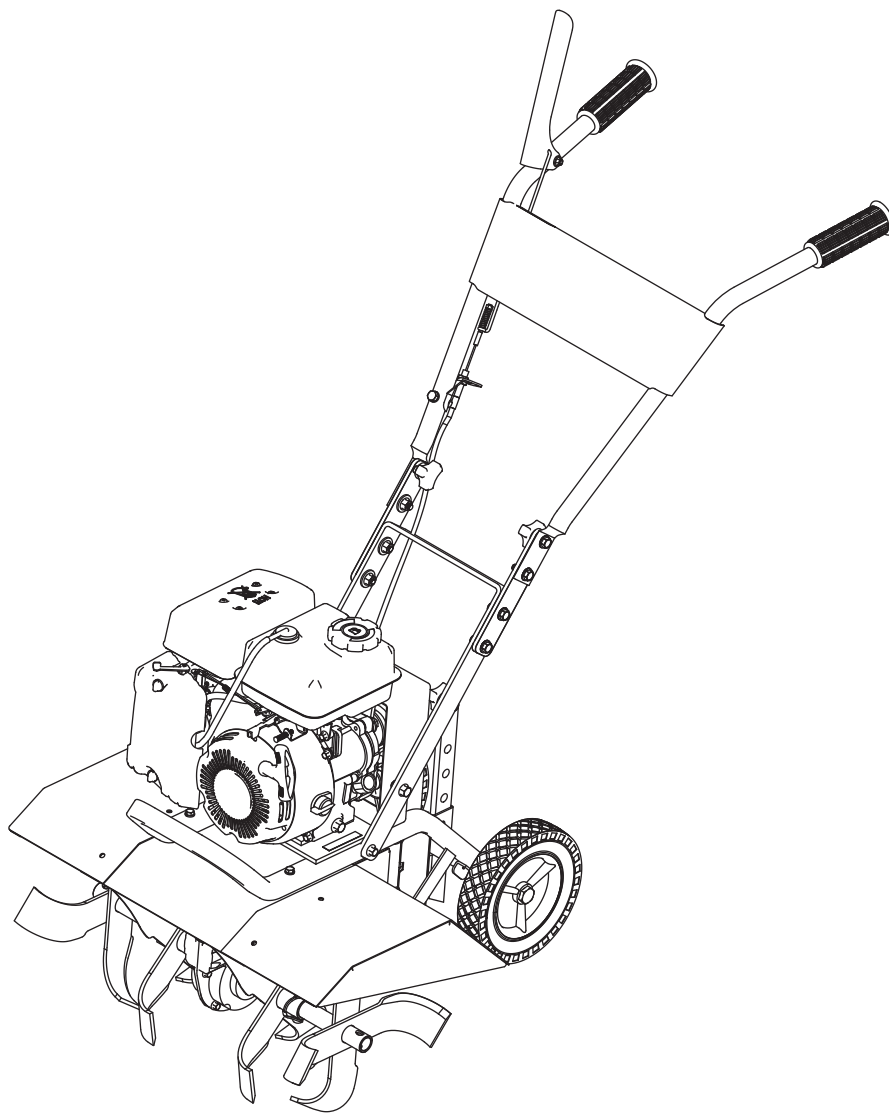




Operator's Manual  
Original Operating Instructions

**VECTOR<sup>™</sup>**  
**Compact Tiller**



**Product Numbers:**

**26750**

**14318 (CE)**

Get parts online at  
**[www.getearthquake.com](http://www.getearthquake.com)**



P/N: 22693  
ECN:10868  
REV1: 06/22/15  
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## INTRODUCTION

Congratulations on your investment in quality. Thank you for purchasing the VECTOR™ Compact Tiller from Earthquake®. We have worked to ensure that this tiller meets the highest standards for usability and durability. With proper care, your tiller 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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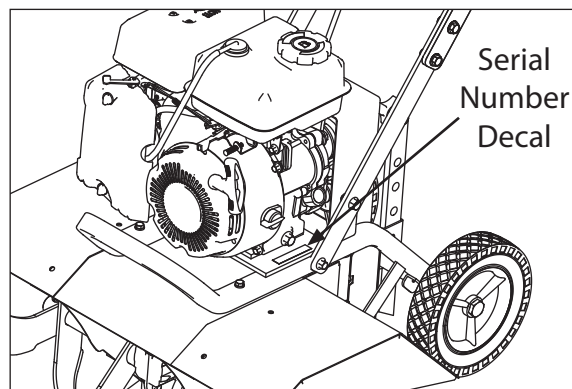
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## FEDERAL EMISSION INFORMATION

Earthquake warrants to the retail purchaser, that this compact tiller 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 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.getearthquake.com](http://www.getearthquake.com), or by mailing it to: Ardisam, 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:		

**This manual may contain information for several models. 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. 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 Equipment:

**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 tiller 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, automobiles, 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 machine near, or when crossing roads.
- If the equipment should start to vibrate abnormally, stop the engine (motor), flip the ON/OFF switch to the **OFF** position. 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. Flip the ON/OFF switch to the **OFF** position.
- 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 till 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. Flip the ON/OFF switch to the **OFF** position. Inspect the machine for damage. If damaged, repair before starting and operating the machine.
- The tines of the tiller should not rotate when the drive control lever is released into the neutral position. If it does rotate when in neutral, contact Earthquake<sup>®</sup> Customer Service for instruction.
- If an object becomes lodged in the tines, flip the ON/OFF switch to the **OFF** position, allow to cool before attempting to remove the foreign object.
- Pulleys and belts should be kept free of oil or other moisture for efficient operation.
- Disengage all clutches and leave control lever in the neutral position before starting the engine.



## 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.**

### Engine Safety Precautions

**NOTE:** *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.



## WARNING

**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 PUT THE ON/OFF SWITCH TO THE OFF POSITION.**

### 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 with the proper equipment. 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.
- 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.



- Never smoke while refilling engine fuel tank or while operating machine.
- Do not store engine with fuel in fuel tank indoors. Fuel and fuel vapors are highly explosive.
- 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 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, 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.

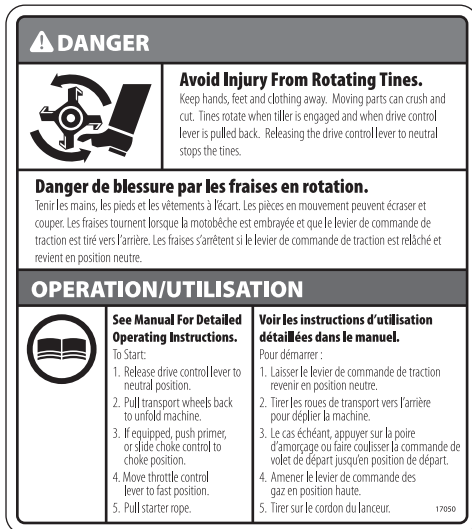
## SAFETY DECALS

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

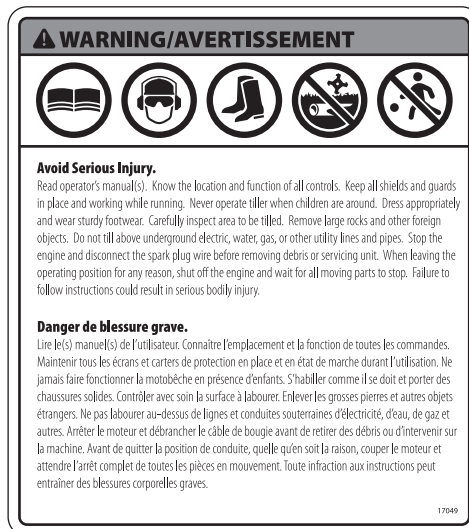
Although reading this manual and the safety instructions it contains will provide you with the necessary basic knowledge to operated this equipment safely and effectively, we have placed several safety labels on the tiller to remind you of this important information while you are operating the unit.

These important safety labels are illustrated below, and are shown here to help familiarize you with the location and content of the safety messages you will see as you perform normal tilling operations. Please review these labels now. If you have any questions regarding their meaning or how to comply with these instructions, reread the complete safety instruction text on the preceding pages. For additional questions European customers may contact their local dealer and US customers must call Earthquake customer service.

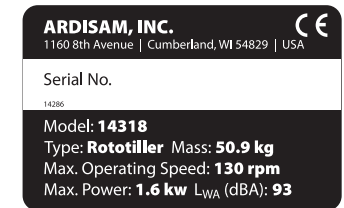
Should any of the safety labels become unreadable because of being worn, faded, or otherwise damaged during the use of your tiller, please use the part number information provided to order a replacement label. European customers can order from their local dealer and US customers can order by calling Earthquake customer service. These safety labels are easily applied, and will act as a constant visual reminder to you, and others who may use the equipment. Follow the safety instructions necessary for safe, effective operation of your rototiller.



