

# POWERSMART<sup>®</sup>

## INSTRUCTION MANUAL

**EN 21" 3-in-1 Gas Push Lawn Mower**

Model # DB2194PR



**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**

21" 3-in-1 Gas Push Lawn Mower	Model # DB2194PR
Engine type:	4 Stroke, OHV, single cylinder with forced air-cooling system
Displacement:	170cc
Fuel tank capacity:	0.40 Gallon
Oil capacity:	16.9 fl.oz
Cutting width:	20.5 inch
Cutting height:	1.18 – 3 inch
Height adjustment:	5 Position
Drive type:	Push
Grass catcher capacity:	1.4 Bushels
Wheel:	Front: 7 inch / Rear: 8 inch
Package dimensions (L x W x H):	33.3 x 22.6 x 16 inches
Weight:	60 lb.

## **INTRODUCTION**

Thank You for Purchasing a PowerSmart® Product. This manual provides information regarding the safe operation and maintenance of this product. Every effort has been made to ensure the accuracy of the information 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 lawn mower.



This manual contains special messages to bring attention to potential safety concerns, lawn mower 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 Dept. 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 lawn mower, read and observe all warnings, cautions, and instructions on the lawn mower 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 before using the engine.



### **DANGER: CARBON MONOXIDE**

Using an 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 CO. But even if you cannot smell the exhaust, you could be breathing CO.

**NEVER** use an engine inside homes, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up in these areas. Using a fan, or opening windows and/or doors will **NOT** properly vent CO nor supply adequate fresh air. **ONLY** use an engine outside and far away from 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 and carburetor bowl before storing or transporting the engine.

**WARNING:** This engine produces heat when running. Temperatures near exhaust can exceed 150<sup>0</sup>F (65<sup>0</sup> 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.

# **IMPORTANT SAFETY INSTRUCTIONS**

This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

## **I. General Operation**

1. Read, understand, and follow instructions and warnings in this manual and on the machine, engine and attachments.
2. Only allow operators, who are responsible, trained, familiar with the instructions, and physically capable to operate the machine.
3. Do not carry passengers and keep bystanders away.
4. Do not operate the machine while under the influence of alcohol or drugs.
5. Follow the manufacturer's recommendation for wheel weights or counterweights.

## **II. PREPARATION BEFORE OPERATING**

1. Clear the operating area of any objects which could be thrown by or interfere with operation of the machine
2. Keep the area of operation clear of all bystanders, particularly small children. Stop the machine and attachment(s) if anyone enters the area.
3. Do not operate the machine without the entire grass catcher, discharge chute, or other safety devices in place and functioning properly. Check frequently for signs of wear or deterioration and replace as needed.
4. Wear appropriate personal protective equipment such as safety glasses, hearing protection, and footwear.

## **III. OPERATING**

1. Only operate the engine in well ventilated areas. Exhaust gases contain carbon monoxide, a deadly poison.
2. Only operate the machine in daylight or good artificial light.
3. Avoid holes, ruts, bumps, rocks, or other hidden hazards. Uneven terrain could overturn the machine, or cause operator to lose their balance or footing.
4. Do not put hands or feet near rotating parts or under the machine. Keep clear of the discharge opening at all times.
5. Do not direct discharge material toward anyone. Avoid discharging material against a wall or obstruction. Material may ricochet back toward the operator. Stop the blade(s) when crossing gravel surfaces.
6. Do not leave a running machine unattended. Always park on level ground, disengage the attachment, set parking brake, and stop engine.
7. Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.

## **IV. CHILDREN SPECIFIC**

1. Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. Never assume that children will remain where you last saw them.
2. Keep children out of the operating area and under the watchful care of a responsible adult other than the operator.

## **V. SLOPE SPECIFIC**

**Slopes are a major factor related to accidents. Operation on slopes requires extra caution.**

1. Travel in the manufacturer recommended direction on slopes. Use caution while operating near drop offs.
2. Avoid mowing wet grass. (Poor footing could cause a slip and fall accident.)
3. Do not operate machine under any condition where traction, steering, or stability is in question. Tires could slide even if the wheels are stopped.
4. Always keep the machine in gear when going down slopes. Do not coast downhill.
5. Avoid starting and stopping on slopes. Avoid making sudden changes in speed or direction. Make turns slowly and gradually.
6. Use extra care while operating machine with a grass catcher or other attachment(s). They can affect the stability of the machine.

## **VI. FIRE AND FUEL SPECIFIC**

1. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
2. Use only an approved fuel container.
3. Do not remove fuel cap or add fuel with the engine running or while hot.
4. Do not refuel indoors or in enclosed spaces
5. Do not store the machine or fuel container, or refuel, where there is an open flame, spark, or pilot light such as on a water heater or other appliance.
6. If fuel is spilled, do not attempt to start the engine and avoid creating any source of ignition until fuel vapors have dissipated.
7. To help prevent fires: keep machine free of grass, leaves, or other debris build up; clean up oil or fuel spillage and remove any fuel soaked debris; allow machine to cool before storing.
8. Use extra care in handling gasoline and other fuels. They are flammable and vapors are explosive.

## **VII. HAULING**

1. Use full width ramps for loading and unloading a machine for transport.

## **VIII. SERVICE**

1. Keep machine in good working order. Replace worn or damaged parts.
2. Use caution when servicing blades. Wrap the blade(s) or wear gloves. Replace damaged blades. Do not repair or alter blade(s)
3. Machines with hydraulic pumps, hoses, or motors; and/or diesel injection systems:  
WARNING: Fluid escaping under pressure may have sufficient force to penetrate skin and cause serious injury. If fluid is injected into the skin, seek immediate medical attention. Keep body and hands away from pin holes or nozzles that eject fluid under high pressure. If a leak occurs, have the machine immediately serviced by a trained technician.
4. If equipped, disconnect spark plug wire(s) before making any repairs.

## WARNING LABEL INSTRUCTIONS

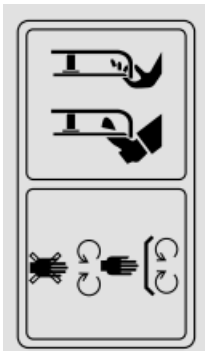


Read carefully the manual before use.



Danger-flying objects;  
keep safe distance from the machine as long as the engine is running.

Do not open or remove safety shields while engine is running.



Pay more attention to the operator's hands and feet to avoid injury

Do not open or remove safety shields while engine is running.



Fuel is flammable,keep fire away.  
Never fill up the fuel tank while the engine is running.



Emission of toxic gas, do not use the mower in a close area or not well ventilated.



