OWNER'S MANUAL

Suburban Merry Tiller

Models ST5.5H ST800 ST800IC ST6R

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

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PART # 709-3400
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TABLE OF CONTENTS

Accessories	2
I. Safety	3
General Preparation	5
Repair and Maintenance Safety	6
II. Assembly Instructions	7
III. Lubrication & Engine Start Up	8
IV. Operation	10
V. Service - Maintenance - Repair	11
Belt and Clutch Adjustment	11
Belt Installation	12
Service Notes	12
Inspection of Transmission	12
Engine Maintenance	13
VI. Storage	13
Transmission Assembly Drawing	14
Tiller Drawing	15
Parts List	16
Warranty	17

MERRY TILLER ACCESSORIES

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

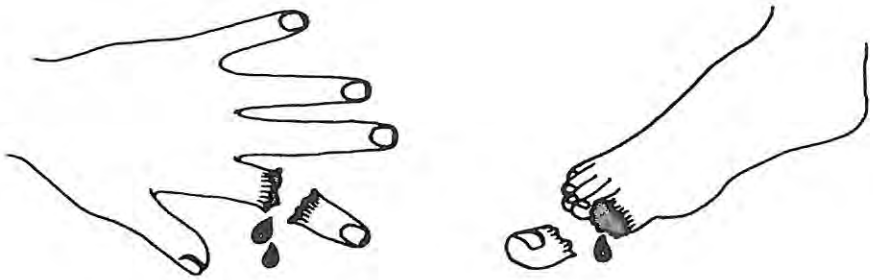
SECTION I - SAFETY

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

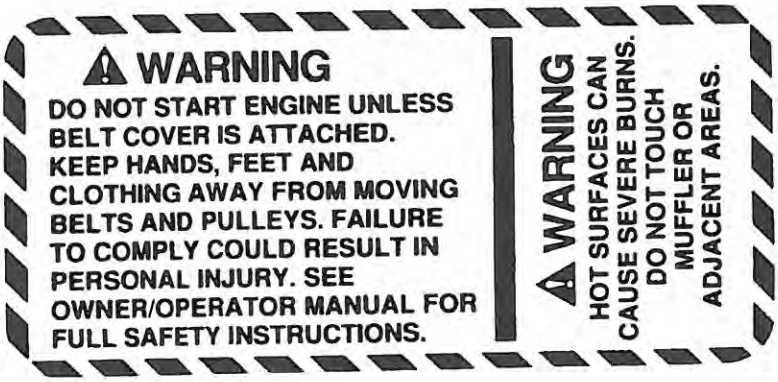
Never use your tiller for any other purpose than cultivating soil and use only approved attachments and accessories. It is designed for this use and any other use may cause injury.

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 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 influence 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 service 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 to 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. **NOTE:** If the engine is equipped with a fuel shut off valve, be sure to turn it to the off position.
- 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. Over revving 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 engine manufacturer's servicing dealer.

SECTION II - ASSEMBLY INSTRUCTIONS

PACKAGE CONTENTS

BOX	POLYBAG	BOLT BAG	
• TILLER	• OWNER'S MANUAL	• 1 EA CLUTCH SPRING	• 2 EA 10-32 X 1 1/4 RHMS
• HANDLE BARS (2)	• ENGINE MANUAL	• 1 EA PULL CORD HOLDER	• 4 EA 1/4 X 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	• 2 EA 5/16 X 1 3/4 HHCS
• POLYBAG	• CROSS BRACE	• 2 EA 1/8 HAIR SPRING COTTER	• 4 EA 5/16-18 X 1 HHCS
	• BOLT BAG	• 2 EA 10-32 KEP NUT	• 8 EA 5/16-18 NYLOCK NUT

NOTE: All items in this section refer to the item numbers on assembly drawings on page 13

