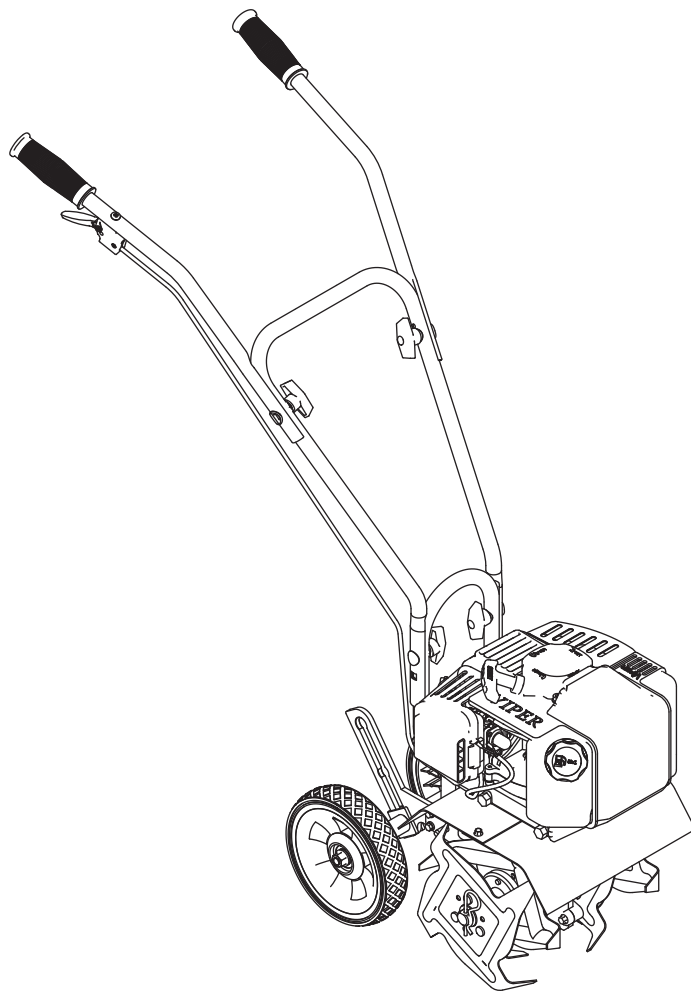




Operator's Manual
Original Operating Instructions
MC43
2-Cycle Cultivator



Includes Model:
MC43

Get parts online at
www.GetEarthquake.com



P/N: 17954
ECN: 10609
REV2: 10/10/14
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INTRODUCTION

Thank you for purchasing a cultivator from Earthquake®. We have worked to ensure that this cultivator meets the highest standards for usability and durability. With proper care, your cultivator will provide many years of service.

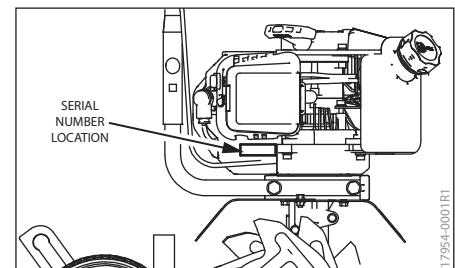
Please read this entire manual before installation and use. Earthquake® reserves the right to change, alter or improve the product and this document at any time without prior notice.

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REGISTRATION AND SERVICE

Record the product model number and serial number in the space provided for easy reference when ordering parts or requesting technical support. Excluding emissions-related warranty items, the warranty is valid only if the completed registration is received by Ardisam within 30 days of purchase. (SEE WARRANTY SECTION FOR MORE INFORMATION) You can register your warranty online by visiting www.earthquake.com, or by mailing it to: Ardisam Inc, 1160 8th Avenue, Cumberland, WI 54829. You may also call our Customer Service department at (800) 345-6007 Mondays through Fridays from 8 a.m. to 5 p.m. CST.



OWNERSHIP RECORDS		
Owner's Name:		
Owner's Address:		
City:	State/Province:	Zip Code/Postal Code:
Model Number:	Serial Number:	
Date of Purchase:		
Notes:		

Read and keep this manual for future reference. This manual contains important information on SAFETY, ASSEMBLY, OPERATION, AND MAINTENANCE. The owner must be certain that all the product information is included with the unit. This information includes the MANUAL, the REPLACEMENT PARTS and the WARRANTIES. This information must be included to make sure state laws and other laws are followed. All persons to whom rent/loan this unit must have access to and understand this information. This manual should remain with the product even if it is resold.

WARNINGS AND SAFETY PRECAUTIONS

Owner's Responsibility

Accurate assembly and safe and effective use of the machine is the owner's responsibility.

- Read and follow all safety instructions.
- Carefully follow all assembly instructions.
- Maintain the machine according to directions and schedule included in this *Earthquake* operator's manual.
- Ensure that anyone who uses the machine is familiar with all controls and safety precautions.

Special Messages

Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.

NOTE: *General information is given throughout the manual that may help the operator in the operation or service of the machine.*



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH IF NOT FOLLOWED COULD ENDANGER YOUR PERSONAL SAFETY. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE THIS EQUIPMENT.

Before Operating Engine:

Please read this section carefully. Read entire operating and maintenance instructions for this product. Failure to follow instructions could result in serious injury or death. Operate the machine according to the safety instructions outlined here and inserted throughout the text. Anyone who uses this machine must read the instructions and be familiar with the controls.

Intended Use / Foreseeable Misuse

IMPORTANT: This is a motorized rotary cultivator that works the soil by means of rotating tines. It is pedestrian-controlled, but not self-propelled, with a gasoline-fueled internal combustion engine to power the tines. It shall not be used for any other purpose.



WARNING

WARNING INDICATES A HAZARD WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY AND/OR PROPERTY DAMAGE.



CAUTION

CAUTION INDICATES YOUR EQUIPMENT CAN BE DAMAGED IF THE SAFETY INSTRUCTIONS THAT FOLLOW THIS SIGNAL WORD ARE NOT OBEYED.



IMPORTANT

INDICATES HELPFUL INFORMATION FOR PROPER ASSEMBLY, OPERATION, OR MAINTENANCE OF YOUR EQUIPMENT.



WARNING

CALIFORNIA PROPOSITION 65 WARNING

ENGINE EXHAUST FROM THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.



WARNING

YOU MUST READ, UNDERSTAND AND COMPLY WITH ALL SAFETY AND OPERATING INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO SETUP AND OPERATE YOUR MACHINE.

FAILURE TO COMPLY WITH ALL SAFETY AND OPERATING INSTRUCTIONS CAN RESULT IN LOSS OF MACHINE CONTROL, SERIOUS PERSONAL INJURY TO YOU AND/OR BYSTANDERS, AND RISK OF EQUIPMENT AND PROPERTY DAMAGE. THE TRIANGLE IN THE TEXT SIGNIFIES IMPORTANT CAUTIONS OR WARNINGS WHICH MUST BE FOLLOWED.



DANGER



General Safety Rules

- Read, understand, and follow all instructions on the machine and in the manual(s). Be thoroughly familiar with the controls and the proper use of the machine before starting.
- Use this equipment for its intended purpose only.
- Familiarize yourself with all of the safety and operating decals on this equipment and on any of its attachments or accessories.
- Do not put hands or feet near or under rotating parts.
- Only allow responsible individuals who are familiar with the instructions to operate the machine. Do not allow children to operate this machine. Do not allow adults to operate the machine without proper instruction.
- Thoroughly inspect the area where the machine 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, automobile, greenhouses, etc.
- Wear appropriate clothing such as a long-sleeved shirt or jacket. Also wear long trousers or slacks. Do not wear shorts. Never wear sandals, sneakers, or open shoes, and never operate the machine with bare feet.
- Do not wear loose clothing or jewelry. They can get caught in moving parts. Always keep hands, feet, hair and loose clothing away from any moving parts on engine and machine.
- Always wear safety goggles or safety glasses with side shields when operating the machine to protect your eyes from foreign objects which can be thrown from the unit. Always wear a protective hearing device.
- Always wear work gloves and sturdy footwear. Wear footwear that will improve footing on slippery surfaces. Leather work shoes or short boots work well for most people. These will protect the operator's ankles and shins from small sticks, splinters, and other debris.
- It is advisable to wear protective headgear to prevent the possibility of being struck by small flying particles, or being struck by low hanging branches, twigs, or other objects which may be unnoticed by the operator.
- Do not operate the machine without proper guards or other safety protective devices in place.
- See manufacturer's instructions for proper operation and installation of accessories. Only use accessories approved by the manufacturer.
- Operate only in daylight or good artificial light.
- Do not operate product when fatigued or under the influence of alcohol, drugs or other medication which can cause drowsiness or affect your ability to operate this machine safely.
- Never operate machine in wet grass. Always be sure of your footing; keep a firm hold on the handle and walk; never run.
- Watch for traffic when operating near, or when crossing roads.
- If the equipment should start to vibrate abnormally, stop the engine (motor), disconnect the spark plug wire and prevent it from touching the spark plug. Check immediately for cause. Vibration is generally a warning of trouble. If the noise or vibrations of the machine increase, stop immediately and perform an inspection.
- Never leave the machine unattended when the engine is running. Remove the wire from the spark plug.
- Regularly inspect the machine. Make sure parts are not bent, damaged or loose.
- Temperature of muffler and nearby areas may exceed 150° F (65° C). Allow muffler and engine areas to cool before touching. Never pick up or carry the machine while the engine is running.
- Prolonged exposure to noise and vibration from gasoline engine-powered equipment should be avoided. Take intermittent breaks and/or wear ear protection from engine noise as well as heavy work gloves to reduce vibration in the hands.
- Keep all screws, nuts and bolts tight.
- Do not transport the machine from one place to another with the engine running.
- When moving the packaged machine, always do so with a partner.
- Check local regulations for age restrictions on use of this machine.

Product-Specific Safety Rules

- Do not cultivate above underground utilities, including water lines, gas lines, electric cables, or pipes. Do not operate the machine on terrain/soil with large rocks and foreign objects which can damage the equipment.
- After striking a foreign object, stop the engine. Remove the wire from the spark plug. Inspect the machine for damage. If damaged, repair before starting and operating the machine.
- The tines of the cultivator should not rotate when the engine is idling. If it does rotate when engine is idling, contact *Earthquake* for instructions.
- If an object becomes lodged in the tines, turn engine off, remove the wire from the spark plug and secure, allow to cool before attempting to remove the foreign object.
- The clutch will transfer maximum power after about two hours of normal operation. During this break-in period clutch slippage may occur. The clutch should be kept free of oil or other moisture for efficient operation.



WARNING

ENGINES GIVE OFF CARBON MONOXIDE, AN ODORLESS, COLORLESS, POISONOUS GAS. CARBON MONOXIDE MAY BE PRESENT EVEN IF YOU DO NOT SMELL OR SEE ANY ENGINE EXHAUST. BREATHING CARBON MONOXIDE CAN CAUSE NAUSEA, FAINTING OR DEATH, IN ADDITION TO DROWSINESS, DIZZINESS AND CONFUSION.

IF YOU EXPERIENCE ANY OF THESE SYMPTOMS, SEEK FRESH AIR AND MEDICAL ATTENTION IMMEDIATELY.



CAUTION

HOT GASES ARE A NORMAL BY-PRODUCT OF A FUNCTIONING INTERNAL COMBUSTION ENGINE. FOLLOW ALL SAFETY INSTRUCTIONS TO PREVENT BURNS AND FIRES.

DO NOT ALTER/MODIFY ENGINE:

NEVER ALTER OR MODIFY THE ENGINE FROM THE FACTORY. SERIOUS INJURY OR DEATH MAY OCCUR IF ENGINE IS MODIFIED OR ALTERED.

WHEN WORKING ON OR REPLACING PARTS FOR THE ENGINE OR PRODUCT, YOU MUST ALWAYS FLIP THE ON/OFF SWITCH TO THE OFF POSITION.