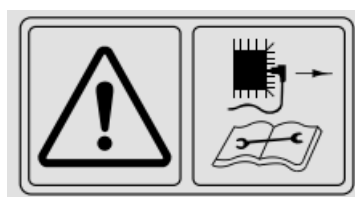


Look behind while backing

Steep slope hazard



When mowing, please wear the glasses and earplugs to defend the operator himself



When repairing, please pull off the spark plug boot, then repair it according to the operational manual



Hot surfaces



Keep bystanders away.

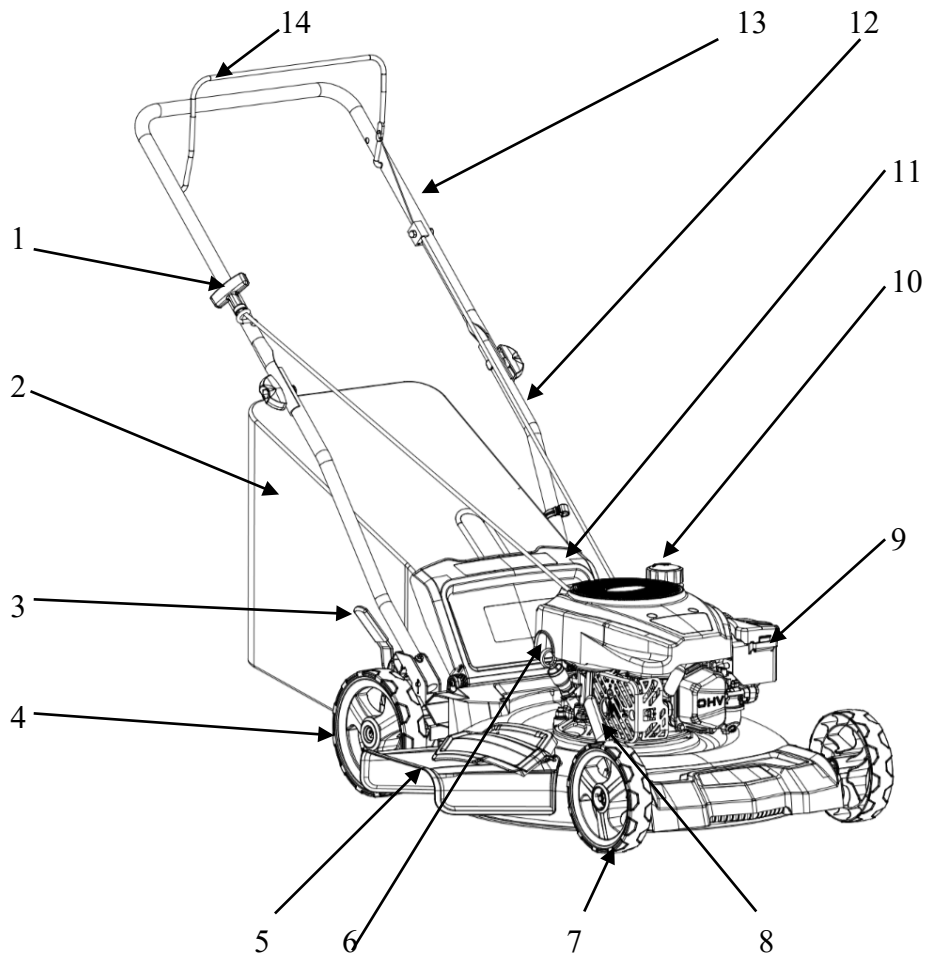


Safety label found on the lawn mower:  
KEEP HANDS AND FEET AWAY.

**Warning:** Keep the safety signs clear and visible on the equipment. Replace the safety signs if they are missing or illegible.

## KNOWING YOUR LAWN MOWER

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



- |   |                                 |    |                                 |
|---|---------------------------------|----|---------------------------------|
| 1 | Recoil starter handle           | 8  | Cutting height adjustment lever |
| 2 | Grass catcher                   | 9  | Primer bulb                     |
| 3 | Cutting height adjustment lever | 10 | Fuel tank cap                   |
| 4 | Rear wheel                      | 11 | Rear discharge door             |
| 5 | Side discharge chute            | 12 | Lower handle                    |
| 6 | Oil dipstick                    | 13 | Upper handle                    |
| 7 | Front wheel                     | 14 | Engine start/stop control       |

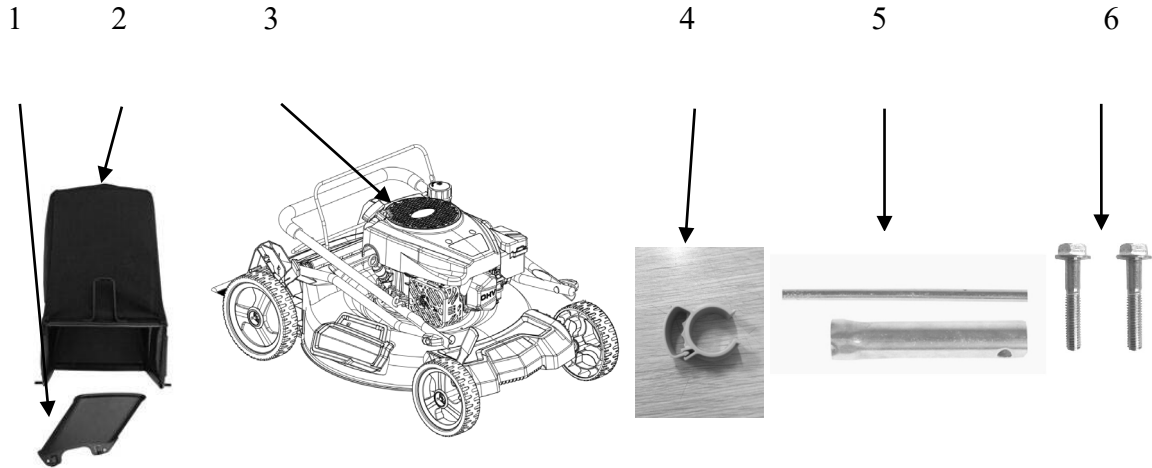
# **LAWN MOWER PREPARATION**

The following section describes steps necessary to prepare the lawn mower for 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 lawn mower or shorten its lifespan.

## **UNPACKING**

Tools required (not included): #2PH screwdriver, utility knife.

Unpack the lawn mower and all its parts, and compare against the list below. Do not discard the carton or any packaging until the engine is completely assembled.

