



Operator's Manual Rear Tine Rotary Tiller

MODEL No. P-RTT-196MD-[E]
P-RTT-196MD

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IMPORTANT:

Thank you for purchasing this Powermate® Tiller.

This manual provides complete instructions for safely operating and maintaining your Tiller. Read and save these instructions. Refer to this manual each time before using your Tiller.

Record the following for future reference:

Mfg. Date Code: _____

Date of Purchase: *Attach a copy of your sales receipt.*

Consumer Toll Free Number: 1-800-737-2112

Refer to the website for electronic manual and parts book.
www.gardnerinc.com

WARNING

This product contains one or more chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.



If you have a question or problem...

CALL TOLL FREE: 1-800-737-2112

KEEP THIS MANUAL FOR FUTURE REFERENCE




Safety Definitions

• Save these instructions

Important Safety Information











Safety Alert Symbols

The following symbols are used on the product and in this manual to alert the operator of potential safety hazards. Read them carefully, and understand their meaning.






 DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor/moderate injury or equipment/property damage.

The following symbols can be found on your tiller. Carefully read and understand their meaning.

Safety Warning Symbols

	Indicates WARNING, DANGER, or CAUTION.		Wear eye protection complying with ANSI Z87.1 and hearing protection.
	Read operator's manual before operating this machine. Failure to follow directions could result in serious injury.		Disconnect spark plug wire when not in use or before servicing, cleaning, or performing maintenance on the unit.
	Thrown objects. Remove all rocks, stones, and foreign objects which could be thrown by machine		Engine exhaust contains carbon monoxide, an odorless and deadly gas. NEVER run unit indoors or in a poorly ventilated area.
	Do not use if children or bystanders are present.		Do NOT touch hot muffler or cylinder. These parts are extremely hot from operation and may remain hot for a short time after operation.
	Rotating tines can cause serious injury. Keep hands, feet, and clothing away.		To reduce risk of fire, clean spilled gas and oil and keep unit free from debris. Gasoline is extremely flammable. Allow machine to cool before refueling.

Control and Operating Symbols

	Oil Fill Location Do Not Overfill		Fuel ON/OFF Valve Move Fuel Valve lever to the right to operate the tiller.
	Clutch Lever Depressing the upper lever engages the tines and drive wheels for the tilling operation. Depressing the lower engages the tines and drive wheels for reversing the tiller.		Choke Lever Move Choke Lever to the left for cold engine starting. Move Choke Lever to the right once engine is started or for warm engine starting.
	Throttle Control Move throttle lever to the left to increase engine speed. Move throttle lever to the right to decrease engine speed.		

Important Safety Information

• Save all instructions

RESPONSIBILITY OF OPERATOR

1. Carefully read and follow these safety instructions. Failure to do so can result in serious injury.
2. Know your product. Read and understand this manual before use. Compare the illustrations to unit. Learn location and function of all controls. Thoroughly understanding the unit before use will result in the best performance and safety.
3. Follow all instructions when assembling the unit. If the unit was purchased in assembled condition, the operator must check the unit carefully to make sure it was assembled according to the instructions in the manual before use.
4. Regularly inspect the tiller. Make sure parts are not bent, damaged, or loose.
5. Use this equipment for its intended purpose only.
6. Operate the unit only with guards, shields, and other safety items in place and working correctly.
7. Service the unit only with authorized or approved replacement parts.
8. Complete all unit maintenance and adjustments according to the instruction in this manual.

WARNING

Look for this symbol to point out important safety precautions. It means: “Attention! Become Alert! Your Safety Is Involved.”

WARNING

Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

WARNING

To prevent accidental starting when setting up, transporting, adjusting or making repairs, always disconnect spark plug wire and put wire where it cannot contact the spark plug.

PREPARATION SAFETY

WARNING

- Read, understand, and follow all instructions on the machine and in this manual. Be thoroughly familiar with the controls and the proper use of the tiller before starting. Know how to stop the engine quickly.
- Familiarize yourself with all the safety and operating decals on this equipment.

WARNING

- Thoroughly inspect the area where the tiller is to be used and remove all foreign objects. Your equipment can propel small objects at high speed causing personal injury or property damage. Stay away from breakable objects, such as house windows, auto glass, greenhouses, etc.
- Check that all nuts and bolts are tight and equipment is in good condition before each use.

WARNING

- Always check that the flameout wire is connected before starting engine.

OPERATION SAFETY

- Never allow children or young teenagers to operate the tiller.

WARNING

- Keep area of operation clear of all bystanders, particularly small children and pets.
- Only allow responsible individuals, who are familiar with the instructions, to operate the tiller.

WARNING

- Do not operate the tiller while under the influence of alcohol, drugs, or other medication which can cause drowsiness or affect your ability to operate this machine safely.
- Do not use this machine if you are mentally or physically unable to operate the machine safely.
- Always wear ANSI compliant safety goggles or safety glasses with side shields when operating tiller to protect your eyes from foreign objects, which can be thrown from the unit.

Important Safety Information (Continued)

- Save all instructions

OPERATION SAFETY (Continued)

- Wear appropriate clothing such as a long sleeved shirt or jacket. Also wear long trousers or slacks. Do NOT wear shorts. Do NOT wear loose clothing, which could get caught in this equipment.
- Always wear work gloves and sturdy footwear such as leather work shoes or short boots. These will protect ankles and shins from small sticks, splinters, and other flying debris, and improve traction.
- It is advisable to wear protective headgear to protect against being struck by small flying particles, or being struck by low hanging branches, twigs, or other objects, which may be unnoticed by the operator.

⚠ WARNING

- 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 or traffic.

⚠ WARNING

- Exercise caution to avoid slipping or falling. Always be sure of your footing; keep a firm hold on the handle and walk; never run. Never operate the tiller at high transport speeds on slippery surfaces.
- Never operate the tiller without good visibility or light.

⚠ DANGER

- Do not run the engine indoors or inside a closed area. The exhaust fumes are dangerous, containing CARBON MONOXIDE, an ODORLESS AND DEADLY GAS.
- Never leave the tiller unattended when the engine is running. Stop the engine and make sure all moving parts have stopped. Remove the wire from the spark plug.
- Watch for holes, ruts, bumps, or other rough ground. Tall grass can hide obstacles.
- Always look behind and down and use caution when using reverse or pulling the tiller towards you.
- Never attempt to start the tiller unless both wheels are in the locked position. This acts as a brake for the tiller. Always start the tiller on the level surface.

⚠ WARNING

- Disengage clutch lever and stop engine before leaving the tiller in operating position. Wait until the tines come to a complete stop before removing debris or making any adjustments to the tiller.

⚠ CAUTION

- Do not attempt to till hard soil, till too deep or till at too fast a rate that can overload the tiller.
- If the tiller should start to vibrate abnormally, stop the engine, disconnect the spark plug wire and prevent it from touching the spark plug. Check immediately for the cause. Vibration is generally a warning of trouble.

FUEL SAFETY

⚠ WARNING

- Gasoline is extremely flammable, and gasoline vapors can explode if ignited. Handle with care.
- Use an approved container.
- Check fuel supply before each use, allowing space for expansion as the heat of the engine and/or sun can cause fuel to expand.
- Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
- Never remove gas cap or add fuel with the engine running. Allow engine to cool before refueling.

⚠ WARNING

- Do not smoke while refueling.
- After refueling, replace fuel tank cap securely and wipe up spilled fuel.
- Never store fuel or tiller with fuel in the tank inside a building where fumes may reach an open flame.
- Never fill gasoline containers or the tiller fuel tank inside of a vehicle or in a truck bed. Accidental electrical static discharge can ignite fuel vapors which could result in serious injury or death.

Important Safety Information (Continued)

- *Save all instructions*

STORAGE SAFETY

- Always refer to the operator's manual instructions for important details if the tiller is to be stored for an extended period.
- Never store the tiller with fuel in the fuel tank inside a building where ignition sources are present such as water heaters, space heaters, clothes dryers, etc.
- To reduce fire hazard, keep tiller free of grass, leaves, or other debris build-up.
- Allow the engine to cool before storing in any enclosure.

REPAIR, MAINTENANCE, AND ADJUSTMENT SAFETY

- After striking a foreign object, stop the engine. Remove the wire from the spark plug and keep the wire away from the plug to prevent accidental starting. Thoroughly inspect the tiller for any damage. If damaged, have the equipment repaired by a trained technician before restarting and operating.

⚠ WARNING

- Stop the engine before cleaning, repairing, or inspecting the unit. Make sure all moving parts have stopped. Let the engine cool, disconnect the spark plug wire and move it away from the spark plug.
- Never attempt to make any adjustments while the engine is running except when specifically recommended by the manufacturer.
- Keep the tiller in safe working condition. Check all fasteners at frequent intervals for proper tightness.
- When servicing or repairing the tiller, do not tip the machine over or up unless specifically instructed to do so in this manual. Service and repair procedures can be done with the tiller in an upright position. Some procedures will be easier if the machine is lifted on a raised platform or working surface.
- Use only original equipment or authorized replacement parts.

⚠ WARNING

- Never tamper with safety devices. Check their proper operation regularly.
- Do not change the engine governor setting or over-speed engine.
- Clean and replace safety and instruction decals as necessary.
- To guard against engine over-heating, always have engine debris filter mounted and clean.

CHILDREN SAFETY

⚠ WARNING

- Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the tiller and the tilling activity.
- Keep children out of the tilling area and under the watchful care of a responsible adult.
- Never assume that children will remain where you last saw them.
- Be alert and turn tiller off if children enter the area.
- Before and while moving backwards, look behind and down for small children.
- Never allow children to operate the tiller.
- Use extra care when operating near blind corners, shrubs, trees, or other objects that may obstruct vision.

