Operator's Manual
Original Operating Instructions

Mini-Cultivator MC43 Series and Dethatcher

MC43E
(electric start)

MC43
(manual start)

Includes models:
MC43
MC43E
MC43ECE
MC43CE
MC43RCE
MD43

Get parts online at
www.GetEarthquake.com

P/N: OMMC43VE
Rev. 06/30/11

INTRODUCTION

Congratulations on your investment in quality. Thank you for purchasing a mini-cultivator from Earthquake. We have worked to ensure that the mini-cultivator meets the highest standards for usability and durability. With proper care, your mini-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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FEDERAL EMISSIONS INFORMATION

Earthquake warrants to the retail purchaser, that this small, off-road engine was designed, built and equipped to conform at the time of initial sale to all applicable regulations of the U.S. Environmental Protection Agency (EPA).

REGISTRATION, SERVICE AND MAINTENANCE LOG

Record the model number and serial number in the space provided for easy reference. Warranty is valid only if the completed registration is received by Earthquake within 30 days of purchase. You can register your warranty online by visiting www.getearthquake.com. If you do not have a computer, 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:		

This instruction book contains information for several models. Read and keep this book for future reference. This book 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 INSTRUCTION BOOKS, the REPLACEMENT PARTS and the WARRANTIES. This information must be included to make sure state laws and other laws are followed.

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.

WARNING

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

CAUTION

CAUTION INDICATES YOU CAN BE HURT OR YOUR EQUIPMENT 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.

CE Intended Use / Foreseeable Misuse

This is a motorized mini-cultivator that cultivates and loosens soil. It is pedestrian controlled. It has a petrol-fuelled internal combustion engine that powers the tines. It shall not be used for any other purpose.

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.

ENGINE SAFETY PRECAUTIONS

Warning Carbon Monoxide Poisoning

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.

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).
- 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.
- 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 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.
- Always unscrew gas cap vent screw while engine is running.
- Never smoke while refilling engine fuel tank.
- Do not store engine with fuel in fuel tank indoors. Fuel and fuel vapors are highly explosive.

⚠ 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 CATALYTIC CONVERTER. 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 DISCONNECT SPARK PLUG WIRE FROM THE SPARK PLUG AND KEEP IT AWAY FROM THE SPARK PLUG.

- During storage, screw down gas cap vent screw tightly.
- Never pour fuel from engine fuel tank.
- Never siphon fuel by mouth to drain fuel tank.
- Always have an adult fill the fuel tank and never allow children to fill the engine.
- Never allow an adult or anyone under the influence of drugs or alcohol to fill engine.
- When storing gasoline or equipment with fuel in the tank, store away from furnaces, stoves, water heaters or other appliances that have a pilot light or other ignition source because they can ignite gasoline vapors.

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.
- This engine is designed to operate using a catalytic converter which contributes to the engine's compliance with the EPA.

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 clean 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, spark plug wire must be removed from spark plug before any repairs or adjustments are attempted. Never make adjustments or repairs with the engine (motor) running. Disconnect the spark plug wire, and keep the wire away from the plug to prevent accidental starting. Remove the ignition key if equipped with an electric start.
- 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, disconnect spark plug lead 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.

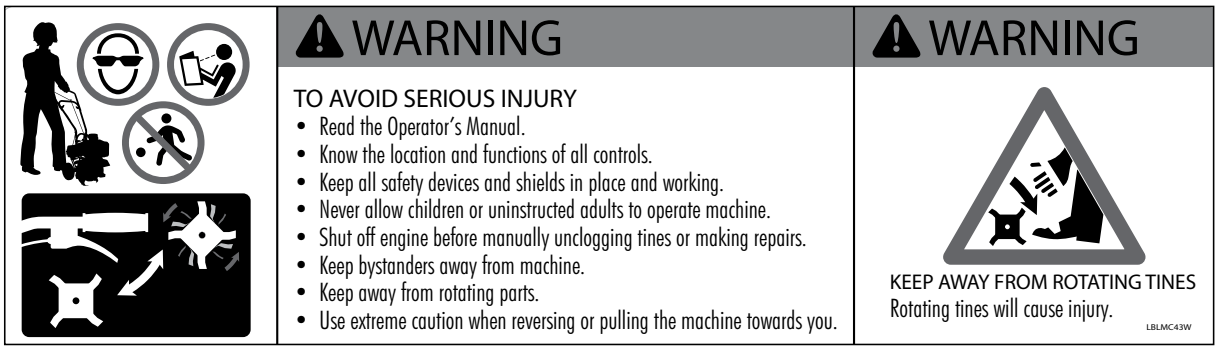
SAFETY DECALS

This mini-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, or contact your local dealer.

Should a decal become unreadable because of being worn, faded, or otherwise damaged during the use of your mini-cultivator, please use the part number information provided to order a replacement label from your local authorized dealer. These decals are easily applied, and will act as a constant visual reminder to you, and others who may use the equipment, to follow the safety instructions necessary for safe, effective operation of your mini-cultivator.



Part No. LBLMC43W
Warning Decal MC43E
Tine Shield Decal

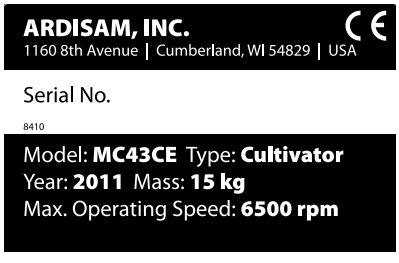
CE WARNING AND OTHER DECALS FOR EUROPEAN MINI-CULTIVATOR MODELS

Wear ear and eye protection while using product

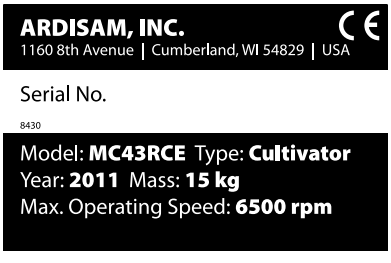
Keep away from moving parts

Hot surfaces. Do not touch.

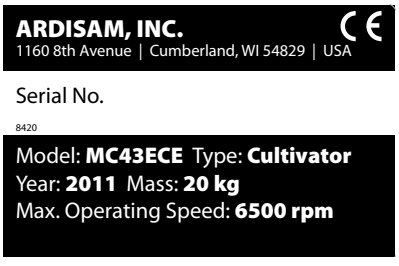
Declared noise level



Serial Nameplate Details: MC43CE



Serial Nameplate Details: MC43RCE



Serial Nameplate Details: MC43ECE

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)
GAS TYPE	UNLEADED REGULAR GAS
SPARK PLUG	BM6A
SPARK PLUG GAP	.028
TRANSMISSION	GEAR DRIVE
GEAR RATIO	32:1
TILLING WIDTH	6" minimum - 10" maximum
TILLING DEPTH	4" maximum
TINE SPEED	250 rpm
WHEEL SIZE	1.375 x 7.0 inch diameter
WEIGHT OF UNIT	MC43E = 46 lb / MC43 = 33 lb MD43 = 57 lb
UNIT SIZE L x W x H (inches)	23" x 20" x 20"

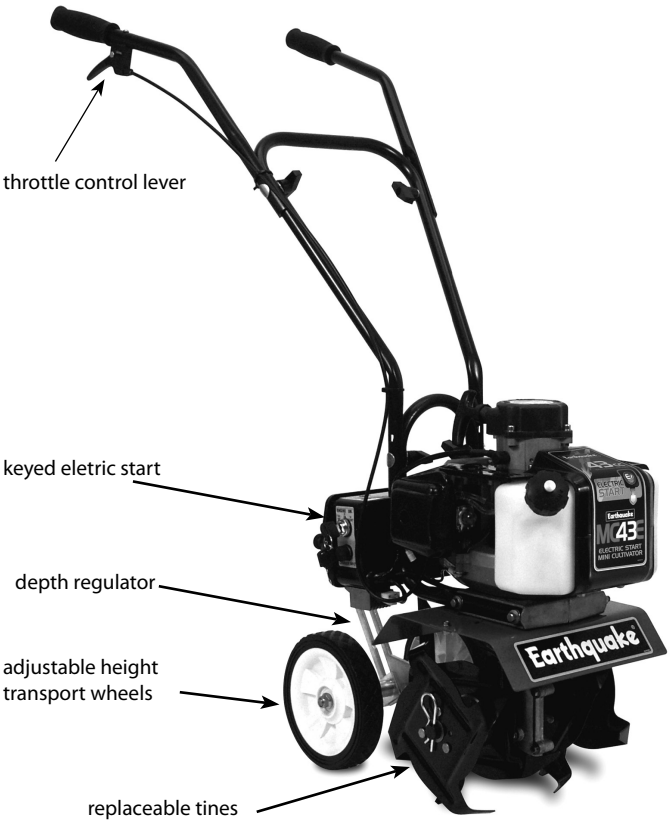
CE SOUND AND VIBRATION LEVELS

Model	2006/42/EC Operator Ear L_{PA} (dBA)	2006/42/EC Sound Power Level L_{WA} (dBA)
MC43CE	71	93
MC43ECE	71	93
MC43RCE	71	93

