



21" SELF-PROPELLED MOWERS

922106

21" KAW ZONE START
S/N 0534 thru Present

922107

21" KAW BLADE BRAKE CLUTCH
S/N 0363 thru Present



MAN 4174839
Rev. B 01-2018



www.bobcatturf.com

OPERATOR'S / PARTS MANUAL

CALIFORNIA PROPOSITION 65



WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.



ADVERTENCIA: Cáncer y Daño Reproductivo - www.65Warnings.ca.gov.



WARNING

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



ADVERTENCIA

El estado de California hace saber que los gases de escape de este producto contienen productos químicos que producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.

IMPORTANT!

It is a violation of California Public Resource Code Section 4442 or 4443 to use or operate the engine on any forest-covered, brush-covered or grass-covered land unless the engine is equipped with a spark arrestor, as defined in Section 4442, maintained in effective working order or the engine is constructed, equipped, and maintained for the prevention of fire.

To acquire a spark arrestor for your unit, see your Engine Service Dealer.

Please refer to the engine manufacturer's information included with the machine.

Labeled power ratings are supplied by the engine manufacturer in accordance with SAE testing and gross/net power rating standards (J1940, J1995, J1349).

21" MOWER

IMPORTANT MESSAGE

Thank you for purchasing this Schiller Grounds Care, Inc. product. You have purchased a world class mowing product, one of the best designed and built anywhere.

This machine comes with an Operator's/Parts Manual., Parts Manual. The useful life and good service you receive from this machine depends to a large extent on how well you read and understand these manuals. Treat your machine properly, lubricate and adjust it as instructed, and it will give you many years of reliable service.

Your safe use of this Schiller Grounds Care, Inc. product is one of our prime design objectives. Many safety features are built in, but we also rely on your good sense and care to achieve accident-free operation. For best protection, study the manuals thoroughly. Learn the proper operation of all controls. Observe all safety precautions. Follow all instructions and warnings completely. Do not remove or defeat any safety features. Make sure those who operate this machine are as well informed and careful in its use as you are.

See a Schiller Grounds Care, Inc. dealer for any service or parts needed. Schiller Grounds Care, Inc. service ensures that you continue to receive the best results possible from Schiller Grounds Care, Inc. products. You can trust Schiller Grounds Care, Inc. replacement parts because they are manufactured with the same high precision and quality as the original parts.

Schiller Grounds Care, Inc. designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this machine only as directed in the manuals, keep it in good repair and follow safety warnings and instructions. You'll always be glad you did.

Schiller Grounds Care, Inc.
One Bob Cat Lane
Johnson Creek, WI 53038-0469

TABLE OF CONTENTS	FIGURES	PAGE
SAFETY.....		2-7
LABELS.....		8-9
CONTROLS.....		10-11
ASSEMBLY AND SET-UP		12
OPERATION.....		13-16
ADJUSTMENTS		17
MAINTENANCE RECORD & CHART		18
MAINTENANCE		19-25
BELT REPLACEMENT		26
CLEANING		27
STORAGE		28
TROUBLESHOOTING		29
SPECIFICATION		30
PARTS SECTION.....		31
922107 ENGINE & TRANSMISSION ASSY.....	FIGURE 1.....	32
922106 ENGINE & TRANSMISSION ASSY.....	FIGURE 2.....	33
922107 & 922106 WHEEL & AXLE ASSY.....	FIGURE 3.....	34-35
922107 & 922106 MOWER DECK ASSY.....	FIGURE 4.....	36-37
922107 HANDLE ASSY.....	FIGURE 5.....	38
922106 HANDLE ASSY.....	FIGURE 6.....	39
DECALS	FIGURE 7.....	40

NOTICE !!!

Unauthorized modifications may present **extreme** safety hazards to operators and bystanders and could also result in product damage.

Schiller Grounds Care, Inc. strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Schiller Grounds Care, Inc. Engineering Department. Any Schiller Grounds Care, Inc. product that is altered, modified or changed in any manner not specifically authorized after original manufacture-including the addition of "after-market" accessories or component parts not specifically approved by Schiller grounds Care, Inc. -will result in the Schiller Grounds Care, Inc. Warranty being voided.

Any and all liability for personal injury and/or property damage caused by any unauthorized modifications, add-on accessories or products not approved by Schiller Grounds Care, Inc. will be considered the responsibility of the individual(s) or company designing and/or making such changes. Schiller Grounds Care, Inc. will vigorously pursue full indemnification and costs from any party responsible for such unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.



This Operator's Manual should be regarded as part of the machine. Suppliers of both new and second-hand machines must make sure that this manual is provided with the machine.

**¡LEA EL INSTRUCTIVO!**

Si no lee Ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad.

**SCHILLER GROUNDS CARE**

Model
XXXXXXX

Serial Number
XXXXXXXXXXXX

Schiller Grounds Care, Inc.
One Bobcat Lane
Johnson Creek, WI 53038



This symbol means:
ATTENTION!
BECOME ALERT!

Your safety and the safety of others is involved.

Signal word definitions:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to Schiller Grounds Care, Inc. machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices or property damage.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage

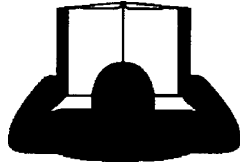
MODEL NUMBER: This number appears on sales literature, technical manuals and price lists.

SERIAL NUMBER: This number appears only on your mower. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information. Located mower deck.

21" MOWER

PREPARING FOR SAFE OPERATION**Operator preparation and training****Read the Operation & Safety Manual**

- If an operator or mechanic cannot read, it is the owner's responsibility to explain this material to them. If any portion of this material is unclear, contact your dealer representative for clarification.



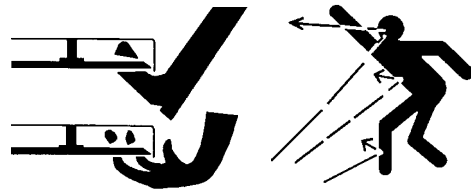
- Become familiar with the safe operation of the equipment, operator controls and safety signs. Be prepared to stop the engine quickly in an emergency. Do not operate or allow another person to operate this machine if there are any questions about safety.
- All operators and mechanics should be trained. The owner is responsible for training the users.
- Wear appropriate clothing, including long trousers, substantial shoes and safety goggles or safety glasses with side shields when operating mower. Do not operate barefoot or wearing open sandals. Long hair, loose clothing or jewelry may get tangled in moving parts. Put up long hair; do not wear loose clothing, jewelry or accessories.

CAUTION

This machine produces sound levels in excess of 85dBA at the operator's ear. Extended periods of exposure can cause hearing loss.

- Wear hearing protection.
- Never allow children, unskilled or improperly trained people to operate this equipment. Local regulations can restrict the age of the operator.
- Only adults and mature teenagers should operate a mower. Mature teenagers should have adult supervision. Be sure a teenager:
 1. Has read and understands the operator manual and understands the risks involved;
 2. Is sufficiently mature to use caution; and
 3. Is of sufficient size and weight to operate the controls comfortably and to manage the mower without taking risks.

- Keep warning labels and this operator's manual legible and intact. Replacement labels and manuals are available from the factory.
- Do not operate machine while under the influence of drugs, alcohol or any other condition of impairment.
- The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property.

WARNING

All rotary lawn mowers are potentially dangerous. They can amputate hands and feet and throw objects. Failure to follow these safety and operating instructions could result in serious injury or death.

Site preparation and circumstances

- Evaluate the terrain to determine how to safely perform the job. Only use accessories and attachments approved by the manufacturer.
- Clear the area to be mowed of objects such as rocks, toys, wire or other debris that may be picked up or thrown by the mower.
- Be sure the area is clear of pets and people, especially young children. Never assume they will remain where you last saw them. Stop the machine if any enter the area.
- Operate only in daylight or in good artificial light.
- Do not mow wet grass.
- Lightning can cause severe injury or death. If lightning is seen or thunder is heard in the area, seek shelter. Do not operate the machine.

MACHINE OPERATION

- Do not tamper with or defeat safety devices. Keep guards, shields and interlock safety devices in place and in proper working condition. They are for your protection.
- Keep all fasteners such as nuts, bolts and pins well secured.
- Visually inspect blades, blade bolts and the reel assembly for wear or damage. Replace worn or damaged blades and bolts.
- Verify that machine and attachments, if any, are in good operating condition.
- Do not engage blades until ready to mow.
- Grass catcher components are subject to wear, damage and deterioration which could expose moving parts or allow objects to be thrown.

FUELING

- Gasoline can be extremely flammable; gasoline vapors are explosive. Use extra care when handling. A fire or explosion from gasoline can burn you or others and /or cause property damage.
- When fueling, refueling or checking fuel level:
 - Do it before starting the engine. Do not remove the fuel tank cap or add fuel while the engine is running.
 - If the engine has been running, stop the engine and allow to cool for several minutes;
 - Do not smoke, stay away from open flames or other possible ignition sources;
 - Refuel outdoors, do not refuel in an enclosed trailer or building;
 - Use a funnel;
 - Do not overfill. Fill to the bottom of the filler neck. The empty space allows for expansion. Overfilling may result in fuel leakage or damage to the engine or emissions system;
 - If fuel is spilled, do not attempt to start the engine until the spill is cleaned up and vapors have cleared.
 - Replace caps on fuel containers and tanks securely.
 - Do not operate without the entire exhaust system in place and in good working condition.



Under certain conditions, static electricity can cause sparks during fueling and start fires or cause explosions. Flowing fuel can generate static electricity. To prevent static electricity sparks:

- Keep fuel containers electrically grounded.
- Do not fill containers in a vehicle or on a truck or trailer bed with a plastic liner. Fill containers on the ground away from the vehicle.
- When practical, remove petrol (gasoline) powered equipment from the truck or trailer and refuel it on the ground. If equipment must be refueled on the truck or trailer, refuel from a portable container rather than a dispenser nozzle.
- Keep the dispenser nozzle in contact with the rim of the fuel tank or container opening until fueling is complete. Do not use a nozzle lock-open device.
- Fill the fuel tank outdoors.
- Store fuel only in containers specifically designed for fuel.



Gasoline is harmful or fatal if swallowed. Long-term exposure to vapors has caused cancer in Laboratory animals.

- Avoid prolonged breathing of vapors.
- Keep face away from nozzle and gas tank/ container opening.
- Keep away from eyes and skin.
- Do not siphon by mouth

21" MOWER

OPERATING SAFELY

WARNING

Operating engine parts, especially the muffler, become extremely hot. Severe burns can result from contact. Debris such as grass clippings, leaves, brush, etc. can catch fire.

- Allow engine parts, especially the muffler, to cool before touching.
- Remove accumulated debris from engine and muffler area

WARNING

Engine exhaust contains carbon monoxide, which is an odorless gas that can kill you.

DO NOT run the engine indoors or in a small confined area where carbon monoxide fumes can collect.

Starting

- Start only according to instructions in this manual or on the machine.
- Never leave a machine unattended. Always turn off the blades and stop the engine before leaving the operator position.
- When starting the engine, make sure hands and feet are clear of the blades.
- Do not tilt the machine when starting.
- Do not change engine governor settings or overspeed the engine. Operating the engine at excessive speed can increase the hazard of personal injury.

Operation

- This mower was designed for use by one operator. Keep all others away during operation.
- Do not operate when people, especially children, or pets are in the area.
- Slow down and use caution when making turns and crossing roads and sidewalks.
- Stop blades when not mowing.
- Stop blades when crossing surfaces other than grass.

- Use extreme caution when reversing or pulling the mower towards you. Be sure the area behind is clear.
- Do not raise the deck while the engine is running.
- Do not mow with the discharge door raised unless there is a grass collector in place or a discharge chute designed for the purpose is in place.
- Never pick up or carry the machine while the engine is running.
- Do not attempt to make wheel height adjustments while the engine is running.
- Do not start the cutting blades until you are ready to start mowing.
- Walk, never run.
- Use care when approaching blind corners, shrubs, trees or other objects that may obscure vision.
- Keep clear of the discharge opening.
- Do not direct discharge towards others.
- Obey safety instructions. Failure to do so may cause injury to yourself and/or others.
- Never leave a machine unattended. Always turn off blades and stop engine before leaving the operator position.

Stopping

- Park the machine on level ground. Stop the engine and wait for all parts to stop moving. Disconnect the spark plug wire before:
 - Checking, cleaning or working on the mower.
 - After striking a foreign object or an abnormal vibration occurs. Inspect and make any necessary repairs before restarting and operating the mower.
 - Before clearing blockages or unclogging.
- Park the machine on level ground. Stop the engine and wait for all parts to stop moving.
 - Whenever you leave the mower.
 - Before refueling.
 - Before emptying the grass catcher.
 - Before making height adjustments.

MOWING SLOPES

Operating on wet grass or steep slopes can cause sliding and loss of control. Loss of control and/or loss of operator's footing could result in a fall with arm or leg getting under the mower deck. This may result in serious injury.

- Be sure of your footing on slopes..
- With walk-behind machines, always operate across slopes, **not** up and down. With ride-on machines, operate up and down slopes, **not** across, except zero turn machines.
- Be alert to dips and rises which change the general slope. Watch for holes, rocks and roots in the terrain and other hidden hazards. Keep away from drop offs. Avoid ground conditions which will cause the machine to slide. tall grass can hide hazards.
- Use extreme caution near water. Banks can give way without warning.
- Use lower speeds and exercise extreme caution on slopes and especially in sharp turns to prevent tipping and loss of control. use extra caution when changing direction on slopes.
- Progressively greater care is needed as the slope increases.
- Do not mow excessively steep slope.
- Do not mow slopes when the grass is wet.
- Grass catchers and other attachments can change the stability of the machine.
- If the operator is uncomfortable or unsure of the machines stability, operation on these slopes should cease immediately.
- The ultimate responsibility for safe operation on slopes rests with the operator.

TRANSPORT

- Use extra care when loading or unloading the machine into a trailer or truck.
- Use full width ramps.
- Tie the machine down securely.

MAINTENANCE AND STORAGE

- Maintain machine according to manufacturer's schedule and instructions for maximum safety and best results.
- Park machine on level ground.
- Never allow untrained personnel to service machine.
- Guards should only be removed by a qualified technician for maintenance or service. Replace guards when work is complete.
- Adjust or repair only after the engine has been stopped and the blades have quit rotating .
- Disconnect spark plug wire(s) before making any repairs.
- Replace parts if worn, damaged for faulty. For best results, always replace with parts recommended by the manufacturer.
- Do not dismantle the machine without releasing or restraining forces which may cause parts to move suddenly.
- Provide adequate support, e.g. jack stands for lifted machine or parts if working beneath.
- Do not put hands or feet near or under rotating parts.
- Clean up spilled oil or fuel thoroughly.
- Replace faulty mufflers.
- To reduce fire hazards, keep the engine, muffler, and fuel storage area free of grass, leaves, debris buildup or grease.
- Particular care must be taken when adjusting the carburetor while the engine is running. Keep hands and feet clear. Shut off PTO if possible.
- When working underneath lifted parts or machines, make sure adequate support is provided.
- Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
- Replace worn or damaged parts for safety.
- Use only replacement parts supplied by original manufacturer.
- Stop the engine and allow to cool before storing.
- Park machine on level ground.
- Never allow untrained personnel to service machine.

