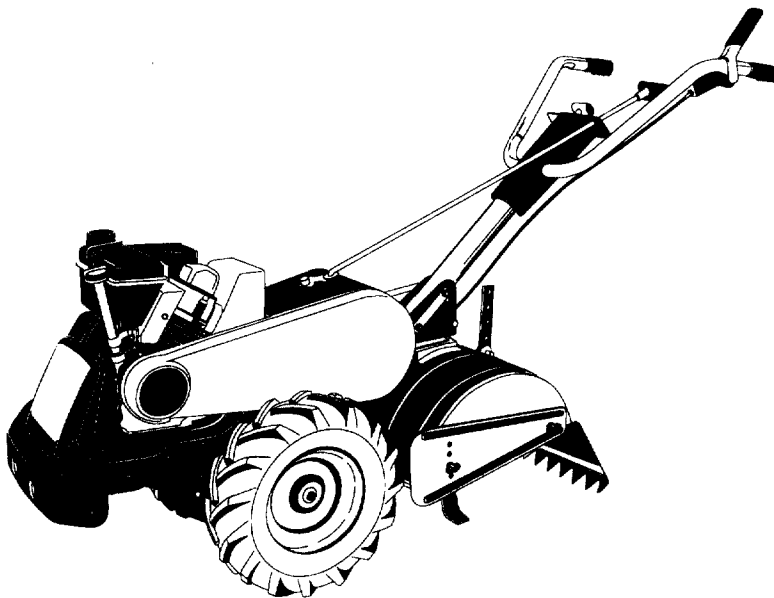




OPERATOR'S MANUAL

REAR TINE TILLER



IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

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

SECTION 1: IMPORTANT SAFE OPERATION PRACTICES



WARNING: 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.**



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



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. This tiller is capable of amputating hands and feet. Failure to observe the following safety instructions could result in serious injury or death.

1. GENERAL OPERATION

- Read this operator's manual carefully in its entirety before attempting to assemble this machine. Read, understand, and follow all instructions on the machine and in the manual(s) before operation. Be completely familiar with the controls and the proper use of the machine before operating it. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
- Your tiller is a powerful tool, not a plaything. Therefore, exercise extreme caution at all times. Your unit has been designed to perform one job: to till soil. Do not use it for any other purpose.
- Never allow children under age 14 to operate the unit. Children 14 years and older should only operate the unit under close parental supervision. Only responsible individuals who are familiar with these rules of safe operation should be allowed to use your unit.
- Do not operate tiller while under the influence of alcohol or drugs.
- Keep the area of operation clear of all persons, particularly small children and pets. Stop the engine when they are in the vicinity of your tiller.
- Wear sturdy, rough-soled work shoes and close fitting slacks and shirt. Shirt and slacks that cover the arms and legs and steel-toed shoes are recommended. Do not wear loose fitting clothes or jewelry and secure hair so it is above shoulder length. They can be caught in moving parts. Never operate a unit in bare feet, sandals or sneakers.
- Operate tiller only in daylight or good artificial light.
- Do not start tiller unless the shift lever (if provided) is in the neutral (N) position.
- Do not allow anyone to stand or walk in front of tiller when starting or running engine.
- Do not place feet or hands on or near the tines when starting the engine or while the engine is running.
- Never attempt to make depth bar, tine width, cable, handle, or wheel adjustments while the engine is running.
- Do not leave the tiller unattended with the engine running.
- 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 move it away from the spark plug.
- 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:
 - Inspect for damage.
 - Repair or replace any damaged parts.
 - Check for any loose parts and tighten to assure continued safe operation.
- Muffler and engine become hot and can cause a burn. Do not touch.
- Keep all shields, guards and safety devices in place and operating properly.
- Use caution when tilling near fences, buildings and underground utilities. Rotating tines can cause damage or injury.
- Do not operate engine if air cleaner or cover over carburetor air intake is removed, except for adjustment. Removal of such parts could create a fire hazard.

- Only use accessories approved for this machine by the manufacturer. Read, understand, and follow all instructions provided with the approved accessory.
- If situations occur which are not covered by this manual, use care and good judgment. Contact your dealer for assistance.

2. CHILDREN

- Tragic accidents can occur if the operator is not alert to the presence of small children. Children are often attracted to the tilling activity. Never assume that children will remain where you last saw them.
- 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 14 to operate the tiller.

3. SERVICE

- 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 two 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 your machine in an enclosed area as the exhaust from the engine contains carbon monoxide, which is a odorless, tasteless and deadly poisonous gas.
- To reduce fire hazard, keep engine and muffler free of leaves, grass, and other debris build-up. Clean up fuel and oil spillage. Allow unit to cool at least 5 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.
- Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
- Never tamper with safety devices. Check their proper operation regularly.
- Do not alter or tamper with the engine's governor setting. The governor controls the maximum safe operating speed of the engine. Overspeeding the engine is dangerous and will cause damage to the engine and to other moving parts of the machine.



WARNING — 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.



Figure 1 Safety labels found on your unit

SECTION 2: FINDING YOUR MODEL NUMBER

This Operator's Manual is an important part of your new tiller. It will help you assemble, prepare and maintain your tiller. Please read and understand what it says.

Before you start to prepare your tiller for its first use, please locate the model plate and copy the information from it in this Operator's Manual. The information on the model plate is very important if you need help from your dealer or the MTD customer support department.

- Every tiller has a model plate. You can locate it by standing in the operating position behind the unit and looking down at the center of the rear tine cover.
- The model plate will look like Figure 2.

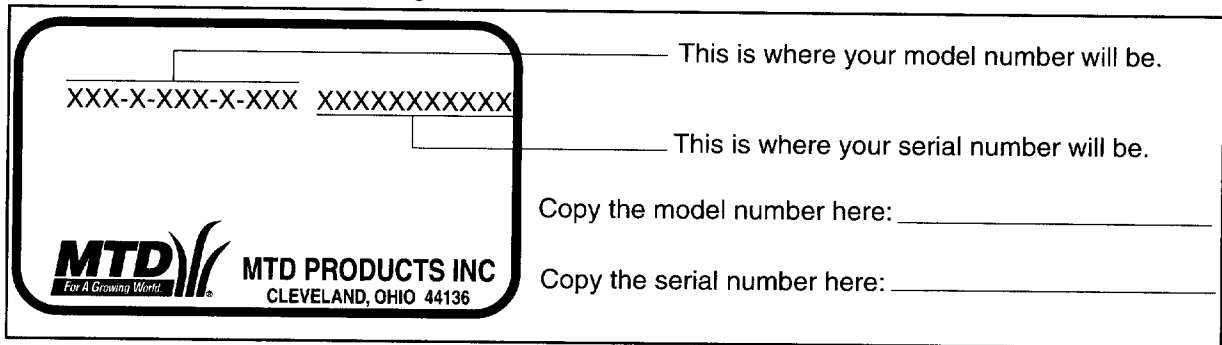


Figure 2

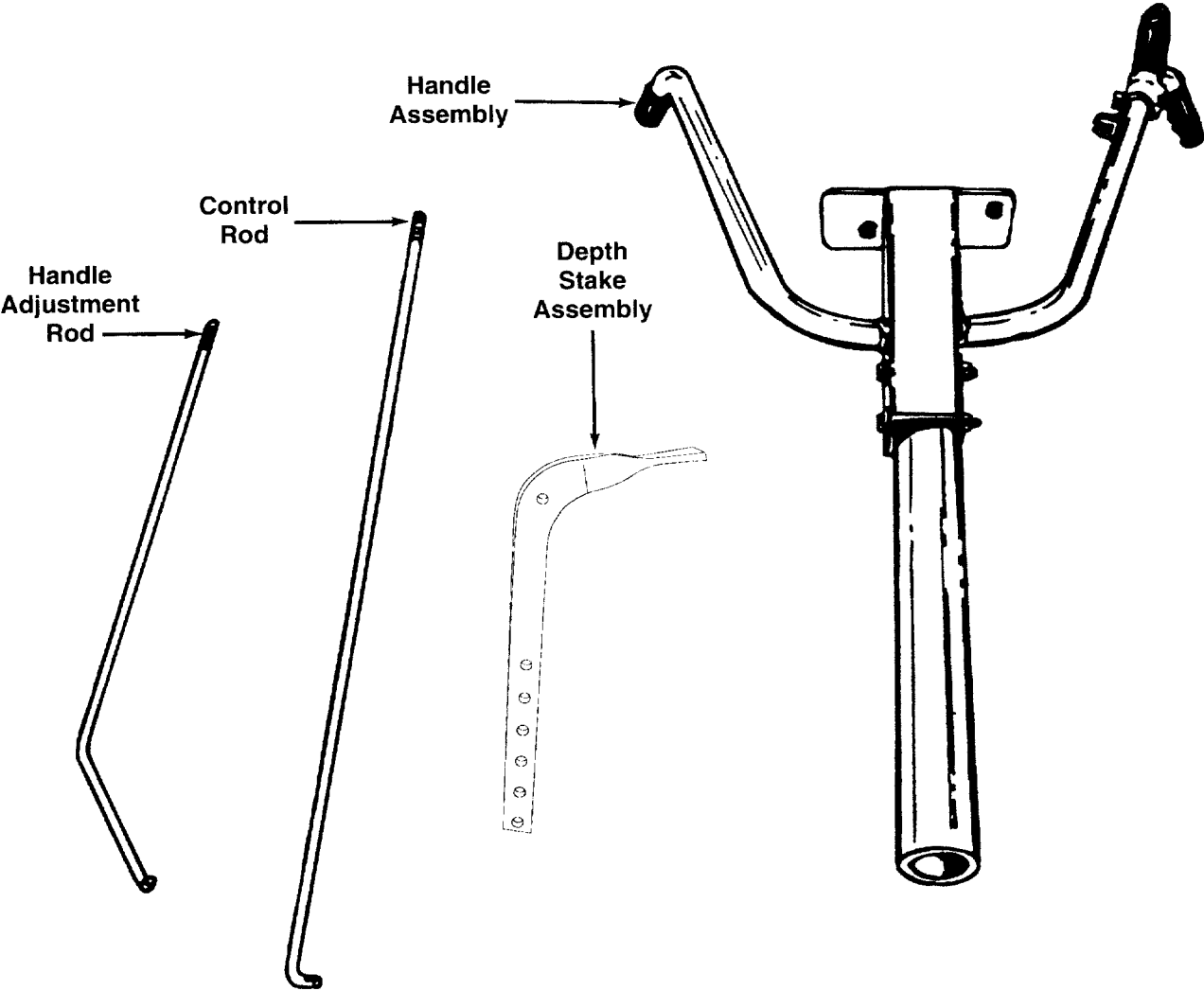
SECTION 3: CALLING CUSTOMER SUPPORT

If you are having difficulty assembling this product or if you have any question regarding the controls, operation or maintenance of this unit, please call the Customer Support Department. You can reach them by calling:

1-800-800-7310

Before you call, make sure that you have your model and serial numbers ready. By having the model and serial numbers ready, you help the Customer Support Representative give you faster service. To find your unit's model and serial number, see SECTION 2: FINDING YOUR MODEL NUMBER.

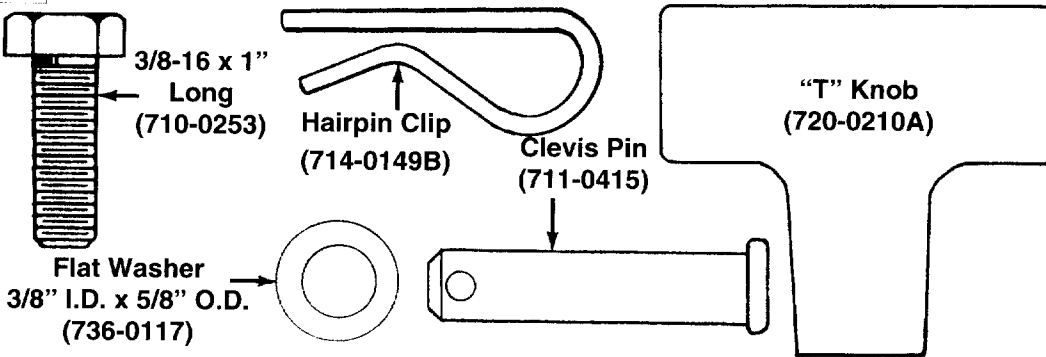
SECTION 4: LOOSE PARTS



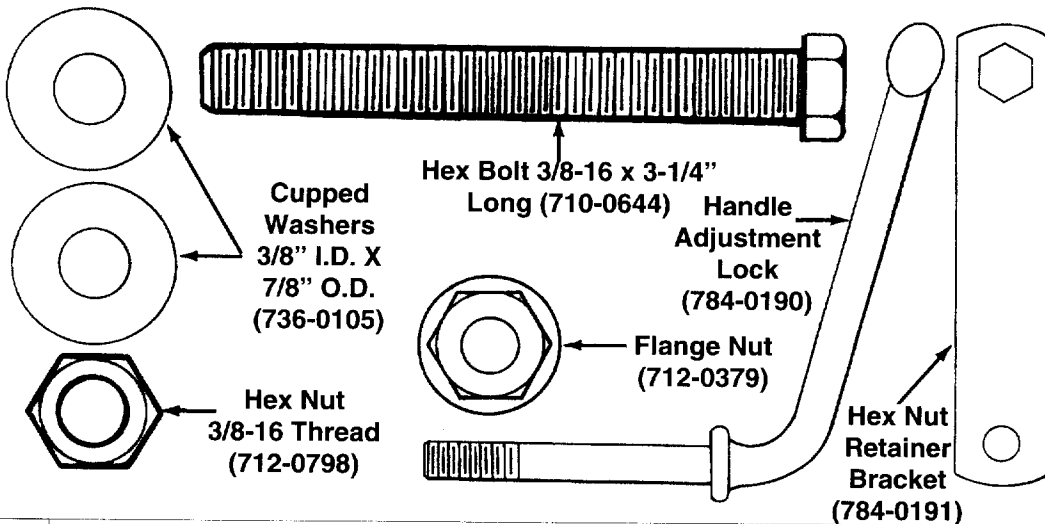
SECTION 5: CONTENTS OF HARDWARE PACK

Remove this sheet from your operator's manual, and lay out the hardware according to the illustration for identification. (Part numbers are shown in parentheses.)

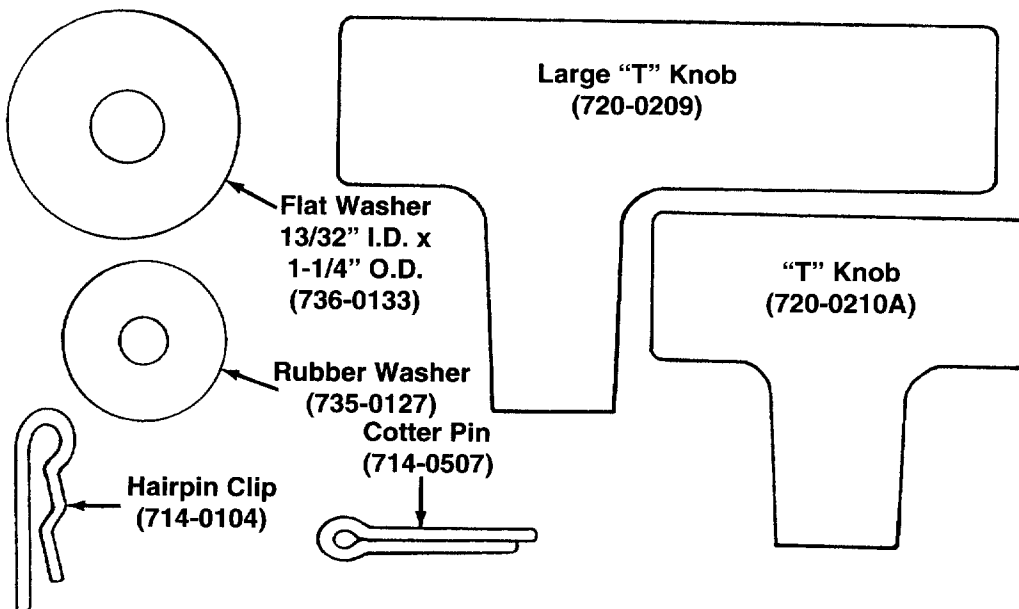
A ATTACHING THE DEPTH STAKE ASSEMBLY



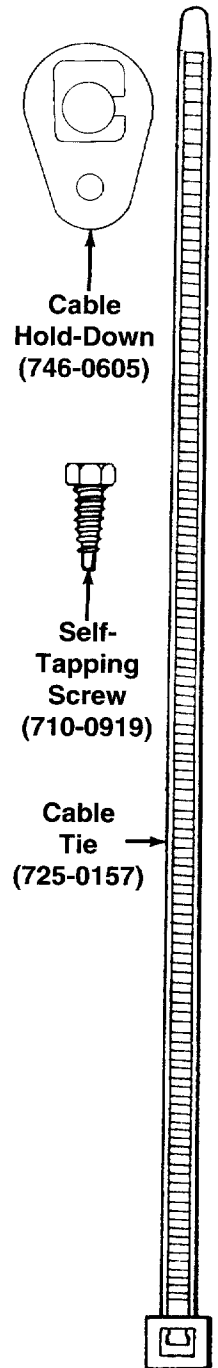
B ATTACHING THE HANDLE ASSEMBLY



D ATTACHING THE RODS



C ATTACHING THE CLUTCH CABLE



SECTION 6: ASSEMBLY INSTRUCTIONS

IMPORTANT: 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.

TOOLS REQUIRED FOR ASSEMBLY

- (2) 9/16" Wrenches*
- (2) Adjustable Wrenches
- (1) Flat Blade Screwdriver
- (1) Pair of Pliers

*Two adjustable wrenches may be used.

TO REMOVE UNIT FROM CARTON

1. Remove staples, break glue on top flaps, or cut tape at carton end and peel along top flap to open carton.
2. Remove loose parts included with unit (i.e., owner's manual, etc.).
3. Cut along dotted lines and lay carton down flat.
4. Remove packing material.
5. Roll or slide unit out of carton. Check carton thoroughly for loose parts.
6. Extend control cable and lay on the floor. Be careful not to bend or kink control cable.
7. Remove page 6 from this manual, and lay out the hardware according to the illustration for identification.

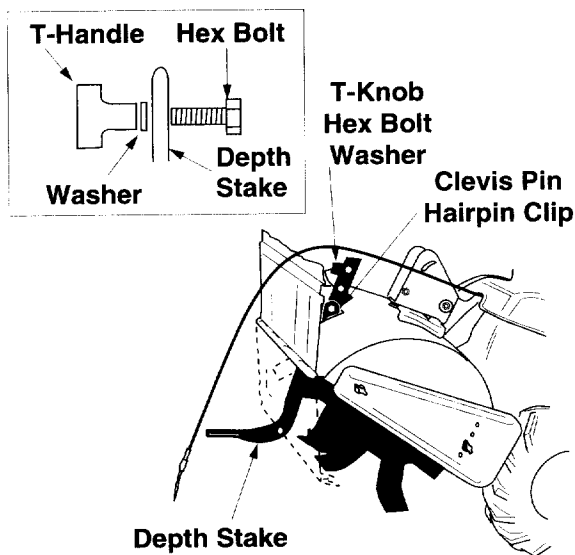


Figure 3

ATTACHING DEPTH STAKE ASSEMBLY

(Hardware A)

1. Tip the tiller forward so it rests on front counterweight.
2. Raise the tine shield hinge flap assembly. Insert the depth stake assembly between the two shoulder bolts (under the tine shield) and up through the tine shield assembly as shown in Figure 5.
3. Insert clevis pin through the tine shield and the second hole from top of the depth stake. Secure with hairpin clip.
4. Insert hex bolt into the top hole of the depth stake assembly. Place flat washer onto the hex bolt and thread "T" knob onto the hex bolt. See Figure 3. Tighten securely.
5. Tip the tiller back down so it rests on the depth stake (transport position).