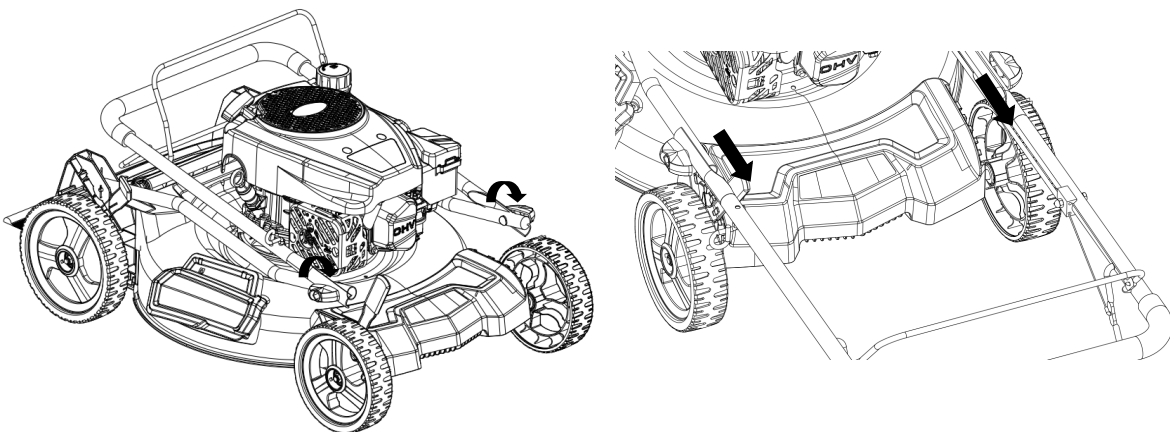


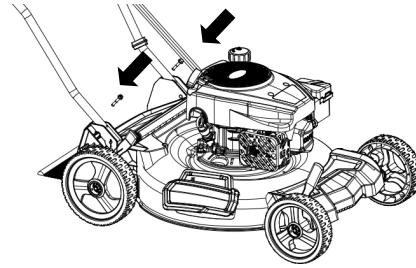
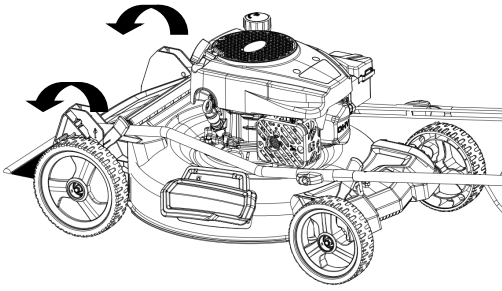
- 1 Side discharge chute
- 2 Grass catcher
- 3 Lawn mower with folding handle

- 4 Cable clip
- 5 Spark plug wrench
- 6 Flange bolts M6 (2)

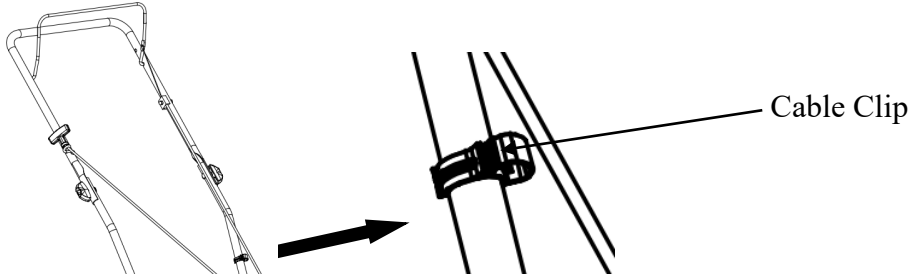
## **ATTACH LOWER & UPPER HANDLE**

1. Loosen two knobs and turn the folded upper tube to match the lower tube, and tighten the knob.
2. Turn the lower tube to an angle that matches the base and tighten with two screws. (Two screws are in the accessories bag.)



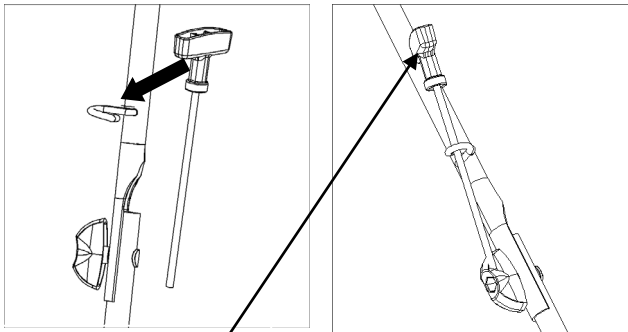


3. Lock the cable to the lower handle using cable clip.

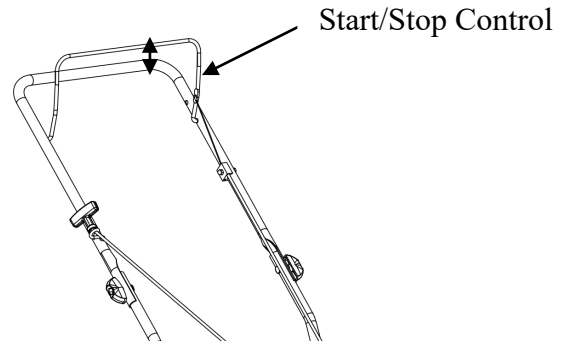


Cable Clip

4. Insert the recoil starter handle cable into the hook provided on the upper handle. You must engage the start/stop control to release the recoil starter handle.



Recoil starter handle

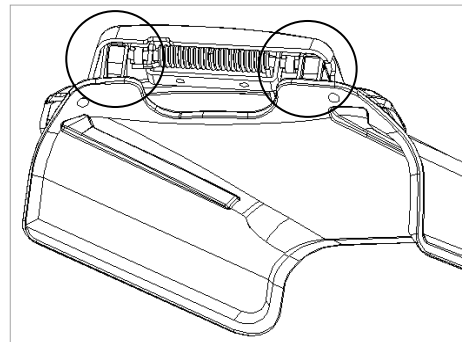
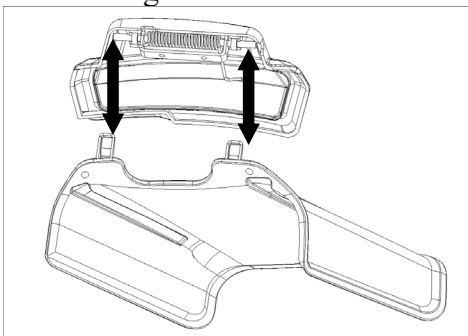


Start/Stop Control

### SIDE DISCHARGE CHUTE

To convert mower for side discharge, the grass catcher has been removed and that the rear discharge door is closed.

1. Lift the spring-loaded discharge cover located on the side of the mower.
2. Slide two hooks of the side discharge chute under the hinge pin and lower the spring on the side discharge cover.



**Caution:** Do not attempt to remove the permanently mounted spring loaded side discharge cover at any time.

## GRASS CATCHER

### Attach grass catcher

1. Lift mower rear discharge door.
2. Place grass catcher into the slots in the handle brackets.
3. Release the rear discharge door so that it rests on the grass catcher.