Product Specifications

• Save all instructions

Unit Weight	120 lb (79kg)	Spark Plug Gap	0.028-0.031 in (0.7-0.8 mm)
Tilling Width	18 in (457mm)	Engine Type	OHV 4-stroke
Tilling Depths	up to 6"	Engine Displacement	196cc
Tine Diameter	11 in (279mm)	Engine Speed (Full Throttle)	3600rpm
Gasoline Type	Regular Unleaded/88 Octane (min.)	Engine Speed (Idle)	2100rpm
Gasoline Capacity	3.5 qt. (3.3L)	Torque Rating	9.6 ft-lbs gross torque per SAE J1940
Engine Oil Type (API SG-SL)	10W-30 is recommended for all service temperatures. See page (8) for additional information.)	Bore Diam. x Stroke	2.7 x 2.13 in (68 x 54mm)
Engine Oil Capacity	20 oz	Intake Valve Clearance	0.004 - 0.006 in (0.10 - 0.15mm)
Transmission Oil Type	SAE 90W-140	Exhaust Valve Clearance	0.006 - 0.008 in (0.15 - 0.20mm)
Transmission Oil Capacity	20 oz (0.6L)	Angle of Ignition	25 degrees
Spark Plug	Torch F7RTC	Tire Size	13x5.00-6 Directional Tractor Tread
		Tire Pressure	20 psi min/30 psi max

Parts & Features

1. Tines
2. Tine Shield
3. Wheels
4. Wheel Lock Pins
5. Muffler
6. Air Filter
7. Recoil Starter Handle
8. Spark Plug / Spark Plug Wire
9. Depth Regulator
10. Throttle Control
11. Fuel ON/OFF Valve
12. Choke Control
13. On/Off Switch
14. Fuel Tank Cap
15. Oil Dipstick
16. Forward Lever
17. Reverse Lever
18. Tine Shield Side Guards
19. Front Handle

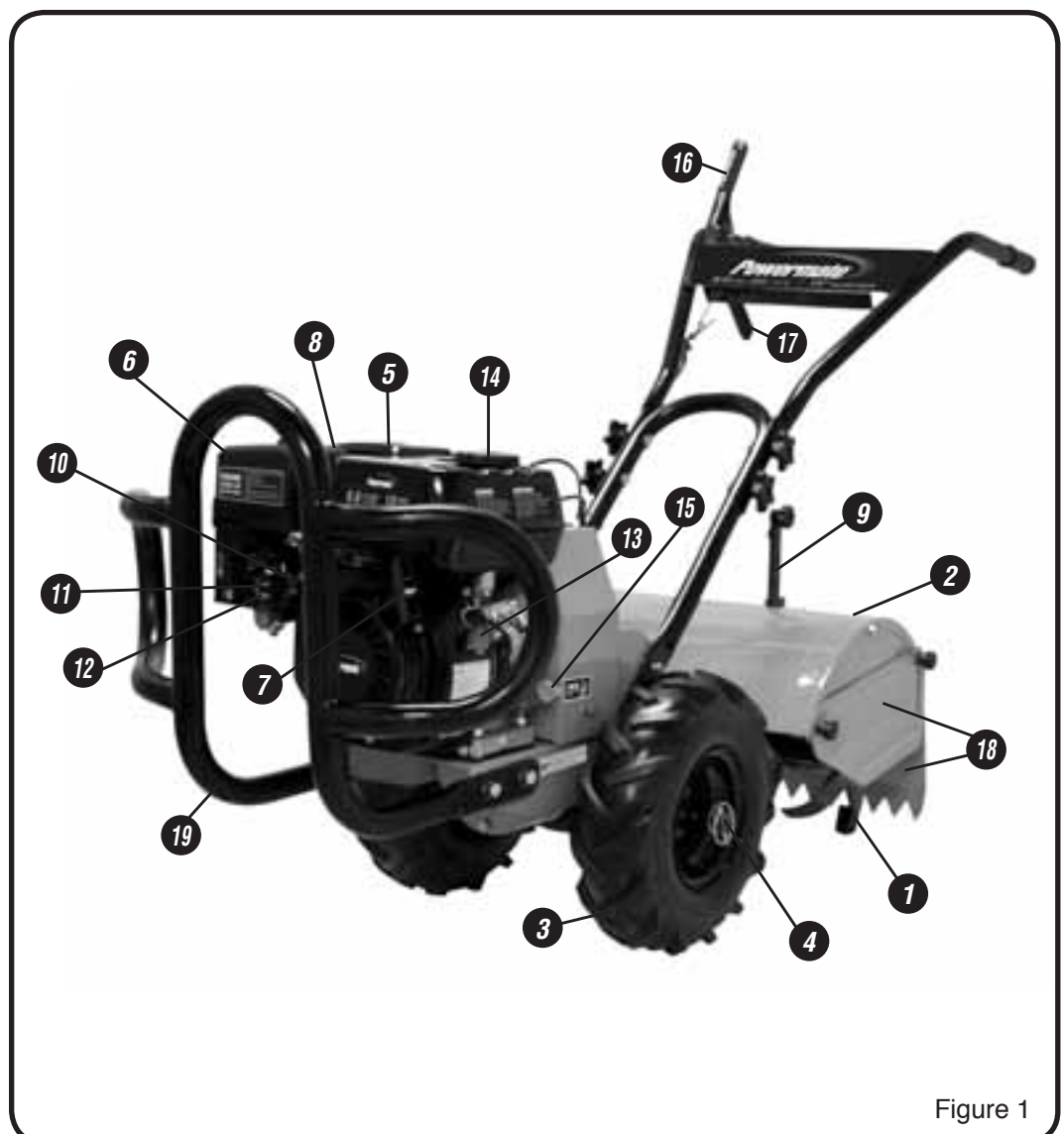


Figure 1

Safety Decals

• Save all instructions

This tiller has been designed and manufactured to provide you with the safety and reliability you would expect from an industry leader in outdoor power equipment manufacturing.

Although reading this manual and the safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively, we have placed several safety labels on the tiller to remind you of this important information while you are operating the unit.

These important safety labels are illustrated below, and are shown here to help familiarize you with the location and content to the safety messages you will see as you perform normal tilling operations. Please review these labels now. If you have any questions regarding their meaning or how to

comply with these instructions, reread the complete safety instruction text on the preceding pages, or contact your local dealer.

Should any of the safety labels become unreadable because of being worn, faded, or otherwise damaged during the use of your tiller, please contact your local authorized dealer to order replacement label.

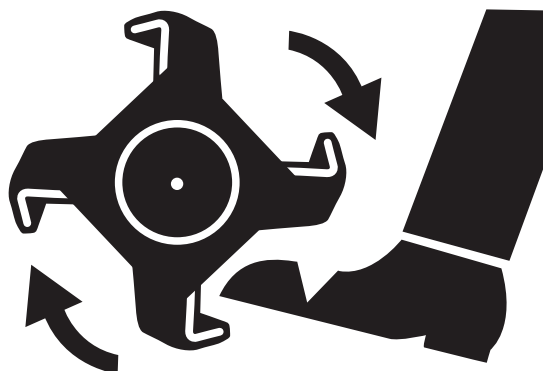
The safety labels are easily applied, and will act as a constant visual reminder to you and others who may use the equipment. Following the safety instructions is necessary for safe, effective operation of your tiller.

⚠ WARNING

TO AVOID SERIOUS INJURY

- Read operators manual(s).
- Know the location and function of all controls.
- Keep all shields and guards in place and working.
- Never allow children or uninstructed adults to operate machine.
- Shut off engine and disconnect the spark plug before manually unclogging tine or making repairs.
- Keep bystanders away from the machine.
- Keep away from rotating parts while engine is running.
- Use extreme caution when reversing or pulling the machine towards yourself.
- Gasoline is flammable and explosive.

⚠ DANGER



KEEP HANDS, FEET, AND CLOTHING AWAY FROM ROTATING TINES.

CONTACT WITH ROTATING TINES MAY RESULT IN SERIOUS INJURY.

FORWARD

REVERSE

⚠ WARNING

FOR OUTDOOR USE ONLY

RISK OF FIRE. DO NOT ADD FUEL WHEN PRODUCT IS OPERATING. ALLOW ENGINE TO COOL COMPLETELY BEFORE REFUELING. RISK OF ASPHYXIATION. USE THIS PRODUCT ONLY IN A WELL VENTILATED AREA.

⚠ MISE EN GARDE

POUR USAGE EXTÉRIEUR SEULEMENT

RISQUE D'INCENDIE : N'AJOUTEZ PAS LE CARBURANT QUAND LE PRODUIT FONCTIONNE. NE PAS REMPLIR LE RÉSERVOIR DE CARBURANT DANS UN ESPACE CLOS NI PENDANT LE FONCTIONNEMENT DE L'APPAREIL. RISQUE D'ASPHYXIE : UTILISER DANS UNE ZONE BIEN AÉRÉE.

⚠ ADVERTENCIA

SOLAMENTE PARA USO EN EXTERIORES

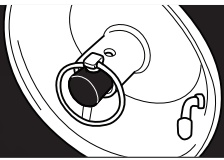
RIESGO DE FUEGO: NO AGREGUE PRODUCTO ESTÁ FUNCIONANDO. PERMITA QUE EL MOTOR SE ENFRIE COMPLETAMENTE DE LLENARLO DE COMBUSTIBLE DE NUEVO. RIESGO DE ASFIXIA. UTILICE EN ÁREAS CON BUENA VENTILACIÓN.

Safety Decals (Continued)

• Save all instructions

TO ENGAGE TRANSPORT MODE

1. Remove pin
2. Slide wheel *towards* frame
3. Insert pin through the hole on the wheel axle and rotate ring to secure



! WARNING

Do not start engine unless belt cover is attached. Keep hands, feet, and clothing away from moving belts and pulleys. Failure to comply could result in injury. See owner's manual for full safety instructions.