ATTACHING THE HANDLE ASSEMBLY

(Hardware B)

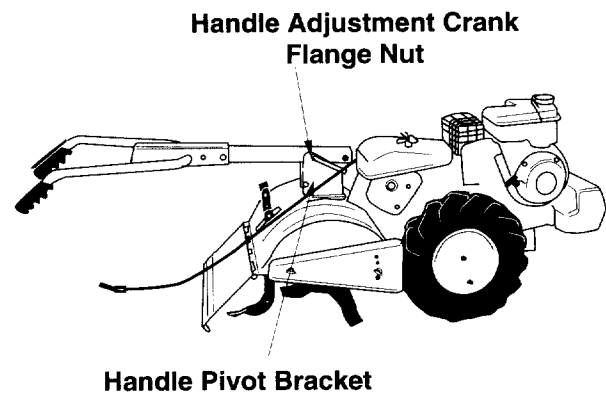


Figure 4

1. Place handle assembly in position in the pivot bracket. See Figure 4.
2. Line up holes in handle with slots in handle pivot bracket. From the right side of the unit, insert handle adjustment crank through handle pivot bracket and handle assembly. See Figure 5. Thread end of handle adjustment crank into the flange nut. Do not tighten at this time.

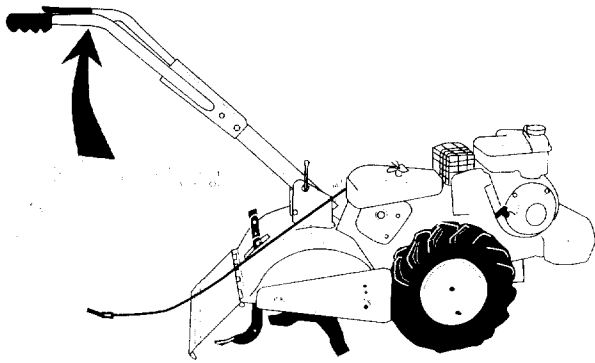


Figure 5

3. Lift up the handle assembly and align bottom holes in the handle assembly with the holes in the pivot bracket. From the left side of the unit, insert hex bolt with cupped washer (cupped side against pivot bracket) and hex nut retainer bracket (bolt through round hole) through the bottom holes on the handle pivot bracket and handle assembly.)

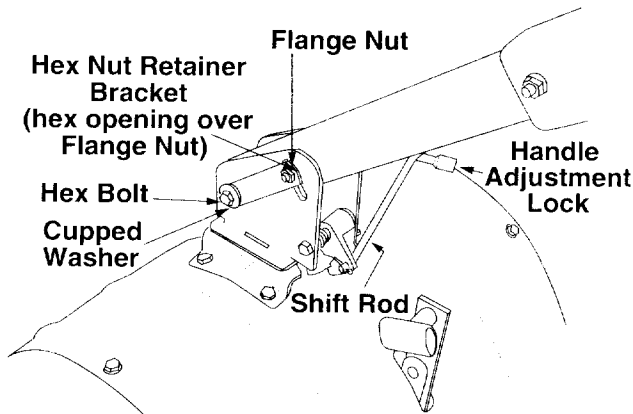


Figure 6

4. Place the hex opening of the hex retainer bracket over the hex flange nut. See Figure 6.
5. Secure bottom of handle by placing cupped washer (cupped side against the pivot bracket) and hex nut on hex bolt.
6. Pivot the handle assembly up or down to the desired position and tighten adjustment crank.

ATTACHING THE CLUTCH CABLE

Attach the clutch cable to the left handle as follows (be careful not to kink the cable).

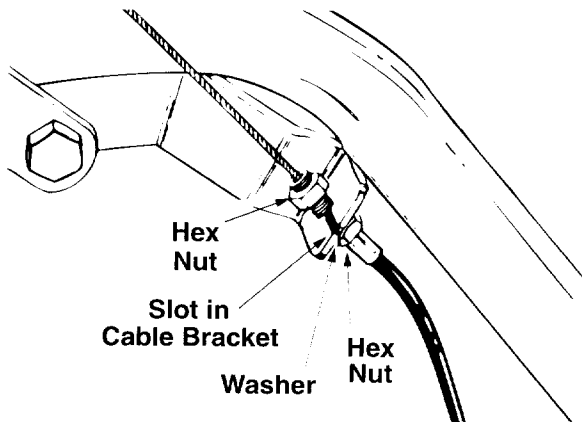


Figure 7

1. Route the clutch cable to the left side of the tiller, and underneath the handle. Remove one hex nut from the end of the casing on the clutch cable. Thread the other nut all the way onto the threaded casing, as far as it will go.
2. Slip the wire through the slot on the cable bracket on the left handle. Push the end of the casing up through the cable bracket. Rethread the hex nut on the end of the cable casing, four turns. Do not tighten at this time. See Figure 7.

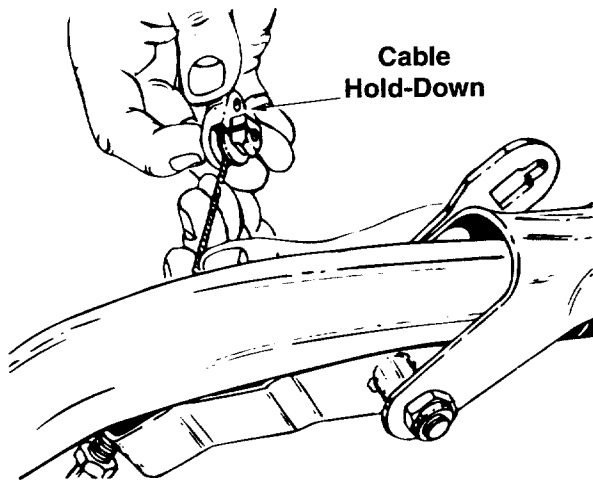


Figure 8

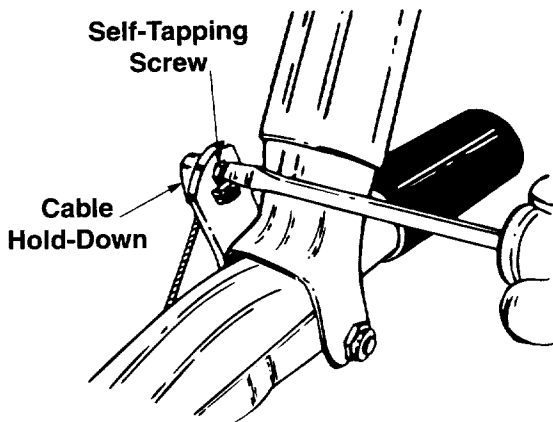


Figure 9

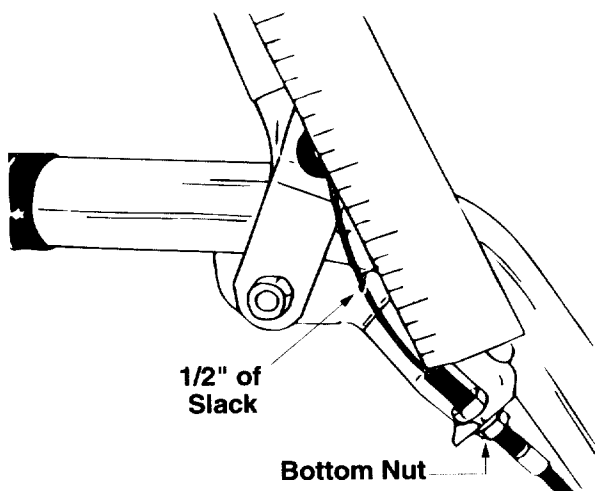


Figure 10

3. Hook the barrel end of the cable into the cable hold-down shipped in hardware pack. Slide the cable around in the slot as shown in Figure 8.
4. Pull the cable upwards to obtain slack, lift the clutch grip, and insert the cable hold-down into the clutch grip. Secure with self-tapping screw from the hardware pack. See Figure 9.
5. With the clutch lever released (in the "up" position, all the way forward), adjust the bottom nut at the cable bracket so there is 1/2" of slack in the control wire as shown in Figure 10. Tighten the upper nut against the bracket. Carefully squeeze the clutch lever against the handle. The control wire should now be straight.

NOTE: Do not overtighten control wire. Too much tension may cause it to break



WARNING: Be certain to check the clutch cable adjustment as instructed on page 10 of your owner's guide before operating the tiller.

Secure drive cable to left handle using cable tie. Refer to Figure 11. Cut off excess end of cable tie.

ATTACHING THE RODS

Control Rod

1. Insert the end of control rod with the 90 degree bend **down** through the plastic bushing on the left side of handle assembly. See Figure 11.
2. Place flat washer, then rubber washer on the hooked end of control rod. Insert end of control rod into the indicator bracket on top of the shift cover, and secure with hairpin clip. See Figure 12.