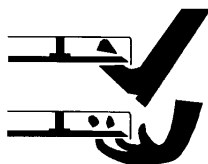
21" MOWER

FUEL



- Gasoline can be extremely flammable; gasoline vapors are explosive. Use extra care when handling. Gasoline vapors are heavier than air and can travel from the location of the container. A fire or explosion from gasoline can burn you or others and/or cause property damage:
- Do not store the machine and/or fuel container(s) in a space also containing heating appliances with an open flame such as a water heater or an appliance with a pilot light.
- Do not use tools such as grinders or torches in areas where fuel is kept.
- Keep petrol (gasoline) storage area free of grass, leaves and excessive grease to reduce fire hazard.
- Keep the machine and fuel containers in a locked storage place to prevent tampering and to keep children from playing with them.

BLADES



- Prevent injury due to rotating blades.
- Keep hands or feet from under or in the blade housing.
- Only replace blades. Never straighten or weld them.
- Keep other persons away from blades.



DANGER		WARNING	
	ROTATING BLADES <ul style="list-style-type: none"> - Keep hands and feet clear. - Stop engine, let blades stop. - Remove spark plug wire before accessing blades. 	THROWN OBJECTS <ul style="list-style-type: none"> - Do not lift or block door open with blade engaged. - Keep area clear of people and pets. - Remove objects blades may strike or throw. - Stop blades to cross gravel or paved areas. 	
		<p>Do not mow without catcher, side chute or mulch plug/plate in place.</p> <p style="text-align: right;">4175059</p>	

WARNING	
	AVOID SERIOUS INJURY OR DEATH: <ul style="list-style-type: none"> - Remove objects that could be thrown. - Do not allow children or untrained persons to operate. - Do not operate unless guards and shields are in place and working. - Do not operate when children or others are around. - Reel continues to rotate for a few seconds after bail is released. - Look behind while backing. - Mow across slopes, not up or down. Avoid steep slopes. <p style="text-align: right;">4175288</p>
BEFORE STARTING: <ul style="list-style-type: none"> - Read and understand the Operator Manual and labels. - Wear hearing and eye protection. - Replace labels and Operator Manual if lost or damaged. 	

21" MOWER



ADVERTENCIA

- Lea y entienda el manual del operador y las etiquetas.
 - Pide que alguien lea y explique el manual y las etiquetas a usted si usted no lee Inglés.
 - Use protección ocular y auditiva.
 - No haga funcionar sin los protectores en su lugar.
- Mantenga las manos, pies y ropa alejados de las piezas móviles.
- Pare el motor antes de dar servicio.
- La gente a más durante la operación.

4175297

SPEED



3



2



1



4175333

SPARK ARRESTOR WARNING

Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

4175289

OPERATOR PRESENCE CONTROL (A)

- The OPC Bail must be held down to operate the recoil starter and to allow the engine to run. Any time the engine is running, the blade will be spinning. When the bail is released, the engine and blade will stop.

TRACTION CONTROL BAIL (B) -

Pull the traction drive bail up to the handle to engage the self propel drive of the machine.

TRANSMISSION SHIFTER (C) -

Move the transmission shifter forward and rearward to change self-propel speeds. There are three speeds. Speed increases as the lever moves forward.

DISCHARGE DOOR (D) -

The discharge door may be raised to install/remove the grass collector or mulch plug. Stop the engine and wait for the blades to stop rotating before raising the discharge door.

PRIMER BULB (E) -

The engine is equipped with a primer bulb to aid starting. Push the bulb to prime the engine.

RECOIL STARTER ROPE (F) -

Pull the recoil starter rope to start the engine. After pulling the rope let the recoil pull the grip back to the guide.

WHEEL HEIGHT ADJUSTERS (G) -

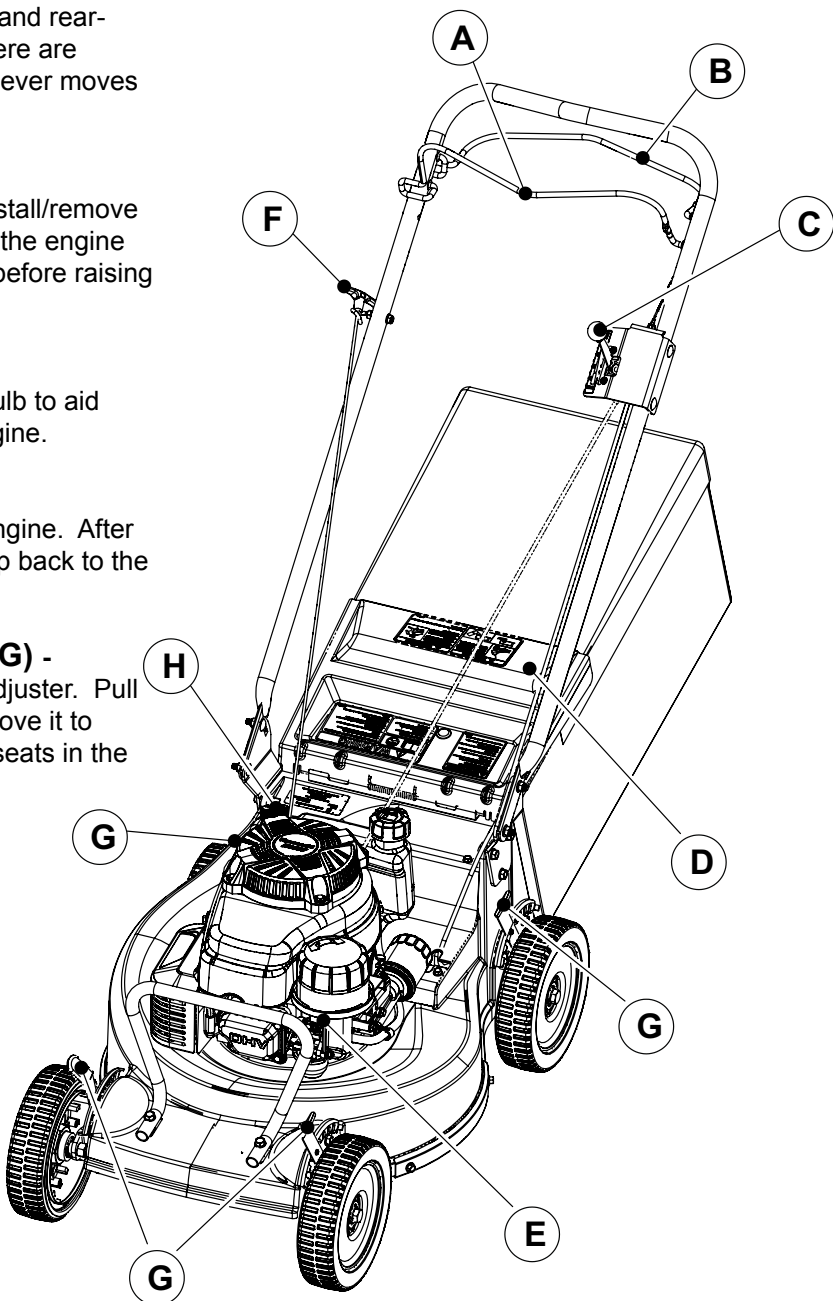
Each wheel is equipped with a height adjuster. Pull the lever away from the machine and move it to the desired height of cut. Make sure it seats in the desired groove.

OIL FILL/DIPSTICK (H) -

Used to check the oil level and add/fill oil.

With the engine off, clean around the oil cap. Unscrew the oil fill cap. Remove and wipe off the dipstick. Reinsert the dipstick until it seats (but do not screw it in). Pull the dipstick out and read the oil level. It should be between the add and full marks on the dipstick. Add oil if required. **DO NOT OVER FILL.**

(See Maintenance Section)



21" MOWER **CONTROLS-BLADE BRAKE CLUTCH(BBC) (922107)**

(BBC) BLADE CONTROL BAIL (A)(A1) -

The blade control bail (A) must be held down for the blade to run. When the bail is released, the blade stops. To start the blade, push down on latch (A1) to release the bail, then hold bail (A) against the handle to start blade. Release the bail to stop the blade.

TRACTION CONTROL BAIL (B) -

Pull the traction drive bail up to the handle to engage the self propel drive of the machine.

TRANSMISSION SHIFTER (C) -

Move the transmission shifter forward and rearward to change self-propel speeds. There are three speeds. Speed increases as the lever moves forward.

DISCHARGE DOOR (D) -

The discharge door may be raised to install/remove the grass collector or mulch plug. Stop the engine and wait for the blades to stop rotating before raising the discharge door.

THROTTLE/CHOKE (E) -

Push the lever all the way forward to engage the choke for engine starting. After the engine starts, move the lever back to the high idle position. To stop the engine, move the lever all the way to the rear.

RECOIL STARTER ROPE (F) -

Pull the recoil starter rope to start the engine. After pulling the rope let the recoil pull the grip back to the guide.

WHEEL HEIGHT ADJUSTERS (G) -

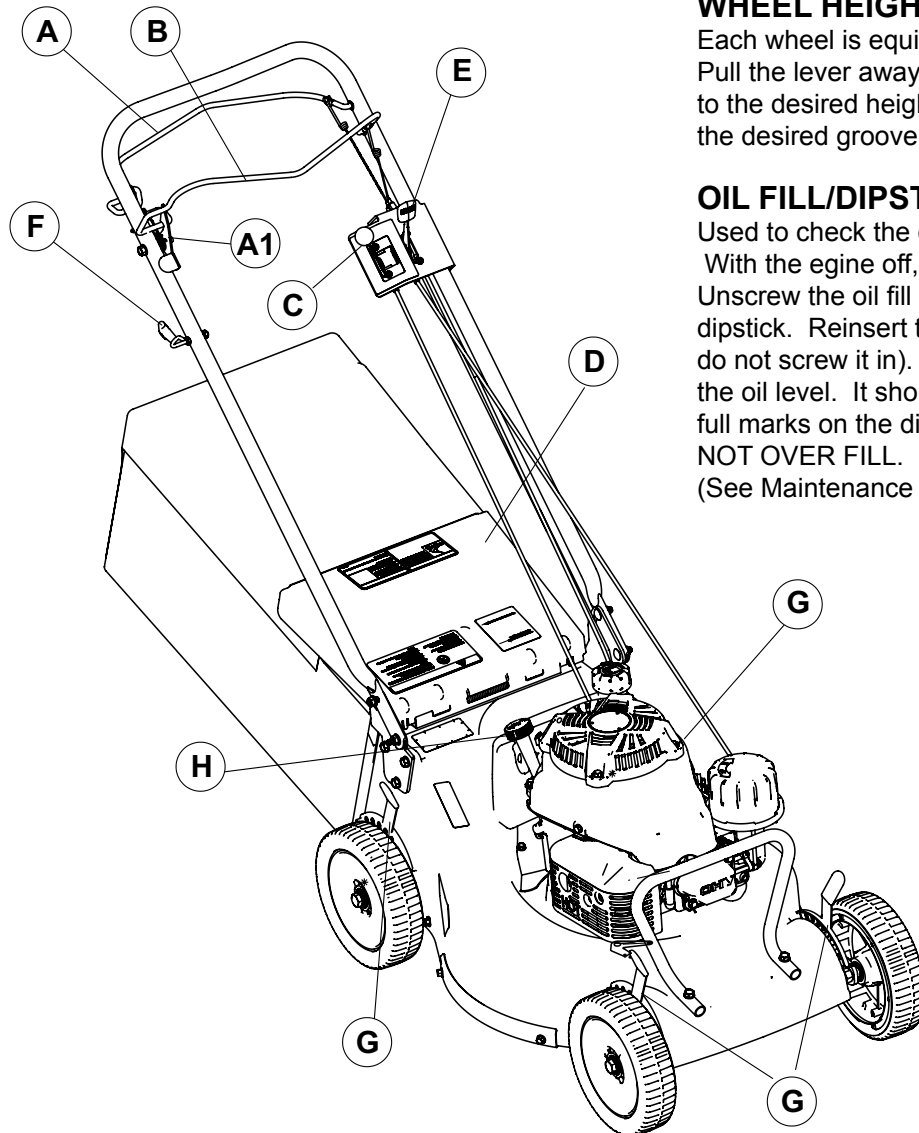
Each wheel is equipped with a height adjuster. Pull the lever away from the machine and move it to the desired height of cut. Make sure it seats in the desired groove.

OIL FILL/DIPSTICK (H) -

Used to check the oil level and add/fill oil.

With the engine off, clean around the oil cap. Unscrew the oil fill cap. Remove and wipe off the dipstick. Reinsert the dipstick until it seats (but do not screw it in). Pull the dipstick out and read the oil level. It should be between the add and full marks on the dipstick. Add oil if required. **DO NOT OVER FILL.**

(See Maintenance Section)



ASSEMBLY

1. Remove the machine from the packing materials. Cut down the corners of one end of the box and roll out the machine.
2. Rotate the handle and attach to the lower handle mounting brackets with four 5/16-18 x 1 carriage bolts **A** and four 5/16-18 nylon flange lock nuts **B**. Choose the most comfortable of the three handle height positions. Tighten the nuts securely. Secure the control cables along the left hand handle tube with the wire ties. **Figure 1**
BBC ONLY: Secure cable to RH handle tube wire ties.
3. Set the height of cut with the wheel height adjuster **C** to the desired level. **Figure 2**
4. The engine is filled with oil from the factory. Check the oil level. Add clean, fresh SAE 30 oil to the full line on the dipstick.
5. Fill the fuel tank with fresh clean regular graded unleaded gasoline. DO NOT use E-15 or E-85 fuel. Engine damage could result and will not be covered under warranty.