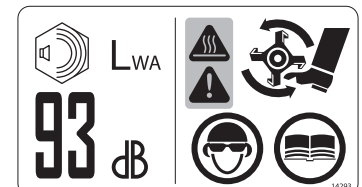
**Part No. 17050**  
**TINES DANGER/OPERATION**  
**Tine Shield Decal**



**Part No. 17049**  
**WARNING**  
**Tine Shield Decal**



**Part No. 14286**  
**NAMEPLATE DECAL (CE)**



**Part No. 14293**  
**CE SAFETY WARNINGS**  
**INCLUDING SOUND**



**Part No. 14287**  
**TINE SPEED (CE)**  
**Tine Decal**



**Part No. 14370**  
**TINE SPEED (CE)**  
**Tine Decal**



**Part No. 15698**  
**CLUTCH ENGAGE**  
**Handle Bar Decal**



**Part No. 17052**  
**BELT AND PULLEY WARNING**  
**Belt Guard Decal**



**Part No. 14292**  
**BELT ENGAGE ICONS (CE)**  
**Control Lever Decal**

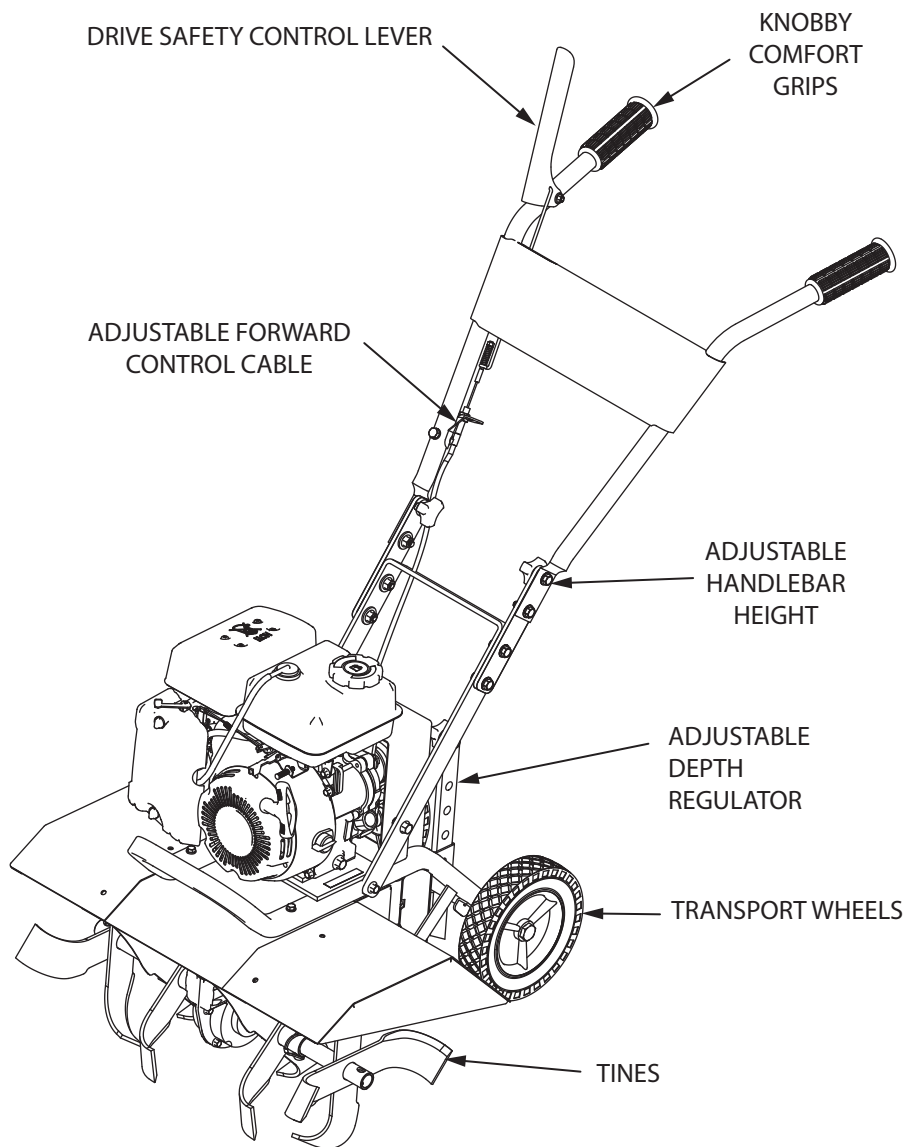
## HAZARD SYMBOLS AND MEANINGS



- A: Warning!
- B: Avoid Injury From Rotating Tines.
- C: Read Owner's Manual Before Operating Machine.
- D: Remove Objects that Could Be Thrown By This Machine.
- E: Dangerous Moving Parts.
- F: Be Aware of Moving and Rotating Parts.
- G: Wear Ear and Eye Protection At All Times.
- H: Do Not Service or Adjust Moving Parts Unless Engine is Stopped and Spark Plug Wire is Disconnected.
- I: Dress Appropriately And Wear Sturdy Footwear.
- J: Toxic Fumes—Do Not Operate in Unventilated Areas.
- K: Hot Surfaces.
- L: Fire Hazards.
- M: Do Not Use In Thunderstorms--For severe weather, stop operation of this machine and seek shelter.
- N: Team Lift--For your safety, always have at least two people when lifting this machine.
- O: Do Not Till Above Underground Utility Lines And Pipes.
- P: Do Not Operate When Children Or Others Are Around.



## FEATURES



## SPECIFICATIONS

<b>ENGINE DISPLACEMENT (CC)</b>	99
<b>TILLING WIDTH (IN)/(CM)</b>	11, 16, 21 / 28, 41, 53
<b>TILLING DEPTH (IN)/(CM)</b>	11 / 28
<b>TINE SPEED (RPM)</b>	178 (US) / 130 (Europe)
<b>WHEEL SIZE (IN)/(CM)</b>	8 / 20
<b>WEIGHT OF UNIT (LB)/(KG)</b>	90 / 40
<b>UNIT SIZE L x W x H (IN)/(CM)</b>	51 x 24 x 41 / 130 x 61 x 104

## Sound and Vibration Levels

Model	2006/42/EC Operator Ear $L_{PA}$ (dBA)	2006/42/EC Sound Power Level $L_{WA}$ (dBA)	2006/42/EC Hand/Arm Vibration Max $m/s^2$
14318 (CE)	81	93	3.9



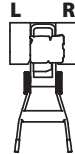
## WARNING

**DO NOT LIFT THE ROTOTILLER FROM THE CARTON. ROTOTILLER IS HEAVY AND CAN CAUSE INJURY. CUT BOX AWAY FROM ROTOTILLER AND REMOVE BOX.**



## IMPORTANT

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



## UNPACKING AND ASSEMBLY

### Tools Required for Assembly

- 2 x 10 mm Wrench
- 2 x 12 mm Wrench

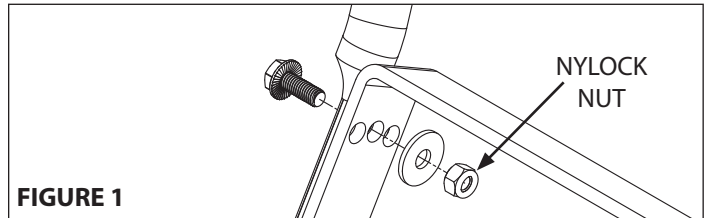
**NOTE: Socket head wrench may make assembly easier, but is not necessary.**

1. Open top of carton and remove handlebar assembly.
2. Parts bag for VECTOR tiller contains:
  - 2- Bolts M8 x 1.25 x 20 Hex Head
  - 6- Bolts M8 x 1.25 x 25 Hex Head
  - 6- Washers M8 8.4x 24 x 2.2mm
  - 6- Nuts M8 x 1.25
  - 2- Middle Handlebar Straps
  - 2- Hand Knobs
  - 6- Bolts M6 x 1.0 x 12
  - 6- Nylock Nuts M6 x 1.0

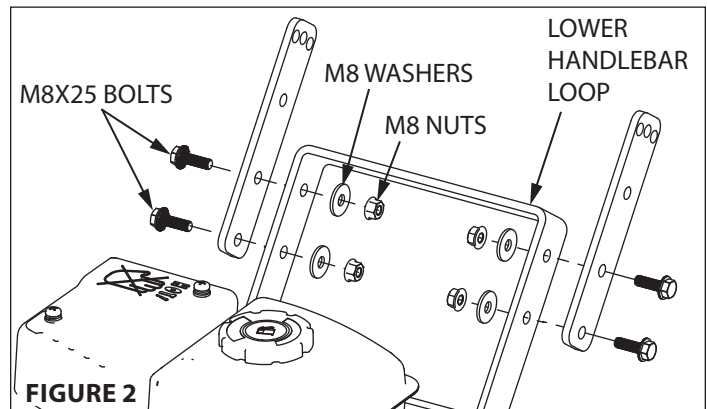
**NOTE: Plastic side of Nylock nut must face away from bolt head during assembly. SEE FIGURE 1**

3. Remove machine from carton
4. Assemble the upper handlebar onto the lower handlebar loop as follows: **SEE FIGURES 2 AND 3**
  - a. Use the two middle handlebar straps to connect the upper handlebar to the lower handlebar loop.
  - b. Install the M8 x 25 bolts through the six lower bolt holes from the outside in.
  - c. Install six washers and tighten with six M8 nuts on the six bolts.
  - d. Tighten the two M8 hand knobs on the two M8 x 20 bolts in the upper most hole on each side of the handlebar.