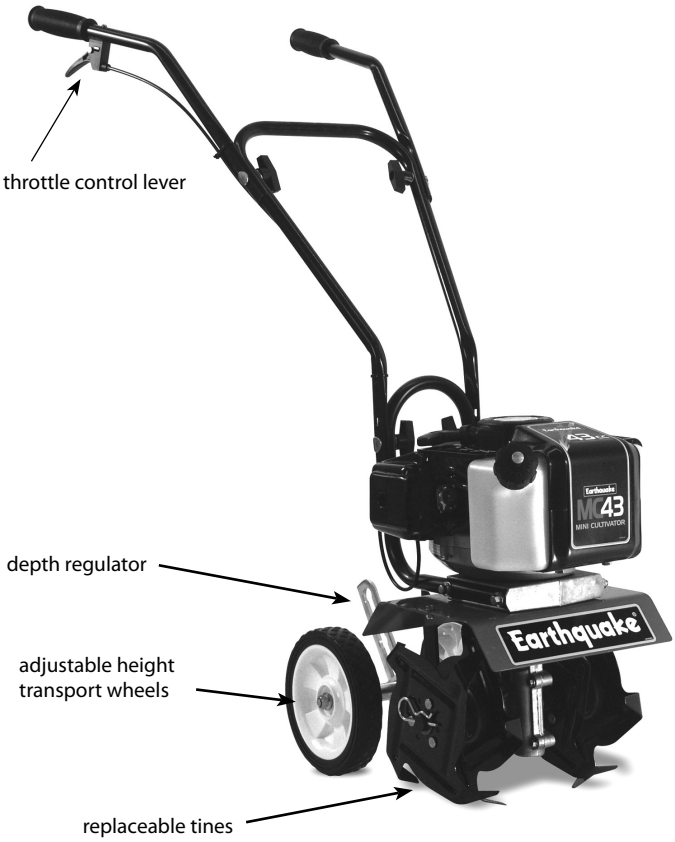
Model	2006/42/EC Hand/Arm Vibration Max m/s²	2006/42/EC Vibration Time Limit
MC43CE	4.83	EAV: 2h 9m ELV: 8h 34m
MC43ECE	4.83	EAV: 2h 9m ELV: 8h 34m
MC43RCE	4.83	EAV: 2h 9m ELV: 8h 34m

FEATURES

MC43E



MC43



ASSEMBLY

UNPACK MINI-CULTIVATOR

1. Carefully lift the mini-cultivator out of the box, remove any packing material and cut any ties holding the handlebar pieces to the mini-cultivator assembly.

ASSEMBLY

1. Stand the mini-cultivator assembly upright with tines and wheels on a level surface. Wheels should be set in the lowest position. **DO NOT** place the mini-cultivator on a high surface where it can fall and cause property damage or personal injury.
2. Using two tee handle nuts (4640), two bolts (4642), and two curved washers (4641), assemble the middle handlebar (4693) to the lower handlebar (4695) that is already attached to the mini-cultivator assembly. **SEE FIGURE 1.** The middle handlebar can be installed in two positions one high and one low. **DO NOT** overtighten the tee handle nuts.
3. Attach the upper right and left handlebars (4689 & 4690) to the middle handlebar using the two remaining tee handle nuts, bolts, and curved washers. **SEE FIGURE 1. DO NOT** overtighten the tee handle nuts.
4. The drag stake is shipped with point facing upwards. Before using, remove detent pin and turn the drag stake around so the point is directed in the downward position facing towards the tines. Re-insert detent pin. **SEE FIGURE 2.**

For the Electric Start Mini-Cultivator Model MC43E, remove the battery box cover and plug the white plastic connector from the battery into the mating white plastic connector in the battery box. **SEE FIGURE 3.** Make sure the ignition key is removed from the ignition before connecting the wiring for the battery.

Figure 3

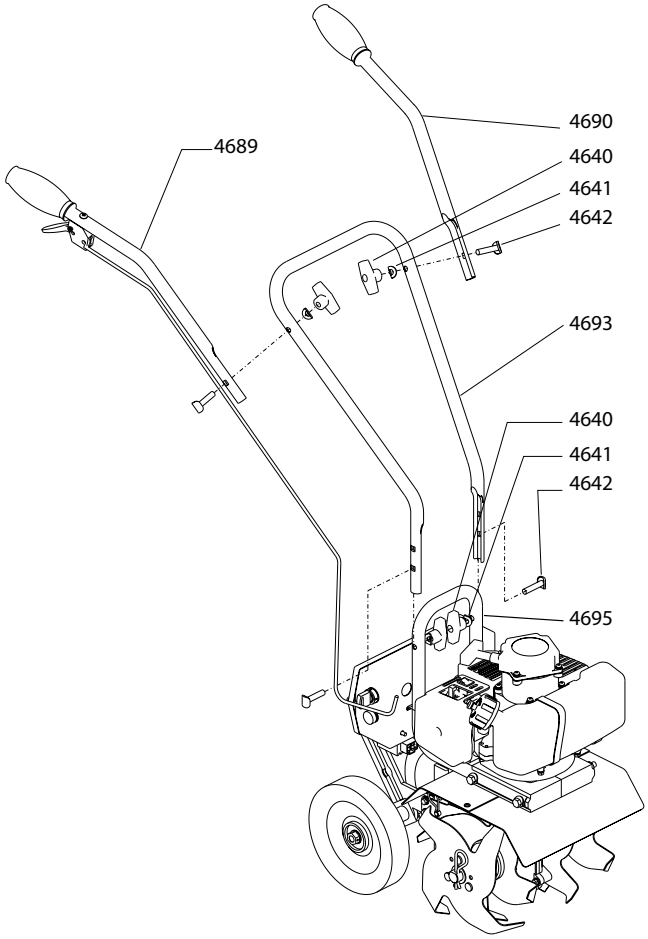


Figure 1: (Model MC43E shown. Figure 1 applies to both models MC43 & MC43E.)

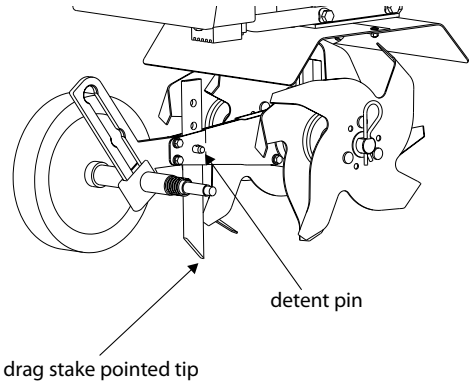


Figure 2

FOR MODEL MC43E ELECTRIC START

CHARGING THE BATTERY

To charge the battery, check that the battery wiring is properly connected and plug the battery charger (4681) into the side of the battery box (4656) with matching three-prong plug. Plug the other end of the battery charger into a standard 120V outlet receptacle. Battery is fully charged when the LED light turns GREEN on the external charger. The electric start mini-cultivator (MC43E) will maintain a charge in the battery when the engine is running.

Batteries may take as long as eight (8) hours to fully charge depending on the original charge level of the battery.

NOTE: For long term storage protection, be sure that the battery is fully charged and the white plastic battery connector is disconnected. Place the battery box cover onto the battery box and store in a dry place out of direct sunlight.

NOTE: Rechargeable batteries have a limited number of charge cycles and may eventually need to be replaced. Battery life and number of charge cycles vary by use.

⚠ WARNING

AVOID ELECTRICAL SHOCK! DO NOT USE BATTERY CHARGER AROUND WATER OR IN WET CONDITIONS.

⚠ IMPORTANT

DO NOT SPRAY WATER ON OR NEAR THE ELECTRONICS OF THE MINI-CULTIVATOR AS THIS MAY RESULT IN DAMAGE TO THE ELECTRICAL COMPONENTS.

DO NOT TRY TO START ENGINE WHILE THE BATTERY CHARGER IS CONNECTED. THIS COULD DAMAGE THE ENGINE AND BATTERY.

OPERATION

PREPARING ENGINE FOR STARTING

GAS AND OIL

Quality

To operate the engine, we recommend using "VIPER" brand two-cycle oil (PN 300400) to ensure that the engine operates correctly throughout the life of the engine. Use unleaded regular gas only.

NOTE: Viper oil can be purchased from our web site at www.GetEarthquake.com.