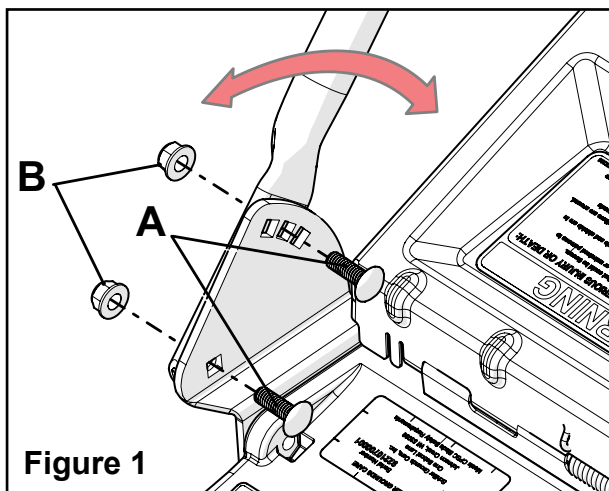


Figure 1

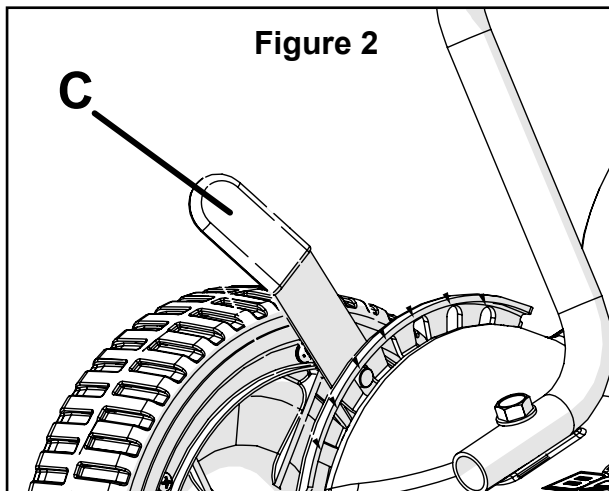


Figure 2

PRE-OPERATION CHECK LIST (OWNER'S RESPONSIBILITY)

- Review and follow all safety rules and safety label instructions.
- Check that all safety labels are installed and in good condition. Replace if missing or damaged.
- Check that all shields and guards are properly installed and in good condition. Be sure that the discharge door is installed. Repair or replace any missing or damaged guards and shields.
- Check that all hardware is properly installed and secured.
- Check that the engine is free of dirt and debris. Pay particular attention to the cooling fins, governor parts and muffler. Clean the cooling air intake. Check air cleaner; service if necessary.
- Visually check for loose or damaged parts and fasteners. Repair or replace before the unit is put in operation.
- Visually inspect the blade. Sharpen if necessary. See blade sharpening section.
- Inspect area to be mowed and remove stones, branches or other hard objects that might be thrown, causing injury or damage.
- Clean area around oil fill dipstick. Remove dipstick, wipe, and reinsert (but do not screw down). Remove again to be sure oil is in the operating range (between add and full marks on the dipstick). Add oil if necessary. **Do Not Overfill.** Install dipstick and secure. The dipstick must always be secured into fill tube when engine is running.

21" MOWER

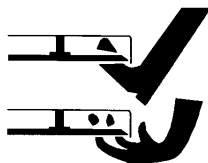
FUELING



- Gasoline can be extremely flammable; gasoline vapors are explosive. Use extra care when handling. A fire or explosion from gasoline can burn you or others and /or cause property damage.
- When fueling, refueling or checking fuel level:
 - Do it before starting the engine. Do not remove the fuel tank cap or add fuel while the engine is running.
 - If the engine has been running, stop the engine and allow to cool for several minutes;
 - Do not smoke, stay away from open flames or other possible ignition sources;
 - Refuel outdoors, do not refuel in an enclosed trailer or building;
 - Use a funnel;
 - Use only approved fuel containers;
 - Do not overfill. Fill to the bottom of the filler neck. The empty space allows for expansion. Overfilling may result in fuel leakage or damage to the engine or emissions system;
 - If fuel is spilled, do not attempt to start the engine until the spill is cleaned up and vapors have cleared.
 - Replace caps on fuel containers and tanks securely.
 - Do not operate without the entire exhaust system in place and in good working condition.

Fill the tank with good quality, clean unleaded gasoline. E10 is acceptable. DO NOT use E15 or E85. E15 or E85 can cause engine/fuel system damage which is not covered by warranty.

BLADES



- Prevent injury due to rotating blades.
- Keep hands or feet from under or in the blade housing.
- Keep other persons away from blades.

OPERATION



- DO NOT operate this mower until you have thoroughly read and understand the operation section of this manual.
- DO NOT operate without all guards and shields in place.
- DO NOT make any adjustments or perform any maintenance while the engine is running.
- DO NOT start or run the engine inside where exhaust fumes can collect. Carbon monoxide present in the exhaust is an odorless and deadly gas.

OPERATING TIPS

- Read the manual before operating the mower.
- Set the engine to the fast position (BBC).
- Maintain a sharp blade. (A sharp blade cuts easier and reduces the load on the engine. See Blade Sharpening Section
- Clean the air filter frequently. A dirty air filter make the engine work harder to get the air it needs and reduces the power.

STARTING THE ENGINE

1. Connect the spark plug wire to the spark plug.
2. Open the fuel valve.

BBC UNITS

3. Move the throttle/ choke control forward to the choke position. **Figure 3**
4. Pull the recoil starter cord until resistance is felt, then pull firmly to start the engine. Allow cord to return slowly. If the engine does not start, repeat.
5. Once engine is started, move the throttle/choke control to the run position.

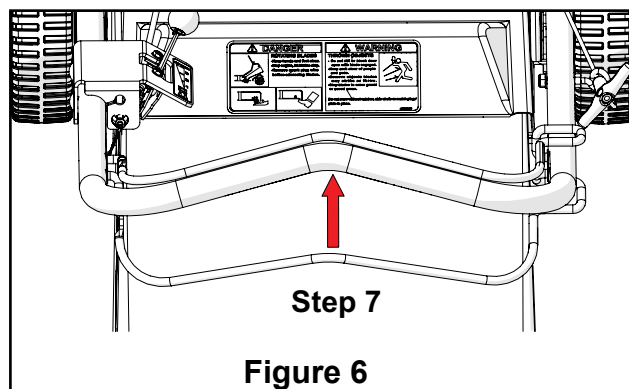
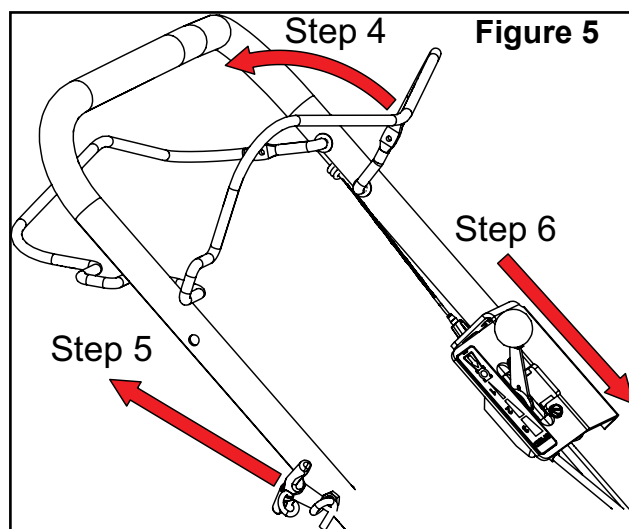
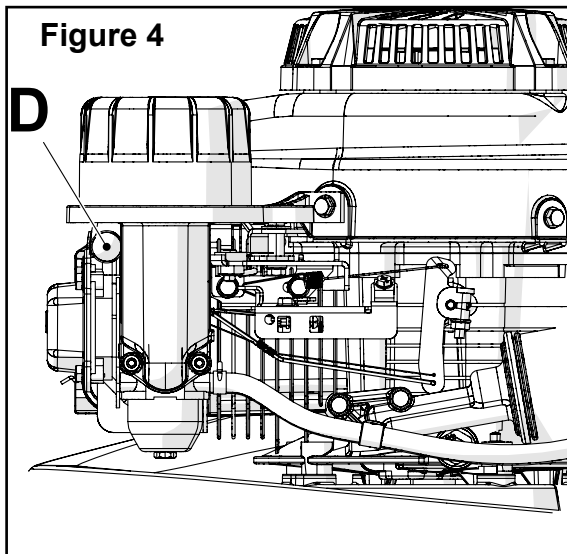
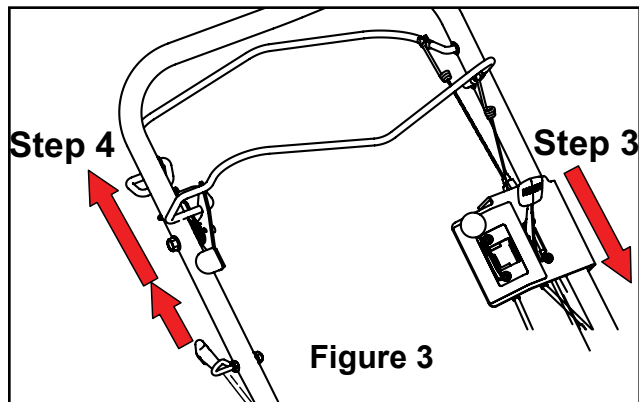
ZONE START UNITS

3. Push the primer bulb **D**, hold for one second and release. **Figure 4**
- NOTE:** When starting after filling an empty tank, it may take several pushes of the primer bulb before fuel reaches the primer.
4. Hold the Operator Presence Control (OPC) bail to the handle. **Figure 5**
5. Pull the recoil starter cord until resistance is felt, then pull firmly to start the engine. Allow cord to return slowly. If the engine does not start, repeat.

Figure 3

SELF-PROPEL DRIVE

6. Once engine is started, move the speed selector lever to the desired speed. **Figure 3 & 5**
7. Pull up on the traction control bail to engage the self-propel drive. **Figure 6**
8. To STOP self propel drive, release the traction control bail when changing speeds.



21" MOWER

STOPPING THE ENGINE

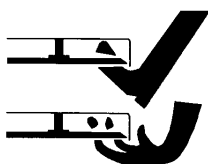
BBC UNITS

1. Move the throttle control to the STOP position.

ZONE START UNITS

1. Release the OPC bail.

OPERATING THE BLADES



BBC UNITS

Always treat a BBC mower as though the blades are running when the engine is running. A BBC is not a substitute for good safety practice. If the BBC is not working, the blades may continue to rotate when you release the blade control bail increasing the chance of serious injury. Check the BBC operation each time you use the mower. The blades should stop in 3 seconds when the blade control bail is released.

- Do not use the mower if the BBC is not working.
- take the mower to your dealer to have non-working BBC repaired.

1. Start the engine.
2. Push down on the latch to release the bail.
3. Hold the blade control bail against the handle to run the blade.
4. Release the blade control bail to stop the blades.

ZONE START UNITS

- The blades run anytime the engine is running.
1. Release the OPC bail to stop the blades and the engine. The blades should stop in 3 seconds. If they do not, take the mower to your dealer to get the blade brake repaired.

CUTTING

CUTTING GRASS

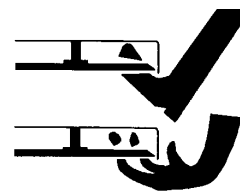
- Set the mower to the cutting height recommended for the turf grass variety you are cutting in your area for the best looking and healthiest lawn.
- Cutting too much off is hard on the turf grass and doesn't leave as nice a finish. For best results cut do not cut off more than one third the height of the grass.
- If the grass has gotten too tall it may require cutting twice, especially when mulching. Cutting off too much may cause the mower to 'load' up or even stall. In addition the finish will not be of good quality.
- Raising the rear one or two notches higher than the front can help disperse clippings. use the front to set the desired mowing height.
- Alternating mowing direction can help prevent rutting and helps keep grass from getting 'trained' to lay in one direction.

CUTTING LEAVES

- For light leaf coverage, mow normally. For heavier leaf coverage, raise the front of the mower to allow the leaves to enter the deck.
- Dry leaves will mulch the best.

CUTTING HEIGHT ADJUSTMENT

The cutting height is adjusted at each wheel from 1" to 4" (25-102mm) in 1/2" (12.7mm) increments.



Adjusting cutting height will bring your hands near the blade. A moving blade can cause serious injury.

- Stop the engine and wait for all movement to stop before adjusting.

To adjust:

1. Pull the adjustment lever towards the wheel. move it in the direction of the desired height.
2. Release the lever, making sure it pops into the notch.

3. When raising the height, it is helpful to lift up on the mower to make it easier to move the wheel. In front, grasp the front edge of the deck to lift up. In rear, grasp the rear of the deck or the handle. Grasping the handle will keep your hands from being under the blade housing part of the deck.

MULCHING

A mulch plug is provided with your mower from the factory.

- Stop the engine and wait for all parts to stop moving.
- Raise the rear discharge door and remove the grass collector (if installed).
- Install the mulch plug into the discharge chute.

NOTE: Clippings may accumulate around the mulch plug making it difficult to remove. After each use remove the plug and clean the accumulated clippings before they have a chance to dry and get hard.

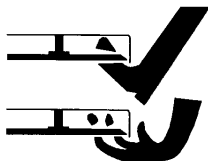
- Mulching eliminates the need to empty the bag and dispose of clippings. By chopping clippings into small pieces, clippings decay and disappear faster. Nutrients are returned to the lawn reducing the need for fertilizer. The mulch also helps conserve water.
- Mulching grass works best when the 1/3 rule is followed. DO not take more than 1/3 of the height of the grass. If the grass has gotten to long to successfully mulch, the mower can be raised and the lawn cut twice or the clippings will need to be bagged.

BAGGING

A 3.1FT³ (2.5 BU) bag is supplied with your mower from the factory.

- Stop the engine and wait for all parts to stop moving.
- Raise the rear discharge door and remove the mulch plug (if installed).
- Position the bag mounting lugs over the lip on the rear of the deck casting.
- Lower the rear discharge door onto the bag. the bag should be centered between the sides of the door.

WARNING



Rotating blades can cause serious injury.

- Stop the engine and wait for all movement to stop before reaching in to clear the discharge chute.

Anytime the blade is running an empty bag will inflate. When the blade control bail of a BBC machine is released, the bag will deflate. If it does not, the BBC is not stopping the blade. Do not use a BBC machine if the BBC is not working properly. take the machine to your dealer and get the BBC repaired before further use.

MOWING WITH THE GRASS BAG

WARNING



A worn grass bag could allow small stones or other debris to be thrown toward the operator or a bystander. Thrown objects can result in serious injury or even death to the operator or bystanders. Check the bag frequently. If it is damaged or worn, contact your dealer to replace it.

Cut until the grass bag is full.

- Stop the engine and wait for all parts to stop moving.
- Raise the rear discharge door.
- Using the handle on the bag, lift the bag off the mower.
- Empty bag by tipping forward.
- Reinstall the bag onto the mower and continue mowing.

WARNING



If the rear discharge door does not close, the mower could throw objects. Thrown objects can result in serious injury or even death to the operator or bystanders.

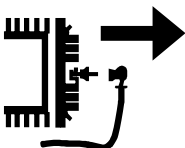
- Do not open the rear discharge door when the engine is running and the blade is moving.
- If clippings block the door open, stop the engine and wait for all parts to stop moving. (DO NOT rely on the BBC if so equipped) before removing the obstruction.

BLADE BRAKE CLUTCH ADJUSTMENT

The blade should stop within 3 seconds when the blade control bail is released. If it does not, adjust the Blade Brake/Clutch. If adjustment does not resolve the stopping time, the BBC will need replacement and you should contact your dealer.

⚠ WARNING

Blades are sharp. Rotating blades can cause serious injury and/or amputation.

