

# **breez™**

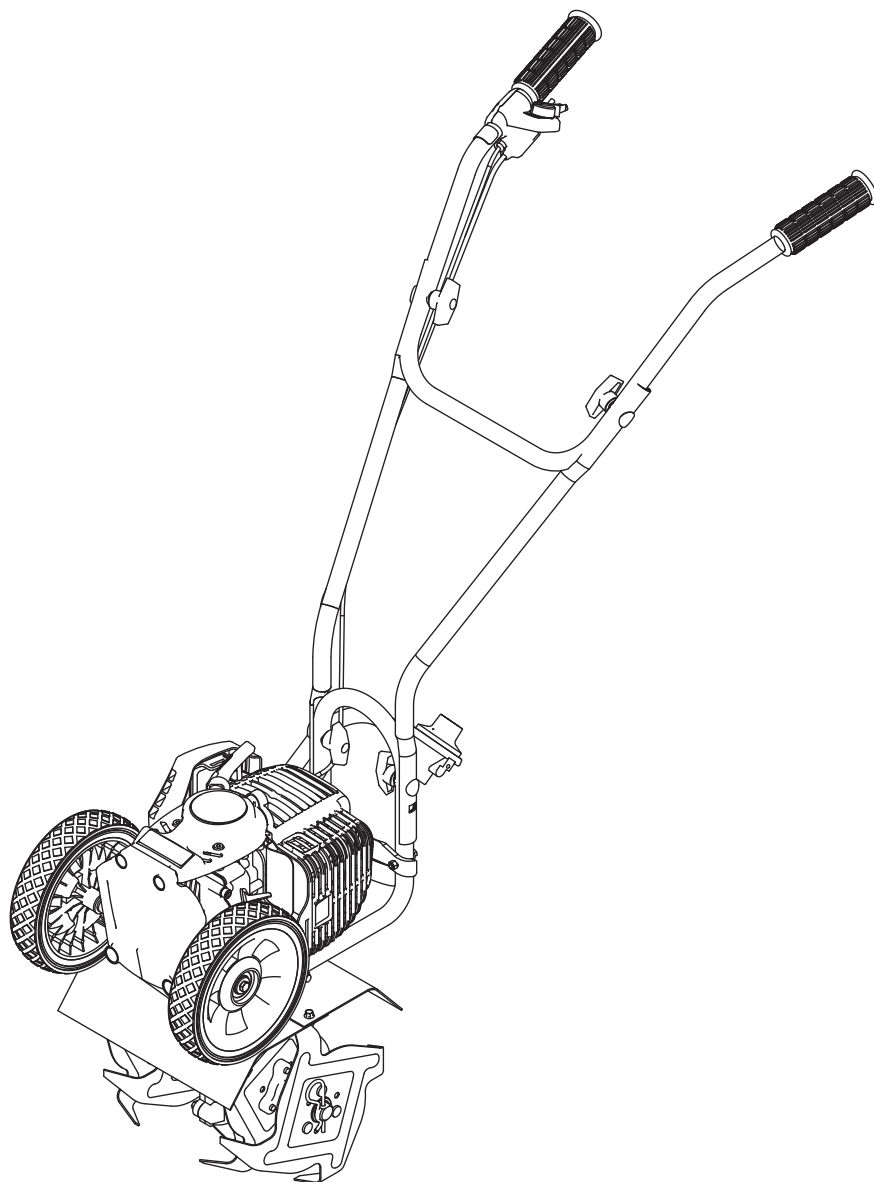
## **PROPANE TILLER**

Operator's Manual  
Original Operating Instructions

### **Breez™ R2**

## **High Compression Propane Powered Tiller**

SN



Includes Model:

21046

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



P/N: 21327  
ECN: 10633  
REV1: 01/30/15  
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## INTRODUCTION

Thank you for purchasing a Breez™ Propane Tiller. 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.

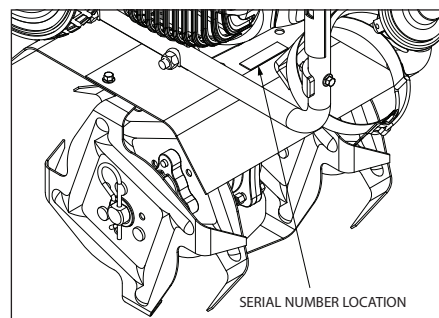
Please read this entire manual before installation and use. Breez™ reserves the right to change, alter or improve the product and this document at any time without prior notice.

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## REGISTRATION AND SERVICE

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



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

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

## WARNINGS AND SAFETY PRECAUTIONS

### Owner's Responsibility

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

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

### Special Messages

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

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



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

### Before Operating Engine:

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

### Intended Use / Foreseeable Misuse

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



### WARNING

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



### CAUTION

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



### IMPORTANT

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



### WARNING

#### CALIFORNIA PROPOSITION 65 WARNING

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



### WARNING

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

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



### DANGER



**General Safety Rules**

- Read, understand, and follow all instructions on the machine and in the manual(s). Be thoroughly familiar with the controls and the proper use of the machine before starting.
- Use this equipment for its intended purpose only.
- Familiarize yourself with all of the safety and operating decals on this equipment and on any of its attachments or accessories.
- Do not put hands or feet near or under rotating parts.
- Only allow responsible individuals who are familiar with the instructions to operate the machine. Do not allow children to operate this machine. Do not allow adults to operate the machine without proper instruction.
- Thoroughly inspect the area where the machine is to be used and remove all foreign objects. Your equipment can propel small objects at high speed causing personal injury or property damage. Stay away from breakable objects, such as house windows, automobile, greenhouses, etc.
- Wear appropriate clothing such as a long-sleeved shirt or jacket. Also wear long trousers or slacks. Do not wear shorts. Never wear sandals, sneakers, or open shoes, and never operate the machine with bare feet.
- Do not wear loose clothing or jewelry. They can get caught in moving parts. Always keep hands, feet, hair and loose clothing away from any moving parts on engine and machine.
- Always wear safety goggles or safety glasses with side shields when operating the machine to protect your eyes from foreign objects which can be thrown from the unit. Always wear a protective hearing device.
- Always wear work gloves and sturdy footwear. Wear footwear that will improve footing on slippery surfaces. Leather work shoes or short boots work well for most people. These will protect the operator's ankles and shins from small sticks, splinters, and other debris.
- It is advisable to wear protective headgear to prevent the possibility of being struck by small flying particles, or being struck by low hanging branches, twigs, or other objects which may be unnoticed by the operator.
- Do not operate the machine without proper guards or other safety protective devices in place.
- See manufacturer's instructions for proper operation and installation of accessories. Only use accessories approved by the manufacturer.
- Operate only in daylight or good artificial light.
- Do not operate product when fatigued or under the influence of alcohol, drugs or other medication which can cause drowsiness or affect your ability to operate this machine safely.
- Never operate machine in wet grass. Always be sure of your footing; keep a firm hold on the handle and walk; never run.
- Watch for traffic when operating near, or when crossing roads.
- If the equipment should start to vibrate abnormally, stop the engine (motor), disconnect the spark plug wire and prevent it from touching the spark plug. Check immediately for cause. Vibration is generally a warning of trouble. If the noise or vibrations of the machine increase, stop immediately and perform an inspection.
- Never leave the machine unattended when the engine is running. Remove the wire from the spark plug.
- Regularly inspect the machine. Make sure parts are not bent, damaged or loose.
- Temperature of muffler and nearby areas may exceed 150° F (65° C). Allow muffler and engine areas to cool before touching. Never pick up or carry the machine while the engine is running.
- Prolonged exposure to noise and vibration from propane 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. 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 tiller should not rotate when the engine is idling. If it does rotate when engine is idling, contact Breez™ for instructions.
- If an object becomes lodged in the tines, turn engine off, remove the wire from the spark plug and secure, allow to cool before attempting to remove the foreign object.
- The clutch will transfer maximum power after about two hours of normal operation. During this break-in period clutch slippage may occur. The clutch should be kept free of oil or other moisture for efficient operation.

**WARNING**

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

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

**CAUTION**

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

**DO NOT ALTER/MODIFY ENGINE:**

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

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

**Engine Safety Precautions**

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

**Preventing Carbon Monoxide Poisoning**

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

**Fires and Handling Fuel Safely**

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

- When storing extra fuel cylinders be sure that they are not stored in direct sunlight or in an area that can exceed 120 degrees Fahrenheit (49 degrees Celsius). Too much heat can cause cylinder to explode.
- Always replace fuel cylinder outside in a well ventilated area. Never replace fuel cylinder indoors. (Examples include: basement, garage, barn, shed, house, porch, etc.)
- Never remove the fuel cylinder with the engine running. Stop engine and allow to cool before replacing fuel cylinder.
- Propane cylinders should be used until completely empty.

- **DO NOT REFILL DISPOSABLE PROPANE CYLINDERS.** Disposable tanks can explode when refilled.
- Do not smoke near or while changing fuel cylinders.
- Allow fuel vapors to escape from the area before starting engine.
- Do not change cylinder near appliances with pilot lights, heaters, or other ignition sources.
- Always have an adult replace the fuel cylinder and never allow children to handle fuel cylinders.
- Never allow an adult or anyone under the influence of drugs or alcohol to handle fuel cylinders.
- Do not put propane cylinders in baggage or transport on trains or in aircraft.
- Empty propane cylinders must be disposed of properly. Consult local regulations for disposal and recycling.
- Follow all warnings on cylinder in addition to notes above.