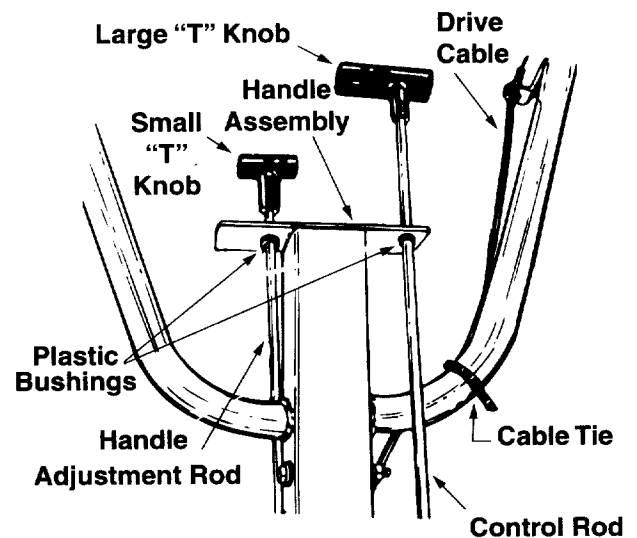


Figure 11

3. Install large "T" Knob on upper end of the control rod. See Figure 11.

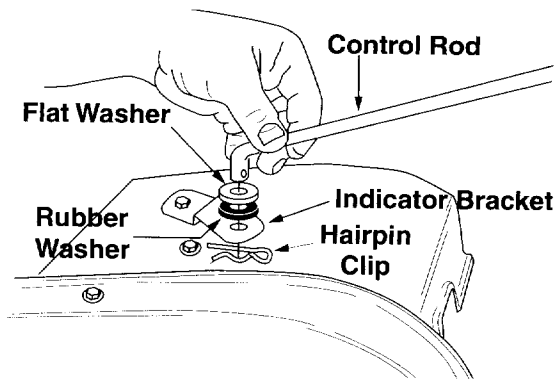


Figure 12

Handle Adjustment Rod

1. Insert the end of handle adjustment rod **down** through the plastic bushing on the right side of handle assembly. See Figure 11.
2. With the handle adjustment rod beneath the handle assembly, insert the hooked end of handle adjustment rod into the handle link, from right hand outside in, as shown in Figure 13. Secure with cotter pin, bending ends of pin in opposite directions.
3. Install small "T" Knob on upper end of the Handle Adjustment Rod. See Figure 11.

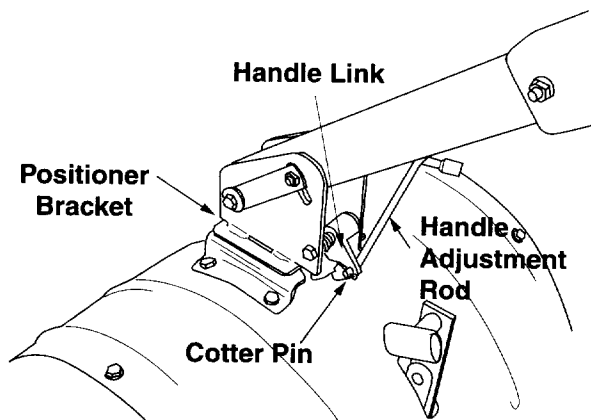


Figure 13

4. Loosen the handle adjustment crank and pivot handle assembly into position desired. Tighten securely the bottom bolt and nut. Tighten the handle adjustment crank.

CHECKING THE CLUTCH ADJUSTMENT

IMPORTANT: Service the engine with oil and gasoline before checking this adjustment. Refer to the separate engine manual packed with your tiller for proper fuel and engine oil recommendations.

Position the tiller so the front counterweight is against a solid object, such as a wall. With the gear selection lever in NEUTRAL, start the engine. Refer to the separate engine manual.

Standing on the right side of the tiller, examine the belt (inside the belt cover). It should not be turning.

NOTE: Do not put fingers under the belt cover.

If the belt turns with the unit in neutral, adjust by moving the hex nut below the cable bracket **down** two full turns. See Figure 14. Tighten the upper hex nut against the bracket.

Now move the shift lever to FORWARD (Wheels Forward) position. Carefully engage the clutch by squeezing the clutch lever against the left handle. The wheels should spin.

If the wheels do not spin with the unit in forward, adjust by moving the hex nut which is above the cable bracket **up** two full turns. Tighten the bottom hex nut against the bracket.

Recheck both adjustments, and readjust as necessary.

NOTE: A secondary cable adjustment is available if you reach the point that additional adjustment is needed. Remove the belt cover and move the hex nuts at the other end of the cable towards the end of the casing. Then readjust the hex nuts at the handle.

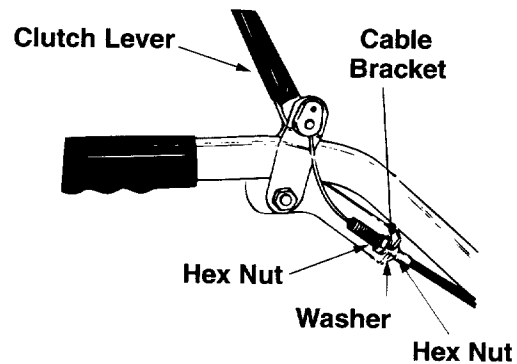


Figure 14

TIRE PRESSURE

The tires on your unit may be over-inflated for shipping purposes. Reduce the tire pressure before operating the unit. Recommended operating tire pressure is approximately 20 p.s.i. (check sidewall of tire for tire manufacturer's recommended pressure).



WARNING: Maximum tire pressure under any circumstances is 30 p.s.i. Equal tire pressure should be maintained on both tires.

SECTION 7: CONTROLS

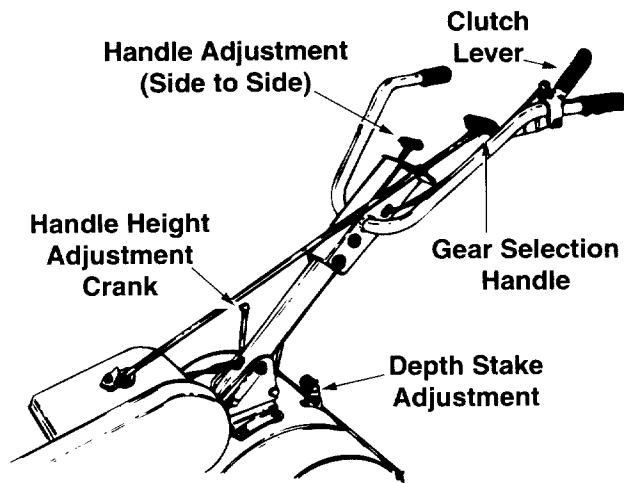


Figure 15

THROTTLE CONTROL

The throttle control lever is located on the engine. It controls the engine speed and stops the engine. See Figure 16.

PRIMER BUTTON

The primer button is located behind the air cleaner. It is used to enrich the fuel mixture in the carburetor when starting a cold engine. See Figure 16.

GEAR SELECTION HANDLE

The gear selection handle is located toward the left side of the tiller. It is used to select NEUTRAL, REVERSE, or one of the FORWARD modes (see below). Pull or push the handle so that the indicator on top of shift cover points to the operating mode desired. See Figure 15.

NEUTRAL—Transmission is in neutral.

REVERSE—Reverse wheel drive.

FORWARD Modes:

Wheels Forward— Forward wheel drive only.

Tines Reverse— Forward wheel drive and reverse tine drive.

Tines Forward— Forward wheel and tine drive.



WARNING: Make certain unit is in NEUTRAL when starting the engine.

NOTE: If difficulty is encountered in moving the gear selection handle, move the tiller forward or backward slightly to allow the gears to synchronize.

CLUTCH LEVER

The clutch lever is located on the left handle. See Figure 15. Squeezing the clutch lever against the handle engages the wheel and tine drive mechanisms.

NOTE: Never engage clutch lever while shifting.

DEPTH STAKE

The depth bar controls the tilling depth. Refer to the SECTION 9: HOW TO USE YOUR TILLER on page 12.

HANDLE ADJUSTMENT (See Figure 15)

The handle may be adjusted to be in line with the tiller, or swung to the left or right so the operator is not walking in the freshly tilled soil.

To adjust the handle position from side to side, pull the handle adjustment lever back, pivot the tiller handle to desired position and release the lever.

The handle may also be adjusted to the height desired. Loosen the handle height adjustment crank a few turns. Pivot handle up or down to desired position. Tighten crank.

SECTION 8: OPERATION

NOTE: Engine is shipped without oil.



WARNING: Before operating the tiller, be certain to read SECTION 9: HOW TO USE YOUR TILLER on page 12. Use the reverse tine drive when tilling virgin ground, sod or hard soil. Use the forward tine drive when cultivating or tilling soft ground.

BEFORE STARTING

1. Service engine with oil as instructed in the separate engine manual packed with your unit.
2. Fill fuel tank with clean, fresh, lead-free, low-lead or regular grade leaded gasoline.

TO START ENGINE



WARNING: BE SURE NO ONE IS STANDING IN FRONT OF THE TILLER WHILE THE ENGINE IS RUNNING OR BEING STARTED.

1. Place gear selection lever in NEUTRAL.
2. Place the engine speed control in the START position.
3. Push primer two (2) or three (3) times (see Figure 16). Wait about two (2) seconds between each push.

NOTE: Primer may be needed to restart a warm engine after a short shutdown.

4. Stand at side of tiller. Grasp the starter handle and pull out slowly, until it pulls slightly harder. Let rope rewind slowly.
5. Pull rope with a rapid full arm stroke. Do not allow handle to snap back. Allow it to rewind slowly while keeping a firm hold on the starter handle.

NOTE: If engine fails to start after three (3) pulls, push primer two (2) times and pull starter rope again.