ENGINE START-UP INSTRUCTIONS

1. Insert the locking pin to secure the wheels in locked position.
2. Turn the Engine Switch to the "on" position.
3. Open the Fuel Valve.
4. Close the Choke Lever.
5. Adjust the Throttle Control to the high speed.
6. Pull the Starter Handle until engine starts.
7. After starting the engine, open the Choke Lever.

! WARNING

Refer to the Troubleshooting and Belt Tension Adjustment sections of the Operator's Manual if tines continue to rotate when the clutch lever is released or do not rotate when the clutch lever is depressed.

Assembly

• Save all instructions



If you need assistance or find any parts missing, CALL TOLL FREE: 1-800-737-2112.

Read and follow the assembly instructions. Do not discard any parts or materials until the unit is assembled. References to the right or left side of the tiller are from the viewpoint of the operator's position behind the tiller.

! WARNING

Do not operate tiller if it is damaged or not completely and correctly assembled.

! WARNING

Before doing any assembly or maintenance to the unit, remove the wire from the spark plug.

! WARNING

Always wear ANSI compliant safety glasses with side shields while assembling the tiller.

The following components will be found in the carton. Quantities shown in ().

1. (1) Tiller
2. (1) Handle Assembly
3. (1) Front Handle
4. (2) Tine Assembly
5. (1) Tine Guard Assembly
6. (1) Depth Regulator
7. (2) M10x50mm bolts and lock nuts for assembling stationary side shields
8. (1) Tiller Operator's Manual
9. (1) Engine Manual
10. (1) Bottle of SAE 30 Engine Oil
11. (1) Parts bag containing the following
 - a. (1) Spark plug wrench
 - b. (2) Combination wrenches
 - c. (4) M8x25mm bolts, flat washers, lock nuts for assembling front carry handle
 - d. (2) M10x25mm flange head bolts, lock washers and nuts for assembling lower handle
 - e. (4) M8x60mm saddle bolts and washers for assembling upper handle
 - f. (4) Handle knobs for assembling upper handle
 - g. (2) Wheel locking pins
 - h. (4) M6x25mm flange head bolts, flat washers and lock nuts
 - i. (2) M10x50mm bolts and lock nuts for assembling tines
 - j. (1) Detent pin
 - k. (4) M8 wing nuts for assembling rotating side shields.

Assembly (Continued)

• Save all instructions



If you need assistance or find any parts missing, CALL TOLL FREE: 1-800-737-2112.

A How to Remove Tiller from Carton

1. Remove all parts and packaging components.
2. Use a utility knife to cut all 4 vertical edges and lay the side panels flat around the tiller.
3. Remove any remaining packaging.
4. Remove the two bolts going thru the packing frame and wheel axle holes.
5. Remove the two bolts located underneath the engine that go thru the packing frame and thru the tiller base frame.
6. With a helper, remove the tiller from the packing frame.

B Assembly Instructions

The tiller comes fully assembled except for a few parts. The following instructions will help you complete the tiller assembly.

INSTALL THE WHEELS (See Figure 2)

1. Remove the locking pins from the wheel hubs.
2. The tiller wheels are directional. For best performance install the wheels with the tire thread facing the direction as shown.
3. Slide the wheel hub onto the wheel axle.
4. Align the wheel hub hole with the hole in the axle and insert the locking pin.
5. Rotate the locking pin ring to lock the pin in position.

INSTALL THE TINES

1. Check the orientation of the tine blade. The sharp cutting edge should be facing the direction of tine rotation for your tiller.
2. Install the tine assemblies on each tine axle. Secure with M10x50mm bolts and lock nuts. Do not over tighten the tine bolt. This could damage the tine assembly and cause difficulty in removing the tine assembly from the tine axle.

INSTALL THE TINE SHIELD

1. Remove the 4 bolts installed in the tine shield brackets above the transmission housing.
2. Place the tine shield on the bracket and secure with the bolts removed in 1. above.
3. Install the tine shield side guards with the hardware provided.

INSTALL THE DEPTH REGULATOR (See Figure 3)

1. Remove the bolt and knob from the depth regulator lever.
2. Insert the depth regulator into the bottom of the depth regulator bracket.
3. Insert the detent pin thru the bracket and lever.
4. Install the bolt and knob removed in 1. onto the depth regulator lever.

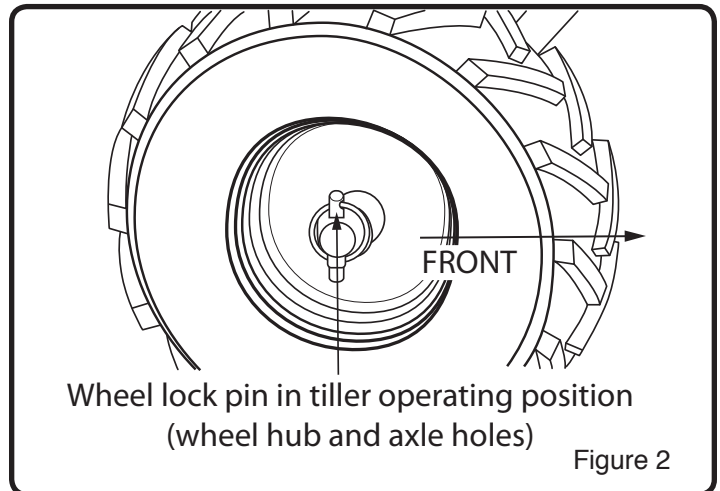


Figure 2

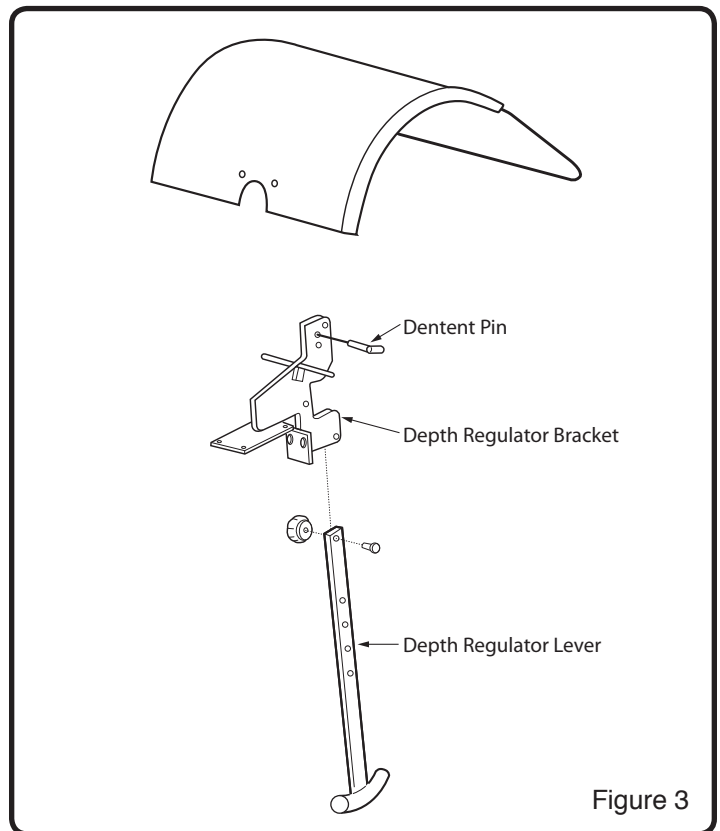


Figure 3

Assembly (Continued)

• Save all instructions



If you need assistance or find any parts missing, CALL TOLL FREE: 1-800-737-2112.

ATTACH LOWER HANDLE (See Figure 4)

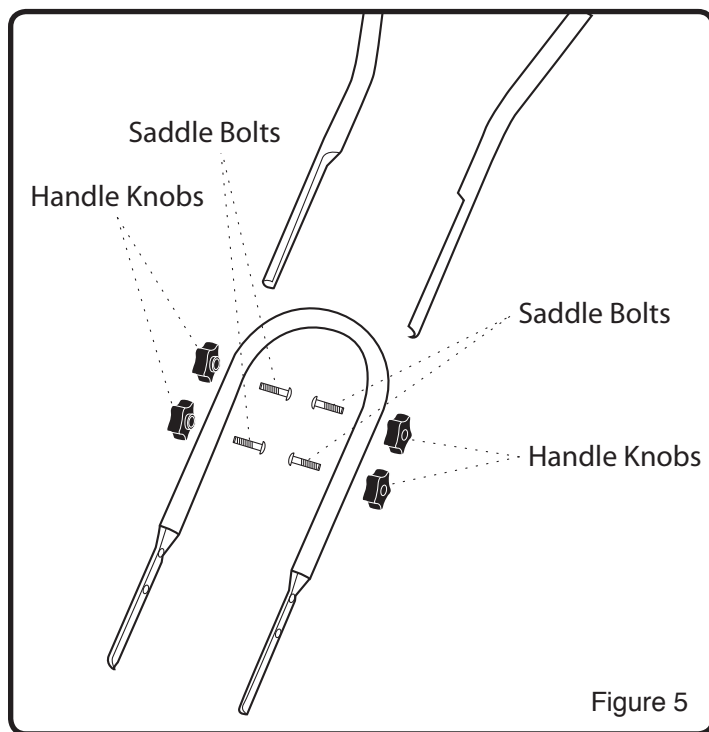
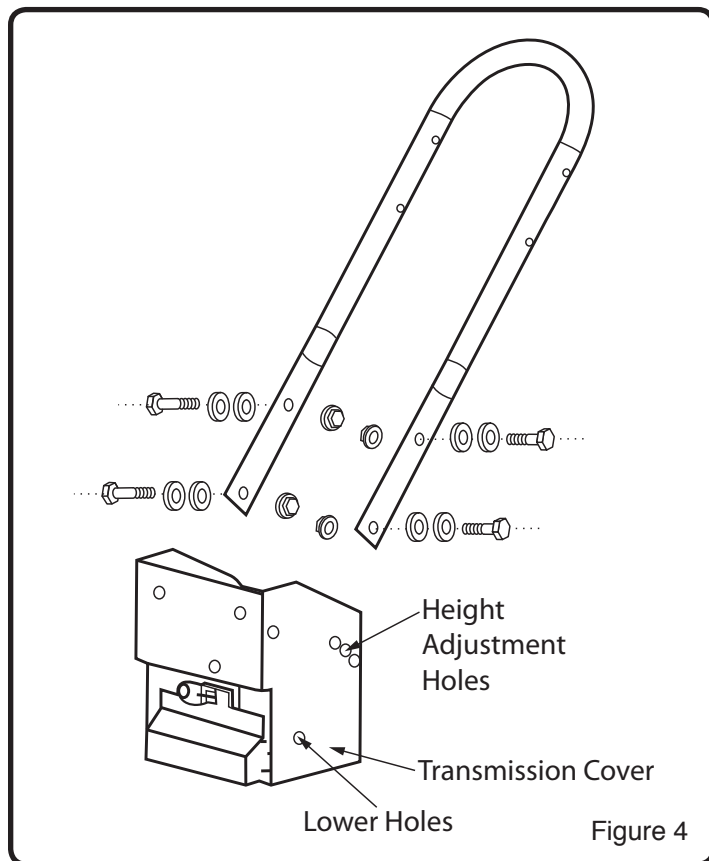
1. Loosen the lower handle bolts.
2. Align the lower handle holes to the middle height adjustment holes in the transmission cover and install the M10 x 25mm flange head bolts, lock washers and nuts. Tighten all four bolts at this time.