Engine Safety Precautions

If your product comes with a separate engine manual, be sure to read and follow all safety and warning precautions outlined there, in addition to any in this manual.

Preventing Carbon Monoxide Poisoning

- Always start and run engine outdoors. Do not start or run engine in an enclosed area, even if doors or windows are open.
- Never try to ventilate engine exhaust indoors. Carbon monoxide can reach dangerous levels very quickly.
- Never run engine outdoors where exhaust fumes may be pulled into a building.
- Never run engine outdoors in a poorly ventilated area where the exhaust fumes may be trapped and not easily taken away. (Examples include: in a large hole or areas where hills surround your working area.)
- Never run engine in an enclosed or partially enclosed area. (Examples include: buildings that are enclosed on one or more sides, under tents, car ports or basements.)
- Always run the engine with the exhaust and muffler pointed in the direction away from the operator.
- Never point the exhaust muffler towards anyone. People should always be many feet away from the operation of the engine and its attachments.
- Do not change the engine governor settings or over-speed the engine.

Gasoline Fires and Handling Fuel Safely

Use extra care in handling gasoline and other fuels. They are flammable and vapors are explosive.

- When storing extra fuel be sure that it is in an appropriate container and away from any fire hazards.
- Prevent fire and explosion caused by static electric discharge. Use only nonmetal, portable fuel containers approved by the Underwriter's Laboratory (U.L.) or the American Society for Testing & Materials (ASTM).
- Never remove the fuel cap or add fuel with the engine running. Stop engine and allow to cool before filling.
- Do not smoke.
- Never drain fuel from engine in an enclosed area.

- Always fill fuel tank outside in a well ventilated area. Never fill your fuel tank with fuel indoors. (Examples include: basement, garage, barn, shed, house, porch, etc.) Never fill tank near appliances with pilot lights, heaters, or other ignition sources. If the fuel has to be drained, this should be done outdoors. The drained fuel should be stored in a container specifically designed for fuel storage or it should be disposed of carefully.
- Always wipe up excess (spilled) fuel from engine before starting. Clean up spilled fuel immediately. If fuel is spilled, do not start the engine but move product and fuel container from area. Clean up spilled fuel and allow to evaporate and dry after wiping and before starting.
- Allow fuel fumes/vapors to escape from the area before starting engine.
- Test the fuel cap for proper installation before starting and using engine.
- Always run the engine with fuel cap properly installed on the engine.
- Never smoke while refilling engine fuel tank.
- Do not store engine with fuel in fuel tank indoors. Fuel and fuel vapors are highly explosive.

Preparation

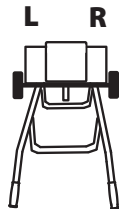
- Dress appropriately when operating the cultivator. Always wear sturdy footwear. Never wear sandals, sneakers or open shoes, and never operate the cultivator with bare feet. Do not wear loose clothing that might get caught in moving parts.
- Carefully inspect the area to be cultivated and remove all foreign objects. Do not cultivate above underground water lines, gas lines, electric cables, or pipes. Do not operate the cultivator in soil with large rocks and foreign objects which can damage the equipment.
- Disengage all clutches and leave control lever in the neutral position before starting the engine.

- Handle fuel with care; it is highly flammable.
 - a. Use an approved fuel container.
 - b. Never add fuel to a running engine or hot engine.
 - c. Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
 - d. Replace gasoline cap securely and clean up spilled fuel before restarting.



WARNING

THE RIGHT AND LEFT SIDES OF YOUR ROTOTILLER ARE DETERMINED FROM THE OPERATING POSITION AS YOU FACE THE DIRECTION OF FORWARD TRAVEL.



THE 2-CYCLE ENGINE USES A 50:1 RATIO OF GAS:OIL. DO NOT USE STRAIGHT UNMIXED GASOLINE OR ENGINE DAMAGE WILL OCCUR.

THIS IS A MOTORIZED CULTIVATOR THAT WORKS THE SOIL BY MEANS OF ROTATING TINES. IT IS PEDESTRIAN CONTROLLED, BUT NOT SELF-PROPELLED, AND USES A GASOLINE-FUELED INTERNAL COMBUSTION ENGINE TO POWER THE TINES. IT SHALL NOT BE USED FOR ANY OTHER PURPOSE.



CAUTION

HOT GASES ARE A NORMAL BY-PRODUCT OF A FUNCTIONING INTERNAL COMBUSTION ENGINE. FOLLOW ALL SAFETY INSTRUCTIONS TO PREVENT BURNS AND FIRES.

DO NOT ALTER/MODIFY ENGINE:

NEVER ALTER OR MODIFY THE ENGINE FROM THE FACTORY. SERIOUS INJURY OR DEATH MAY OCCUR IF ENGINE IS MODIFIED OR ALTERED.

WHEN WORKING ON OR REPLACING PARTS FOR THE ENGINE OR PRODUCT, YOU MUST ALWAYS FLIP THE ON/OFF SWITCH TO THE OFF POSITION.

OPERATION PRECAUTIONS

- Do not operate cultivator under the influence of alcohol or drugs.
- Never operate cultivator without guards, covers, and hoods in place.
- Keep hands, feet, and clothing away from rotating parts. Keep clear of cultivator tines at all times.
- Tines rotate when cultivator is engaged; tines rotate when the drive safety control lever is pulled down. Releasing the drive safety control lever to neutral stops the tines.
- Use extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
- After striking a foreign object, stop the engine, remove the wire from the spark plug, thoroughly inspect the cultivator for any damage, and repair the damage before restarting and operating the cultivator.
- If vegetation clogs the tines, stop the engine and disconnect the spark plug wire before removing vegetation by hand.
- If the unit should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
- Do not run engine indoors; exhaust fumes are deadly.
- Do not overload the machine capacity by attempting to till too deep at too fast of a rate.
- Never operate the cultivator without good visibility or light.
- Take all possible precautions when leaving the machine unattended. Disengage throttle control, stop the engine, wait for all moving parts to stop, and make certain guards and shields are in place.
- When leaving the operating position for any reason:
 - shut off the engine.
 - wait for all moving parts to stop.

MAINTENANCE AND STORAGE PRECAUTIONS

- Keep machine, attachments and accessories in safe working condition.
- Check shear bolts, engine mounting bolts and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.
- To prevent accidental starting, always disconnect and secure the spark plug wire from the spark plug before performing cultivator maintenance.
- Never run the engine indoors. Exhaust fumes are deadly.
- Always allow muffler to cool before filling the fuel tank.
- Never store equipment with gasoline in the tank inside a closed building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any building.
- Always refer to the operator's guide instructions for important details if the cultivator is to be stored for an extended period.

BURNS AND FIRES

The muffler, muffler guard and other parts of the engine become extremely hot during the operation of the engine. These parts remain extremely hot after the engine has stopped.

Prevention of Burns and Fires

- Never remove the muffler guard from the engine.
- Never touch the muffler guard because it is extremely hot and will cause severe burns.
- Never touch parts of the engine that become hot after operation.
- Always keep materials and debris away from muffler guard and other hot parts of the engine to avoid fires.

Children and bystanders

Tragic accidents can occur if the operator is not alert to the presence of children and/or bystanders. Never assume that others will remain where you last saw them.

- Keep the area of operation clear of all persons, especially small children and pets. Keep children under the watchful care of a responsible adult.
- Be alert and turn machine off if children enter the area.
- Before and while moving backwards, look behind and down for small children.
- Never allow children to operate the machine.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

Service

- Always stop the engine whenever you leave the equipment, before cleaning, repairing or inspecting the unit. Engine should be turned off and cool. Never make adjustments or repairs with the engine (motor) running. Flip the ON/OFF switch to the **OFF** position to prevent accidental starting.
- Always wear eye protection when you make adjustments or repairs.
- Keep all nuts and bolts tight and keep equipment in good condition.
- Never tamper with safety devices. Check their proper operation regularly.
- When servicing or repairing the machine, 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 machine in an upright position. Some procedures will be easier if the machine is lifted on a raised platform or working surface.
- To reduce fire hazard, keep machine free of grass, leaves or other debris build-up. Clean up oil or fuel spillage. Allow machine to cool before storing.
- Stop and inspect the equipment if you strike an object. Repair, if necessary, before restarting.

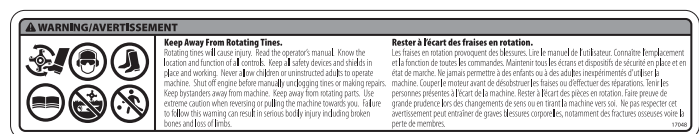
- Clean and replace safety and instruction decals as necessary.
- To guard against engine over-heating, always have engine debris filter mounted and clean.
- Inspect machine before storage. When not in use, flip the ON/OFF switch to the **OFF** position and store indoors in a dry place locked or otherwise inaccessible to children.
- Use only original equipment parts from *Earthquake*, including all nuts and bolts.

SAFETY DECALS

This cultivator 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.

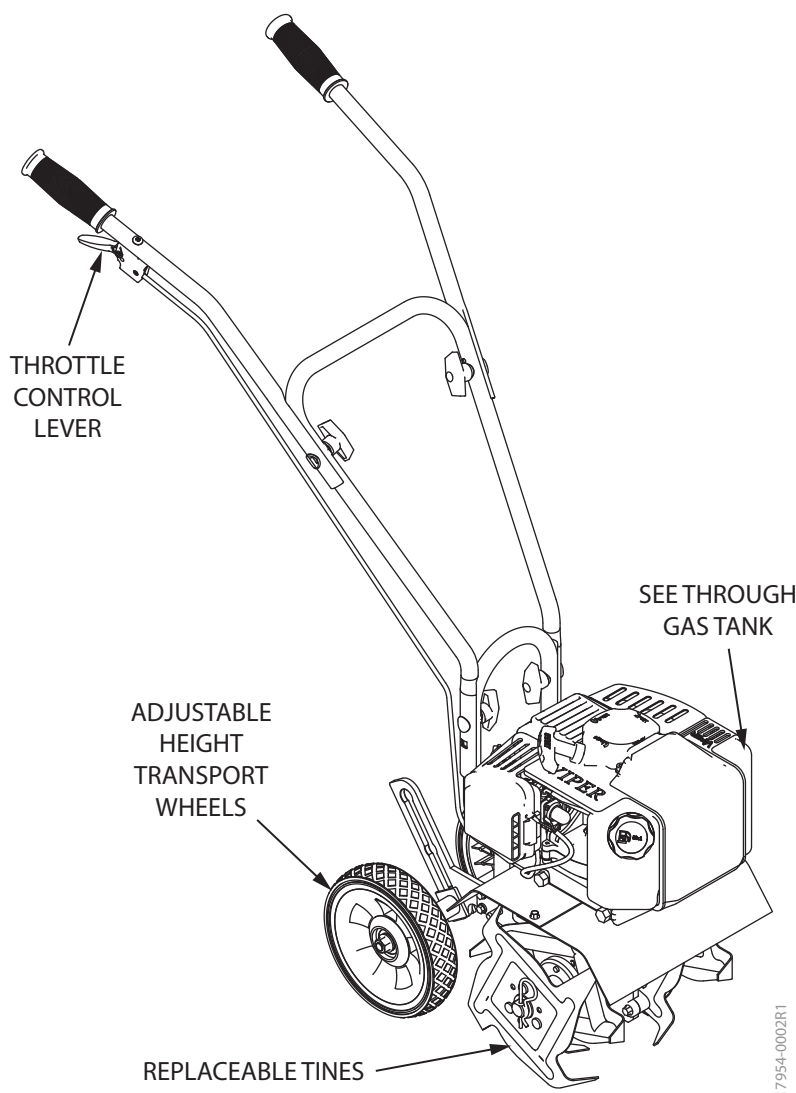
Reading this manual and the safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively. We have placed a safety decal on the cultivator to remind you of some of this important information while you are operating the unit.