6. Repeat steps 4 and 5 until engine starts. Refer to engine manual for additional engine information.

NOTE: After starting engine and prior to using the tiller, be certain to check the clutch adjustment as described in "Checking the Clutch Adjustment" section of the Assembly Instructions.

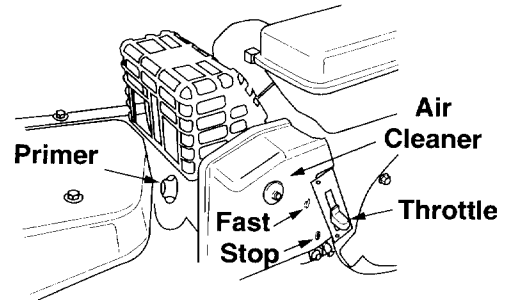


Figure 16

TO STOP ENGINE

1. Move the engine speed control lever in the STOP position.
2. Disconnect spark plug wire and ground to prevent accidentally starting while equipment unattended.

NOTE: After the first ten hours of operation, recheck the clutch adjustment. Refer to "Checking the Clutch Adjustment" section of the Assembly Instructions.

SECTION 9: HOW TO USE YOUR TILLER



WARNING: When operating the tiller for the first time, use the depth stake setting that gives 1 inch of tilling depth (second hole from the top). See Figure 17.

Tilling depth is controlled by the depth stake which can be adjusted to five different settings. See Figure 17. Adjust the side shields as shown in Figure 18, as you adjust the depth stake. Be certain spark plug wire is disconnected and grounded against the engine.

1. When using the tiller for the first time, use the second adjustment hole from the top (1" of tilling depth). See Figure 17.
2. When breaking up sod and for shallow cultivation, use the setting which gives 1" of tilling depth (second hole from the top). Place the side shields in their lowest position. For further depth, raise the depth stake and side shields and make one or two more passes over the area.
3. When tilling loose soil, depth stake may be raised to its highest position (use bottom adjustment hole) to give the deepest tilling depth. Raise the side shields to their highest position.

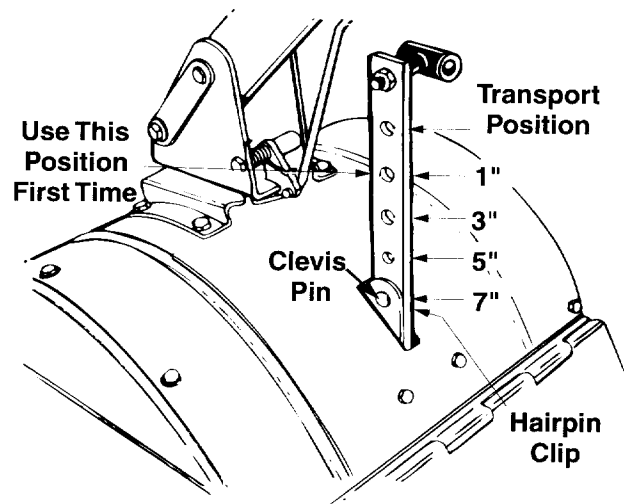


Figure 17

4. To transport tiller, lower the depth stake (use top adjustment hole).
5. To adjust the depth stake, remove the clevis pin and hairpin clip. See Figure 17. Move the depth stake to the desired setting.
6. To adjust the side shields, remove the wing nuts. See Figure 18. Place side shield in position desired. Replace wing nuts and tighten securely.

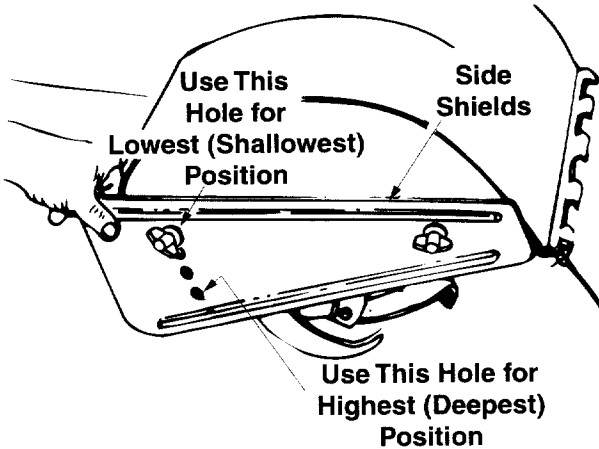


Figure 18

TO OPERATE THE TILLER:

1. Select the depth stake setting.
2. Start engine as instructed on page 12.
3. Move gear selection handle to one of the forward modes or reverse. **Use the reverse tine drive when tilling virgin ground, sod or hard soil. Use the forward tine drive when cultivating or tilling soft ground.**

IMPORTANT: When using the forward tine drive, lower the depth stake (use a shallower tilling depth) to make certain the tines do not run across the ground.



WARNING: Do not move the gear selection handle with the wheels or tines engaged. Make certain the unit is stopped completely before changing the gear selection.

4. Squeeze the clutch lever against the handle to engage the wheels and tines.

NOTE: Make certain the gear selection indicator is correctly positioned before engaging the clutch handle. If it is between gears, the engine will stall.

To transport tiller, **do not** engage the tines. Select the wheel drive only.



WARNING: Do not push down on the handles so that the wheels are lifted off the ground while using the reverse tine drive, or the tiller could move backward and cause personal injury.

For best results, it is recommended the garden be tilled twice (lengthwise, then widthwise) to pulverize the soil.

SECTION 10: ADJUSTMENTS

HANDLE ADJUSTMENT

The handle may be adjusted to be in line with the tiller, or swung to the left or right. The handle height may also be adjusted. Refer to the Control section for details of handle adjustment.

BELT TENSION ADJUSTMENT

Periodic adjustment of the belt tension may be required due to normal stretch and wear on the belt. Adjustment is needed if the tines or wheels seem to hesitate while turning, but the engine maintains the same speed.

To adjust to the tension on the belt, refer to clutch adjustment information in "Checking the Clutch Adjustment" section of the Assembly Instructions.

CARBURETOR ADJUSTMENT



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

Never make unnecessary adjustments. The factory settings are correct for most applications. If adjustments are needed, refer to the separate engine manual packed with your tiller.

SECTION 11: LUBRICATION

Transmission—The transmission is pre-lubricated and sealed at the factory. It requires no checking unless the transmission is disassembled. To fill with grease, lay the right half of the transmission on its side. Add 30 ounces of Benalene 920 grease. Assemble the left half to it. This grease can be obtained at your nearest authorized dealer. Order part number 737-0300.

Clutch Lever—Lubricate the pivot point on the clutch lever and the cable at least once a season with light oil. The control must operate freely in both directions.

Pivot Points—Lubricate all pivot points and linkages at least once a season with light oil.

Tine Shaft—Remove tines at least once a season and lubricate with oil.

Wheel Axle—Remove the wheel assemblies at least once a season and lubricate with oil.

SECTION 12: MAINTENANCE



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

ENGINE

Refer to the separate engine manual for engine maintenance instructions.

Maintain **engine oil** as instructed in the separate engine manual packed with your unit. Read and follow instructions carefully.

Service **air cleaner** every ten hours under normal conditions. Clean every hour under extremely dusty conditions. Poor engine performance and flooding usually indicates that the air cleaner should be serviced. To service the air cleaner, refer to the separate engine manual packed with your unit.

IMPORTANT: Never run your engine without air cleaner completely assembled.

The **spark plug** should be cleaned and the gap reset every 25 hours of engine operation. Spark plug replacement is recommended at the start of each tiller season; check engine manual for correct plug type and gap specification.

Clean the engine regularly with a cloth or brush. Keep the cooling system (blower housing area) clean to permit proper air circulation which is essential to engine performance and life. Be certain to remove all dirt and combustible debris from muffler area.

CLEANING THE TINE AREA

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

BELT REPLACEMENT



CAUTION: Do not use an off-the-shelf belt.

Your tiller has been engineered with a belt made of special material (Kevlar Tensile) for longer life and better performance. It should not be replaced with an off-the-shelf belt.

If belt replacement is required, order belt or belts by part number from your nearest authorized dealer. Part No. 754-0434—"V" Belt

1. Disconnect and ground the spark plug wire against the engine.

2. Remove the belt cover from the left side of the tiller as follows: See Figure 19. Remove two self-tapping screws and flat washers from the top of belt cover. Remove the hex cap nut and flat washer from the side of the belt cover. Remove the hex nut and flat washer at the bottom of the front of the cover.

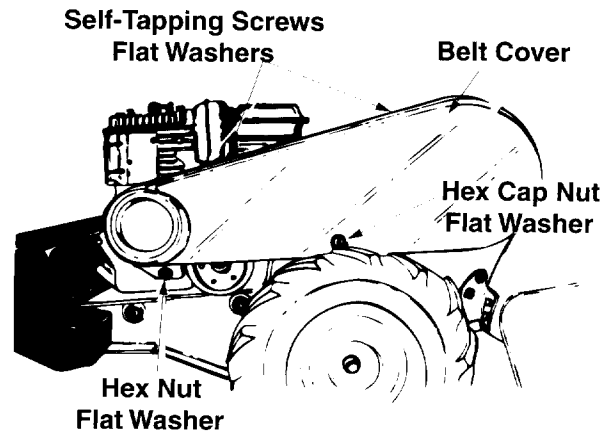


Figure 19

3. Remove the hex bolt (belt keeper) located beneath the engine pulley. See Figure 20.
4. Remove belt. Reassemble new belt, following instructions in reverse order.

NOTE: Upon reassembly, make certain the belt is routed over the idler pulley and inside of belt keepers by engine pulley. See Figure 20.