ATTACH UPPER HANDLE (See Figure 5)

1. Slide the upper handle down over the lower handle and align the holes.
2. Insert the saddle bolts into the holes as shown and secure with the handle knobs.
3. Tighten the handle knobs securely.

ATTACH FRONT HANDLE (See Figure 1)

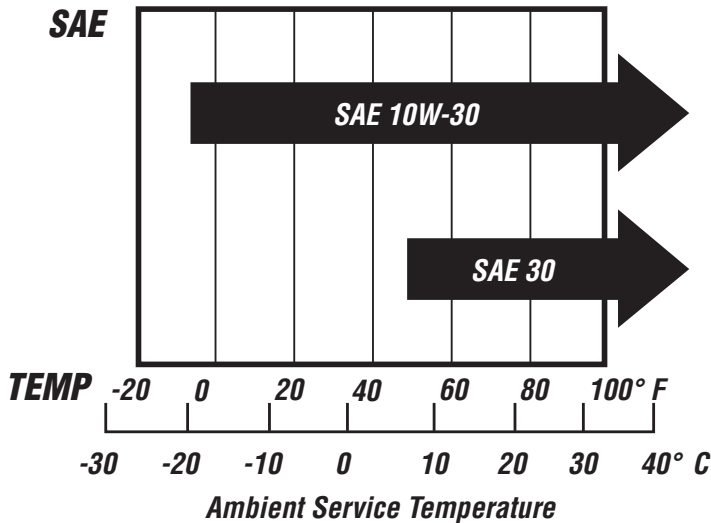
1. Slide the front handle onto the outside of the base frame and align the holes.
2. Install the four M8 x 25mm bolts, flat washers and locknuts and tighten securely.



Engine Preparation (Continued)

• Save all instructions

A Engine Oil



CAUTION

Frequently check oil level while filling. DO NOT OVERFILL. DO NOT UNDER FILL. Running engine at improper oil level will seriously damage engine.

6. Replace and tighten dipstick.
7. Clean up any spilled oil.

NOTE: THE TRANSMISSION CASE COMES FROM THE FACTORY WITH THE PROPER AMOUNT AND TYPE OF GEAR OIL. (See Figure 8)

CAUTION

Engine shipped without oil. Failure to add oil will result in serious engine damage.

A bottle of SAE 30 engine oil is included with your tiller. Refer to the chart on the right for alternative oil types to use at different temperatures. Always use a high quality detergent oil classified "For Service, SG, SH, SJ" or higher. Do not use special additives.

CAUTION

Always use recommended oil type. Using dirty oil or incorrect oil type such as 2-stroke engine oil will shorten engine life.

NOTE: Engine Oil Capacity is 600 ml. For first time fill, simply add the entire contents of the provided oil bottle to the crankcase.

HOW TO CHECK OIL LEVEL AND FILL TO PROPER LEVEL

WARNING

Before checking oil, make sure engine is off, and spark plug wire has been disconnected from spark plug.

1. Place the tiller on a level surface and make sure the depth regulator lever is set so the main frame of the tiller is level. (See Figure 6)
2. Remove the oil fill cap/dipstick and wipe clean with cloth. (See Figure 6)
3. Insert dipstick into fill spout but do NOT screw in. Remove dipstick and check oil level.
4. When oil level is full, the oil will be at upper limit on dip stick. If oil level is near or below the lower limit, oil must be added. (See Figure 7)
5. Add oil slowly until the oil level reaches the upper limit of the dipstick. Use a funnel or nozzle to reduce spillage.

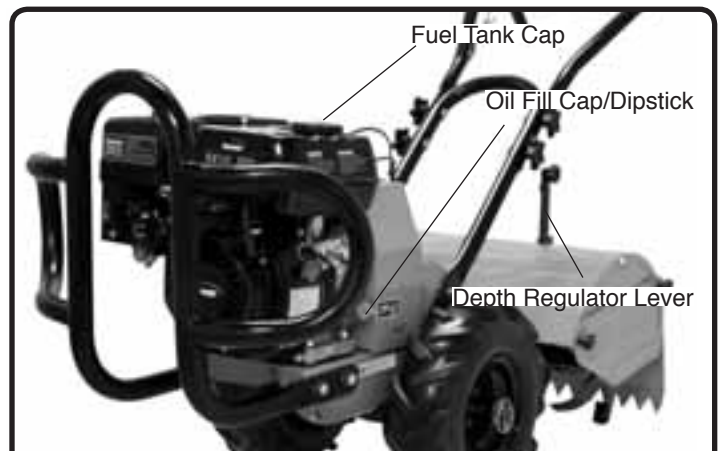


Figure 6

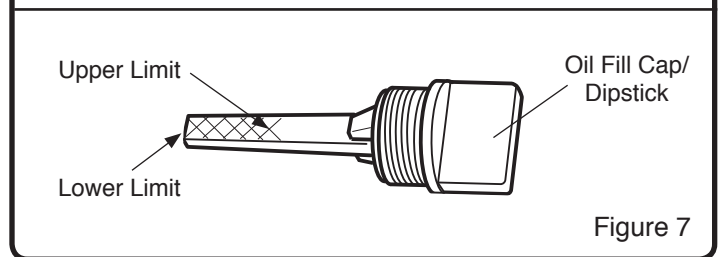
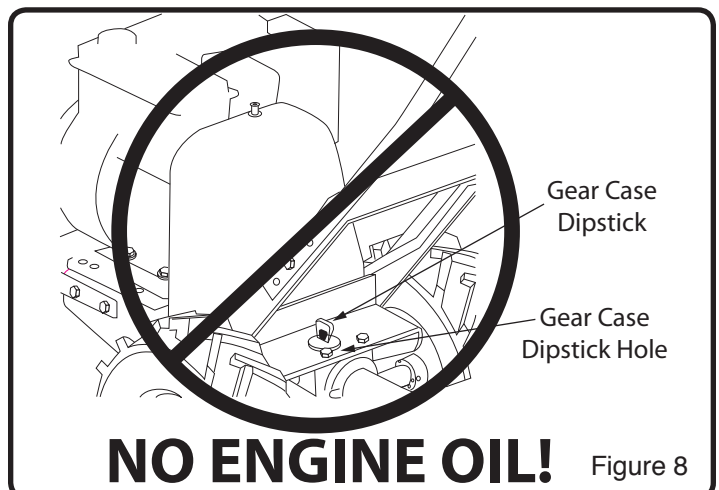


Figure 7



NO ENGINE OIL! Figure 8

Operation

• Save all instructions

A Pre-Start Inspection

1. Make sure all safety guards are in place and all nuts and bolts are secure.
2. Check oil level in engine crankcase. See your engine manual for procedure and specifications.
3. Inspect air cleaner for cleanliness. See your engine manual for procedure.
4. Check the fuel supply. Fill the fuel tank no closer than 1 inch from top of tank to provide space for expansion. See your engine manual for fuel recommendations.
5. Be sure spark plug wire is attached and spark plug is tightened securely.
6. Check position of wheels and wheel lockouts.
7. Check depth regulator lever position.
8. Examine underneath and around engine for signs of oil or fuel leaks.
9. Inspect fuel hoses for tightness and fuel seepage.
10. Look for signs of engine damage.
11. Remove excessive debris from muffler area and recoil starter.

IMPORTANT: ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE.

CAUTION

PLEASE DO NOT START YOUR TILLER UNTIL YOU HAVE READ THE MANUAL THAT CAME WITH YOUR TILLER, AND THE SECTIONS IN THIS MANUAL TILLER CONTROLS, ADJUSTMENTS AND SAFETY. IF YOU HAVE READ THESE, FOLLOW THE STEPS BELOW TO START YOUR TILLER. ALWAYS PERFORM THIS PRE-START CHECKLIST BEFORE STARTING THE ENGINE.

WARNING

GASOLINE IS HIGHLY FLAMMABLE AND MUST BE HANDLED WITH CARE. NEVER FILL THE TANK WHEN THE ENGINE IS HOT OR RUNNING. ALWAYS MOVE OUTDOORS TO FILL TANK.

WHEELS MUST ALWAYS BE LOCKED IN THE TILLING POSITION WHEN ENGINE IS RUNNING. DO NOT OPERATE THE TILLER WITH THE WHEEL LOCKOUTS UNLOCKED. ALWAYS SET THE WHEELS IN TILLING POSITION BEFORE STARTING ENGINE.