These important safety decals are illustrated below, and are shown here to help familiarize you with the location and content of the safety messages you will see as you perform normal cultivating operations. Please review these decals now, and if you have any questions regarding its meaning or how to comply with these instructions, reread the complete safety instruction text in this manual.



Part No. 17048
Cultivator Warning Decal
Tine Shield Decal

FEATURES



SPECIFICATIONS

ENGINE DISPLACEMENT	43cc
FUEL TANK CAPACITY	36 ounces
OIL/GAS RATIO	50:1 - 2.6 ounces per gallon
OIL TYPE	VIPER 2 CYCLE ENGINE OIL (P/N 300400)
FUEL TYPE	Minimum 87 octane gasoline. NOTE: If using an ethanol blended fuel, a fuel stabilizer, mixed to manufacturer specifications, is recommended.

SPARK PLUG	BM6A
SPARK PLUG GAP	0.028
TRANSMISSION	GEAR DRIVE
GEAR RATIO	32:1
TILLING WIDTH	6" minimum - 10" maximum
TILLING DEPTH	8" maximum
TINE SPEED	250 rpm
WHEEL SIZE	1.375 x 7.0 inch diameter
WEIGHT OF UNIT	MC43 = 33 lb
UNIT SIZE L X W X H (INCHES)	23" x 20" x 20"

UNPACKING AND ASSEMBLY

Unpack Cultivator

1. Carefully lift the cultivator out of the box, remove any packing material and cut any ties holding the handlebar pieces to the cultivator assembly.
2. Find parts packet. Parts packet contains:
 - 4 - T-Handle Nuts (4640)
 - 4 - Curved Washers (4641)
 - 4 - Handle Clamp Bolts (4642)

Assembly

1. Stand the cultivator assembly upright with tines and wheels on a level surface. Wheels should be set in the lowest position. **DO NOT** place the cultivator on a high surface where it can fall and cause property damage or personal injury.
2. Using two T-handle nuts, two handlebar clamp bolts, and two curved washers, attach the middle handlebar to the lower handlebar that is already connected to the cultivator assembly. The middle handlebar can be installed in one of two positions, one high and one low. **DO NOT** overtighten the T-handle nuts. **SEE FIGURE 1**
3. Attach the upper right and left handlebars to the middle handlebar using the two remaining T-handle nuts, handle clamp bolts, and curved washers. **SEE FIGURE 1. DO NOT overtighten the T-handle nuts.**
4. The drag stake is shipped with point facing upwards. Before using, remove lock pin and turn the drag stake around so the point is directed in the downward position facing towards the tines. Re-insert lock pin. **SEE FIGURE 2**

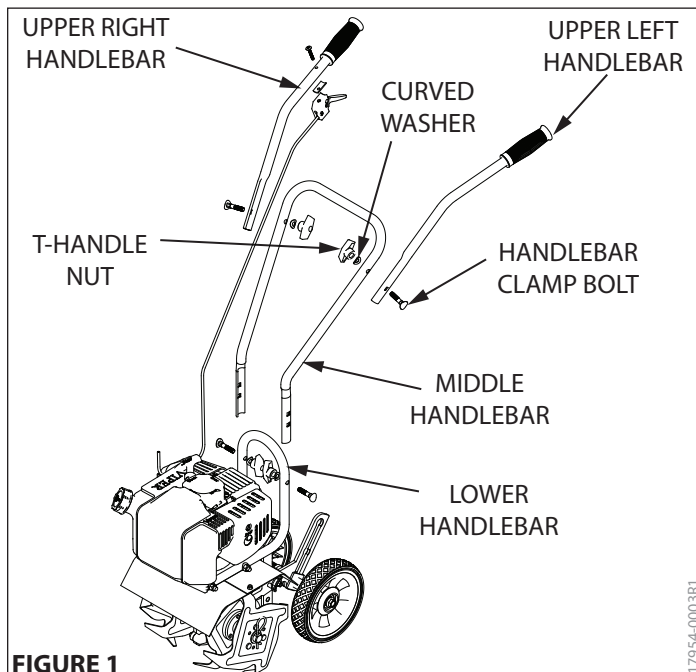


FIGURE 1

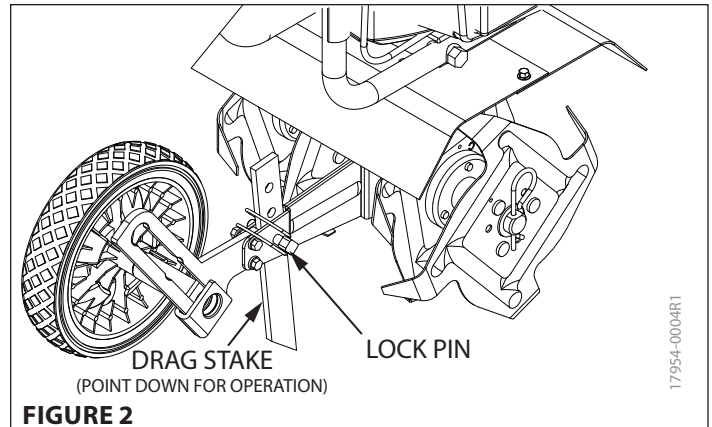


FIGURE 2

! WARNING

DO NOT STORE ENGINE INDOORS WITH FUEL IN THE TANK. FUEL AND FUEL VAPORS ARE HIGHLY FLAMMABLE.

NEVER MIX FUEL AND OIL DIRECTLY IN ENGINE FUEL TANK. USE ONLY NONMETAL, PORTABLE FUEL CONTAINERS APPROVED BY THE UNDERWRITER'S LABORATORY (U.L.) OR THE AMERICAN SOCIETY FOR TESTING & MATERIALS (ASTM).

AN ADULT MUST ALWAYS HANDLE AND FILL THE ENGINE WITH FUEL.

ALWAYS HANDLE GAS IN A WELL VENTILATED AREA, OUTDOORS, AWAY FROM FLAMES OR SPARKS.

DO NOT START ENGINE IF FUEL IS SPILLED. WIPE OFF EXCESS FUEL AND ALLOW TO DRY. REMOVE ENGINE FROM AREA TO AVOID SPARKS.

NEVER RUN ENGINE INDOORS. EXHAUST FUMES ARE DEADLY.

FAILURE TO FOLLOW THESE WARNINGS CAN CAUSE DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL.

OPERATION

Operation Tips

1. The clutch will transfer maximum power after about two hours of normal operation. During this break-in period clutch slippage may occur. The clutch should be kept free of oil and other moisture for efficient operation.
2. Cultivate without placing excessive body weight on the unit. The cultivator operates most efficiently with the weight of the unit itself.

Preparing Engine for Starting

Mixing Fuel and Filling the Fuel Tank

IMPORTANT:

To operate the engine, we recommend using "VIPER" brand two-cycle oil (PN 300400) or equivalent high quality 2-cycle oil designed for air-cooled 2-cycle engines, to ensure that the engine operates correctly throughout the life of the engine. Use premium gasoline, low/no ethanol blends recommended.

NOTE: Engine must be run with a 50:1 Gas:Oil ratio.

GAS	OIL	RATIO
1 gallon	2.6 ounces	50:1
2 gallons	5.1 ounces	50:1
5 gallons	13 ounces	50:1

1. Fuel must be mixed in a container outside in a well ventilated area.
2. Fill certified fuel container 1/4 full of recommended fuel.
3. Add recommended amount of 2 cycle oil.
4. Screw container cap on straight and tight.
5. Shake the container to mix fuel and oil.
6. Unscrew gas cap slowly to vent, add the remainder of fuel requirements.
7. Wipe away any spilled fuel or oil and allow to evaporate before moving or transporting.



IMPORTANT

THIS ENGINE USES A GAS/OIL MIXTURE. DO NOT RUN ON STRAIGHT GAS ONLY, ENGINE DAMAGE WILL OCCUR.

Filling Fuel Tank

1. Shut-off engine and allow engine to completely cool before refilling the fuel tank.
2. Move to a well ventilated area, outdoors, away from flames and sparks.
3. Clean debris from area around the fuel cap.
4. Loosen fuel cap slowly. Place the cap on a clean, dry surface.
5. Carefully add fuel without spilling.
6. Do not fill gas tank completely full, allow space for fuel to expand.

7. Immediately replace fuel cap and tighten. Wipe off spilled fuel and allow to dry before starting engine.

Tine Removal and Installation

To Remove Tines, do as follows: **SEE FIGURE 3**

1. Remove the hairpins from each end of the tine shaft.
2. Slide the four tines off the shaft.

To Install Tines

1. First slide the inside tines onto each end of the tine shaft. One inside tine is stamped with a **B** and the other is stamped with a **C**.
2. Slide the outside tine **A** and tine **D** onto each end of the shaft next. The tines should be installed in the correct order so that they are positioned left to right **A, B, C, D**, as viewed from the user's position on the cultivator. Make sure that the hub collars on both the right and left pairs of tines face each other so that there is adequate spacing between the tine blades.
3. Insert the hairpins into the holes at each end of the tine shaft to lock the tines into place.

NOTE: Tines can be reversed so the pointed tip of the tines are directed forward - for more aggressive digging. In this arrangement, tines are positioned left to right D, C, B, A as viewed from the user's position.

To reduce cultivating width from 10" to 6", remove both outer tines and reinsert hairpins through the two inner holes on the tine shaft to secure both inner tines in place.

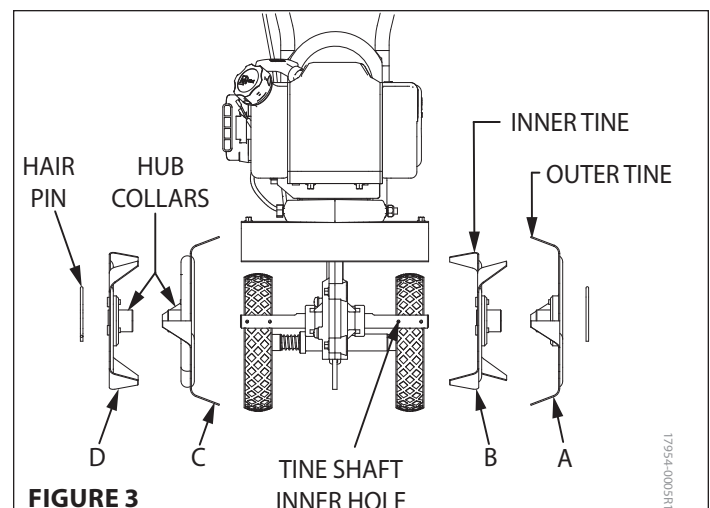


FIGURE 3

WARNING

MAKE SURE THE UNIT IS IN A STABLE POSITION BEFORE PULLING THE STARTER HANDLE.

WHEN THE UNIT STARTS TO FIRE OR RUN, RETURN BOTH HANDS TO THE HANDLE BAR POSITION TO MAINTAIN CONTROL AND STABILITY OF THE UNIT.

STARTER ROPE CAN CAUSE AN UNANTICIPATED JERK TOWARDS ENGINE. PLEASE FOLLOW INSTRUCTIONS TO AVOID INJURY.

NEVER LEAVE ENGINE RUNNING WHILE UNATTENDED. TURN OFF AFTER EVERY USE.

NEVER CARRY CULTIVATOR FROM ONE LOCATION TO ANOTHER WHILE ENGINE IS RUNNING.

ALWAYS WEAR A PROTECTIVE HEARING DEVICE.

DO NOT START ENGINE IF FUEL IS SPILLED. WIPE OFF EXCESS FUEL AND ALLOW TO DRY.

Starting and Stopping the Engine

- Move engine to a well ventilated area, outdoors, to prevent carbon monoxide poisoning.
- Move to an area away from flames or sparks, to avoid ignition of vapors if present.
- Remove all debris from air cleaner holes and gas cap to ensure proper air flow.

Cold Engine Start:

Starting engine for first time or after engine has cooled off or after running out of fuel.

