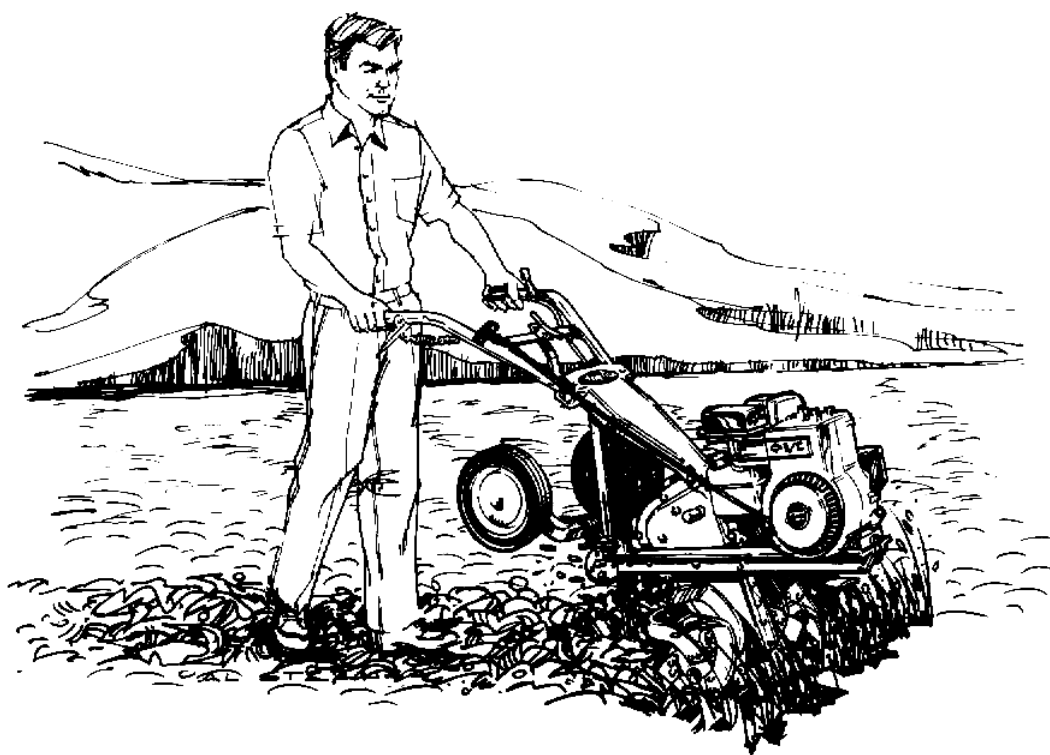


OWNER'S MANUAL

# International Merry Tiller

Model IT950IC

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**CAUTION:**

Before using this product, read this manual and follow all Safety Rules and Operating Instructions.

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P/N 710-3402  
12/22/16

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## MERRY TILLER ACCESSORIES

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AVAILABLE WHEREVER MERRY TILLER PRODUCTS ARE SOLD

|         |  |
|---------|--|
| MT-951  | Finger Tine Assemblies - Right and Left Inside     |
| MT-952  | Finger Tine Assemblies - Right and Left Outside    |
| MT-956  | Pick Tine Assemblies (1 set)                       |
| MT-1701 | Slasher Tine Assemblies - Right and Left Inside    |
| MT-1702 | Slasher Tine Assemblies - Right and Left Outside   |
| MT-1703 | Slasher Tine Extension Assemblies - Right and Left |
| MT-1812 | Bolo Tine Assemblies - Right and Left Inside       |
| MT-1813 | Bolo Tine Assemblies - Right and Left Outside      |
| MT-2492 | Aerator Assemblies (3 spoons) Set of 4             |
| MT-2857 | Finger Tine Extension Assemblies (1 complete set)  |
| MT-7801 | 8" Furrower  |
| MT-7802 | 10" Furrower                                       |
| MT-7875 | Adjustable Plow Bar                                |

## SECTION I - SAFETY



**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.**

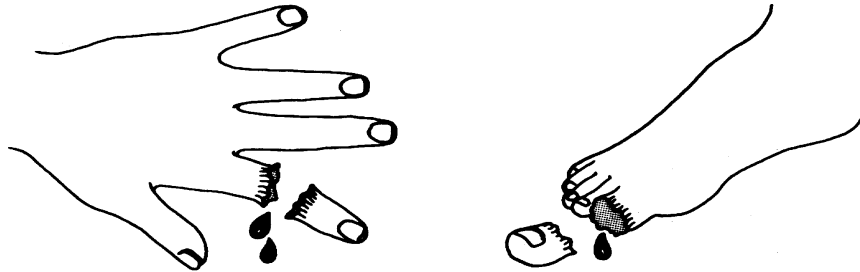
### INTENDED USE

**Never** use your tiller for any other purpose than cultivating soil and use only approved attachments and accessories. It is designed for this use and any other use may cause injury.



### **DANGER:** *Rotating tines and belt.*

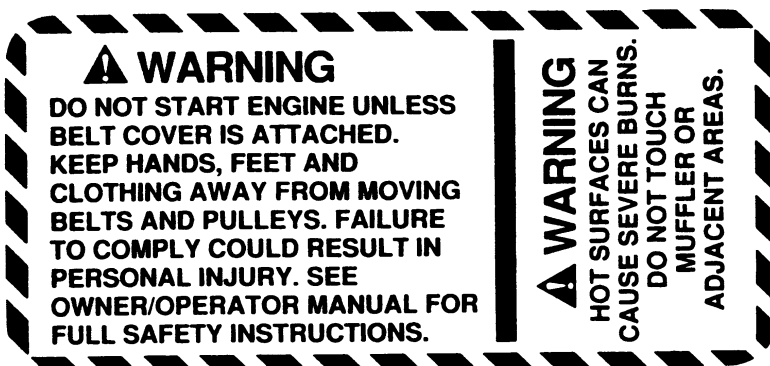
Keep hands and feet out of tines and belt area while machine is running.




**DANGER:** This machine can **CRUSH, CUT, and SEVER** parts of your body if they enter the operating areas of the garden tiller.

Make certain that all safety labels on this equipment are kept clean and in good condition. If you need replacement labels, please order by part number.

**MAKE CERTAIN THAT ALL LABELS ON THIS EQUIPMENT ARE KEPT CLEAN AND IN GOOD CONDITION. IF YOU NEED REPLACEMENT LABELS, PLEASE ORDER BY PART NUMBER 091-0423.**



**WARNING**

TO AVOID INJURY

- \* READ THE OPERATOR'S MANUAL.
- \* KNOW LOCATION AND FUNCTION OF ALL CONTROLS.
- \* KEEP ALL SAFETY DEVICES AND SHIELDS IN PLACE.
- \* NEVER ALLOW CHILDREN OR UNINSTRUCTED ADULTS TO OPERATE TILLER.
- \* SHUT OFF ENGINE AND DISCONNECT SPARK PLUG WIRE BEFORE UNCLOGGING TINES OR MAKING REPAIRS.
- \* KEEP BYSTANDERS AWAY FROM MACHINE.
- \* KEEP AWAY FROM ROTATING PARTS.

## OPERATORS INSTRUCTIONS

### STARTING:

1. Remove or rotate wheels to up position.
2. Adjust drag bar for desired depth.
3. Stand between handlebars.
4. Allow clutch lever to drop into disengaged position.
5. Move throttle lever to run position.
6. Reach forward to set choke lever to choke position.
7. Hold left handlebar with left hand and pull starter rope with right hand.
8. As engine starts, return choke lever to run position and adjust throttle for desired speed.