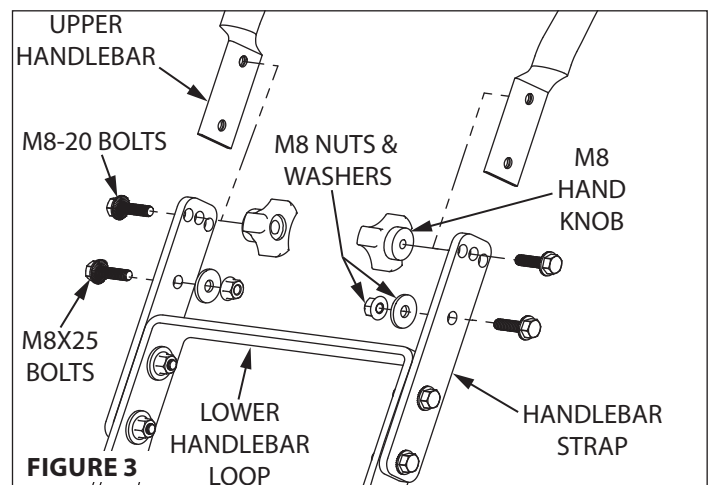
**NOTE: The two upper bolts and hand knobs can be used in one of three hole positions for handlebar height adjustment. SEE FIGURE 4. The upper bolts should be placed on the outside of the handlebar strap while the hand knobs should be placed on the inside. SEE FIGURE 3**



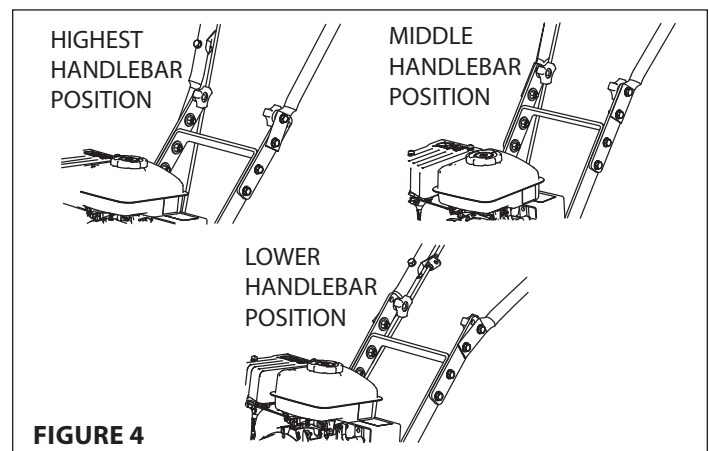
**FIGURE 1**



**FIGURE 2**

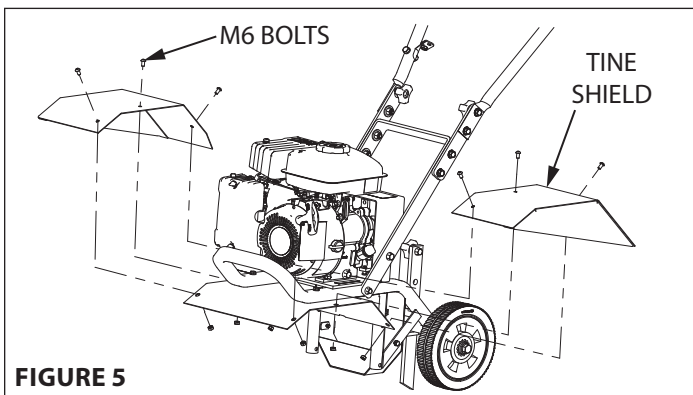


**FIGURE 3**



**FIGURE 4**

5. Assemble tine shield extensions using six M6 bolts and six nylock nuts. **SEE FIGURE 5**



**FIGURE 5**

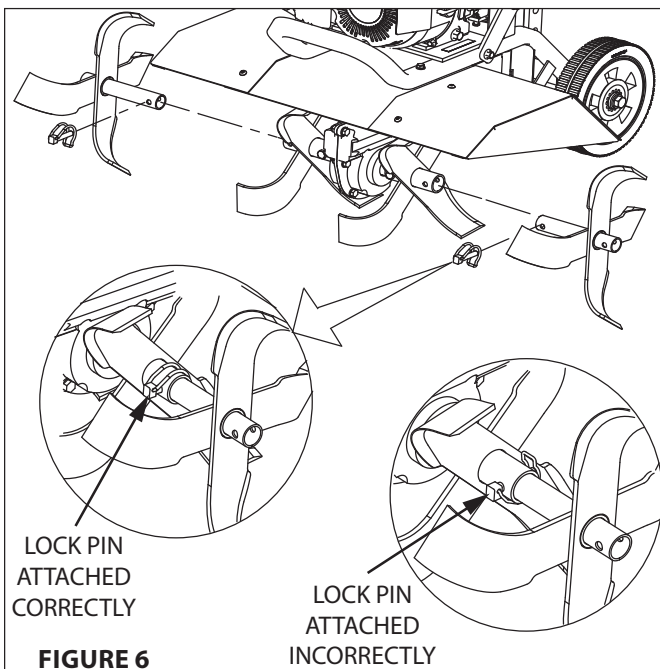
6. Assemble tines to unit.

**NOTE:** *Sharp edges of tines will be away from the operator at the top or facedown at front of machine.*

- a. Fasten outer tines to the inner tines using the 8mm x 40mm lock pins already affixed to the inner tines. Lock pins must be installed so that the pin enters the hole in the tine from the front of the tiller, and so the wire bale hinges over the top of the tine pipe and latches to the protruding pin on the back side of the tine.

**SEE FIGURE 6**

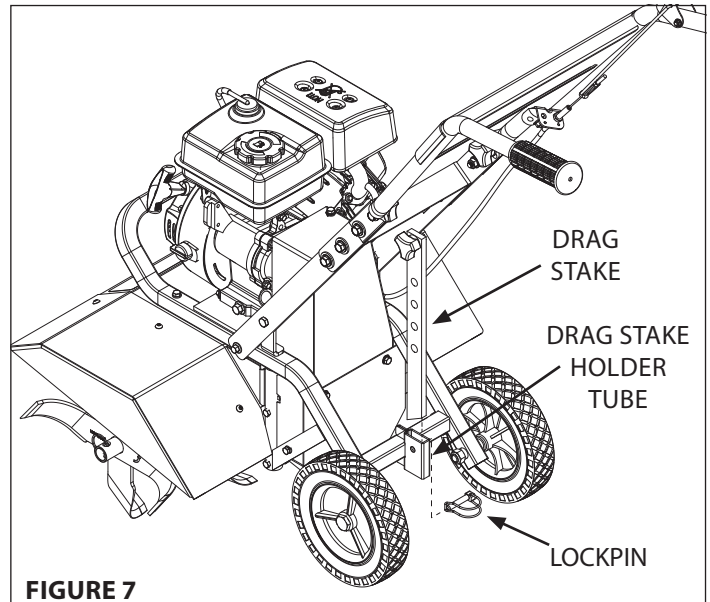
- b. Outside tines have two positions--wide 21" and narrow 16". For narrow width, assemble with short side of tine holder pipe towards center of machine.
- c. For wide width, move the left tine to the right side and right tine to the left side. Assemble with the long half of tine pipe towards machine.



**FIGURE 6**

7. Install the drag stake assembly from the top down through the drag stake holder tube on the tiller frame between the wheels. Lock the drag stake in place using the lock pin that is already affixed to the drag stake holder tube.

**SEE FIGURE 7**



**FIGURE 7**

## **CAUTION**

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

### **Fill Engine Crankcase**

1. Add oil according to engine manual. **Do not overfill.** Use a clean, high quality detergent oil. Container must be marked A.P.I. Service SF - SJ. Use no special additives with recommended oils. **Do not mix oil with gasoline.** Oil level must be full. Check the oil level by removing oil fill plug. Oil level should be up to the bottom of the fill plug opening.
2. Always check oil level before starting engine. Refer to engine manual for capacity and type of oil to use.

## OPERATION

### CONTROLS

#### Drive Safety Control Lever

Engage tines into forward, releasing returns machine to neutral. Pulling down on drive safety control lever engages the tines. Releasing the drive safety control lever to a neutral position disengages the tines.

#### Belt Tension Adjustment

Proper belt tension is critical to good performance. After 1/2 hour of operation, all cables may have to be adjusted due to initial stretch. Thereafter, check tension after every 2 hours of operation. Proper tension is achieved when the spring compresses 1/4" when drive lever is engaged.

An indication that the belt may need to be adjusted is a constant buzzing sound that can be heard when the engagement lever is compressed (see page 17), or a persistent squealing sound when engaged and under load.

**NOTE:** *A short buzzing noise can be heard when engagement lever is released. This is normal, caused by the teeth of the cog belt catching the wire guide, stopping the rotation of the of the belt. This does not require the belt tension to be adjusted.*

#### To increase belt tension:

1. Loosen upper jam nut in 1/8" increments while holding lower jam nut in place. **SEE FIGURE 8**
2. Check adjustment and instructions under "Check Belt Tension" section.

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

#### Drag Stake

Tilling depth is controlled by the height of the (drag stake) depth regulator lever. **SEE FIGURE 9**

#### To adjust tilling depth:

1. Remove lock pin.
2. Raise the depth regulator lever to position tines at chosen tilling depth. Lowering the depth regulator will allow for deeper tilling.
3. Align hole in depth regulator lever with hole in depth regulator bracket and replace lock pin.