Mixture

Run engine with a 50:1 ratio.

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

MIXING FUEL AND FILLING FUEL TANK

Mixing Fuel

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.

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.

⚠ CAUTION

NEVER STORE ENGINE WITH FUEL IN THE TANK INDOORS. 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.

⚠ IMPORTANT

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

DO NOT START ENGINE WITH BATTERY CHARGER CONNECTED TO BATTERY. THIS COULD CAUSE DAMAGE TO THE MINI-CULTIVATOR.

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 mini-cultivator operates most efficiently with the weight of the unit itself.
3. Never run engine indoors. Exhaust fumes are deadly.

Using the Screw Type, Manual Venting Gas Cap

Your mini-cultivator is equipped with a screw type, manual venting gas cap.

1. Before starting the engine, turn the screw in the top of the gas cap 2-3 turns (counterclockwise) to its venting position. **DO NOT** turn the screw to the point that it stops (4-5 turns counterclockwise). To ensure that gas will not spill during use, check that the gas cap is screwed on tightly and the gas cap screw is in the venting position.
2. After using the mini-cultivator and before putting away or transporting it in a truck bed, screw the gas cap screw and gas cap on (clockwise) tightly. This will prevent gas from leaking during storage. The gas cap will not leak during storage if gas cap is tight and the screw at the top is tight.

STARTING AND STOPPING 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 rocker switch to the ON position.

⚠ WARNING

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

WHEN THE UNIT STARTS TO FIRE OR RUN, RELEASE THE THROTTLE CONTROL MOMENTARILY WITH YOUR RIGHT HAND AND RETURN YOUR LEFT HAND TO THE HANDLEBAR POSITION TO MAINTAIN CONTROL AND STABILITY OF THE UNIT WITH BOTH HANDS.

⚠ CAUTION

IF ENGINE FAILS TO START AFTER TRYING STARTING PROCEDURES, PLEASE CONTACT OUR CUSTOMER SERVICE DEPARTMENT AT 800-345-6007.

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 MINI-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.

5. Squeeze throttle control with right hand. Grasp starter handle with left 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 until unit fires or runs. Repeat this step every time the starter rope is pulled.

   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 between CHOKE and RUN.

7. Move choke lever to RUN position and move 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 rocker switch to OFF position.

Warm Engine Start:

1. Move choke lever to CHOKE position.

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

2. Continue with Step 4 of Cold Engine Starting.

Hot Engine Start:

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

FOR MODEL MC43E ELECTRIC START

1. Check that the battery is connected using the white plastic connectors inside the battery box. Insert ignition key into ignition and turn key to the START position until engine starts running, then release key to the ON position. **DO NOT** hold the ignition key in the START position longer than 3 seconds.
2. Run engine for 30 to 45 seconds at HALF CHOKE position until engine warms up.
3. Move choke lever to RUN position and move throttle to desired speed.
4. To stop, turn switch to OFF position on manual start models. On electric start, turn ignition key to the OFF position.

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 mini-cultivator can be adjusted to one of three positions. The lowest wheel position is used for transporting the mini-cultivator across a smooth level surface while the engine is not running. The two higher 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, SEE FIGURES 5 AND 6.

1. Pull the locking metal sleeve against the spring until it releases from one of the three holes 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 one of the three holes in the vertical guide.

The drag stake is used to help regulate cultivating depth and control the mini-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.

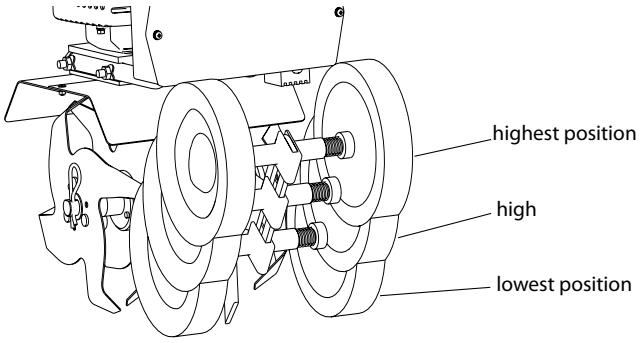


Figure 4

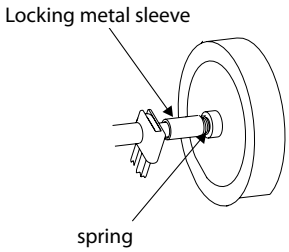


Figure 5

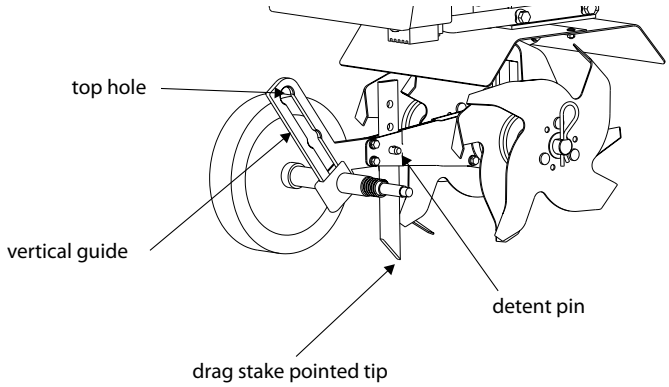


Figure 6

To adjust the drag stake (SEE FIGURE 6):

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

MAINTENANCE AND STORAGE

STEPS FOR WORKING ON EQUIPMENT

1. Turn off engine switch.
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 mini-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 mini-cultivator.
6. Reconnect the spark plug wire.

MINI-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 molylithium 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.

⚠ CAUTION

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 MINI-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 MINI-CULTIVATOR.

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

MAINTENANCE SCHEDULE

MAINTENANCE ITEM		Every 8 hours (daily)	Every 20 hours or seasonally	Each Year
Clean Engine and Check Bolts & Nut		X		
Air Filter	Check	X		
(See Air Filter section)	Clean *		X	
	Replace		X	X
Spark Plug (Gap .028")	Check/ Adjust		X	
(See Spark Plug section)	Replace			X

* Service more frequently under dusty conditions

Cooling Fins

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

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.

> **⚠ IMPORTANT**
>
> **NEVER TWIST AIR FILTERS WHEN CLEANING. ALWAYS PRESS.**

Steps for Cleaning Air Filter (Ring Style Foam Filter) - See parts breakdown section.

1. Wash in warm water with liquid detergent and water until dirt and debris are removed. Press filter when washing, do not twist.
2. Rinse in warm water until soap and dirt are removed.
3. Dry filter by wrapping in a clean cloth and pressing filter until it is dry.
4. Apply a lightweight motor oil or thin based machine oil to the entire filter.
5. Remove excess oil.
6. Attach the filter and air cleaner cover to the engine.

Steps for Cleaning Air Filter (Block Style Foam Filter) - See "Parts Breakdown" section.

1. Before removing the air filter cover, move the choke lever to the choke position. **SEE FIGURE 7.**
2. To remove air filter cover, squeeze the latch tabs on both sides of the cover. **SEE FIGURE 8.**
3. Once the latch tabs are released, remove the air filter cover by rotating the cover away from the engine. **SEE FIGURE 9.**
4. Remove the foam filter element **(SEE FIGURE 10)** and replace with a new oiled filter, or clean the original foam filter with warm water and mild soap by following the previous steps for cleaning the air filter. Remember to thoroughly oil the foam filter with 30 or 40 weight motor oil and squeeze out any excess oil.
5. Reinstall the foam filter, pressing it evenly in place to ensure that the foam is fully seated into its sealed position. **SEE FIGURE 11.**
6. 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.

Figure 7

Figure 8

Figure 9

Figure 10

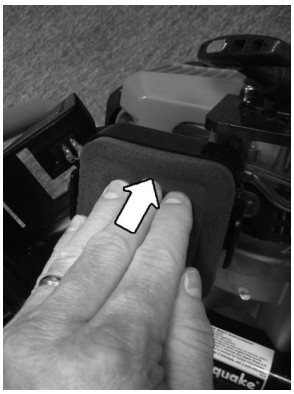


Figure 11

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 .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.

Carburetor
Never tamper with factory setting of the carburetor.

TINE REMOVAL AND INSTALLATION

To Remove Tines

1. Remove the cotter pins 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 mini-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. **SEE FIGURE 12.**
3. Insert the cotter pins into the holes at each end of the tine shaft to lock the tines into place.