ALWAYS PUT DEPTH REGULATOR LEVER IN THE TRANSPORT POSITION BEFORE STARTING ENGINE. TINES SHOULD CLEAR GROUND.

DANGER

ALWAYS KEEP HANDS AND FEET CLEAR OF ROTATING MACHINE PARTS.

B Start-Up

The controls required to start and run the tiller are located on the engine and are marked with the icon for choke, slow and fast for the throttle, and on/off fuel valve. A more detailed description of engine operation and all related precautions and procedures can be found in the engine manufacturer's manual that accompanies each tiller.

COLD STARTS

1. Turn the Engine Switch to the "on" position.
2. Open the Fuel Valve.
3. Move choke lever to left for full choke position.
4. Move throttle lever to "start" or "fast" position.
5. Pull starting rope out slowly one time and allow to return normally.
6. Pull starting rope out rapidly, and allow rope to return normally.
7. When engine starts, gradually move choke lever to "no choke" position and increase throttle speed.

RESTARTING A WARM ENGINE

Restarting an engine that is already warm from previous running does not normally require use of the choke.

1. Move throttle lever to "start" position or "fast" position.
2. Pull starting rope out rapidly until engine starts. Allow rope to return normally. Repeat until engine starts.
3. Adjust throttle speed to "fast" for best tiller performance.

Operation (Continued)

• Save all instructions

C Idle Speed

Use the "low" position on the throttle lever to reduce stress on the engine when tilling is not being performed. Lowering the engine speed to "idle" will help extend the life of the engine, as well as conserve fuel and reduce the noise level of the equipment.

D Operating Speed

For normal tilling, set the throttle lever to "fast".

E Shutting Down

To stop the engine at any time, turn engine ON/OFF switch to the off position. To stop wheels and tines at any time, release drive safety control levers to neutral position.

F Tilling

1. Adjust the depth regulator lever to desired tilling depth.

⚠ WARNING

NOTE: Raise depth regulator lever up one hole at a time, testing tiller operation after each raise. Raising depth regulator lever too high can result in loss of control of tiller!

2. Move the throttle control to fast.

3. Place the tiller in forward by pushing down on the drive safety control lever (**FORWARD**)--this will engage the wheels and tines.

NOTE: You can slow the tiller's forward advance at any time by putting slight downward pressure on the handlebars. You can stop the tiller by releasing the drive safety control levers to the neutral position.

⚠ CAUTION

ALWAYS PRESS THE FORWARD OR REVERSE DRIVE LEVERS DOWN COMPLETELY ONTO THE HANDLE BAR GRIPS. FAILURE TO DO SO MAY RESULT IN EXCESSIVE DRIVE BELT WEAR AND PRE-MATURE DRIVE BELT FAILURE.

⚠ WARNING

TEMPERATURE OF MUFFLER AND NEAR BY AREAS MAY EXCEED 150°F. AVOID THESE AREAS.

DO NOT MOVE CHOKE CONTROL TO CHOKE TO STOP ENGINE, BACKFIRE OR ENGINE DAMAGE MAY OCCUR.

TO STOP WHEELS AND TINES AT ANY TIME, RELEASE DRIVE SAFETY CONTROL LEVERS TO NEUTRAL POSITION.

ALWAYS RELEASE DRIVE SAFETY CONTROL LEVERS TO NEUTRAL POSITION AND STOP THE ENGINE BEFORE ADJUSTING THE DEPTH OF THE REGULATOR LEVER.

⚠ DANGER

ENGINE AND SURROUNDING PARTS BECOME EXTREMELY HOT DURING NORMAL USE AND WILL CAUSE SERIOUS BURN INJURIES IF TOUCHED BEFORE THE ENGINE HAS COOLED.

ALLOW ENGINE TO COOL COMPLETELY BEFORE TOUCHING THESE HOT SURFACES.

IMPORTANT: PRACTICE OPERATING THE CONTROLS AND TILLER WITH TINES OUT OF GROUND BEFORE BEGINNING TO TILL. IT IS IMPORTANT THAT YOU KNOW HOW TO USE THE TILLER PROPERLY, KEEP CONTROL AT ALL TIMES, STOP THE TINES AND WHEELS FROM TURNING, AND STOP THE ENGINE IF NECESSARY. IF YOU DO NOT KNOW HOW TO DO THESE THINGS, READ THE CONTROLS, ADJUSTMENTS AND SAFETY SECTIONS BEFORE PROCEEDING.

Operation (Continued)

• Save all instructions

G Drive Safety Control Levers

CAUTION

DO NOT OPERATE BOTH "FORWARD" AND "REVERSE" DRIVE SAFETY CONTROL LEVERS AT THE SAME TIME.

THIS INFORMATION IS PROVIDED HERE ONLY TO INTRODUCE THE CONTROLS. DO NOT START THE ENGINE AT THIS TIME. STARTING AND OPERATING INSTRUCTIONS ARE GIVEN ON PAGE 11. PLEASE READ THIS SECTION AND ALL OPERATING AND SAFETY INSTRUCTIONS BEFORE STARTING YOUR TILLER.

- AS A SAFETY PRECAUTION, THE DRIVE SAFETY CONTROL LEVERS WILL NOT LOCK IN THE FORWARD OR REVERSE POSITION.

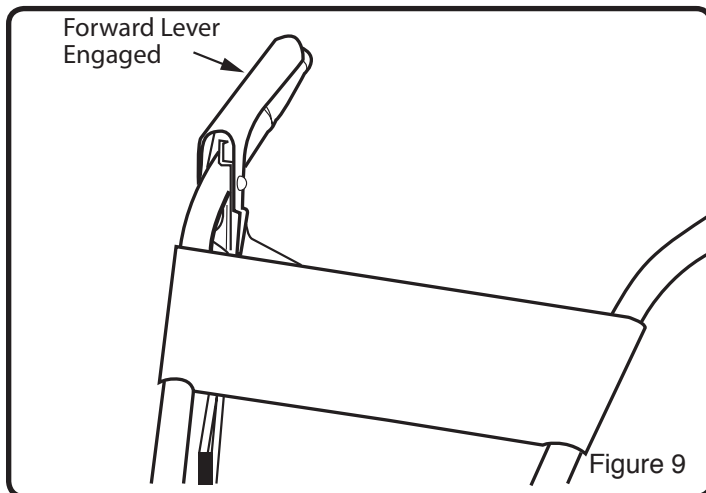
WARNING

DO NOT FIX THE FORWARD OR REVERSE DRIVE LEVERS IN DRIVE POSITION BY ANY OTHER MEANS THAN MANUALLY USING YOUR RIGHT HAND. DO NOT TIE OR OTHERWISE SECURE THE LEVERS IN DRIVE POSITION.

- TO STOP THE WHEELS AND TINES AT ANY TIME RELEASE THE DRIVE SAFETY CONTROL LEVERS OR RELEASE THE REVERSE HANDLE.

FORWARD LEVER (See Figure 9)

Engages wheels and tines into forward. Pushing down the drive safety control lever (**FORWARD**) toward the handlebar engages the wheels and tines. Releasing the lever stops the wheels and tines and brings the tiller to a complete stop.

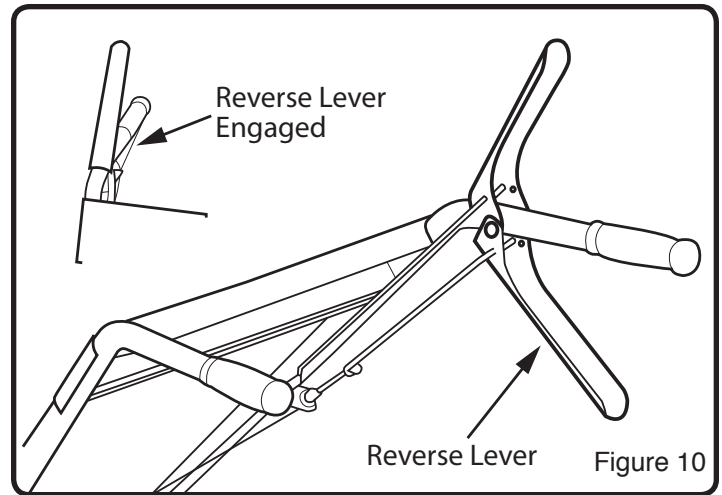


REVERSE LEVER (See Figure 10)

Engages wheels and tines into reverse.

Pulling the drive safety control lever (**REVERSE**) toward the handlebar reverses tiller.

Releasing the lever stops the wheels and tines.



Operation (Continued)

• Save all instructions

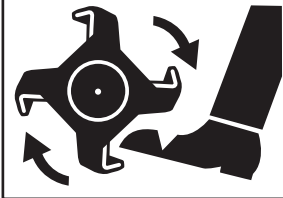
H Adjustments

⚠ WARNING

ENGINE SHOULD BE OFF BEFORE ADJUSTING ANY CONTROLS.

EXTREME CAUTION SHOULD BE USED WHEN OPERATING TILLER IN THE REVERSE DIRECTION.

⚠ DANGER



WHEEL LOCK PINS (See Figures 2 and 11)

Place wheels in tilling position.

1. Remove lock pin. Align hole in axle with hole in wheel hub.
2. Insert lock pin through holes, fold lock pin ring to secure pin to axle.
3. Firmly lock wheel and axle together before tilling.
4. Repeat for other wheel.

⚠ WARNING

Always have both wheel lock pins in or out. Do not operate tiller with only one wheel locked.

To place wheels in free-wheel position.

1. Remove lock pin. Slide wheel inward toward machine.
2. Insert pin in axle only, fold lock pin ring to secure pin to axle.
3. Wheel should turn freely on axle.

HANDLEBAR HEIGHT ADJUSTMENT (See Figure 4)

Adjust handlebar height.