### TILLING:

Squeeze clutch lever to start tilling. Apply downward pressure on handles to allow drag bar to control forward motion of tiller. Certain tilling conditions require tiller to be run at a reduced throttle speed.

### STOPPING:

Release clutch lever and move throttle to stop position.



**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.



**WARNING:** The Engine Exhaust from this product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

## GENERAL PREPARATION

- Read the owner's manual carefully and in its entirety before attempting to assemble this machine. Be thoroughly familiar with the controls and the proper use of the equipment before operation. Know how to stop the unit and disengage the controls quickly.
  - Your tiller is a powerful tool, not a plaything. Therefore, exercise extreme caution at all times.
  - Never allow children to operate the equipment. Only responsible adults who are familiar with these rules of safe operation should be allowed to use your unit.
  - Keep the area of operation clear of all persons, particularly small children, and pets. Thoroughly inspect the area where the equipment is to be used and remove all foreign objects.
  - Wear sturdy, rough-soled work shoes and close fitting slacks and shirt. Slacks that cover the legs and steel-toed shoes are recommended. Secure hair above shoulders and do not wear loose clothes that can be caught in moving parts. Never operate a unit in bare feet, sandals or sneakers.
  - Do not operate while under the use of alcohol or drugs.
  - If the tines strike a foreign object or if your machine should start making an unusual noise or vibration, immediately stop the engine and allow the machine to come to a complete stop. Disconnect the spark plug wire and move it away from the spark plug.
- Take the following steps:
- a. Inspect for damage.
  - b. Repair or replace any damaged parts.
  - c. Check for any loose parts and tighten to assure continued safe operation.
- Handle fuel with care; it is highly flammable.
  - Refer to engine manual for safety and services instructions.
  - Disengage clutch before starting the engine (motor).
  - Never attempt to make any adjustments while the engine (motor) is running (except where specifically recommended by the manufacturer).
  - DO NOT put hands or feet near or under rotating parts.
  - Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards of traffic. Do not carry passengers.
  - Stop the engine (motor) when leaving the operating position. Disconnect the spark plug before unclogging the tines, and when making any repairs, adjustments, and inspections.
  - Periodically check tines and remove any vines or garden debris that may be wrapped around the tine shaft. **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.
  - Do not run the engine indoors; exhaust fumes are dangerous.
  - NEVER operate the tiller without proper guards, plates, or other safety protective devices in place.
  - Do not overload the machine's capacity by attempting to till too deep at too fast a rate.
  - Only operate your tiller in good daylight. Do not operate tiller at night or in dark areas where your vision may be impaired.
  - Be careful when tilling in hard soil or frozen ground. The tines may catch in the ground and propel the tiller forward. If this occurs, release clutch lever to stop forward motion.

## CHILDREN

- Tragic accidents can occur if the operator is not alert to the presence of small children.
- Keep children out of the work area and under the watchful eye of a responsible adult other than the operator.
  - Be alert and turn the unit off if a child enters the area.
  - Never allow children under the age of 16 to operate the tiller.

## • REPAIR AND MAINTENANCE SAFETY

- Use extreme care in handling gasoline and other fuels. They are extremely flammable and the vapors are explosive.
- Store fuel and oil in approved containers, away from heat and open flame, and out of the reach of children. Check and add fuel before starting the engine. Never remove gas cap or add fuel while the engine is running. Allow engine to cool at least three minutes before refueling.
- Replace gasoline cap securely and wipe off any spilled gasoline before starting the engine as it may cause a fire or explosion. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
- Never refuel unit indoors because flammable vapors will accumulate in the area.
- Never store the machine or fuel container inside where there is an open flame or spark, such as a gas hot water heater, space heater, clothes dryer or furnace.
- Never run this machine in an enclosed area as the exhaust from the engine contains carbon monoxide, which is an odorless, tasteless, and deadly poisonous gas.
- To reduce fire hazard, keep engine and muffler free of debris build-up. Clean up fuel and oil spillage. Allow unit to cool at least five minutes before storing.
- Before cleaning, repairing, or inspecting, make certain the tines and all moving parts have stopped. Disconnect the spark plug wire and keep wire away from spark plug to prevent accidental starting. Do not use flammable solutions to clean air filter.
- Check the belt and engine mounting screws at frequent intervals for proper tightness. Also visually inspect tines for wear or damage. Use only replacement tines which meet original manufacturer's specifications.
- Never tamper with safety devices. Check their proper operation regularly. Be sure all safety guards and shields are in proper position. These safety devices are for your protection.
- Never operate your tiller in poor mechanical condition or when in need of repair. Periodically check and keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
- Inspect the belt each time you use the unit. Look for damage, worn areas, or tears. Do not use the unit if this condition exists.
- If your machine strikes any foreign object or starts making an unusual noise or vibration, immediately shut off engine, disconnect spark plug wire from spark plug, and allow all moving parts to come to a complete stop. Inspect for damage and repair and or replace damaged parts. Check for and tighten any loose parts.
- Do not tamper with the engine's governor setting. The governor controls the maximum safe operation speed and protects the engine. Overspeeding the engine is dangerous and will cause damage to the engine and to the other moving parts of the machine. See your authorized dealer for engine governor adjustments.

## YOUR RESPONSIBILITY

- Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

**SAVE THESE INSTRUCTIONS  
FOR FUTURE REFERENCE.**



**HAZARD:** 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 to 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 Briggs & Stratton servicing dealer.

## SECTION II - ASSEMBLY INSTRUCTIONS

### PACKAGE CONTENTS

| BOX                 | POLYBAG                | BOLT BAG                      |                               |
|---------------------|------------------------|-------------------------------|-------------------------------|
| • TILLER            | • OWNER'S MANUAL       | • 1 EA CLUTCH SPRING          | • 1 EA 1/4-20 X 2 1/2 EYEBOLT |
| • HANDLE BARS (2)   | • ENGINE MANUAL        | • 1 EA PULL CORD HOLDER       | • 4 EA 1/4-20 NYLOCK NUT      |
| • TIE BARS (2)      | • WARRANTY CARD        | • 2 EA CABLE GUIDE            | • 2 EA 5/16-18 X 3/4 HHCS     |
| • OUTSIDE TINES (2) | • CLUTCH CABLE         | • 2 EA 3/8 X 2 1/4 CLEVIS PIN | • 4 EA 5/16-18 X 1 HHCS       |
| • POLYBAG           | • CROSS BRACE          | • 2 EA 1/8 HAIR SPRING COTTER | • 2 EA 5/16 X 1 3/4 HHCS      |
|                     | • LIFT HANDLE (2)      | • 2 EA 10-32 KEP NUT          | • 2 EA 5/16 X 3 1/4 HHCS      |
|                     | • LIFT HANDLE GRIP     | • 2 EA 10-32 X 1 1/4 RHMS     | • 2 EA 5/16-18 WHIZNUT        |
|                     | • CLUTCH CONTROL LEVER | • 1 EA 1/4-20 X 1 1/4 HHCS    | • 8 EA 5/16-18 NYLOCK NUT     |
|                     | • BOLT BAG             | • 1 EA 1/4-20 X 1 1/2 HHCS    |                               |

**NOTE:** All item numbers in this section refer to the item numbers on assembly drawings on page 18 and 20.

### TOOLS REQUIRED FOR ASSEMBLY

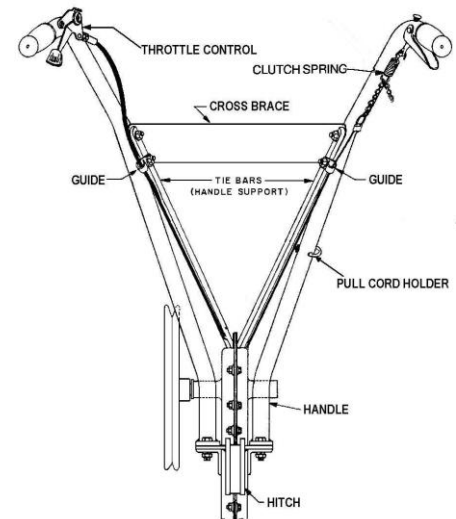
- 2 ea. 7/16", 1/2", 3/8" Wrench or Socket

### STEP I - Unpacking and Checking Contents

1. Remove all parts and liners from carton
2. Slit carton ends, leaving the tiller available for assembly without lifting it.
3. After unpacking the shipping carton, compare items with list above. Use the parts lists and assembly drawings on pages 17-19 for additional identification assistance.
4. If any parts are missing or damaged, contact your local dealer, distributor, or call the factory.
5. Assembly should be done on a clean, level surface.