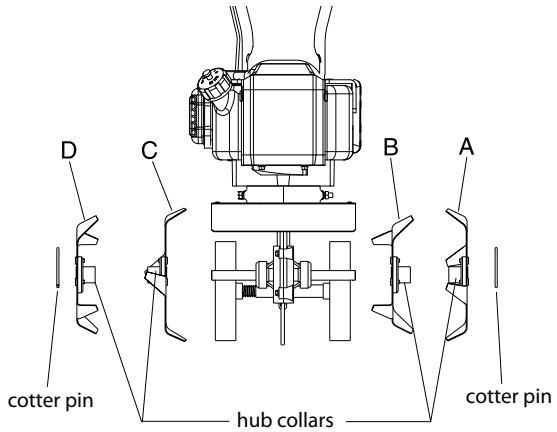


Figure 12 (Front View)

TRANSPORTING YOUR MINI-CULTIVATOR

1. After using the mini-cultivator and before transporting it in a truck bed, screw the gas cap screw and gas cap on (clockwise) tightly. The gas cap will not leak during transporting if gas cap is tight and the screw at the top is tight. Never transport engine inside an enclosed space within a vehicle. Fuel or fuel vapors may ignite causing serious injury or death.
2. If fuel is present in the fuel tank, transport in an open vehicle in an upright position.
3. If an enclosed vehicle must be used, remove gas into an approved red fuel container. DO NOT siphon by mouth.
4. Run engine to use up the fuel in the carburetor and fuel tank. Always run engine in a well ventilated area.
5. Wipe away any spilled fuel from engine and mini-cultivator. Allow to dry.
6. Gas cap and gas cap vent screw should be turned down tightly before transporting mini-cultivator in a vehicle.

LONG-TERM STORAGE

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

Steps for Long Term Storage

1. Remove the remainder of the fuel from the gas tank into an approved fuel container.
2. Store mini-cultivator engine in a vertical position.
3. Remove all debris from cultivator tines and engine.

⚠ CAUTION

TO AVOID INJURY OR DEATH, NEVER SIPHON FUEL BY MOUTH.

NEVER STORE MINI-CULTIVATOR WITH FUEL IN THE FUEL TANK INSIDE AN ENCLOSED AREA OR BUILDING.

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 Mini-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 mini-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@ardisam.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 spares.

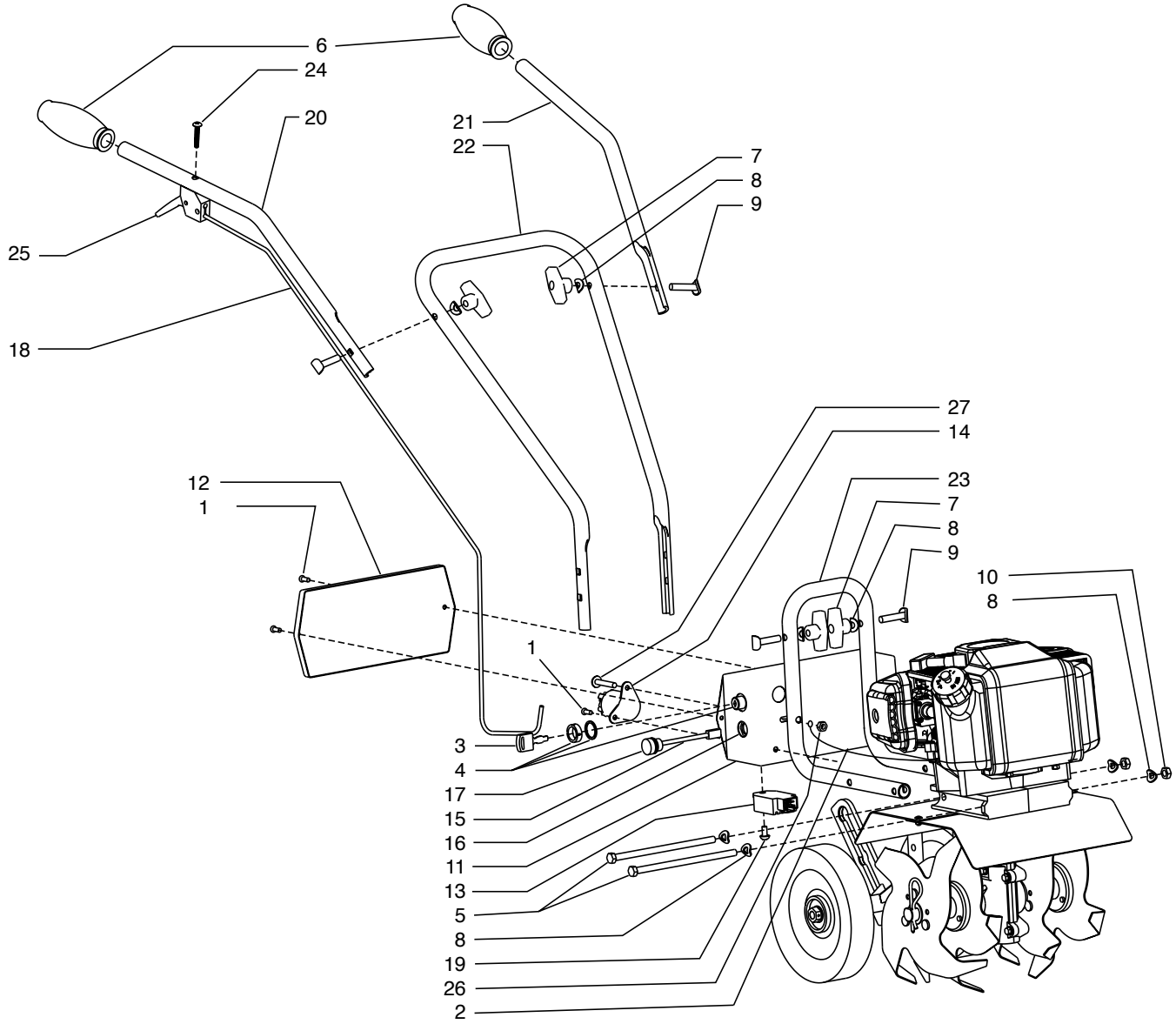
TROUBLESHOOTING GUIDE

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. Throttle control not held open	5. Hold throttle control open when pulling recoil handle
	6. Fuel line hose not positioned in bottom of gas tank	6. 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 factory
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. Throttle control not held open	4. Prime unit 3 more times, then hold throttle open when pulling 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 factory
	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 factory
Engine revs too high	1. Carburetor out of adjustment	1. Call factory
Tines turn at idle	1. Idle speed too high	1. Adjust idle speed lower
	2. Broken clutch spring	2. Replace spring
MODEL MC43E ONLY		
Charger won't charge	1. Battery worn out	1. Replace with new battery
	2. Connectors not plugged in	2. Open battery box and connect battery connectors
Key won't start machine	2. Battery not charged	1. Charge battery

Contact service provider at 800-345-6007 if above remedies fail.