1. Move choke lever to **RUN** position.

NOTE: Choke must be in the RUN position when pushing or using the primer bulb.

2. Prime unit until primer hose is filled with gas.

NOTE: When using the primer bulb, allow the bulb to return completely to its original position between pushes.

3. Move choke lever to **CHOKE** position.

NOTE: CHOKE position is defined by moving the choke lever as far to the CHOKE position as possible.

4. Push ON/OFF switch to the **ON** position.
5. Hold handle bar firmly. Grasp starter handle with other hand and pull out slowly, until it pulls slightly harder. Without letting starter handle retract, pull rope with a rapid full arm stroke. Let it return to its original position very slowly. Repeat this step every time the starter rope is pulled until unit fires or runs.

NOTE: If engine fails to start after 5-6 pulls, push primer 1 time and pull starter rope again.

6. After engine starts running, move choke lever to **HALF CHOKE** position until unit runs smoothly.

NOTE: Half choke is defined when the choke lever is positioned between CHOKE and RUN.

7. Move choke lever to **RUN** position and squeeze throttle to desired speed.

NOTE: Run at full throttle when possible. Do not let unit idle for extended periods of time.

8. To stop engine, push ON/OFF switch to **OFF** position.

Warm Engine Start:

1. Begin with Step 3 of Cold Engine Starting.

Hot Engine Start:

1. Begin with Step 4 of Cold Engine Starting.
2. If engine does not fire, refer to Step 1 of Warm Engine Starting.

Note: If engine fails to start after trying starting procedures, please contact our customer service department at 800-345-6007.

DO NOT attempt to start engine in the following ways:

- DO NOT use starting fluid.
- DO NOT spray flammable liquids or vapors into air cleaner, carburetor or spark plug chamber.
- DO NOT remove spark plug and attempt to start engine. Flammable fuel can spray out & ignite from a spark from spark plug.

Adjusting Wheels and Drag Stake

The wheels on the cultivator can be adjusted to one of three positions. The **LOW** wheel position is used for transporting the cultivator across a smooth level surface while the engine is not running. The **HIGH** and **HIGHEST** wheel positions are used when cultivating in soil and help stabilize the unit when cultivating at different depths. **SEE FIGURE 4**

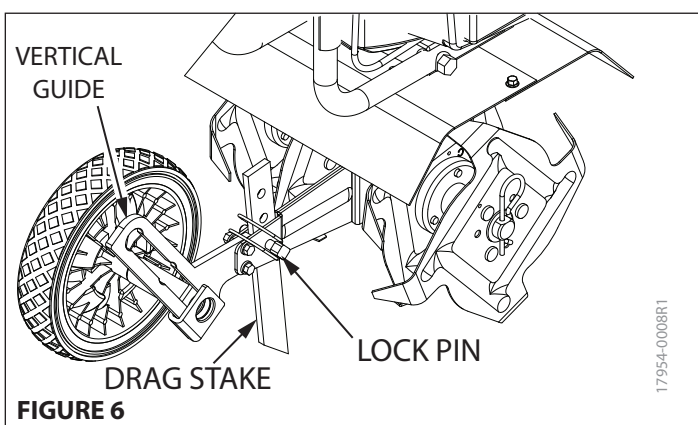
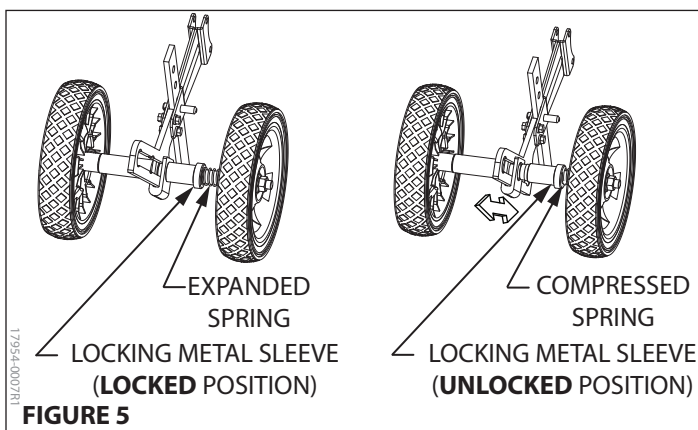
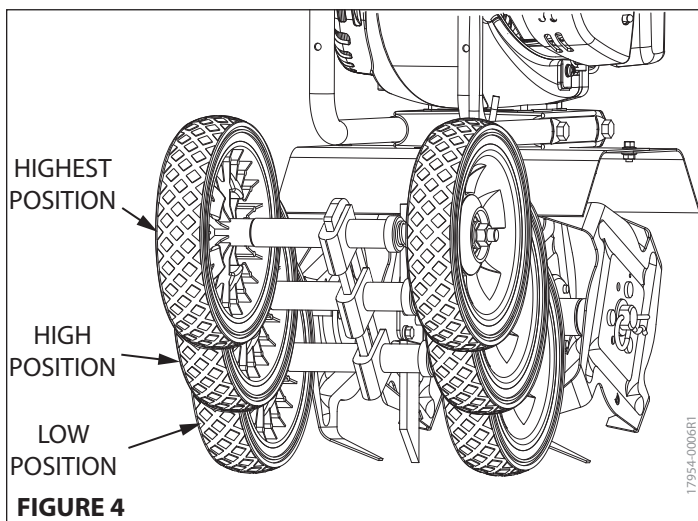
To Adjust Wheels Up Or Down do as follows: SEE FIGURES 4 & 5:

1. Pull the locking metal sleeve against the spring, away from the vertical guide until it releases from one of the three notched positions in the vertical guide.
2. Slide the wheel set up or down to the desired position, and release the locking metal sleeve until it locks into desired notch in the vertical guide.

To Adjust the Drag Stake do as follows: SEE FIGURE 6

The drag stake is used to help regulate cultivating depth and control the cultivator from leaping forward during operation. Resistance to forward motion is greatest when the drag stake is set in its lowest position allowing for deeper cultivation.

1. Pull the lock pin out of the drag stake mount hole.
2. Position drag stake so the pointed tip is directed downward.
3. Insert lock pin into the hole that achieves desired depth.



⚠ WARNING

PRACTICE SAFETY AT ALL TIMES. ENGINE MUST BE TURNED OFF AND ALLOWED TO COOL, AND SPARK PLUG WIRE MUST BE DISCONNECTED BEFORE ATTEMPTING ANY MAINTENANCE OR REPAIR.

TO PREVENT ACCIDENTAL STARTING:

ENGINE MUST BE TURNED OFF AND COOL, AND SPARK PLUG WIRE MUST BE REMOVED FROM SPARK PLUG BEFORE CHECKING AND ADJUSTING ENGINE OR EQUIPMENT.

TEMPERATURE OF MUFFLER AND NEARBY AREAS MAY EXCEED 150° F (65° C). AVOID THESE AREAS.

CHECK CULTIVATOR OFTEN FOR LOOSE NUTS AND BOLTS. KEEP THESE ITEMS TIGHTENED.

NEVER STORE ENGINE WITH FUEL IN THE TANK INSIDE A BUILDING. POTENTIAL SPARKS MAY BE PRESENT FOR IGNITION OF FUEL AND FUEL VAPORS.

AN ADULT MUST ALWAYS DO MAINTENANCE AND REPAIR ON ENGINE AND CULTIVATOR.

ENGINE MUST BE SHUT-OFF, COOL, AND SPARK PLUG WIRE REMOVED BEFORE ANY REPAIR OR MAINTENANCE CAN BE DONE.

MAINTENANCE AND STORAGE

Steps For Working On Equipment

1. Turn engine switch to the **OFF** position.
2. Disconnect the spark plug wire from the spark plug.
3. Securely place the disconnected spark plug wire away from the spark plug and any metal parts. This must always be done or arcing may occur between spark plug wire and metal parts.
4. Replace or repair the part on the cultivator.
5. Check all parts that were repaired, or removed during repair, that they are secure and fit correctly.

NOTE: All repair parts must come from the factory. Never replace parts that are not specifically designed for the cultivator.

6. Reconnect the spark plug wire.

*** For helpful hints and tips for using your cultivator, check out one of the informative cultivating videos on www.getearthquake.com.**

Cultivator Maintenance

1. The transmission case has grease installed at the factory. It is recommended that once a year the gear case be split by a qualified service professional and the grease level checked. Add a molythium type grease only if level of grease is below top of the gears. **DO NOT OVERFILL.**
2. Keep all screws, nuts, and bolts tight.
3. For cold weather operation, store the unit in a cool environment. Transferring the unit from a cold to a warm place can cause the build up of harmful condensation.

Engine Maintenance

Please read the maintenance schedule and observe these recommendations to extend the life of your engine.

Good maintenance is essential for safe, economical, and trouble-free operation. It will also help reduce air pollution. To help you properly care for your engine, the following pages include a maintenance schedule, routine inspection procedures, and simple maintenance procedures using basic hand tools. Other service tasks that are more difficult, or require special tools, are best handled by professionals and are normally performed by a technician or other qualified mechanic.

Maintenance, replacement or repair of the emissions control devices and systems may be performed by any non-road engine repair establishment or individuals. However, items must be serviced by an authorized dealer to obtain "no charge" emissions control service.

The maintenance schedule applies to normal operating conditions. If you operate your engine under unusual conditions, such as sustained high-load or high-temperature operation, or use in unusually wet or dusty conditions, consult your servicing dealer for recommendations applicable to your individual needs and use.

Maintenance Schedule

MAINTENANCE ITEM		Every 8 hours (daily)	Every 20 hours or seasonally	Each Year
Clean Engine and Check Bolts & Nut		X		
Air Filter (See Air Filter section)	Check	X		
	Clean *		X	
	Replace		X	X
Spark Plug (Gap 0.028") (See Spark Plug section)	Check/Adjust		X	
	Replace			X

* Service more frequently under dusty conditions

Spark Plug

The recommended spark plug is a NGK BM6A which cross references to a Champion CJ8.

1. Check spark plug at the beginning of each season.
2. Disconnect the spark plug cap, and clean any debris from around the spark plug area.
3. Remove spark plug and replace if any of the following occur; pitted electrodes, burned electrodes, cracked porcelain, or deposits around electrodes.
4. After analysis, seat spark plug and tighten with spark plug wrench. Reconnect the spark plug wire.
 - Reinstall original spark plug, tighten additional 1/2 turn.
 - Installing new spark plug, adjust spark plug gap to 0.028" and tighten additional 1/8 – 1/4 turn .

NOTE: Loose spark plug may overheat and damage engine. Over tightened spark plug may damage threads in the cylinder head.

Cooling Fins

Cooling fins, air inlets and linkages must be free from any debris before each use.

CARBURETOR

Never tamper with factory setting of the carburetor.

Air Filter

Never run engine without air cleaner properly installed. Added wear and engine failure may occur if air cleaner is not installed on engine.

Service air cleaner every 3 months or after 20 hours of operation. Clean filter daily in extremely dusty conditions.

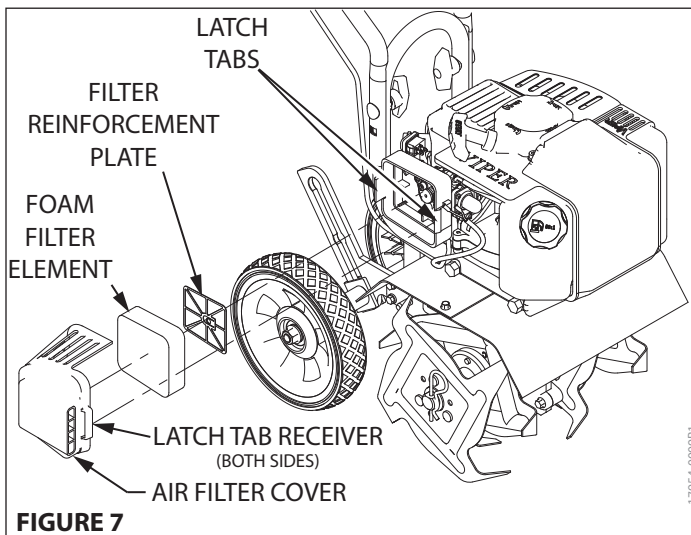
**To Replace or Clean Air filter, do as follows:
(Block Style Foam Filter)**

1. Before removing the air filter cover, move the choke lever to the **CHOKE** position.
2. To remove air filter cover, squeeze the latch tabs on both sides of the cover. **SEE FIGURE 7**
3. Once the latch tabs are released, remove the air filter cover by rotating the cover away from the engine.
4. Remove the foam filter element. Replace with a new oiled foam filter or clean the original foam filter with warm water and mild soap.

