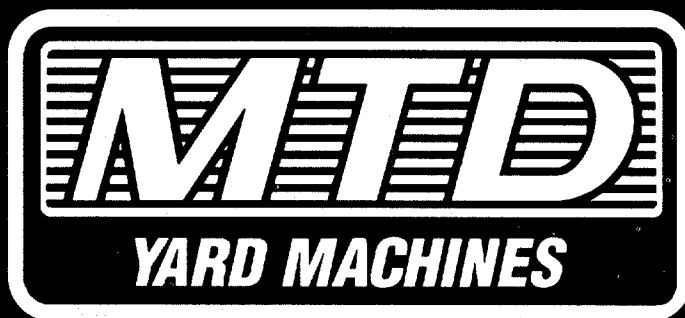


# OWNER'S GUIDE

AMERICAN  AMERICAN  
M A D E O W N E D  
OUTDOOR POWER EQUIPMENT



**Important: Read Safety Rules and Instructions Carefully**

**CHAIN  
DRIVE  
TILLER**

**Model Number  
035**

**WARNING:** This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state 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 the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 368022, Cleveland, Ohio 44136-9722.

**MTD PRODUCTS INC • P.O. BOX 368022 • CLEVELAND, OHIO 44136-9722**


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FORM NO. 770-8575K

# IMPORTANT

## RULES FOR SAFE OPERATION



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR TILLER. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL—  HEED ITS WARNING.

