

# POWERSMART<sup>®</sup>

## INSTRUCTION MANUAL

31cc 4-Cycle Gas Brush Cutter

Model # PS431



**PROBLEMS? QUESTIONS?**

**DO NOT RETURN TO STORE  
CALL OUR CUSTOMER HELP LINE**

**(800)791-9458 Mon-Fri 9-5 EST**



**Have product questions or need technical support? Please feel free to contact us!**

Website: [www.Amerisuninc.com](http://www.Amerisuninc.com)  
[www.powersmartusa.com](http://www.powersmartusa.com)

Toll free: 1-800-791-9458 Mon-Fri 9-5 EST  
Email: [support@amerisuninc.com](mailto:support@amerisuninc.com)



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## **TECHNICAL DATA**

31cc 4-Cycle Gas Brush Cutter

Model # PS431

Engine type:	4-Cycle, Single Cylinder
Displacement:	31 cc
Fuel tank capacity:	20.3 fl.oz
Oil capacity:	2.7 fl.oz
Blade size:	10 inch, 20 mm Arbor Size
Overall length:	74.8 inch
Package dimensions (L x W x H):	42.5 x 10 x 11.4 inches
Shipping weight:	19.6 lb.

## **INTRODUCTION**

Thank You for purchasing your PowerSmart® Product. This manual provides information regarding the safe operation and maintenance of this product. Every effort has been made to ensure accuracy of the information found in this manual. PowerSmart® reserves the right to change this product and specifications at any time without prior notice.

Please keep this manual available to all users during the entire life of the product.



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

### **QUESTIONS? PROBLEMS?**

Please contact our Customer Service Department with any questions and/or comments, either by Email: support@amerisuninc.com, or Toll Free at (800) 791-9458. We are available Mon-Fri 9am-5pm EST to help solve any issues that you might encounter.

### **NOTICE REGARDING EMISSIONS**

Engines that are certified to comply with U.S. EPA emission regulations for SORE (Small Off Road Equipment), are certified to operate on regular unleaded gasoline, and may include the following emission control systems: (EM) Engine Modifications and (TWC) Three-Way Catalyst (if so equipped).

## **SAFETY INFORMATION**

Before operating this product, read and observe all warnings, cautions, and instructions on the product and in this Owner's Manual.

NOTE: The following safety information is not meant to cover all possible conditions and situations that may occur. Read the entire Owner's Manual for safety and operating instructions. Failure to follow instructions and safety information could result in serious injury or death.

This safety alert symbol is used to identify safety information about hazards that can result in personal injury.



A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.

**DANGER:** Indicates a hazard, which, if not avoided, will result in death or serious injury.

**WARNING:** Indicates a hazard, which, if not avoided, could result in death or serious injury.

**CAUTION:** Indicates a hazard, which, if not avoided, might result in minor or moderate injury.

**CAUTION:** When used without the alert symbol, indicates a situation that could result in damage to the engine.

# **GENERAL SAFETY PROCEDURES**

For any questions regarding the hazard and safety notices listed in this manual or on the product, please call (800) 791-9458 Mon-Fri 9-5 EST. **Please read and understand the instructions in this manual before starting the engine or attempting to operate this unit.**

**Warning:** When using the unit, all safety rules must be followed. Please read these instructions before operating the unit in order to ensure the safety of the operator and any bystanders. Please keep these instructions for later use.

**Warning:** This unit can cause serious injury including loss of limb(s) or blindness to the operator and others. The warnings and safety instructions in this manual must be followed to provide reasonable safety and efficiency in using the unit. The operator is responsible for following the warnings and instructions in this manual and on the unit. Read the entire instruction manual before assembling and using the unit! Restrict the use of this unit to persons who read, understand, and follow the warnings and instructions in this manual and on the unit. Never allow children to operate this unit.

## **OPERATOR SAFETY**

- Always wear safety glasses or similar eye protection when operating, or performing maintenance on your unit. We recommend eye protection that is ANSI Z87 certified for impact resistance.
- Use appropriate hearing protection.
- Always wear long pants from a sturdy fabric, long sleeves, boots and gloves. Wearing safety leg guards is recommended. Dress appropriate to the terrain that you will be clearing.
- Being fully covered will also help to protect you from debris and/or pieces of toxic plants thrown by the spinning line/blade. A face or dust mask is recommended of the operation in dry conditions.
- It is recommended to wear foot protection with a reinforced toe.
- Never attempt to use this product while barefoot or in sandals.
- Secure longer hair to above the shoulders. Secure or remove loosely hanging clothing, jewelry, ties, straps, tassels, etc. They can become entangled and caught within the moving parts.
- Do not operate unit when you are tired, sick, upset or under the influence of alcohol, drugs, or medication. Watch what you are doing; use common sense. Stay alert.
- Never start or run the engine inside a room or building. Even with windows open, breathing CO exhaust fumes can quickly disorient and/or subsequently become lethal.
- Keep handles free of oil and fuel.
- Always use the handlebar and a properly adjusted shoulder strap with a blade (see ASSEMBLY).



## **DANGER: CARBON MONOXIDE**

Using any internal combustion engine indoors **CAN KILL YOU IN MINUTES**. Engine exhaust contains carbon monoxide (CO). This is a poison gas you cannot see or smell. If you can smell the engine exhaust, you are breathing carbon monoxide (CO). Even if you don't smell exhaust, you could still be breathing CO.

**NEVER** use an engine inside homes, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up quickly in these areas. Using a fan, or opening windows and/or doors will **NOT** properly vent CO or supply adequate fresh air. **ONLY** run an engine outside and far away from all windows, doors, and vents. These openings can pull in engine exhaust.

Even if you use an engine correctly, CO may leak into the home. ALWAYS use a battery-powered or battery-backup CO alarm in the home. If you start to feel sick, dizzy, or weak after the engine has been running, move to fresh air RIGHT AWAY. See a doctor. You may have carbon monoxide poisoning.

**WARNING:** The exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

**WARNING:** This engine may emit highly flammable and explosive gasoline vapors, which can cause severe burns or even death if ignited. A nearby open flame can lead to explosion even if it isn't directly in contact with gasoline.