### STEP II - Attaching Handles, Cross Brace and Tie Bars

1. Attach lower ends of handles (item #31 & #34, pg. 20) to frame rails (item #14 & #15, pg. 18). Use the 5/16-18 x 1 1/4" HHCS (item #51, pg. 20) and the 5/16-18 nylock nut (item #41, pg. 20) to attach each handle. **Do not completely tighten the bolts and nuts at this time.**
2. Remove the two long bolts and whiz nuts on the transmission where the tie bars (item #29 & #30, pg. 20) will connect. Discard the whiz nuts. Connect the tie bars to the transmission with the 1/4-20 x 1 1/4 HHCS and the 1/4-20 x 2 1/2 eyebolt provided in the bolt bag. Secure these with the 1/4-20 nylock nuts from the bolt bag. Handle tie bars must be placed on either side of the transmission case flange with the bolt going through both tie bars and the transmission case. **Do not completely tighten the nuts at this time.**
3. To each handle, assemble a handle tie bar (item #29 & #30, pg. 20) with the handle cross brace (item #26, pg. 20) between them. Place a 5/16-18 x 1 3/4" HHCS (item #10, pg. 20) through the upper hole of the handle, tie bar, and cross brace. **Hand tighten** a 5/16-18 nylock nut (item #41, pg. 20) to these bolts. Attach two cable guides (item #50, pg. 20) to the inside of the cross brace by placing a 5/16-18 x 3/4 HHCS (item #48, pg. 20) through the lower hole in the tie bar, cross brace, and then through the cable guide. **Hand tighten** a 5/16-18 nylock nut on both sides
4. **Tighten all nuts and bolts in the same order as installation of steps 1-3.**



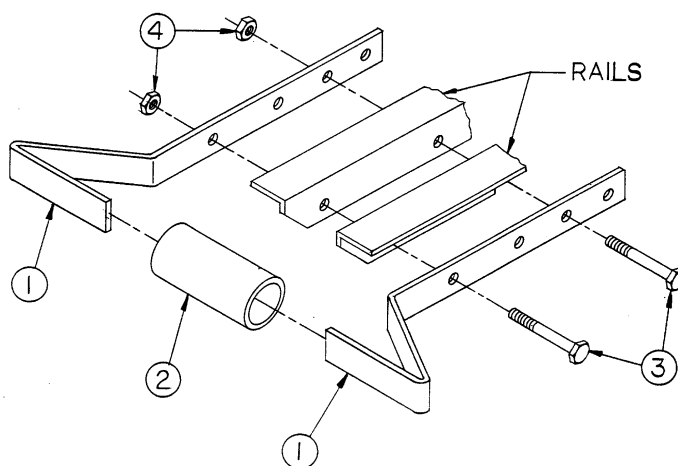
### STEP III - Attaching the Throttle Control Cable, Clutch Cable and Starter Rope

1. Insert throttle control (item #52, pg. 20) through cable guide (item #50, pg. 20). Attach throttle control to handlebar with 2 ea. 10-32 x 1 1/4" machine screw (item #33, pg. 20) and 2 ea. 10-32 Kep nut (item #32, pg. 20).
2. Attach clutch control lever (item #31B, pg. 20) to handlebar with a 1/4-20 x 1 1/2 HHCS (#31D, pg. 20) and a 1/4-20 nylock locknut (#31D, pg. 20).
3. Insert clutch cable through the cable guide (item #50, pg. 20), and the eyebolt on the transmission. Slip lower cable loop (end without chain attached) over adjustment link (item #3, pg. 18). Attach clutch spring (item #43, pg. 20) to the clutch control lever (item #31B, pg. 20). Now attach the clutch cable chain to the spring.
4. Disconnect the spark plug. Grasp the starter pull cord and pull it 6" past cross brace. String the cord into eye of pull cord holder from the bolt bag. Put the pull cord holder through the hole on the right hand handle above the cross brace. This is illustrated as #54, pg. 20. Secure with 1/4-20 nylock locknut (item #5, pg. 20) provided in the bolt bag.

### STEP IV - Lift Handle

Mount the lift handles to the front of the rails underneath the engine as shown in the picture. Find the set of mounting holes that works on your tiller and put the 5/16-18 x 3 1/4" bolts through the handles and the rails.

| <u>Item No.</u> | <u>Part No.</u> | <u>Qty.</u> | <u>Description</u>    |
|-----------------|-----------------|-------------|-----------------------|
| 1               | 709-3405        | 2           | Lift Handle           |
| 2               | 706-3408        | 1           | Handle Grip           |
| 3               | 090-0094        | 2           | 5/16-18 x 3 1/4" HHCS |
| 4               | 090-0418        | 2           | 5/16-18 Whiz Locknut  |





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## SECTION III - LUBRICATION & ENGINE START UP

---

FOR INFORMATION ABOUT:

- ☐ OIL
- ☐ FUEL
- ☐ STARTING
- ☐ STOPPING
- ☐ RECOMMENDED MAINTENANCE
- ☐ SERVICE
- ☐ STORAGE
- ☐ ENGINE WARRANTY INFORMATION

REFER TO THE ENGINE OWNER'S MANUAL.

**THE ENGINE ON YOUR INTERNATIONAL TILLER HAS BEEN SHIPPED DRY.**

**BE SURE TO SERVICE THE ENGINE ACCORDING TO THE ENGINE  
OWNER'S MANUAL PRIOR TO STARTING.**

**FAILURE TO DO SO CAN RESULT IN DAMAGE NOT WARRANTED BY THE  
ENGINE MANUFACTURER.**

**WARNING:** Do not fill closer than ½" from the top of the fuel tank to prevent spills and to allow for fuel expansion. If gasoline is accidentally spilled, move the tiller away from the area of the spill. Avoid creating any source of ignition until gasoline vapors have disappeared.

**CAUTION:** Experience indicates that alcohol blended fuels (gasohol, ethanol, methanol) can attract moisture which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system or an entire engine while in storage. To avoid engine problems, the fuel system should be empty before storage for periods over 30 days. For more information, refer to the engine owner's manual. Use fresh fuel each season. Never use engine or carburetor cleaner products in the fuel tank or permanent damage may result.