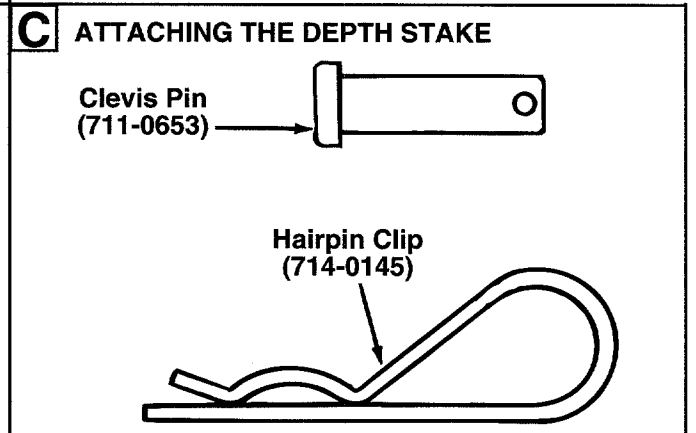
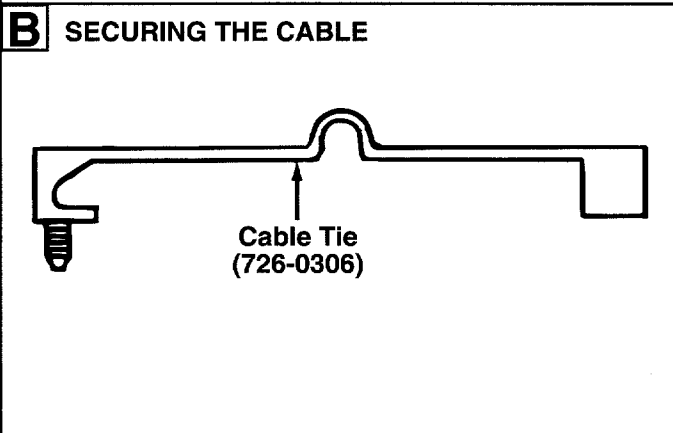
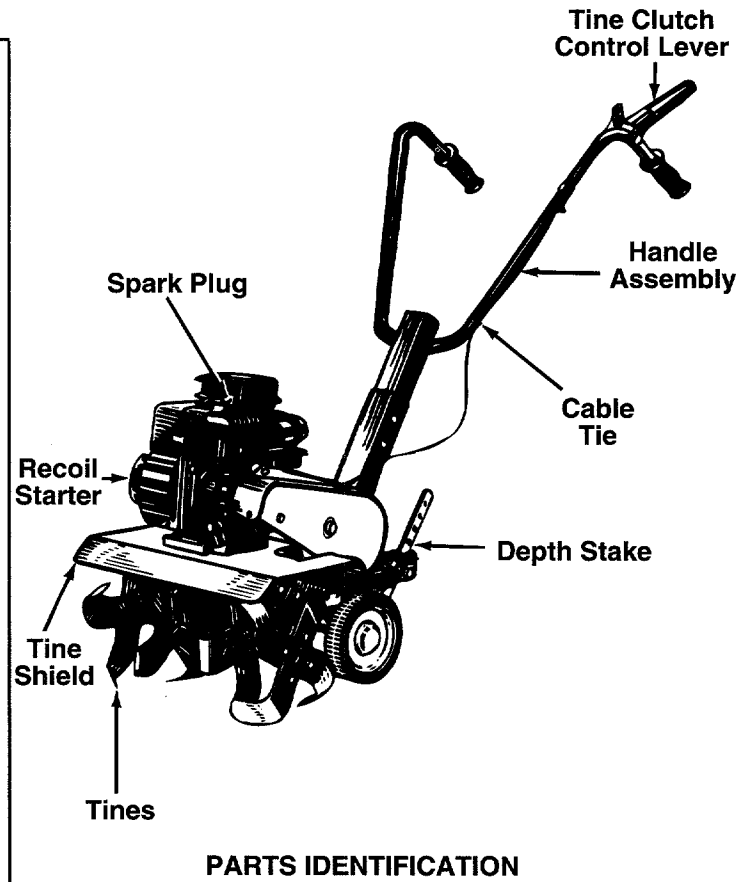
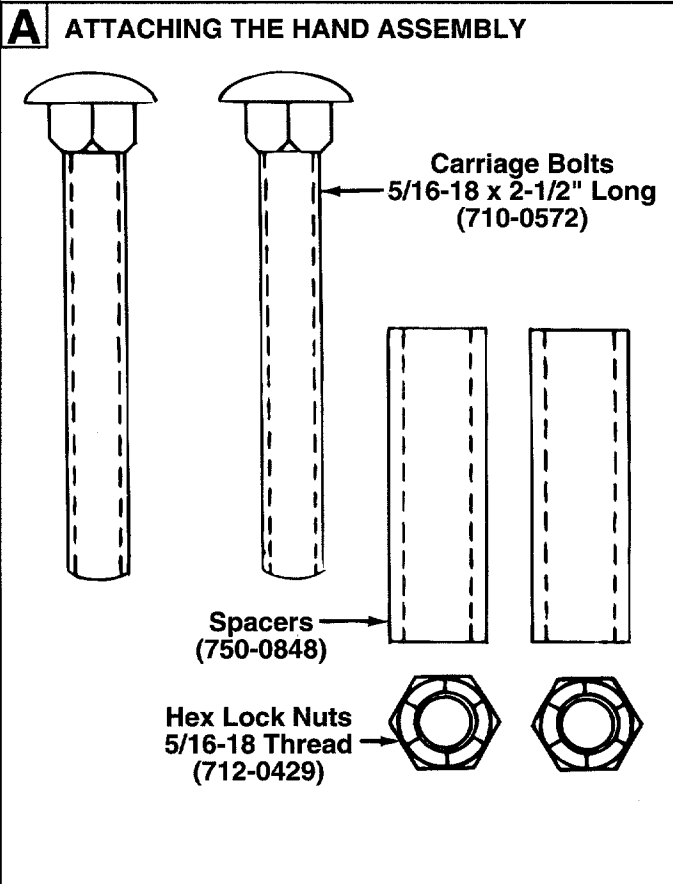


**DANGER:** Your tiller was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. If you violate any of these rules, you may cause serious injury to yourself or others.

1. It is suggested that this manual be read in its entirety before attempting to assemble or operate this unit. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Your tiller is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times.
3. Read this owner's manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
4. Never allow children to operate a power tiller. Only persons well acquainted with these rules of safe operation should be allowed to use your tiller.
5. No one should operate this unit while intoxicated or while taking medication that impairs the senses or reactions.
6. Keep the area of operation clear of all persons, particularly small children and pets.
7. Do not operate equipment when barefoot or wearing open sandals. Always wear substantial footwear.
8. Do not wear loose fitting clothing that could get caught on the tiller.
9. Do not start the engine unless the shift lever is in the neutral (N) position.
10. Do not stand in front of the tiller while starting the engine.
11. Do not place feet and hands on or near the tines when starting the engine or while the engine is running.
12. Never attempt to make a wheel or depth bar adjustment while the engine is running.
13. Do not leave the tiller unattended with the engine running.
14. Do not walk in front of the tiller while the engine is running.
15. Check the fuel before starting the engine. Gasoline is an extremely flammable fuel. Do not fill gasoline tank indoors, while the engine is running, or while the engine is still hot. Replace gasoline cap securely, and wipe off any spilled gasoline before starting the engine as it may cause a fire or explosion.
16. Do not run the engine while indoors. Exhaust gases are deadly poisonous.
17. Be careful not to touch the muffler after the engine has been running. It is hot.
18. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
19. Before any maintenance work is performed or adjustments are made, remove the spark plug wire and ground it on the engine block for added safety.
20. Use caution when tilling near buildings and fences. Rotating tines can cause damage or injury.
21. Before attempting to remove rocks, bricks and other objects from tines, stop the engine and be sure the tines have stopped completely. Disconnect the spark plug wire and ground to prevent accidental starting.
22. Check the tine and engine mounting bolts at frequent intervals for proper tightness.
23. Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
24. Never store the equipment with gasoline in the tank inside of a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