## ADJUSTING THE CUTTING HEIGHT



**Warning!** Cutting height adjustments should only be performed after the engine and blades have come to a complete stop!

It is always best to begin cutting your lawn with a higher deck height to prevent scalping your lawn.

The cutting height is adjusted with front and rear levers.

Actuate the adjustment lever and pull it to the required position. Please make sure that the lever locks into same position.

## OPERATION

### GAS AND OIL FILL-UP

The engine comes shipped without oil or gasoline. Be sure to add oil and gasoline before starting the engine.

1. Add oil before starting mower for the first time.
2. Service the engine with gasoline as instructed.



**Warning:** Use extreme care when handling gasoline. Gasoline is extremely flammable and its vapors are explosive. Never fuel the machine indoors or while the engine is hot or running. Extinguish all cigarettes, cigars, pipes and other potential sources of ignition.

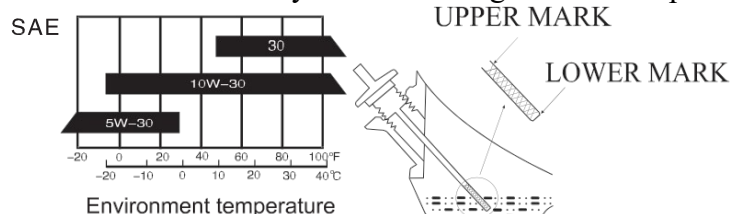
### Engine Oil

Engine oil is a key factor in deciding the engines performance. Do not apply engine oil with additives or 2-stroke gasoline engine oil, because they haven't enough lubrication, and may shorten the engines service life.



**Check the engine with it stopped on a level ground.**  
Engine oil recommended: 10W-30

As viscosity varies with regions and temperatures, SF class oil is recommended.

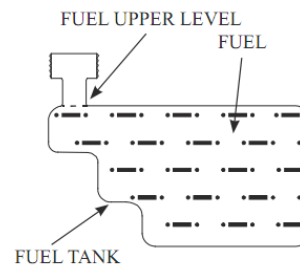


### Check method

1. Remove the dipstick and Clean it.
2. Reinsert the dipstick into the oil filling hole without screwing check oil lever.
3. If the oil level is too low, add the recommended engine oil up to the oil upper level.
4. Reinstall the dipstick.

## Adding Gasoline

1. Remove the fuel tank cap and check fuel level.
2. If the level is too low, refuel the tank, remember adding fuel not over the fuel upper level.



### Warning:

1. Gasoline is extremely flammable and is explosive under certain conditions.
2. Refueling in a well-ventilation area with the engine stopped. Do not smoke and allow flames or sparks in the area where gasoline is stored or where the fuel tank is refueled.
3. Do not overfill the fuel tank (there should be no fuel in the filling neck). After refueling, make sure the fuel tank cap is set back securely.
4. Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
5. Avoid repeated or prolonged contact with skin or breathing of fuel vapor. Keep out of reach of children.

Use fresh (within 30 days from purchase), lead-free gasoline with a minimum of 87 octane rating. Do not mix oil with gasoline.

To add gasoline, follow these steps:

1. Make sure the lawn mower is on a level surface.
2. Unscrew fuel tank 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 0.40 gallons.

**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.

### IMPORTANT:

- Never use an oil/gasoline mixture.
- Never use old gasoline.
- Avoid getting dirt or water into the fuel tank.
- Gasoline can age in the tank and make starting difficult. Never store lawn mower for extended periods of time with fuel in the tank or the carburetor.

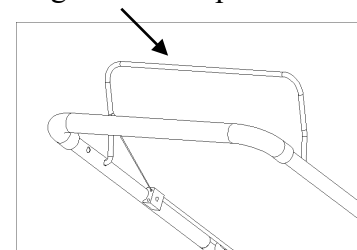
## ENGINE START/STOP CONTROL

This lawn mower comes equipped with an engine start/stop control to prevent unintentional starting and to ensure safe operation. Releasing this lever will quickly stop the blade in case of danger. The lever must be actuated before the lawn mower is started. When the engine start/stop lever is released, it must return to its initial position.

Before you start mowing, you should run through this process several times in order to ensure that the lever and actuator cables are working properly.

Repeat the test several times after the engine has started up. When the engine start/stop Control is released, the engine must stop within a few seconds. If not, contact Customer Service.

Engine start/stop Control



**Warning:** The blade begins to rotate as soon as the engine is started.

## **START THE ENGINE**

To start the engine, perform the following steps:

1. Check the oil and fuel levels.
2. Press the primer bulb 3 times.
3. Engage the engine Start/Stop Control and simultaneously pull on the recoil starter. Pull on the recoil starter handle slowly until a slight resistance is felt, then pull quickly to start the engine. Return cord gently into the recoil starter. Never allow the cord to snap back.
4. If engine fails to start, repeat step 3.

**NOTE:** After repeated failed attempts to start the engine, please consult the troubleshooting guide before attempting again. If problems persist, please call customer service.

**NOTE:** Don't allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

## **STOP THE ENGINE**

Release the engine start/stop control to stop the engine.

## **MOWING**

The engine throttle on your mower has been preset to provide optimum bagging and mulching performance for years to come.

Only use a sharp blade that is in good condition. This will prevent the grass blades from becoming frayed and the lawn from turning yellow.

Mow in straight lines for a nice, clean look. The swaths should overlap each other by a few inches in order to avoid stripes.

It's important to keep the underside of the mower deck clean and remove grass build-up. This buildup will decrease mulching quality, and make it harder for the equipment to bag the grass.

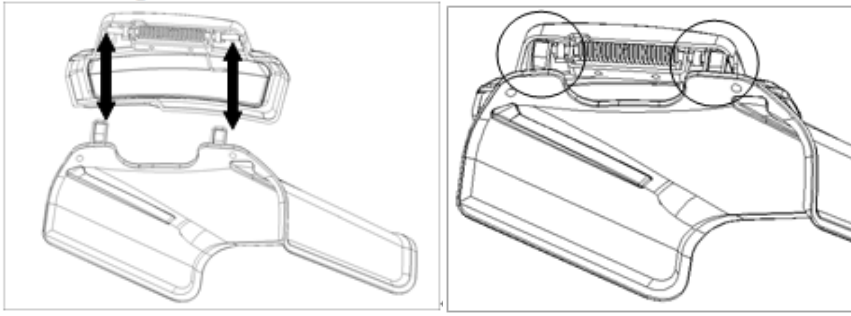
Always mow along inclines (not up and down). You can prevent the lawn mower from slipping down by holding a position at an angle upwards. Select the cutting height according to the length of the grass. If necessary, mow a number of times so that you never cut more than 2 inches of grass in one go.