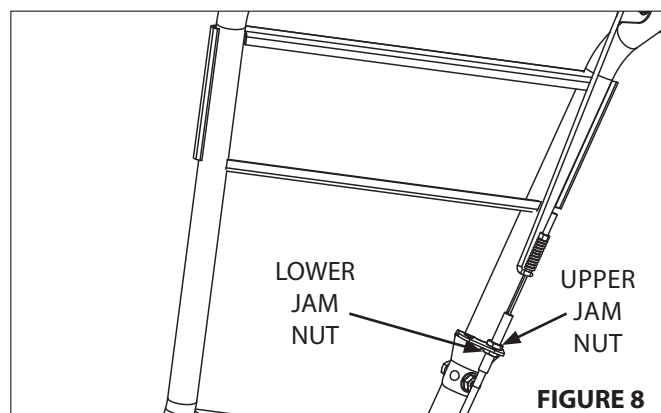
**NOTE:** *Raise depth regulator all the way when transporting tiller. Lower the depth regulator all the way to maintain control of the tiller in harder soil conditions.*

### WARNING

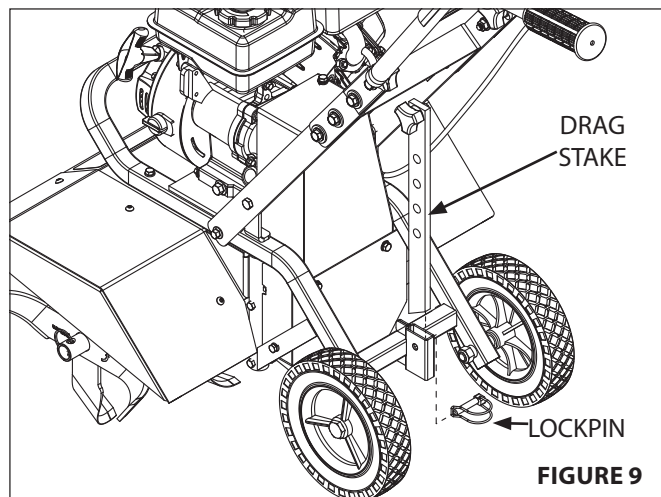
**THIS INFORMATION IS PROVIDED HERE ONLY TO INTRODUCE THE CONTROLS. DO NOT START THE ENGINE AT THIS TIME. PLEASE READ THIS SECTION AND ALL OPERATING AND SAFETY INSTRUCTIONS BEFORE STARTING YOUR TILLER.**

- **AS A SAFETY PRECAUTION, THE DRIVE SAFETY CONTROL LEVER WILL NOT LOCK IN THE FORWARD POSITION.**
- **TO STOP THE TINES AT ANY TIME RELEASE THE DRIVE SAFETY CONTROL LEVER.**
- **PROTECTIVE FOOTWEAR MUST BE WORN WHILE OPERATING THIS PRODUCT.**
- **ENGINE SHOULD BE OFF BEFORE ADJUSTING ANY CONTROLS.**
- **DO NOT ADJUST TILLING DEPTH UNLESS DRIVE SAFETY CONTROL LEVER IS RELEASED TO THE NEUTRAL POSITION.**

**FAILURE TO FOLLOW THESE INSTRUCTIONS CAN CAUSE SERIOUS INJURY OR DEATH.**



**FIGURE 8**



**FIGURE 9**

## **WARNING**

- **DO NOT START YOUR TILLER UNTIL YOU HAVE READ AND UNDERSTAND THIS MANUAL AND THE SECTIONS IN THIS MANUAL COVERING SAFETY AND OPERATION. ONCE YOU HAVE READ THE MANUAL, FOLLOW THE APPROPRIATE STEPS TO START YOUR TILLER.**
- **ALWAYS PERFORM THE PRE-START CHECKLIST BEFORE STARTING THE ENGINE.**
- **PRACTICE OPERATING THE CONTROLS AND TILLER WITH TINES OUT OF GROUND BEFORE BEGINNING TO TILL. IT IS IMPORTANT THAT YOU KNOW HOW TO USE THE TILLER PROPERLY, KEEP CONTROL AT ALL TIMES, STOP THE TINES AND WHEELS FROM TURNING, AND STOP THE ENGINE IF NECESSARY. IF YOU DO NOT KNOW HOW TO DO THESE THINGS, READ THE CONTROLS AND SAFETY SECTIONS BEFORE PROCEEDING.**
- **ALWAYS MAINTAIN CONTROL OF YOUR TILLER. ONLY OPERATE TILLER IN SOIL CONDITIONS THAT ARE CONDUCIVE TO MAINTAINING CONTROL OF THE TILLER. DO NOT OPERATE TILLER IN CONDITIONS THAT CONTAIN ROCKS FOREIGN OBJECTS, OR ANY OTHER MATERIAL THAT IS NOT SOIL. IF YOUR TILLER BUMPS, JERKS OR LURCHES, LET GO OF THE HANDLE BARS AND THE DRIVE CONTROL LEVER IMMEDIATELY SO THAT THE TINES STOP TURNING.**
- **EXTREME CAUTION MUST BE TAKEN IN SELECTING TILLING DEPTH. IF YOU ATTEMPT TO TILL IN CERTAIN SOIL CONDITIONS WITH THE DRAG STAKE IN TOO HIGH OF A POSITION—LOSS OF CONTROL COULD RESULT.**
- **IF REMOVING MATERIAL FROM THE TINES BY HAND, STOP THE ENGINE AND REMOVE SPARK PLUG WIRE FIRST.**
- **ENGINE AND SURROUNDING PARTS BECOME EXTREMELY HOT DURING NORMAL.**
- **TEMPERATURE OF MUFFLER AND NEARBY AREAS MAY EXCEED 150° F. AVOID THESE AREAS.**
- **ALLOW ENGINE TO COOL COMPLETELY BEFORE TOUCHING THESE HOT SURFACES. THESE AREAS WILL CAUSE SERIOUS BURN INJURIES IF TOUCHED BEFORE THE ENGINE HAS COOLED..**
- **ALWAYS KEEP HANDS AND FEET CLEAR OF ROTATING MACHINE PARTS.**
- **FAILURE TO FOLLOW INSTRUCTIONS CAN CAUSE SERIOUS INJURY OR DEATH.**

## **CAUTION**

- **DO NOT USE CHOKE CONTROL TO STOP ENGINE. BACK-FIRE OR ENGINE DAMAGE MAY OCCUR.**
- **TO STOP THE ENGINE AT ANY TIME, MOVE THROTTLE CONTROL TO THE OFF OR STOP POSITION, OR FLIP THE ON/OFF SWITCH TO OFF.**
- **TO STOP TINES AT ANY TIME, RELEASE DRIVE SAFETY CONTROL LEVER TO THE NEUTRAL POSITION.**
- **ALWAYS RELEASE DRIVE SAFETY CONTROL LEVER TO THE NEUTRAL POSITION BEFORE ADJUSTING THE DEPTH OF THE REGULATOR LEVER.**
- **ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE.**
- **FAILURE TO FOLLOWS INSTRUCTIONS CAN CAUSE FAILURE OF EQUIPMENT.**

## **PRE-START INSPECTION**

1. Make sure all safety guards are in place and all nuts and bolts are secure.  
**NOTE: All hardware (nuts, bolts, ect) should be checked for tightness before each use. Vibration can cause hardware to loosen over time.**
2. Check oil level in engine crankcase. See your engine manual for procedure and specifications.
3. Inspect air cleaner for cleanliness. See your engine manual for procedure.
4. Check the fuel supply. Fill the fuel tank no closer than 1 inch from top of tank to provide space for expansion. See your engine manual for fuel recommendations.
5. Be sure spark plug wire is attached and spark plug is tightened securely.
6. Check depth regulator lever position.
7. Examine underneath and around engine for signs of oil or fuel leaks.
8. Inspect fuel hoses for tightness and fuel seepage.
9. Look for signs of engine damage.
10. Remove excessive debris from muffler area and recoil starter.

## **START-UP**

The controls required to start and run the rototiller are located on the engine.

The throttle speed control is located above the pull-start recoil and is indicated by a rabbit for FAST and a turtle for SLOW. The choke lever is located above the air cleaner cover. The On/Off switch is located on the side of the blower housing closest to the recoil pull handle.



Additional engine operation and related precautions and procedures can be found in the engine manufacturer's manual that accompanies each tiller.

### COLD STARTS

1. Turn the On/Off switch to the **ON** position
2. Move choke lever to **FULL CHOKE** position.
3. Move throttle lever to half way between the **SLOW** position and the **FAST** position.
4. Pull starting rope out slowly one time and allow to return normally.
5. Pull starting rope out rapidly, and allow rope to return normally. Repeat until engine starts.
6. When engine starts, gradually move choke lever to run position and increase throttle speed to the **FAST** position for tilling.

### Restarting A Warm Engine

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

1. Turn the On/Off switch to the **ON** position.
2. Move throttle lever to half way between **SLOW** and **FAST**.
3. Pull starting rope out rapidly until engine starts. Allow rope to return normally. Repeat until engine starts.
4. Adjust throttle speed to the **FAST** position for tilling.

### Operating Speed

For normal tilling, set the throttle lever to **FAST**.

### Shutting Down

To stop the engine at any time, turn the On/Off switch to the **OFF** position. To stop tines at any time, release the drive safety control lever to the neutral position.

### Tilling

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

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

2. Move the throttle control to **FAST**.
3. Place the tiller in motion by pushing down on the drive safety control lever--this will engage the tines.

## MAINTENANCE AND STORAGE

Your rototiller has been designed and produced by the industry's leading manufacturer of outdoor power equipment to provide you with years of reliable operation.

Please read the maintenance schedule in this manual for the tiller, and the maintenance schedule and recommendations in the accompanying engine manual. Observe these recommendations to extend the life of your product.

Good maintenance is essential for safe, economical, and trouble-free operation. Keeping your tiller in top running condition will prolong its life, and help you obtain optimum performance. 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 warranty service.***

The maintenance schedule applies to normal operating conditions. If you operate your tiller 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 Operation	Page	Before Each Use	50 hours or Every Season
Check belt tension	12, 15	X	
Change drive belt	15		X
Engine maintenance	16, <b>EM</b>	X	X
Check or fill engine crankcase	16, <b>EM</b>	X	1
Clean tine axle shaft	16	X	
Lubrication	16		X

**EM** = See engine manual

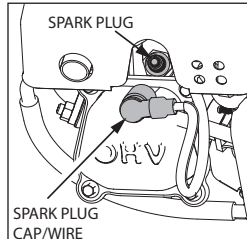
**1** Change oil after first 5-8 hours of use, then after every 50 hours or every season. Change oil every 25 hours when operating under heavy load or in high temperatures.