# CONTENTS OF HARDWARE PACK/PARTS IDENTIFICATION

Lay out the hardware according to the illustration for identification purposes. Part numbers are shown in parentheses.  
(Hardware pack may contain extra items which are not used on your unit.)



# ASSEMBLY INSTRUCTIONS

**NOTE:** This unit is shipped WITHOUT GASOLINE or OIL. After assembly, see separate engine manual for proper fuel and engine oil recommendations.

**NOTE:** Left and right is determined from the operator's position, standing behind the tiller.

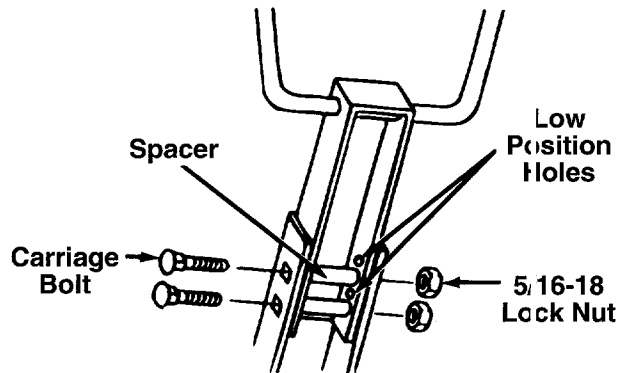


FIGURE 1.

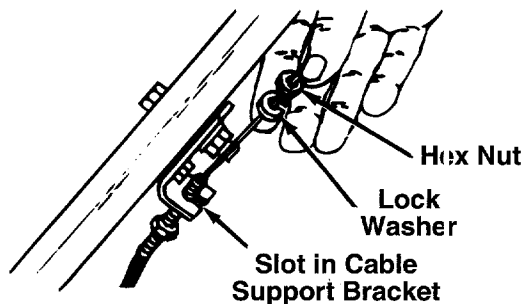


FIGURE 2.

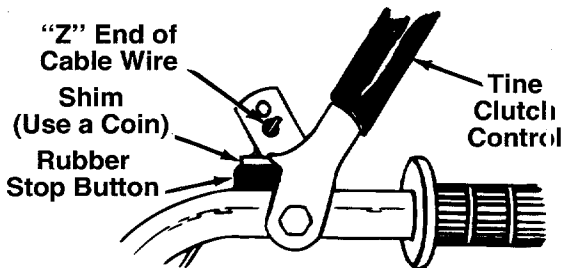


FIGURE 3.

## UNPACKING

1. Remove loose parts included with tiller (i.e. handles, hardware pack, etc.).
2. Cut down corners on one end of carton and lay end down flat. Remove packing material.
3. Roll tiller out of carton and check carton thoroughly for loose parts.
4. Extend the control cable and place on the floor. Be careful not to bend or kink the cable.

## ATTACHING THE HANDLE ASSEMBLY (Hardware A)

There are two height positions for the handle assembly. Slide handle channel inside frame channel, selecting holes for either high or low position. See figure 1. Secure with two carriage bolts, spacers and hex lock nuts. Tighten securely. If after using the tiller, you desire a different position, reassemble handle in the other position.

## ATTACHING AND ADJUSTING THE CLUTCH CABLE

1. Remove one hex nut and the lock washer from the end of the clutch cable.
2. Slip the cable wire and threaded end fitting up through the slot on cable support bracket. See figure 2.
3. Replace lock washer and start hex nut on threaded end fitting. Start nut, but do not tighten.
4. Hook the "Z" end fitting of cable wire into bottom hole of clutch lever bracket.

5. Place an approximately 1/16 inch shim on top of rubber stop button (use a coin—nickel or penny) and lift tine clutch control so it is against coin. Hold in this position. See figure 3.

**NOTE:** The coin is used as a shim to make certain a small amount of slack remains in cable after adjustment, which is necessary so tines are not engaged when clutch lever is released.