Turn off the engine before doing any checks on the blade. Keep in mind that the blade continues to rotate for a few seconds after the engine has been turned off. Never attempt to manually stop the blade. Regularly check to see if the blade is securely attached, is in good condition and is sharp. If the contrary is the case, sharpen the blade or replace it. In the event that the blade strikes an object, immediately turn off the lawn mower and wait for the blade to come to a complete stop. Then inspect the condition of the blade and the blade mount. Replace any parts that are damaged.

## **USING AS SIDE DISCHARGE**

You should close the rear cover with mulching adapter in order to use the side discharge.

1. On the side of the mower, lift the side discharge cover.
2. Slide two hooks of side discharge chute under hinge pin on the side discharge cover. Lower the side discharge cover.



**Caution:** Do not remove side discharge cover at any time.

### **USING AS A REAR BAGGER**

To use the grass catcher to collect clippings while you are operating the mower.

1. Attached grass catcher following instruction in the lawn mower preparation. Grass clippings will automatically collect in bag as you run the mower. Operate mower until grass catcher is full.
2. Stop engine completely by releasing the engine start/stop lever. Make sure that the engine has come to a complete stop.
3. Lift rear discharge door and pull grass catcher up and away from the mower to remove the grass catcher. Dispose of the grass clippings and reinstall the grass catcher when complete.



**Warning:** If you strike a foreign object, stop the engine. Remove spark plug wire, thoroughly inspect mower for any damage, and repair damage before restarting and operating. Excessive vibration of the mower during operation is an indication of damage. The mower should be promptly inspected and repaired.

## **MAINTENANCE**

Proper routine maintenance of this mower will help prolong the life of the machine.

Always observe safety rules when performing any maintenance.

The warranty on this lawn mower does not cover items that have been subjected to operator abuse or negligence. To receive full value from warranty, operator must maintain the lawn mower as instructed here.

Changing of engine-governed speed will void engine warranty.

All adjustments should be checked at least once each season.

Periodically check all fasteners and make sure these are tight.



**Warning:** Always stop engine, allow engine to cool, disconnect spark plug wire before performing any type of maintenance on your machine.

### **DECK CARE**

It is important to clean underside of the mower deck after use to prevent the build-up of grass clippings or other debris. Follow steps below for proper cleaning.

1. Allow the engine to run until it is out of fuel. Do not attempt to pour fuel from the engine.
2. Disconnect spark plug wire.
3. Slowly tip mower so that it rests on the housing.
4. To prevent oil spills, always tip the mower so that the Air Filter is facing up.
5. Hold mower firmly and scrape and clean the underside of the deck with a suitable tool.
6. Gently lower the mower back on its wheels on the ground.

**Warning:** Never tip the mower more than 90° in any direction and do not leave the mower tipped for any length of time. Oil can drain into the upper part of the engine causing a starting problem.



## MOWER BLADE

To ensure safe operation, have all blade sharpening, balancing and mounting work carried out by an authorized service center. To achieve optimal results, we recommend having the blade checked once a year.

If, in spite of all caution, the blade comes into contact with an obstacle, switch off the engine immediately and pull off the spark plug connector. Tilt the lawn mower to the rear and check the blade for damage. Always keep the side with the air cleaner facing up. Damaged or bent blades must be replaced. Never straighten a bent blade. Never work with bent or heavily worn blades as this will result in vibrations, causing further damage to the mower.



**Warning:** Risk of injury when working with a damaged blade.

## CHECKING THE OIL

The oil capacity of the engine crankcase is 16.9 fl. oz.

Check the oil level of the engine according to the Recommended Maintenance Schedule.

The lawn mower should be checked before each use for proper oil level. This is a critical step for proper engine starting.

To check the oil level:

1. Remove the dipstick and clean it.
2. Reinsert the dipstick into the Oil filling hole without screwing it and check Oil level.
3. If the Oil level is too low, add the recommended engine oil up to the oil upper lever.
4. Reinstall oil dipstick.

## CHANGING/ADDING OIL

Change the oil according to the Recommended Maintenance Schedule. Change the oil when the engine is warm. This will allow for complete drainage. Change oil more often if operating under heavy load or high ambient temperatures. It is also necessary to drain the oil from the crankcase if it has become contaminated with water or dirt. The oil capacity of the engine is 16.9 fl.oz. Add oil when the oil level is low. For proper type and weight of oil refer to “GAS AND OIL FILL-UP” portion of the “OPERATION” section.

**To refill the crankcase with oil, follow these steps:**

1. Make sure the lawn mower is on a level surface. Tilting the lawn mower to assist in filling will cause oil to flow into engine areas and will cause damage. Keep lawn mower level!
2. Remove the dipstick from the engine.
3. Using a funnel or appropriate dispenser, add the correct amount of oil (16.9 fl.oz) into the crankcase.
4. Reinstall dipstick.

**NOTE:** Never dispose of used motor oil in the trash or down a drain. Please call a local recycling center or auto garage to arrange oil disposal.

## AIR CLEANER MAINTENANCE

Routine maintenance of the air cleaner helps maintain proper airflow to the carburetor. Occasionally check that the air cleaner is free of excessive dirt. Refer to Recommended Maintenance Schedule. For air cleaner detail:

1. Open the air cleaner cover.
2. Remove the sponge-like element from the casing.
3. Wipe the dirt from inside the empty air cleaner casing.
4. Wash the sponge-like element in household detergent and warm water. Small amount of oil in the element is normal and necessary for the engine to work properly.

5. If necessary, replace the paper element.
  6. Reinstall the sponge-like element in the air cleaner casing and reinstall the cover.
- CAUTION:** running the engine with dirty, damaged or missing air cleaner element will cause the engine to wear out prematurely.

### SPARK PLUG MAINTENANCE

The spark plug is important for proper engine operation. A good spark plug should be intact, free of deposits, and properly gapped. Refer to Recommended Maintenance Schedule. To inspect the spark plug:

1. Remove spark plug boot. Be careful not to tear insulation or wire.
2. Unscrew the spark plug from the engine using the spark plug wrench provided. There is limited space for the wrench to turn. Use both rows of holes in the spark plug wrench to gain leverage to loosen the plug.
3. Visually inspect the spark plug for cracks or excessive electrode wear. Replace as necessary.
4. Measure the plug gap with a wire gauge. The gap should be 0.7 to 0.8 mm (0.028-0.031 in).
5. If re-using the spark plug, use a wire brush to clean any dirt from around the spark plug base then re-gap the spark plug.
6. Screw the spark plug back into the spark plug hole using the spark plug wrench. Do not over-tighten spark plug. Recommended tightening of spark plug is ½ to ¾ of a turn after spark plug gasket contacts spark plug hole. Reinstall the spark plug boot.