The ideal height of the handlebar varies with operator height and the depth of tilling. To adjust handlebar height:

1. Unscrew nuts and remove top bolts on each side.
2. Loosen the lower bolts. Do not remove.
3. Align handlebar to desired holes on the lower handlebar mount.
4. Install bolts and nuts. Retighten all four bolts securely.

DEPTH REGULATOR LEVER (See Figure 3)

Tilling depth is controlled by the height of the depth regulator lever. To adjust tilling depth:

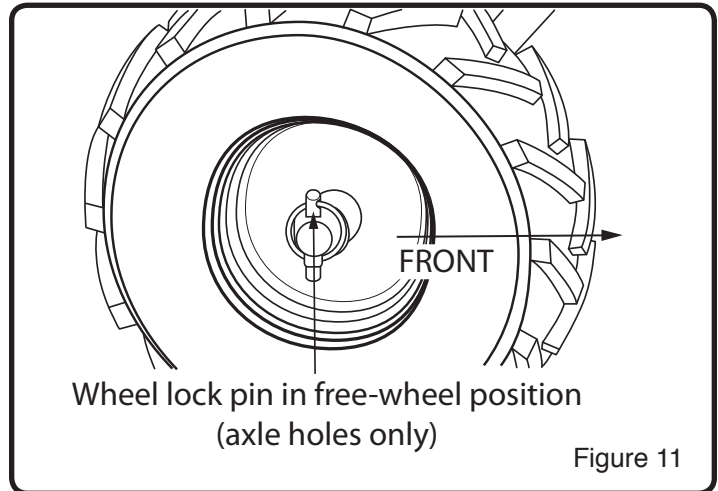
1. Remove detent pin.
2. Raise the depth regulator lever to position tines at chosen tilling depth.
3. Align hole in depth regulator lever with hole in depth regulator bracket and replace detent pin.

Depth Regulator Lever Down = Shallower tilling.

Place the detent pin in the top hole of the depth regulator lever for shallowest tilling.

Depth Regulator Lever Up = Deeper tilling.

Place the detent pin in the bottom hole of the depth regulator lever for deepest tilling.



⚠ WARNING

DO NOT ADJUST TILLING DEPTH UNLESS DRIVE SAFETY CONTROL LEVERS ARE RELEASED TO NEUTRAL POSITION.

ALWAYS SET THE DEPTH REGULATOR LEVER IN THE TRANSPORT POSITION BEFORE STARTING ENGINE, THAT IS, PLACE THE DETENT PIN IN THE HIGHEST HOLE OF THE DEPTH REGULATOR LEVER.

Operation (Continued)

• Save all instructions

I Adjustments (Cont.)

BELT TENSION ADJUSTMENT (See Figure 12)

Proper belt tension is critical to good performance. After 1/2 hour of operation, all cables may have to be adjusted due to initial stretch. Thereafter, check tension after every 2 hours of operation.

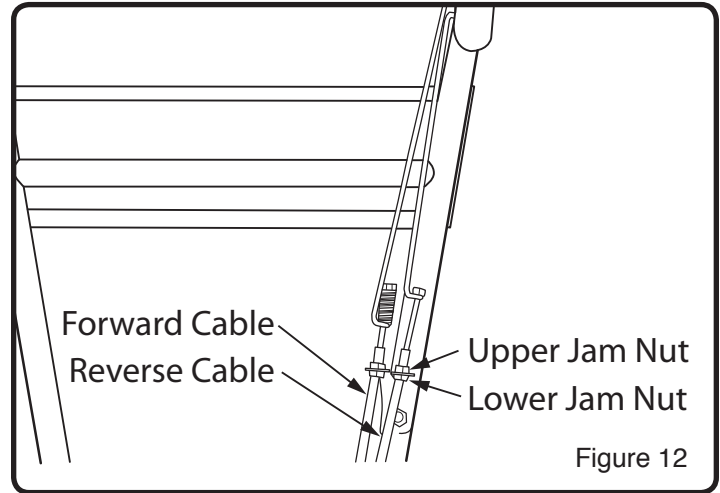
TO INCREASE BELT TENSION

1. Loosen upper jam nut. Turn nut up cable in 1/8" increments.
2. Tighten lower jam nut.
3. Check adjustment.

TO DECREASE BELT TENSION

1. Loosen lower jam nut. Turn nut down cable in 1/8" increments.
2. Tighten upper jam nut.
3. Check adjustment.

This procedure can be repeated until conduit adjustment bolts are fully adjusted. If no more adjustment can be made, belt may have to be replaced.



J Tilling Tips

The key to successful tilling is to begin with a shallow cut on the first pass, and then work an inch or two deeper on each successive pass.

- Tilling depth will vary with ground conditions.
- When beginning to till in unbroken ground or in extremely hard soil, set the detent pin in the highest hole of the depth regulator lever (follow instructions under Tilling section). This will allow for shallow tilling. With the drag stake in this position, make several light passes over the area to be tilled. Reset for deeper depths with successive passes.
- If tiller jumps or skids uncontrollably, lower the drag stake by placing the detent pin in a higher hole. This will allow for shallower tilling. Hold firmly to the handlebars to control sudden lurches.
- If weeds, tall grasses, vines, or other materials clog or jam the tines, reverse the tiller to unwind vegetation.

⚠ WARNING

Immediately release the drive control levers if the tines jam or you strike a foreign object. With drive control levers in neutral position, stop the engine. Disengage the spark plug wire. When tines have stopped, remove foreign objects and check for damage.

K Cultivating Tips

If you plan to use your tiller for cultivating:

- Plant rows on 20" - 22" centers for ease of turning.
- Set the depth regulator lever with the detent pin in one of the higher holes. This will allow for shallow cultivation necessary to turn over weeds, and break up and aerate the soil.

⚠ WARNING

EXTREME CAUTION MUST BE TAKEN IN SELECTING TILLING DEPTH. IF YOU ATTEMPT TO TILL TOO DEEPLY FOR SOIL CONDITIONS, THAT IS, WITH THE DEPTH REGULATOR LEVER IN TOO HIGH A POSITION, LOSS OF CONTROL COULD RESULT.

IF REMOVING MATERIAL FROM THE TINES BY HAND, STOP ENGINE AND REMOVE SPARK PLUG WIRE FIRST.

Maintenance

• Save all instructions

A Maintenance Schedule

⚠ WARNING

Before performing any maintenance, turn engine off and remove the wire from the spark plug to prevent accidental starting and serious injury.

IMPORTANT: The warranty on this tiller does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, the operator must maintain the tiller as instructed in this manual, and only use genuine replacement parts. The following table lists required periodic maintenance.

PERIODIC MAINTENANCE SCHEDULE TABLE

Service Records- Fill in dates as you complete regular service	Before Each Use	After Every 10 Hours of Use	After Every 25 Hours of Use	After Every 50 Hours of Use	After Every 100 Hour of Use	Before Each Season	Before Storage	See Note Below
Check Engine Oil Level, Fill to Proper Level	✓					✓		
Check Connection of BOTH Flameout Wire Connectors	✓					✓		
Clean Debris From Unit	✓					✓	✓	
Lubricate All Pivot Points		✓				✓	✓	
Check Fasteners for Tightness		✓				✓		1
Check Drive Belts Replace if Necessary		✓				✓		
Check Tines for Wear or Damage Replace if Necessary		✓				✓		
Check Fuel Line Replace if Necessary			✓			✓		
Lubricate Wheel Axles			✓			✓	✓	
Check Spark Plug Replace if Necessary			✓			✓		
Change Engine Oil				✓		✓	✓	2,3
Clean Air Filter Replace if Necessary			✓			✓		4
Replace Spark Plug					✓			
Clean Combustion Deposits from Cylinder, Piston, and Valves					✓			
Check Transmission Oil						✓		

⚠ CAUTION **IMPORTANT NOTES about Maintenance schedule**

1. Re-check tightness of all fasteners after first 2 hours of initial use
2. Change engine oil after first 5-8 hours of initial use
3. Change oil every 25 hours if operating under heavy load or in high temperatures
4. Clean air filter every 10 hours if operating under dusty conditions.

⚠ WARNING

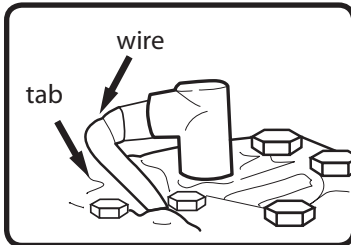
Use only GENUINE replacement parts. Other parts may damage the unit or result in injury.

Maintenance (Continued)

• Save all instructions

B Servicing the Tiller

The following information will help you make the necessary checks and perform the procedures required to follow the normal care recommendations made for your tiller unit. If you prefer, your local authorized dealer can make these checks and perform the required procedures for you.



⚠ WARNING

TO PREVENT ACCIDENTAL STARTING:

ENGINE MUST BE TURNED OFF AND COOL, AND SPARK PLUG WIRE MUST BE REMOVED AND SECURED FROM

SPARK PLUG BEFORE CHECKING AND ADJUSTING ENGINE OR EQUIPMENT.

CHANGE FORWARD/REVERSE BELTS

(See Figure 12 and 13)

1. Turn off engine. Engine must cool completely before proceeding.
2. Remove spark plug wire and secure away from spark plug.
3. Reduce the belt tension by loosening the forward and reverse cable lower jam nut.
4. Remove the upper and lower belt guards.
5. To remove the reverse drive belt:
 - a. Remove the reverse belt idler.
 - b. Slide the belt free of the reverse belt guides and engine pulley.
 - c. Pull belt down and away from the transmission pulley.
6. To remove the forward drive belt:
 - a. Remove the two forward belt guide studs and forward belt idler assembly.
 - b. Slide the belt free of the engine pulley.
 - c. Pull the belt down and away from the transmission pulley.
7. To install the forward drive belt:
 - a. Insert the belt from underneath the unit and up around the rearward portion on the engine pulley.
 - b. Place the lower loop of the belt around the rearward portion of the transmission pulley.
 - c. Replace the two forward belt guide studs and forward belt idler assembly.
8. To install the reverse drive belt:
 - a. Insert the belt from underneath the unit and up around the reverse belt idler.
 - b. Place the lower loop of the belt around the forward portion of the transmission pulley.
 - c. Replace the reverse belt idler into the reverse belt idler bracket. The belt should not go around the engine pulley. Be sure the belt is inside of the reverse belt guide studs.
9. Tighten the forward and reverse lower jam nut.
10. Check the belt tension. The belts should be loose with the drive levers disengaged.
11. Replace the upper and lower belt guards.
12. Re-attach the spark plug wire to the spark plug.