6. Adjust cable by tightening bottom hex nut until all slack is removed from cable wire.
7. Release the clutch lever, remove coin and tighten the top hex nut while holding the bottom nut using two 1/2" wrenches or adjustable wrenches.

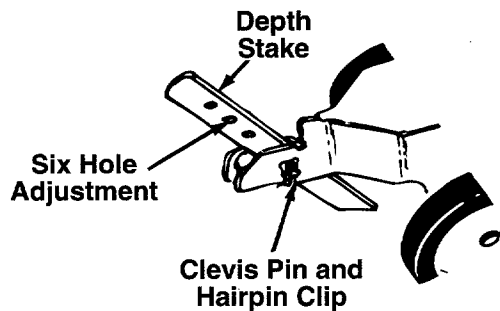


FIGURE 4.

**TO CHECK CABLE ADJUSTMENT:**



Be certain spark plug wire is disconnected from spark plug and cannot come in contact with plug.

1. With the clutch lever released (disengaged position), pull starter rope slowly several times while watching the tines. Tines should not turn when adjusted correctly.
2. If tines turn, readjust cable by loosening lower nut slightly to provide additional slack in cable wire when in disengaged position.
3. Retighten top nut and check again for proper adjustment.

**SECURING THE CABLE (Hardware B)**

Secure the cable to the left handle using cable tie provided. Refer to illustration on page 3 for proper location of cable tie.

**ATTACHING THE DEPTH STAKE (Hardware C)**

Insert depth stake between rear frame halves as shown in figure 4. The pointed end of the depth stake should face forward as shown. Secure with clevis pin and hairpin clip.

## OPERATION

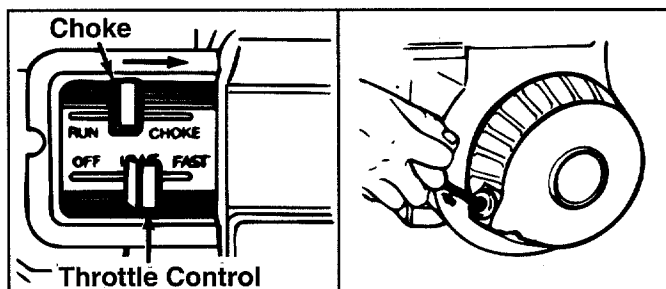


FIGURE 5.

**THROTTLE CONTROL**

The throttle control is located on the right side of the engine. It controls the engine speed and stops the engine. See figure 5.

**CHOKE LEVER**

The choke lever is located above the throttle control. It is used to enrich the fuel mixture in the carburetor when starting a cold engine.

**STARTER HANDLE**

Used to manually start the engine. See figure 5.

**TINE CLUTCH CONTROL**

The clutch control lever is located on the left handle. Refer to figure 3. Squeezing the lever against the handle engages the tine drive. Release the lever to stop the tines from turning.

**DEPTH STAKE**

The depth stake controls the tilling depth. Refer to "How to Use Your Tiller" section on page 6.

**BEFORE STARTING ENGINE**

1. Check clutch adjustment before starting tiller. Refer to Assembly Instructions.
2. **Service the engine with gasoline and oil** as instructed in the separate engine manual. **Read instructions carefully.**

**NOTE:** Your tiller is shipped without oil; however, a small amount of oil may be present from the factory.



**WARNING:** Never fill fuel tank indoors, with engine running or until the engine has been allowed to cool for at least two minutes after running.

**TO START ENGINE**



**WARNING:** Be sure no one is standing in front of the tiller while the engine is running or being started.

1. Attach spark plug wire to spark plug.
2. Place the throttle control lever in FAST position. See figure 5.
3. Move choke lever to CHOKE position (a warm engine may not require choking).
4. Stand on right side of tiller and grasp handle in area of label to steady the tiller. If necessary, place your left foot against rear wheel for additional support.
5. With the tine clutch control **released**, pull rope out slowly until engine reaches start of compression cycle (rope will pull slightly harder at this point). Let the rope rewind slowly.

6. Pull rope with a rapid, continuous, full arm stroke. Keep a firm grip on starter handle. Let rope rewind slowly. Do not let starter handle snap back against starter.
7. Repeat preceding instructions 5 and 6 until engine fires. When engine starts, move choke lever on engine halfway between CHOKED and RUN.
8. Move throttle control to IDLE position for a few minutes warm-up. Move choke lever to RUN position as engine warms up.