⚠ WARNING

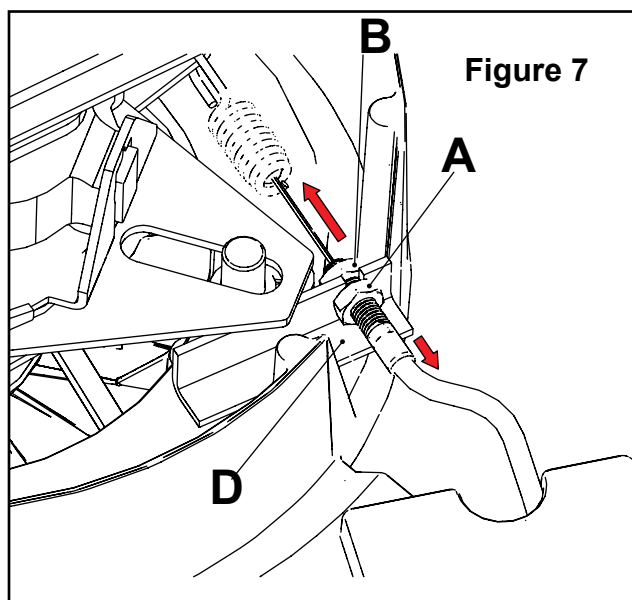
Disconnect the spark plug wire when working around the blade.

Wear gloves to protect from getting cut by a stationary blade.

⚠ WARNING

If the fuel tank is more than 1/2 full, remove the fuel until the level is less than half full.

1. Turn the mower on its muffler right side.
2. Loosen nuts **A** and **B** and turn to the ends of the threaded conduit fitting. **Figure 7**
3. Pull cable to remove slack. While you continue to pull the cable, hand tighten nut **A** against cable bracket **D**. Release the cable and tighten nut **B** against the bracket.
4. Tip the mower back upright..
5. Check cable adjustment as follows:
 - a. Squeeze Blade Control Bail to the handle.
 - b. Push blade/brake clutch control on right handle fully forward and release. The control should stay engaged until the blade control bail is released.
 - c. Adjust cable again if required.

**Figure 7**

MAINTENANCE CHART & RECORD

21" MOWER

MAINTENANCE OPERATION	Maintenance is an ongoing job. These intervals are maximum times between maintenance operations. Perform more often under severe conditions.				
	FIRST 5 HOURS	BEFORE EACH USE	EVERY 25 HOURS	EVERY 100 HOURS	EVERY 300 HOURS
ENGINE					
Consult the engine manual for additional information and instructions					
Change Oil and Filter	X	See engine manufacturer's manual			
Check /Top Off Oil Level		X			
Check for Fuel Leaks		X			
Check for loose hardware - blade, engine, etc.		X			
Check BBC and stop time		X	The blade must stop within 3 seconds of releasing bail, See Page 18 for instruction. if adjustment does not fix it, contact a dealer for repair.		
Clean Grass under deck, in discharge tunnel, plug and under belt cover		X			
Clean Foam Precleaner			X		
Check Fuel Filter				X	
Check / Replace Spark Plugs				X	
Change Paper Air Filter					X

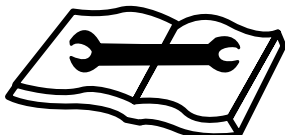
MAINTENANCE RECORD	DATE	HRS	DATE	HRS	DATE	HRS	DATE	HRS	DATE	HRS	DATE	HRS
Change Oil												
Change Foam PreCleaner												
Check Nuts & Bolts												
Change Fuel Filter												
Clean & Gap Spark Plugs												
Change Oil And Filter												
Change Paper Air Cleaner												
NOTE: After first 5 hours of operation change engine oil and filter.												

21" MOWER

MAINTENANCE

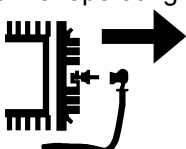
READ YOUR OWNER'S MANUAL BEFORE DOING ANY MAINTENANCE!

WARNING



NOTE: Determine the left and right sides of the machine from the normal operating position.

WARNING



If you leave the wire on the spark plug, someone could accidentally start the engine. Accidental starting of the engine could seriously injure you or other bystanders.

Disconnect the wire from the spark plug before you do any maintenance. Set the wire aside so that it does not accidentally contact the spark plug.

WARNING



The engine can become very HOT. Touching a hot engine can cause severe burns.

Allow the engine to cool completely before service or making repairs around the engine area.

WARNING



Tipping the lawn mower may cause the fuel to leak from the carburetor or the fuel tank. Gasoline is extremely flammable, highly explosive and under certain conditions, can cause personal injury or property damage.

To avoid fuel spills, Do not tip the mower with more than 1/2 tank of fuel. Remove gasoline to the 1/2 full level.

Tip the mower on the RIGHT side ONLY!!!!

CHECK DAILY HARDWARE

Tighten any nuts and bolts found loose. Replace any broken or missing cotter pins. Repair any other problems before operating.

FUEL

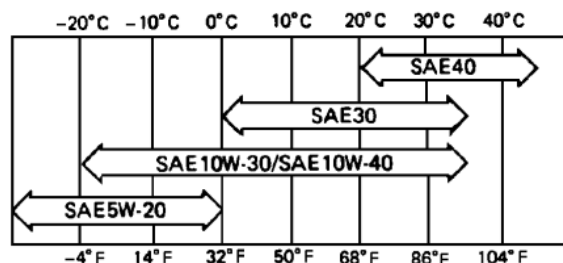
Fill the tank with good quality, clean unleaded gasoline. E10 is acceptable. DO NOT use E15 or E85. E15 or E85 can cause engine/fuel system damage which is not covered by warranty. DO NOT MIX OIL WITH GASOLINE!

ENGINE OIL

Fill the engine with clean fresh API Service Classification SF, SG, SH, or SJ

Oil Viscosity: Choose the viscosity according to the temperature as follows per chart.

NOTE: Using multi grade oils (5W-20, 10W-30, 10W40) will increase oil consumption. Check oil level more frequently when using them.



BLADES

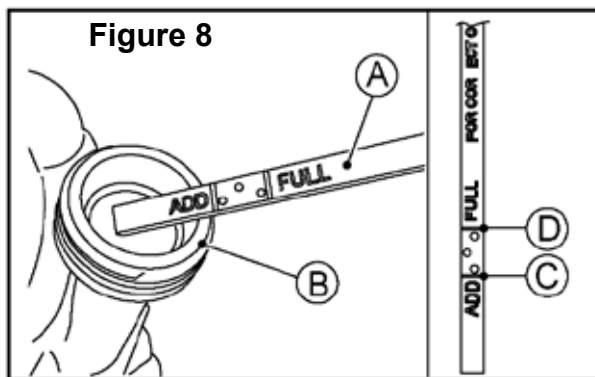
Ensure that the fuel tank is no more than 1/2 full so fuel doesn't run out. Tip the machine on its side so the muffler is down to provide access to the underside of the mower. Check blades for any defects and sharpness. For blade removal and installation see Page 20.

BLADE BRAKE CLUTCH

Start engine, hold in Blade Control Bail against handle. Push Blade control forward until it latches to start and run blades. Release blade control bail. If blade does not stop within 3 seconds see BBC Adjustment Section on Page 17.

CHECKING ENGINE OIL

1. Stop engine and wait for all moving parts to stop. Make sure unit is on a level surface.
2. Check with engine cold.
3. Clean area around dipstick. Remove dipstick **A** and wipe off oil. Reinsert the dipstick into oil filler **B** and push it all the way down into the tube. **DO NOT** screw into place. Remove dipstick and read the oil level. Should read between the ADD line **C** and the FULL line **D**. **Figure 8**



4. If the oil level is low, wipe off the area around the oil fill cap, remove cap and fill to the FULL mark on the dipstick. Refer to the Engine Owner's manual for appropriate API rating and viscosity. **DO NOT** overfill. Reinstall dipstick and tighten once desired fill is completed.

NOTE: DO NOT OPERATE THE ENGINE WITH THE OIL LEVEL BELOW THE "LOW" OR "ADD" MARK ON THE DIPSTICK, OR OVER THE "FULL" MARK.

BLADE REMOVAL / INSTALLATION

Ensure that the fuel tank is no more than 1/2 full so fuel doesn't run out. Tip the machine on its side so the muffler is down to provide access to the underside of the mower. This will prevent oil and excess fuel from getting into the carburetor and causing starting problems.

⚠ WARNING



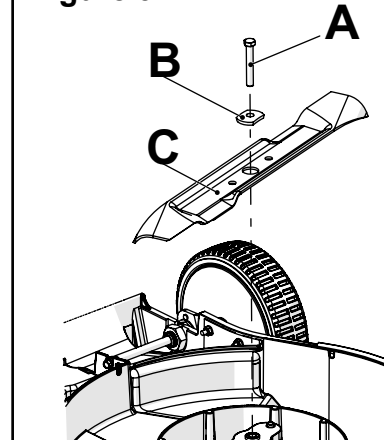
Blades are sharp. Handling blades can result in injury. Wrap blades or wear gloves to prevent injury.

ZONE START BLADE REPLACEMENT

Blade Removal:

1. Tip mower on muffler side.
2. Block blade to prevent rotation. Remove bolt **A**, washer **B** and blade **C**. **Figure 9**
3. Inspect blade: Sharpen, balance or replace as necessary.

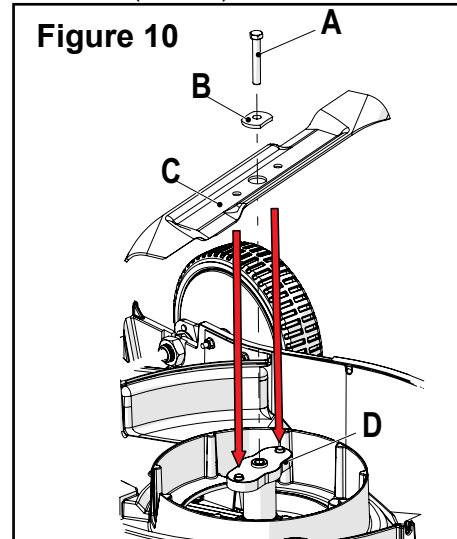
Figure 9



Blade Installation:

1. Seat hub **D** fully on crankshaft.
2. Position blade on hub with sharpened edge toward chute. Engage hub pilots with matching blade holes.
3. Reinstall washer **B** on bolt **A** with cupped side facing toward the blade **C** and install bolt and washer into hub **D**. **Figure 10**
4. Tighten bolt to 45lb-ft (60N-m).

Figure 10



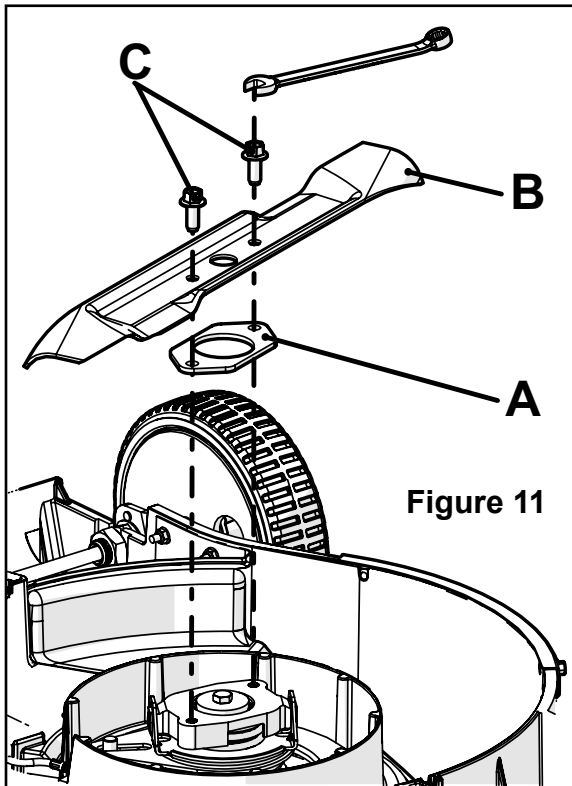
BBC BLADE REPLACEMENT

Blade Removal:

1. Tip mower on muffler side.
2. Block blade to prevent rotation. Remove two bolts **C**, blade **B** and spacer **A**. **Figure 11**
3. Inspect blade: Sharpen, balance or replace as necessary.

Blade Installation:

1. Position spacer **A** and blade **B** on BBC assembly with sharpened blade edge toward chute. **Figure 11**
2. Install Bolts **C** and tighten bolts to 35lb-ft (50N-m).



BLADE SHARPENING



Blades are sharp. Handling blades can result in injury.

Disconnect the spark plug wire when working around the blade.

Wear gloves to protect from getting cut by a stationary blade

Blades may be sharpened by filing or grinding. Keep the original bevel of 30 degrees when sharpening. After sharpening, there should be no more than .015in (1/64 in) (.4 mm) of flat on the sharp edge.

Blades are heat treated.

Do not over heat the blade when sharpening.

Do not straighten bent blades. Replace with new blade.

If the lift portion of the blade is worn thin, replace the blade. A worn lift can break off and become a projectile.

Replace a cracked blade. Do not attempt to weld a blade.

Balance the blade within 1oz-in after sharpening. Clean the accumulated crud from mowing, then balance the blade. Inexpensive balancing tools are available or hanging the blade on a nail in a vise will work. The heavy end will hang down. Add a 1/4" (6mm) nut 10in (250 mm) in from the center to the light end with a piece of tape. If that makes the light end the heavy end the blade is sufficiently balanced. If not, sharpen the heavy end some more until adding the nut to the light end makes it the heavy end.

NOTE: If a 1/4" (6mm) nut is not available, a 5/16" nut (8mm) may be used at 6" from center.

BLADE BRAKE CLUTCH (BBC)

REMOVAL / INSTALLATION

⚠ WARNING



Blades are sharp. Rotating blades can cause serious injury and /or amputation.

Disconnect the spark plug wire when working around the blade.

Wear gloves to protect from getting cut by a stationary blade.

Ensure that the fuel tank is no more than 1/2 full so fuel doesn't run out.

⚠ WARNING



BBC Removal:

1. Turn the mower on its muffler side.
2. Remove the mower blade. **Figure 12**
3. Remove the bolt and washer securing the BBC to the engine crankshaft.
4. Turn nut **C** on as far as it will go on the threaded conduit fitting to relieve tension on the cable.

Figure 13

⚠ WARNING

Be aware components are under spring tension.

Wear eye protection and use the proper tools when installing these components.

5. Insert a 1/4" bar (6.3mm) through clutch actuation lever **F** and against the bottom of the engine as a pry bar. Rotate the lever with the pry bar as indicated to get enough slack to disconnect spring **H** from the clutch actuation lever. Smoothly back off the pry bar to release the tension.