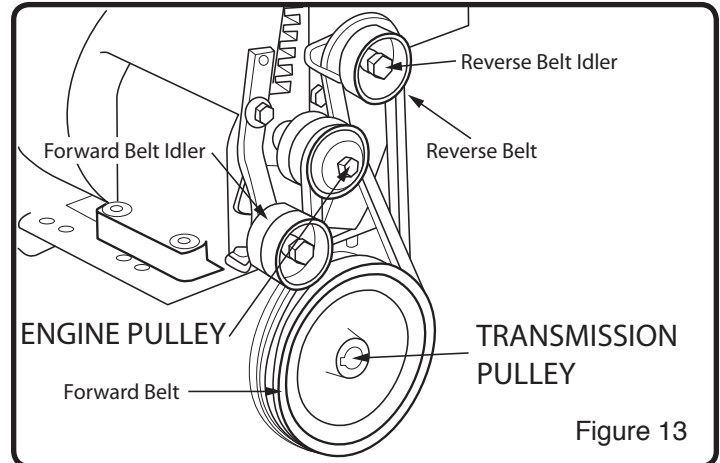


Figure 13

13. Follow Operating Instructions – start the engine and operate the forward drive lever to check for proper cable adjustment and belt tension. See the Belt Tension Adjustment section if cable adjustment is required.
14. Start the engine and operate the reverse drive lever to check for proper cable adjustment and belt tension. See the Belt Tension Adjustment section if cable adjustment is required.

⚠ WARNING

THE TINES OR WHEELS SHOULD NOT ROTATE WITH THE ENGINE RUNNING, THE DEPTH REGULATOR SET AT TRANSPORT HEIGHT (LOWEST HEIGHT) AND THE DRIVE LEVER NOT ENGAGED.

Maintenance (Continued)

• Save all instructions

C Engine Maintenance

ENGINE MAINTENANCE

Refer to the engine manual included in your parts packet for information on engine maintenance. Your engine manual provides detailed information and a maintenance schedule for performing the following tasks:

1. Check oil level before each use or after every 8 hours of operation.
2. Change oil after first 5-8 hours of operation. Change oil while engine is warm. Refill with new oil of recommended grade.
4. Check spark plug yearly or every 100 hours of operation.
5. Service air cleaner.
6. Keep engine and parts clean.
7. Check engine and equipment often for loose nuts and bolts, keep these items tightened.

CHECK OR FILL ENGINE CRANKCASE

Important: Engine is shipped from factory without oil. You must add engine oil before starting engine.

1. Add oil according to engine manual. **Do not overfill.** Use a clean, high quality detergent oil. **Do not mix oil with gasoline.** Oil level must be full. check the oil level by removing oil fill plug.
2. Always check oil level before starting engine. Refer to engine manual for capacity and type of oil to use.

CHECK TILLER TRANSMISSION OIL

Important: Tiller transmission is shipped from factory with the proper amount of oil. When replacing oil, the tiller transmission holds 18-22ounces. Do not overfill.

Check the oil level annually. To check the oil level:

1. Move tiller to level ground.
2. Remove oil level dipstick located between the handlebar mounts on the engine mount. If the oil level couldn't touch the dipstick, fill the oil to recommended level.
3. Replace oil level dipstick in the filler hole.
4. Note that the drive wheel transmission and rear tine transmission are one common reservoir. When you add to the front transmission, you must wait a short period of time for the oil to flow rearward and equalize in both front and rear. The dipstick will read correctly on level ground for both gear units.

CHECK TIRE PRESSURE

Recommended tire pressure is 30 PSI. If tires do not have equal pressure, tiller will pull to one side.

LUBRICATION

Proper lubrication of moving mechanical parts is critical for proper care and maintenance. Oil the moving parts shown at 10 hour intervals using a 30 weight oil.

CLEAN TINE AXLE SHAFT

1. Turn off engine. Engine must be cool.
2. Remove spark plug wire and secure from spark plug.
3. Tip the tiller forward. Block the tiller in position so that it rests on the engine mount and the tines are exposed.
4. Remove all vegetation, string, wire, and other material that may have accumulated on the axle between the inside set of tines and the seal cover on the transmission housing.
5. Tip the tiller back to a level position.
6. Replace spark plug wire.

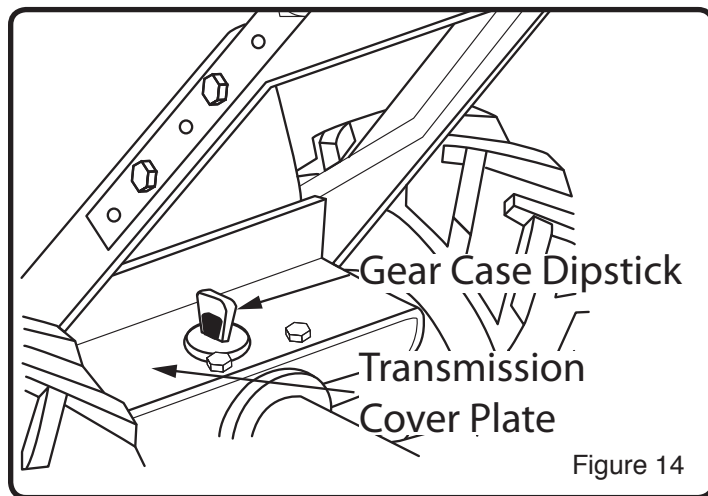


Figure 14

Maintenance *(Continued)*

• Save all instructions

D How to Prepare for Storage

⚠ WARNING

Never store the tiller indoors with fuel in the fuel tank. Never store in an enclosed, poorly ventilated area where fumes could reach an open flame, a spark or a pilot light as on a furnace, water heater or clothes dryer. Allow engine to cool before storing unit.

⚠ WARNING

Do not remove gasoline while inside a building, near a fire, or while you smoke. Gasoline fumes can cause an explosion or a fire.

NOTE: A yearly checkup or tune-up at an authorized service center will make sure that the tiller will provide maximum performance for the next season.

When the tiller is put in storage for thirty days or more, the following steps should be followed to make sure the tiller is in good condition the next season.

1. Let the engine run until it is out of gasoline.
2. Change the oil by following instructions under "How to Change the Oil."
3. Remove the spark plug from the cylinder. Pour one ounce of oil into the cylinder. Slowly pull the recoil-start grip so that the oil will protect the cylinder. Install a new spark plug in the cylinder. Pull starter handle slowly a few times to distribute oil. Pull recoil slowly until resistance is felt. This will close the cylinder valves.

⚠ WARNING

DO NOT attach spark plug wire to spark plug when storing unit.

4. Clean tiller. Remove all dirt, leaves, debris, grease, etc. from the tiller - including cylinder cooling fans, recoil starter cover holes, under fuel tank, and under muffler.
5. Check the tiller for worn or damaged parts. Have damaged parts replaced if necessary.
6. Tighten any loose hardware.
7. Apply lubrication as directed in Maintenance section.
8. Put the unit in a building that has good ventilation.
9. Cover the tiller with a breathing material.

Technical Service

You may have further questions about assembling, operating, or maintaining this TILLER. If so, you can contact our Technical Service Department at 1-800-737-2112 (English only).

You may also write to:

METL Corporate Office - CORRESPONDENCE ONLY
ATTN: Technical Service – METL
6700 Wildlife Way
Long Grove, IL 60047



**If you need assistance or have any questions, CALL
TOLL FREE: 1-800-737-2112.**

When contacting the Technical Service Department, have ready:

- Your Name
- Your Address
- Your Phone Number
- Model Number of Product
- Date of Purchase (include copy of receipt for written requests)