## **WARNING**

### **TO PREVENT ACCIDENTAL STARTING:**

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



## **CAUTION**

**CHECK FORWARD BELT TENSION REGULARLY. TOO MUCH OR TOO LITTLE TENSION WILL CAUSE PREMATURE BELT FAILURE.**

### **Servicing The Rototiller**

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

#### **Check Belt Tension**

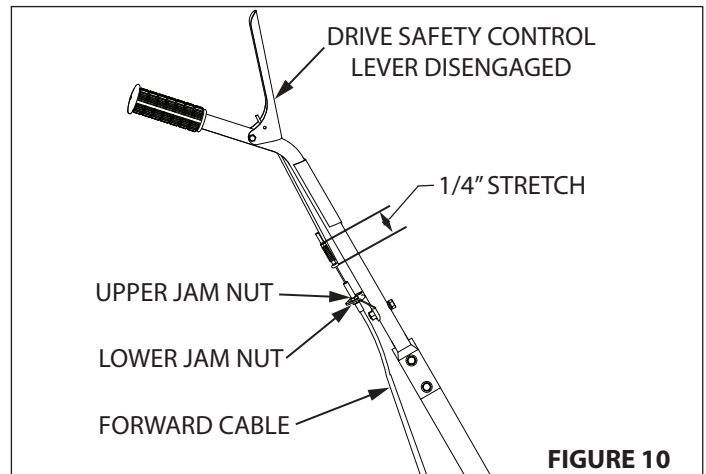
Belt tension may decrease over time. It may need to be adjusted within the first half hour of operation, and should be checked after every two hours of operation. Proper adjustment will assure long belt life. Too much or too little belt tension will cause premature belt failure. To check and adjust the forward belt tension:

1. Turn off engine. Engine must be cool.
2. Remove spark plug wire from spark plug and secure.
3. With drive safety control lever in the neutral position, measure length of spring when in its relaxed state.
4. Pull down on drive safety control lever and measure length of spring when compressed. Ideal length would be 1/4" shorter. **SEE FIGURE 10**

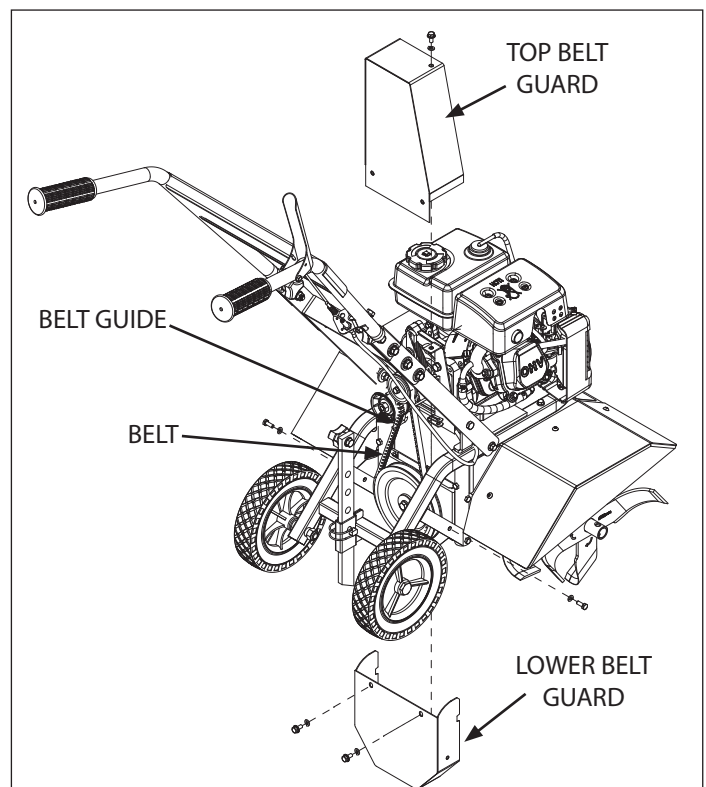
#### **Change Drive Belt**

1. Turn off engine. Engine must be cool.
2. Remove spark plug wire from spark plug and secure.
3. Remove top and lower belt guards. **SEE FIGURE 11**
4. Remove the belt from the engine pulley as follows:
  - a. Gently pull the engine recoil rope to rotate the pulley.
  - b. With the pulley turning, force the belt out of the groove and slide the belt free of the engine pulley.

- c. Pull the belt down and out of the way.
  - d. Push the belt down and away from the transmission pulley to remove.
5. Install new belt as follows:
    - a. Place belt in transmission pulley groove.
    - b. Gently pull the engine recoil rope to rotate the pulley while forcing the belt into the groove.
  6. Replace top and lower belt guards (18129 and 18123).
  7. Recheck belt tension and adjust if necessary
  8. Attach spark plug wire.



**FIGURE 10**



**FIGURE 11**

## **WARNING**

- **DO NOT STORE TILLER IN AN UNVENTILATED AREA WHERE FUEL FUMES MAY REACH FLAME, SPARKS, PILOT LIGHTS OR AN IGNITED OBJECT. DRAIN FUEL OUTDOORS AWAY FROM ANY IGNITION SOURCES. USE ONLY APPROVED FUEL CONTAINERS.**
- **DO NOT START YOUR TILLER UNTIL YOU HAVE READ AND UNDERSTAND THIS MANUAL AND THE SECTIONS IN THIS MANUAL COVERING SAFETY AND OPERATION. ONCE YOU HAVE READ THE MANUAL, FOLLOW THE APPROPRIATE STEPS TO START YOUR TILLER.**
- **ENGINE AND SURROUNDING PARTS BECOME EXTREMELY HOT DURING NORMAL.**
- **TEMPERATURE OF MUFFLER AND NEARBY AREAS MAY EXCEED 150° F. AVOID THESE AREAS.**
- **ALLOW ENGINE TO COOL COMPLETELY BEFORE TOUCHING THESE HOT SURFACES. THESE AREAS WILL CAUSE SERIOUS BURN INJURIES IF TOUCHED BEFORE THE ENGINE HAS COOLED.**
- **ALWAYS KEEP HANDS AND FEET CLEAR OF ROTATING MACHINE PARTS.**
- **FAILURE TO FOLLOW INSTRUCTIONS CAN CAUSE SERIOUS INJURY OR DEATH.**

## **CAUTION**

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- **ALWAYS RELEASE DRIVE SAFETY CONTROL LEVER TO THE NEUTRAL POSITION BEFORE ADJUSTING THE DEPTH OF THE REGULATOR LEVER.**
- **ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE.**
- **NEVER RUN ENGINE WITHOUT COMPLETE AIR CLEANER INSTALLED ON ENGINE. ENGINE CAN OVERHEAT AND BECOME DAMAGED IF DEBRIS BLOCKS THE COOLING SYSTEM OR ROTATING SCREEN.**
- **FAILURE TO FOLLOW INSTRUCTIONS CAN CAUSE FAILURE OF EQUIPMENT.**

## **ENGINE MAINTENANCE**

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

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

## **CHECK OR FILL ENGINE CRANKCASE**

1. Add oil according to engine manual. **Do not overfill.** Use a clean, high quality detergent oil. Container must be marked A.P.I. Service SF - SJ. Use no special additives with recommended oils. **Do not mix oil with gasoline.** Oil level must be full. Check the oil level by removing oil fill plug. Oil level should be up to the bottom of the fill plug opening on most engines.
2. Always check oil level before starting engine. Refer to engine manual for capacity and type of oil to use.

## **CLEAN TINE AXLE SHAFT**

1. Turn off engine. Engine must be cool.
2. Remove spark plug wire and secure from spark plug.
3. Remove all vegetation, string, wire, and other material that may have accumulated on the axle between the inside set of tines and the seal on the transmission housing.
4. Replace spark plug wire.

## **LUBRICATION**

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

## **WARNING**

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

**FAILURE TO COMPLY WITH THIS SAFETY REQUIREMENT CAN RESULT IN SERIOUS PERSONAL INJURY TO YOU OR BYSTANDERS.**

## STORAGE

### PREPARE FOR STORAGE

Follow the steps below to prepare your tiller for storage. Read your engine manual for detailed instructions on preparing the engine for storage.

1. Protect tines and tine shafts from rust:
  - Coat the tine shaft lightly with axle grease.
2. Drain fuel system completely following engine manufacturer's instructions or add fuel stabilizer to prevent fuel from gumming up during extended storage period.
3. While engine is still warm, drain the oil from the engine. Refill with fresh oil of the recommended grade.
4. Clean external surfaces, engine and cooling fan.

5. Remove spark plug, pour one ounce of SAE 30 oil into spark plug hole.
6. Plug hole and pull starter cord slowly to distribute oil evenly in cylinder head area.
7. Reinstall spark plug.
8. Transport unit to a suitable storage location. If you have chosen to use a fuel stabilizer and have not drained the fuel system, follow all safety instructions storage precautions in this manual to prevent the possibility of fire from the ignition of gasoline fumes. Remember, gasoline fumes can travel to distant sources of ignition and ignite, causing risk of explosion and fire.
9. If there is any possibility of unauthorized use or tampering, remove the spark plug and store it in a safe place before storing the rototiller unit. Be sure to plug the spark plug hole to prevent foreign material from entering.