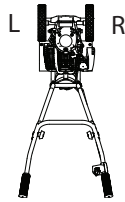
**Preparation**

- Dress appropriately when operating the tiller. Always wear sturdy footwear. Never wear sandals, sneakers or open shoes, and never operate the tiller with bare feet. Do not wear loose clothing that might get caught in moving parts.
- Carefully inspect the area to be tilled and remove all foreign objects. Do not till above underground water lines, gas lines, electric cables, or pipes. Do not operate the tiller in soil with large rocks and foreign objects which can damage the equipment.
- Disengage all clutches and leave control lever in the neutral position before starting the engine.
- Handle fuel with care; it is highly flammable.
  - a. Use an approved fuel cylinder.
  - b. Never replace fuel cylinder with a running engine or hot engine.
  - c. Replace fuel cylinder outdoors with extreme care. Never replace fuel cylinder indoors.
  - d. Replace fuel cylinder securely before restarting.



**WARNING**

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



**THE 4-CYCLE ENGINE USES 10W-30 MOTOR OIL.**

**DO NOT USE WITHOUT OIL OR ENGINE DAMAGE WILL OCCUR.**

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

**CAUTION**

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

**DO NOT ALTER/MODIFY ENGINE:**

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

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

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

**MAINTENANCE AND STORAGE PRECAUTIONS**

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

**OPERATION PRECAUTIONS**

- Do not operate tiller under the influence of alcohol or drugs.
- Never operate tiller without guards, covers, and hoods in place.
- Keep hands, feet, and clothing away from rotating parts. Keep clear of tiller tines at all times.
- Tines rotate when tiller is engaged; tines rotate when the drive safety control lever is pulled up. Releasing the drive safety control lever to neutral stops the tines.

## 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

- If you smell propane (identified by a sour, rotten egg smell) do not start or run the engine. If there is a build up of propane, leave the area immediately. If necessary, call the local fire department for assistance.
- Do a visual inspection of the propane tank, hose, and fitting seals before connecting the propane cylinder to the engine. Do not connect a propane cylinder that has damaged or missing seals.
- Always disconnect the regulator hose from the propane cylinder before transporting or storage.
- Use a protective cap on the propane cylinder when not attached to the engine. This will help keep the cylinder valve clean.
- Do not over tighten propane cylinder when attaching to fuel line. Damage to regulator or propane cylinder seals can occur.
- Check for suspected propane leaks with soapy water on connections. If bubble are observed, inspect and retighten fitting. Repair all leaks before use.
- Use caution when handling propane. Propane is flammable.
- Never remove the muffler guard from the engine.
- Never touch the muffler guard because it is extremely hot and will cause severe burns.
- Never touch parts of the engine that become hot after operation.
- Always keep materials and debris away from muffler guard and other hot parts of the engine to avoid fires.

### Children and bystanders

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

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

### Service

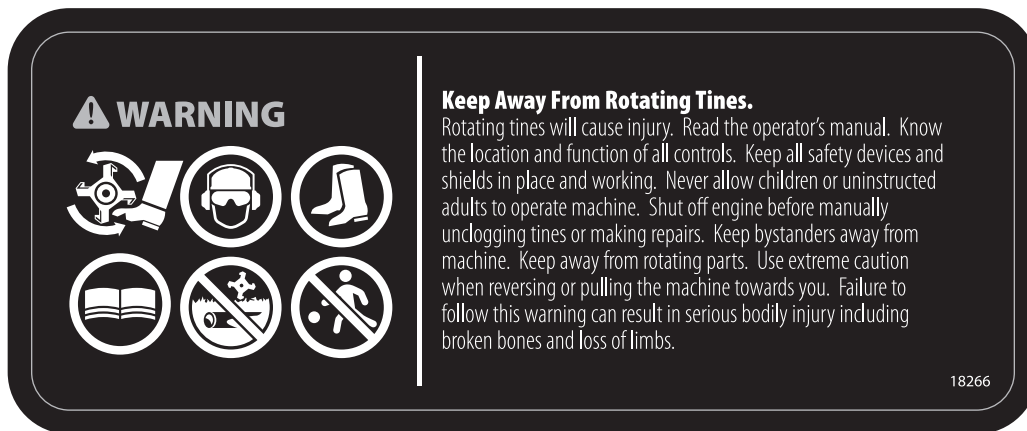
- Always stop the engine whenever you leave the equipment, before cleaning, repairing or inspecting the unit. Engine should be turned off and cool. Never make adjustments or repairs with the engine (motor) running. Flip the ON/OFF switch to the **OFF** position to prevent accidental starting.
- Always wear eye protection when you make adjustments or repairs.
- Keep all nuts and bolts tight and keep equipment in good condition.
- Never tamper with safety devices. Check their proper operation regularly.
- When servicing or repairing the machine, do not tip the machine over or up unless specifically instructed to do so in this manual. Service and repair procedures can be done with the machine in an upright position. Some procedures will be easier if the machine is lifted on a raised platform or working surface.
- To reduce fire hazard, keep machine free of grass, leaves or other debris build-up. Clean up oil or fuel spillage. Allow machine to cool before storing.
- Stop and inspect the equipment if you strike an object. Repair, if necessary, before restarting.
- Clean and replace safety and instruction decals as necessary.
- To guard against engine over-heating, always have engine debris filter mounted and clean.
- Inspect machine before storage. When not in use, flip the ON/OFF switch to the **OFF** position and store indoors in a dry place locked or otherwise inaccessible to children.
- Use only original equipment parts from Breez™, including all nuts and bolts.

## SAFETY DECALS

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

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 safety decals on the tiller to remind you of some of this important information while you are operating the unit.

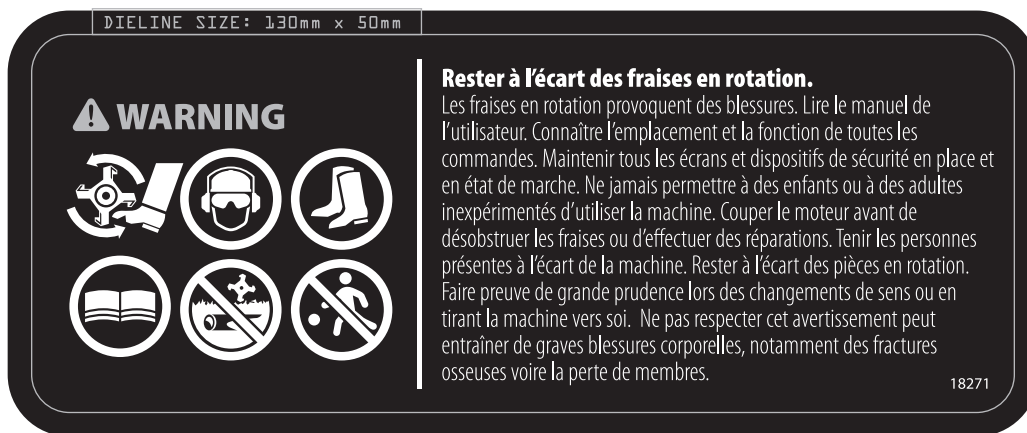
These important safety decals are illustrated on the next page, and are shown here to help familiarize you with the location and content of the safety messages you will see as you perform normal tilling operations. Please review these decals now, and if you have any questions regarding its meaning or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