Figure 14

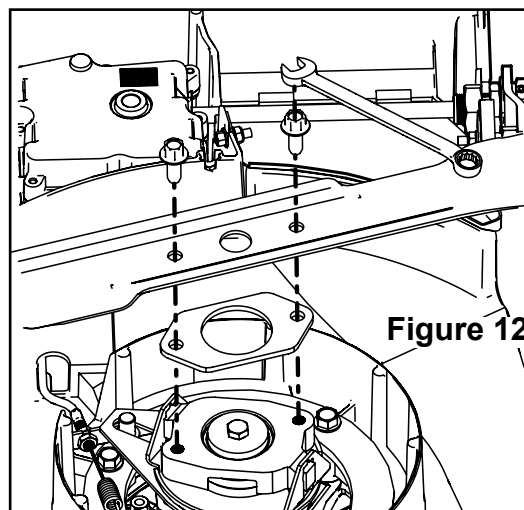


Figure 12

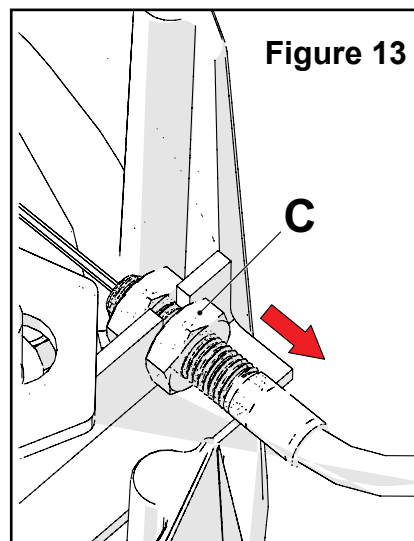


Figure 13

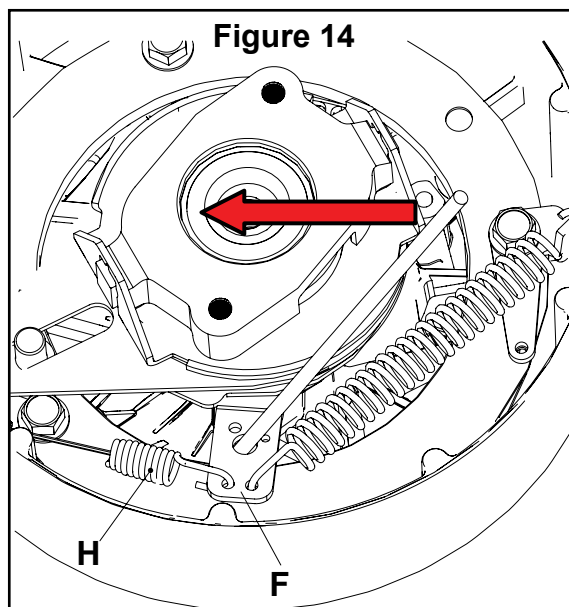


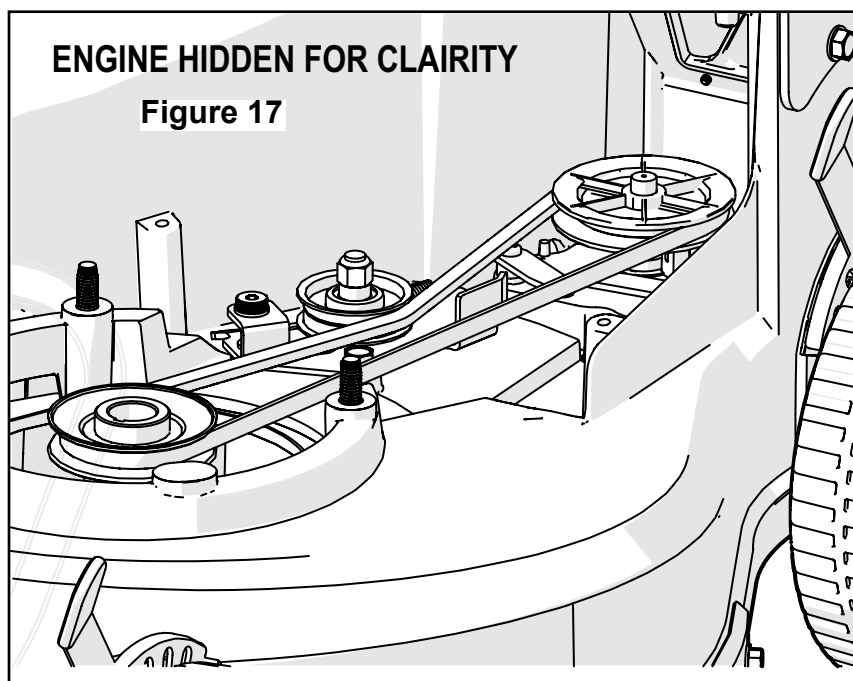
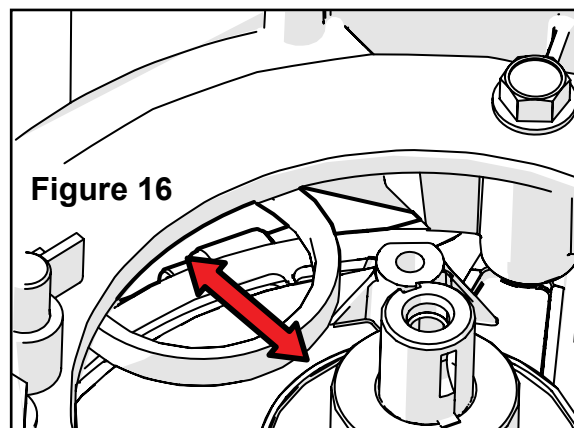
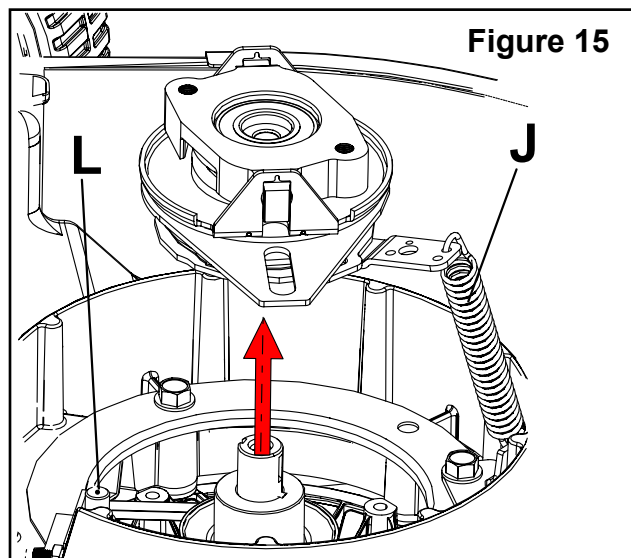
Figure 14

21" MOWER

6. Wear a pair of heavy gloves. Position your hands on the clutch assembly where they won't be pinched when the clutch rotates in the direction the spring pulls. Pull the clutch assembly off the engine until the anti-rotation arm clears pin L. When the pin clears, the clutch assembly will jump back under spring tension about an 1" (25mm). The body of the spring will stop the movement of the clutch. Finish pulling the clutch off. Disconnect the spring J from the clutch. **Figure 15**

If replacing the belt:

7. Pull the old belt out through the deck opening. Install the new belt through the opening. **Figure 16**
8. Route the belt around the engine sheave and over the transmission sheave. Once the belt is that far it will stay in place and you can leave the rest of the belt installation until the clutch is replaced. **Figure 17**



BBC Installation:

1. Connect spring **J** to the engine mounting ring and to the clutch actuation lever. **Figure 18**
2. Wear thick gloves. Set the clutch over the end of the engine crankshaft. Line up the clutch key with the engine key way and slide the clutch assembly onto the shaft. **Figure 19**
3. Rotate the clutch assembly against the spring until the anti-rotation arm will fit over the anti-rotation pin **L**. Push the clutch assembly on the engine crankshaft against the transmission drive pulley. **Figure 19**
4. Using a 1/4" (6.3mm) bar, rotate the actuation lever until the cable spring **H** can be attached to the actuation lever. Smoothly release the tension on the bar. When the bar is free, remove it. **Figure 14**
5. Turn nut **C** to the end of the threads on the conduit fitting. **Figure 20**
6. Pull cable to remove slack. While you continue to pull the cable, hand tighten nut **A** against cable bracket **D**. Let go of the cable and tighten the second nut **B** against the bracket. **Figure 21**

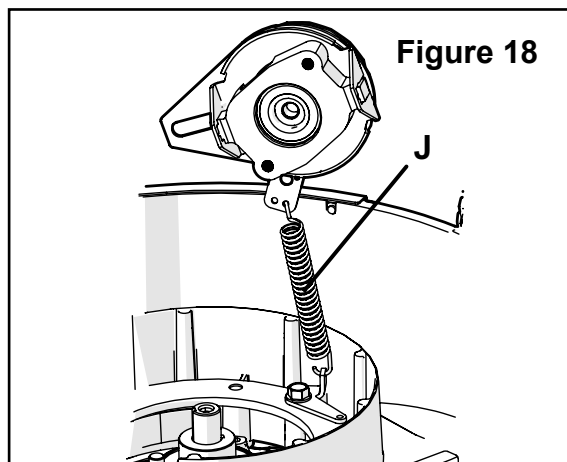


Figure 18

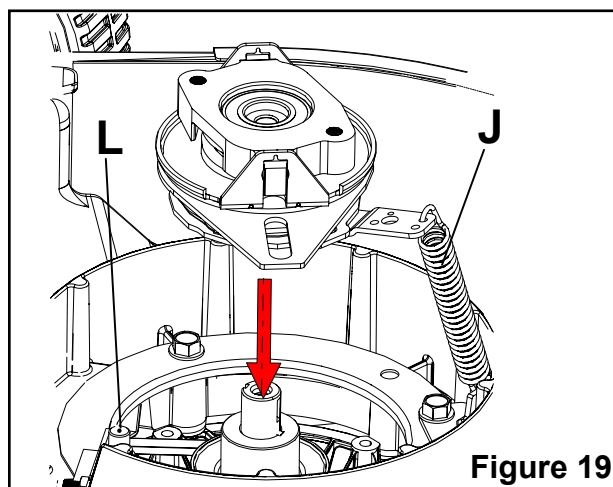


Figure 19

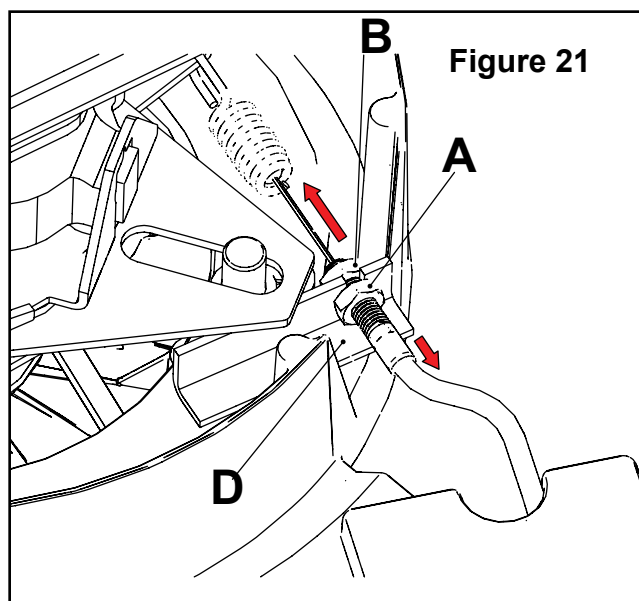


Figure 21

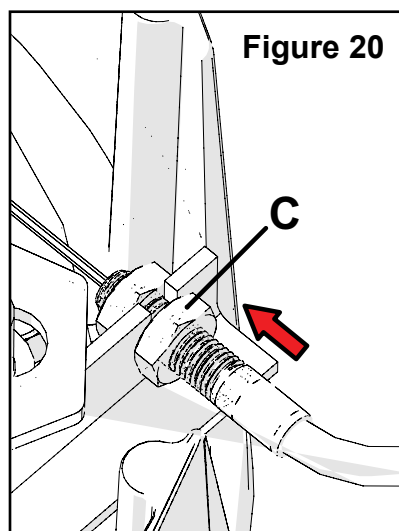
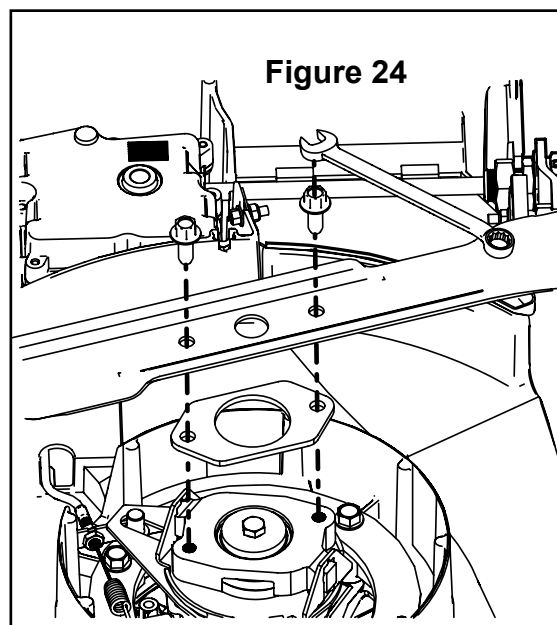
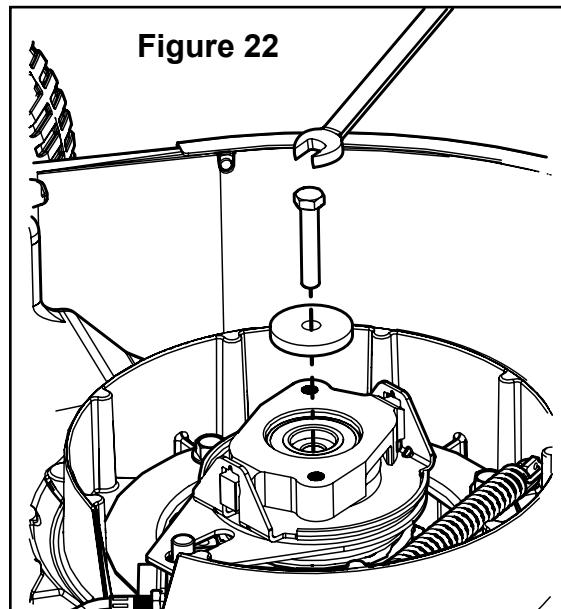


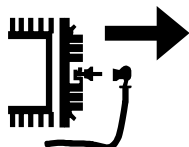
Figure 20

7. Install the blade brake assembly, washer and bolt. Run the bolt down until the crankshaft turns. **Figure 22**
8. Remove the recoil from the engine. Put a bar between the notches of the recoil cup. **Figure 23**
9. Torque the blade brake clutch bolt to 45lb-ft (60N-m). **Figure 22**
10. Replace the recoil assembly.
11. Install the blade. Block the blade to prevent the blade from turning. Tighten the two blade bolts to 35 lb-ft (50N-m) **Figure 24**



BELT REPLACEMENT

Ensure that the fuel tank is no more than 1/2 full so fuel doesn't run out. Tip the machine on its side so the muffler is down to provide access to the underside of the mower. This will prevent oil and excess fuel from getting into the carburetor and causing starting problems.



BELT REMOVAL:

1. Disconnect the spark plug wire.
2. Remove the four screws **K** securing the belt cover **M**. Remove the belt cover. **Note:** When reinstalling the cover, take care not to over tighten these screws. **Figure 25**
3. Remove the bolt **N** and nut **P** securing the transmission torque restraint to the mower deck. Remove the spacer **Q** between the torque restraint and the mower deck. **Figure 26**
4. Tilt the transmission forward and remove the drive belt from the transmission sheave. Push the belt through the opening to the underside of the mower deck.
5. Tip the mower on the muffler side.