- Do not operate near an open flame.
- Do not smoke near the engine.
- Always operate on a firm, level surface.
- Always turn engine off before refueling. Allow engine to cool for at least 2 minutes before removing fuel cap. Loosen cap slowly to relieve pressure in tank.
- Do not overfill fuel tank. Gasoline may expand during operation. Do not fill to the top of the tank. Allow for expansion.
- Always check for spilled fuel before operating.
- Empty fuel tank before storing or transporting the engine.

**WARNING:** This engine produces heat when running. Temperatures near exhaust can exceed 150°F (65°C).

Do not touch hot surfaces. Pay attention to warning labels on the engine identifying hot parts of the machine. Allow engine to cool down after use before touching engine or areas of the engine that become hot during use.

**CAUTION:** Misuse of this engine can damage it or shorten its life. Only use engine for its intended purposes.

## UNIT/MAINTENANCE SAFETY

**WARNING:** Stop unit and disconnect the spark plug before performing maintenance (except idle speed adjustments).

- Look for and replace damaged or loose parts before each use. Look for and repair fuel leaks before use. Keep unit in good working condition.
- Throw away blades that are bent, warped, cracked, broken, or damaged in any other way. Replace trimmer head parts that are cracked, chipped, broken, or damaged in any other way before using the unit.
- Maintain unit according to recommended procedures. Keep blade sharp. Keep cutting line at the proper length.
- Use only specified replacement line. Never use wire, rope, string, etc.
- Install required shield properly before using the unit.
- Use only specified blade or trimmer head; make sure it is properly installed and securely fastened.
- Never start engine with clutch shroud removed. The clutch can fly off and cause serious injury.
- Be sure blade or trimmer head stops turning when engine idles.
- Make idle speed adjustments with the lower end supported to prevent blade or trimmer line from contacting any object. Hold unit by hand; do not use the shoulder strap for support.
- Keep others away when making idle speed adjustments.

- Use only recommended accessories and replacement parts.
- Have all maintenance and service not explained in this manual performed by your authorized service dealer.

## **CUTTING SAFETY**

**WARNING:** Inspect area before starting unit. Remove all debris and hard objects such as rocks, glass, wire, etc., that can ricochet, be thrown, or otherwise cause injury or damage during operation.

- Keep others including children, animals, bystanders, and helpers at least 50 feet (15meters) away. Bystanders should be encouraged to wear safety glasses. Stop engine immediately if you are approached.
- Always keep engine on the right--hand side of your body.
- Hold the unit firmly with both hands.
- Keep firm footing and balance. Do not overreach.
- Keep blade or trimmer head below waist level. Do not raise engine above your waist.
- Keep all parts of your body away from blade, trimmer head, and muffler when engine is running. A hot muffler can cause serious burns.
- Cut from your left to your right. Cutting on right side of the shield will throw debris away from the operator.
- Use only in daylight or good artificial light.
- Use only for jobs explained in this manual.

## **TRANSPORTING AND STORAGE**

- Stop the unit before transporting.
- Keep the muffler away from your body.
- Allow the engine to cool and secure the unit before storing or transporting it in a vehicle.
- Empty the fuel tank before storing or transporting the unit. Run out of fuel left in the carburetor by starting the engine and letting it run until it stops.
- Store unit and fuel in area where fuel vapors cannot reach sparks or open flames from water heaters, electric motors or switches, furnaces, etc.
- Store unit so the blade or line limiter blade cannot accidentally cause injury. The unit can be hung by the shaft.
- Store unit out of reach of children.

**SAFETY NOTICE:** Exposure to vibrations through prolonged use of gasoline powered hand tools could cause blood vessel or nerve damage in the fingers, hands, and joints of people prone to circulation disorders or abnormal swellings. Prolonged use in cold weather has been linked to blood vessel damage in otherwise healthy people. If symptoms occur such as numbness, pain, loss of strength, change in skin color or texture, or loss of feeling in the fingers, hands, or joints, discontinue the use of this tool and seek medical attention. A reduced-vibration system does not guarantee the avoidance of these problems. Users who operate power tools on a continual and regular basis must monitor closely their physical condition and the condition of this tool.

## **Children**

Sever injury can occur if the operator is not alert to the presence of children in the immediate area. Children are often attracted to the mowing activity. Never assume that children will remain where you last saw them.

1. Keep children out of the mowing area and under the watchful care of a responsible adult other than the operator.
2. Be alert and turn mower off if a child enters the area.
3. Never allow children under the age of 16 to operate the product.
4. Use extra care when approaching blind corners, shrubs, trees, or other objects that may block your view of a child.

## **Fuel safety**

1. Safe Handling of Gasoline
2. To avoid personal injury or property damage, use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive.
3. Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
4. Only use a US EPA approved compliant portable fuel container.
5. Never remove gas cap or add fuel with the engine running. Allow engine to cool before refueling.
6. Never attempt to refuel the product while indoors.
7. Never store the machine or fuel container where there is an open flame, spark, or pilot light such as on a water heater or on other appliances.
8. Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.
9. Remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment with a portable container, rather than from a gasoline dispenser nozzle.
10. Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
11. If fuel is spilled on clothing, change clothing immediately.
12. Never overfill fuel tank. Replace gas cap and tighten securely.

## **BRUSHCUTTER SAFETY**

The blade can violently thrust away from material that it does not cut. Blade thrust can cause amputation of arms or legs.

Do not use the trimmer head as a fastening device for the blade.