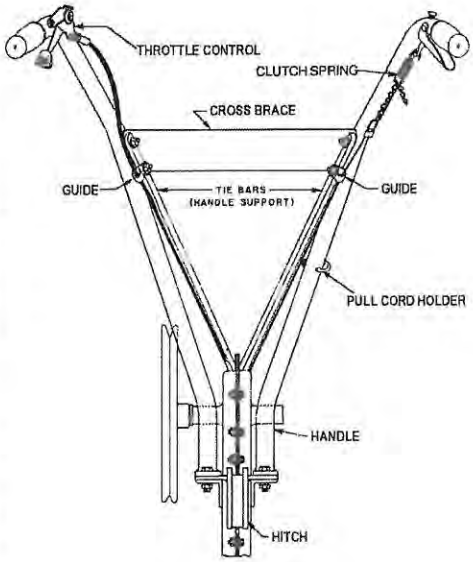
TOOLS REQUIRED FOR ASSEMBLY

- 1/2", 7/16", 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. 16/17) to frame rails (item #17 & #18, pg. 16/17). Use the 5/16-18 x 1" HHCS (item #51, pg. 16/17) and the 5/16-18 nylock nut (item #41, pg. 16/17) to attach each handle. **Do not completely tighten the bolts and nuts at this time.**

2. Remove the three bolts and whiz nuts on the transmission where the tie bars (item #28 & #29, pg. 16/17) will connect. Discard the whiz nuts. Place the tie bars on both sides of the transmission case flange and put the 1/4-20 x 1 1/4 bolts you just removed through the three holes in the tie bars and transmission and handtighten with three 1/4-20 nylock nuts from the bolt bag.

3. To attach the cross brace, place a 5/16-18 x 1 3/4 HHCS (item #10, pg. 16/17) through the upper holes of the handle, tie bar, and cross brace. Handtighten a 5/16-18 nylock nut (item #41, pg. 16/17) to these bolts. Attach two cable guides (item #50, pg. 16/17) to the inside of the cross brace by placing a 5/16-18 x 3/4 HHCS (item #48, pg. 16/17) through the lower hole in the tie bar, cross brace, and then through the cable guide. Handtighten 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. 16/17) through cable guide (item #50, pg. 16/17). Attach throttle control to handlebar with 2 ea. 10-32 x 1 1/4 machine screw (item #33, pg. 19) and 2 ea. 10-32 Kep nut (item #32, pg. 19) provided in the bolt bag.

2. Insert clutch cable through the cable guides (item #50, pg. 16/17) on the cross brace and the transmission. Slip lower cable loop (end without chain attached) over adjustment link (item #25, pg. 16/17). Attach clutch spring (item #43, pg. 16/17) to the clutch control lever (item #31B, pg. 16/17). Now attach the clutch cable chain to the spring.

3. Disconnect the spark plug. Grasp the starter pull cord and pull it 6" past the cross brace. String the cord into the eye of pull cord holder (item #54, pg 16/17) from the bolt bag. Put the pull cord holder through the hole below the cross brace. Secure with a ¼-20 nylock nut from the bolt bag.

NOTE: Models with Honda engines do not provide an extended rope pull. This engine is equipped with an on/off switch that requires the engine to be stated and stopped from the engine position

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 SUBURBAN 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 WARRANTIED 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 mower 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.

SECTION IV - OPERATION

TILLING - This 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 at the tilling site, lean the tiller forward until resting on the frame rails. Grab the ring on the pin holding the wheels in place, pull it out and swing the wheels up and out of the way. Pull the upper pin out and lock the wheels into the upper position with this pin. Adjust the dragbar by pulling the third pin out and raising or lowering it to the desired tilling 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.

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. After striking a foreign object, STOP the engine, remove the wire from the spark plug, 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 of light.