**THE TRANSMISSION HAS BEEN FACTORY SERVICED WITH "00" GREASE.  
NO ADDITIONAL LUBRICATION IS NECESSARY OR RECOMMENDED.**

**ALWAYS CHECK OIL LEVEL PRIOR TO  
STARTING THE TILLER.**

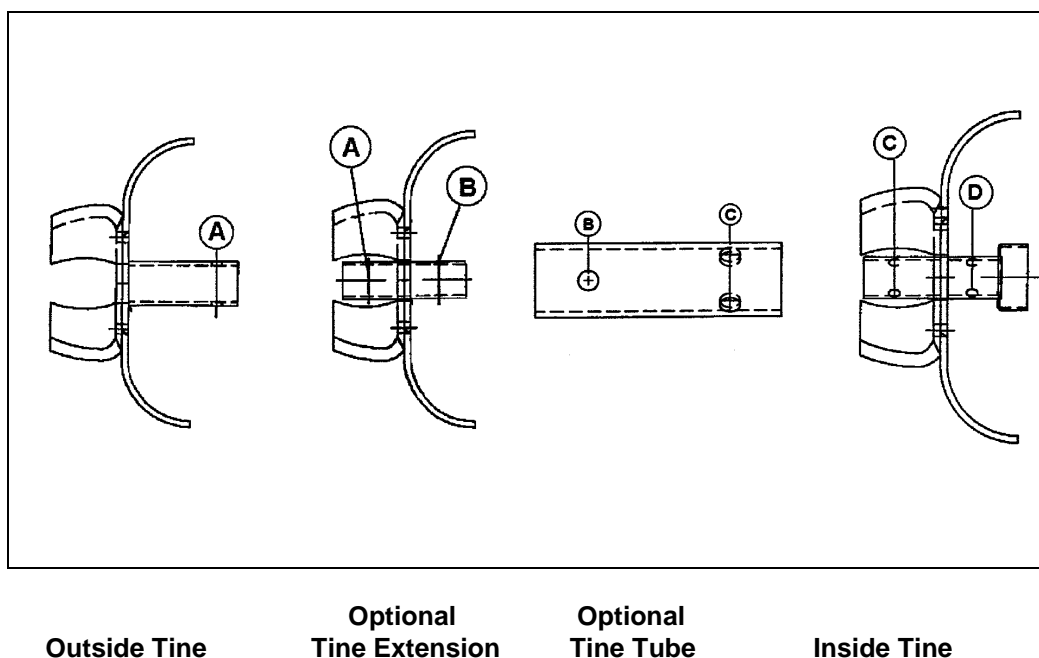
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## SECTION IV - OPERATION

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### TILLING

- The International Tiller is equipped with a set of rear wheels. These wheels are designed only for transporting the tiller to and from the tilling area. They should never be used during the tilling process. When tilling, the wheels should be removed or rotated into the up position and the drag bar should be set to till at the desired depth. The drag bar acts as an anchor which forces the tiller to dig rather than walk over the area to be tilled and controls the forward motion of the tiller. By adjusting the downward pressure on the handlebars, the operator controls the drag bar depth and the tiller will perform properly with a minimum of assistance.
- The International Tiller is equipped with two sets of tines to provide tilling widths of 14" and 26". A third optional tine extension is available to provide for a maximum tilling width of 37". If using the optional tine extensions, install the tine tube, tine extension, and the outside tine per the drawing below. In extreme soil conditions, the recommended tilling width is 26". When adding and removing tines, it is important to make sure all tines have the sharpened edge facing forward, in the tilling direction.
- When adding or removing tines, align all required holes per the diagram below and secure with clevis pins and hair cotter springs. Point "D" attaches to the tiller transmission drive shaft.



### NOTE:

For 14" tilling width, use inside tines only.

For 26" tilling width, use inside and outside tines only.

For 37" tilling width, install the optional tine extension and tine tube between the inside and outside tines as per above drawing.

## OPERATION:

1. NEVER allow bystanders near the unit.
2. DO NOT put hands or feet near or under rotating parts.
3. **Exercise extreme caution** when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards of traffic. DO NOT carry passengers.
4. Exercise caution to avoid slipping or falling.
5. Never operate the machine at high transport speeds on slippery surfaces.
6. Do not overload the machine's capacity by attempting to till TOO DEEP at too FAST a rate.
7. Be careful when tilling in hard soil or frozen ground. Certain soil conditions require the engine to be run at a reduced speed or the tines may catch in the ground and propel the tiller forward. If this occurs, release clutch lever to stop forward motion.
8. If the tiller strikes a foreign object, STOP the engine, remove the wire from the spark plug, and thoroughly inspect the tiller for any damage before restarting and operating the machine.
9. If the unit should start to VIBRATE abnormally, STOP the engine (motor) and check immediately for the cause. Vibration is generally a warning of trouble.
10. STOP the engine (motor) when leaving the operating position. Disconnect the spark plug wire before unclogging the tines, and when making any repairs, adjustments, and inspections.
11. Take all possible precautions when leaving the machine unattended. Release the clutch lever and stop the engine.
12. Periodically check tines and remove any vines or garden debris that may be wrapped around tine shaft. **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.
13. DO NOT run the engine indoors. Exhaust fumes are dangerous.
14. NEVER operate the tiller without proper guards, plates, or other safety protective devices in place.
15. Use only attachments and accessories APPROVED by the manufacturer of the tiller.
16. Never operate the tiller without good visibility and light.

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## SECTION V - SERVICE - MAINTENANCE - REPAIR

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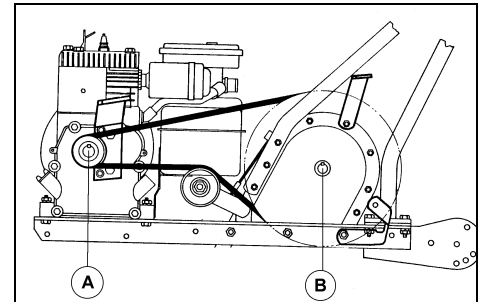
**The transmission has been factory serviced with “00” grease. No additional lubrication is necessary or recommended.**

**Belt tension should be checked, and adjusted if necessary, after initial 20 to 30 minutes of operation. Follow directions below.**

### Belt and Clutch Adjustment

**CAUTION: DO NOT ADJUST BELT OR CLUTCH WITH THE ENGINE RUNNING!**

- For proper belt tightness and tiller operation, the distance from the center of the engine crankshaft (A), to the center of the transmission input shaft (B), should measure 13 15/16”.
- Proper clutch adjustment is very important. The idler type clutch may need adjusting as the belt stretches.
- To check belt and clutch adjustment, start the tiller, press down on the handle bars to raise the tines into the air, and squeeze the clutch lever. If adjusted correctly, the tines will rotate while the clutch lever is squeezed and stop when it is released. When the lever is squeezed tight, the clutch spring (item #43, pg. 19) should be slightly stretched (about 1/4 inch).



**If your tines fail to operate as described above, adjustment can be made in the following ways.**

1. Switch the link on the end of the clutch cable (item #53, pg. 19) which is attached to the clutch spring (item #43, pg. 19). A link closer to the cable will tighten the adjustment, a link further away from the cable will loosen the setting.
2. Loosen the nut (item #31, pg. 17) holding the adjustment link (item #3, pg. 17). While holding idler arm and pulley (item #26 & #27, pg.17) firmly, adjustment link can be moved up (counterclockwise) to loosen clutch, or moved down (clockwise) to tighten clutch. After making any change in position of adjustment link, re-tighten nut.
3. Additional adjustment can also be made by loosening the four bolts (item #8, pg. 17) holding the engine to the engine mounts (items #14 & #15, pg. 17) and sliding the engine forward or backward as needed. Re-tighten engine mount bolts. **This adjustment is almost never needed and should not be made unless all other adjustments fail.**

### Belt Installation and Alignment of Pulleys

1. Whenever a new belt is installed be sure to examine the grooves of the pulleys for wear. A wide groove of a worn engine pulley will cause slippage of the belt when the clutch is engaged. Replace the pulley if worn.
2. The pulleys must be aligned by sliding the engine pulley in or out so that the belt will travel in a straight line.
3. Be sure to install the belt inside the two pins of the belt release bracket. If improperly installed on the outside of the belt release pins, the belt will be quickly damaged, and/or jump off pulleys.
4. Start the engine and test the clutch for proper operation.
5. Reinstall the belt cover.
6. Check belt tension after initial 20 to 30 minutes of operation with a new belt. Be sure your tiller operates as per the directions in this section.