CAUTION

DO NOT TWIST AIR FILTERS WHEN CLEANING. ALWAYS PRESS. TWISTING OR TOO MUCH FORCE CAN DAMAGE THE FILTER ELEMENT.

- After cleaning, thoroughly oil the foam filter with 30 or 40 weight motor oil and squeeze out any excess oil before reinstalling it. Make sure to press the foam filter evenly into place over the filter reinforcement plate to ensure that the foam is fully seated into its sealed position.
- Replace the air filter cover so that it fully snaps into place and is secured by the latch tabs. Check that the cover is securely attached by pulling slightly on the cover. If the cover doesn't move when pulled, it is secure.



WARNING

DO NOT SIPHON FUEL BY MOUTH. GASOLINE IS TOXIC AND CAN CAUSE INJURY TO PERSONNEL.

NEVER STORE CULTIVATOR WITH FUEL IN THE FUEL TANK INSIDE AN ENCLOSED AREA OR BUILDING. FUEL VAPORS CAN COLLECT AND CAUSE A FIRE.

Transporting Your Cultivator

- After using the cultivator and before transporting it, screw the gas cap on (clockwise) tightly. The gas cap will not leak during transporting if gas cap is tight. Never transport engine inside an enclosed space within a vehicle. Fuel or fuel vapors may ignite causing serious injury or death.
- If fuel is present in the fuel tank, transport in an open vehicle in an upright position.

- If an enclosed vehicle must be used, remove gas into an approved red fuel container. DO NOT siphon by mouth.
- Run engine to use up the fuel in the carburetor and fuel tank. Always run engine in a well ventilated area.
- Wipe away any spilled fuel from engine and cultivator. Allow to dry.
- Gas cap should be turned down tightly before transporting cultivator in a vehicle.

Long-Term Storage

If your cultivator will not be used for more than one month, prepare it for long term storage.

Steps for Long-Term Storage

- Mix an appropriate amount of fuel stabilizer, such as STA-BIL®, to fresh gasoline, in the ratio recommended on the stabilizer packaging. Run the engine for five minutes to distribute the stabilizer mixture throughout the fuel system. This will prevent gum, varnish and corrosion build up in your fuel system during long-term storage for up to 12 months.
- Store cultivator in an upright position.
- Remove all debris from cultivator tines and engine.

TROUBLESHOOTING AND REPAIR

At *Earthquake*, we build quality and durability into the design of our products; but no amount of careful design by us, and careful maintenance by you, can guarantee a repair-free life for your Earthquake Cultivator. Most repairs will be minor, and easily fixed by following the suggestions in the troubleshooting guide in this section.

The guide will help you pinpoint the causes of common problems and identify remedies.

For more complicated repairs, you may want to rely on your retailer, an authorized service center or Earthquake. Earthquake will make the necessary repairs if a service center is not available. A parts breakdown is located toward the end of this manual.

We will always be glad to answer any questions you have, or help you find suitable assistance. To order parts or inquire about warranty, call or e-mail us using the contact information found in this section.

Ordering Replacement Parts

Parts can be obtained from the store where the cultivator was purchased or direct from the factory. To order parts visit; www.getearthquake.com or call 1-800-345-6007.

For other general questions, you can e-mail us at: info@getearthquake.com.

Please include the following information with your order:

- 1) Part numbers
- 2) Part description
- 3) Quantity
- 4) Model number and serial number

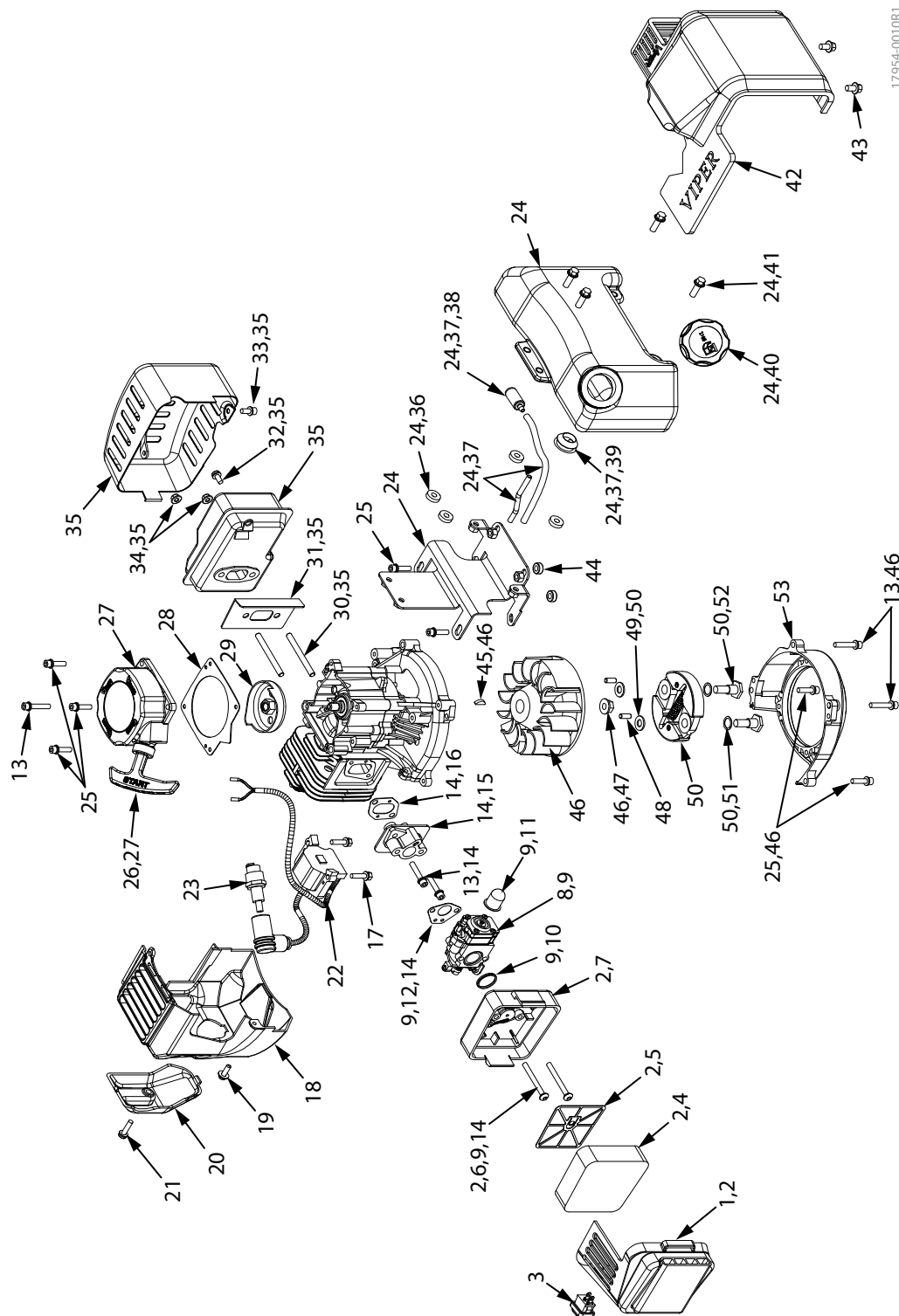
Spare Parts

Only use approved *Earthquake* spare parts.

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	REMEDY/ACTION
Engine will not start	1. Power switch off	1. Flip switch to ON position
	2. Spark plug wire disconnected	2. Connect spark plug wire to spark plug
	3. Out of fuel	3. Refuel
	4. Spark plug wet, faulty or improperly gapped	4. Clean, replace or gap spark plug
	5. Fuel line hose not positioned in bottom of gas tank	5. Push fuel line down into fuel in gas tank
Engine runs rough, floods during operation	1. Dirty air filter	1. Clean or replace air filter
	2. Choke partially engaged	2. Turn off choke
	3. Carburetor out of adjustment	3. Call customer service
Engine is hard to start	1. Stale fuel	1. Drain old fuel and replace with fresh. Use gas stabilizer at end of season
	2. Spark plug wire loose	2. Make sure spark wire is securely attached to spark plug
	3. Dirty carburetor	3. Clean carburetor, use gas stabilizer, new gas can
	4. Fuel not primed sufficiently	4. Prime unit 3 more times, then pull recoil handle
Engine misses or lacks power	1. Clogged gas tank	1. Remove and clean gas tank
	2. Clogged air filter	2. Clean or replace air filter
	3. Carburetor out of adjustment or bad	3. Call customer service
	4. Spark plug wet, faulty or improperly gapped	4. Clean, replace or gap spark plug
Engine runs, then quits	1. Gas cap not venting	1. Clean or replace gas cap, check vent
	2. Plugged fuel filter	2. Clean or replace fuel filter
	3. Carburetor out of adjustment or bad	3. Call customer service
Engine revs too high	1. Carburetor out of adjustment	1. Call customer service
Tines turn at idle	1. Idle speed too high	1. Adjust idle speed lower
	2. Broken clutch spring	2. Replace spring

ILLUSTRATED PARTS BREAKDOWN - Engine Assembly



17954-0010R1

ILLUSTRATED PARTS BREAKDOWN - Engine Assembly

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	3004158	AIR FILTER COVER	1
2	15230	KIT AIR FILTER ASSEMBLY	1
3	1021	ROCKER SWITCH	1
4	3004156	FOAM ELEMENT AIR FILTER BLOCK	1
5	3004157	AIR FILTER REINFORCEMENT FRAME	1
6	15209	BOLT M5 X 52 WITH WASHER	2
7*	3004150	AIR FILTER BASE ASSEMBLY	1
8	15261	CARBURETOR 43CC NO TAMP	1
9	11334	KIT CARBURETOR REPLACEMENT	1
10	300481	CARBURETOR O-RING	1
11	3004109	CARBURETOR PRIMER BULB	1
12	300479	CARBURETOR GASKET	1
13	17952	BOLT M5 X 28 WITH WASHER	5
14	11205	KIT INTAKE MANIFOLD	1
15	300478	WINDPIPE INTAKE	1
16	300476	GASKET INTAKE	1
17	300335	BOLT M5 X 20 HEX HEAD WITH WASHER	2
18	300482	ENGINE SHROUD RED	1
19	10887	BOLT M5 X 16 BUTTON HEAD WITH WASHER	1
20	300483	ENGINE SHROUD CAP END BLACK	1
21	300439	BOLT M5 X 20 BUTTON HEAD WITH WASHER	1
22	300472	IGNITION COIL PE140F-110 AMP	1
23	BM6A	SPARK PLUG	1
24 (a)	10683	KIT GAS TANK	1
25	17946	BOLT M5 X 20 WITH WASHER	7
26	3004121	RECOIL HANDLE	1
27	300430	RECOIL ASSEMBLY	1
28	300429	RECOIL SPACER PLATE	1
29	300491	RECOIL CLUTCH CUP	1
30	300493	STUD M6 X 62	2