SECTION V - SERVICE - MAINTENANCE - REPAIR

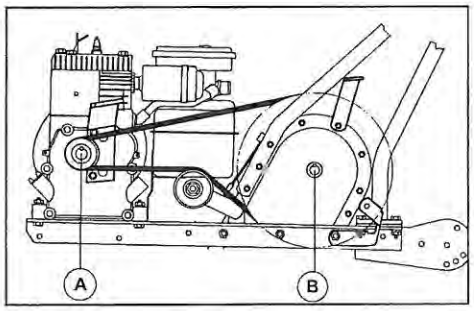
The transmission has been factory serviced with "00" grease. No additional lubrication is necessary or recommended.

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 14 3/4".
- 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. 15) 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. 15) which is attached to the clutch spring (item #43, pg. 15). 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 holding the adjustment link (item #25, pg. 15). While holding idler arm and pulley (item #20 & #22, pg.15) 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 #10, pg. 15) holding the engine to the engine mounts (items #17 & #18, pg. 15) 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, clothes 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.

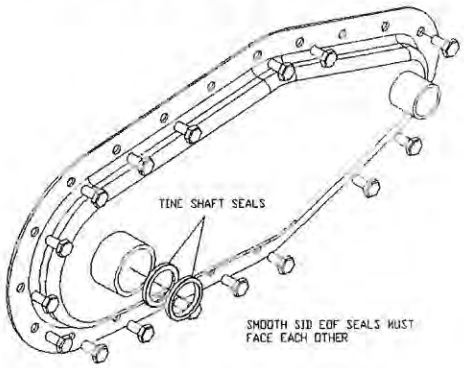
By following the engine maintenance schedule, you will obtain maximum engine and tiller life. The four cycle engine of your tiller will normally consume some oil, so **check engine oil level regularly and before each use.**

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 ½" 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

SECTION VI - STORAGE

- 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

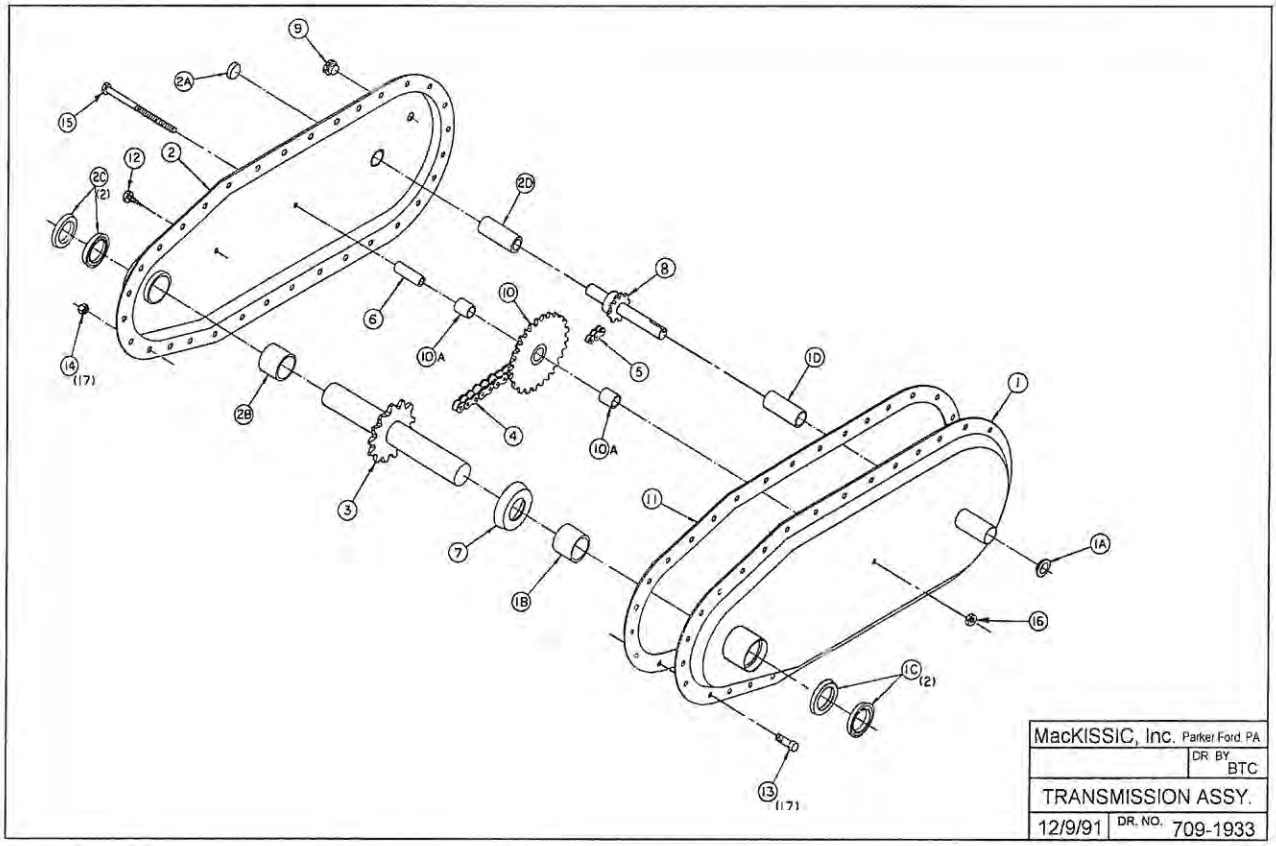
Drain all the oil from the crankcase and refill the crankcase with fresh oil each season (this should be done after the engine has been operated and is still warm).