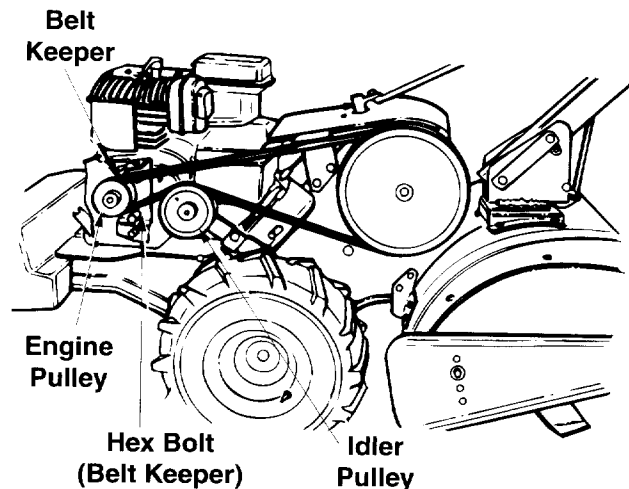


Figure 20

TIRES

Recommended operating tire pressure is approximately 20 p.s.i. (check sidewall of tire for tire manufacturer's recommended pressure). Maximum tire pressure under any circumstances is 30 p.s.i. Equal tire pressure should be maintained on both tires.

When installing a tire to the rim, be certain rim is clean and free of rust. Lubricate both the tire and rim generously. Never inflate to over 30 p.s.i. to seat beads.



WARNING: Excessive pressure (over 30 p.s.i.) when seating beads may cause tire/rim assembly to burst with force sufficient to cause serious injury.

SECTION 13: OFF-SEASON STORAGE

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. Lubricate the tiller as described in the lubrication instructions.
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.

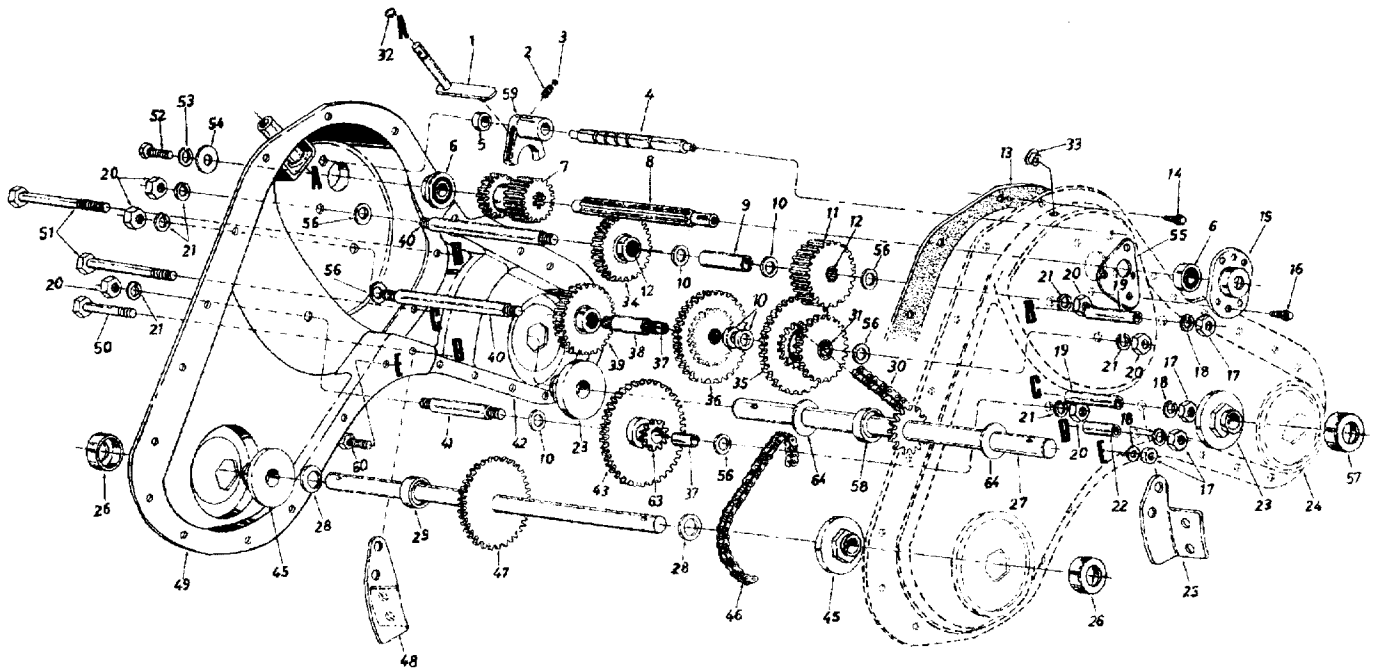
NOTE: When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rustproof the equipment. Using a light oil or silicone, coat the equipment, especially any springs, bearings and cables.

SECTION 14: TROUBLE SHOOTING GUIDE

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	Fuel tank empty, or stale fuel. Throttle control lever not in correct starting position (if so equipped). Blocked fuel line. Dirty aircleaner. Choke not in ON position. Spark plug wire disconnected. Faulty spark plug. Engine flooded.	Fill tank with clean, fresh gasoline. Fuel will not last over thirty days unless a fuel stabilizer is used. Move throttle lever to start position. Clean fuel line. Refer to the engine manual packed with your unit. Move switch to ON position. Connect wire to spark plug. Clean, adjust gap or replace. Refer to the engine manual packed with your unit.
Engine runs erratic	Unit running on CHOKE. Spark plug wire loose. Blocked fuel line or stale fuel. Vent in gas cap plugged. Water or dirt in fuel system. Dirty air cleaner. Carburetor out of adjustment.	Move choke lever to OFF position. Connect and tighten spark plug wire. Clean fuel line; fill tank with clean, fresh gasoline. Fuel will not last over thirty days unless a fuel stabilizer is used. Clear vent. Drain fuel tank. Refill with fresh fuel. Refer to the engine manual packed with your unit. Refer to the engine manual packed with your unit.
Engine over-heats	Engine oil level low. Dirty air cleaner. Air flow restricted. Carburetor not adjusted properly.	Fill crankcase with proper oil. Refer to the engine manual packed with your unit. Refer to the engine manual packed with your unit. Adjust carburetor as instructed in separate engine manual.
Tines do not engage	Foreign object lodged in tines. Tine clevis pin(s) missing. Pulley and idler not in correct adjustment. Not shifting properly. Control cable not adjusted properly. Belt worn and/or stretched.	Dislodge foreign object. Replace tine clevis pin(s). Take unit to authorized service dealer. Refer to Controls section of operator's manual for proper shifting procedures. Adjust control cable (see assembly instructions). Replace belt.
Tines skip over ground	Improper rotation.	Forward rotation should only be used on soil that has already been tilled, not on virgin soil.
Wheels do not engage	Clevis pin missing. Tiller is not being shifted properly. Control cable not adjusted properly. Belt worn and/or stretched.	Replace clevis pin. Refer to Controls section of operator's manual for proper shifting procedures. Adjust control cable (see assembly instructions). Replace belt.

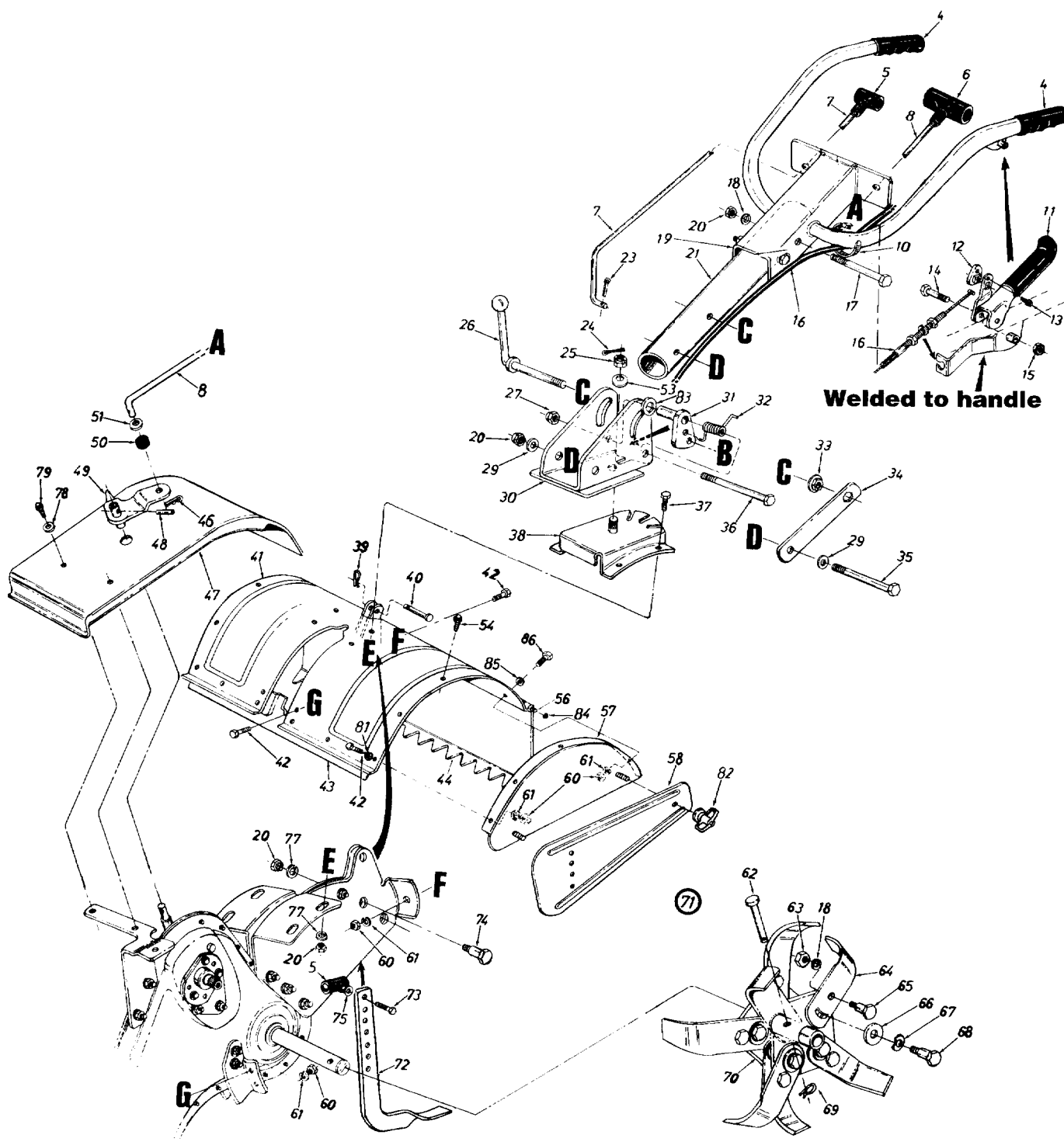
Note: For repairs beyond the minor adjustments above, contact your local authorized service dealer.