### TO STOP ENGINE

1. Move throttle control lever to OFF position. See figure 5.
2. Disconnect spark plug wire from spark plug and ground against the engine to prevent accidental starting while equipment is unattended.

## HOW TO USE YOUR TILLER

The tiller is a precision built machine designed for seed bed preparation, cultivating, furrowing and mulching. It is engineered to minimize the hardest work in the vegetable or flower garden, to till the soil for planting and cultivating, and to perform many other useful labor saving tasks in the garden. With the proper amount of care and maintenance, this machine will provide the owner with many years of service.

### CONTROLLING SPEED AND TILLING DEPTH:

1. Depth Stake Adjustment: The depth stake acts as a brake for the tiller and controls the depth and speed at which the machine will operate. Remove the clevis pin and hairpin clip to raise or lower depth stake. See figure 6.

By increasing the depth of the depth stake, the forward speed of the machine is reduced and the working depth is increased. When the depth stake is raised, the working depth of the machine is reduced and the forward speed is increased.

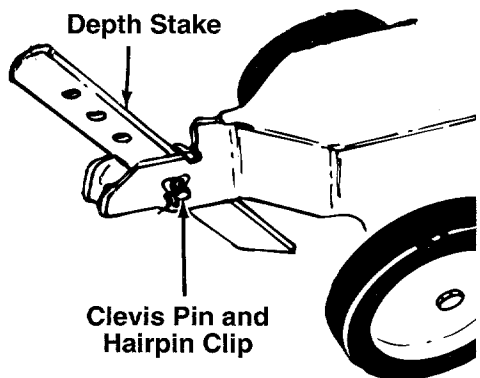


FIGURE 6.

When tilling, leave approximately 8 inches of untilled soil between the first and second tilling paths, then make the third path between the first and second as shown in figure 7. In some soils, the desired depth is obtained the first time over the garden. In other soils, the desired depth is obtained by going over the garden two or three times. In the latter case, the depth stake should be lowered before each succeeding pass over the garden. Passes should be made across the length and width of the garden alternately. Rocks which are turned up should be removed from the garden area.

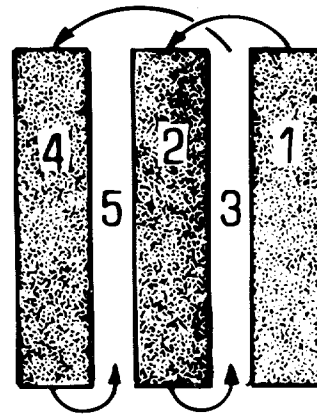


FIGURE 7.

2. Handle Pressure: Further control of tilling depth and travel speed can be obtained by variation of pressure on the handles. A downward pressure on the handles will reduce the working depth and increase the forward speed. An upward pressure on the handles will increase the working depth and reduce the forward speed. The type of soil and working conditions will determine the actual setting of the depth stake and the handle pressure required.
3. Throttle Control: The throttle control lever adjusts the engine speed and stops the engine. With the throttle control pushed completely to the right, the carburetor is in START or FAST position. Pulling the throttle back reduces the engine speed to IDLE. Pull the throttle completely back to stop the engine.

Use maximum engine speed for deep tilling. Move the throttle control to IDLE when transporting the tiller.

### TRANSPORTING THE TILLER

To transport the tiller to or from the garden, raise the depth stake to its highest position. With the throttle control in IDLE position, the unit will move under its own power, without damaging grass areas as long as it is allowed to move freely. If the operator holds back, it will start to dig.

## CULTIVATING

For cultivating, a two to three inch depth is desirable. The throttle should be set to control forward movement to a slow walking speed.

With the outer tines installed, the working width of the machine is 18 inches. For cultivation, this may be reduced to 14 inches by removing the outer tines. Use a 3/8" wrench to remove the two self-tapping screws on the outside of the tines. See figure 8. Replace the first tine removed as shown in figure 9.

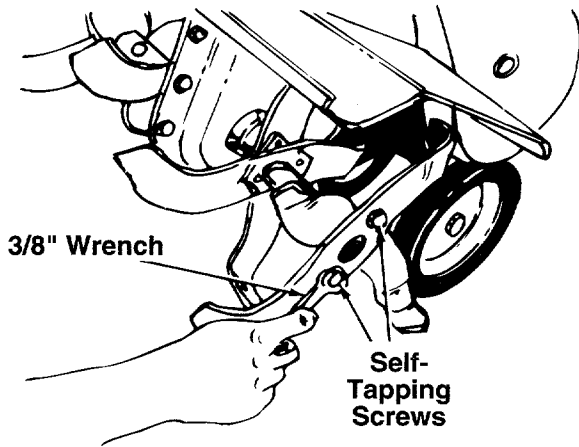


FIGURE 8.