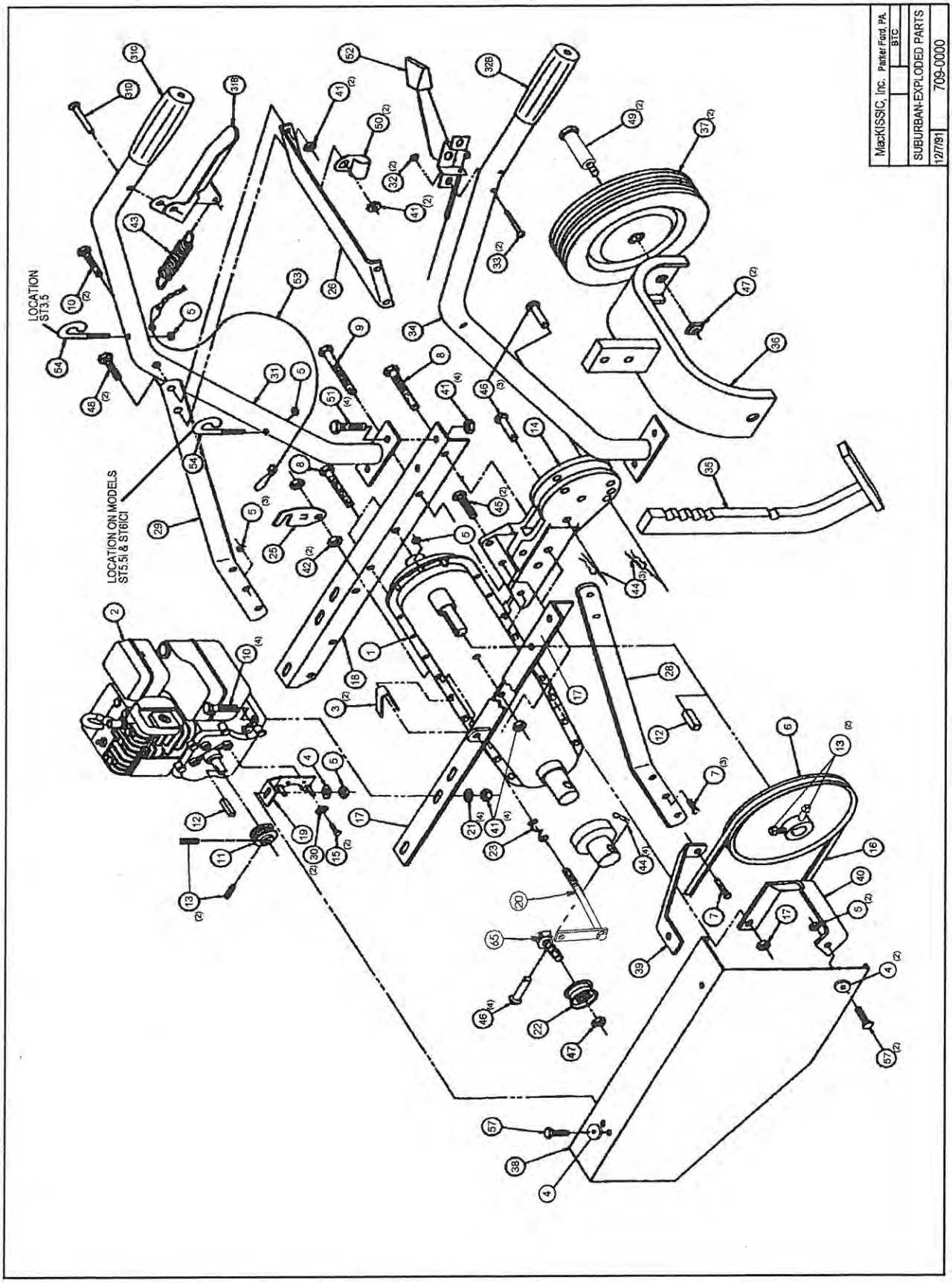
DANGER: Your tiller was built to be operated according to the rules for safe operation in this manual. **As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury.** If you violate any of these rules, you may cause serious injury to yourself or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