PARTS BREAKDOWN

MC43E HANDLEBAR PARTS EXPLOSION

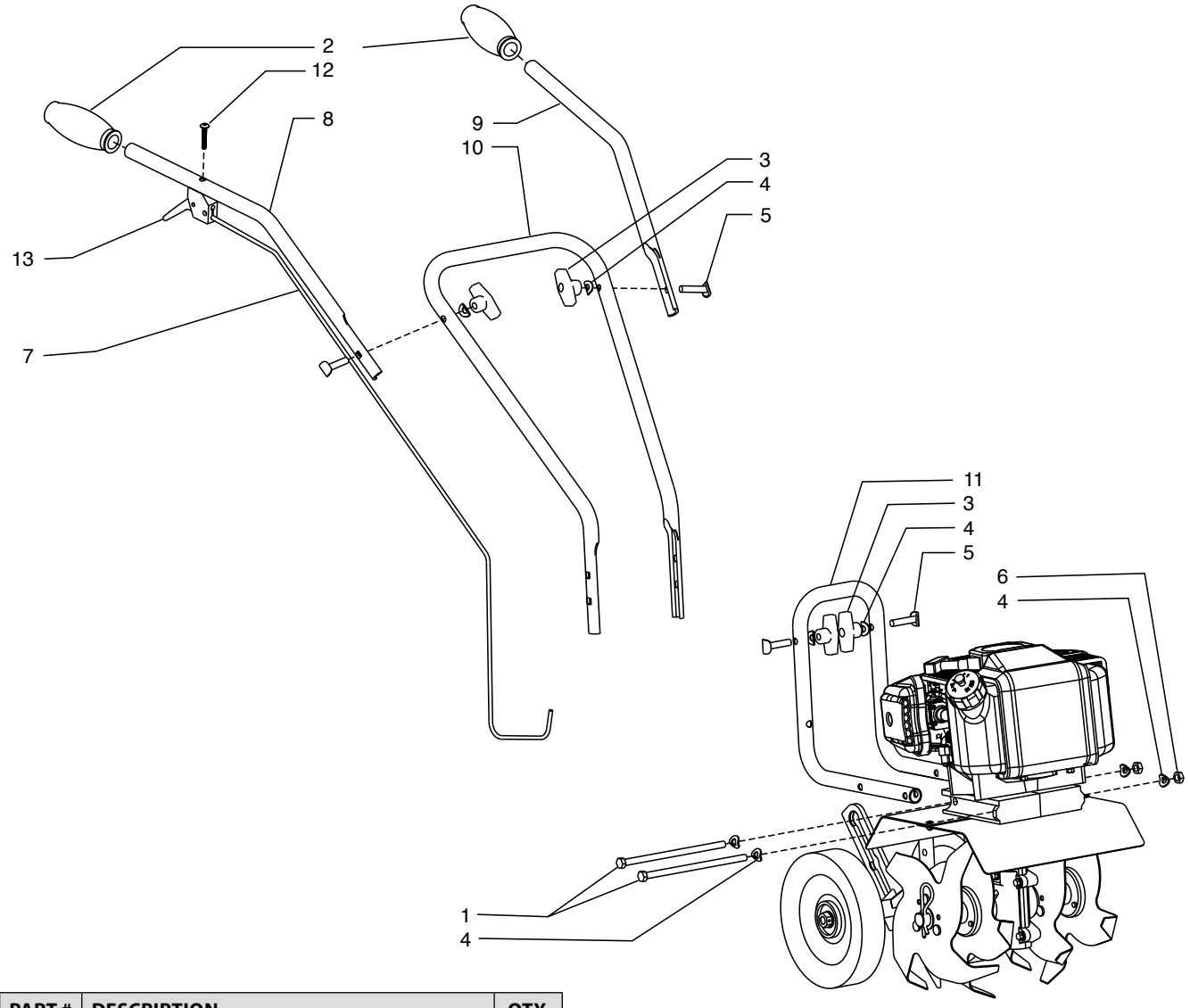


MC43E HANDLEBAR PARTS LIST

KEY	PART #	DESCRIPTION	QTY.
1	300471	BOLT, M5 X 12MM	3
2	300523	GROUND WIRE	1
3	46139	KEY ONLY	1
4	46140	KEY SWITCH	1
5	46141	BOLT, HEX HD M8 X 1.25 X 160MM	2
6	4639	GRIP, HANDLEBAR	2
7	4640	NUT, T-HANDLE	4
8	4641	WASHER	8
9	4642	BOLT, HANDLE CLAMP	4
10	4655	NUT, HEX HD M8 X 1.25	2
11	4656	BATTERY BOX MC43E	1
12	4657	COVER, BATTERY BOX	1
13	4659	VOLTAGE RECTIFIER	1
14	4660	SOLENOID	1
15	4661	CHARGER PIGTAIL	1
16	4662	NUT, CHARGER PIGTAIL	1
17	4663	CAP, CHARGER PIGTAIL	1

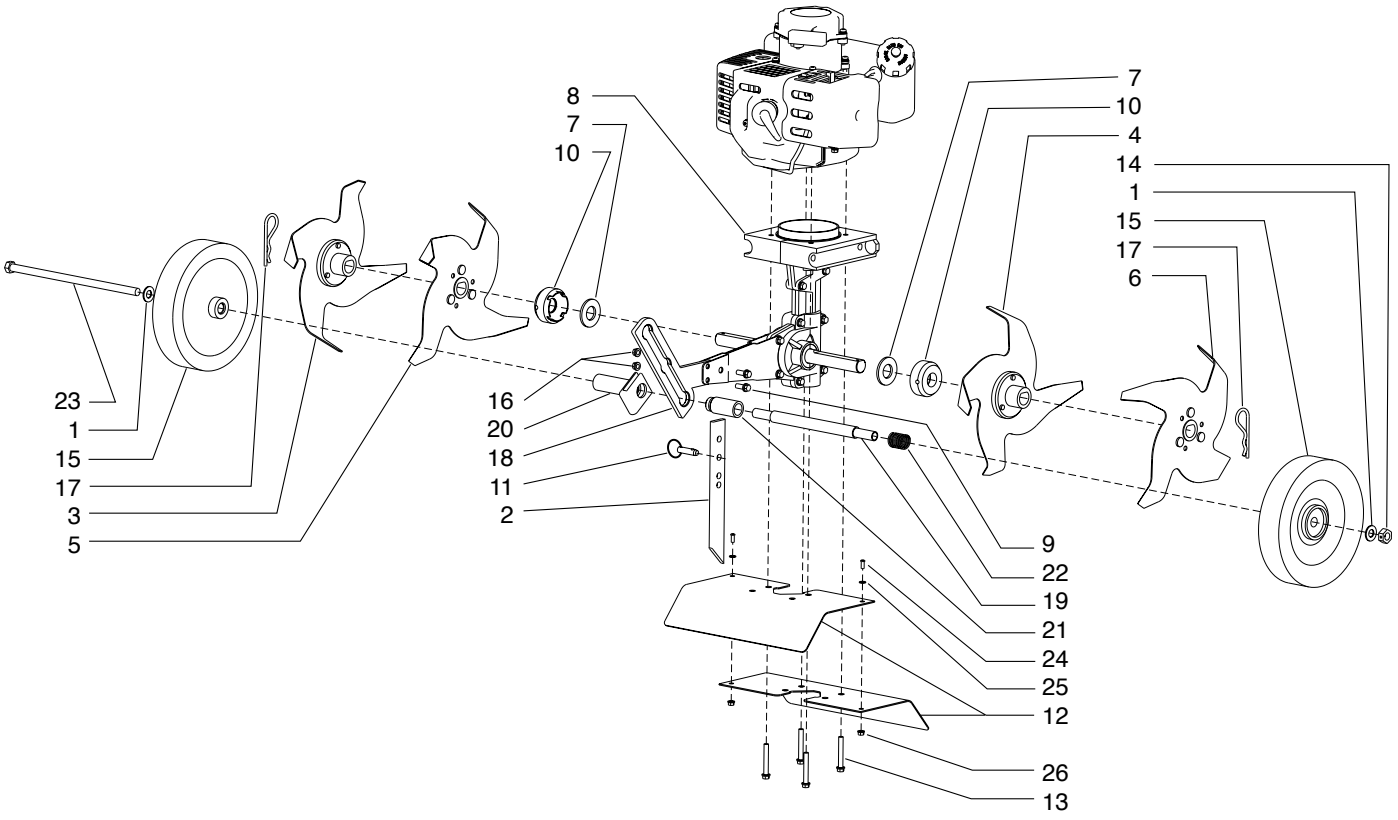
KEY	PART #	DESCRIPTION	QTY.
18	4667	THROTTLE CABLE	1
19	4669	BOLT, M6 X 1MM X 12MM PAN HD	1
20	4689	HANDLEBAR, UPPER RIGHT	1
21	4690	HANDLEBAR, UPPER LEFT	1
22	4693	HANDLEBAR, MIDDLE	1
23	4695	HANDLEBAR, LOWER	1
24	4814	BOLT, PHILLIPS TRUSS HD ZN 10-24 X 1-1/4	1
25	4819	TRIGGER ASSEMBLY, LONG THROW W/O CABLE	1
26	53106	NUT, LOCK BI-WAY 1/4-20	2
27	6041612	BOLT, PTH ZN 1/4-20 X 1-1/2	2
--	46122	BATTERY 12V 7A (not shown)	1
--	4653	FUSE HOLDER (not shown)	1
--	4658	FUSE 10 AMP (not shown)	1
--	4675	BATTERY CONNECTOR SET, WHITE (not shown)	1
--	4681	BATTERY CHARGER (not shown)	1

MC43 HANDLEBAR PARTS EXPLOSION



KEY	PART #	DESCRIPTION	QTY.
1	46141	BOLT, HEX HD M8 X 1.25 X 160MM	2
2	4639	GRIP, HANDLEBAR	2
3	4640	NUT, T-HANDLE	4
4	4641	WASHER	8
5	4642	BOLT, HANDLE CLAMP	4
6	4655	NUT, HEX HD M8 X 1.25	2
7	4667	THROTTLE CABLE	1
8	4689	HANDLEBAR, UPPER RIGHT	1
9	4690	HANDLEBAR, UPPER LEFT	1
10	4693	HANDLEBAR, MIDDLE	1
11	4695	HANDLEBAR, LOWER	1
12	4814	BOLT, PHILLIPS TRUSS HD ZN 10-24 X 1-1/4	1
13	4819	TRIGGER ASSEMBLY, LONG THROW W/O CABLE	1