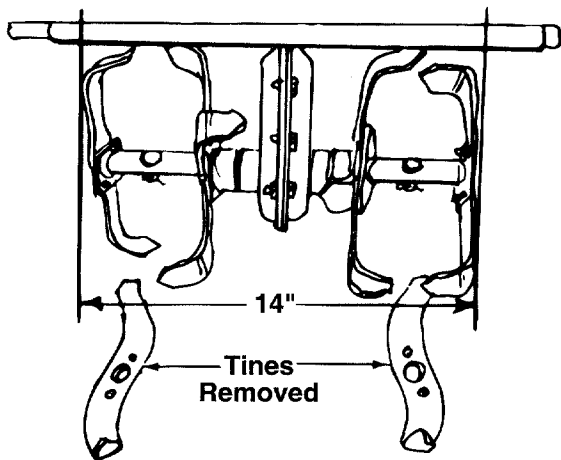


FIGURE 9.

The minimum tilling width is 10 inches. Remove both sets of outer tines by removing the two self-tapping screws on the outside of the tines. See figure 10.

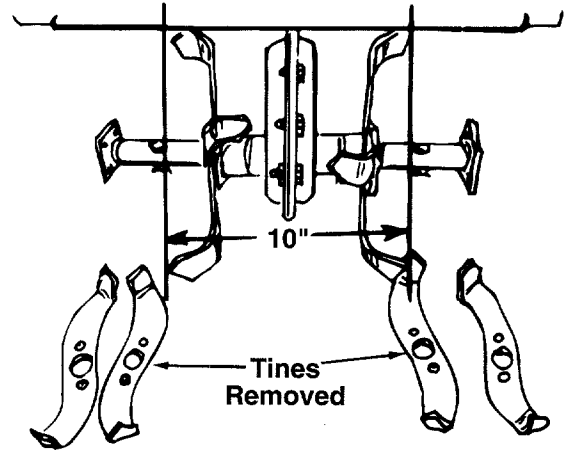


FIGURE 10.

When laying out plant rows, be sure to allow enough width to permit cultivation between the rows. In growing corn or similar crops, check-row planting will permit cross cultivation and practically eliminate hand hoeing. See figure 11.

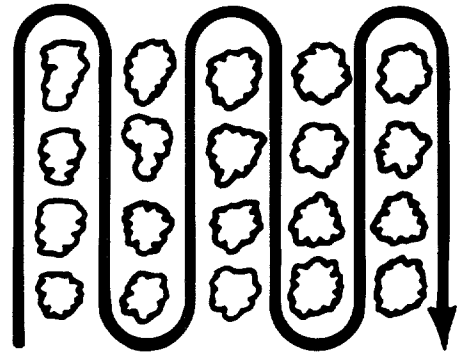


FIGURE 11.

## ADJUSTMENTS



**WARNING:** Disconnect the spark plug wire and ground against the engine before performing any adjustments, repairs, or maintenance.

### HANDLE POSITION

The upper handle can be adjusted to two different heights. Refer to the Assembly section of this manual.

### TINE CLUTCH CONTROL ADJUSTMENT

To adjust the tine clutch control, refer to the Assembly section of this manual.

### DEPTH STAKE ADJUSTMENT

To adjust the depth stake, refer to "How To Use Your Tiller" on page 6.

## TINE WIDTH ADJUSTMENT

To adjust the tine width, refer to "Cultivating" on page 7.

## CARBURETOR ADJUSTMENTS



**WARNING:** If any adjustments are made to the engine while the engine is running (e.g. carburetor), keep clear of all moving parts. Be careful of heated surfaces and muffler.

Minor carburetor adjustments may be required to compensate for differences in fuel, temperature, altitude and load. To adjust carburetor, refer to the separate engine manual packed with your mower.

**NOTE:** A dirty air cleaner will cause an engine to run rough. Be certain air cleaner is clean and attached to the carburetor before adjusting carburetor.

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## LUBRICATION

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**WARNING:** Always stop engine and disconnect spark plug wire before cleaning, lubricating or doing any kind of work on tiller.

**Pivot Points**—Remove the belt cover and lubricate all moving parts and pivot points at least once a season using SAE 30 engine oil.