**NOTE:** The purpose of the belt release bracket is to force the belt out of the engine pulley groove, allowing it to slip when clutch lever is not engaged.

- Proper maintenance includes periodic inspection and lubrication of the tiller by the operator, using the correct lubricants. This will ensure long life of the tiller.
- Keep machine, attachments, and accessories in safe working condition.
- Check engine mounting bolts, and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.

## Service Notes

1. **The transmission has been factory serviced with “00” grease. NO additional lubrication is necessary or recommended.**
2. Service the engine according to the engine operating and maintenance instructions furnished with the tiller. Special attention should be given to the proper installation and service of the engine air filter assembly.
3. Regularly check tines for wear. Tine clevis pin holes should be checked for wear or elongation. Tine assemblies should be replaced when lead corner on cutting edge has become rounded, therefore reducing tilling efficiency.
4. Proper maintenance includes periodic inspection and lubrication by the operator, using the correct lubricants. This will ensure long life of the tiller.
5. Keep the machine, attachments, and accessories in safe working condition.
6. Check engine mounting bolts, and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.
7. 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, cloths dryers, and the like. Allow the engine to cool before storing in any enclosure.
8. Always refer to the engine operating instructions for important details if the tiller is to be stored for an extended period.

## Inspection of the Transmission Case Assembly

When it is necessary to make internal repairs to the transmission, it is advisable to take your tiller to an authorized MERRY TILLER dealer, especially if there are signs of excessive wear. Following are some suggestions that will help to determine the amount of wear.

1. Before removing the transmission case from the tiller, turn the large pulley by hand and observe whether or not the rotor shaft also turns. If it does not, or if the pulley turns freely, check to be certain the square key securing the pulley to the drive shaft is not missing or damaged. This could cause the pulley to slip on the shaft.
2. Turn the large pulley in either direction until all the slack is removed from the chains and sprockets within the transmission. Make a mark on the tine shaft and the outer edge of the large pulley. Then, while observing both the mark on the pulley and the mark on the tine shaft, turn the large pulley in the opposite direction until all internal slack is removed and the mark on the tine shaft just begins to move. The mark on the large pulley should not travel a distance of more than 3 inches (7.6 centimeters) before the mark on the tine shaft begins to move.

Any travel of the mark in excess of this indicates excessive wear inside the case of either one or both chains, sprockets, shafts, or bearings. The case should be removed and disassembled for internal inspection.

## Engine Maintenance

### **CHECK THE ENGINE OWNER’S MANUAL FOR RECOMMENDED REGULAR MAINTENANCE.**

By following the engine maintenance schedule, you will obtain maximum engine and tiller life. The four cycle engine of your tiller will normally consume some oil, so **check engine oil level regularly and before each use.**

# MERRY TILLER SERVICE BULLETIN

## TIME TO CHANGE THE TINE SHAFT SEALS

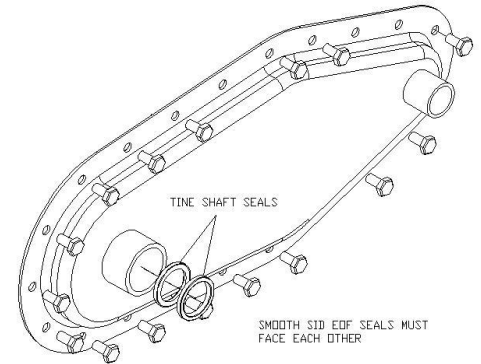
### Tine Shaft Seal Replacement Instructions

It is extremely important that the oil seals on the tiller transmission be inspected and replaced regularly to ensure proper lubrication and to prevent dirt from entering the transmission. Both sides of the tine shaft have two oil seals. These seals are inserted back to back over the tine shaft. The inner seal faces into the transmission and is designed to keep lubricant from escaping from the transmission. The outer seal faces outward and is designed to keep dirt out of the transmission. The Merry Tiller transmission is lubricated with heavy "00" grease. If the seals fail, it may not be noticed due to the heavy consistency of the grease. This is the best possible lubricant available and will add years of life to your Merry Tiller. Seals should be inspected regularly and replaced as needed or before periods of expected extended use.

To replace the seals proceed as follows.

1. Take a screwdriver or awl and hammer along the tine shaft until you can pry the first seal out.
2. Repeat and take the second seal out.
3. Place the new seal on the tine shaft with smooth side facing out, and press into place. (Note: A 1 1/2" ID piece of plastic pipe works great to do this).
4. Place the second seal on the tine shaft with the smooth side facing in, and press into place.
5. Repeat to other side of the transmission.

**Note: It is very important that the smooth side of the two seals be against each other.**



### Replacement Parts

| PART #      | QTY | WHERE USED             | DESCRIPTION        |
|-------------|-----|------------------------|--------------------|
| 708-3241    | 1   | MINNIE                 | OIL SEAL           |
| 708-3241-10 | 10  | MINNIE                 | OIL SEAL – 10 PACK |
| 708-3241-50 | 50  | MINNIE                 | OIL SEAL – 50 PACK |
| 706-0344    | 1   | SUBURBAN/INTERNATIONAL | OIL SEAL           |
| 706-0344-10 | 10  | SUBURBAN/INTERNATIONAL | OIL SEAL – 10 PACK |
| 706-0344-50 | 50  | SUBURBAN/INTERNATIONAL | OIL SEAL – 50 PACK |

### MAINTENANCE SCHEDULE

| Frequency       | Service required  |
|-----------------|---|
| After every use | Inspect belts & pulleys for proper alignment and excessive wear   |
|                 | Check operation of belt and idler, make sure tines stop & start correctly   |
|                 | Inspect transmission for any leakage, check all bolts for tightness. Pay particular attention to center bolt that secures the transmission to the frame rails   |
|                 | Check tines for wear and excessive play, make sure no pins are missing  |
|                 | Perform normal engine maintenance   |
| Every 150 hours | Inspect transmission case assembly, conduct test for excessive travel, (see attached). Check for excessive wear on case halves  |
|                 | Check tine shaft and drive shaft for up and down play, if loose replace bearings.   |
|                 | If transmission is OK replace tine shaft and drive shaft seals  |
|                 | Inspect tines for wear, if cutting corner is rounded replace tines. Check pin holes for elongating and wear, make sure no pins are missing  |
|                 | Anytime the transmission is unbolted from the frame rails it is necessary to secure the internal sprockets with a 5/16" rod cut to the same width of the transmission case. It is possible for the internal sprockets to move if not secured during service |
| Every 600 hours | Remove transmission for internal inspection. Disassemble and inspect all parts for wear. Clean all parts, replace worn parts as needed, relubricate with approx. 9 oz. "00" grease. Reassemble with new case gasket and reinstall on tiller.                |
|                 | Anytime the transmission is unbolted from the frame rails it is necessary to secure the internal sprockets with a 5/16" rod cut to the same width of the transmission case. It is possible for the internal sprockets to move if not secured during service |

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## SECTION VI - STORAGE

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- Clean the tiller thoroughly.
- Wipe down the tiller with an oiled rag to prevent rust ( use a light oil or silicone).
- Store the unit in a clean, dry area. Do not store next to corrosive material, such as fertilizer.