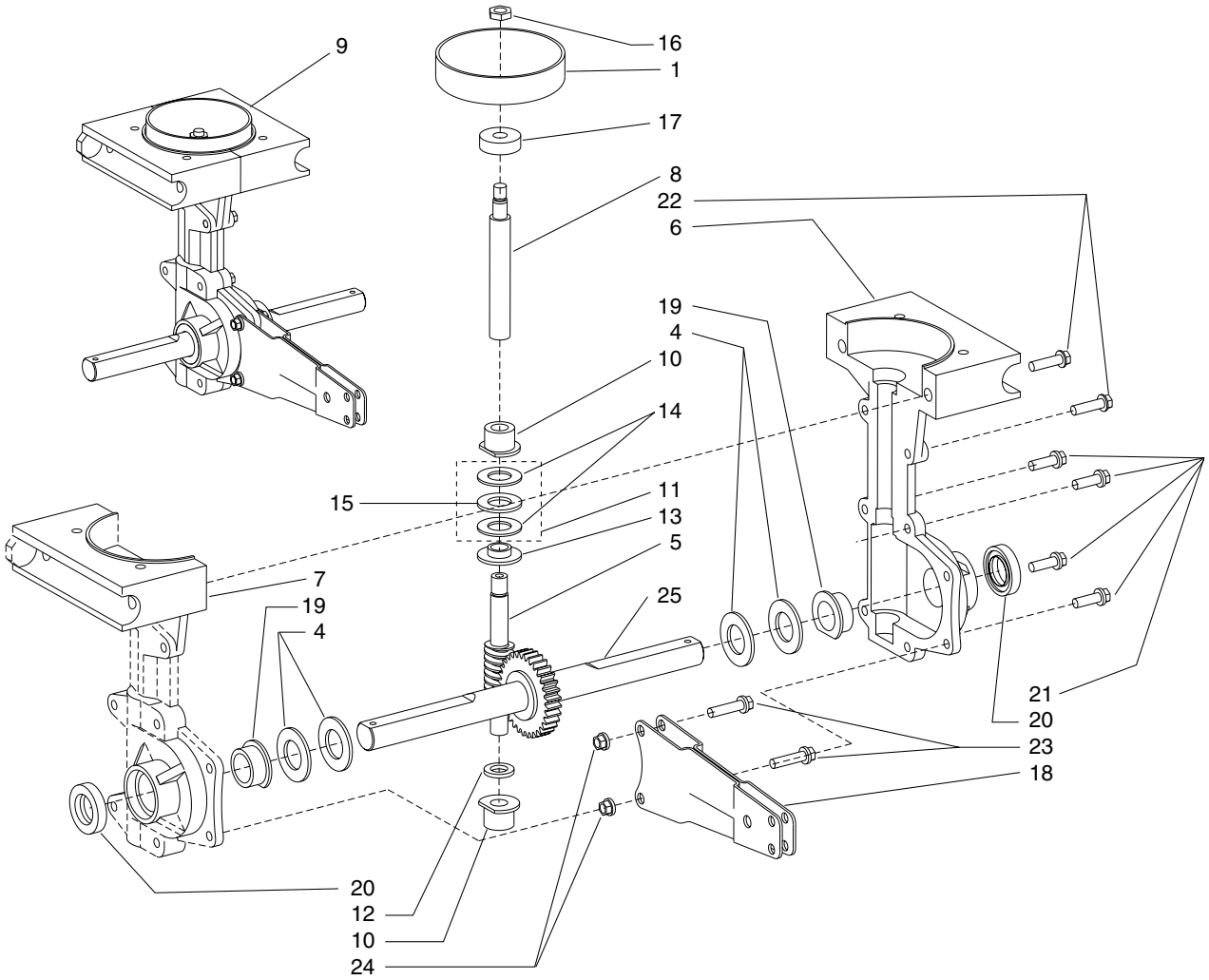
HOOD & TINES PARTS EXPLOSION



KEY	PART #	DESCRIPTION	QTY.
1	2431	WASHER, 10MM NARROW FLAT	2
2	4600	DRAG BAR	1
3	4601	TINE "A" RIGHT OUTSIDE	1
4	4602	TINE "C" LEFT INSIDE	1
5	4603	TINE "B" RIGHT INSIDE	1
6	4604	TINE "D" LEFT OUTSIDE	1
7	4606	WASHER, FIBER	2
8	46138	TRANSMISSION ASSEMBLY	1
9	46142	BOLT M6 X 1.0 X 15MM FLANGED HEX HD	2
10	46144	DUST CAP	2
11	46145	DETENT PIN 5/16 X 1-1/2"	1
12	46146	TINE SHIELD	2
13	4625	BOLT, M6 X 1.0 X 42MM FLANGED HEX HD	4
14	4629	NUT M10 X 1.5 CENTER LOCK HEX HD	1

KEY	PART #	DESCRIPTION	QTY.
15	4634	WHEEL	2
16	4650	NUT M6 X 1.0 FLANGED HEX HD	2
17	4652	HAIR PIN, 5/8-3/4 COTTER	2
18	4673	WHEEL HOLDER	1
19	4674	WHEEL TUBE	1
20	4678	GUIDE, WHEEL TUBE	1
21	4684	TUBE, WHEEL LOCK	1
22	4685	SPRING, WHEEL LOCK	1
23	4687	BOLT M10 X 1.5 X 225MM HEX HD	1
24	4691	BOLT, M4 X 0.7 X 10MM PHILLIPS PAN HD	2
25	4692	WASHER, M4 FLAT	2
26	4694	NUT M4 X 0.7 FLANGED HEX HD	2
--	E43CCMCV	ENGINE 43CC CAT CONVERT	1
--	E43MCEVE	ENGINE 43CC CAT CONVERT ELEC START	1

TRANSMISSION PARTS EXPLOSION



KEY	PART #	DESCRIPTION	QTY.
1	300414	CLUTCH DRUM	1
	4608	TINE SHAFT (USE P/N 4651)	
	4609	GEAR, TINE SHAFT (USE P/N4651)	
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	46138	TRANSMISSION ASSEMBLY	1
10	4614	BUSHING, DRIVE SHAFT	2
11	4615	THRUST BEARING ASSEMBLY	1
12	4616	SPACER, BUSHING	1
13	4617	REDUCER, THRUST BEARING	1

KEY	PART #	DESCRIPTION	QTY.
14	4618	WASHER, THRUST	2
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

ENGINE PARTS EXPLOSION

ENGINE PARTS LIST

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	300484	FLYWHEEL, MAGNETO	1
2	300337	NUT, FLANGE M8	1
3	300462	WASHER, ROTOR	2
4	300413	CLUTCH ROTOR ASSEMBLY W/SPRING	1
5	300449	WASHER, SPRING	2
6	300450	BOLT, SHOULDER	2
7	300467	PIN, LOCATING	2
8	300487	MOUNT RING & SHROUD	1
9	300491	RECOIL CLUTCH	1
10	300429	PLATE, RECOIL	1
11	3004121	HANDLE, RECOIL (STANDARD)	1
12	300430	RECOIL ASSEMBLY WITH STANDARD HANDLE	1
13	300472	IGNITION COIL, MC43	1
	300472CE	IGNITION COIL, MC43 CE	1
	300191	IGNITION COIL, MC43E	1
	300191CE	IGNITION COIL, MC43E CE	1
14	300482	SHROUD, ENGINE	1
15	300493	BOLT, STUD M6 X 62MM	2
16	300475	GASKET, MUFFLER	1
17	4813	MUFFLER	1
18	4812	COVER, MUFFLER	1
19	BM6A	SPARK PLUG	1
20	300483	COVER, ENGINE SHROUD	1
21	300476	GASKET, INTAKE	1
22	300478	WINDPIPE, INTAKE 43CC/51CC	1
23	300479	GASKET, CARBURETOR	1
24	300486	CARBURETOR	1
25	300481	O-RING, CARBURETOR	1
26	3004109	PRIMER BULB	1
27	3004158	COVER, AIR FILTER	1
28	3004150*	AIR FILTER ASSEMBLY	1
29	3004156	FOAM, AIR FILTER	1
30	3004157	PLATE, REINFORCEMENT	1

*Air filter assembly includes: air filter base (28), choke lever bolt (31), two choke lever washers (32), nylock choke lever nut (33), choke lever (34) and choke paddle (35)