BEFORE STARTING ENGINE, ALWAYS CHECK OIL LEVEL!

709-1933 TRANSMISSION ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	709-1934	L.H. Case Half Assembly (includes 1A-1D)	1
1A	706-0342	Drive Shaft Seal	1
1B	706-0343	Tine Shaft Bearing	1
1C	706-0344	Oil Seal	2
1D	706-0345	Bearing	1
2	709-1935	R.H. Case Half Assembly (includes 2A-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	709-0147	Tine Shaft Weldment	1
4	706-0347	Roller Chain #50-40 Pitches	1
5	706-0348	Roller Chain #35-50 Pitches	1
6	709-0352	Idler Sprocket Inner Race	1
7	709-0651	Tine Shaft Spacer	1
8	706-2500	Drive Shaft Assembly	1
9	706-3411	Caplug	1
10	709-1615	Idler Sprocket Assembly (includes 10A)	1
10A	030-0093	Idler Sprocket Bearing	2
11	709-1654	Transmission Case Gasket	1
12	706-2788	1/4 x 3/4" Self Tapping Screw	1
13	706-3096	1/4-20 x 1/2" HH Whiz Lockscrew	17
14	090-0453	1/4-20 Whiz Locknut	17
15	090-0419	5/16-18 x 2-3/4" HHCS	1
16	090-0460	5/16-18 Nylock Locknut	1
--	060-0034	"OO" Grease	1




MacKISSIC, Inc. Parker Ford, PA.
BTC
SUBURBAN-EXPLODED PARTS
12/7/91
709-0000
LOCATION ST3.5
LOCATION ON MODELS ST5.5I & ST6ICI