Part No. 18266

Tiller Warning Decal

Tine Shield Decal English



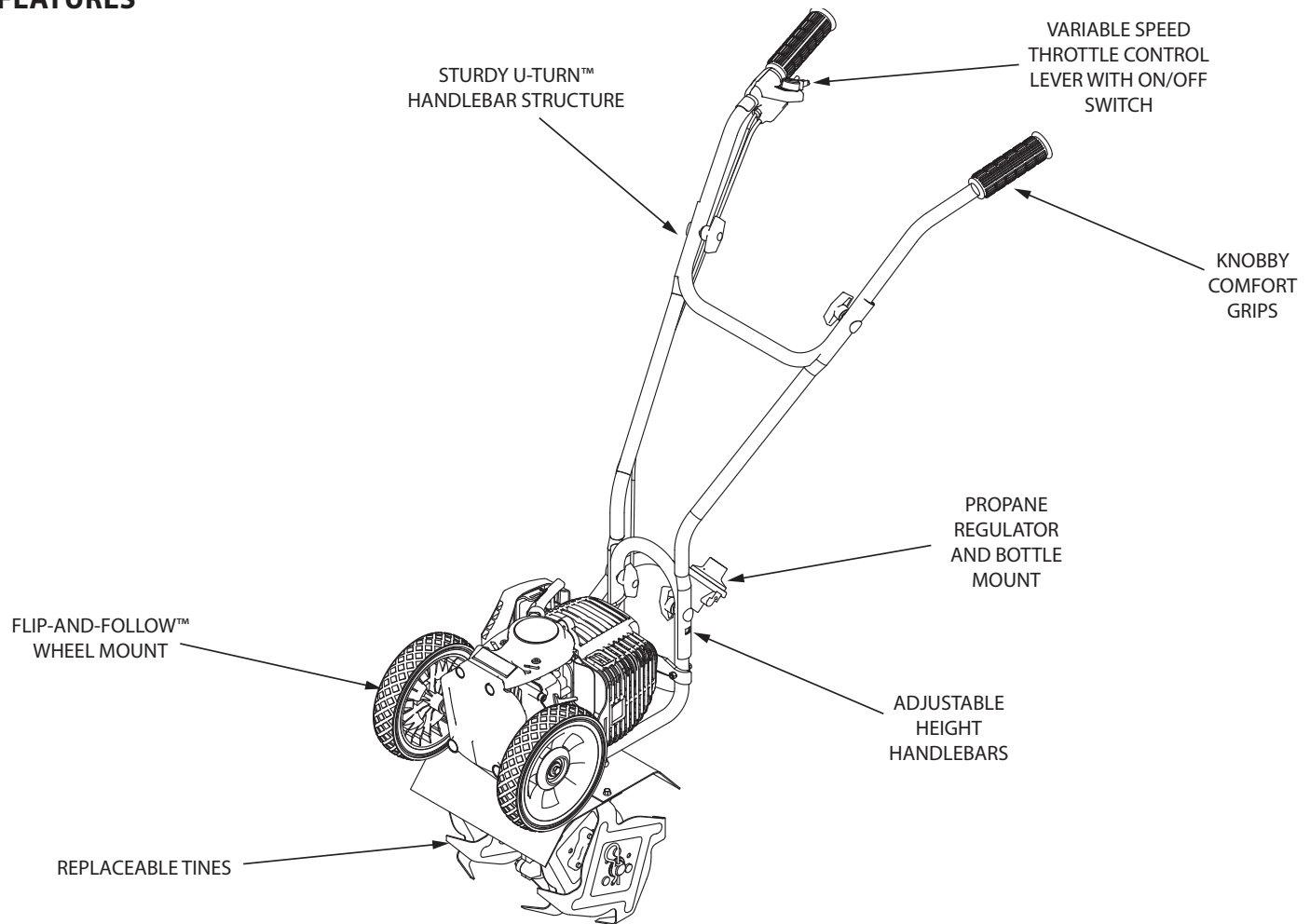
Part No. 18271

Tiller Warning Decal

Tine Shield Decal French



## FEATURES



## SPECIFICATIONS

|                               |                                                 |
|-------------------------------|-------------------------------------------------|
| <b>ENGINE DISPLACEMENT</b>    | 40cc                                            |
| <b>PROPANE CYLINDER SIZE*</b> | 16.4 oz. ( 465 gram)                            |
| <b>OIL TYPE</b>               | VIPER® 4-Cycle Engine Oil<br>10W-30 (P/N 13235) |
| <b>FUEL TYPE</b>              | Propane                                         |
| <b>SPARK PLUG</b>             | CMR6A                                           |
| <b>SPARK PLUG GAP</b>         | 0.028"                                          |
| <b>TRANSMISSION</b>           | Gear Drive                                      |

|                            |                           |
|----------------------------|---------------------------|
| <b>GEAR RATIO</b>          | 32:1                      |
| <b>TILLING WIDTH</b>       | 6" minimum - 10" maximum  |
| <b>TILLING DEPTH</b>       | 8" maximum                |
| <b>MAX TINE SPEED</b>      | 250 rpm                   |
| <b>WHEEL SIZE</b>          | 1.375 x 7.0 inch diameter |
| <b>WEIGHT OF UNIT</b>      | 33 lb                     |
| <b>UNIT SIZE L X W X H</b> | 37" x 18" x 39"           |

**\* One 16.4 oz. propane cylinder provides up to one hour of continuous run time at full throttle. (Longer run times possible at half throttle)**

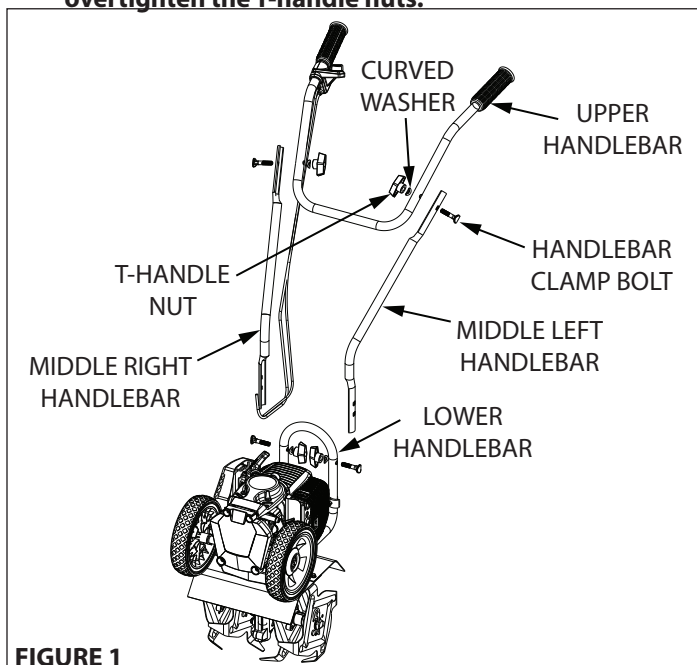
## UNPACKING AND ASSEMBLY

### Unpack Tiller

1. Carefully lift the tiller out of the box, remove any packing material and cut any ties holding the handlebar pieces or tines to the tiller assembly.
2. Find parts packet. Parts packet contains:
  - 4 - T-Handle Nuts (4640)
  - 4 - Curved Washers (4641)
  - 4 - Handle Clamp Bolts (4642)
3. Find manual packet. Manual packet contains:
  - 1 - Hair Pin (4652)

### Assembly

1. Stand the tiller assembly upright with tines and wheels on a level surface. **DO NOT** place the tiller on a high surface where it can fall and cause property damage or personal injury.
2. Slide inside tine **B** onto tine shaft.
3. Slide outside tine **A** onto end of tine shaft next.
4. Insert hair pin into hole at end of tine shaft to lock the tines in place.
2. Using two T-handle nuts, two handlebar clamp bolts, and two curved washers, attach the middle handlebars to the lower handlebar that is already connected to the tiller assembly. The middle handlebars can be installed in one of two positions, one high and one low. **SEE FIGURE 1 DO NOT overtighten the T-handle nuts.**
3. Attach the upper handlebar to the middle handlebars using the two remaining T-handle nuts, handle clamp bolts, and curved washers. **SEE FIGURE 1. DO NOT overtighten the T-handle nuts.**



## ! WARNING

**DO NOT STORE ENGINE INDOORS WITH FUEL CYLINDER ATTACHED. FUEL AND FUEL VAPORS ARE HIGHLY FLAMMABLE.**

**NEVER REFILL FUEL CYLINDERS. USE ONLY METAL, DISPOSABLE PROPANE FUEL CYLINDERS APPROVED BY THE UNDERWRITER'S LABORATORY (U.L.) OR THE AMERICAN SOCIETY FOR TESTING & MATERIALS (ASTM).**

**AN ADULT MUST ALWAYS HANDLE AND REPLACE THE FUEL CYLINDER.**

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

**NEVER RUN ENGINE INDOORS. EXHAUST FUMES ARE DEADLY.**

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

## OPERATION

### PROPANE AND OIL

**NOTE:** *Engine is shipped from factory without oil. You must add engine oil before starting engine. If engine is started without oil, engine may be damaged beyond repair and will not be covered by warranty.*

### Oil Quality

To operate the engine, we recommend using "VIPER®" brand 4-cycle oil (13235), included with each new Breez™ R2, or an equivalent 10W-30 engine oil to ensure that the engine operates correctly throughout the life of the engine. Use 16.4 oz (465 gram) disposable propane fuel cylinders.

### Checking and Adding Oil

Be sure the engine is located on a level surface before checking or refilling oil. Proper position for checking oil level or refilling oil is face down on the wheel mount cover. It is recommended to remove the wheels in order to ensure a level surface. **SEE FIGURE 2A**

## ! IMPORTANT

**ENGINE MUST BE TIPPED FORWARD WHEN CHECKING OIL LEVEL OR FILLING WITH OIL. FAILURE TO DO SO CAN RESULT IN OVERFILLING THE ENGINE WITH OIL WHICH WILL IMPAIR THE ENGINE'S PERFORMANCE.**

1. Clean around oil fill area.
2. Unscrew dipstick and wipe clean with cloth.
3. Reinsert dipstick (must be fully threaded for accurate reading).
4. Unscrew and check dipstick. If no oil shows on the dipstick, refill so that the oil level appears between the low and high marks on the dipstick. **SEE FIGURE 2B**
5. Change oil if contaminated

## ⚠ CAUTION

**ENGINE IS SHIPPED FROM FACTORY WITHOUT OIL. YOU MUST ADD ENGINE OIL BEFORE STARTING ENGINE. IF ENGINE IS STARTED WITHOUT OIL, ENGINE MAY BE DAMAGED BEYOND REPAIR AND WILL NOT BE COVERED BY WARRANTY.**

**NEVER STORE ENGINE WITH FUEL CYLINDER ATTACHED INDOORS. FUEL AND FUEL VAPORS ARE HIGHLY FLAMMABLE.**

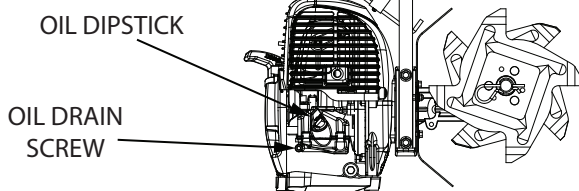
**ONLY AN ADULT MUST ALWAYS HANDLE AND REPLACE FUEL CYLINDER.**

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

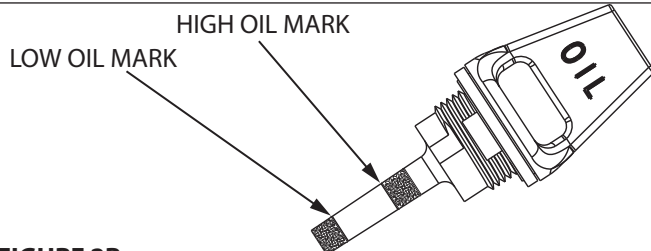
## ⚠ IMPORTANT

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

WHEELS REMOVED FOR EASY OIL CHECKING



**FIGURE 2A BREEZ™ R2 ON LEVEL, HORIZONTAL SURFACE**



**FIGURE 2B**

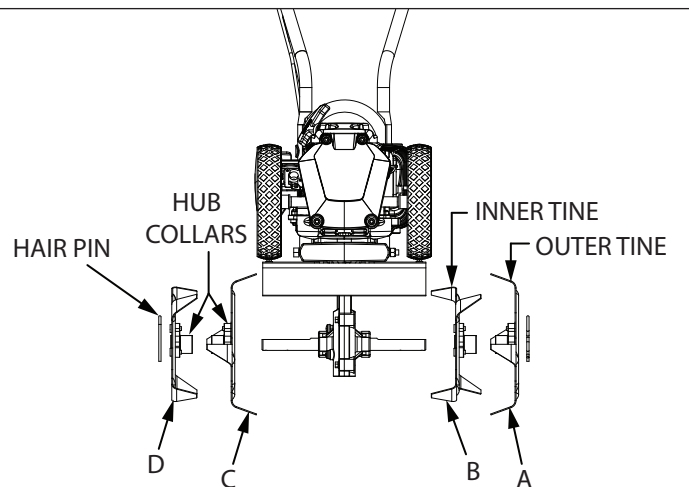
## Operation Tips

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. Till without placing excessive body weight on the unit. The tiller operates most efficiently with the weight of the unit itself.