**Chain Case**—The chain case is pre-lubricated and sealed at the factory. It requires no checking unless the chain case is disassembled. To fill with grease, lay the right half of the chain case on its side. Add 10 ounces of Benalene #372-0 grease and assemble the left half to the right half.

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## MAINTENANCE

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**WARNING:** Disconnect spark plug wire and ground it against the engine before performing any repairs or maintenance.

## TROUBLE SHOOTING

Refer to page 9 of this manual for trouble shooting information.

## ENGINE

Refer to the separate engine manual for all engine maintenance instructions.

## CLEANING THE TINE AREA

Clean the underside of the tine shield after each use. The dirt washes off the tines easier if washed immediately instead of after it dries.

## BELT REMOVAL AND REPLACEMENT

1. Remove the belt cover assembly by removing one hex bolt and lock washer, one self-tapping screw and one hex bolt, lock washer and hex nut. See figure 12.
2. Lift the belt cover assembly off the tiller. Be careful not to bend or kink the clutch cable.
3. Remove the belt and position the new belt on engine pulley and chain case pulley.

**NOTE:** Upon reassembly of belt cover, place the belt over top of the idler pulley and between engine pulley and weld pin on belt cover assembly. See figure 12.

4. Fasten belt cover assembly in position. Secure with the hardware removed in step 1.

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## OFF-SEASON STORAGE

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If the tiller will not be used for a period longer than 30 days, the following steps should be taken to prepare the tiller for storage.

1. Clean the exterior of engine and the entire tiller thoroughly.
2. Refer to the engine manual for correct engine storage instructions.
3. Wipe tines with oiled rag to prevent rust.
4. Store tiller in a clean, dry area. Do not store next to corrosive materials, such as fertilizer.

**NOTE:** When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rustproof the equipment. Using a light oil or silicone, coat the equipment, especially any springs, bearings and cables.



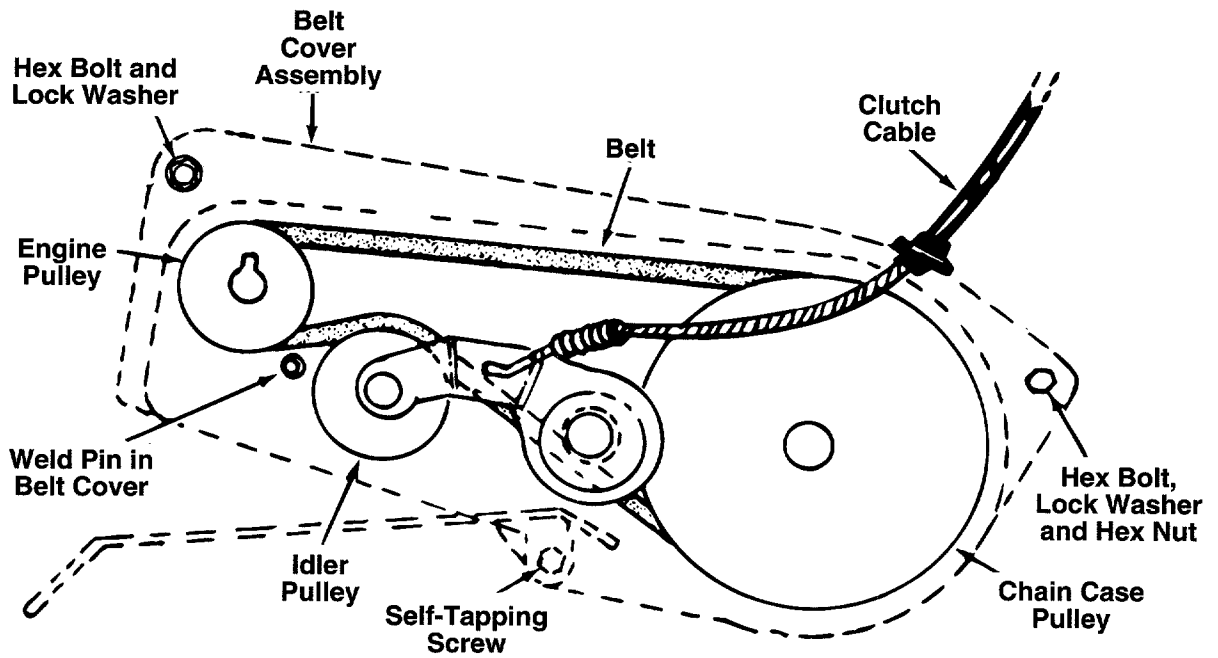


FIGURE 12.