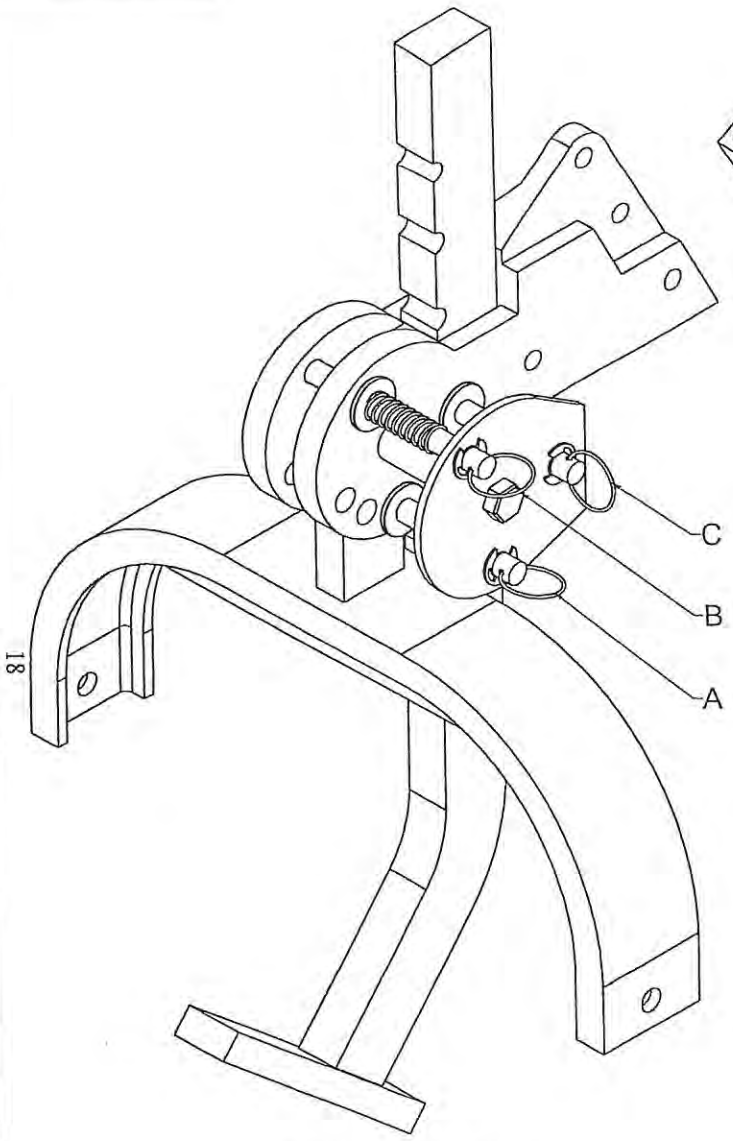
SUBURBAN PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	709-1933	Transmission Assembly	1
2	030-0505	ST800 - B&S Engine	1
2	030-0503	ST800IC – B&S Engine	1
2	706-3404	ST5.5H - Honda Engine	1
2	030-0446	ST6R - Robin Engine	1
3	709-0165	"U" Shaped Spacer	2
4	090-0232	1/4" Flat Washer	4
5	090-0470	1/4-20 Nylock Locknut	7
6	030-0109	Pulley - Transmission	1
7	090-0060	1/4-20 x 1" HHCS	3
8	090-0419	5/16-18 x 2-3/4" HHCS	2
9	090-0093	5/16-18 x 3" HHCS	1
10	090-0091	5/16-18 x 1-3/4" HHCS	6
11	706-1368	Pulley - Engine	1
12	100-0018	3/16 x 3/16 x 1" Shaft Key	1
13	080-0053	5/16-18 x 5/16" Set Screw	4
14	709-2502	Hitch-Rear	1
15	090-0408	5/16-24 x 3/4" HHCS	2
16	030-0131	V-Belt	1
17	709-2205	L.H. Engine Mount Weldment	1
18	709-2208	R.H. Engine Mount	1
19	709-2647	Belt Release Bracket Weldment	1
20	706-3417	Idler Arm Weldment	1
21	090-0233	5/16 Flat Washer	4
22	030-0111	Idler Pulley	1
23	709-3409	Idler Arm Compression Spring	1
25	706-0137	Adjustment Link	1
26	706-1826	Cross Brace	1
27	100-0018	3/16 x 3/16 x 1 Key – ST800 & ST800IC	1
27	703-0505	3/16 x 3/16 x 1 1/2 Key - ST5.5H	1
28	709-3136	Tie Bar L.H.	1
29	709-3137	Tie Bar R.H.	1
30	090-0394	5/16" Split Lock Washer	2
31	706-2637	R. H. Handle Assembly (includes 31B, 31C, and 31D)	1