## Preparing Engine For Starting

1. Make sure the engine crank case is filled with 3.7 oz (110ml) of 10W-30 engine oil.
2. Screw a 16.4 oz (465 gram) disposable propane fuel cylinder onto regulator assembly.
3. Insert fuel cylinder into holder and secure.

**NOTE: The correct size disposable propane fuel cylinder is approximately 3.875 inches (9.5 cm) in diameter. Always use the correct size and type specified. Use of the wrong propane cylinder can cause damage to the engine. It is recommended that you have at least one additional disposable propane cylinder available to use as a backup.**



**FIGURE 3**

## Tine Removal and Installation

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

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

## To Install Tines

1. First slide the inside tines onto each end of the tine shaft. One inside tine is stamped with a **B** and the other is stamped with a **C**.

- 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 tiller. 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.
- Insert the hairpins into the holes at each end of the tine shaft to lock the tines into place.

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

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



## WARNING

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

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

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

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

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

**ALWAYS WEAR A PROTECTIVE HEARING DEVICE.**

### Starting and Stopping the Engine

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

### Engine Start:

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

**NOTE:** *The Breez™ R2 Propane Tiller does not require choking or priming.*

- Set ON/OFF switch on handlebar to the **ON** position.

- Hold handlebar firmly. Grasp starter handle with other hand and pull out slowly, until there is tension as you pull. Without letting starter handle retract, pull rope with a rapid full arm stroke. Let it return to its original position very slowly. Repeat this step every time the starter rope is pulled until unit fires or runs. When the engine fires or runs, engage the throttle.

**NOTE:** *When attempting to start, DO NOT allow the recoil to retract on its own, as it may snap back quickly and cause injury. Repeat this step every time the starter rope is pulled. Run at full throttle when possible. Do not let unit idle for extended periods of time.*

### Cold Warm-Up Procedure

When starting the engine in very cold weather, it may be necessary to "feather" the throttle after starting. This will allow the engine to warm up and reduce stalling.

**NOTE:** *If the engine does not start due to excessive cold weather conditions, replace the propane cylinder with a new cylinder that has been stored in a warm place.*



## WARNING

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

### TO PREVENT ACCIDENTAL STARTING:

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

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

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

**NEVER STORE ENGINE WITH FUEL CYLINDER ATTACHED 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 TILLER.**

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

## MAINTENANCE AND STORAGE

### Steps For Working On Equipment

1. Turn engine switch to the **OFF** position.
2. Disconnect the spark plug wire from the spark plug.
3. Securely place the disconnected spark plug wire away from the spark plug and any metal parts. This must always be done or arcing may occur between spark plug wire and metal parts.
4. Replace or repair the part on the tiller.
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 tiller.**

6. Reconnect the spark plug wire.

### Tiller Maintenance

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

### Engine Maintenance

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

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

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

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

### Maintenance Schedule

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

\* Service more frequently under dusty conditions

### Spark Plug

The recommended spark plug is a NGK CMR6A. (40cc)

1. Check spark plug at the beginning of each season or every 20 operating hours.
2. Disconnect the spark plug cap, and clean any debris from around the spark plug area.
3. Remove spark plug and replace if any of the following occur; pitted electrodes, burned electrodes, cracked porcelain, or deposits around electrodes.
4. After analysis, seat spark plug and tighten with spark plug wrench. Reconnect the spark plug wire.
  - Reinstall original spark plug, tighten additional 1/2 turn.
  - Installing new spark plug, adjust spark plug gap to 0.028" and tighten finger tight. Torque the spark plug to 7.2 - 8.7 ft-lbs.

**NOTE: A loose spark plug may overheat and damage engine. An over tightened spark plug may damage threads in the cylinder head.**

### Cooling Fins

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

### CARBURETOR

Never tamper with factory setting of the carburetor.

### Air Filter

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

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

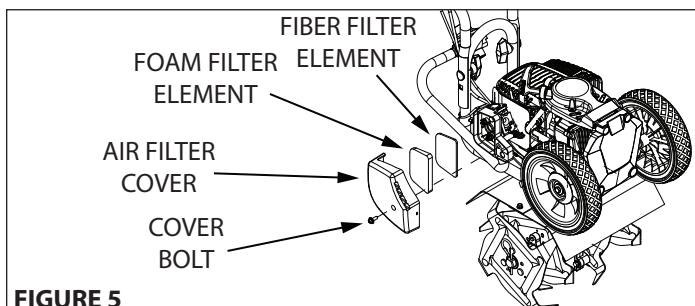
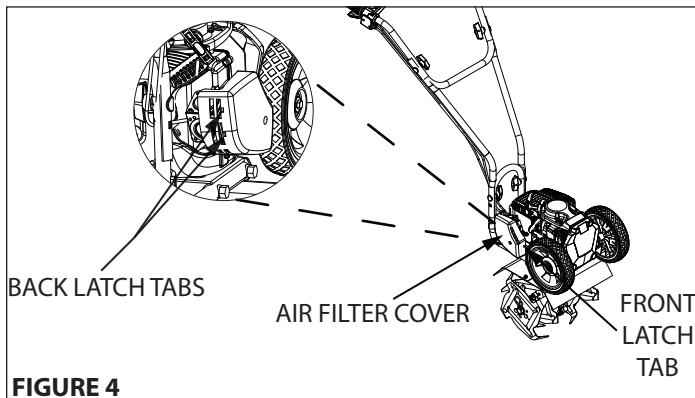


### Step for Replacing and Cleaning Air Filter:

1. To remove air filter cover, unscrew the cover bolt with a screw driver and gently pop out the front latch tab. The cover then can be slid off the back latch tabs and away from the engine. **SEE FIGURE 4**
2. Remove the foam filter and fiber filter elements. Replace with a new fiber filter and a new oiled foam filter (**SEE FIGURE 5**), or clean the original foam and fiber filters with warm water and mild soap. Remember to thoroughly oil the foam filter with 30 or 40 weight motor oil and squeeze out any excess oil before reinstalling it. Make sure to press the foam filter evenly into place over the fiber filter to ensure that the foam is fully seated into its sealed position.
3. Replace the air filter cover by first connecting the back latch tabs then swinging the cover, making sure the foam filter block stays fully seated and in its proper position, and connect the front latch tab so that it is secured into place.
4. Screw the cover bolt back into place. Check that the cover is securely attached by pulling slightly on the cover. If the cover doesn't move when pulled, it is secure.

### CAUTION

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



### WARNING

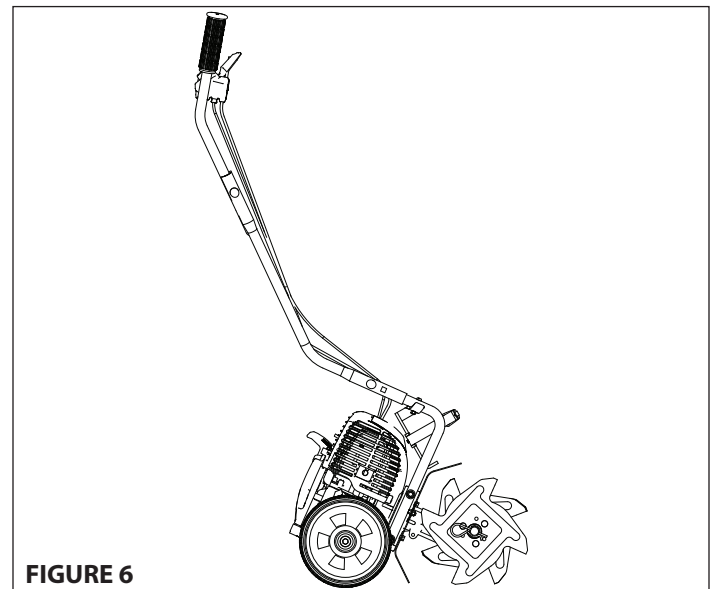
**NEVER STORE TILLER WITH FUEL CYLINDER ATTACHED INSIDE AN ENCLOSED AREA OR BUILDING. FUEL VAPORS CAN COLLECT AND CAUSE A FIRE.**

### Transporting Your Tiller

1. After using the tiller and before transporting it, remove the fuel cylinder from the bottle holder.
2. Disconnect the fuel cylinder from the regulator hose and and cover with safety cap to prevent damage to the valve seals.

### Long-Term Storage

1. Remove the fuel cylinder from the bottle holder.
2. Disconnect the fuel cylinder from the regulator hose and and cover with safety cap to prevent damage to the valve seals.
3. Store tiller in the upright position. **SEE FIGURE 6**
4. Remove all debris from tiller tines and engine.