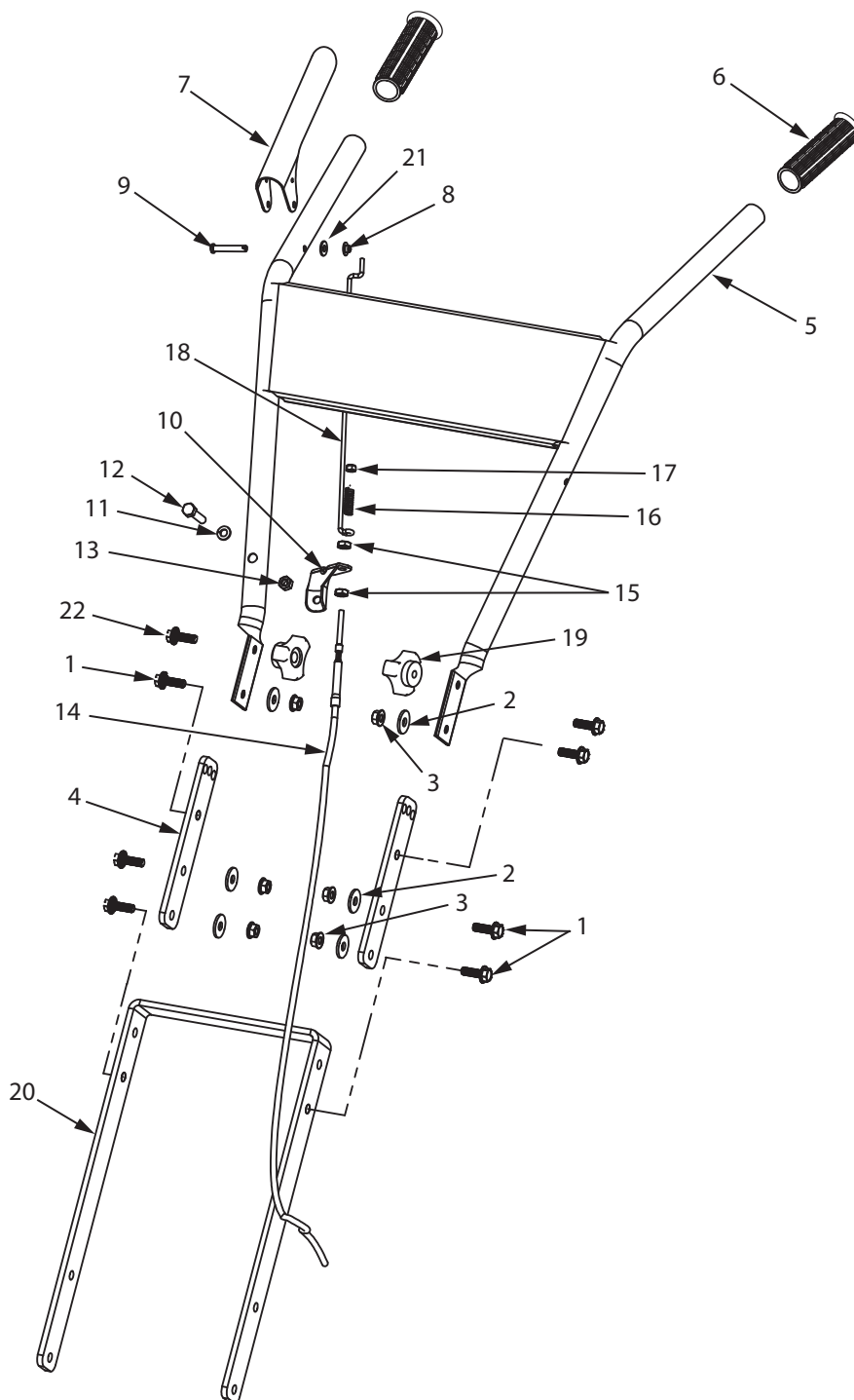
## TROUBLESHOOTING AND REPAIR

### Troubleshooting Guide

While normal care and routine maintenance will extend the life of your rototiller, prolonged or constant use may eventually require that service be performed to allow it to continue operating properly. The troubleshooting guide below lists the most common problems, causes and remedies.

PROBLEM	REMEDY/ACTION
Engine will not start	<ul style="list-style-type: none"> <li>• Add gas to gas tank.</li> <li>• Connect spark plug wire to spark plug</li> <li>• Throttle must be positioned at choke for a cold start</li> </ul>
Engine runs rough, floods during operation	<ul style="list-style-type: none"> <li>• Clean or replace air cleaner</li> </ul>
Engine is hard to start	<ul style="list-style-type: none"> <li>• Drain old fuel and replace with fresh. Use gas stabilizer at end of season</li> <li>• Make sure spark plug wire is securely attached to spark plug</li> <li>• Drive safety control lever must be released to neutral to start the engine</li> </ul>
Engine misses or lacks power	<ul style="list-style-type: none"> <li>• Raise the tines for shallower tilling by raising the depth regulator lever</li> <li>• Clean or replace air cleaner</li> <li>• Improper carburetor adjustment, take to authorized engine service center</li> <li>• Replace spark plug and adjust gap</li> <li>• Drain and refill gas tank and carburetor</li> </ul>
Tiller moves forward during starting	<ul style="list-style-type: none"> <li>• Drive safety control lever must be released to neutral to start the engine</li> </ul>
Tiller is difficult to control when tilling (machine jumps or lurches forward)	<ul style="list-style-type: none"> <li>• Lower engine speed in hard ground</li> <li>• Lower the depth regulator for greater control of the tiller</li> </ul>
Belts squeal in forward operation	<ul style="list-style-type: none"> <li>• Adjust belt tension</li> <li>• Replace drive belt</li> </ul>
Constant buzzing sound is heard while engagement lever is compressed	<ul style="list-style-type: none"> <li>• Fully compress engagement lever</li> <li>• Properly space wire guide against idler pulley</li> <li>• Tighten throttle cable</li> </ul> <p><b>NOTE: If engagement lever is fully compressed, wire guide is properly adjusted, and cable has reached full adjustment and buzzing sound persists, the belt may be stretched and have to be replaced.</b></p>
Excessive heat build up in transmission/tine area during tilling	<ul style="list-style-type: none"> <li>• Remove vegetation</li> <li>• Check transmission lubrication and fill if needed</li> </ul>

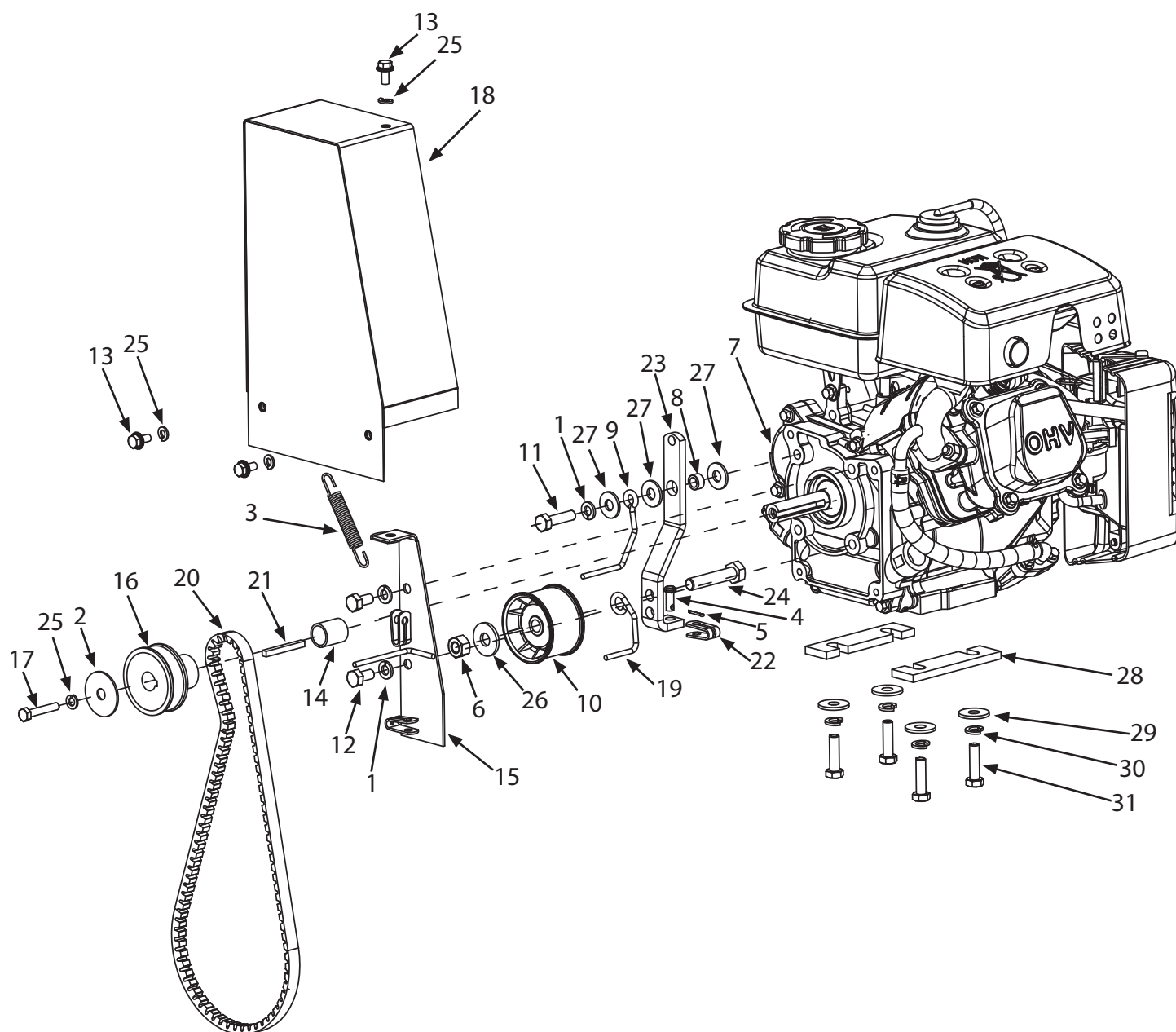
## ILLUSTRATED PARTS BREAKDOWN - Handlebar Assembly