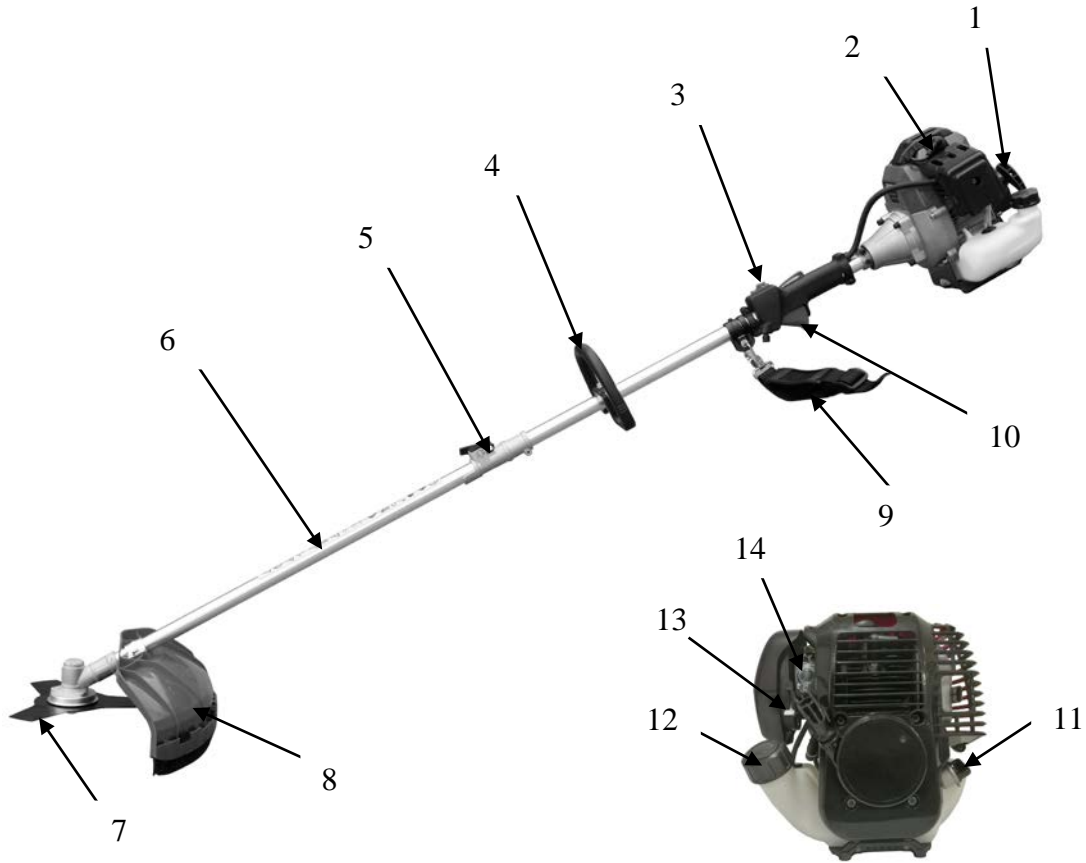
The blade will continue to spin after the trigger is released or engine is turned off. The coasting blade can throw objects or seriously cut you if accidentally touched. Stop the blade by contacting the right-hand side of the coasting blade with material already cut.

**WARNING:** Inspect area before starting unit. Remove all debris and hard objects such as rocks, glass, wire, etc., that can ricochet, be thrown, or otherwise cause injury or damage during operation.

- Throw away and replace blades that are bent, warped, cracked, broken or damaged in any other way.
- Install required shield properly before using the unit.
- Use only specified blade and make sure it is properly installed and securely fastened.
- Cut from your left to your right. Cutting on the right side of the shield will throw debris away from the operator.
- Always use the handlebar and a properly adjusted shoulder strap with blade (see ASSEMBLY).

# **KNOWING YOUR BRUSH CUTTER**

Please use the illustration below to familiarize yourself with the location and function of the components that control of your brush cutter.



- 1 Recoil Starter Handle
- 2 Spark Plug
- 3 ON/OFF Switch
- 4 Handlebar
- 5 Coupler
- 6 Shaft
- 7 Cutting Blade
- 8 Blade Shield

- 9 Shoulder Strap
- 10 Throttle Trigger
- 11 Oil Fill & Dipstick
- 12 Fuel Tank
- 13 Choke Lever
- 14 Fuel Primer Bulb

## **BRUSH CUTTER PREPARATION**

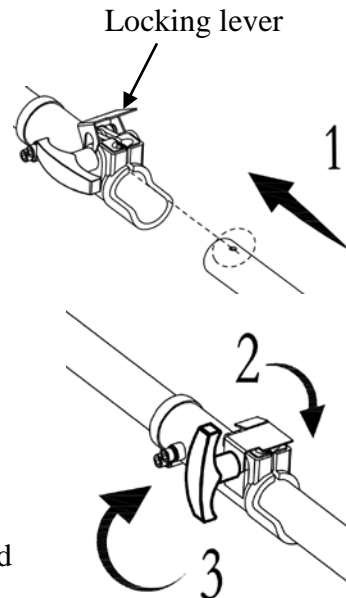
The following section describes steps necessary to prepare the brush cutter for initial use. If after reading this section, you are unsure about how to perform any of the steps please call (800) 791-9458 Mon-Fri 9-5 EST for customer service. Failure to perform these steps properly can damage the brush cutter or shorten its lifespan.

### **INSTALLING BRUSH CUTTER ATTACHMENT**

**CAUTION:** When installing brush cutter attachment, place the unit on a flat surface for stability.

1. Loosen the coupler by turning the knob counterclockwise and lifting the locking lever.
2. Make sure to line up the small hole on the attachment, with the slot on the powerhead. Push the attachment into the coupler.
3. Before using the unit, push down locking lever and tighten the knob securely by turning it clockwise.

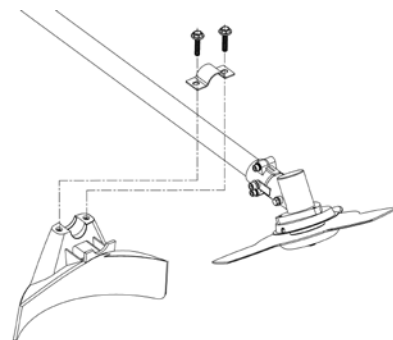
**WARNING:** Make sure the locking/release button is locked in the primary hole and that the knob is securely tightened before operating the unit. All attachments are designed to be used in the primary hole unless otherwise stated in the attachment instruction manual. Using the wrong hole could lead to serious injury or damage to the unit.



### **ATTACHING THE PLASTIC BLADE SHIELD**

**CAUTION: The blade shield must be properly installed.** This shield helps provide partial protection to the operator, and others from the risk of thrown objects and other debris.