### TROUBLESHOOTING AND REPAIR

At Breez™, 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 Breez™ Tiller. 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 Breez™. Breez™ 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 tiller was purchased or direct from the factory. To order parts visit; [www.getearthquake.com](http://www.getearthquake.com) or call 1-800-345-6007.

For other general questions, you can e-mail us at: [info@breezpropanetillers.com](mailto:info@breezpropanetillers.com).

Please include the following information with your order:

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

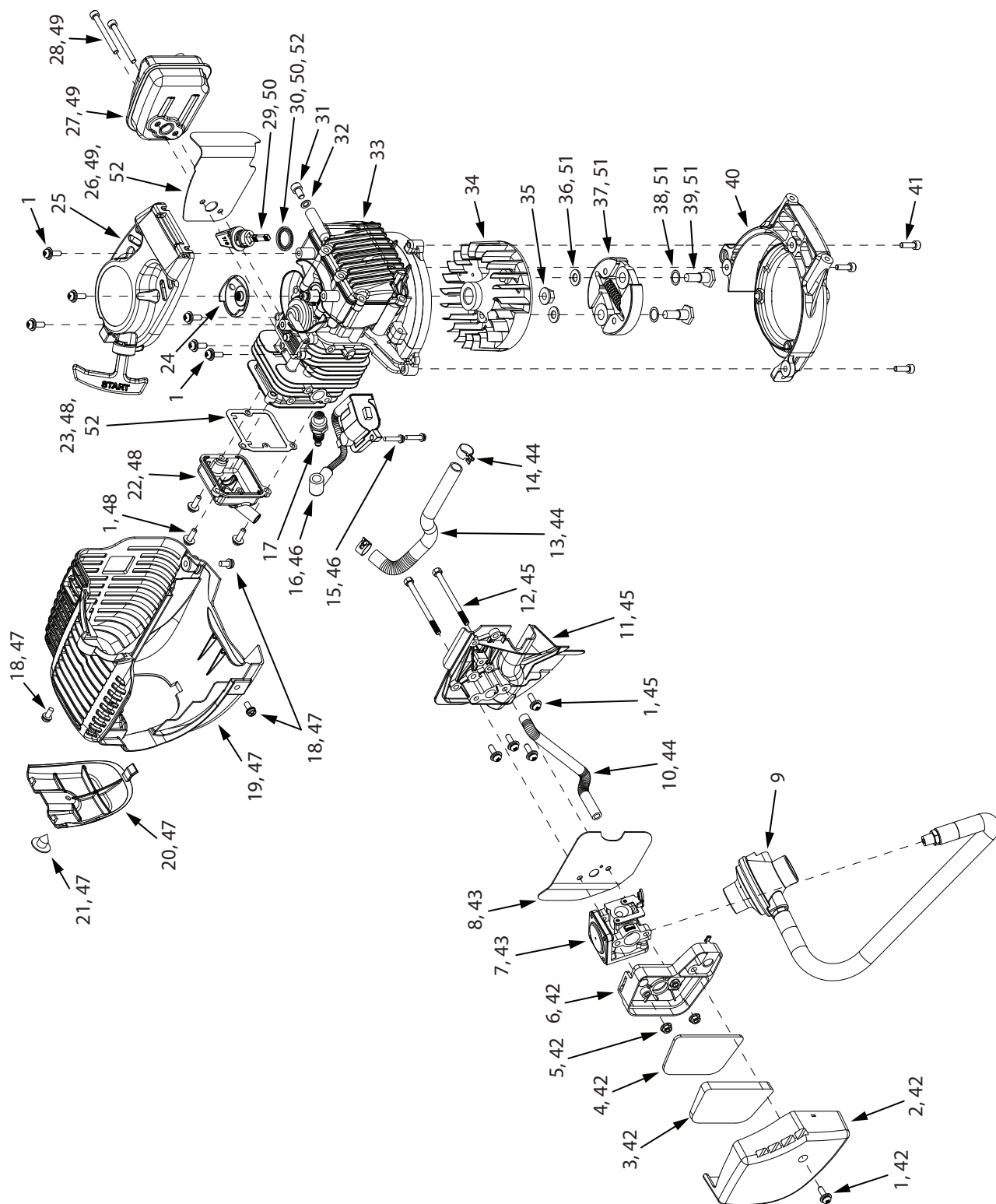
### Spare Parts

Only use approved Breez™ spare parts.

## TROUBLESHOOTING GUIDE

| PROBLEM                                    | POSSIBLE CAUSE                                 | REMEDY/ACTION                                                        |
|--------------------------------------------|------------------------------------------------|----------------------------------------------------------------------|
| Engine will not start                      | 1. Power switch off                            | 1. Flip switch to ON position                                        |
|                                            | 2. Spark plug wire disconnected                | 2. Connect spark plug wire to spark plug                             |
|                                            | 3. Out of fuel                                 | 3. Replace propane fuel cylinder                                     |
|                                            | 4. Spark plug wet, faulty or improperly gapped | 4. Clean, replace or gap spark plug                                  |
| Engine runs rough, floods during operation | 1. Dirty air filter                            | 1. Clean or replace air filter                                       |
|                                            | 2. Carburetor out of adjustment                | 2. Call customer service                                             |
| Engine is hard to start                    | 1. Spark plug wire loose                       | 1. Make sure spark wire is securely attached to spark plug           |
|                                            | 2. Fuel too cold                               | 2. Replace cylinder with one that has been stored in a warm location |
| Engine misses or lacks power               | 1. Clogged air filter                          | 1. Remove and clean or replace                                       |
|                                            | 2. Fouled spark plug                           | 2. Replace spark plug                                                |
| Engine runs, then quits                    | 1. Clogged air filter                          | 1. Remove and clean or replace                                       |
|                                            | 2. Carburetor out of adjustment or bad         | 2. Call customer service                                             |
| Engine revs too high                       | 1. Carburetor out of adjustment                | 1. Call customer service                                             |
| Tines turn at idle                         | 1. Idle speed too high                         | 1. Adjust idle speed lower                                           |
|                                            | 2. Broken clutch spring                        | 2. Replace both springs                                              |

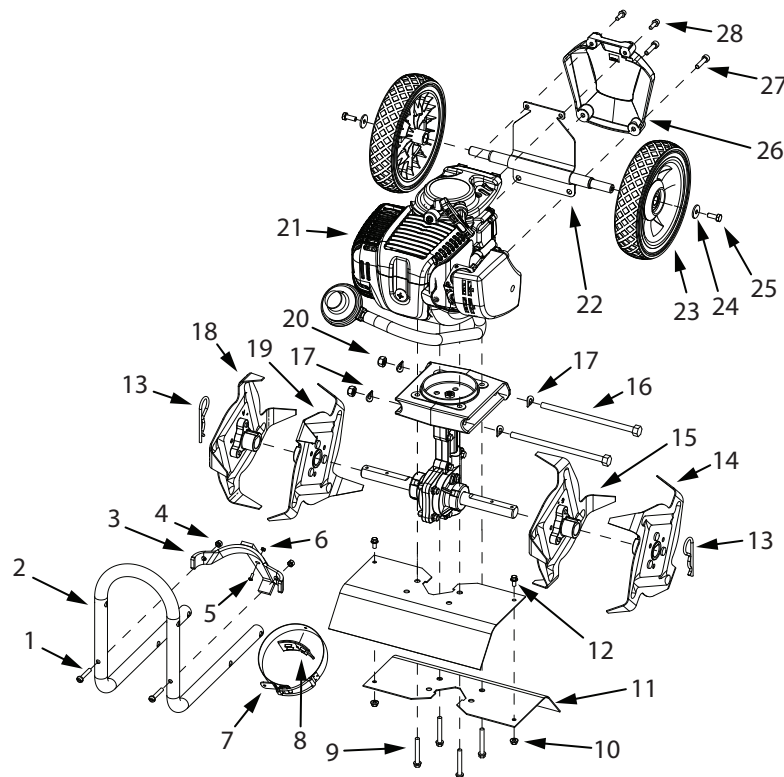
**ILLUSTRATED PARTS BREAKDOWN - Engine Assembly**



**ILLUSTRATED PARTS BREAKDOWN - Engine Assembly**

| ITEM NO. | PART NO. | DESCRIPTION                   | QTY. |
|----------|----------|-------------------------------|------|
| 1        | 10887    | BOLT M5 X 0.8 X 16 MM PHILIPS | 14   |
| 2        | 13197    | AIR FILTER COVER              | 1    |
| 3        | 13198    | AIR FILTER                    | 1    |
| 4        | 17078    | AIR FILTER FIBER              | 1    |
| 5        | 400020   | NUT M5 X 0.8 MM TOPLOCK       | 2    |
| 6        | 17251    | INTAKE BASE ASSEMBLY          | 1    |
| 7        | 16544    | CARBURETOR PROPANE            | 1    |
| 8        | 13299    | CARBURETOR GASKET             | 1    |
| 9        | 19169    | REGULATOR HOSE ASSEMBLY       | 1    |
| 10       | 17252    | CRANKCASE BREATHER HOSE       | 1    |
| 11       | 13328    | CARBURETOR INSULATOR          | 1    |
| 12       | 17249    | BOLT M5 X 0.8 X 70 MM HEX     | 2    |
| 13       | 13317    | VALVE COVER BREATHER HOSE     | 1    |
| 14       | 13395    | HOSE CLAMP 13.5 MM ID         | 2    |
| 15       | 13325    | BOLT M4 X 0.7 X 20 MM PHILIPS | 2    |
| 16       | 13252    | IGNITION COIL                 | 1    |
| 17       | 13243    | SPARK PLUG NGK CMR6A          | 1    |
| 18       | 300471   | BOLT M5 X 0.8 X 12 MM HEX     | 3    |
| 19       | 11041    | ENGINE SHROUD BLACK           | 1    |
| 20       | 11043    | ENGINE SHROUD CAP BLACK       | 1    |
| 21       | 11044    | SCREW 3/16 X 1/2 INCH PHILIPS | 1    |
| 22       | 13321    | VALVE COVER                   | 1    |
| 23       | 13324    | VALVE COVER GASKET            | 1    |
| 24       | 13244    | RECOIL CLUTCH                 | 1    |
| 25       | 13194    | RECOIL ASSEMBLY               | 1    |
| 26       | 13202    | MUFFLER HEAT SHIELD           | 1    |

