oil to axle and hub at back of wheel. Spin wheel to allow oil to move into bearing. In extremely dusty conditions, wheels may become tight because of dust in bearing area. When this occurs, remove the wheels and clean axle and wheel bearing surfaces with solvent or emery cloth. Oil and reassemble.

**2. Throttle Control Cable** -- Lubricate control cable as necessary, with #30 oil. Apply with a saturated rag or an oil can along the outer surface of the conduit. Remove excess oil.

**3. Clutch Lever Pivots** -- Apply a few drops of SAE 30 oil to the clutch hand lever and idler lever pivots as required to maintain a free and smooth operation of clutch.

**4. Transmission** -- Fill transmission with machine in normal upright position. Fill plug is located on the upper right hand side. Use 90 weight gear lube or 50 weight motor oil. Capacity is approximately 16 ounces. Remove fill plug. Remove check plug. Fill until check plug hole overflows. Replace plugs. If excessive oil leakage appears around rotor shaft, the seals and shields must be replaced.

**5. Idler Arm Pivots** -- Lubricate idler arm pivots once a month or every 40 operating hours with #30 oil.

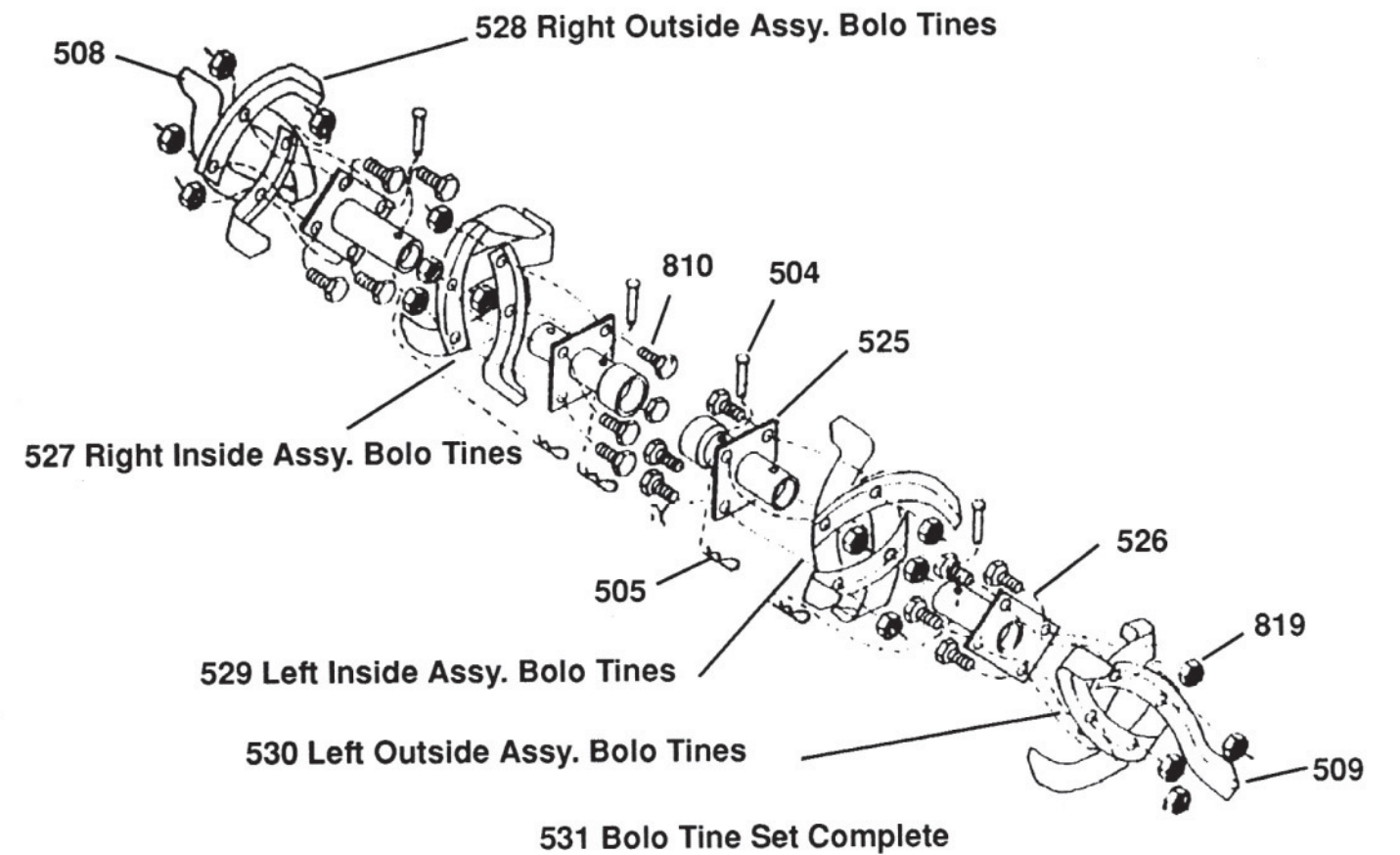
**STORAGE** --At the end of the season or if the tiller is to be stored for any length of time it should be washed. To make the job easier use a soft-bristled scrub brush to clean wheels and tires. A stick can be used to clean dirt from crevices. This simple procedure will keep your tiller looking like new for years.

**ENGINE MAINTENANCE AND STORAGE -- REFER TO ENGINE OWNER'S MANUAL FOR**

**PROPER STORAGE AND MAINTENANCE OF YOUR ENGINE.**

# PARTS BREAKDOWNS

## TINES



Ref	MT AND TP MODELS			RMT MODELS		
	Part #	Quan	Description	Part #	Quan	Description
504	461466	4	Tine Pin	461466	4	Tine Pin
505	460312	4	Hair Pin	460312	4	Hair Pin, Cotter
508	130720	8	Bolo Blade, Right	130762	4	Slasher Tine, RH
509	130721	8	Bolo Blade, Left	130763	4	Slasher Blade, LH
525	130722	2	Tine Hub, Inner	130776	2	Tine Hub, Inner
526	130723	2	Tine Hub, Outer	130777	2	Tine Hub, Outer
527	130740	1	R Inside Assy. Bolo Tine	130766	1	R Inside Assembly Slasher
528	130742	1	R Outside Assembl. Bolo	130768	1	R Outside Assembly Slasher
529	130741	1	L Inside Assembly Bolo	130767	1	L Inside Assembly Slasher
530	130743	1	L Outside Assembly Bolo	130769	1	L Outside Assembly Slasher
531	130744	1	Bolo Tine Set Complete	130761	1	Slasher Tine Set Complete