31B	706-3254	Clutch Control Lever	1
31C	706-0630	Handle Grip	1
31D	090-0057	¼-20 x 1-1/2 HHCS	1
31D	090-0470	¼-20 Nylock Locknut	1
32	706-1539	10-32 Nut	2
33	090-0400	10-32 x 1 1/4 Rd Hd Machine Screw	2
34	706-2632	L.H. Handle Assembly (includes 32B)	1
35	706-0895	Rear Skid Weldment	1
36	706-2480	Wheel Frame Weldment	1
37	706-3347	Wheel	2
38	709-2658	Belt Cover	1
39	709-2659	Trans. Case to Belt Cover Bracket	1
40	709-3080	Engine Mount to Belt Cover Bracket	1
41	090-0460	5/16-18 Nylock Locknut	17
42	090-0207	3/8-16 Hex Nut	2
43	706-0152	Clutch Control Spring	1
44	706-0924	1/8" Hair Spring Cotter	7
45	090-0089	5/16-18 x 1-1/4" HHCS	2
46	706-1024	Clevis Pin	7
47	090-0461	3/8 Nut Nylock	2
48	090-0066	5/16-18 x 3/4" HHCS	2
49	705-0056-2	1/2 Shoulder Bolt	2
50	706-2243	Cable Guide	2
51	090-0088	5/16-18 x 1" HHCS	4
52	710-2667	Throttle Control – Honda & Robin units	1
52	710-3408	Throttle Control – Briggs & Stratton unitS	1
53	706-2250	Clutch Cable Assembly	1
54	090-0467	Pull Cord Holder	1
57	090-0012	1/4-20 x 3/4" HHCS	3
---	707-1338-A	L.H. Inside Slasher Tine – Not Shown	1
---	707-1339-A	R.H. Inside Slasher Tine – Not Shown	1
---	707-1704-A	L.H. Outside Slasher Tine – Not Shown	1
---	707-1705-A	R.H. Outside Slasher Tine – ot Shown	1