**NOTE: If storing in an unventilated or metal storage shed, rustproof the equipment by coating with a light oil or silicone.**

### Engine

It is important to prevent gum deposits from forming in essential fuel system parts such as the carburetor, fuel hose, or fuel tank during storage. Experience indicates that alcohol blended fuels ( e.g. gasohol, ethanol or methanol) can attract moisture which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage.

- Empty the fuel tank before storing the tiller for 30 days or longer.
- Start the engine and let it run until the fuel lines and carburetor are empty.
- Never use engine or carburetor cleaner products in the fuel tank or permanent damage may occur.
- Remove the spark plug, pour approximately one tablespoon of engine oil into cylinder and crank slowly to distribute oil. Replace the spark plug.
- Use fresh fuel next season. **Do not** store gasoline from one season to another.

NOTE: Fuel stabilizer is an acceptable alternative in minimizing the formation of fuel gum deposits during storage.

### Fuel Stabilizer

- Follow the mix ratio found on stabilizer container when mixing stabilizer to gasoline in fuel tank or storage container.
- Run the engine at least ten minutes after adding stabilizer to allow the stabilizer to reach the carburetor. Do not drain the gas tank and carburetor if using fuel stabilizer.

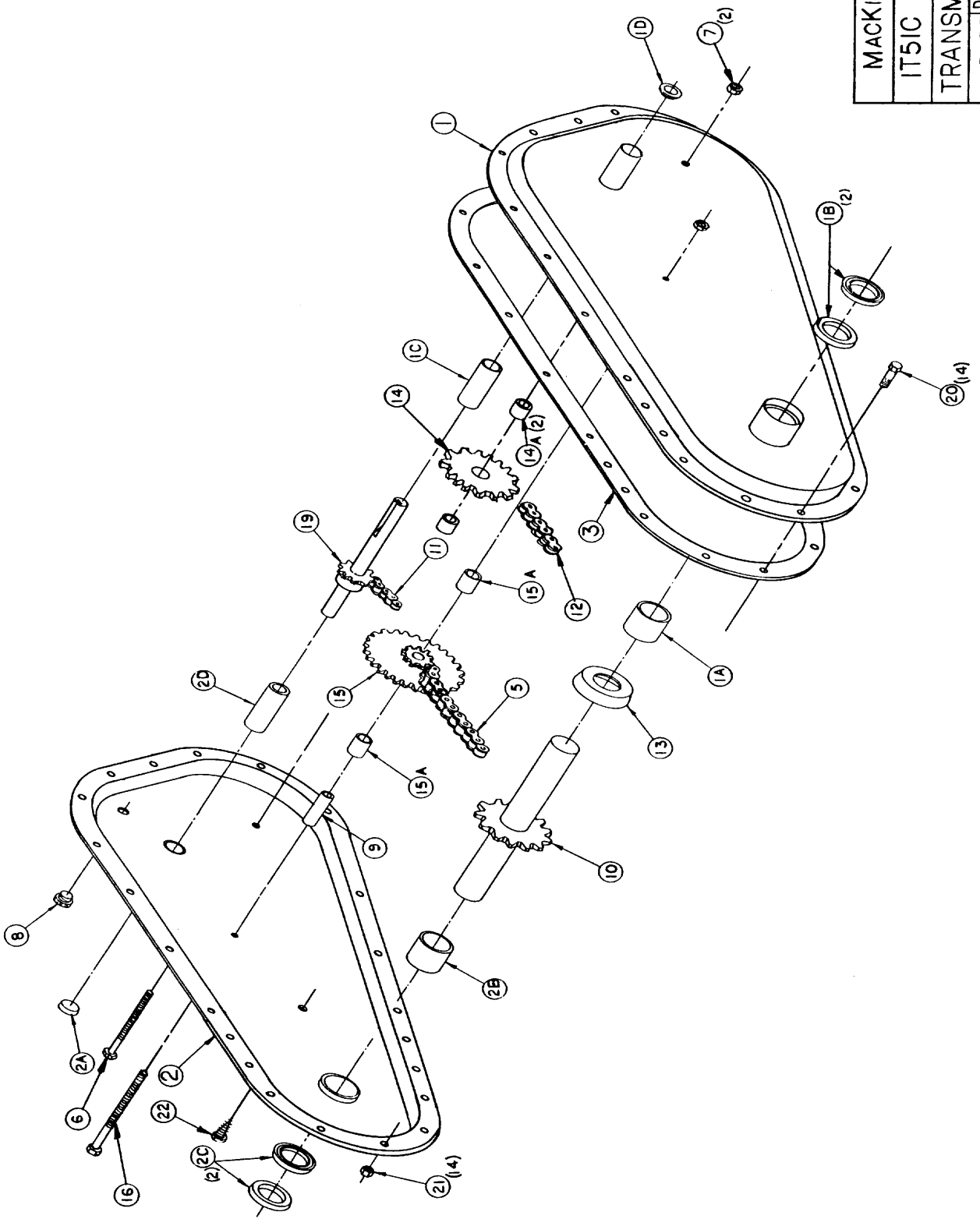
### Oil

Drain all the oil from the crankcase and refill the crankcase with fresh oil each season (this should be done after the engine has been operated and is still warm).