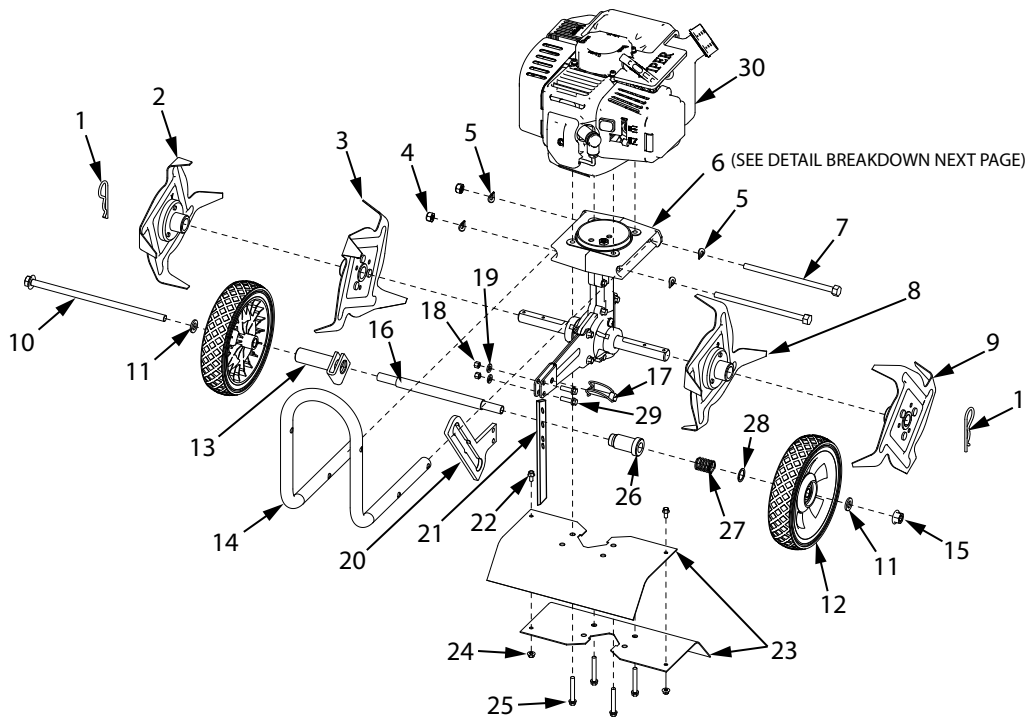
ITEM NO.	PART NO.	DESCRIPTION	QTY.
31	300475	GASKET MUFFLER HEAT SHIELD	1
32	300471	BOLT M5 X 12 WITH WASHER	1
33	17888	BOLT M5 X 12 SOCKET HEAD WITH WASHER	1
34	300492	NUT M6 X 1 HEX FLANGE	2
35	11197	KIT MUFFLER STRAIGHT EJECTION	1
36	11190	SPACER M5 X 4 NYLON	4
37 (b)	3004105	KIT FUEL LINE TWO HOLE GROMMET	1
38	3004103	FUEL FILTER	1
39	300494	GROMMET TWO HOLE	1
40	11936	GAS CAP TWO WAY SELF VENTING	1
41	4647	BOLT M6 X 18 HEX FLANGE	4
42	15105	GAS TANK SHROUD BLACK	1
43	300336	BOLT M6 X 10 HEX FLANGE	2
44	11189	SPACER M5 X 5	2
45	300338	KEY WOODRUFF 3 X 5 X 12	1
46	11209	KIT FLYWHEEL	1
47	300337	NUT M8 X 1.25 HEX FLANGE	1
48	300467	DOWEL PIN 5 X 12	2
49	300462	WASHER 15.8 X 8.4 X 1.6	2
50	11235	KIT CLUTCH	1
51	300449	WAVE WASHER 10 X 15 X 0.25	2
52	300450	BOLT M8 X 25 SHOULDER 10	2
53	300487	FLYWHEEL SHROUD	1
-	15075	ENGINE 43CC MINI CULTIVATOR	1
-	3004114	KIT CARBURETOR REPAIR	1
-	KITTU101	KIT TUNE UP	1

*Air filter assembly includes: air filter base, choke lever bolt, two choke lever washers, nylock choke lever nut, choke lever, and choke paddle.

(a) Gas tank kit includes: gas tank, gas cap, two-hole grommet, fuel line hose, primer line hose, and fuel filter.

(b) These parts are available as part of fuel line repair kit. Fuel line repair kit includes: two-hole grommet, fuel line hose, primer line hose, and fuel filter.

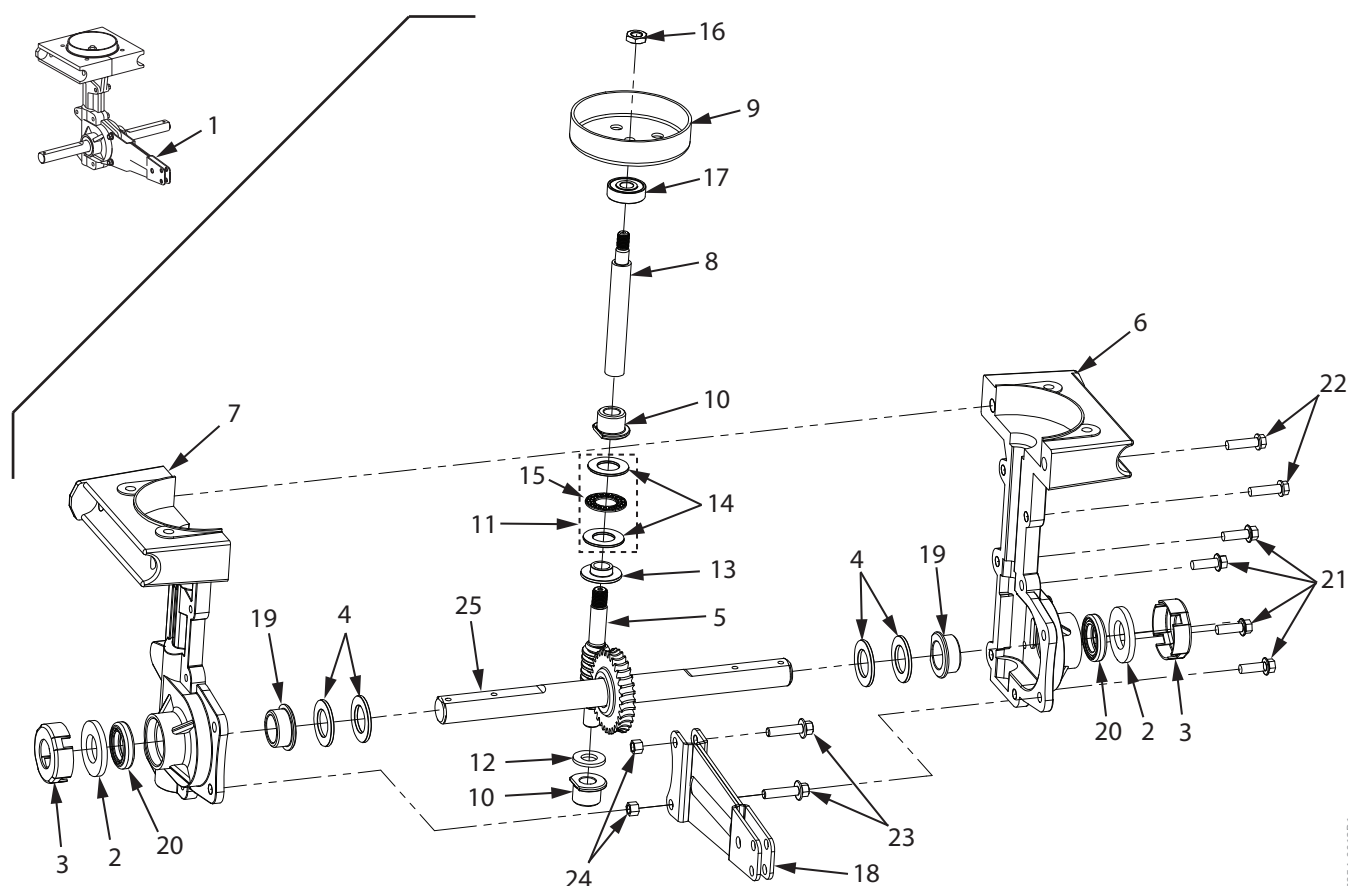
ILLUSTRATED PARTS BREAKDOWN - Hood & Tines Parts Explosion



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	4652	HAIR PIN, 5/8-3/4 COTTER	2
2	4601	TINE "A" RIGHT OUTSIDE	1
3	4603	TINE "B" RIGHT INSIDE	1
4	400023	NUT M8 NYLOCK	2
5	4641	WASHER M8 CURVED ZINC	4
6	46138	TRANSMISSION ASSEMBLY	1
7	46141	BOLT M8-1.25 X 155MM ZN P-T	2
8	4602	TINE "C" LEFT INSIDE	1
9	4604	TINE "D" LEFT OUTSIDE	1
10	17171	BOLT M10-1.5 X 231 HHF GR8.8 YL ZN P-T	1
11	2431	WASHER, 10MM NARROW FLAT	2
12	4634	WHEEL 180 X 38MM DIAMOND TREAD WHITE HUB	2
13	4678	GUIDE, WHEEL TUBE	1
14	15104	HANDLEBAR LOWER MC NO BATTERY BOX HOLES	1
15	4629	NUT M10 X 1.5 CENTER LOCK HEX HD	1
16	4674	WHEEL TUBE	1

ITEM NO.	PART NO.	DESCRIPTION	QTY.
17	18039	PIN LOCK 8MM X 40MM PIPE SAFETY PIN	1
18	4650	NUT M6 X 1.0 FLANGED HEX HD	2
19	W1200117	WASHER M6 X 13 X 1.75 FLAT ZN	2
20	4673	WHEEL HOLDER	1
21	4600	DRAG STAKE	1
22	4691	BOLT, M4 X 0.7 X 10MM PHILLIPS PAN HD	2
23	46146	TINE SHIELD	2
24	400020	NUT M5 X 0.8 TOPLOCK HHF GR 8.8 ZN	2
25	4625	BOLT, M6 X 1.0 X 42MM FLANG HEX HD	4
26	4684	TUBE, WHEEL LOCK	1
27	4685	SPRING, WHEEL LOCK	1
28	13230	WASHER 21MM X 16MM X 1MM	1
29	46142	BOLT M6 X 1.0 X 15MM FLANG HEX HD	2
30	15075	ENGINE MC43 VIPER MANUAL START	1

ILLUSTRATED PARTS BREAKDOWN - Transmission Parts Explosion



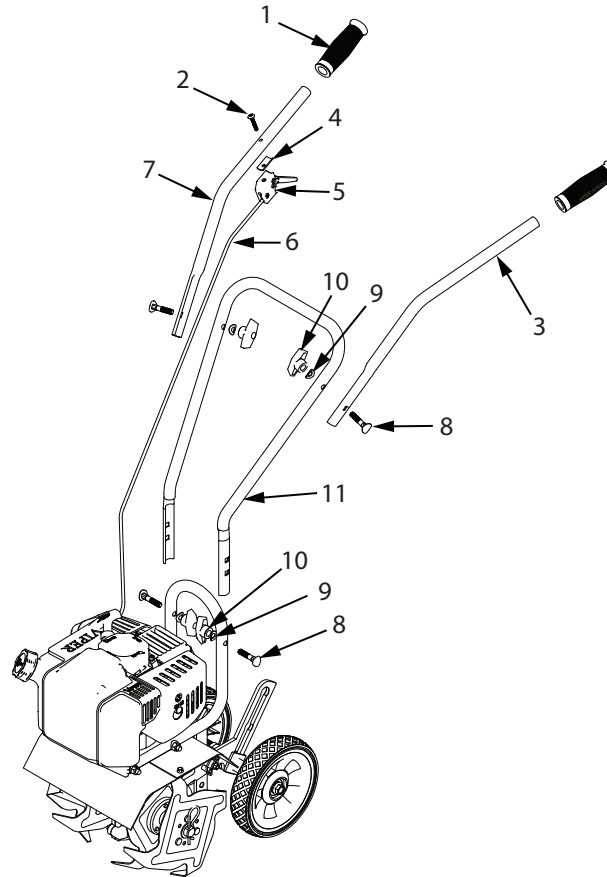
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ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	46138	TRANSMISSION ASSEMBLY	1
2	4606	WASHER, FIBER	2
3	46144	DUST CAP	2
4	4610	SHIM, TINE SHAFT	4
5	4613	WORM SPUD	1
6	46135	TRANSMISSION CASTING, RIGHT	1
7	46136	TRANSMISSION CASTING, LEFT	1
8	46137	DRIVE SHAFT	1
9	300414	CLUTCH DRUM	1
10	4614	BUSHING, DRIVE SHAFT	2
11	4615	THRUST BEARING ASSEMBLY	1
12	4616	SPACER, BUSHING	1
13	4617	REDUCER, THRUST BEARING	1
14*	4618	WASHER, THRUST	2