1. Attach the shield and bracket to the shaft of the cutter attachment.
2. Install the supplied hex head screws using a wrench and tighten securely.



### **ASSEMBLY OF SHOULDER STRAP**

**WARNING:** Proper shoulder strap and handlebar adjustments must be made with the engine completely stopped before using unit.

1. Insert your right arm and head through the shoulder strap and allow it to rest on your left shoulder. Make sure the hook is to the right side of your waist.

**NOTE:** A one-half twist is built in the shoulder strap to allow the strap to rest flat on the shoulder.

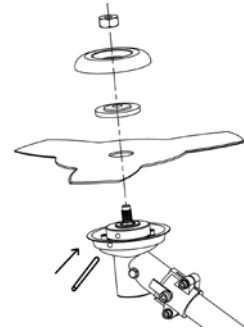
2. Adjust the strap, allowing the hook to be about 6 inches (15 cm) below the waist.
3. Fasten the strap hook to the clamp located between the throttle trigger and the handlebar mounting bracket and lift the tool to the operating position.
4. Try on shoulder strap and adjust for fit and balance before starting the engine or beginning a cutting operation. **NOTE:** It may be necessary to relocate the shoulder strap clamp on the shaft for proper balancing of unit.

## REPLACING THE BLADE

**WARNING:** Wear protective gloves when handling or performing maintenance on the blade to avoid injury. The blade is sharp and can cut you even when it is not moving.

**WARNING:** Do not attempt to use any blades, washers, nuts, or fastening hardware other than shown in the following illustrations. These parts must be provided by the manufacturer and installed as shown below. Failure to use proper parts can cause the blade to fly off and seriously hurt you or others.

1. Align hole in dust cup with hole in side of gearbox by rotating the blade.
2. Insert a small screwdriver or into aligned holes. This will keep the shaft from turning while loosening the blade nut.
3. Loose blade nut with a wrench while holding screwdriver in position.
4. Remove the cupped washer, retaining washer and blade from the threaded shaft of the gearbox. Leave the dust cup on the shaft.
5. Install the new blade and the retaining washer over the threaded shaft.
6. Make sure the raised part of the retaining washer is facing the gearbox and the raised area fits into the hole in the center of the blade.
7. Slide the blade and retaining washer onto the shaft of the gearbox.
8. Place the cupped washer onto the shaft. Make sure the cupped side of the washer is toward the blade.
9. Install the bottom blade nut by threading onto the shaft counterclockwise (looking from bottom of unit).
10. Tighten blade nut firmly with a wrench while holding screwdriver in position.
11. Remove the screwdriver.

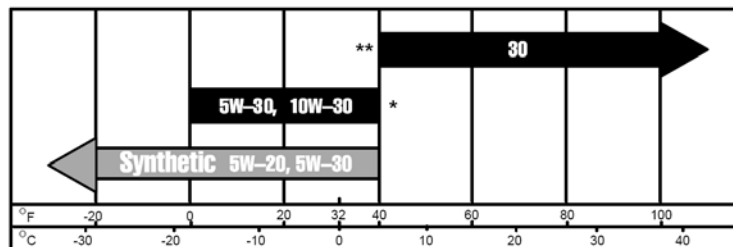


## ADD OIL

**This product is shipped without oil. User must add the proper amount of oil before operating the product for the first time.** The oil capacity of the engine crankcase is 2.7 fl. oz. For general use (above 40° F), we recommend 30W, 4-stroke engine oil.

## ENGINE OIL RECOMMENDATIONS

Select good quality detergent oil bearing the American Petroleum Institute (API) service classifications SJ, SL, or SM (synthetic oils may be used). Use the ASE viscosity grade of oil from the following chart that matches the starting temperature anticipated before the next oil changes.



Engine Oil Temperature Recommendations

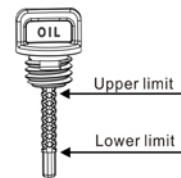
Location of oil fill & dipstick



To add oil, follow these steps:

1. Make sure the product is on a level surface. Tilting the product to assist in filling will cause oil to flow into engine areas and will cause damage.
2. Unscrew the dipstick from the engine.
3. Slowly add the engine oil.
4. To check the oil level, wipe the dipstick with a clean rag.

5. Next, insert the dipstick into the oil fill opening **without screwing it in**. Remove the dipstick to check the oil level mark.
6. If required, slowly add more oil until the mark reads just below the upper limit line on the dipstick. **Do not overfill the crankcase.**
7. Firmly tighten the dipstick and check for any leaks.



## ADD GASOLINE



**WARNING:** This product may emit highly flammable and explosive gasoline vapors, which can cause severe burns or even death if ignited. A nearby open flame can lead to explosion even if not directly in contact with gasoline.

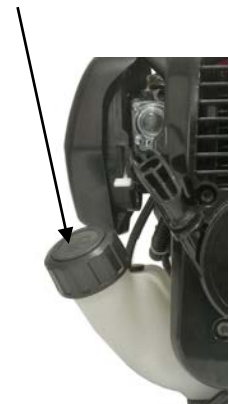
Use fresh (within 30 days from purchase), lead-free gasoline with a minimum of 87 octane rating.

**Using a gas/oil mixture with unit will damage the engine. Do not mix oil with gasoline.**

### To add gasoline, follow these steps:

1. Make sure the product is on a level surface.
2. Unscrew fuel cap and set aside. **NOTE:** The fuel cap may be tight and hard to unscrew.
3. Slowly add unleaded gasoline to the fuel tank. Be careful not to overfill. The capacity of the fuel tank is 20.3 fl. oz. **NOTE:** Do not fill the fuel tank to the very top. Gasoline will expand and spill over during use even with the fuel cap in place.
4. Reinstall fuel cap and wipe clean any spilled gasoline with a dry cloth.

Fuel tank cap



### IMPORTANT:

- **Never use an oil/gasoline mixture.**
- **Never use stale or old gasoline.**
- Avoid getting dirt or water into the fuel tank.
- Gasoline can age in the tank and make starting difficult. Never store brush cutter for extended periods of time with fuel in the tank or the carburetor.
- Turn the fuel cock off and drain the fuel from the carburetor.