**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.

**BEFORE STARTING ENGINE, ALWAYS CHECK OIL LEVEL!**

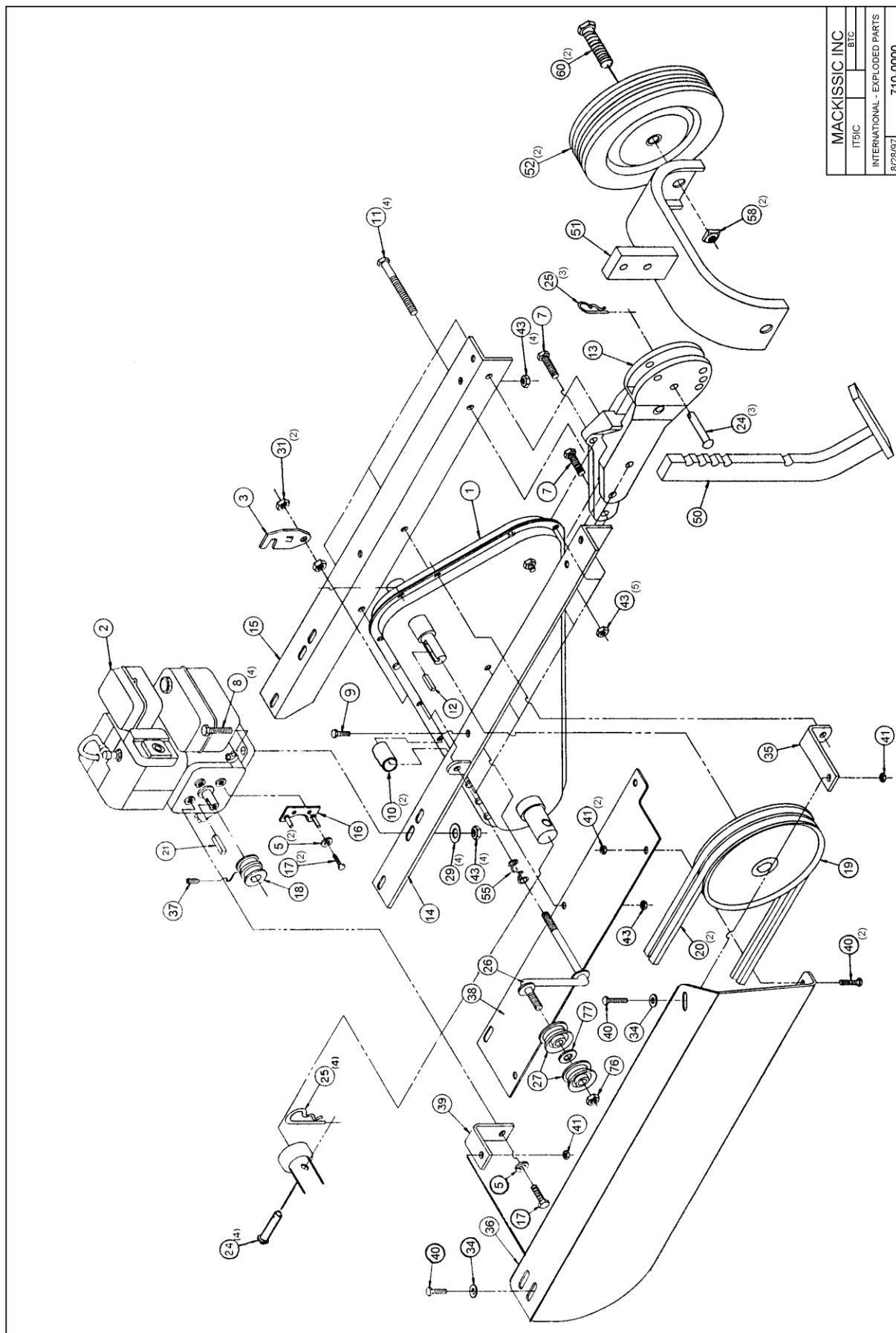


|                   |                 |
|-------------------|-----------------|
| MACKISSIC, INC    |                 |
| IT51C             | DR BY: JTS      |
| TRANSMISSION ASSY |                 |
| 12-5-92           | DR BY: 710-2281 |



## 710-2281 TRANSMISSION ASSEMBLY

| ITEM NO. | PART NO. | DESCRIPTION                                       | QTY. |
|----------|----------|---|------|
| 1        | 710-1885 | L.H. Case Half Assembly (include 1A to 1D)        | 1    |
| 1A       | 706-0343 | Tine Shaft Bearing                                | 1    |
| 1B       | 706-0344 | Oil Seal  | 2    |
| 1C       | 706-0345 | Bearing   | 1    |
| 1D       | 706-0342 | Drive Shaft Seal                                  | 1    |
| 2        | 710-1886 | R.H. Case Half Assembly (includes items 2A to 2D) | 1    |
| 2A       | 020-0014 | Soft Plug   | 1    |
| 2B       | 706-0343 | Tine Shaft Bearing                                | 1    |
| 2C       | 706-0344 | Oil Seal  | 2    |
| 2D       | 706-0345 | Bearing   | 1    |
| 3        | 710-1754 | Gasket  | 1    |
| 5        | 706-0347 | Roller Chain #50-40 Pitch                         | 1    |
| 6        | 090-0092 | 5/16-18 x 2-1/2" HHCS, GR5                        | 1    |
| 7        | 090-0460 | 5/16-18 Nylock Locknut (assembly)                 | 2    |
| -        | 090-0418 | 5/16-18 Whiz Locknut (parts transmission)         | 2    |
| 8        | 706-3411 | Caplug  | 1    |
| 9        | 710-1757 | Idler Sprocket Inner Race                         | 2    |
| 10       | 710-1760 | Tine Shaft Weldment                               | 1    |
| 11       | 710-1762 | Roller Chain #35-44 Pitch                         | 1    |
| 12       | 706-1763 | Roller Chain #40-40 Pitch                         | 1    |
| 13       | 709-0651 | Tine Shaft Spacer                                 | 1    |
| 14       | 710-1903 | Upper Idler Sprocket Assembly (includes item 14A) | 1    |
| 14A      | 030-0093 | Idler Sprocket Bearing                            | 2    |
| 15       | 710-1905 | Lower Idler Sprocket Assembly (includes item 15A) | 1    |
| 15A      | 030-0093 | Idler Sprocket Bearing                            | 2    |
| 16       | 090-0093 | 5/16-18 x 3" HHCS, GR5                            | 1    |
| 19       | 706-2500 | Drive Shaft Assembly                              | 1    |
| 20       | 706-3096 | 1/4-20 x 1/2" Whiz Lock Screw                     | 15   |
| 21       | 090-0453 | 1/4-20 Whiz Locknut                               | 15   |
| 22       | 706-2788 | 1/4" x 3/4" Self Tapping Screw                    | 1    |
| --       | 710-3404 | Spacer  | 1    |
| --       | 060-0034 | "OO" Grease                                       | 1    |