ITEM NO.	PART NO.	DESCRIPTION	QTY.
15*	4619	THRUST BEARING CAGE WASHER	1
16	4620	NUT, JAM M8	1
17	4623	BALL BEARING, 9MM	1
18	4633	ARM WHEEL/DRAG STAKE MOUNT	1
19	4645	BUSHING, TINE SHAFT	2
20	4646	SEAL, TINE SHAFT	2
21	4647	BOLT, FLG HEX HD M6 X 1.0 X 18MM	4
22	4648	BOLT, FLG HEX HD M6 X 1.0 X 22MM	2
23	4649	BOLT, FLG HEX HD M6 X 1.0 X 24MM	2
24	4650	NUT, FLANGED HEX HD M6	2
25	4651	TINE GEAR & SHAFT ASSEMBLY	1

* ORDER THRUST BEARING ASSEMBLY KIT 4615

ILLUSTRATED PARTS BREAKDOWN - Mc43 Handlebar Parts Explosion



17954-0013R1

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	4639	GRIP, HANDLEBAR	2
2	4814	BOLT, PHILLIPS TRUSS HD ZN 10-24 X 1-1/4	1
3	4690	HANDLEBAR, UPPER LEFT	1
4	12633	RUBBER PAD	1
5	4809	TRIGGER ASSEMBLY, SHORT THROW W/O CABLE	1
6	14645	THROTTLE CABLE	1
7	4689	HANDLEBAR, UPPER RIGHT	1
8	4642	BOLT, HANDLE CLAMP	4
9	4641	WASHER	4
10	4640	NUT, T-HANDLE	4
11	4693	HANDLEBAR, MIDDLE	1

15073 BORDER-EDGER KIT INSTALLATION (OPTIONAL ACCESSORY)

The Border-Edger Kit is a useful tool for making clean cuts in the lawn along the borders of gardens, flower beds, walkways, and driveways for a well manicured look. To install the Border-Edger Kit, do the following:

INSTALLATION

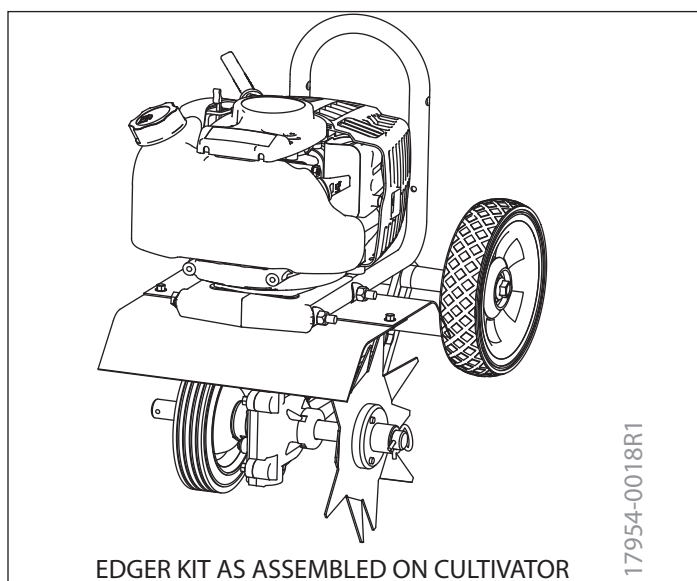
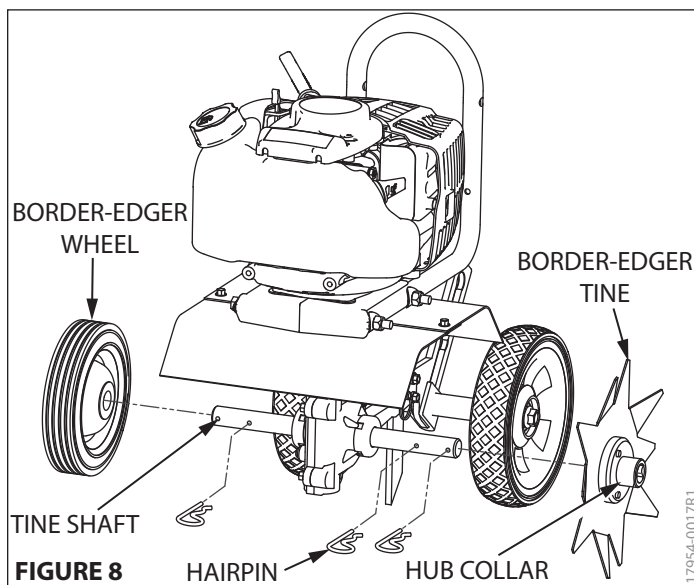
1. Make sure the cultivator is not running by flipping the ON/OFF switch to the **OFF** position.
2. Remove the hairpins from both sides of the tine shaft.
3. Remove the cultivating tines from the shaft, remembering which direction they are facing.
4. Put the tines in a safe place and save the (2) hairpins, they will be used on the Border-Edger Kit.
5. Slide the border-edger tine onto either side of the tine shaft. Make sure that the hub collar of the border-edger tine faces outward, away from the transmission of the cultivator. **SEE FIGURE 8**
6. Take the (2) hairpins saved in *Step 4* and insert them through the inner and outer holes in the tine shaft on each side of the border-edger tine to secure the tine blade in place on the shaft. **SEE FIGURE 8**
7. Slide the border-edger wheel onto the opposite side of the tine shaft as far as it will go.
8. Insert the remaining (1) hairpin, that came with the kit, through the inner hole next to the wheel in the middle of the tine shaft. **SEE FIGURE 8**
9. Before using the Border-Edger Kit, remove the drag stake from the unit.
10. Set the cultivator wheels to the **HIGHEST** (top) position.

PARTS BREAKDOWN

KEY #	PART #	DESCRIPTION	QTY.
1	15009	BORDER-EDGER TINE	1
2	46131	BORDER-EDGER WHEEL	1
3	46134	HAIRPIN	1

CAUTION

BE AWARE THAT THE CULTIVATOR COULD UNEXPECTEDLY BOUNCE UPWARD, OR JUMP FORWARD IF THE TINES STRIKE CONCRETE, PAVEMENT, OR OTHER HARD SURFACES OR HARD OBSTACLES BURIED UNDER GROUND.

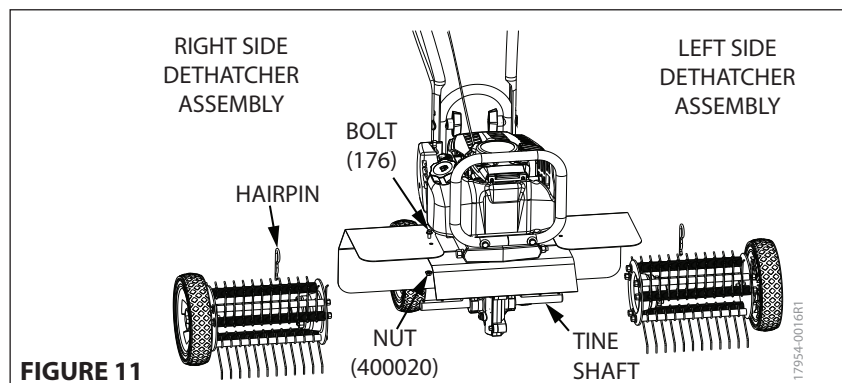
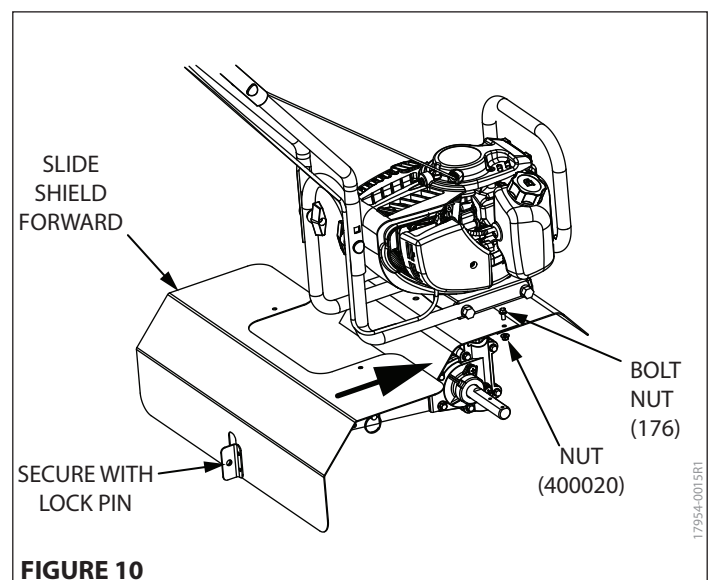
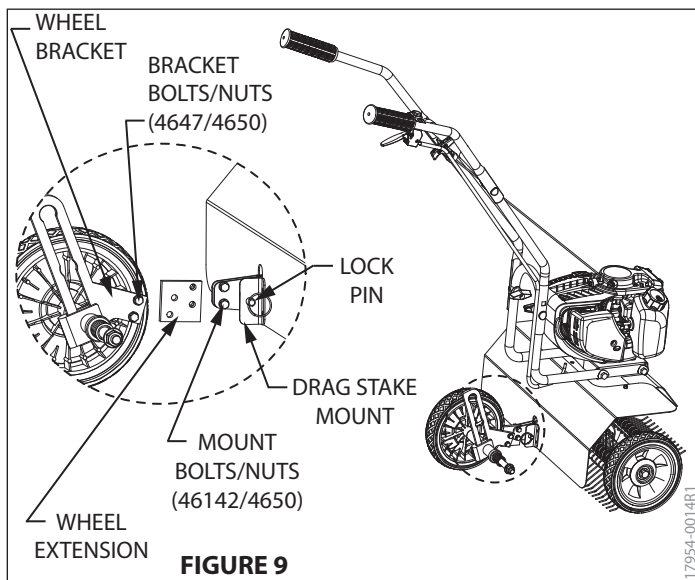


DK43 DETHATCHER KIT INSTALLATION (OPTIONAL ACCESSORY)

The Dethatcher Kit is very effective for lifting away the excessive matted layers of thatch that can prevent moisture, oxygen and nutrients from penetrating the soil and can harbor disease and insects. Use in Spring, Summer, and Fall to bring life and color back to your lawn.

1. Flip the ON/OFF switch to the **OFF** position. Remove the cultivating tines or other working tools and the drag stake.
2. Unscrew mount bolts/nuts that connect the wheel bracket to the drag stake mount and set wheel bracket aside. **SEE FIGURE 9**
3. Slide dethatcher shield over the unit's tine shield from the rear of the unit and secure using bolts (176) and nuts (400020).
SEE FIGURE 10
3. Secure the lower part of the dethatcher shield to the drag stake mount using the lock pin (18039).
4. Install wheel extension plate (4676) using additional bolts (46142) and nuts (4650). Make sure wheel extension is facing the right direction. (The side, with the two holes flush to the edge, connects to the drag stake mount) **SEE FIGURE 9**
 - a. With the mount bolts/nuts attach the wheel extension to the drag stake mount.
 - b. Then with the bracket bolts/nuts (included with the Dethatcher Kit) attach the wheel bracket to the wheel extension.
5. Slide the Left and Right Dethatcher Assemblies onto the tine shaft making sure the Right Assembly is installed on the right side and Left Assembly is installed on the left side as defined from the user's position. **SEE FIGURE 11**
6. Secure dethatcher assemblies using the hairpins (4652). The hairpins go through the inner holes of the tine shaft.