**NOTE:** After completing the above preparation, the brush cutter is ready to be started.

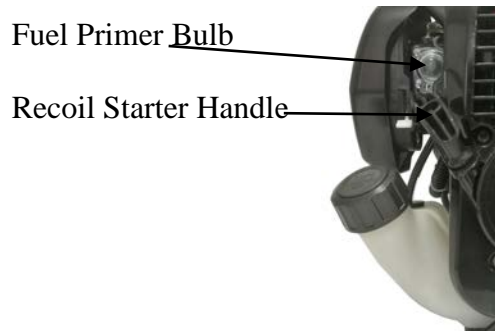
## OPERATION



**WARNING:** Be sure to read the fuel information in the safety rules before you begin. If you do not understand the safety rules, do not attempt to fuel your unit. Call customer support.

### STARTING A COLD ENGINE

1. Set unit on a flat surface.
2. Slowly press the primer bulb 3 times.
3. Move choke lever to the START position.
4. Pull recoil starter handle sharply 5 times.
5. Squeeze and hold trigger.
6. Pull recoil starter handle until engine starts.



### STARTING A WARM ENGINE

1. Squeeze and hold trigger.
2. Pull recoil starter handle until engine starts.

### OPERATING

When operating unit, you should clip the shoulder strap onto the clamp, check for the following:

- Wear hearing protection, eye protection, head protection and heavy clothing.
- Extend your left arm and hold handlebar grip with your left hand.
- Hold throttle grip with your right hand with finger on throttle trigger.
- Keep unit below waist level.
- Keep shoulder strap pad centered on your left shoulder and danger sign centered on your back.
- Maintain full weight of tool on your left shoulder.
- Without bending over, keep the blade or trimmer head near and parallel to the ground and not crowded into material being cut.



**RISK OF KICKOUT (Blade Thrust)** This reaction can only occur when using a bladed unit. This sudden and violent reaction can cause serious injury. Please carefully review this section. It is important that you understand what causes Blade Kickout, and how you can reduce the chance of it occurring. It is critical to understand how to remain in control of the unit if blade thrust occurs.

**WHAT CAUSES KICKOUT (Blade Thrust)** – Blade Thrust can occur when the spinning blade contacts an object that it cannot cut. This contact causes the blade to stop for an instant and then suddenly move or “thrust” away from the object that was hit. The “thrusting” reaction can be violent enough to cause the operator to be propelled in any direction and lose control of the unit. The uncontrolled unit can cause serious injury if the blade contacts the operator or others in the area.

**WHEN KICKOUT OCCURS** -- Blade Thrust can occur without warning if the blade snags, stalls, or binds. This is more likely to occur in areas where it is difficult to see the material being cut. By using the unit properly, the occurrence of blade thrust will be reduced and the operator will be less likely to lose control.

- Cut only grass, weeds, and woody brush up to 1/2 inch (1 cm) in diameter with the blade. Do not let the blade contact material it cannot cut such as stumps, rocks, fences, metal, etc., or clusters of hard, woody brush having a diameter greater than 1/2 inch (1 cm).
- Keep the blade sharp. A dull blade is more likely to snag and thrust.
- Cut only at full throttle. The blade will have maximum cutting power and is less likely to bind or stall.
- “Feed” the blade deliberately and not too rapidly. The blade can thrust away if it is fed too rapidly.
- Cut only from your left to your right. Cutting on right side of the shield will throw debris away from the operator.
- Use the shoulder strap and keep a firm grip on the unit with both hands. A properly adjusted shoulder strap will support the weight of the unit, freeing your arms and hands to control and guide the cutting motion.
- Keep feet comfortably spread apart and braced for a possible sudden, rapid thrust of unit. Do not overreach. Keep firm footing and balance.
- Keep blade below waist level; it will be easier to maintain control of unit.
- Do not raise the engine above your waist as the blade can come dangerously close to your body.
- Do not swing unit with such force that you are in danger of losing your balance.

Bring the engine to cutting speed before entering the material to be cut. If the blade does not turn when you squeeze the throttle trigger, make sure shaft is fully inserted into the engine.

Always release the throttle trigger and allow engine to return to idle speed when not cutting. The blade should not turn while the engine is running at idle. If the blade turns at idle, do not use your unit. Refer to contact customer service.

- Maintain good firm footing while using the unit. Do this by planting feet firmly in a comfortable apart position.
- Cut while swinging the upper part of your body from left to right.
- As you move forward to the next area to cut, be sure to maintain your balance and footing.

**WARNING:** The operator or others must not try to clear away cut material with the engine running or the blade turning to avoid serious injury. Stop engine and blade before removing materials wrapped around blade or shaft.

## **MAINTENANCE**

**WARNING:** Disconnect the spark plug before performing any maintenance.

### **CHECK FOR DAMAGED OR WORN PARTS**

Contact customer service for replacement of damaged or worn parts.

**ON/OFF Switch** -- Ensure ON/OFF switch functions properly by pushing and releasing the switch. Make sure engine stops. Wait 5 seconds before attempting to restart unit to allow switch to reset. Restart engine and continue.

**Fuel Tank** – Immediately discontinue use of unit if fuel tank shows signs of damage or leaks.

**Debris Shield** -- Discontinue use of unit if debris shield is damaged.

### **CLEAN AIR FILTER**

A dirty air filter will decrease engine performance and increases fuel consumption and harmful emissions. It is important to clean the filter after every 5 hours of operation.

1. Clean the filter cover, and the area around it to keep dirt from falling into the carburetor chamber when removed.
2. Press the tabs on the air filter cover to remove the cover and air filter.

**NOTE:** To avoid creating a fire hazard or producing harmful evaporative emissions, do not clean filter in gasoline or other flammable solvent.

3. Wash the filter in soap and water.
4. Allow the filter thoroughly dry before for reinstalling.
5. Replace parts.

### **REPLACE SPARK PLUG**

Replacing the spark plug each year will help ensure that the engine starts easier, and runs better. Set spark plug gap at 0.025 inch (0.6 mm). The ignition timing is fixed and does not require adjustment.