## ILLUSTRATED PARTS BREAKDOWN - Handlebar Assembly

ITEM #	PART #	DESCRIPTION	QTY.
1	18135	BOLT M8 X 1.25 X 25 HEX HEAD	6
2	3245	WASHER M8 24 X 2.2MM	6
3	64132	NUT M8 X 1.25 HEX HEAD	6
4	18011	STRAP HANDLE BAR MIDDLE	2
5	13811	WELDMENT, HANDLEBAR	1
6	13833	HANDLEBAR GRIP 1 IN ID	2
7	53650	LEVER CONTROL	1
8	3248	NUT M5 X 0.8 NYLOCK	1
9	13159	BOLT 60D X 32 SHLDR M5 X 7MM HEX HEAD	1
10	53629	BRACKET CABLE MOUNT	1
11	504	LOCKWASHER-SPRING 5/16"	1
12	12770	BOLT M8 X 1.25 X 40MM HEX HEAD	1
13	13508	NUT M8 1.0	1
14	13822	CABLE FT PULLEY 787MM SHEATH	1
15	4620	JAM NUT M8 X 1.25	2
16	53620	SPRING COMPRESSION FORWARD ARM	1
17	IN58	NUT 5M X 0.8 NYLOCK	1
18	11397	LINK 260MM LONG	1
19	13601	KNOB M8 THREE STAR	2
20	18010	HANDLEBAR LOWER STRAP	1
21	3308	WASHER FLAT M5 5.3 X 10 X 1.0	1
22	13906	BOLT M8 X 1.25 X 20 HEX HEAD	2

## ILLUSTRATED PARTS BREAKDOWN - Engine Assembly

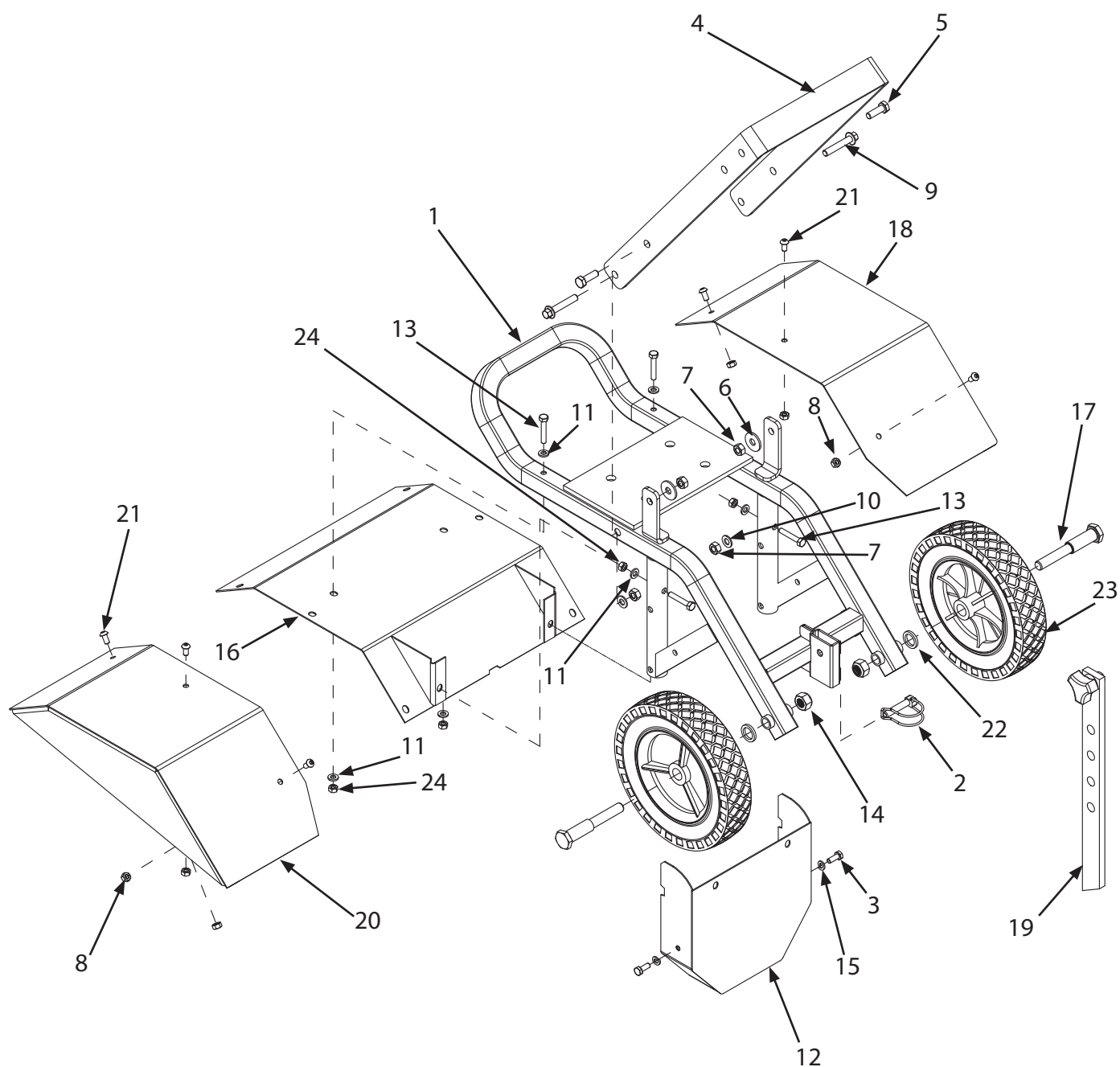




## ILLUSTRATED PARTS BREAKDOWN - Engine Assembly

ITEM #	PART #	DESCRIPTION	QTY.
1	504	LOCKWASHER SPRING 5/16IN	3
2	803	WASHER 5/16ID X 1-1/2OD IN FLAT 16 GA	1
3	1407	SPRING FORWARD ARM	1
4	1416	PIN CLEVIS 6.3 X 16.8 MM	1
5	1418	PIN COTTER SIZE 2	1
6	3235	NUT M10 X 1.5 LOCK"	1
7	13276	ENGINE R100 99CC EPA III	1
8	13791	BUSHING 8.3 X 12.4 X 6.65 MM	1
9	14030	GUIDE BELT VECTOR	1
10	17354	PULLEY IDLER 55MM X 10.5MM X 33MM	1
11	17983	BOLT M8 X 1.25 X 30 HEX HEAD	1
12	17984	BOLT M8 X 1.25 X 16 HEX HEAD	2
13	19895	BOLT M6 X 1.0 X 12 HEX HEAD	3
14	18008	BUSHING 16.4 X 20 X 23.8MM	1
15	18015	WELDMENT CABLE GUIDE PLATE	1
16	18022	PULLEY SINGLE GROOVE 16MM ID	1
17	18104	BOLT M6 X 1.0 X 35 HEX HEAD	1
18	18129	WELDMENT GUARD PULLEY TOP	1
19	22563	WIREFORM BELT CATCH	1
20	22694	BELT V 4L 12X 876 TOOTH	1
21	38397	KEY 3/16IN X 1.75IN	1
22	53596B	YOKE ZINC PLATED CLEVIS	1
23	53617	ARM FORWARD	1
24	332033	BOLT M10 X 1.5 X 50 HEX HEAD	1
25	W1200116	WASHER M6 X 1.5 SPRINGLOCK	4
26	W1200126	WASHER M10 X 28 X 2.8	1
27	WF516	WASHER 5/16" ZN	3
28	18043	SHIM .25 IN ENGINE MOUNT	2
29	3245	WASHER M8 X 24 X 2.2MM	4
30	W1200114	WASHER M8 X 1.9 SPRING LOCK	4
31	18134	BOLT M8 X 1.0 X 35 HEX HEAD	4

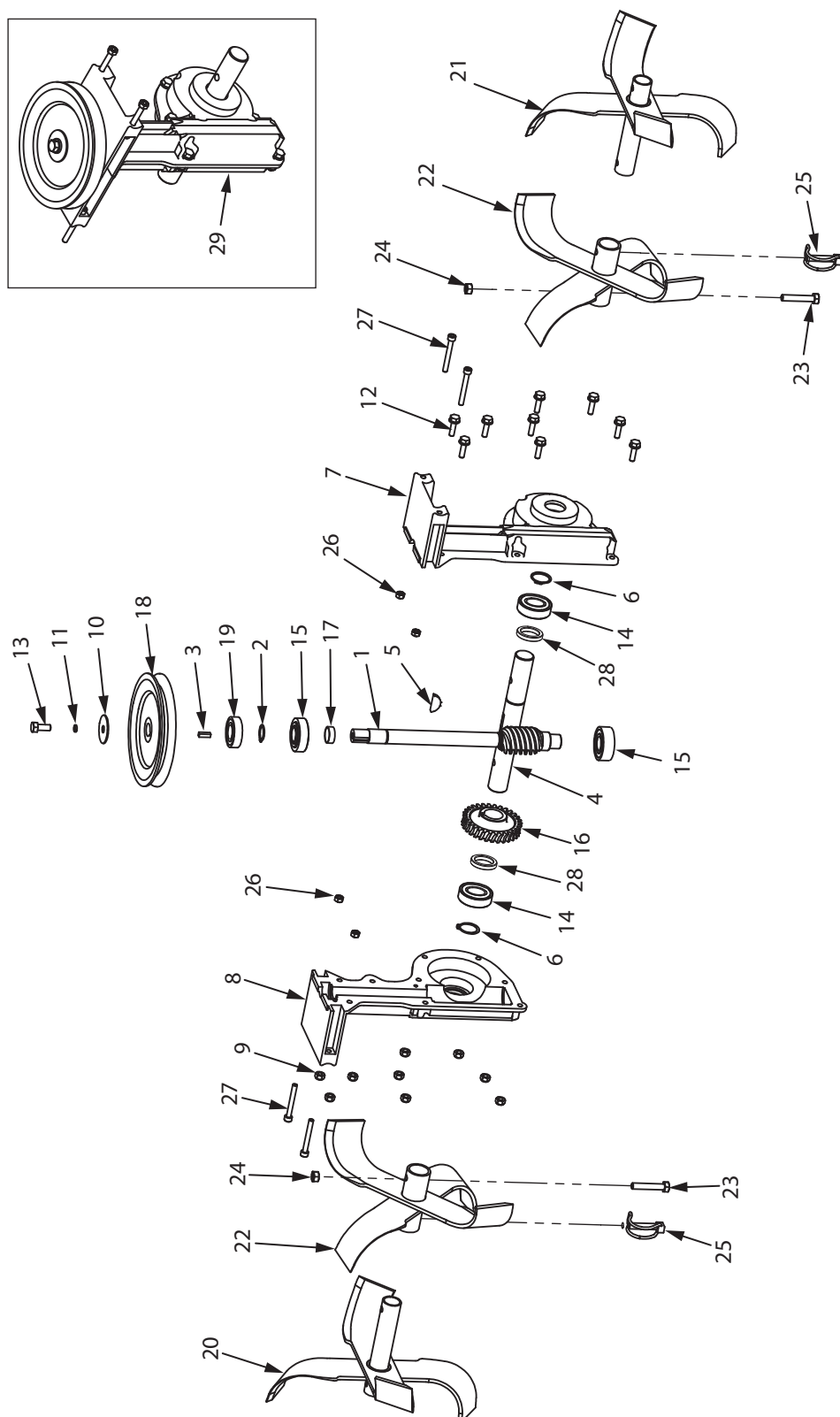
## ILLUSTRATED PARTS BREAKDOWN - Chassis Assembly