BLADE BRAKE CLUTCH (BBC)

6. To finish removing the Belt. **See BBC Removal/ Installation Section Page 22.**

ZONE START:

6. Pull the belt through the opening and work it over the blade. The blade does not need to be removed. **Figure 227**
7. Install the new belt in reverse order.

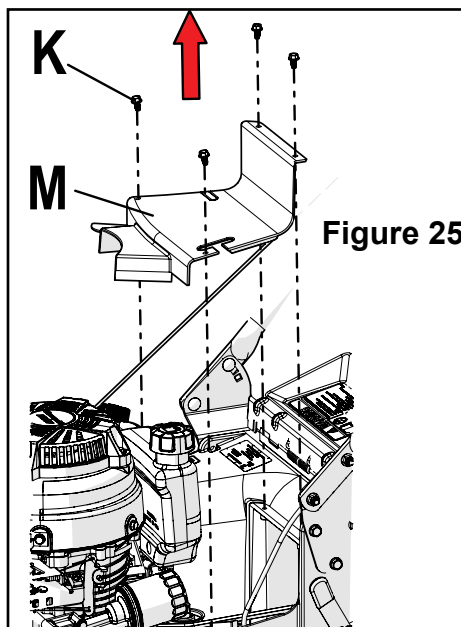


Figure 25

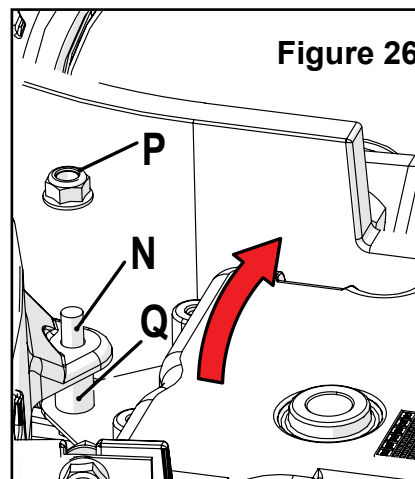


Figure 26

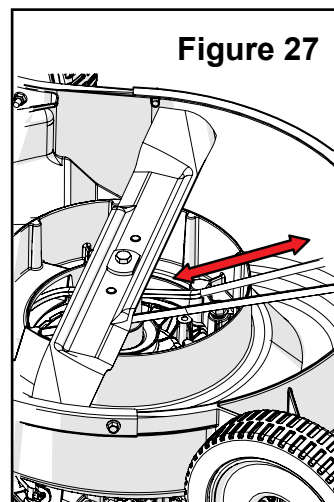


Figure 27

21" MOWER

CLEANING THE MOWER

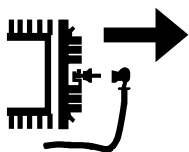
WARNING

Avoid injury. Before cleaning the mower:

Stop engine. Allow engine to cool.

Disconnect spark plug wire.

WARNING



Ensure that the fuel tank is no more than 1/2 full so fuel doesn't run out.

Turn the mower on it muffler side to clean under the deck.

WARNING



Blades are sharp. Wear gloves to protect from getting cut by a stationary blade.

Unless otherwise noted, it is best to blow debris off with air rather than using water. Water can get into places it shouldn't and cause corrosion that will shorten the life of various components.

1. Clean the engine and top of deck.
2. Clean clippings built up between the wheels and mower deck.
3. If necessary, remove the engine shroud and clean the cooling fins.
4. Remove the belt cover to remove the clippings in the belt and transmission area. DO NOT spray water at or near the transmission. Replace the belt cover. Do not over tighten the screws.
5. Remove mulch plug (if installed). Scrape clippings from the chute and deck area, then wash to remove corrosive lawn chemicals. DO NOT spray transmission with water.

STORAGE**Preparing the machine for storage:****⚠ CAUTION**

Stale fuel can produce varnish and gum up the carburetor making the engine hard to start, and causing it to run rough. Service may be required to get the engine to start.

Add fuel stabilizer to the fuel in the tank and run for a few minutes to get the fuel into the carburetor. Alternatively you can safely drain the tank, properly dispose of the fuel and start the engine and run it until it runs out of fuel. Run the machine outside.

Storing**⚠ WARNING**

To prevent possible explosion or ignition of vaporized fuel, do not store equipment with fuel in the tank or carburetor in an enclosure with an open flame such as a furnace or water heater with a pilot light.

Daily Storage

1. Clean the machine. See cleaning section.
2. Check the blade for damage. Replace if bent, cracked or worn. Sharpen blade so it will be ready to go for next use.
3. Check the engine oil level. Inspect the air cleaner.
4. Service the engine according to the engine manufacturer's instructions.

Extended Storage

Before storing the machine for any period exceeding 30 days:

1. Clean the machine. See cleaning section.
2. Check the blade for damage. Replace if bent, cracked or worn. Sharpen blade so it will be ready to go for next use.
3. Paint scratched or chipped metal surfaces to prevent corrosion.
4. Safely drain the fuel tank and properly dispose of fuel. Run the engine outdoors until all remaining fuel is used.
5. While the engine is warm drain the oil and replace the filter. Refill with the proper oil.

⚠ CAUTION

6. Remove the spark plug and squirt a small quantity of oil in the cylinder. Turn the engine over a few times to distribute the oil.

Bringing out of Extended Storage

1. Inspect the machine for loose or damaged parts. Make any necessary repairs.
2. Inspect the blade. Sharpen or replace depending on condition.
3. Fill fuel tank with clean fresh fuel.
4. Check the oil level. Top off if necessary.
5. Check the fuel system for leaks.

21" MOWER

SYMPTOM	POSSIBLE CAUSE	ACTION NEEDED
Engine won't start	Fuel tank empty Stale or dirty fuel Throttle/choke not in choke position Engine not primed Disconnected spark plug Dirty, cracked or broken spark plug	Fill Tank Drain tank and carburetor bowl Refill tank with fresh fuel Move control to choke position Push primer bulb Reconnect spark plug Replace spark plug
Engine starts hard/ loses power	Stale or dirty fuel Fuel cap vent plugged Dirty air cleaner components Underside of deck loaded with debris or clippings Disconnected spark plug Dirty, cracked or broken spark plug Throttle/choke not in choke or high idle position Engine oil low or dirty	Drain tank and carburetor bowl Refill tank with fresh fuel Clear vent Clean foam pre-cleaner. Tap paper element to remove dirt or replace Clean underside of deck Reconnect spark plug Replace spark plug Position throttle/choke in CHOKE to start, high idle to run Adjust control mounting at engine if necessary Add or change oil
Engine runs rough	Disconnected spark plug Dirty, cracked or broken spark plug Throttle/Choke not in high idle position Dirty air cleaner components Stale or dirty fuel	Reconnect spark plug Replace spark plug Position throttle/choke in high idle Adjust control mounting at engine if necessary Drain tank and carburetor bowl Refill tank with fresh fuel
Mower or Engine Vibrates Abnormally	Bent or unbalanced blade Loose blade bolt(s) Underside of deck loaded with debris or clippings Engine mounting bolts loose	Balance blade Replace bent blade tighten blade bolts(s) to proper torque Clean underside of deck Tighten engine mounting bolts
Uneven cut	Height adjustment levers not set in same position Blade dull, bent or unbalanced Blade upside down Mowing pattern not changed Underside of deck loaded with debris or clippings	Set height adjustment levers to same position Sharpen blade Balance blade Replace blade Reinstall blade correctly Alternate direction when mowing Clean underside of deck
Discharge chute plugs	Throttle/clutch not in high idle Cutting height to low Mowing too fast Grass not dry Underside of deck loaded with debris or clippings Dirty or full grass bag	Position throttle/choke in high idle Adjust control mounting at engine if necessary Raise height, cut twice in very high grass Slow down Wait for grass to dry Clean underside of deck Empty bag Clean bag to all it to discharge air
Mower drive slips, jerks or will not move	Drive belt broken Transmission not in gear	Replace drive belt Move transmission shifter to get it in gear

POWER UNITS

ENGINE:

Manufacturer Kawasaki
 Model Series..... FJ180V
 Valve Type4
 Valve TypeOver Head Valve
 Displacement..... 179 cc (10.9 cu in.)
 BBC Choke.....Manual
 Zone Primer Bulb

Starter Recoil
 Throttle Control BBC Remote
 Zone Fixed Speed
 Spark PlugNGK-BPR5ES
 Spark Plug Gap0.03 in (0.76 mm)
 Spark Plug Torque16 lb-ft (22N-m)
 Air Cleaner..... Paper Element w/ Foam Pre Cleaner

CAPACITIES:

Fuel tank..... 1.9 qt (1.8L)
 Engine Oil without filter..... 0.74 qt (0.7 L)
 Rear Grass Bag.....2.5 bu (3.1 cu ft)

DRIVE SYSTEM:

ManufacturerBiCiDi
 TypeGear Transmission
 Number of Speeds.....3

Travel Speeds:

First Gear.....2.4mph (3.9 km/h)
 Second Gear3.3 mph (5.3 km/h)
 Third Gear4.1 mph (6.6 km/h)

Deck material.....Cast Aluminum
 Adjustable Handle Standard
 Rear grass bag Standard
 Side Discharge Chute..... Not Available
 Mulching Plug Standard
 Wheel Size 9.0 X 2.0
 Cutting Height Range 1-4 in (25 - 102 mm)
 No of Cutting Heights in 1/2 in (13 mm) Steps7
 Cutting Width21 in (53.3 cm)

Safety System:

922106 Zone Start
 922107 Blade Brake/Clutch

Weight (Approximately):

922106134 lb (61 kg)
 922107139 lb (63 kg)

Blade Hardware Torque:

92210645 lb-ft (61 N-m)
 92210735 lb-ft (47 N-m)

Recommended Lubricants

Fuel See Engine Manual
 Oil See Engine Manual

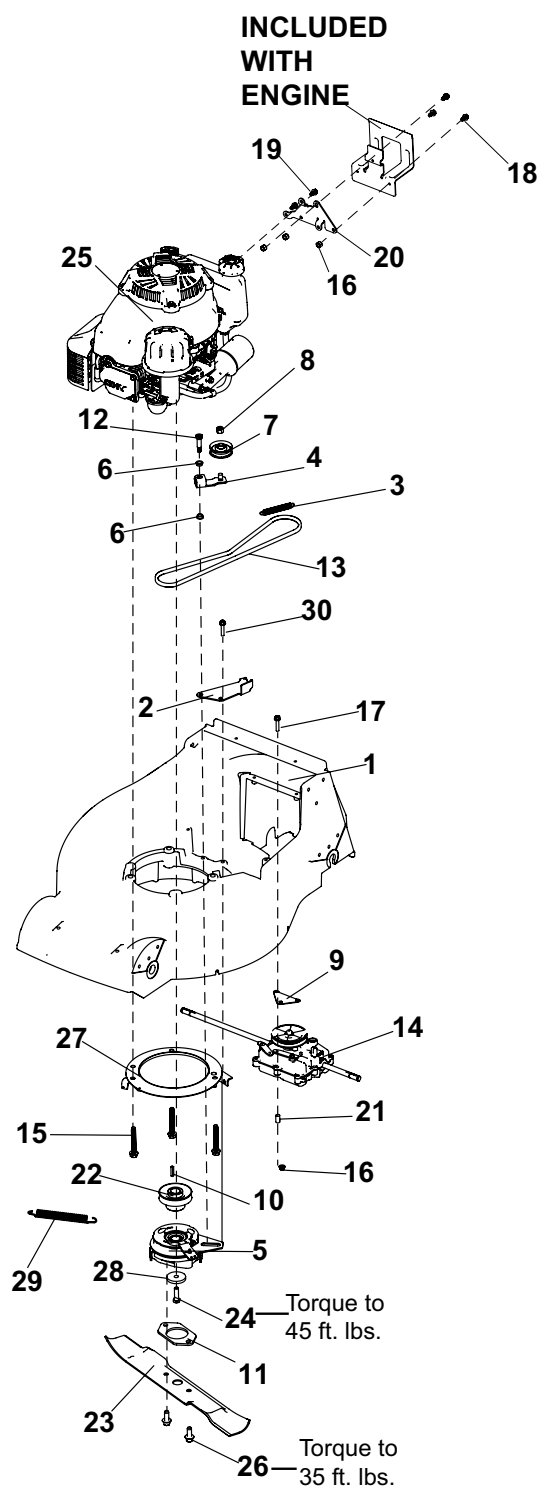
MACHINE SPECIFICATIONS:

PARTS SECTION

922107 ENGINE & TRANSMISSION ASSY

21" MOWER

FIGURE 1

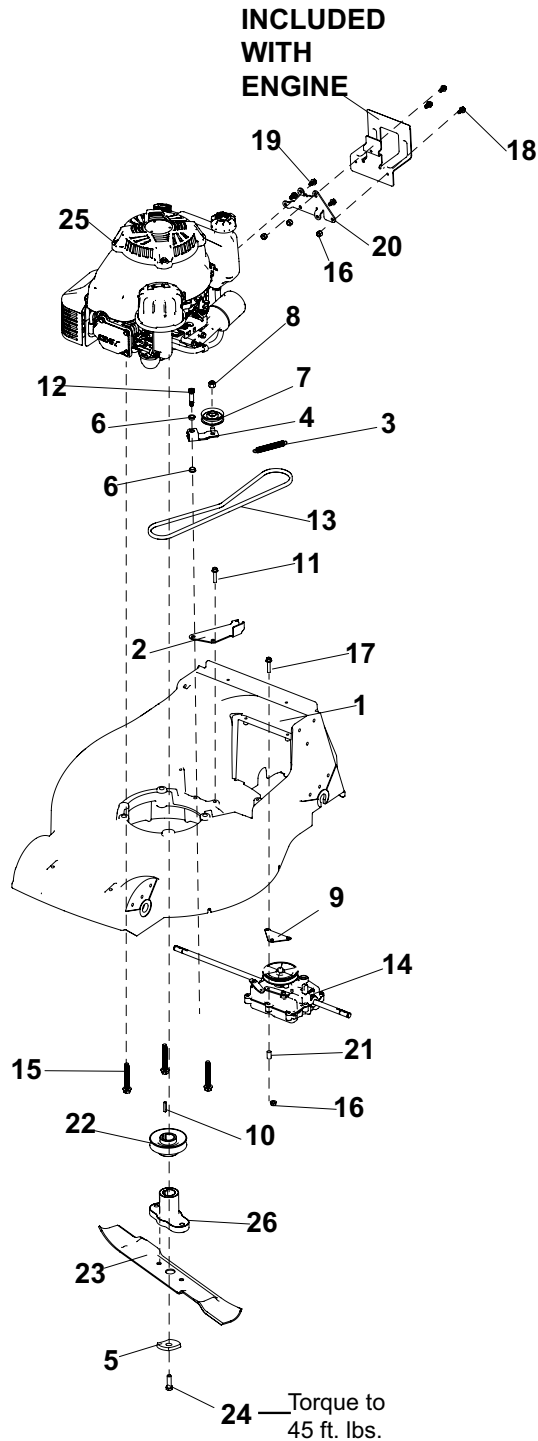


ITEM	PART NO.	DESCRIPTION	QTY
1	4175700	S-DECK, MOWER	1
2	4174894	BRKT-IDLER	1
3	4174767	SPRING, IDLER	1
4	4175723	ASSY-IDLER	1
INCLUDES ITEMS 6-8			
5	4174798	CLUTCH-BBC	1
6	48053-09	BRG-FLGD BR .375X .500X.25	2
7	4174859	IDLER-1.875	2
8	94229-03	NUT-NYLON LOCK 3/8-16	1
9	4175102.7	BRKT-TRANSAXLE, FLAT	1
10	64164-02	KEY-3/16X1 SQ	1
11	4174802	SPACER-BLADE	1
12	64166-26	SHOULDER BOLT	1
13	4174804	BELT, FHP DRIVE V-BELT	1
14	4174786	TRANSMISSION	1
15	94197-017	BLT-TDFM 3/8-16X2-3/4	3
16	94268-01	NUT-FL NYLON LOCK 1/4-20	4
17	94262-004	BLT-FLG HD 1/4-20 X 1-1/4	1
18	94262-002	BLT-FLG HD 1/4-20 X 3/4	3
19	94197-030	BLT-TDFM 1/4-20X1/2	3
20	4174811.7	SPACER-FUEL TANK	1
21	4116380-01	SPACER-.272X.438X.635 LG	1
22	4174794	PULLEY-4 IN 'A'	1
23	4174803	BLADE - HIGH LIFT	1
24	64123-126	BLT-HEX 3/8-24X2	1
25	4175154	ENGINE-KAWASAKI FJ BBC 50	1
26	94263-012	BLT-FLG HD M10-1.5 X 25	2
27	4174793	PLATE-BBC	1
28	4174799	WASHER-.400 X 1.75 X .250	1
29	4174797	SPRING, BBC	1
30	94197-029	BLT-TDFM 5/16-18 X 1/2	1