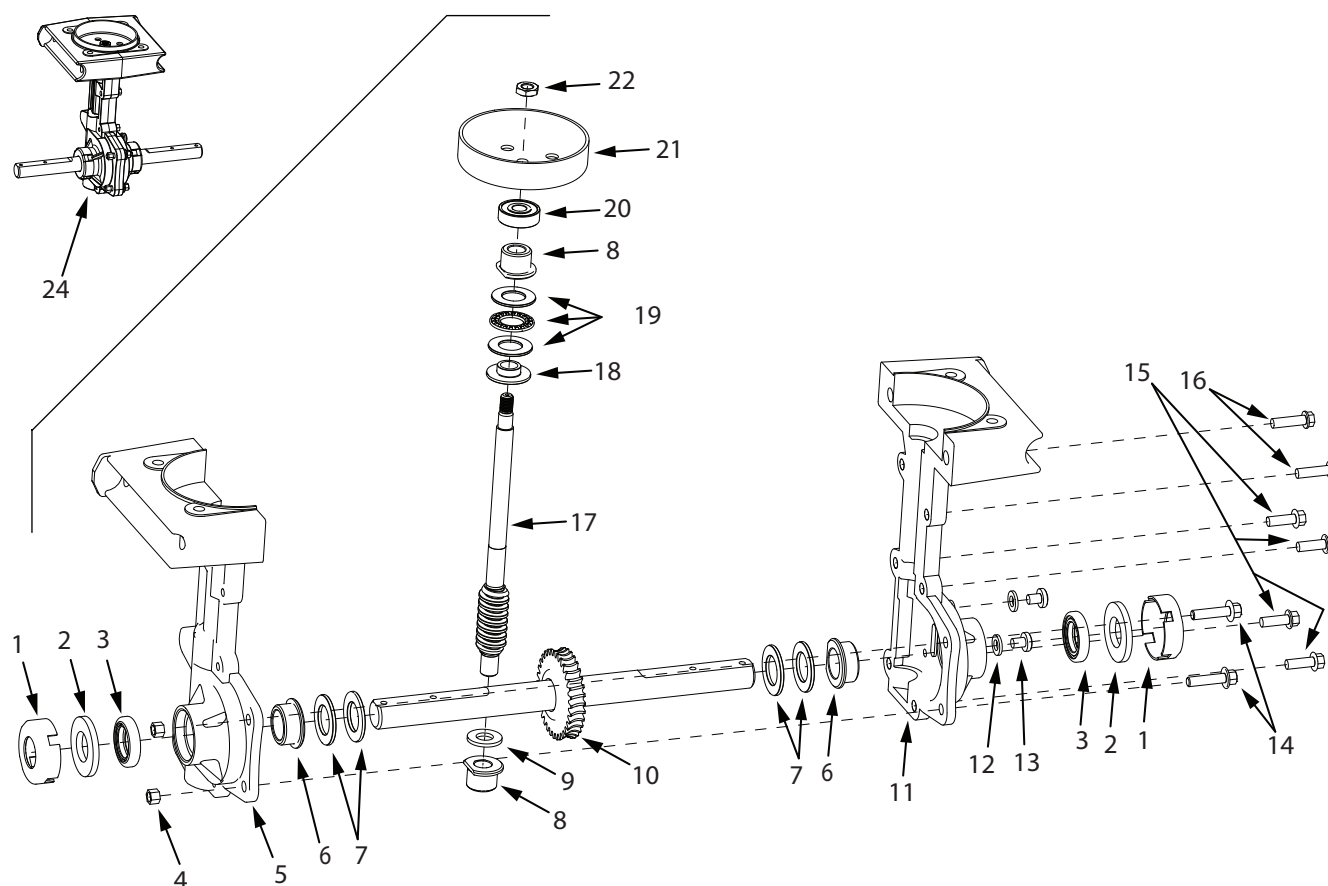
| ITEM NO. | PART NO. | DESCRIPTION                  | QTY. |
|----------|----------|------------------------------|------|
| 27       | 13200    | MUFFLER                      | 1    |
| 28       | 13181    | BOLT M5 X 0.8 X 50 MM SOCKET | 2    |
| 29       | 13196    | DIPSTICK                     | 1    |
| 30       | 15977    | DIPSTICK GASKET 16MM ID      | 1    |
| 31       | 19919    | BOLT M6 X 1.0 X 10 MM HEX    | 1    |
| 32       | 13320    | WASHER M6 COPPER             | 1    |
| 33       | 13322    | ENGINE BLOCK                 | 1    |
| 34       | 13241    | FLYWHEEL                     | 1    |
| 35       | 300337   | NUT M8 X 1.25 MM HEX FLANGE  | 1    |
| 36       | 300462   | WASHER 15.8 X 8.4 X 1.6 MM   | 2    |
| 37       | 300413   | CENTRIFUGAL CLUTCH           | 1    |
| 38       | 300449   | WAVE WASHER 10 X 15 X 0.25MM | 2    |
| 39       | 300450   | BOLT M8 X 1.25 X 25 MM SHLDR | 2    |
| 40       | 13239    | MOUNT RING                   | 1    |
| 41       | W1200123 | BOLT M5 X 0.8 X 16 MM SOCKET | 3    |
| 42       | 13363    | AIR FILTER KIT               | 1    |
| 43       | 21325    | CARBURETOR PROPANE KIT       | 1    |
| 44       | 13394    | BREATHER HOSES KIT           | 1    |
| 45       | 13390    | CARBURETOR BRACKET KIT       | 1    |
| 46       | 13400    | IGNITION COIL KIT            | 1    |
| 47       | 18497    | ENGINE SHROUD KIT            | 1    |
| 48       | 13298    | VALVE COVER KIT              | 1    |
| 49       | 13391    | MUFFLER KIT                  | 1    |
| 50       | 13393    | DIPSTICK KIT WITH O-RING     | 1    |
| 51       | 11235    | CLUTCH KIT 76.76 MM OD VIPER | 1    |
| 52       | 13066    | GASKETS KIT                  | 1    |

**ILLUSTRATED PARTS BREAKDOWN - Hood & Tines Parts Explosion**


| ITEM NO. | PART NO. | DESCRIPTION                     | QTY. |
|----------|----------|---------------------------------|------|
| 1        | 18504    | BOLT M5 X 0.8 X 30 MM FILLISTER | 2    |
| 2        | 21061    | LOWER HANDLEBAR                 | 1    |
| 3        | 18504    | BRACKET PROPANE TANK MOUNT      | 1    |
| 4        | 18504    | NUT M5 NYLOC                    | 2    |
| 5        | 18504    | BOLT M3 X 0.5 X 12 MM PHILIPS   | 1    |
| 6        | 18504    | NUT M3 NYLOC                    | 1    |
| 7        | 18504    | PROPANE TANK STRAP              | 1    |
| 8        | 18504    | RUBBER PAD TANK STRAP           | 1    |
| 9        | 4625     | BOLT M6 X 1.0 X 42 FLANGE HEX   | 4    |
| 10       | IN58     | NUT M5 NYLOC                    | 2    |
| 11       | 21272    | TINE SHIELD SIX HOLE ORANGE     | 2    |
| 12       | 176      | BOLT M5 X 0.8 X 10 HEX          | 2    |
| 13       | 4652     | COTTER HAIR PIN                 | 2    |
| 14       | 4604     | TINE -D- ASSEMBLY               | 1    |
| 15       | 4602     | TINE -C- ASSEMBLY               | 1    |