### MAINTENANCE SCHEDULE

Item	Action	Before each use	5 Hours of use or first month	First 25 hours of use	50 hours of use or every 6 months	100 hours of use or every year	150 hours of use or every two years
Blade	Inspect	x					
Blade mounting bolt	Inspect	x					
Engine oil	Check	x					
	Change		x		x <sup>2</sup>	x	x
Air filter	Check	x					
	Clean			x <sup>1</sup>	x <sup>1</sup>	x <sup>1</sup>	
	Replace						x
Grass bag	Check	x					
Blade control operation	Check	x				x	
Spark plug	Check					x	
	Replace						x
Fuel tank	Clean					x	
Flywheel brake pad	Check					x	
Valve clearance	Check-adjust					x	
Fuel line	Check	Check every 2 years and replace if necessary					

1. Service more frequently when used in dusty areas.
2. Change engine oil every 25 hours when used under heavy load or in high outside air temperatures.

## **STORAGE**

**CAUTION:** Never place any type of storage cover or tarp on the MOWER while it is still hot.

If the MOWER is being stored for extended periods of time (30 days or more), drain fuel tank and carburetor bowl.

When storing the mower for extended periods of time:

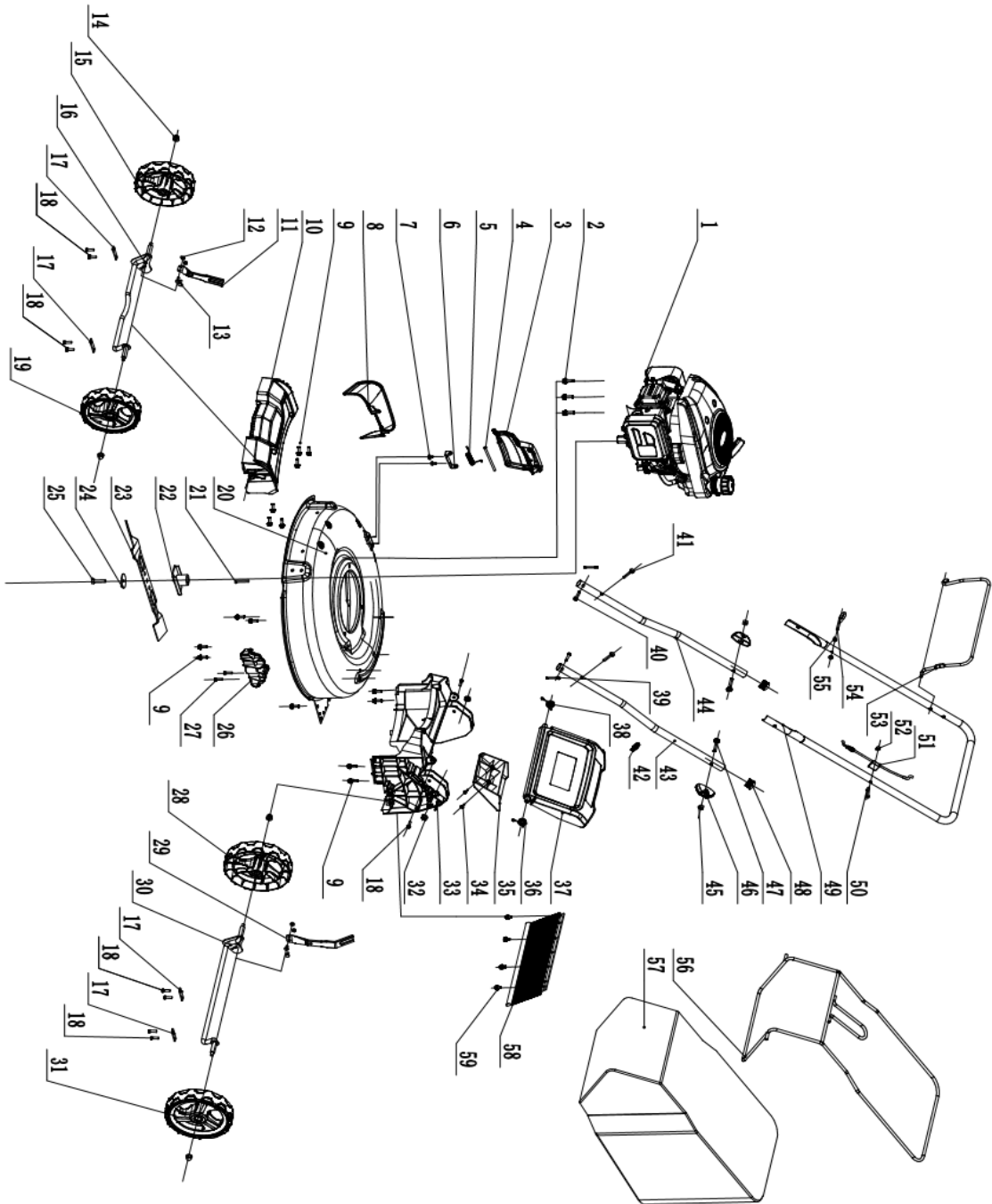
1. Start the engine and run it until the tank, carburetor bowl and fuel line are completely empty and the engine stalls.
2. Change the oil after each season.
3. Remove the spark plug. Use an oil-can to fill the cylinder with approx. 2 ml of oil. Slowly pull back the starter handle, which will bathe the cylinder wall with oil. Screw the spark plug back in.
4. Clean the cooling fins of the cylinder and the housing.
5. Be sure to clean the entire equipment to protect the paint.
6. Store the equipment in a well-ventilated place.

**NOTE: LIMITED WARRANTY does not cover fuel system damage or engine performance problems resulting from neglected storage preparation.**

## **TROUBLESHOOTING**

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
Engine fails to start	Engine start/stop lever disengaged.	Engage engine start/stop lever.
	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 runs erratic.	Engine flooded.	Wait a few minutes to restart, do not prime.
	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. Drain carburetor bowl.
	Water or dirt in fuel system.	Drain fuel tank. Refill with fresh fuel.
Engine overheats.	Dirty air filter	Clean or replace the filter.
	Engine oil level low.	Fill crankcase with proper oil.
Idles poorly.	Air flow restricted.	Clean area around and on top of engine.
	Spark plug fouled, faulty, or gap too wide.	Reset gap or replace spark plug.
Excessive vibration/noise	Dirty air cleaner.	Clean or replace the filter.
	Blade loose or unbalanced.	Tighten and balance blade.
Mower will not mulch grass.	Bent/damaged blade.	Replace the blade.
	Wet grass.	Do not mow when grass is wet, wait until dry to cut.
Uneven cut.	Excessively high grass.	Mow once at a high cutting height, then mow again at desired height or make a narrower cutting path.
	Dull blade.	Sharpen or replace blade.