## ILLUSTRATED PARTS BREAKDOWN - Chassis Assembly

ITEM #	PART #	DESCRIPTION	QTY.
1	18004	WELDMENT VECTOR FRAME	1
2	18039	PIN LOCK 8 X 40MM	1
3	92776	BOLT M6 X 1.0 X 20 HEX HEAD	2
4	18010	HANDLEBAR LOWER STRAP	1
5	W1265V0904	BOLT M8 X 1.25 X 20 HEX HEAD	2
6	3245	WASHER M8 8.4 X 24 X 2.2MM	2
7	3252	NUT M8 X 1.25 HEX HEAD	4
8	W1265V0913	NUT M6 X 1.0 NYLOCK	6
9	3247	BOLT M8 X 1.25 X 45 HEX HEAD	2
10	400024	WASHER FLAT M8 X 16 X 1.6	2
11	W1200117	WASHER M6 X 13 X 1.75	6
12	18123	WELDMENT GUARD PULLEY LOWER	1
13	18103	BOLT M6 X 1.0 X 40 HEX HEAD	4
14	331052	NUT M12 X 1.75 NYLOCK	2
15	W1200116	WASHER M6 X 1.5	2
16	18119	WELDMENT SHIELD TINE MIDDLE	1
17	10513	BOLT M12 X 1.5 X 96 HEX HEAD SHOULDER M15.7 X 42	2
18	18118	WELDMENT SHIELD TINE RIGHT	1
19	18131	ASSEMBLY DRAG STAKE	1
20	18116	WELDMENT SHIELD TINE LEFT	1
21	18058	BOLT M6 x 1.0 x 12 BUTTON HEAD	6
22	10517	WASHER 16 ID X 25 OD X 2.5MM	2
23	15856	WHEEL 8ID X 5/8ID IN RUBBER GRY	2
24	14109	NUT M6 X 1.0 NYLOCK	4

## ILLUSTRATED PARTS BREAKDOWN - Transmission Assembly



## ILLUSTRATED PARTS BREAKDOWN - Transmission Assembly

ITEM #	PART #	DESCRIPTION	QTY.
1	13610	WORM DRIVESHAFT 20MM OD	1
2	8924	RING RETAINING EXTERNAL 3/4 INCH	1
3	17989	KEY 5 X 5 X 20 MM	1
4	13612	TINE SHAFT 25MM OD 8MM KEY FT	1
5	17990	KEY 6 X 10 X 25MM HALF MOON	1
6	1810	SNAP RING 1" EXTERNAL	2
7*	-----	CASTING ALUMINUM FT RIGHT SIDE	1
8*	-----	CASTING ALUMINUM FT LEFT SIDE	1
9	13599	NUT M6 X 1.0 NYLOCK	9
10	803	WASHER 5/16"ID X 1-1/2"OD FLAT 16 GA.	1
11	1916965	WASHER 1/4" SPRING LOCK	1
12	13600	BOLT M6 X 1.0 X 25 HEX HEAD	9
13	W1265V0904	BOLT M8 X 1.25 X 20 HEX HEAD	1
14	13902	BEARING BALL 25MM ID	2
15	3220	BEARING TAPERED ROLLING 30204 20 X 47 X 15.2 MM	2
16	13615	GEAR BRASS 25MM ID 6MM KEY	1
17	13590	BUSHING 26 X 20.22 X 6.6MM	1
18	13619	PULLEY TRANS SINGLE GROOVE	1
19	3309	BEARING 6004 2RS	1
20	13905	OUTSIDE TINE RIGHT	1
21	13904	OUTSIDE TINE LEFT	1
22	13903	INSIDE TINE	2
23	3316	BOLT M8 x 1.25 x 45 HEX HEAD	2
24	400023	NUT M8 NYLOCK	2
25	18039	PIN LOCK 8 X 40MM	2
26	4650	NUT M6 X 1.0 NYLOCK	4
27	18103	BOLT M6 X 1.0 X 40 HEX HEAD	4
28	14421	SPACER 25 X 35 X 5.43MM	2
29	13586	ASSEMBLY COMPLETE TRANS	1

\* Right and left castings sold as complete transmission 13586 Assembly only.



## WARRANTY TERMS AND CONDITIONS

### PRODUCT WARRANTY: 5-YEAR LIMITED WARRANTY – 10/01/2014

Ardisam, Inc. (Ardisam), a manufacturing company, warrants this product to be free from defects in the material or workmanship for a period of five years from the date of purchase. If there is insufficient evidence of the purchase date, the effective date of this warranty will begin on the tiller's date of manufacture. During the five-year warranty of this product, Ardisam will furnish, at their discretion, parts and labor to correct any defect caused by faulty material or workmanship. In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. Ardisam reserves the right to inspect any incoming units returned under warranty to determine if the warranty applies before performing any warranty related work (including parts and components). Any unit used in a commercial application, or producing income 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. 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. This warranty excludes tines due to normal wear, wear items such as belts, wheels, tires, and cables, routine maintenance items such as filter elements, o-rings, seals, lubricants, and tune-ups, accessory parts such as tiller furrowers, edger kits, and dethatcher kits, running the tiller dry (without oil), or below minimum oil levels, using the tiller for a purpose other than that for which it was designed and manufactured, using the tiller in violation of local codes, ordinances and good trade practices. \*These warranties apply only to products which have not been subjected to negligent use, abuse, misuse, overload, improper installation, alteration, accident, acts of God (or other events beyond Ardisam's control), vandalism, unauthorized parts, failure to use proper fuel and oil, or if repairs have been performed at a non-authorized service facility. These warranties shall not cover damage from normal wear and tear, normal maintenance parts and services, lightning; nor improper installation, operation, storage, or maintenance; nor operating the equipment above recommended maximums as stated in this manual and the accompanying engine manual. These warranties supersede all other warranties either expressed or implied and all other obligations or liabilities on the part of Ardisam. 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. Ardisam will at no charge, repair or replace, at the discretion of Ardisam, any defective part which falls under the 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. Some states and countries do not allow the limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.

**SEE ENGINE MANUAL FOR ENGINE WARRANTY**

P/N: 21192  
REV1: 100114  
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CE Technical File – DP1246

## EC DECLARATION OF CONFORMITY



**Name and Address of the manufacturer:**

Ardisam Manufacturing Inc.  
1690 Elm Street, Cumberland, WI U.S.A. 54829

**Name and Address of person authorised to compile the technical file:**

Mr Andrew Clark, Designplus (Eng.) Ltd.,  
10 Chapel Lane, West Bergholt, Colchester, Essex. CO6 3EG. UK

**Description of Equipment:**

Front Tine Tiller, pedestrian controlled, no drive wheel(s)

**Model / Type:**

14318

**Serial No.:**

**Directives / Conformity Assessment Procedures:**

Machinery Directive (2006/42/EC) / Annex VIII  
The Noise Emission in the Environment by Equipment for use Outdoors Directive (2000/14/EC) / Annex VI

**Name/address of Notified Body:**  
(For 2000/14/EC):

AV Technology Ltd.  
AVTECH House, Arkle Avenue, Stanley Green Trading Estate, Handforth, Cheshire. SK9 3RW. UK

**2000/14/EC information:**

- Measured Sound Power level:
- Guaranteed Sound Power level:
- Sound Power Limit determining factor:

93 dB ( $L_{WA}$ )  
93 dB ( $L_{WA}$ )  
99cc Viper engine @ 2750rpm

**Technical standards and specifications:**

EN 709:1997+A4:2009 – Agricultural and forestry machinery – Pedestrian controlled tractors with mounted rotary cultivators, motor hoes, motor hoes with drive wheel(s) – Safety

**Declaration:**

The person signing below declares that the above named equipment fulfils all the relevant provisions of the stated directives.

**Authorised Signature:**

Name: Kirk Hyatt

Position: Earthquake Project Manager

Signature:

**Place of Declaration:**

Ardisam Inc, Cumberland, WI, USA

Date:

November 2011



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](mailto: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.

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Check for parts online at [www.getearthquake.com](http://www.getearthquake.com) or call 800-345-6007 M-F 8-5