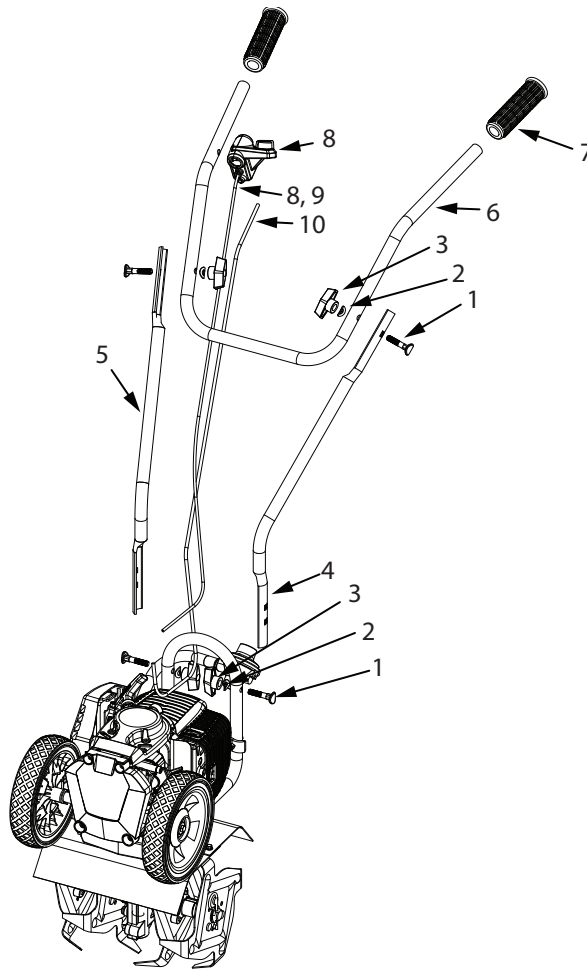
| ITEM NO. | PART NO. | DESCRIPTION                  | QTY. |
|----------|----------|------------------------------|------|
| 16       | 46141    | BOLT M8 X 1.25 X 155 MM HEX  | 2    |
| 17       | 4641     | WASHER M8 CURVED             | 4    |
| 18       | 4601     | TINE -A- ASSEMBLY            | 1    |
| 19       | 4603     | TINE -B- ASSEMBLY            | 1    |
| 20       | 400023   | NUT M8 NYLOC                 | 2    |
| 21       | 21058    | ENGINE 40CC 4-CYCLE PROPANE  | 1    |
| 22       | 21562    | WHEEL MOUNT PLATE WITH AXLE  | 1    |
| 23       | 13189    | WHEEL 180 X 38 MM GREY       | 2    |
| 24       | 18581    | WASHER M6 X 20 X 2 MM        | 2    |
| 25       | 17986    | BOLT M6 X 1.0 X 16 HEX       | 2    |
| 26       | 17204    | COVER WHEEL MOUNT BLACK      | 1    |
| 27       | 13222    | BOLT M6 X 1.0 X 25 MM SOCKET | 2    |
| 28       | 17945    | BOLT M5 X 0.8 X 16 MM SOCKET | 2    |
| -        | 18504    | PROPANE TANK BRACKET KIT     | 1    |



**ILLUSTRATED PARTS BREAKDOWN - Transmission Parts Explosion**


| ITEM NO. | PART NO. | DESCRIPTION                 | QTY. |
|----------|----------|-----------------------------|------|
| 1        | 46144    | DUST CAP                    | 2    |
| 2        | 4606     | WASHER, FIBER               | 2    |
| 3        | 4646     | SEAL, TINE SHAFT            | 2    |
| 4        | 4650     | NUT, FLANGED HEX HD M6      | 2    |
| 5        | 46136    | TRANSMISSION CASTING, LEFT  | 1    |
| 6        | 4645     | BUSHING, TINE SHAFT         | 2    |
| 7        | 4610     | SHIM, TINE SHAFT            | 4    |
| 8        | 4614     | BUSHING, DRIVE SHAFT        | 2    |
| 9        | 4616     | SPACER, BUSHING             | 1    |
| 10       | 4651     | TINE GEAR & SHAFT ASSEMBLY  | 1    |
| 11       | 46135    | TRANSMISSION CASTING, RIGHT | 1    |
| 12       | W1200117 | WASHER M6 X 13 X 1.75 MM    | 2    |

| ITEM NO. | PART NO. | DESCRIPTION                   | QTY. |
|----------|----------|-------------------------------|------|
| 13       | 13447    | BOLT M6 X 1.0 X 8 MM PHILIPS  | 2    |
| 14       | 4649     | BOLT M6 X 1.0 X 22 MM HEX FLG | 2    |
| 15       | 4647     | BOLT M6 X 1.0 X 18 MM HEX FLG | 4    |
| 16       | 4648     | BOLT M6 X 1.0 X 22 MM HEX FLG | 2    |
| 17       | 21953    | DRIVE SHAFT TRANSMISSION      | 1    |
| 18       | 4617     | REDUCER, THRUST BEARING       | 1    |
| 19       | 4615     | THRUST BEARING KIT            | 1    |
| 20       | 4623     | BALL BEARING 9MM              | 1    |
| 21       | 300414   | CLUTCH DRUM                   | 1    |
| 22       | 4620     | JAM NUT M8                    | 1    |
| 23       | 46138    | TRANSMISSION ASSEMBLY         | 1    |

**ILLUSTRATED PARTS BREAKDOWN - Handlebar Parts Explosion**


| ITEM NO. | PART NO. | DESCRIPTION                    | QTY. |
|----------|----------|--------------------------------|------|
| 1        | 4642     | BOLT, HANDLE CLAMP             | 4    |
| 2        | 4641     | WASHER CURVED                  | 4    |
| 3        | 4640     | NUT, T-HANDLE                  | 4    |
| 4        | 11078    | MIDDLE HANDLEBAR LEFT          | 1    |
| 5        | 11077    | MIDDLE HANDLEBAR RIGHT         | 1    |
| 6        | 11045    | UPPER HANDLEBAR LOOP           | 1    |
| 7        | 13309    | HANDLEBAR GRIP                 | 2    |
| 8        | 17483    | ON/OFF SWITCH HOUSING KIT      | 1    |
| 9        | 17209    | POWER CABLE WITH ON/OFF SWITCH | 1    |
| 10       | 14645    | THROTTLE CABLE                 | 1    |

## 15073 BORDER-EDGER KIT INSTALLATION (OPTIONAL ACCESSORY)

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

### INSTALLATION

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

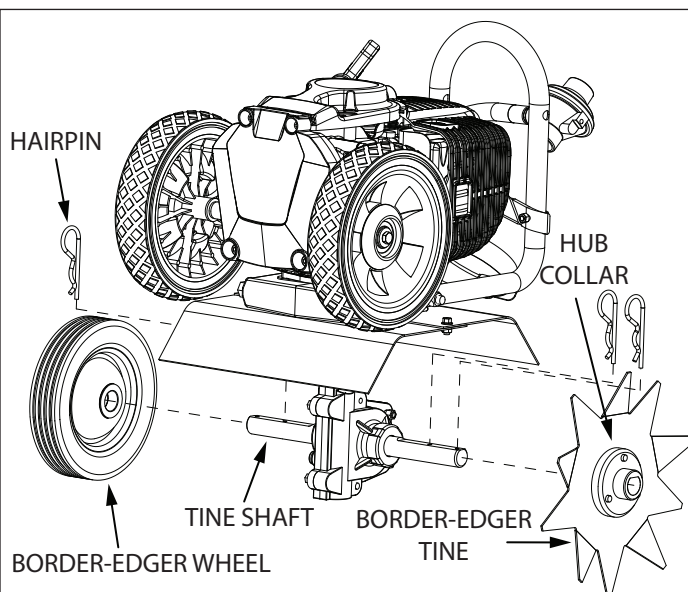
**NOTE:** *Never use the Border-Edger Kit with the drag stake installed.*

### PARTS BREAKDOWN

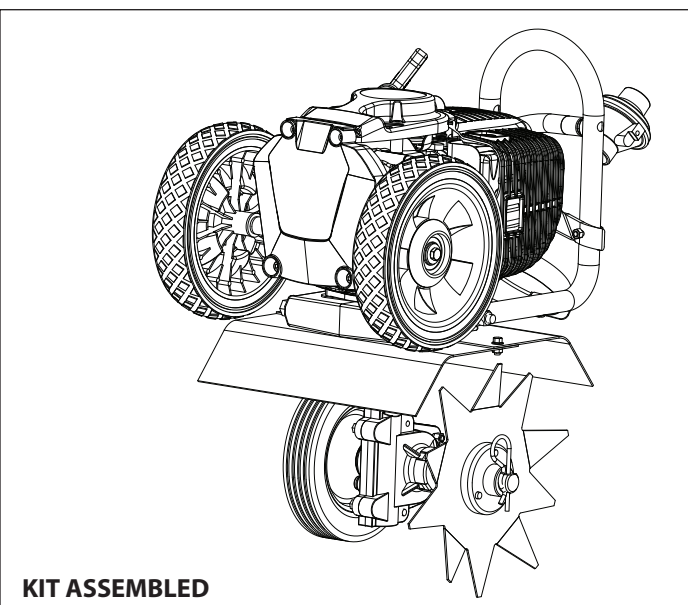
| KEY # | PART # | DESCRIPTION        | QTY. |
|-------|--------|--------------------|------|
| 1     | 15009  | BORDER-EDGER TINE  | 1    |
| 2     | 46131  | BORDER-EDGER WHEEL | 1    |
| 3     | 46134  | HAIRPIN            | 1    |

### CAUTION

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



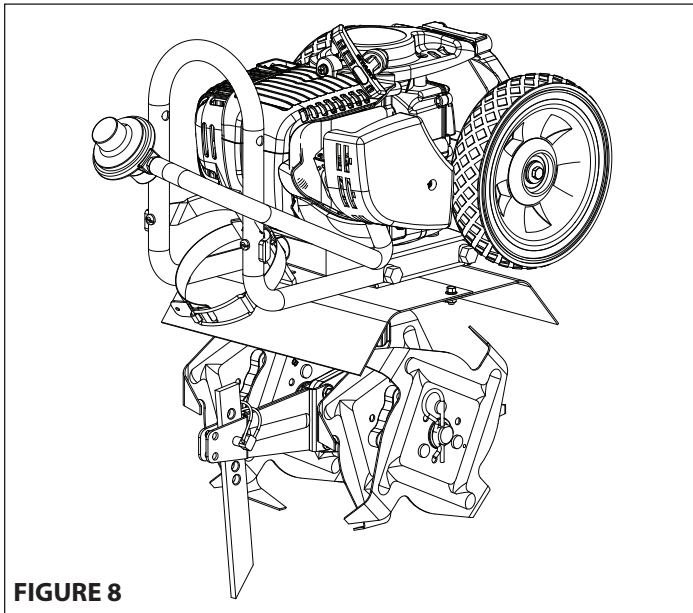
**FIGURE 7**



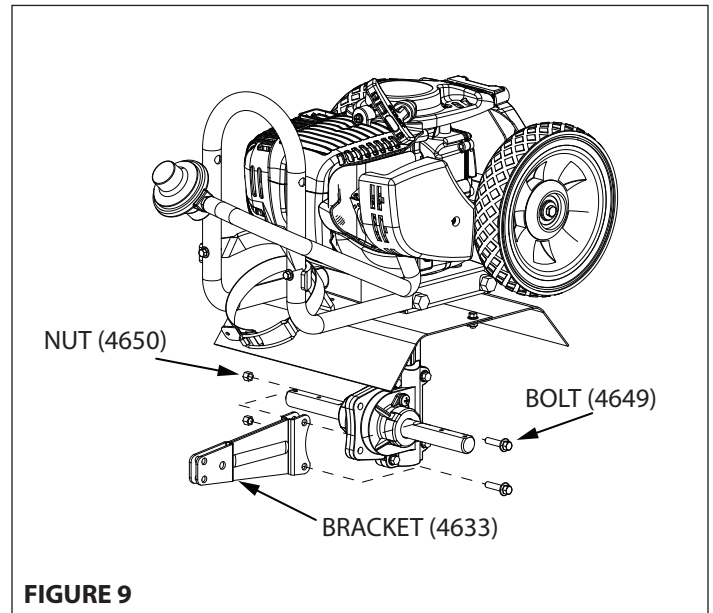
## 15290 DRAG STAKE BRACKET KIT INSTALLATION (OPTIONAL ACCESSORY)

The Drag Stake Bracket Kit is very effective for ensuring depth control and straight rows while tilling.