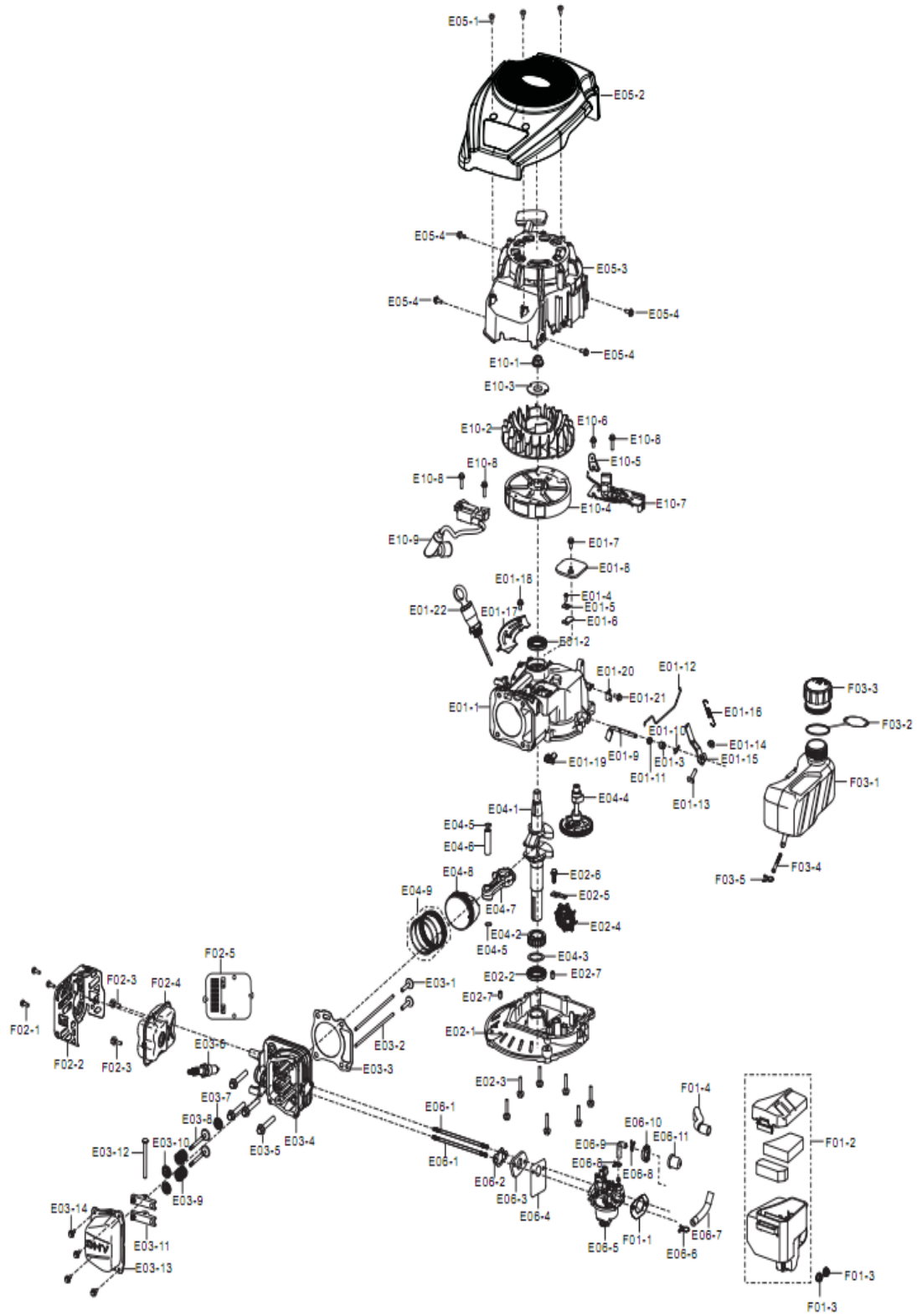
# EXPLODED VIEW AND PARTS LIST



Item	Stock#	Description	Qty
1	303190312	Engine	1
2	303020241	Bolt M8x25	3
3	203050381	Side discharge deflector	1
4	303090066A	Spring pin shaft	1
5	303130335	Torsional spring	1
6	303160456	Side discharge bracket	1
7	303020468	Screw M6x10	2
8	203050382A	Side discharge chute	1
9	303010353	Screw ST8x20	15
10	203050399B	Front cover	1
11	303071058	Front adjustment spring leaf assembly	1
12	303030032	Nylon locknut M6	4
13	303020339	Screw M6x14	4
14	303030077	Flange nylon nut M8	4
15	203050384	7 inch Right wheel	1
16	303180934	Front axle seaming	1
17	303071034	Axle keeper	4
18	303010216	Screw ST6.3x20	10
19	203050385	7 inch Left wheel	1
20	303071357	21 inch Steel deck	1
21	303110030	Key 4.7x40	1
22	303180808	Blade connector	1
23	303071037	21 inch Blade	1
24	303043023A	Butterfly washer	1
25	303020626	Bolt	1
26	203021335	Plastic windshield	1
27	303010332	Screw ST6.3*16	1
28	203050386	8 inch Right wheel	1
29	303071059	Rear axle seaming	1
30	303180938A	Rear axle welded	1

Item	Stock#	Description	Qty
31	203050387	8 inch Left wheel	1
32	303030087	Lock nut M6	1
33	203050388B	Rear base	1
34	203050389	Rear plug cover	1
35	303010095	Screw ST4.2×14mm	2
36	303130336	Rear axle sleeve	1
37	203050390A	Rear base	1
38	303130337	Rear cover torsional Spring right	1
39	303160807	Flat Head Pin shaft M6x35	2
40	303121005	Cotter Pin	2
41	303020558	Screw M6*35	2
42	203050519	Clip	1
43	303080488C	Lower handle L	1
44	303080503C	Lower handle R	1
45	303030026	Nut M8	2
46	203020336A	Knob	2
47	303020140	T-screw M8x50	2
48	302060012	Plug	2
49	303080489A	Upper handle	1
50	303020308	Screw M6x30	1
51	302080049	Brake cable	1
52	303030025	Cap nut M6	2
53	303080490	Cutting control bar	1
54	303160531A	Hook	1
55	303030065	Nut M6	1
56	303080491	Collection Bag Support	1
57	302120048	Collection Bag	1
58	302080050A	Plastic barrier	1
59	303010351	Screw ST6.3*14	4