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REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	784-0171A	Shifting Bracket Ass'y.	32	716-0865	Snap Ring
2	732-0496	Compression Spring .50" Lg.	33	726-0277	Taper Cap Plug
3	741-0862	Ball Detent .250" Dia.	34	717-0854A	N Spur Gear 30T 12/16" I.D.
4	738-0645	Detent Shaft 1/2" Dia.	35	717-0874	30/44T Gear Ass'y. Comp.
5	750-0664	Spacer .505" I.D. x 88" O.D.	36	717-1470	Spur Gear 44T/11T
6	741-0155	Ball Brg. .62" I.D. x 1.38"	37	741-0181	Sleeve Bearing
7	717-0851	Spur Gear 16T (Input)	38	717-0835	Gear Hub 3/4" I.D. x 3" Lg.
8	717-0852	Input Spline Shaft 7/8"	39	717-0855A	N Spur Gear 30T 1.0" I.D. x 1/2" W
9	750-0651	Spacer .657" I.D. x 2.85" Lg.	40	738-0647	Jack Shaft 5/8" Dia. x 5"
10	736-0187	FI-Wash. .640" I.D. x 1.24"	41	738-0648	Jack Shaft 5/8" Dia. x 2.38"
11	717-0857A	N Spur Gear 30T 7/8" I.D.	42	786-0126	Trans. Housing Ass'y.—R.H.
12	741-0478	Needle Bearing 5/8" I.D.	43	717-1471	Spur Gear 44T
13	721-0211	Gasket—Trans. Hsg.	45	741-0421	Wheel Brg. .752" x 2.5"
14	710-0599	Hex S-Tap Scr. 1/4-20 x .5"	46	713-0367	#420 Chain 1/2 Pitch x 50 Links—
15	784-0211	1-3/8" Dia. Bearing Housing	47	611-0020	Wheel Shaft Ass'y. 15.6"
16	710-0642	Hex TT-Tap Scr. 1/4-20 x .75"	48	784-0192	Bracket Gear Case—R.H.
17	712-0267	Hex Nut 5/16-18 Thd.*	49	686-0074	R.H. Housing Ass'y.
18	736-0119	L-Wash. 5/16" I.D.*	50	710-0116	Hex Bolt 5/16-18 x 2"
19	750-0662	Spacer 1.56" Lg.	51	710-0378	Hex Bolt 5/16-18 x 2.5"
20	712-0378	Hex Nut 7/16-20 Thd.	52	710-0513	Hex Bolt 1/4-20 x .62" Lg.
21	736-0407	Bell-Wash. .45" I.D. x 1.0"	53	736-0329	L-Wash. 3/8" I.D.*
22	750-0661	Spacer 1.015" Lg.	54	736-0176	FI-Wash. 1/4" I.D. x .93" O.D.
23	741-0420	Tine Shaft Brg. 1.002 x 2.50	55	786-0065	Gear Positioner Bracket
24	786-0127	Trans. Housing Ass'y.—L.H.	56	736-0406	FI-Wash. 7/16" I.D. x 1-3/8"
25	784-0193	Bracket Gear Case—L.H.	57	721-0378	Seal 1" Shaft
26	721-0379	Seal .75" Shaft	58	750-0570	Spacer 1" I.D. x 2" O.D.
27	611-0021	Tine Shaft Ass'y. 1" O.D.	59	717-0853	Shifting Fork
28	736-0351	FI-Wash. .76" I.D. x 1.5" O.D.	60	710-0376	Hex Bolt 5/16-18 x 1" Lg.*
29	750-0671	Spacer .75" I.D. x .50" Lg.	63	784-0162A	10T Sprocket Ass'y.
30	713-0226	Chain #50 5/8 Pitch x 52 Links—Endless	64	736-0163	Thrust Wash. 1.03" I.D. x 1.62" O.D.
31	741-0488	Needle Bearing 5/8" I.D.	—	737-0300	Grease Benelene 920
			—	686-0098	Gear Case Assembly Complete

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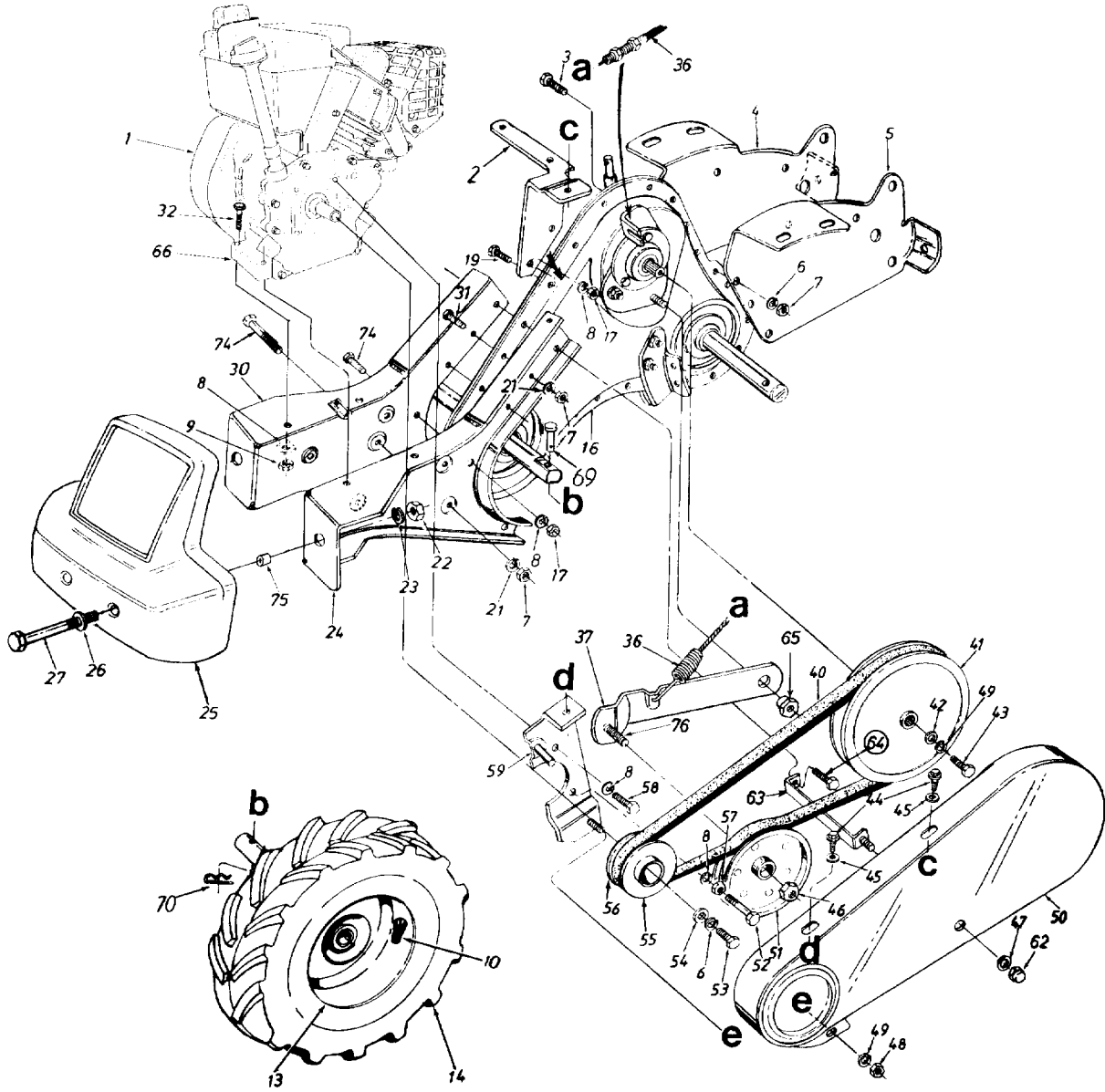