KEY NO.	PART NO.	DESCRIPTION	QTY.
31*	3004150	AIR FILTER ASSEMBLY	1
32*	3004150	AIR FILTER ASSEMBLY	2
33*	3004150	AIR FILTER ASSEMBLY	1
34*	3004150	AIR FILTER ASSEMBLY	1
35*	3004150	AIR FILTER ASSEMBLY	1
36	56105	BRACKET, GAS TANK	1
37[a]	3004118	GAS TANK KIT	1
38	300401	GAS CAP, MANUAL VENTING	1
39	300332	SHROUD, GAS TANK	1
40	1021	SWITCH, ROCKER	1
--	1021CE	ON/OFF SWITCH WIRE ASSEMBLY REMOTE HANDLEBAR (Not Shown-For CE Models Only)	1
41[b]	3004105	KIT FUEL LINE TWO HOLE GROMMET	1
42[b]	3004105	KIT FUEL LINE TWO HOLE GROMMET	1
43[b]	3004105	KIT FUEL LINE TWO HOLE GROMMET	1
44	300335	BOLT W/WASHER PHILLIPS HH	4
45	300492	NUT, FLANGE M6	2
46	300471	BOLT W/WASHER M5 X 12MM	4
47	300439	BOLT W/WASHER PH M5 X 18MM	7
48	300336	BOLT HH M6 X 10MM	2
49	300438	BOLT W/WASHER M5 X 25MM	2
50	300456	BOLT M5 X 50MM	2
51	300338	KEY, FLYWHEEL	1
52	3004103	FILTER, FUEL	1
53	300351	BOLT HH M6 X 8MM	2
61	300326	GUARD	
-	3004114	KIT, CARBURETOR	1
--	KITTU101	KIT, TUNE UP	1
MC43E ELECTRIC START MODEL ONLY			
54	300525	STUD BOLT M6 X 41MM	1
55	300339	KEY, ELECTRIC STARTER	1
56	300527	STARTER WIRE	1
57	300529	STARTER MOTOR KIT (includes starter, stud bolt, clutch drum & ground wire)	1
58	300445	WASHER M5	2
59	300438	BOLT W/WASHER M5 X 25MM	2
60	300439	BOLT W/WASHER PH M5 X 18MM	2

(a) Gas tank kit includes: gas tank (37), gas cap (38), two-hole grommet (41), fuel line and fuel filter (43, 52).

(b) These parts are available as part of fuel line repair kit. Fuel line repair kits includes: two-hole grommet (41), fuel line hose (42), primer line hose (43) and fuel filter (52)

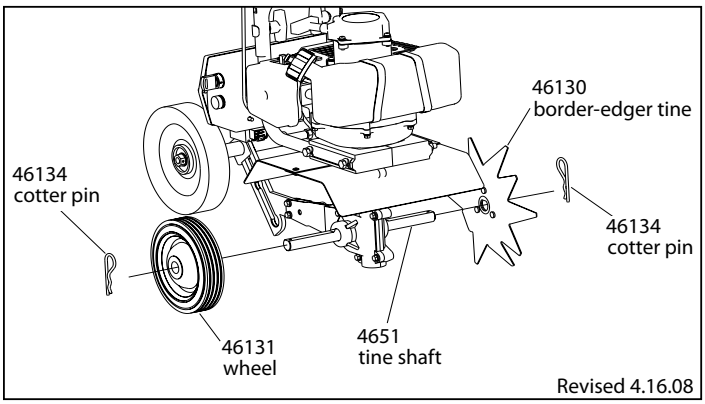
EK43 BORDER-EDGER KIT INSTALLATION (OPTIONAL ACCESSORY)

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:

1. Disconnect spark plug wire from spark plug.
2. Remove the cotter pins 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) cotter pins, they will be used on the Border-Edger Kit.
5. Slide the Border-Edger attachment on 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 mini-cultivator.
6. Put (1) cotter pin, flat side facing edger attachment, through the shaft hole that is further down the shaft from the hole where the cultivating tines were placed.
7. Slide the wheel on the opposite tine shaft.
8. Insert the remaining cotter pin, flat side facing wheel, through the hole next to the wheel at the end of the tine shaft.
9. Re-connect spark plug wire.
10. Before using the Border-Edger Kit, remove the drag stake from the unit.
11. Set the mini-cultivator wheels to their highest (top) position.

⚠ CAUTION

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



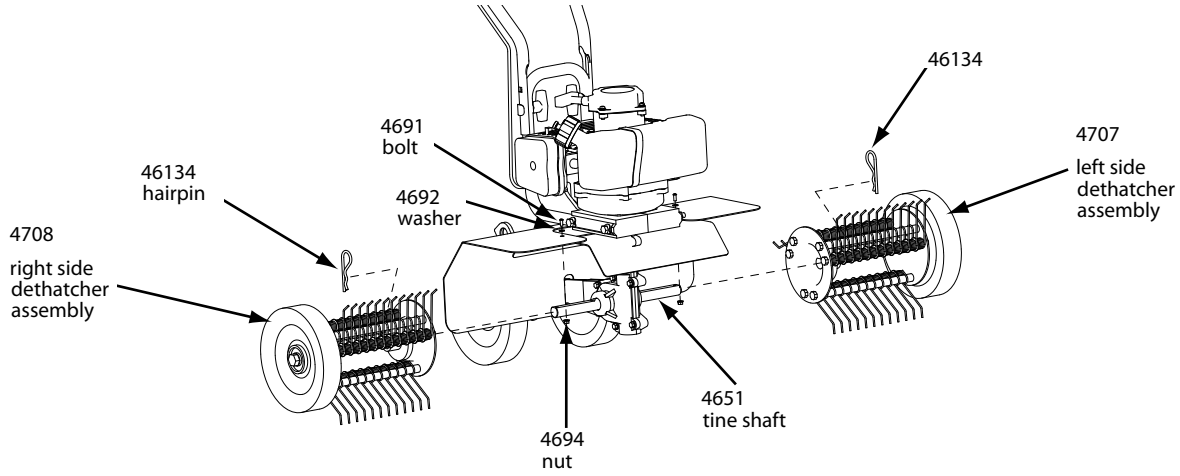
EK43 Border-Edger Attachment Kit (fits both Models MC43 & MC43E)

DK43 DETHATCHER KIT INSTALLATION (OPTIONAL ACCESSORY)

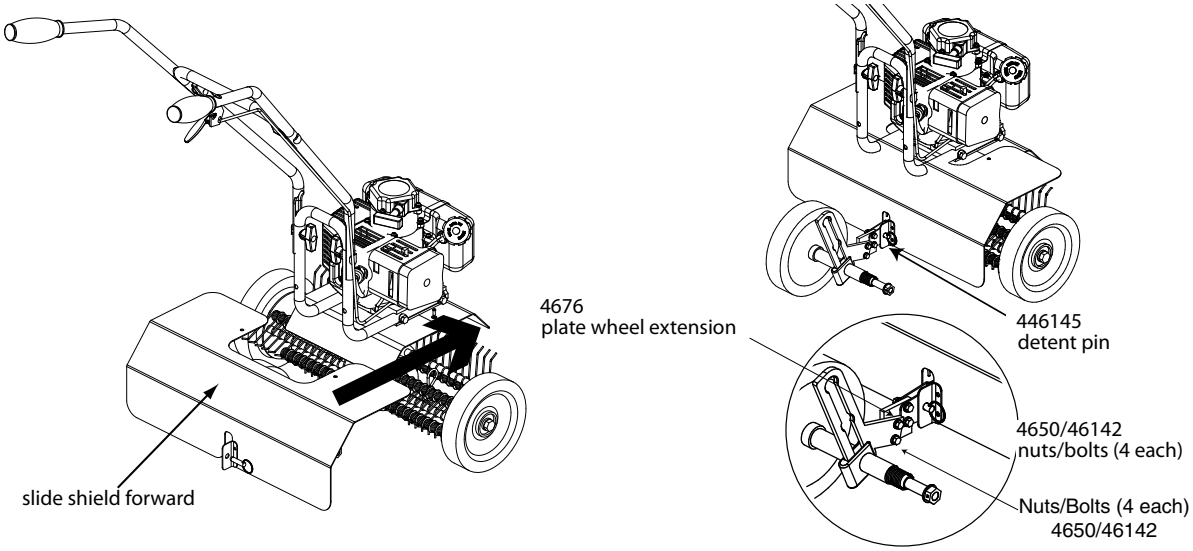
The Dethatcher Kit is very effective for lifting away the excessive matted layers of thatch that can prevent moisture, oxygen and nutrients from penetrating the soil and can harbor disease and insects. Use in Spring, Summer, and Fall to bring life and color back to your lawn.

1. Disconnect spark plug wire from spark plug. Remove the cultivating tines (if so equipped). Refer to exploded view below for detailed assembly.
2. 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.
3. Secure dethatcher assemblies using the hairpins (46134).
4. Slide dethatcher shield over the unit's tine shield from the rear of the unit and secure using bolts (4694), washers (4692), and nuts (4694).
5. Secure the lower part of the dethatcher shield to the drag stake mount using the detent pin (46145). Re-connect spark plug wire.
6. Install wheel extension plate (4676) using additional bolts (46142) and nuts (4650).