* NOT ILLUSTRATED

21" MOWER

FIGURE 2



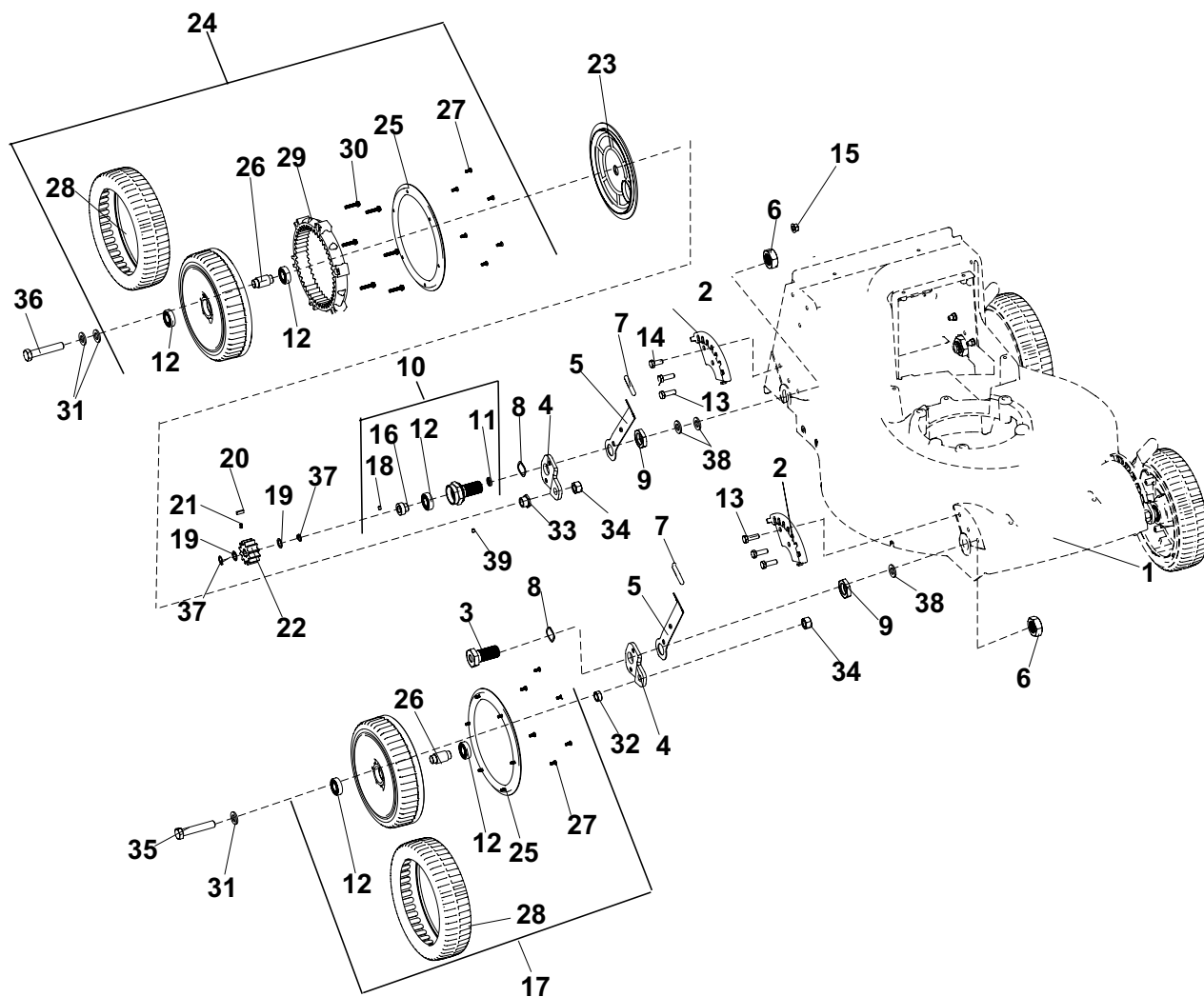
ITEM	PART NO.	DESCRIPTION	QTY
1	4175700	DECK-MOWER	1
2	4174894	BRKT-IDLER	1
3	4174767	SPRING, IDLER	1
4	4175723	ASSY-IDLER	1
INCLUDES ITEMS 6-8			
5	4174800	WASHER-BLADE SPEC	1
6	48053-09	BRG-FLGD BR .375X .500X.25	2
7	4174859	IDLER-1.875	2
8	94229-03	NUT-NYLON LOCK 3/8-16	1
9	4175102.7	BRKT-TRANSAXLE, FLAT	1
10	64164-42	KEY-SQ 1/4 X 1/2	1
11	94197-029	BLT-TDFM 5/16-18 X 1/2	1
12	64166-26	SHOULDER BOLT	1
13	4174804	BELT, FHP DRIVE V-BELT	1
14	4174786	TRANSMISSION	1
15	94197-017	BLT-TDFM 3/8-16X2-3/4	3
16	94268-01	NUT-FL NYLON LOCK 1/4-20	4
17	94262-004	BLT-FLG HD 1/4-20 X 1-1/4	1
18	94262-002	BLT-FLG HD 1/4-20 X 3/4	3
19	94197-030	BLT-TDFM 1/4-20X1/2	3
20	4174811.7	SPACER-FUEL TANK	1
21	4116380-01	SPACER-.272X.438X.635 LG	1
22	4174795	SHEAVE-TRANSAXLE	1
23	4174803	BLADE - HIGH LIFT	1
24	64123-267	BLT-HEX 3/8-24X2-1/2 GR 8	1
25	4174790	ENGINE-KAWASAKI FJ ZONE	1
26	4174796	ADAPTOR-BLADE	1

* NOT ILLUSTRATED

922107 & 922106 WHEEL & AXLE ASSEMBLY

21" MOWER

FIGURE 3



922107 & 922106 WHEEL & AXLE ASSEMBLY

21" MOWER

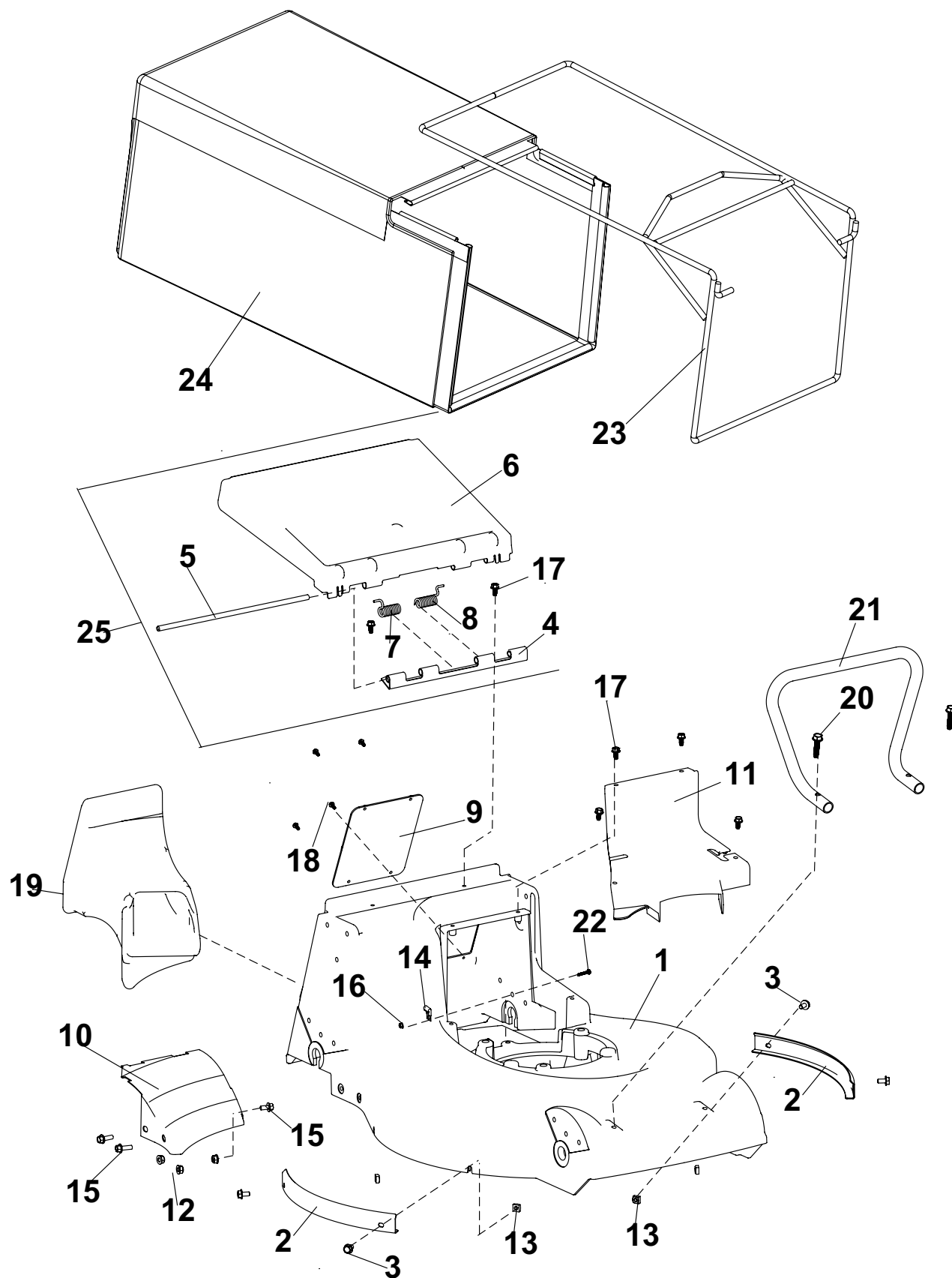
FIGURE 3

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4175700	S-DECK, MOWER	1	* NOT ILLUSTRATED			
2	4174768	LOCATOR-HEIGHT ADJUSTOR	4				
3	4174780	HUB-WHEEL	2				
4	4174927	BRKT-WHEEL	4				
5	4175730	S-LEVER, HEIGHT ADJUST	4				
	INCLUDES ITEM 7						
6	94001-15	NUT-HEX JAM 7/8-14	4				
7	4174783	GRIP	4				
8	64171-3	WASHER -WAVE 7/8 NOM	4				
9	4174784	NUT-HEX JAM THIN	4				
10	4175727	ASSY-DRIVE, HUB	2				
	INCLUDES ITEMS 8, 11, 12, 16, 18						
11	4174810	SEAL 12 X16 X 3	2				
12	4174773	BEARING-6002RR	10				
13	94197-001	BLT-TDFM 5/16-18X3/4	11				
14	94197-031	BLT-TDFM 5/16-18 x 1	1				
15	94268-01	NUT-FL NYLON LOCK 1/4-20	1				
16	4174809	BUSHING-DRIVE HUB	2				
17	4175725	S-ASSY WHEEL, FRONT	2				
	INCLUDES ITEMS 12, 24-28						
18	64044-27	SCREW-SET 10-32X1/4 DOG PT	2				
19	4174813	WASHER-THRUST W/TANG	4				
20	64164-53	KEY-RECT 3 X 5 X 14 MM	2				
21	4174814	SPRING-COMPRESSION	2				
22	4174815	GEAR-PINION	2				
23	4174812	COVER-DUST	2				
24	4175724	S-ASSY WHEEL, DRIVE	2				
	INCLUDES ITEMS 12, 24-30						
25	4174772.47	RETAINER-TIRE	4				
26	4174774	SPACER-WHEEL BEARING	4				
27	94152-93	SCREW-PH PHIL 8-32X1/2	24				
28	4174771	TIRE-9X2	4				
29	4174775	GEAR-WHEEL	2				
30	94152-83	SCREW-SLT HH 10-24X1	12				
31	94251-005	WSHR-M12	6				
32	4174778	SPACER-1/2 X 3/4 X 5/16	2				
33	4174779	SPACER-STEPPED	2				
34	94151-7	NUT-HEX CTR LOCK	4				
35	94123-125	BLT-HEX 1/2-13X2-3/4	2				
36	94123-31	BLT-HEX 1/2-13X3	2				
37	64144-47	RING-RETAINING 12MM EXT	4				
38	64163-65	WSHR-.890X1.375X18GA	6				
39	64044-13	SCREW-SET 1/4-28 X 1/4	4				