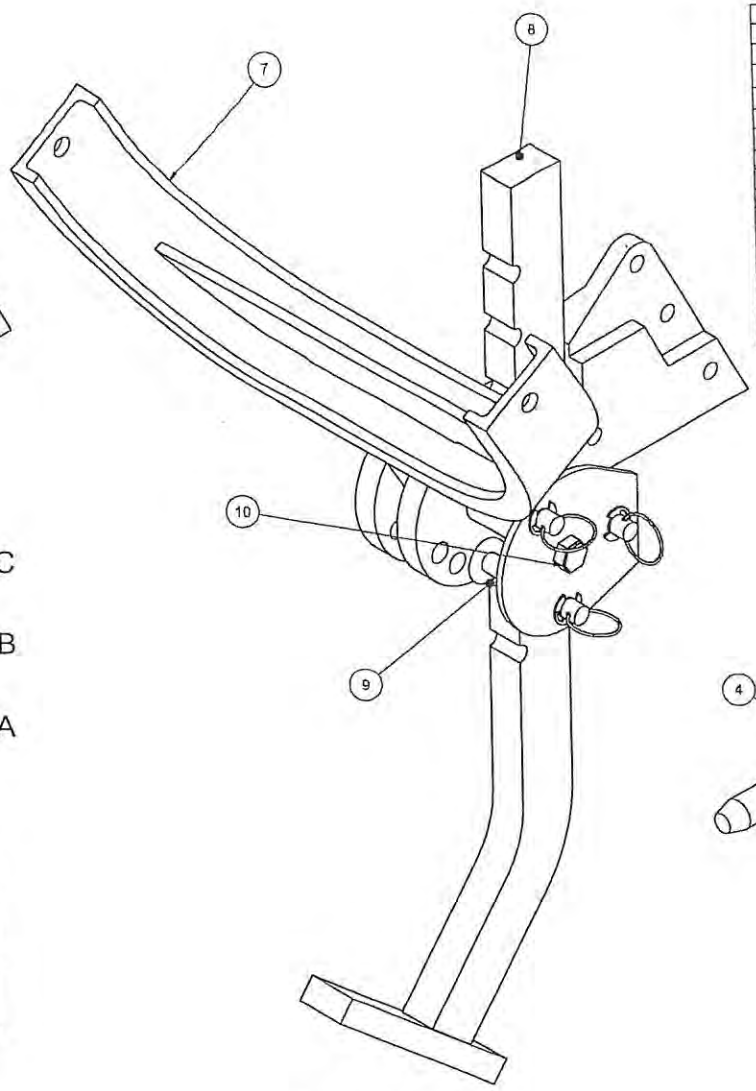
PROPRIETARY

MACKISSIC INC.

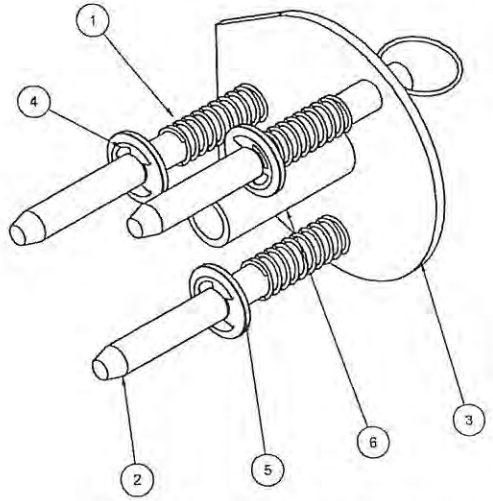
Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	3	709-3409	SPRING LC-042G-10
2	3	709-3408	SPRING PIN
3	1	709-3406	SPRING PIN PLATE
4	3	090-0497	E-ring
5	3	090-0233	5/16" USS FLATWASHER PLTD
6	1	709-3407	SPRING PIN SPACER
HITCH/SPRING PIN ASSY.			
ITEM	QTY	PART #	DESCRIPTION
6	1	709-2502	HITCH - SUBURBAN
6	1	710-2503	HITCH - INTERNATIONAL
7	1	706-3415	SUB & INT. WHEEL ASSY.
8	1	706-0895	REAR SKID WELDMENT
9	1	709-3424	SPRING PIN ASSY.
10	1	090-0019	3/8-16 X 4-1/2" HHCS
11	1	090-0461	3/8-16 NYLOCK NUT



TRANSPORT POSITION



TILLING POSITION



SPRING PIN ASSEMBLY 709-3424

18

FOR ADDED CLARITY, WHEELS AND FRAME ARE NOT SHOWN

DRAWN BY: STEVE RICH	Mackissic Inc. P.O. BOX 111, PARKER FORD, PA 19457 PHONE: (610) 495-7181 FAX: (610) 495-7141
DATE: 10/29/2002	TITLE: HITCH/SPRING PIN ASSY.
TOLERANCES: .15 | 1/32 | 1°	
WHERE USED: SUBURBAN INTERNATIONAL	SIZE: C MATERIAL:
	SCALE: 1:1 DWG NO. MACKISSIC INC.

NOTES

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 90 day 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.

THE DURATION OF THE LIMITED WARRANTY IS TWO YEARS CONSUMER, 90 DAYS COMMERCIAL AND RENTAL USE. REPAIR OR REPLACEMENT AS PROCEEDED UNDER THIS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. MacKissic, INC., SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXCEPT THE LIMITED WARRANTY DESCRIBED ABOVE, ALL IMPLIED WARRANTIES (MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE SPECIFICALLY DISCLAIMED.

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.

01/28/13