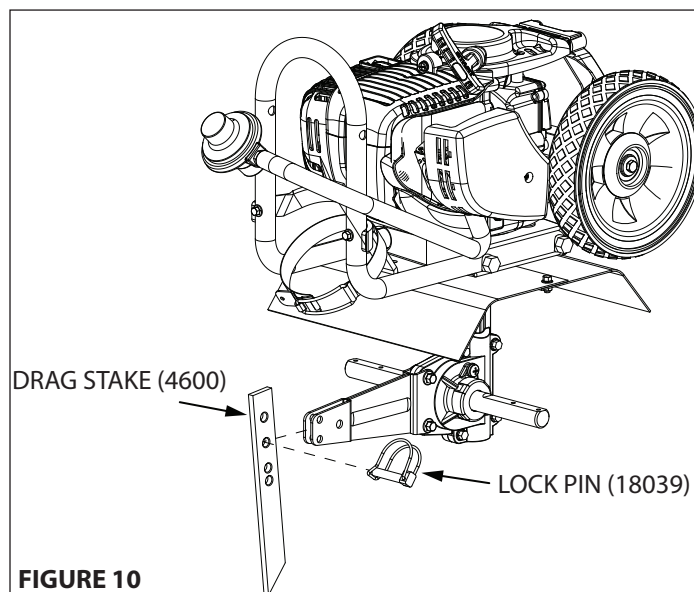
1. Flip the ON/OFF switch to the **OFF** position. Remove the tilling tines or other working tools.
2. Remove bolts (4649) and nuts (4650) from transmission casting. **SEE FIGURE 9**
3. Secure bracket (4633) to transmission casting with bolts (4649) and nuts (4650). **SEE FIGURE 9**
4. Place drag stake (4600) in bracket (4633) and secure at desired depth with lock pin (18039). **SEE FIGURE 10**
5. Replace tilling tines.



**FIGURE 8**



**FIGURE 9**



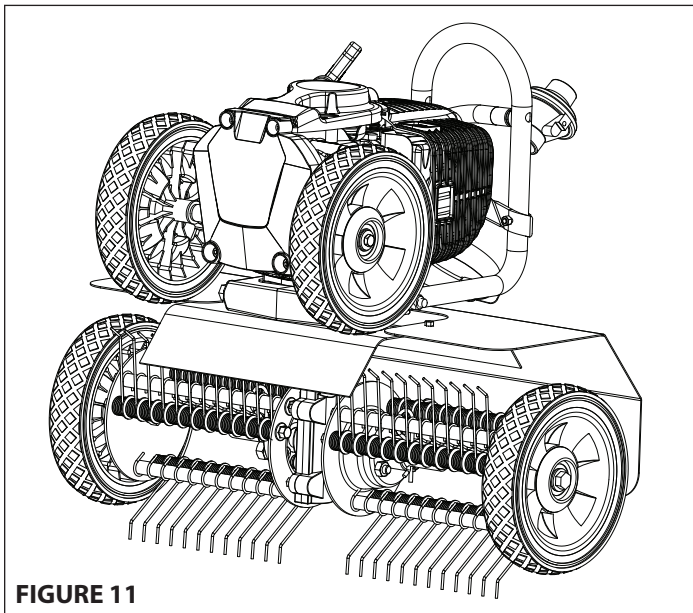
**FIGURE 10**

## DK43 DETHATCHER KIT INSTALLATION (OPTIONAL ACCESSORY)

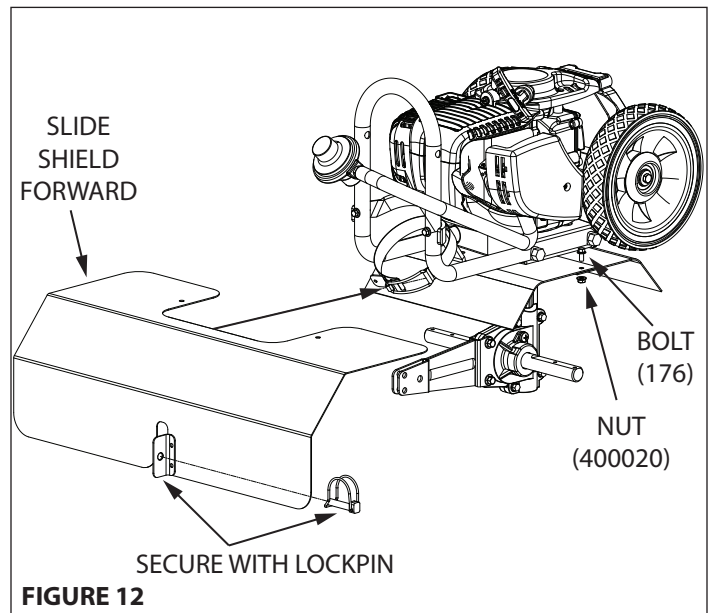
The Dethatcher Kit is very effective for lifting away the excessive matted layers of thatch in your lawn that can prevent moisture, oxygen and nutrients from penetrating the soil and can harbor disease and insects. Use in Spring, Summer, and Fall to bring life and color back to your grass lawn.

1. Flip the ON/OFF switch to the **OFF** position. Remove the tilling tines or other working tools and the drag stake.
2. Slide dethatcher shield over the unit's tine shield from the rear of the unit and secure using bolts (176) and nuts (400020).  
**SEE FIGURE 12**
3. Secure the lower part of the dethatcher shield to the drag stake mount using the lock pin (18039).
4. Slide the Left and Right Dethatcher Assemblies onto the tine shaft making sure the Right Assembly is installed on the right side and Left Assembly is installed on the left side as defined from the user's position. **SEE FIGURE 13**. Secure dethatcher assemblies using the hairpins (4652). The hairpins go through the inner holes of the tine shaft.

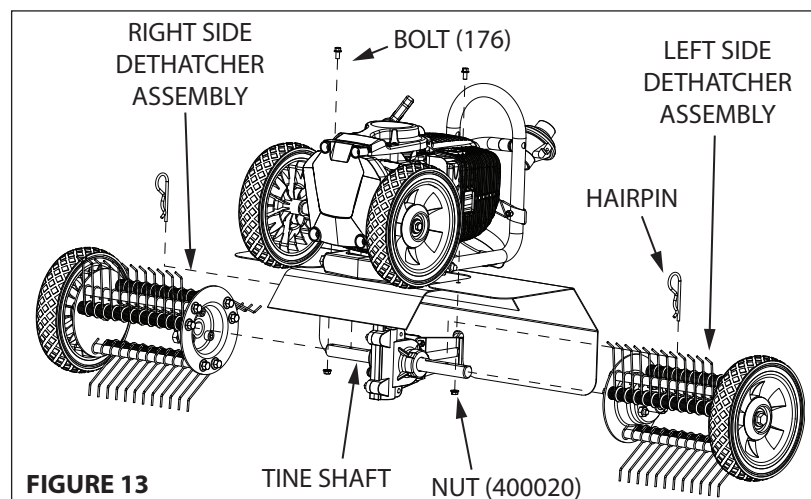
**NOTE:** Drag Stake Bracket Kit (15290) is required to use the Dethatcher Kit.



**FIGURE 11**



**FIGURE 12**



**FIGURE 13**

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





## WARRANTY TERMS AND CONDITIONS

### PRODUCT WARRANTY: 1-YEAR LIMITED WARRANTY

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

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

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

***For replacement parts, phone 800-345-6007.***

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

17645-REV1

## FEDERAL EMISSIONS CONTROL WARRANTY STATEMENT

### YOUR WARRANTY RIGHTS AND OBLIGATIONS

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

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

### MANUFACTURER'S WARRANTY COVERAGE:

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

### PURCHASER'S/OWNER'S WARRANTY RESPONSIBILITIES:

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

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

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

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

**800-345-6007**

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

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

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

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

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

## II. EMISSION CONTROL SYSTEM WARRANTY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



Breez™, Division of Ardisam, Inc.  
1160 8th Avenue, PO Box 666  
Cumberland, WI 54829  
800-345-6007 | Fax 715-822-2223  
E-mail: [info@breezpropanetillers.com](mailto:info@breezpropanetillers.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.breezpropanetillers.com](http://www.breezpropanetillers.com) or call 800-345-6007 M-F 8-5