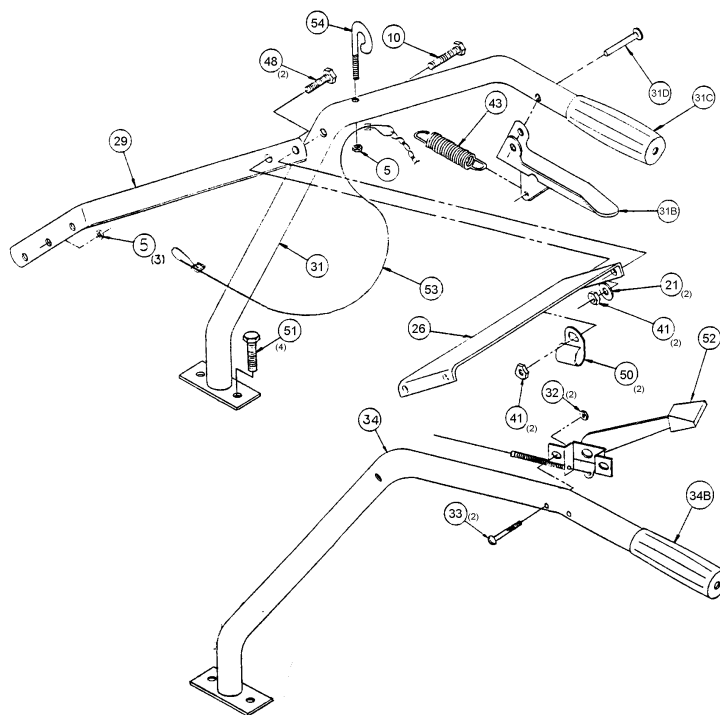


## INTERNATIONAL PARTS LIST

| ITEM NO. | PART NO.   | DESCRIPTION                 | QTY. |
|----------|------------|-----------------------------|------|
| 1        | 710-2281   | Transmission Assembly       | 1    |
| 2        | 030-0622   | IT950IC Engine              | 1    |
| 3        | 706-0137   | Adjustment Link             | 1    |
| 5        | 090-0394   | 5/16" Split Lockwasher      | 2    |
| 7        | 090-0089   | 5/16-18 x 1-1/4" HHCS, GR5  | 2    |
| 8        | 090-0091   | 5/16/18 x 1-3/4" HHCS, GR5  | 4    |
| 9        | 090-0088   | 5/16-18 x 1" HHCS, GR5      | 1    |
| 10       | 710-1854   | Engine mount spacer         | 2    |
| 11       | 090-0093   | 5/16-18 x 3" HHCS, GR5      | 4    |
| 12       | 100-0018   | 3/16 x 3/16 x 1" Shaft Key  | 2    |
| 13       | 710-2503   | Hitch                       | 1    |
| 14       | 710-2262   | L.H. Engine Mount           | 1    |
| 15       | 710-2265   | R.H. Engine Mount           | 1    |
| 16       | 710-2245   | Belt Release Weldment       | 1    |
| 17       | 090-0408   | 5/16-24 x 3/4" HHCS, GR5    | 3    |
| 18       | 710-2350   | 2" Double "A" Pulley        | 1    |
| 19       | 710-2351   | 6" Double "A" Pulley        | 1    |
| 20       | 608-0020   | Belt                        | 2    |
| 21       | 100-0018   | 3/16 x 3/16 x 1 Key         | 1    |
| 24       | 706-1024   | Clevis Pin                  | 7    |
| 25       | 706-0924   | 1/8" Hair Spring Cotter     | 7    |
| 26       | 706-3417   | Idler Arm                   | 1    |
| 27       | 030-0111   | Idler Pulley                | 2    |
| 29       | 090-0233   | 5/16" Flat Washer           | 4    |
| 31       | 090-0207   | 3/8-16 Hex Nut              | 2    |
| 34       | 090-0232   | 1/4" Flat Washer            | 2    |
| 35       | 710-2551   | Rear Bracket                | 1    |
| 36       | 710-2553   | Belt Cover                  | 1    |
| 37       | 080-0053   | 5/16-18 x 5/16 Set Screw    | 2    |
| 38       | 710-2556   | Fender Bracket              | 1    |
| 39       | 710-2557   | Front Bracket               | 1    |
| 40       | 090-0012   | 1/4-20 x 3/4" HHCS, GR5     | 4    |
| 41       | 090-0470   | 1/4-20 Nylock Locknut       | 4    |
| 43       | 090-0460   | 5/16-18 Nylock Locknut      | 15   |
| 50       | 706-0895   | Rear Skid Weldment          | 1    |
| 51       | 706-2480   | Rear Wheel Frame            | 1    |
| 52       | 706-3347   | 10" Semi-pneumatic          | 2    |
| 55       | 709-1237   | Idler Arm Spring            | 1    |
| 58       | 090-0461   | 3/8 Nylock Nut              | 2    |
| 60       | 705-0056-2 | 1/2" Hex Head Shoulder Bolt | 2    |
| ---      | 707-1338-A | LH. Inside Slasher Tine     | 1    |
| ---      | 707-0339-A | RH. Inside Slasher Tine     | 1    |
| ---      | 707-1341-A | LH. Middle Slasher Tine     | 1    |
| ---      | 707-1340-A | RH. Middle Slasher Tine     | 1    |
| ---      | 707-1704-A | LH. Outside Slasher Tine    | 1    |
| ---      | 707-1705-A | RH. Outside Slasher Tine    | 1    |
| 76       | 090-0461   | 3/8-16 Nylock Locknut       | 1    |
| 77       | 090-0234   | 3/8 Flat Washer             | 1    |

## PARTS LIST FOR HANDLE ASSEMBLY

| ITEM NO. | PART NO. | DESCRIPTION                               | QTY. |
|----------|----------|---|------|
| 5        | 090-0470 | 1/4-20 Nylock Nut                         | 3    |
| 10       | 090-0091 | 5/16-18 x 1 3/4 HHCS                      | 2    |
| 21       | 090-0233 | 5/16 Flat Washer                          | 4    |
| 26       | 706-1826 | Cross Brace                               | 1    |
| 29       | 710-3406 | R.H. Tie Brace                            | 1    |
| 30       | 710-3405 | L.H. Tie Brace (Not Shown)                | 1    |
| 31       | 706-2637 | R.H. Handle Assembly (includes item 31C)  | 1    |
| 31B      | 706-3254 | Clutch Control Lever                      | 1    |
| 31C      | 706-0630 | Handle Grip                               | 1    |
| 31D      | 090-0057 | 1/4-20 x 1-1/2 HHCS                       | 1    |
| 31D      | 090-0470 | 1/4-20 Nylock Locknut                     | 1    |
| 32       | 706-1539 | 10-32 Kep Nut                             | 2    |
| 33       | 090-0400 | 10-32 x 1 1/4 RD HD Mach. Screw           | 2    |
| 34       | 706-2632 | L.H. Handle Assembly (includes items 34B) | 1    |
| 34B      | 706-0630 | Handle Grip                               | 1    |
| 41       | 090-0460 | 5/16 Nylock Nut                           | 4    |
| 43       | 706-0152 | Clutch Spring                             | 1    |
| 48       | 090-0066 | 5/16-18 x 3/4 HHCS                        | 2    |
| 50       | 706-2243 | Cable Guide                               | 2    |
| 51       | 090-0089 | 5/16-18 x 1-1/4 HHCS                      | 4    |
| 52       | 710-3408 | Throttle Control                          | 1    |
| 53       | 706-2250 | Clutch Cable Assembly                     | 1    |
| 54       | 090-0467 | Pull Cord Holder                          | 1    |





# LIMITED WARRANTY

Any product manufactured by MacKissic, Inc. and found, in the judgment of MacKissic, Inc., to be defective in material or workmanship, will be repaired or replaced by an Authorized MacKissic Service Dealer without charge for parts and labor to the original owner of the MacKissic product.

The MacKissic product including any defective part must be returned to an Authorized MacKissic Service Dealer within the warranty period. The expense of delivering the product to the dealer for warranty work and the expense of returning it back to the owner after repair or replacement will be borne by the owner. MacKissic's responsibility is limited to making the required repairs or replacements only. No claim of breach of warranty shall be cause for cancellation or rescission of the sales contract of any MacKissic product. Proof of purchase will be required by the dealer to substantiate any warranty claim. All warranty work must be performed by an Authorized MacKissic Service Dealer.

This warranty is limited to two years from the date of original retail purchase for any MacKissic product that is used for consumer purposes or one year for commercial and rental use.

This warranty does not cover any product that has been subject to misuse, abuse, neglect, negligence, or accident, or that has been operated in any way contrary to or inconsistent with the operating instructions as specified in the owner's manual. The warranty does not apply to any damage to the product that is the result of improper maintenance, or to any product or parts that have not been assembled or installed as specified in the owner's manual.

The warranty does not cover any product that has been altered or modified. In addition, the warranty does not extend to repairs made necessary by normal wear, or by the use of parts or accessories which, in the judgment of MacKissic, Inc., are either incompatible with the MacKissic product or adversely affect its operation, performance or durability. This warranty does not cover engines, electric starters, batteries, and tires which are warranted separately by their manufacturer and for a different period of time.

MacKissic, Inc. reserves the right to change the design of any product without assuming any obligation to modify any product previously manufactured.

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MacKISSIC, INC. ASSUMES NO RESPONSIBILITY FOR INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, EXPENSE FOR GASOLINE, OIL, EXPENSE OF DELIVERING THE PRODUCT TO AN AUTHORIZED MacKISSIC SERVICE DEALER AND EXPENSE OF RETURNING IT BACK TO THE OWNER, MECHANIC'S TRAVEL TIME, TELEPHONE OR TELEGRAM CHARGES, RENTAL OF A LIKE PRODUCT DURING THE TIME WARRANTY REPAIRS ARE BEING PERFORMED, TRAVEL, LOSS OR DAMAGE TO PERSONAL PROPERTY, LOSS OF REVENUE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME OR INCONVENIENCE.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

2/22/18