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REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
4	720-0180	Handle Grip	43	784-0210	Bracket Reinforcement—18"
5	720-0210A	Small "T" Knob	44	786-0113	Tine Shield Hinge Flap
6	720-0209	Large "T" Knob	46	714-0104	Intern. Cotter Pin 5/16" Dia.
7	747-0666	Clutch Rod	47	784-0208B	Shift Cover
8	747-0664	Control Rod 37" Lg.	48	715-0120	Spring Roll Pin 3/16" Dia.
10	725-0157	Cable Tie-Self Clinching	49	784-0173	Shifting Crank Ass'y.
11	784-0202B	Clutch Grip Ass'y.—L.H.	50	735-0127	Rubber Washer .33" I.D.
12	746-0605	Barrel Cable Hold Down	51	736-0133	FI-Wash. .4" I.D. x 1.25" O.D.
13	710-0919	Hex B-Tap Scr. #10 x .44" Lg.	53	736-0317	Bell-Wash. .63" I.D. x 1.25"
14	710-0331	Hex Bolt 3/8-24 x 2.25" Lg.*	54	710-0607	Hex Wash. Tap Scr.
15	712-0262	Hex Jam L-Nut 3/8-24 Thd.	56	747-0432	Tiller Flap Rod
16	746-0908	Clutch Control Cable 46" Lg.	57	784-0179A	End Cover Ass'y.
17	710-0194	Hex Bolt 3/8-16 x 3.00" Lg.*	58	15390	Side Shield
18	736-0217	L-Wash. 3/8" I.D.—H.D.	60	712-0267	Hex Nut 5/16-18 Thd.*
19	684-0109	Handle Ass'y.	61	736-0119	L-Wash. 5/16" I.D.*
20	712-0798	Hex Nut 3/8-16 Thd.*	62	711-0415	Clevis Pin .375" Dia.
21	784-0189	Handle Tubing Ass'y.	63	712-0355	Hex Nut 3/8-24 Thd.*
23	714-0507	Cotter Pin 3/32" x .750"	64	742-0305	13" Dia. Articulating Tine
24	714-3021	Cotter Pin 3/32" Dia. x 1.25" Lg.*	65	738-0689	Shld. Bolt 1/2" Dia. x .175
25	712-0386A	Hex Slotted Nut 5/8-18 Thd.	66	736-0208	FI-Wash. .51" I.D. x 1.50"
26	784-0190	Handle Adj. Crank	67	736-0253	Bell-Wash. .515" I.D. x 1.14"
27	712-0375	Hex Cent. L-Nut 3/8-16 Thd.	68	738-0688	Shld. Bolt 1/2" Dia. x .320
29	736-0105	Bell-Wash. .4" I.D. x .87" O.D.	69	714-0149B	Intern. Cotter Pin
30	684-0263A	Handle Pivot Bracket	70	784-0160	Tine Adapter Ass'y. 18"
31	748-0375	Handle Link	71	784-0205	Tine Ass'y. Comp. 18"
32	732-0493	Spring Handle Adj. (Torsion)	72	786-0120	Depth Bar Ass'y.
33	712-0379	Hex Flange Nut 3/8-24 Thd.	73	710-0253	Hex Bolt 3/8-16 x 1" Lg.*
34	784-0191	Bracket Hex Nut Retainer	74	738-0148	Shld. Bolt 1/2" I.D. x .62" Lg.
35	710-0644	Hex Bolt 3/8-16 x 3.25" Lg.*	75	736-0117	FI-Wash. 3/8" I.D. x 5/8" O.D.
36	710-0521	Hex Bolt 3/8-16 x 3.00" Lg.—Gr. 8	77	736-0169	L-Wash. 3/8" I.D.*
37	710-3097	Hex Bolt 3/8-16 x 1" Lg.*	78	736-0463	FI-Wash. .281" I.D. x .62"
38	686-0071	Handle Positioner Brkt. Ass'y.	79	710-0599	Hex Wash. Self-Tap Scr. 1/4-20 x .50" Lg.
39	714-0149B	Intern. Cotter Pin	82	712-0421	Plastic Knob 5/16-18 Thd.
40	711-0415	Clevis Pin .375" Dia.	83	736-3004	FI-Wash. .406" I.D. x .875" O.D.
41	784-0156	Tine Shield 18"	84	726-0106	End Cap
42	710-0376	Hex Bolt 5/16-18 x .1" Lg.*	85	736-0264	Flat Washer .33 x .630 x .06
			86	738-0849	Shoulder Screw

*For faster service obtain standard nuts, bolts and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

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REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	—	Engine	42	736-0176	Fl-Wash. 1/4" I.D. x .93" O.D.
2	786-0123	Shift Cover Mounting Brkt.	43	710-0412	Hex Bolt 1/4-28 x .75" Lg.
3	710-0253	Hex Bolt 3/8-16 x 1.00" Lg.*	44	710-0599	Hex Wash. Hd. S-Tap Scr 1/4-20 x .50" Lg.
4	784-0178	Tine Shield Mtg. Brkt.—R.H.	45	736-0463	Fl-Wash. .281" I.D. x .625"
5	784-0177	Tine Shield Mtg. Brkt.—L.H.	46	712-0266	Jam Cnter L-Nut 3/8-16 Thd.
6	736-0169	L-Wash. 3/8" I.D.*	47	736-3020	Fl-Wash. .266" I.D. x .625" O.D.
7	712-0798	Hex Nut 3/8-16 Thd.*	48	712-0287	Hex Nut 1/4-20 Thd.*
8	736-0119	L-Wash. 5/16" I.D.*	49	736-0329	L-Wash. 1/4" I.D.*
9	712-0267	Hex Nut 5/16-18" Thd.*	50	784-0158-0665	Belt Cover
10	734-0255	Air Valve	51	756-0405	Fl-Idler w/Flanges 3.75" O.D.
13	634-0108	Wheel Rim Ass'y. Only	52	710-0409	Hex Bolt 5/16-24 x 1.75**
14	634-0107	L.H. Wheel Ass'y. Comp.	53	710-0152	Hex Bolt 3/8-24 x 1.00" Lg.*
	634-0106	R.H. Wheel Ass'y. Comp.	55	756-0972	Outer Engine Pulley Half
	734-0808	Tire Only	56	756-0971	Inner Engine Pulley Half
16	686-0098	Gear Case Ass'y. Comp.	57	712-0123	Hex Nut 5/16-24 Thd.*
19	710-0376	Hex Bolt 5/16-18 x 1" Lg.*	58	710-0237	Hex Bolt 5/16-24 x .62" Lg.*
22	712-3066	Hex Nut 1/2-20	59	686-0065	Belt Keeper Ass'y.
23	736-0921	L-Wash. 1/2" I.D.*	62	712-0392	Hex Cap Nut 1/4-28 Thd.
24	686-0079A	Engine Mounting Rail—L.H.	63	686-0064	Belt Cover Brkt. Ass'y.
25	731-1595	Counter Weight	64	710-0376	Hex Bolt 5/16-18 x 1" Lg. (Gr. 5)
26	736-0179	Fl-Wash. .510" I.D. x 1.0"	65	738-0876	Shld. Nut
27	710-0506	Hex Bolt 1/2-20 x 5.5" Lg.*	66	717-0522	Engine Spacer Block
30	686-0080A	Engine Mounting Rail—R.H.	69	711-1017	Clevis Pin
32	710-0176	Hex Bolt 5/16-18 x 2.75**	70	714-0104	Hairpin Clip
36	746-0908	Clutch Control Cable 46" Lg.	74	710-0602	Screw 5/16-18 x 1"
37	786-0064	Idler Bracket	75	750-0194	Hub
40	754-0434	"V"-Belt	76	710-0723	Hex Cap Scr. 2/8-16: 1.25 Lg.
41	756-0634	Fl-Pulley 8" O.D.			

*For faster service obtain standard nuts, bolts and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

NOTES

NOTES

MANUFACTURER'S LIMITED WARRANTY FOR:



For TWO YEARS from the date of retail purchase within the United States of America, its possessions and territories, MTD PRODUCTS INC will, at its option, repair or replace, for the original purchaser, free of charge, any part or parts found to be defective in material or workmanship. This warranty covers units which have been operated and maintained in accordance with the operating instructions furnished with the unit, and which have not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance or alteration.

Normal wear parts or components thereof are subject to separate terms as noted below in the "No Fault Ninety Day Consumer Warranty" clause.

All normal wear part failures will be covered on this product for a period of 90 days regardless of cause. After 90 days, but within the two year period, normal wear parts failures will be covered ONLY IF caused by defects in material or workmanship of OTHER component parts. Normal wear parts are defined as batteries*, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates and tires.

How to obtain service: Warranty service is available, with proof of purchase, through your local authorized service dealer. To locate the dealer in your area, please check the yellow pages or contact the Customer Service Department of MTD PRODUCTS INC, P. O. Box 368022, Cleveland, Ohio 44136-9722.

Phone 1 (800) 800-7310. The return of a complete unit will not be accepted by the factory unless prior written permission has been extended by the Customer Service Department of MTD PRODUCTS INC.

Transportation charges: Transportation charges for the movement of any power equipment unit or attachment are the responsibility of the purchaser.

Units exported out of the United States: MTD PRODUCTS INC does not extend any warranty for

products sold or exported outside of the United States of America, its possessions and territories, except those sold through MTD PRODUCTS INC's authorized channels of export distribution.

Other Warranties:

1. The engine or component parts thereof carry separate warranties from their manufacturers. Please refer to the applicable manufacturer's warranty on these items.
2. *Batteries are covered by a 90-day replacement warranty.
3. Log splitter pumps, valves and cylinders or component parts thereof are covered by a one year warranty.
4. All other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular purpose, are hereby expressly disclaimed in their entirety.
5. The provisions as set forth in this warranty provide the sole and exclusive remedy of MTD PRODUCTS INC's obligations arising from the sales of its products. MTD PRODUCTS INC will not be liable for incidental or consequential loss or damage.

How state law relates to this warranty: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Certain disclaimers are not allowed in some states and therefore they may not apply to you under all circumstances.

NOTE: This warranty does not cover routine maintenance items such as lubricants, filters, blade sharpening and tune-ups, or adjustments such as brake adjustments, clutch adjustments or deck adjustments. Nor does this warranty cover normal deterioration of the exterior finish due to use or exposure.