## **STORAGE**

**CAUTION:** Perform the following steps after each use:

- Allow engine to cool before storing or transporting.
- Store unit and fuel in a well-ventilated area where fuel vapors cannot reach sparks or open flames from water heaters, electric motors or switches, furnaces, etc.
- Store unit with all guards in place. Position unit so that any sharp object cannot accidentally cause injury.
- Store this unit and the fuel well out of the reach of children.

## SEASONAL STORAGE

Prepare your unit for storage at the end of season or, if it will not be used for 30 days or more.

If your unit is to be stored for a period of time:

1. Clean the entire unit before lengthy storage.
2. Store in a clean dry area.

## FUEL SYSTEM

Adding fuel stabilizer helps to minimize the formation of fuel gum deposits during storage. Add stabilizer to the gasoline in the fuel tank and/or fuel storage container.

Run the engine for at least 5 minutes after adding to distribute stabilizer throughout the system.

## ENGINE

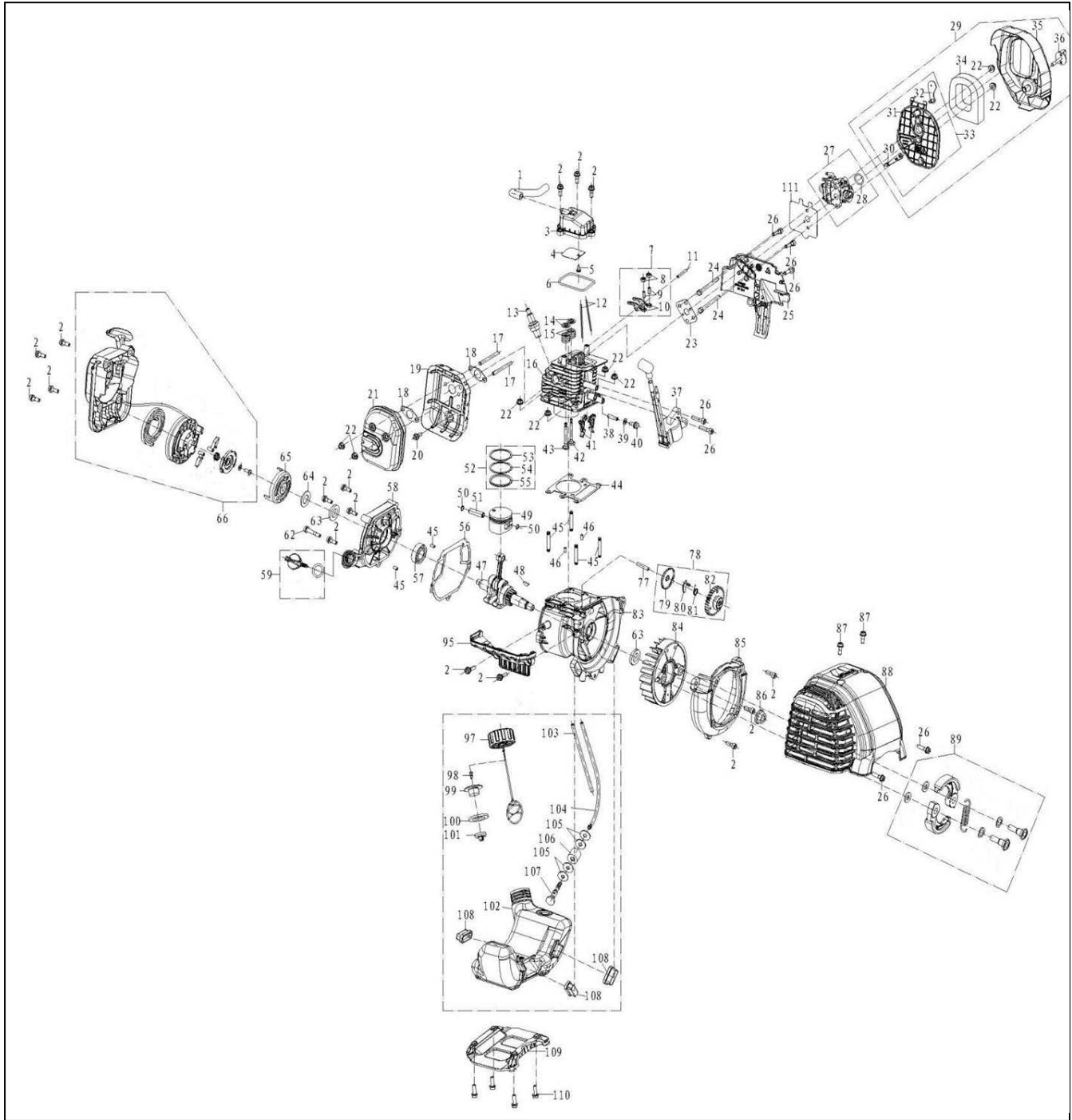
1. Replace the spark plug with new one of recommended type.
2. Clean air filter.
3. Check the entire unit for loose screws, nuts, and bolts. Replace any damaged, broken, or worn parts.
4. At the beginning of the next season, use only fresh fuel.

## TROUBLESHOOTING

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
Engine fails to start	Engine ON/OFF switch is off.	Engage ON/OFF switch.
	Spark plug wire disconnected.	Connect spark plug wire.
	Fuel tank empty or stale fuel.	Fill tank with clean, fresh gasoline.
	Engine not primed.	Press primer bulb.
	Faulty spark plug.	Clean, adjust gap, or replace.
	Blocked fuel line.	Clean fuel line.
	Engine flooded.	Wait a few minutes to restart, do not prime.
Engine runs erratic.	Spark plug wire loose.	Connect and tighten spark plug wire.
	Blocked fuel line or stale fuel.	Clean fuel line. Fill tank with clean, fresh gasoline.
	Water or dirt in fuel system.	Drain fuel tank. Refill with fresh fuel.
	Dirty air filter	Please refer to engine manual.
Engine overheats.	Engine oil level low.	Fill crankcase with proper oil.
	Air flow restricted.	Clean area around and on top of engine.
Idles poorly.	Spark plug fouled, faulty, or gap too wide.	Reset gap or replace spark plug.
	Dirty air cleaner.	Please refer to engine manual.
Excessive vibration/noise	Blade loose or unbalanced.	Tighten and balance blade.
	Bent/damaged blade.	See an authorized service dealer.