Maintenance *(Continued)*

• Save all instructions

PROBLEM	POSSIBLE CAUSE(S)	SOLUTION(S)
Engine difficult to start	<ol style="list-style-type: none"> 1. Out of fuel 2. Engine Switch Off 3. Engine is not primed. 4. Spark plug wire disconnected 5. Fouled spark plug 6. Dirty Carburetor 7. Clogged air filter 8. Clogged fuel filter 9. Contaminated Fuel 	<ol style="list-style-type: none"> 1. Add fresh fuel 2. Turn engine switch on 3. Turn choke on 4. Attach spark plug wire to spark plug 5. Remove spark plug. Inspect. Replace if necessary 6. Take unit to an authorized service center for Carburetor cleaning 7. Remove and clean air filter 8. Remove fuel filter. Inspect. Replace if necessary 9. Drain fuel tank. Clean fuel tank. Fill with fresh fuel
<u>Engine Problems</u> Engine smokes excessively Engine runs very “rough” Engine runs erratically Engine cannot maintain full speed	<ol style="list-style-type: none"> 1. No Engine Oil 2. Engine oil not at proper level 3. Fouled spark plug 4. Clogged air filter 5. Clogged fuel filter 6. Contaminated Fuel 7. Carburetor out of adjustment 	<ol style="list-style-type: none"> 1. Add engine oil 2. Check engine oil. Add or drain engine oil if necessary 3. Remove spark plug. Inspect. Replace if necessary 4. Remove and clean air filter 5. Remove fuel filter. Inspect. Replace if necessary 6. Drain fuel tank. Clean fuel tank. Fill with fresh fuel 7. Take unit to an authorized service center for Carburetor adjustment
Excessive vibration / noise	<ol style="list-style-type: none"> 1. Loose parts 2. Engine problems (above) 3. Abnormal noise or squeal coming from belt drive. 	<ol style="list-style-type: none"> 1. Tighten all fasteners 2. Refer to engine solutions (above) 3. Normally due to belt/pulley break in period. Refer to Belt Tension Adjustment section.
Tines will not rotate	<ol style="list-style-type: none"> 1. Debris interfering with tines 2. Tines loose 3. Improper drive cable adjustment 4. Damaged drive belts 	<ol style="list-style-type: none"> 1. Remove debris from around tines 2. Replace tine bolts and nuts 3. Refer to “Belt Tension Adjustment” Section to decrease belt tension 4. Replace drive belts
Tines continue to rotate when drive lever not engage	<ol style="list-style-type: none"> 1. Improper drive cable adjustment 2. Damaged drive belts 	<ol style="list-style-type: none"> 1. Refer to “Belt Tension Adjustment” Section to decrease belt tension 2. Replace drive belts
Engine will not stop	Flameout wire terminals disconnected	Connect engine flameout wire terminals
Tine will not cut properly	Damaged or worn tines	Replace tines
Frequent engine stalling	<ol style="list-style-type: none"> 1. Excessive tilling speed / depth 2. Engine problems (above) 	<ol style="list-style-type: none"> 1. Till at a moderate pace. Make multiple passes. 2. Refer to engine solutions (above)

Warranty

• Save all instructions

A Powermate® ROTARY TILLER Limited Warranty

Always specify model number when contacting the factory.

We reserve the right to amend these specifications at any time without notice. The only warranty applicable is our standard written warranty. We make no other warranty, expressed or implied. MAT Engine Technologies, LLC warrants this Tiller and any parts thereof, to be free from defects in material and workmanship for two years (90 days for commercial use or for reconditioned unit) from the date of first purchase from an authorized dealer, provided that the product has been properly maintained and operated in accordance with all applicable instructions. This warranty is extended only to the original retail purchaser. The bill of sales or proof of purchase must be presented at the time a claim is made under this warranty. This warranty does not cover commercial, industrial, or rental usage, nor does it apply to parts that are not in original condition because of normal wear and tear, or parts that fail or become damaged as a result of misuse, accident, lack of proper maintenance, tampering, or alteration. Travel, handling, transportation, and incidental costs associated with warranty repairs are not reimbursable under this warranty and are the responsibility of the owner. To the full extent allowed by the law of the jurisdiction that governs the sale of the product, this express warranty excludes any and all other expressed warranties and limits the duration of any and all implied warranties, including warranties of merchantability and fitness for a particular purpose to two years from the date of first purchase, and MAT Engine Technologies, LLC's liability is hereby limited to the purchase price of the product and MAT Engine Technologies, LLC shall not be liable for any other damages whatsoever including indirect, incidental, or consequential damages. Some states do not allow limitation of how long an implied warranty lasts or an exclusion or limitation of incidental or consequential damages, so the above limitation of damages may not apply to you. This warranty provides the original purchaser with specific rights.

For information regarding those rights, please consult the applicable state laws.

METL Corporate Office - CORRESPONDENCE ONLY
ATTN: Technical Service – METL
6700 Wildlife Way
Long Grove, IL 60047

Warranty (Continued)

• Save all instructions

B Emission Control System Warranty

This **MAT Engine Technologies, LLC (METL)** outdoor power equipment engine complies with the emissions regulations of:

<i>Powermate® Model No.</i>	<i>Regulatory Agency</i>
P-RTT-196MD-[E]	United States Environmental Protection Agency ("U.S. EPA")
P-RTT-196MD	United States Environmental Protection Agency ("U.S. EPA") and State of California

To the extent there is any conflict between this Emissions Control System Warranty and the equipment manufacturer's warranty, this Emissions Control System Warranty shall apply except where the equipment manufacturer's warranty may provide a longer warranty period. Please read your warranty rights and obligations carefully. Some sections of the warranty may not apply to the specific equipment model you purchased. Unless specifically noted otherwise, the terms of the Emission Control System Warranty shall apply to all product engines covered within this manual.

Your Warranty Rights and Obligations:

The California Air Resources Board, U.S. EPA and **MAT Engine Technologies, LLC (METL)** are pleased to explain the Emission Control System Warranty on your new outdoor power equipment engine.

California (applies only to Model No. P-RTT-196MD-[E] and P-RTT-196MD)

In California, new spark-ignited small off-road equipment engines must be designed, built and equipped to meet the State's stringent anti-smog standards.

Other States, U.S. Territories

In other areas of the United States, your engine must be designed, built and equipped to meet the U.S. EPA emission standards for spark-ignited engines at or below 19 kilowatts.

All of the United States

MAT Engine Technologies, LLC (METL) must warrant the emissions control system on your power equipment engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your power equipment engine. Where a warrantable condition exists, **METL** will repair your power equipment engine at no cost to you including diagnosis, parts and labor.

Manufacturer's Warranty Coverage:

The emissions control system is warranted for two years. If any emissions-related part on your engine is defective, the part will be repaired or replaced by **METL**.

Owner's Warranty Responsibility

As the power equipment engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. **METL** recommends that you retain all receipts covering maintenance on your power equipment engine, but **METL** can not deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the power equipment engine owner, you should however be aware that **METL** may deny your warranty coverage if your power equipment engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your power equipment engine to a distribution center or service center authorized by **METL** as soon as the problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact

MAT Engine Technologies, Inc.
6700 Wildlife Way
Long Grove, IL 60047
Tel: 1-800-737-2112

Warranty *(Continued)*

- Save all instructions

Warranty Coverage:

METL warrants that the product engine is free from defects in materials and workmanship which cause such engine to fail to conform with the U.S. EPA or State of California emissions standards for small spark-ignited nonroad (off-road) engines – as applicable to your **METL** product. Small spark-ignited off-road engines manufactured after January 1, 1995 and sold in the State of California and U.S. EPA-certified small spark-ignited nonroad engines manufactured in model year 1997 or later and sold in all of the United States are covered by this Emission Control System Warranty for a period of two years from the date of delivery to the original purchaser. This Emission Control System Warranty is transferable to each subsequent purchaser for the duration of the warranty period. Emission Control System Warranty repairs or replacements will be made without charge for diagnosis, parts or labor. A list of warranted parts is provided below. Normal maintenance items, such as spark plugs, air filters and fuel filters that are included on the list of warranted parts are warranted only up to the first scheduled required replacement interval for such item, as set forth in the Operator's Manual. If any emission control system part is repaired or replaced under the Emission Control System Warranty, it shall be warranted for the remainder of the applicable warranty period. **METL** will also repair or replace other engine components damaged by a failure of any part covered by the Emission Control System Warranty during the Emission Control System Warranty Period. Only parts authorized and approved by **METL** may be used in the performance of any Emission Control System Warranty repairs or replacements and will be provided without charge to the owner. Unapproved, add-on, modified, counterfeit and/or "gray market" parts may not be used to modify or repair the **METL** engine. If such a part has been used in the repair or maintenance of your engine, and an **METL Authorized Service Center** determines it is defective or causes a failure of a part covered under the Emission Control System Warranty, your claim for repair of your engine or product may be disallowed. **METL** shall not be held liable hereunder for failures of any warranted parts caused by the use of such an unapproved, add-on, modified, counterfeit and/or "gray market" part.

How to Obtain Warranty Service:

You must take your power equipment engine or the product on which it is installed, along with evidence of the date of the sale to the original purchaser, at your expense, to any **METL Authorized Service Center** during its normal business hours. To locate your nearest **METL Authorized Service Center**, call (800) 737-2112. The product owner shall be responsible for any expenses or charges incurred for service calls or transportation of the product or equipment engine to and from the **METL Authorized Service Center**, including any and all damages or losses incurred during such transportation or shipment.

Exclusions:

Failures other than those resulting from defects in material or workmanship are not covered by this Emission Control System Warranty. This Emission Control System Warranty does not extend to emission control systems or parts which are affected or damaged by owner abuse, neglect, improper maintenance, misuse, mis-fueling, improper storage, accident and/or collision, the incorporation of, or any use of, any unapproved, add-on, modified, "graymarket" or counterfeit parts, unsuitable attachments, or the unauthorized alteration of any part. This Emission Control System Warranty does not cover the regular replacement of normal maintenance items made in connection with required maintenance services after the item's first scheduled replacement, as set forth in the Operator's Manual (e.g. spark plugs, air filters, fuel filters, etc...).

Limitations of Liability:

METL disclaims any responsibility for loss of time or use of the engine, or the equipment in which the engine is installed, transportation, commercial loss, or any other incidental or consequential damage. Any implied warranties are limited to the duration of this written limited warranty. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions and limitations may not apply to you.

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

Warranty (Continued)

- Save all instructions

Limitation of Liability (cont.):

SYSTEMS COVERED BY THIS WARRANTY:	PARTS DESCRIPTION:
Fuel Metering System	Carburetor assembly (if so equipped) and its internal components; fuel filter (if so equipped), carburetor gaskets, fuel pump (if so equipped)
Air Induction System	Intake pipe/ manifold, air cleaner
Ignition System	Spark plug ¹ , ignition module / coil
Exhaust System	Catalytic muffler assembly (if so equipped), muffler gasket, exhaust manifold
Crankcase Breather Assembly	Breather connection tube
Miscellaneous Parts Used in Above Systems	Hoses, belts, connectors and assemblies
Evaporative Emissions Components ²	Fuel line, fuel line fittings, clamps, fuel tank, carbon canister, canister mounting brackets, carburetor purge port connector
¹ Covered up to the first required replacement only. See the Maintenance Schedule	
² As applicable to your product engine emissions certifications	