922107 & 922106 MOWER DECK ASSEMBLY

21" MOWER

FIGURE 4



21" MOWER **922107 & 922106 MOWER DECK ASSEMBLY**

FIGURE 4

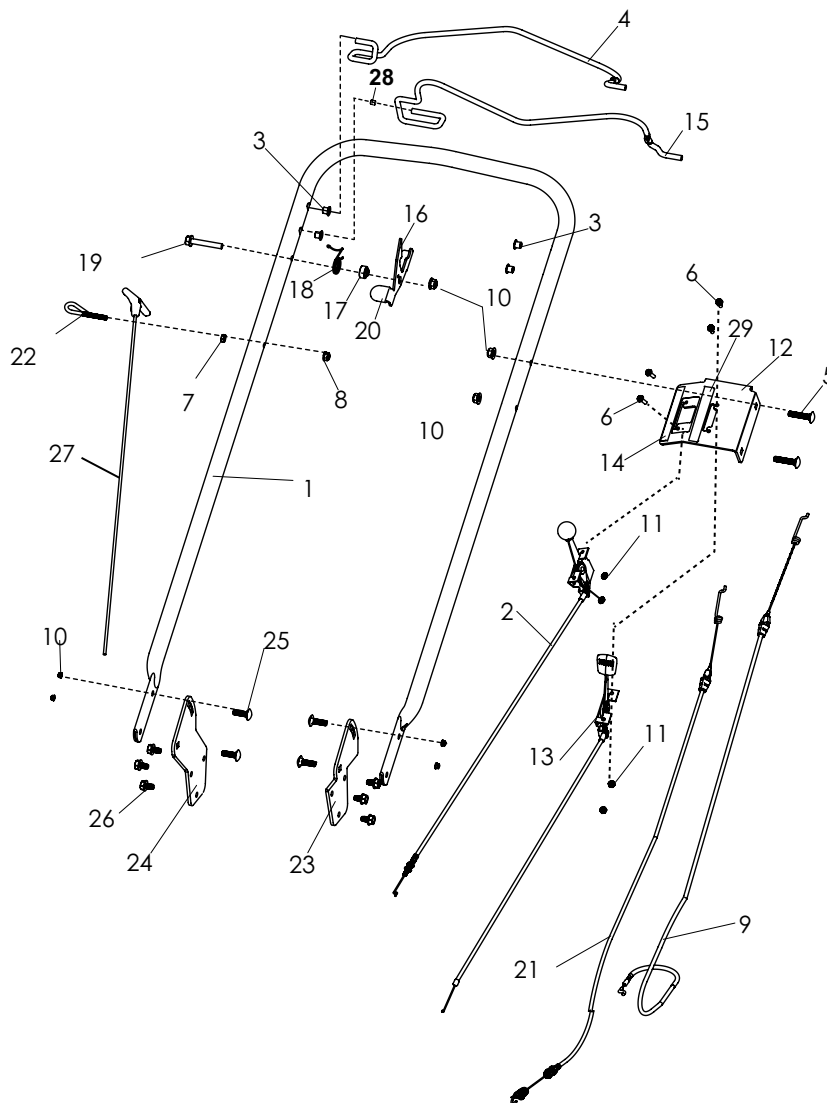
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4175700	S-DECK, MOWER	1				
2	4175722	KIT-SWEAR STRIP	2				
		INCLUDES ITEM 3 & 13					
3	94262-001	BLT-FLG HD 1/4-20 X 1/2	4				
4	4174816.47	BRKT-DOOR	1				
5	4174818	ROD-DOOR HINGE	1				
6	4175720	S-DOOR, REAR DISCHARGE	1				
7	4174820	SPRING-DOOR RH	1				
8	4174819	SPRING-DOOR LH	1				
9	4175623.7	COVER-ACCESS	1				
10	4174805	CHUTE-BOTTOM	1				
11	4174835	COVER-BELT	1				
12	94268-01	NUT-FL NYLON LOCK 1/4-20	3				
13	94277-01	NUT-SQ 1/4-20	4				
14	48412-04	CLIP-CABLE 5/16 J X 10.32	1				
15	94262-002	BLT-FLG HD 1/4-20 X 3/4	3				
16	94268-02	NUTFLG NYLON LOCK 5/16-18	1				
17	94197-030	BLT-TDFM 1/4-20X1/2	6				
18	94152-88	SCRW-HEX WSHR 8-32X3/8	4				
19	4174836	PLUG-MULCH	1				
20	94197-013	BLT-TDFM 5/16-18X1-1/4	2				
21	4175168.47	BUMPER-STOP BAR	1				
22	94197-031	BLT-TDFM 5/16-18X1	1				
23	4174838.47	WLDMT-FRAME BAGGER	1				
24	4174837-1	BAG-BOBCAT	1				
25	4175726	KIT-REAR DOOR	1				
		INCLUDES ITEMS 4-8 & 17					

* NOT ILLUSTRATED

922107 HANDLE ASSEMBLY

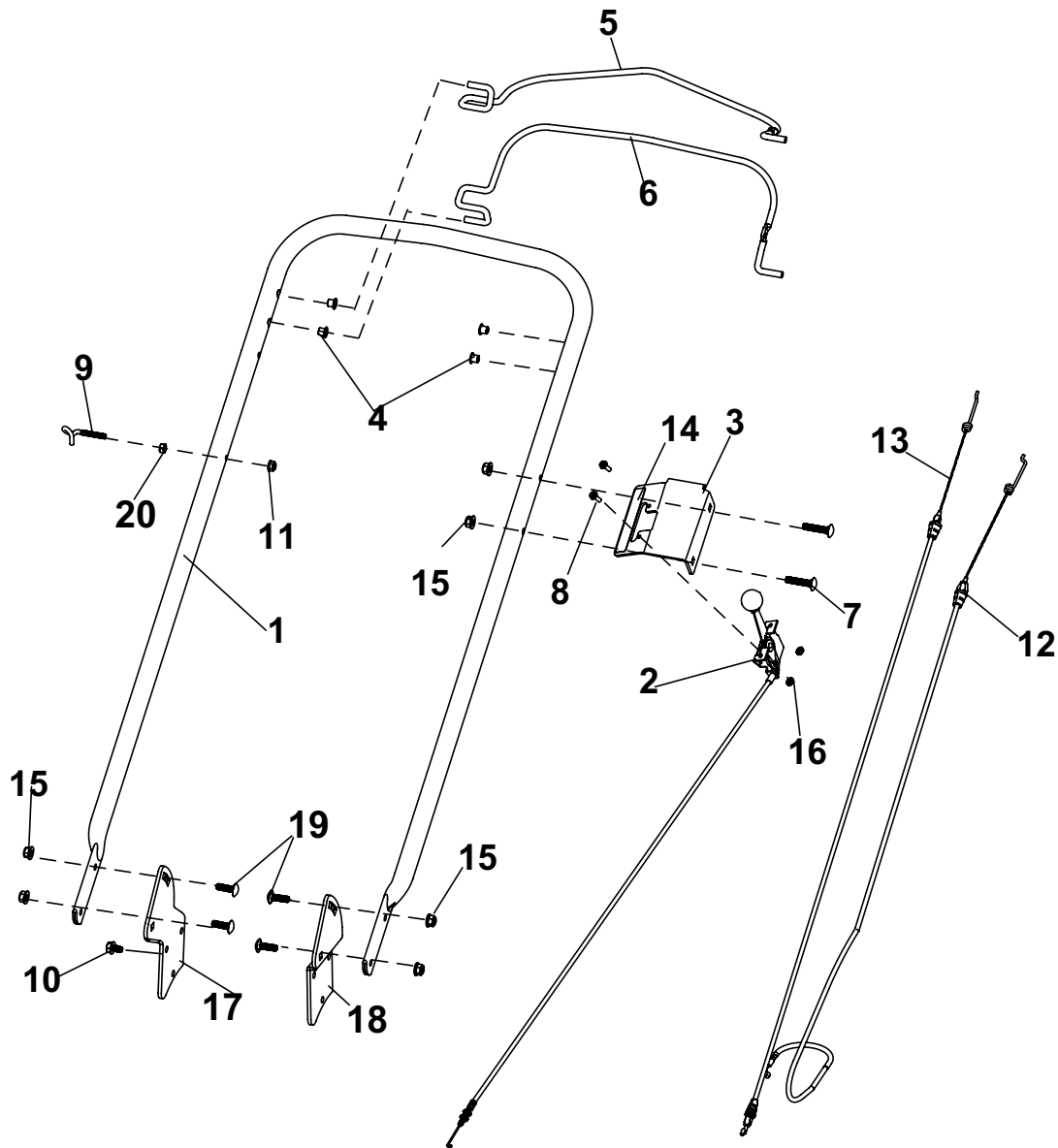
21" MOWER

FIGURE 5



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4175306.47	HANDLE-MOWER	1	19	94262-035	BLT-FLG HD	1
2	4175313	CABLE-SPEED SELECTOR	1	20	4175610	GRIP	1
3	38304-09	BRG FLGD PLASTIC	4	21	4175620	CABLE-BLADE CONTROL	1
4	4175308.47	BAIL-TRACTION	1	22	4175875	GUIDE-ROPE	1
5	94018-34	BLT-CRG	2	23	4175330.7	BRKT-HANDLE LH	1
6	64152-46	SCREW-SLT HH 10-24X1/2	4	24	4175331.7	BRKT-HANDLE RH	1
7	94001-14	NUT-HEX JAM	1	25	94018-63	BLT-CRG	4
8	94268-01	NUT-FL NYLON LOCK	1	26	94197-031	BLT-TDFM 5/16-18 X 1	6
9	4175312	CABLE-TRANS CLUTCH	1	27		PULL-ROPE	1
10	94268-02	NUT-FL NYLON LOCK	5	OBTAIN FROM ENGINE MANUFACTURER			
11	64025-15	NUT-HEX #10-24 KEPS	4	28	4175970	SPACER-.328 X.625 X.875 LG	1
12	4179295	S-BRKT, CONTROL BBC INCLUDES ITEM 14 & 29	1	29	4179219	LABEL-THROTTLE	1
13	4175314	CABLE-THROTTLE	1				
14	4175333	LABEL-SPEED LEVER	1				
15	4175605.47	BAIL-BLADE CONTROL BBC	1				
16	4175604	LATCH-BBC BAIL	1				
17	4175619	HUB-SPACER	1				
18	4175606	SPRING-TORSION	1				

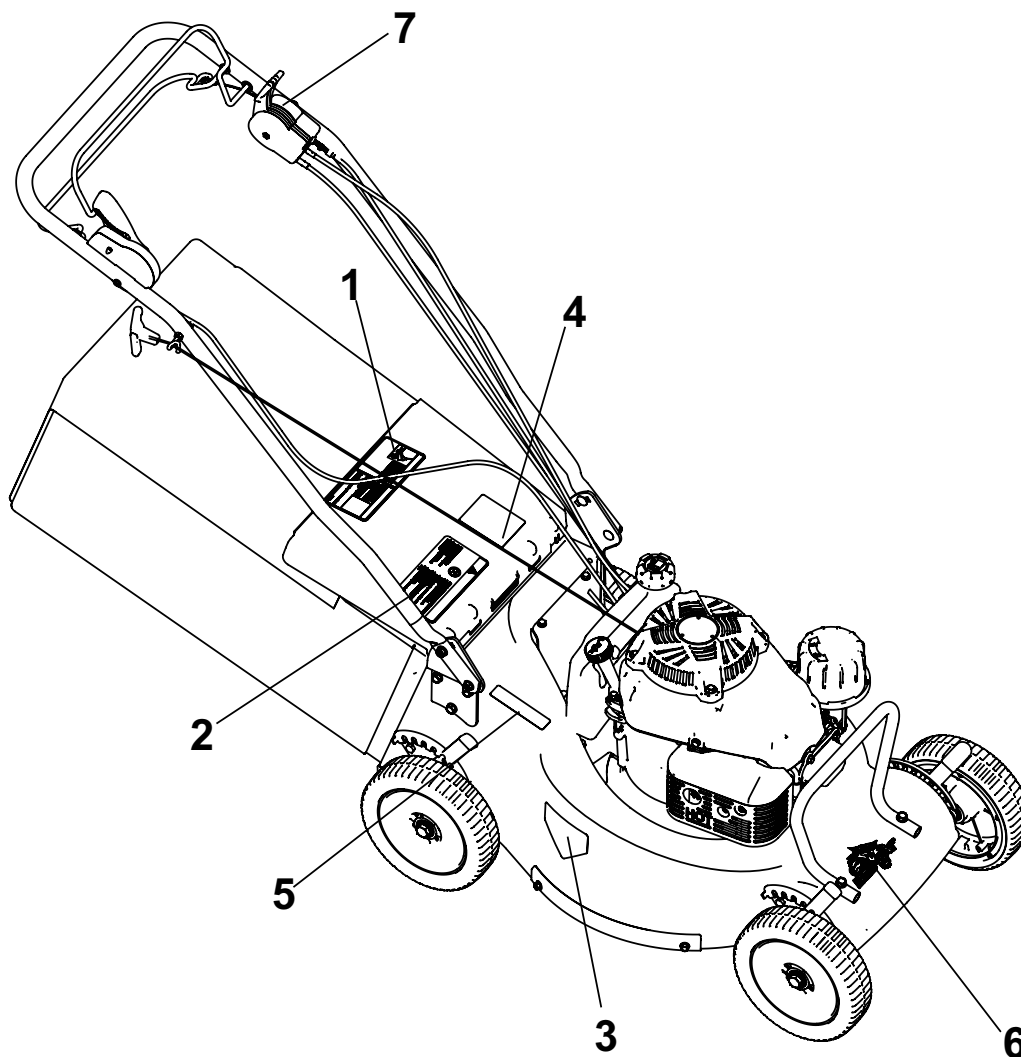
FIGURE 6



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4175306.47	HANDLE-MOWER	1	11	94268-01	NUT-FL NYLON LOCK	1
2	4175313	LEVER-SPEED SELECTOR	1	12	4175312	CABLE-TRANS CLUTCH	1
3	4175721	S-BRKT,CONTROL ZONE START	1	13	4175311	CABLE-OPC, 21" MOWER	1
	INCLUDES ITEM 14			14	4175333	LABEL-SPEED LEVER	1
4	38304-09	BRG-FLG .313X.438X.56X.754	4	15	94268-02	NUT-FL NYLON LOCK	6
5	4175308.47	BAIL-TRACTION	1	16	64025-15	NUT-HEX #10-24 KEPS	2
6	4175307.47	BAIL-OPC ZS	1	17	4175331.7	BRKT-HANDLE RH	1
7	94018-34	BLT-CRG 5/16-18 X 1 1/2	2	18	4175330.7	BRKT-HANDLE LH	1
8	94152-46	SCREW-SLT HH 10-24X1/2	2	19	97018-63	BLT-CRG 5/16-18X1	4
9	4175875	GUIDE-ROPE	1	20	94001-13	NUT-JAM 1/4-20	1
10	94197-031	BLT-THDFM 5/16-18X1	6				

* NOT ILLUSTRATED

FIGURE 7



ITEM	PART NO.	DESCRIPTION	QTY
1	4175059	LABEL-DANGER/WARNING	1
2	4175288	LABEL-WARNING-HEARING	1
3	4175056	LABEL-CPSC	1
4	4175297	LABEL-CAUTION-SPANISH	1
5	4176807	LABEL-SPARK WARN	1
6	4158402	LABEL-BOBCAT SMALL	1
7	4175333	LABEL-SPEED LEVER	1
	(922106 MODEL ONLY)		
	4175478	LABEL-CONTROL	1
	(922107 MODEL ONLY)		

* NOT ILLUSTRATED

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