# EXPLODED VIEW AND PARTS LIST

Engine exploded view

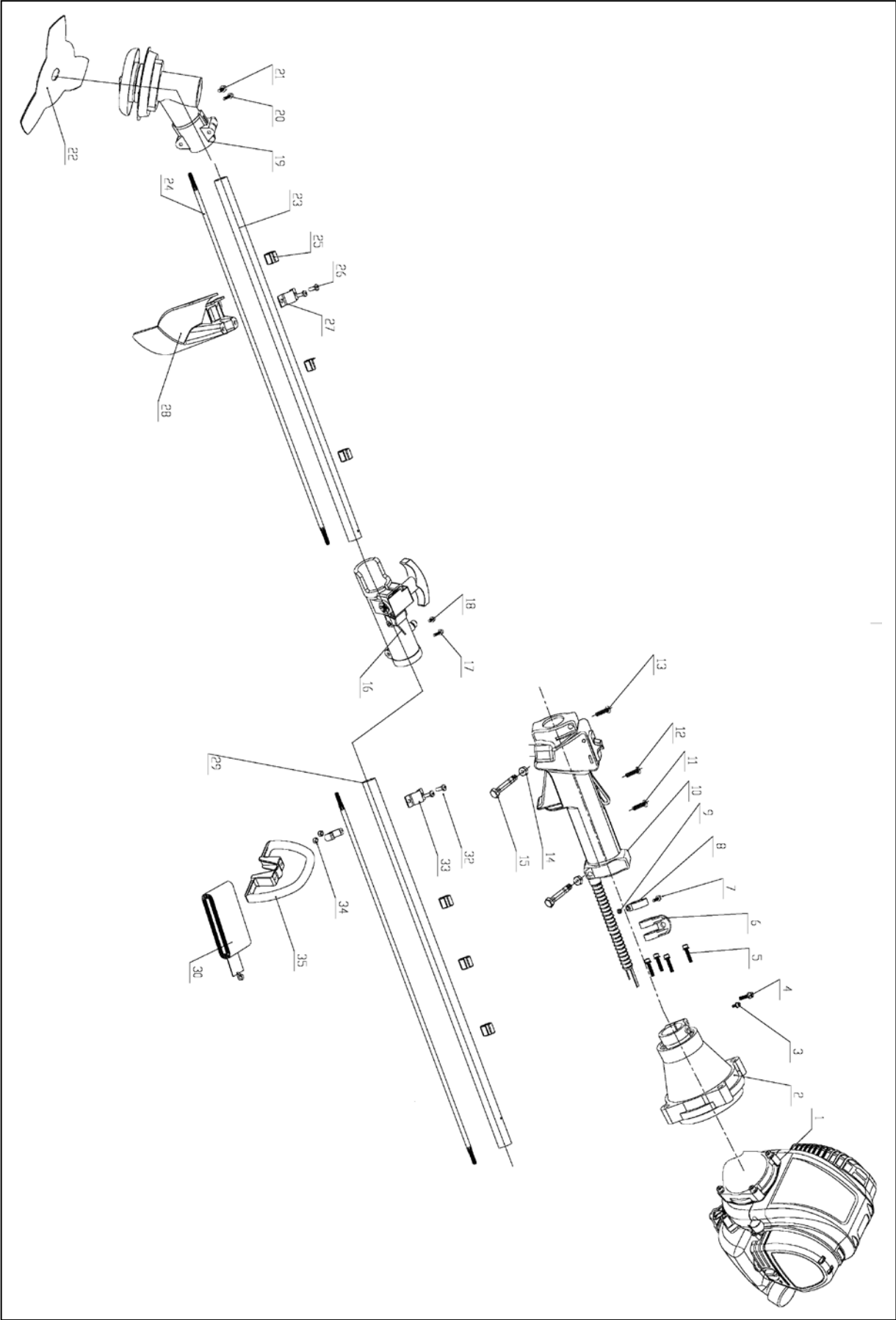


## Engine parts list

Item	Stock #	Description	Qty
1	100002804	Breather Hose	1
2	100010417-0001	Screw M5×15	16
3	100002301	Valve Cover	1
4	100002788	Oil Block	1
5	100011001-0001	Screw ST4.2×10	1
6	100010128	Valve Cover Gasket	1
7	100004416	Rocker Arm Assembly	2
8	100004487	Lock Nut	2
9	100030648	Adjust Nut	2
10	100004463	Upper Rocker Arm	2
11	100004481	Pin	1
12	100004387	Push Rod	2
13	100009371	Spark Plug	1
14	100004577	Valve Spring Seat	2
15	100004560	Valve Spring	2
16	100002362	Cylinder Head	1
17	100010383-0001	Stud M5×54	2
18	100006544	Muffler Gasket A	2
19	100006547	Muffler Gasket B	1
20	100010420-0001	Screw M5×10	1
21	100006155	Muffler	1
22	100011451-0002	Nut M5	8
23	100005549	Insulator Gasket A	1
24	100011146-0001	Bolt M5×55	2
25	100005583	Insulator	1
26	100010418-0001	Screw M5×20	5
27	100005165	Carburetor	1
28	100005663	O-Ring	1
29	100004627-0002	Air Filter Assembly	1
30	100005791	Choke Lever	1
31	100004963	Air Filter Base	1
32	100005711	Choke Plate	1
33	100051870	Air Filter Base	1
34	100004804	Air Filter Element	1
35	100004823	Air Filter Cover	1
36	100004957	Bolt	1
37	100009184	Ignition Module	1
38	100004483	Pin	1
39	100010539	Washer 6	1
40	100011528-0003	Bolt M6×10	1
41	100004464	Lower Rocker Arm	2
42	100004517	Intake Valve	1
43	100004540	Exhaust Valve	1
44	100010190	Cylinder Head Gasket	1
45	100010403-0001	Stud M5×30	4
46	100010542	Pin 4×8	4
47	100003412	Connecting Rod	1