# ENGINE EXPLODE VIEW AND PART LIST



Item	Stock #	Description	Qty
E01-1	11310-Z3C0110-00A0	CRANKCASE SUBASSEMBLY.	1
E01-2	90682-Z240110-0000	SEAL, OIL	1
E01-3	90682-Z030210-0000	SEAL, OIL	1
E01-4	90103-0410-51	SCREW	1
E01-5	11321-Z2P0110-0000	PIECE, BREATH	1
E01-6	11337-Z2P0110-0000	LIMIT BOARD	1
E01-7	90007-0512-A1	BOLT	1
E01-8	11333-Z2P0110-0000	PLATE, BREATH GROOVE COVER	1
E01-9	16061-Z2P0110-00A0	ARM, GOVERNOR	1
E01-10	90501-Z010110-0000	PIN	1
E01-11	90412-Z870210-0000	WASHER, FLAT	1
E01-12	16062-Z2P0110-0000	ROD, GOVERNEOR	1
E01-13	16072-Z010110-0000	BOLT, GOVERNOR SUPPORT	1
E01-14	90305-0600-31	NUT	1
E01-15	16070-Z2P0110-0000	SUPPORT SUBASSEMBLY, GOVERNOR	1
E01-16	16063-Z2P0110-0000	SPRING, GOVERNOR	1
E01-17	19308-Z2P0110-0000	SHIELD, CRANKCASE SIDE	1
E01-18	90007-0512-A1	BOLT	1
E01-19	11340-Z2P0110-0000	Return oil block assembly	1
E01-20	16561-Z2P0110-0000	PLATE SUBASSEMBLY, THROTTLE CONTROL BOTTOM	1
E01-21	90007-0512-A1	BOLT	1
E01-22	15010-Z2P0310-Q200	DIPSTICK, OIL	1
E02-1	11411-Z2P0110-00A0	COVER, CRANKCASE	1
E02-2	90682-Z030320-0000	SEAL, OIL	1
E02-3	90001-0630-01	BOLT	7
E02-4	16400-Z2P0111-00A0	GEAR ASSY, GOVERNOR	1
E02-5	16013-Z030120-0000	PLATE, GOVERNOR SPINDLE COMPRESSION	1
E02-6	90001-0616-01	BOLT	1
E02-7	90502-0812-00	PIN	2
E03-1	14081-Z2P0110-00A0	TAPPET, VALVE	2
E03-2	14071-Z2P0110-00A0	LIFTER, VALVE	2
E03-3	12131-Z3C0110-00A0	GASKET, CYLINDER HEAD	1
E03-4	12140-Z3C0110-00A0	HEAD SUBASSEMBLY, CYLINDER	1
E03-5	90001-0850-01	BOLT	4
E03-6	30010-Z120110-00A0	PLUG, SPARK	1
E03-7	12101-Z810210-00A0	GUIDE, SEAL	1
E03-8	12110-Z3C0110-00A0	VALVES SET	2
E03-9	12103-Z030110-0000	SPRING, VALVE	2
E03-10	12112-Z010110-00A0	SEAT, VALVE SPRING	2
E03-11	14310-Z2P0110-00A0	ROCKER SUBASSEMBLY, VALVE	2
E03-12	14330-Z2P0110-00A0	SHAFT, VALVE ROCKER	1
E03-13	12411-Z2P0110-0000	COVER, CYLINDER HEAD	1
E03-14	90007-0512-A1	BOLT	4
E04-1	13300-Z3C0910-00A0	CRANKSHAFT ASSY.	1
E04-2	14014-Z2P0210-00A0	GEAR, TIMING DRIVE	1

Item	Stock #	Description	Qty
E04-3	90408-Z030210-0000	WASHER, FLAT	1
E04-4	14200-Z2P0110-00A0	CAMSHAFT ASSY.	1
E04-5	13122-Z240110-00A0	CLIP, PISTON PIN	2
E04-6	13121-Z240110-00A0	PIN, PISTON	1
E04-7	13010-Z2P0110-00A0	ROD, CONNECTING	1
E04-8	13111-Z3C0110-00A0	PISTON	1
E04-9	13200-Z870110-00A0	RING ASSY, PISTON	1
E05-1	90107-0516-01	SCREW	3
E05-2	80001-Z2P0210-RC00	HOUSING, ENGINE	1
E05-3	28200-Z2P0310-Q200	STARTER ASSY, RECOIL	1
E05-4	90007-0516-A1	BOLT	4
E06-1	90204-Z010210-0100	BOLT	1
E06-2	17002-Z2P0110-00A0	GASKET, INLET	1
E06-3	16003-Z2P0110-00A0	PLATE, CARBURETOR INSULATOR	1
E06-4	16004-Z2P0110-00A0	GASKET, INSULATOR PLATE	1
E06-5	16100-Z3C0210-00A0	CARBURETOR ASSY.	1
E06-6	90685-1000-01	CLAMP	1
E06-7	90686-Z2P0110-0000	TUBE, FUEL	1
E06-8	90685-0700-01	CLAMP	2
E06-9	16211-Z2P0110-0000	TUBE, STARTING RICHED VALVE	1
E06-10	16212-Z2P0110-0000	SEAT, STARTING RICHED VALVE	1
E06-11	16213-Z2P0110-0000	VALVE BODY, STARTING RICHED	1
E10-1	13501-Z010110-00A0	NUT, FLYWHEEL	1
E10-2	19352-Z2P0110-00A0	IMPELLER	1
E10-3	28020-Z2P0110-0000	SEAT, STARTER CUP	1
E10-4	13510-Z2P0110-00A0	FLYWHEEL SUBASSEMBLY	1
E10-5	30029-Z2P0110-0000	LUG, SHROUD	1
E10-6	90007-0516-A1	BOLT	1
E10-7	45200-Z2P0110-JS00	BRAKE ASSY.	1
E10-8	90007-0520-A1	BOLT	3
E10-9	30400-Z2P0110-0000	COIL, IGNITION	1
F01-1	17001-Z2P0110-00A0	GASKET, AIR CLEANER	1
F01-2	17100-Z2P0110-0000	CLEANER, AIR	1
F01-3	90305-0600-31	NUT	2
F01-4	17004-Z2P0110-0000	TUBE, BREATHER	1
F02-1	90107-0413-03	BOLT	3
F02-2	18130-Z2P0210-0000	COVER, MUFFLER OUTER	1
F02-3	90001-0616-01	BOLT	2
F02-4	18100-Z2P0210-0000	MUFFLER ASSY.	1
F02-5	18020-Z2P0110-00A0	PLATE, MUFFLER INSULATOR	1
F03-1	16600-Z2P0110-Q2A9	TANK ASSY, FUEL	1
F03-2	16744-Z620120-0000	TANK CAP CHAIN	1
F03-3	16730-Z620210-LKD0	COVER, FUEL TANK	1
F03-4	16652-Z030110-00A0	STRAINER, FUEL	1
F03-5	90685-1000-01	CLAMP	1

## **THREE (3) 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.

### **THREE (3) 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 three (3) 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 Three (3) 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, is 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 THREE (3) 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.**

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.**