## TROUBLE SHOOTING GUIDE

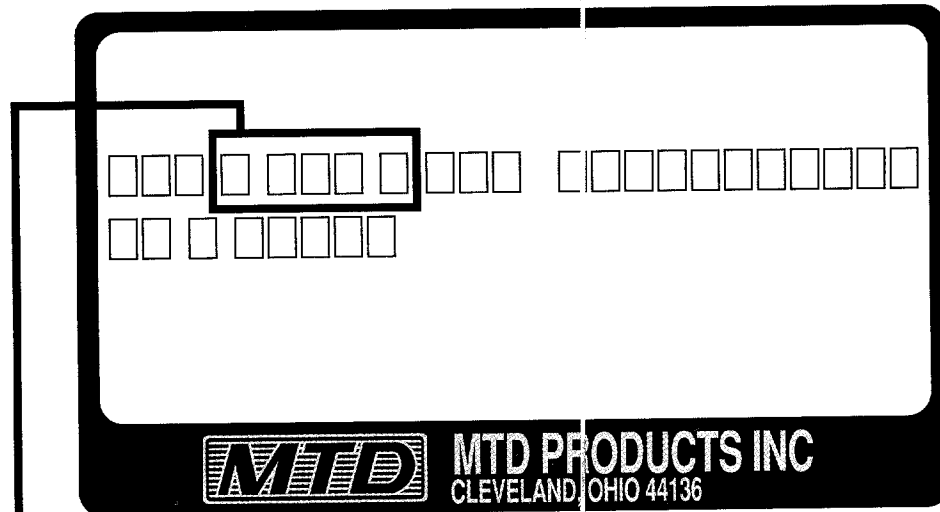
Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	<ol style="list-style-type: none"> <li>1. Fuel tank empty, or stale fuel.</li> <li>2. Throttle control lever not in starting position.</li> <li>3. Blocked fuel line.</li> <li>4. Spark plug wire disconnected.</li> <li>5. Faulty spark plug.</li> <li>6. Engine flooded.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill tank with clean, fresh gasoline.</li> <li>2. Move throttle lever to START position.</li> <li>3. Clean fuel line.</li> <li>4. Connect wire to spark plug.</li> <li>5. Clean, adjust gap or replace.†</li> <li>6. Remove spark plug, dry the plug, and crank engine with plug removed and throttle in off position. Replace spark plug, connect wire and resume starting procedures.</li> </ol>
Engine runs erratic	<ol style="list-style-type: none"> <li>1. Unit running on CHOKE.</li> <li>2. Spark plug wire loose.</li> <li>3. Blocked fuel line or stale fuel.</li> <li>4. Vent in gas cap plugged.</li> <li>5. Water or dirt in fuel system.</li> <li>6. Dirty air cleaner.</li> <li>7. Carburetor out of adjustment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Move choke lever to OFF position.</li> <li>2. Connect and tighten spark plug wire.</li> <li>3. Clean fuel line; fill tank with clean, fresh gasoline.</li> <li>4. Clear vent.</li> <li>5. Drain fuel tank. Refill with fresh fuel.</li> <li>6. Clean air cleaner.†</li> <li>7. Adjust carburetor.†</li> </ol>
Engine overheats	<ol style="list-style-type: none"> <li>1. Engine oil level low.</li> <li>2. Air flow restricted.</li> <li>3. Carburetor not adjusted properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill crankcase with proper oil.</li> <li>2. Remove blower housing and clean.†</li> <li>3. Adjust carburetor.†</li> </ol>
Tines do not engage	<ol style="list-style-type: none"> <li>1. Foreign object lodged in tines.</li> <li>2. Tine clevis pin(s) missing.</li> <li>3. Control cable not adjusted properly.</li> <li>4. Belt worn and/or stretched.</li> </ol>	<ol style="list-style-type: none"> <li>1. Dislodge foreign object.</li> <li>2. Replace tine clevis pin(s).</li> <li>3. Adjust control cable (see assembly instructions).</li> <li>4. Replace belt.</li> </ol>

NOTE: For repairs beyond the minor adjustments listed above, please contact your local service dealer.  
 †Refer to the separate engine manual packed with your tiller.





**Copy the information from  
your model plate here:**



*Please help us  
help you!*

**Have your  
model number  
available  
when you call**

Model No. - 035 -	
Clutch Control Cable	746-0509
V-Belt	754-0216
Idler Pulley	756-0199
R.H. Tine Blade	04922
L.H. Tine Blade	04923
Spark Plug	RJ19LM
Illustrated Parts List	770-95-6A

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