Item	Stock #	Description	Qty
48	100010576	Woodruff Key	1
49	100003055	Piston	1
50	100003218	Circlip	2
51	100003112	Piston Pin	1
52	100003227	Piston Ring Set	1
53	100003134	Piston Ring 1st	1
54	100003176	Piston Ring 2nd	1
55	100030448	Oil Ring	1
56	100010135	Crankcase Gasket	1
57	100010668	Bearing 6002	1
58	100002919	Crankcase Cover	1
59	100004096-0001	Dipstick Assembly	1
62	100010419-0001	Screw M5×28	1
63	100017615	Oil Seal 15×26×5	2
64	100010911-0003	Washer 8	1
65	100007541	Starter Cup	1
66	100007181-0002	Recoil Starter Assembly	1
77	100004350	Camshaft Pin	1
78	100004273	Camshaft	1
79	100004352	Camshaft Cover	1
80	100004373	Release Valve	1
81	100004382	Return Spring	1
82	100004329	Drive Timing Gear	1
83	100002590	Crankcase	1
84	100009481	Flywheel	1
85	100007070	Flywheel Cover	1
86	100011456-0002	Nut M10×1.25	1
87	100010422-0001	Screw M5×13.5	2
88	100007165-0002	Shroud	1
89	100007741	Clutch Assembly	1
95	100006570-0001	Muffler Plate	1
97	100008744	Fuel Cap	1
98	100008815	Plug	1
99	100031375	Fuel Cap Cover	1
100	100008793	Fuel Cap Gasket	1
101	100021457	Plug	1
102	100008538	Fuel Tank	1
103	100017667	Fuel Hose 2.5×5.3×230	1
104	100017668	Fuel Hose 2.5×5.3×270	1
105	100010813	Washer 5	4
106	100009032	Float Filter	1
107	100009031	Float	1
108	100008927	Damping Pad	3
109	100008661	Fuel Tank Guard	1
110	100010417-0001	Screw M5×15	4
111	100030031	Insulator Gasket B	1

Brush cutter exploded view



Brush cutter parts list

Item	Stock #	Description	Qty
1	303190256	31cc 4 Stroke Engine	1
2	202310001	Connector Component	1
3	303020553	Screw M5x12	1
4	303020554	Screw M6x30	1
5	303020554	Screw M6x30	4
6	302100009	Strap Hanging Ring	1
7	303020555	Screw M5x25	1
8	302100010	Fixed Ring	1
9	303030120	Nut M5	1
10	202110046	Straight Handle Component	1
11	303010330	Screw ST4.2x15	3
12	303010331	Screw ST2.5x20	2
13	303010330	Screw ST4.2x15	1
14	303030030	Nylon Locknut M5	2
15	303020110	Screw M5x20	2
16	202310002	Middle Connector Component	1
17	303020555	Screw M5x25	1

Item	Stock #	Description	Qty
18	303020553	Screw M5x12	1
19	202260002	Gear Box Component	1
20	303020555	Screw M5x25	2
21	303020553	Screw M5x12	1
22	303071039	Blade	1
23	303080492	Upper Handle	1
24	303170012	Transmission Shaft	2
25	303060134	Bush	6
26	303020084	Screw M6x16	2
27	303071040	Bracket	1
28	203050391	Blade Shield	1
29	303080493	Lower Handle	1
30	302120038	Strap	1
32	303020084	Screw M6x16	2
33	303071042	Bracket	2
34	303030032	Nylon Locknut M6	2
35	203010822	Handlebar	1

## **TWO (2) YEARS LIMITED WARRANTY**

PowerSmart is committed to building equipment that will provide years of dependable service. Our warranties are consistent with our commitment and dedication to quality.

### **TWO (2) YEARS LIMITED WARRANTY OF POWER SMART PRODUCTS FOR HOME USE.**

PowerSmart ("Seller") warrants to the original purchaser only, that all PowerSmart consumer power tools will be free from defects in material or workmanship for a period of two (2) years from date of purchase. If the tool(s) is used while providing professional or commercial services, the warranty coverage shall be for a maximum of (90) days.

**SELLER'S SOLE OBLIGATION AND YOUR EXCLUSIVE REMEDY** under this Two (2) Years Limited Warranty and, to the extent permitted by law, any warranty or condition implied by law, shall be the repair or replacement of parts, without charge, which are defective in material or workmanship and which have not been misused, carelessly handled, or improperly repaired, by person(s) other than an Authorized Seller or Service Center.

Please be aware that normal wear parts are not covered this warranty. This includes drive belts, blades and grass bags. **Carburetor issues, and/or other damage found to be the result of stale, contaminated or compromised fuel, are not covered under this limited warranty.**

To make a claim under this Limited Warranty, you must return the entire power tool product; transportation prepaid, to PowerSmart. The owner must include a legible copy of the original receipt, which shall list the date of purchase, along with the company's name where the product was purchased.

**THIS LIMITED WARRANTY DOES NOT APPLY TO ANY ACCESSORY ITEMS INCLUDED WITH THE TOOL SUCH AS CIRCULAR SAW BLADES OTHER RELATED ITEMS OR TO ANY REPLACEMENT PARTS LISTED UNDER MAINTENANCE.**

**ANY IMPLIED WARRANTIES SHALL BE LIMITED IN DURATION TO TWO (2) YEARS FROM DATE OF PURCHASE. SOME STATES IN THE U.S. AND SOME CANADIAN PROVINCES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.**

**IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING BUT NOT LIMITED TO LIABILITY FOR LOSS OF PROFITS) ARISING FROM THE SALE OR USE OF THIS PRODUCT. SOME STATES IN THE U.S. AND SOME CANADIAN PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

**THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE IN THE U.S., PROVINCE TO PROVINCE IN CANADA AND FROM COUNTRY TO COUNTRY.**

For questions, comments, technical assistance or to order repair parts

Please call toll free at: 1-800-791-9458 (M-F 9am – 5pm EST)

Email: [support@amerisuninc.com](mailto:support@amerisuninc.com)

**PLEASE SAVE ALL OF YOUR ORIGINAL RECEIPTS. THIS WARRANTY IS VOID WITHOUT THEM.**