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



DK43 Dethatcher Kit (fits both Models MC43 & MC43E or stand-alone as MD43)



MC43E & MC43 MINI-CULTIVATOR
MD43 DETHATCHER

WARRANTY TERMS AND CONDITIONS

PRODUCT WARRANTY: 1-YEAR LIMITED WARRANTY

Earthquake, a manufacturing company, warrants this **EARTHQUAKE® MINI-CULTIVATOR OR MINI DETHATCHER** to be free from defects in the material or workmanship for a period of one year from the date of purchase. During the one-year warranty of this product, Earthquake will, at their discretion, furnish parts and/or labor to correct any defect caused by faulty material or workmanship. Any unit used in a commercial application is covered for a period of 90 days after purchase. This warranty applies to the original owner with a proof of purchase and is not transferable. This guarantee is void unless the warranty card is properly filled out and received by Earthquake within 30 days of purchase or go to www.GetEarthquake.com for online registration.

For replacement parts, phone 800-345-6007 or go online to www.GetEarthquake.com.

ENGINE WARRANTY: 2-YEAR LIMITED WARRANTY

Earthquake, a manufacturing company warrants its Viper Engines under a two-year limited warranty to be free from defects in materials and workmanship for the service life of the product not to exceed twenty four consecutive months from the date of purchase for consumer applications. As an Earthquake Viper small engine owner, you are responsible for executing proper maintenance listed in your Operating and Maintenance Instructions. 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.

**These warranties apply only to products which have not been subjected to negligent use, misuse, alteration, accident, unauthorized parts, failure to use proper fuel and oil, or if repairs have been performed at non-authorized service centers. These warranties supersede all other warranties either expressed or implied and all other obligations or liabilities on our part. Earthquake does not assume, and does not authorize any other person to assume for us, any liability in connection with the sale of our products. To be at "No Charge," warranty work must be sent directly to Earthquake or one of our authorized service centers and performed by them. To obtain warranty service and/or replacement instructions, contact our customer service department at 800-345-6007 Monday through Friday from 8 a.m. to 5 p.m. or visit www.getearthquake.com. If you choose to ship your product to Earthquake for warranty repair, you must first have prior approval from Earthquake by calling our customer service department at 800-345-6007 for a return material authorization number (RMA#). Under these circumstances, all items must be shipped prepaid. Earthquake will at no charge, repair or replace, at their discretion, any defective part which falls under the conditions stated above. Earthquake retains the right to change models, specifications and price without notice.*

EXPLANATION OF EMISSIONS CONTROL WARRANTY PROVISIONS

Viper Engines are designed, built and equipped to meet all EPA requirements. It warrants that it is free from defects in material and workmanship that could cause failure to the warranted part; and that it is identical in all material respects to the engine described in the manufacturer's application for certification. When a warrantable condition exists, Viper will repair your engine at no cost to you, including parts and labor. The engine emissions label will indicate certification information. If the purchaser is in need of a warrantable repair and is not within 100 miles distance from an Earthquake authorized repair center, Earthquake will pay for shipping costs to and from an authorized Earthquake repair center.

Listed below are the parts covered by the emissions control systems warranty. Some parts listed below may require scheduled maintenance and are warranted up to the first scheduled replacement point for that part. Coverage under this warranty includes only the parts listed below (the emission and evaporation control systems) if so equipped:

- Air Filter Assembly (only to the first scheduled replacement point)
- Fuel Filter (only to the first scheduled replacement point)
- Carburetor
- Fuel Lines, Fuel Line Fittings and Clamps
- Fuel Metering Valve (if equipped)
- Evaporative System (if equipped)
  - Canister (if equipped)
  - Canister filter (if equipped)
  - Vapor hose (if equipped)
  - Orifice connector (if equipped)
  - Fuel tank
  - Fuel cap
  - Primer bulb canister (if equipped)
- Spark Plugs
- Magneto Ignition System
- Muffler Assembly

LIMITATIONS

The Emission Control Systems Warranty shall not cover any of the following:

a) Repair or replacement required because of misuse or neglect, improper maintenance, repairs improperly performed or replacements not conforming to Earthquake specifications that adversely affect performance and/or durability and alterations or modifications not recommended or approved in writing by Earthquake.

b) Replacement of parts and other services and adjustments necessary for required maintenance at or after the first scheduled replacement point;

c) Consequential damages such as loss of time, inconvenience, loss of use of the engine or equipment, etc.

d) Diagnosis and inspection fees that do not result in eligible warranty service being performed; and

e) Any add-on or modified part, or malfunction of authorized parts due to the use of add-on or modified parts.

These items will be covered for a period of **two years** from the date of the original purchase. Viper warrants that: the components are designed, built and equipped so as to conform with all applicable regulations adopted by the EPA; that they are free from defects in material and workmanship that could cause failure to the engine or other; and that the components used are identical in all material respects to the engine described in the manufacturer's application for certification. The warranty period begins on the date the engine is originally purchased.

MAINTENANCE AND REPAIR REQUIREMENTS

The owner is responsible for the proper use and maintenance of the engine. Earthquake recommends that all receipts and records covering the performance of regular maintenance be retained in case questions arise. If the engine is resold during the warranty period, the maintenance records should be transferred to each subsequent owner. Earthquake reserves the right to deny warranty coverage if the engine has not been properly maintained; however, Earthquake may not deny warranty repairs solely because of the lack of repair maintenance or failure to keep maintenance records.

Normal maintenance replacement or repair of emission control devices and systems may be performed by any repair establishment or individuals; however, warranty repairs must be performed by an Earthquake authorized service center. Any replacement parts or service that is equivalent in performance and durability may be used in non-warranty maintenance or repairs, and shall not reduce the warranty obligations of the engine manufacturer.

The warranty on emissions-related parts is as follows:

- Any warranted part that is not scheduled for replacement as required maintenance in the owner's manual supplied, is warranted for the warranty period stated above. If any such part fails during the period of warranty coverage, that part will be repaired or replaced at no charge to the owner. Any such part repaired or replaced under the warranty will be warranted for the remaining warranty period.
- Any warranted part that is scheduled only for regular inspection in the owner's manual supplied, is warranted for the warranty period. Any such part repaired or replaced under warranty will be warranted for the remaining warranty period.
- Any warranted part that is scheduled for replacement as required maintenance in the owner's manual supplied, is 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 will be repaired or replaced at no charge to the owner. Any such part repaired or replaced under warranty will be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
- Add on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any nonexempted add on or modified parts by the owner will be grounds for disallowing a warranty claim. The manufacturer will not be liable to warrant failures of warranted parts caused by the use of a nonexempted add on or modified part.

CE

ARDISAM Inc.
1360 1st Avenue, P.O. Box 666, Cumberland, Wisconsin, 54829 USA
Phone:- 001 (715) 822 2415 Fax:- 001 (715) 822 4180

EC Declaration of Conformity (Noise)

Manufacturers Name:	ARDISAM Inc.
Manufacturers Address:	1360 1st Avenue P.O. Box 666 Cumberland Wisconsin 54829 USA Phone: - 001 (715) 822 2415 Fax: - 001 (715) 822 4180
Declares that this product:	
Description of equipment:	Mini Cultivator/Motor Hoe
Conforms to the following directive:	Outdoor Noise Directive 2000/14/EC Annex V
Measured Sound Power level	92 db_{Lwa}
Guaranteed Sound Power level	93 db_{Lwa}
Cutting width	N/A
Contact Name / Address	Kirk Hyatt / as above
Notified Body:	N/A
Place of Declaration:	Wisconsin
Date:	12/29/2009

CE

ARDISAM.com

ARDISAM Inc.

1360 1st Avenue, P.O. Box 666, Cumberland, Wisconsin, 54829 USA
Phone: - 001 (715) 822 2415 Fax: - 001 (715) 822 4180

Declaration of Conformity

Ardisam Inc. hereby certify that the machinery stipulated below complies with all the relevant provisions of the:

Machinery Directive 98/37/EC
Noise Directive2000/14/EC annex V
Electromagnetic Compatability2004/108/EC

As amended, and the National Laws and Regulations adopting these directives.

Machine description	**:**	**Mini Cultivator / Motor Hoe**
Make	**:**	**Ardisam**
Type	**:**	**MC43CE/MC43RCE/MC43ECE**
Serial No.	**:**	**10000 – 99999**

And Is in conformity with the provisions of the following other EEC Directives:

The Electromagnetic Compatibility Directive 89/336/EC (as implemented by the Electromagnetic (Amendment) Regulations 1994 – (SI 1994/3060)

Applicable standard: BS EN 13684:2004

Authorised Person empowered to sign: - _____ Mr. Kirk Hyatt
Position in Company: - **Product Development Manager**

Date: - 12/29/2009

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