NOTE: The drag stake should not be used when using the dethatcher kit.





NOTES

[illegible]



NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



WARRANTY TERMS AND CONDITIONS

PRODUCT WARRANTY: 1-YEAR LIMITED WARRANTY

Ardisam, Inc. (Ardisam) warrants the product(s) under a one-year limited warranty to be free from defects in the material or workmanship or both for a period not exceeding twelve consecutive months from the date of original purchase by the first retail consumer or first commercial end user. "Consumer use" means personal recreational use by a retail consumer. "Commercial use" or "commercial application" means all other uses, including use for commercial, income producing or rental purposes. Once a product has experienced commercial use, it shall thereafter be considered as a commercial use product for the purpose of this warranty. This warranty applies to the original owner that provides a proof of purchase. The warranty is not transferable. The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the twelve month consecutive period thereafter. Any unit used in a commercial application is covered for a period of 90 days after purchase by the first commercial end user. For the warranty to be valid, the product must be registered online, or the warranty card must be filled out and received by Ardisam, within 30 days of purchase. Ardisam shall not be obligated to ship any repair or replacement product to any location outside of the United States of America or Canada.*

ENGINE WARRANTY: 2-YEAR LIMITED EMISSIONS CONTROL WARRANTY (SEE EXPLANATION OF EMISSIONS CONTROL WARRANTY STATEMENT FOR DETAILS)

Ardisam warrants the Viper® engine(s) under a two-year limited emissions control warranty to be free from defects in the materials or workmanship or both for the service life of the product not to exceed twenty-four consecutive months from the date of purchase for consumer applications. As a Viper® small engine owner, you are responsible to perform periodic maintenance as specified in the product's operator's manual and/or engine manual. The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the period of time stated above.*

For replacement parts, phone 800-345-6007.

*This warranty policy applies only to products which have not been subjected to negligent use, misuse, uses other than those indicated in the product's operator's manual, alteration, accident, use of unauthorized parts, failure to perform periodic maintenance as specified in product's operator's manual, normal wear and tear, use of unauthorized parts or repairs performed at unauthorized service centers. There is no other expressed warranty. Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one year from purchase, or to the extent permitted by law. All other implied warranties are excluded. Liability for incidental or consequential damages are excluded to the extent exclusion is permitted by law. Ardisam does not assume, and does not authorize any other person to assume for Ardisam, any liability in connection with the sale of Ardisam products. **To be at "No Charge," warranty work must be sent directly to and performed by Ardisam or an Ardisam Authorized Warranty Service Facility.** To obtain warranty service and/or replacement instructions, contact the Ardisam Customer Service Department at 800-345-6007. If you choose to ship your product to Ardisam for warranty repair, you must first have prior approval from Ardisam by calling the Ardisam Customer Service Department for a return material authorization number (RMA#). Under these circumstances, all items must be shipped prepaid. For Viper® engine warranty repairs, Ardisam will cover the cost of shipping only for purchasers located more than 100 miles from an Ardisam Authorized Warranty Service Facility if it is determined that warranted repair is indeed necessary. Ardisam will at no charge, repair or replace, at the discretion of Ardisam, any defective part which satisfies all conditions stated above. Ardisam retains the right to change models, specifications and price without notice. Ardisam shall not be obligated to ship any repair or replacement product to any location outside of the United States of America or Canada.

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FEDERAL EMISSIONS CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The United States Environmental Protection Agency (EPA), together with Ardisam, Inc. (Ardisam), are pleased to explain the Emission Control System Warranty on your small off-road engine (SORE). New small off-road engines must be designed, built and equipped to meet stringent anti-smog standards the federal government. Ardisam will warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect, modification or improper maintenance of your engine.

The emission control system includes all components whose failure would increase the emissions of any regulated pollutant. These components are listed in the emission-related parts list located in a subsequent section of this emissions warranty statement. Ardisam will repair your engine at no cost to you for diagnosis, replacement parts and labor, should a warrantable condition occur.

MANUFACTURER'S WARRANTY COVERAGE:

The emission control system is warranted for two years. If, during such warranty period, any emission-related part on your engine is found to be defective in materials or workmanship, repairs or replacement will be performed by an Ardisam Authorized Warranty Service Facility.

PURCHASER'S/OWNER'S WARRANTY RESPONSIBILITIES:

As the SORE purchaser/owner, you are responsible for the completion of all required maintenance as listed in your factory supplied Manual(s). For warranty purposes, Ardisam recommends that you retain all receipts covering maintenance on your SORE. However, Ardisam cannot deny warranty solely because of the lack of receipts or for your failure to ensure the completion of all scheduled maintenance.

As the SORE purchaser/owner, you should, however, be aware that Ardisam may deny any and/or all warranty coverage or responsibility if your SORE or a part/component thereof, has failed due to abuse, neglect, improper maintenance or modifications, or the use of counterfeit and/or "grey market" parts not made, supplied or approved by Ardisam.

You are responsible for presenting your SORE to an Ardisam Authorized Warranty Service Facility as soon as a problem occurs. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

Warranty service can be arranged by contacting either your selling dealer or an Ardisam Authorized Warranty Service Facility. To locate the Ardisam Authorized Warranty Service Facility nearest you, call our free number:

800-345-6007

IMPORTANT NOTE: This warranty statement explains your rights and obligations under the Emission Control System Warranty (ECS Warranty), which is provided to you by Ardisam pursuant to federal law. See also the Ardisam "Product Warranty" (non-emission warranties), which is enclosed herewith on a separate sheet or located in additional materials accompanying this product. The ECS Warranty applies only to the emission control system of your new engine. If there is any conflict in terms between the ECS Warranty and the Ardisam

Warranty, the ECS Warranty shall apply except in circumstances where the Ardisam Warranty may provide a longer warranty period. Both the ECS Warranty and the Ardisam Warranty describe important rights and obligations with respect to your new engine.

Warranty service can be performed only by an Ardisam Authorized Warranty Service Facility. When requesting warranty service, evidence must be presented showing the date of the sale to the original purchaser/owner. Ardisam will not be responsible for any and/or all damages or losses incurred while the engine is being transported/shipped for inspection or warranty repairs.

IF YOU HAVE ANY QUESTIONS REGARDING YOUR WARRANTY RIGHTS AND RESPONSIBILITIES, YOU SHOULD CONTACT ARDISAM AT THE FOLLOWING ADDRESS:

Ardisam, Inc.
1160 8th Avenue; P.O. Box 666
Cumberland, Wisconsin 54829
800-345-6007 · Fax (715) 822-4180
E-mail: info@ardisam.com

II. EMISSION CONTROL SYSTEM WARRANTY

Emission Control System Warranty (ECS Warranty) for equipment using small off-road engines:

(a) Applicability: This warranty shall apply to equipment that uses small off-road engines. The ECS Warranty Period shall begin on the date the new engine or equipment is purchased by/delivered to its original, end-use purchaser/owner and shall continue for 24 consecutive months thereafter.

(b) General Emissions Warranty Coverage: Ardisam warrants to the original, end-use purchaser/owner of the new engine or equipment and to each subsequent purchaser/owner that each of its engines is...

(1) Designed, built and equipped so as to conform with all applicable regulations adopted by the EPA pursuant to their respective authority, and

(2) Free from defects in materials and workmanship which, at any time during the ECS Warranty Period, may cause a warranted emissions-related part to fail to be identical in all material respects to the part as described in the engine manufacturer's application for certification.

The ECS Warranty only pertains to emissions-related parts on your engine, as follows:

(1) Any warranted, emissions-related parts that are not scheduled for replacement as required maintenance in the Maintenance Schedule (located in the section of the Manual(s) pertaining to maintenance) shall be warranted for the ECS Warranty Period. If any such part fails during the ECS Warranty Period, it shall be repaired or replaced by Ardisam according to Subsection (4) below. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.

(2) Any warranted, emissions-related part that is scheduled only for regular inspection as specified in the Maintenance Schedule (located in the section of the Manual(s) pertaining to maintenance)

shall be warranted for the ECS Warranty Period. A statement in such written instructions to the effect of "repair or replace as necessary" shall not reduce the ECS Warranty Period. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.

(3) Any warranted, emissions-related part that is scheduled for replacement as required maintenance in the Maintenance Schedule (located in the section of the Manual(s) pertaining to maintenance) shall be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by Ardisam according to Subsection (4) below. Any such emissions-related part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period prior to the first scheduled replacement point for such emissions-related part.

(4) Repair or replacement of any warranted, emissions-related part under this ECS Warranty shall be performed at no charge to the owner at an Ardisam Authorized Warranty Service Facility.

(5) When the engine is inspected by an Ardisam Authorized Warranty Service Facility, the owner shall not be held responsible for diagnostic costs if the repair is deemed warrantable.

(6) Ardisam shall be liable for damages to other original engine components or approved modifications proximately caused by a failure under warranty of any emission-related part covered by the ECS Warranty.

(7) Throughout the ECS Warranty Period, Ardisam shall maintain a supply of warranted emission-related parts sufficient to meet the expected demand for such emission-related parts.

(8) Any Ardisam authorized and approved emission-related replacement part may be used in the performance of any ECS Warranty maintenance or repairs and will be provided without charge to the purchaser/owner. Such use shall not reduce Ardisam's ECS Warranty obligations.

(9) Unapproved, add-on, modified, counterfeit and/or "grey market" parts may not be used to modify or repair an Ardisam engine. Such use voids this ECS Warranty and shall be sufficient grounds for disallowing an ECS Warranty claim. Ardisam shall not be held liable hereunder for failures of any warranted parts of an Ardisam engine caused by the use of such an unapproved, add-on, modified, counterfeit and/or "grey market" part.

EMISSION-RELATED PARTS INCLUDE THE FOLLOWING (IF EQUIPPED):

- (1) Fuel Metering System
 - (i) Carburetor and internal parts (and/or pressure regulator or fuel injection system).
 - (ii) Air/fuel ratio feedback and control system.
 - (iii) Cold start enrichment system.
 - (iv) Fuel Tank.

- (2) Air Induction System
 - (i) Controlled hot air intake system.
 - (ii) Intake manifold.
 - (iii) Air filter.
- (3) Ignition System
 - (i) Spark Plugs.
 - (ii) Magneto or electronic ignition system.
 - (iii) Spark advance/retard system.
- (4) Exhaust Gas Recirculation (EGR) System
 - (i) EGR valve body, and carburetor spacer if applicable.
 - (ii) EGR rate feedback and control system.
- (5) Air Injection System
 - (i) Air pump or pulse valve.
 - (ii) Valves affecting distribution of flow.
 - (iii) Distribution manifold.
- (6) Catalyst or Thermal Reactor System
 - (i) Catalytic converter.
 - (ii) Thermal reactor.
 - (iii) Exhaust manifold.
- (7) Particulate Controls
 - (i) Traps, filters, precipitators, and any other device used to capture particulate emissions.
- (8) Miscellaneous Items Used in Above Systems
 - (i) Electronic controls.
 - (ii) Vacuum, temperature, and time sensitive valves and switches.
 - (iii) Hoses, belts, connectors, and assemblies.



Earthquake®, Division of Ardisam, Inc.
1160 8th Avenue, PO Box 666
Cumberland, WI 54829
800-345-6007 | Fax 715-822-2223
E-mail: info@getearthquake.com

All weights, specifications and features are approximate and are subject to change without notice. Due to continuous product improvements, product images may not be exact. Items used for props not included. Some assembly may be required.

Check for parts online at **www.getearthquake.com** or call 800-345-6007 M-F 8-5