

# **COMPACT OUTLAW MODEL ZERO-TURN MOWER** OWNER'S, SERVICE & PARTS MANUAL

For additional information, please see us at

### www.badboymowers.com

Bad Boy, Inc. 102 Industrial Drive Batesville, Arkansas 72501

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### This manual applies to the following equipment:

### **Bad Boy Compact Outlaw Series**

Compact Outlaw 4200 42" 726cc Kawasaki FX691V Compact Outlaw 4800 48" 726cc Kawasaki FX691V Compact Outlaw 4200 42" 810cc Vanguard Compact Outlaw 4800 48" 810cc Vanguard

### COMMONLY USED ITEMS AND PART NUMBERS

48" Blade	Hi-Lift Fusion	Gator Blade		Wave Blade		
48 Bidue	038-5350-00	038-5000-00		) 038-5000-00		038-4825-00
42" Blade	Hi-Lift Fusion	Gator Blade		Hi-Lift Fusion Gato		Wave Blade
42 Didue	038-4226-00	038-4227-00		038-4228-00		
Hydraulic Filter		063-1050-00				
Dock Polt	48"	42"		48"		42"
DECK BEIL	Deck Belt 041-1470-00		041-4022-00			
Pump Belt		041-6400-00				
Fuel Filter	063-6000-00					
Spork Dlug	Vanguard 810cd		Kawasaki FX 691v			
Spark Plug	015-8000-00	015-8000-00		015-8001-00		
Air Filter	Outer Element		Inner Element			
All Filler	063-8019-00			063-8020-00		
Oil Filter	Vanguard 810cc		Kawasaki FX 691v			
063-8018-00		C		063-8017-00		
Motor Oil	10W-30 Motor Oil - Bad Boy Synthetic Blend Motor Oil Recommended					
Hydro Oil	20W-50 Motor Oil - Bad Boy Hydrostatic Oil Reccommended; Approximately 2 quarts per side					

## **SECTION 1: BASIC INFORMATION**

Congratulations on the purchase of your new Bad Boy Mower! The purpose of this manual is to assist operators in maintaining and operating their machine. The information and instructions in this manual can help you attain years of performance from your new Bad Boy. Also, check out our website to learn more about the Bad Boy family.

- 1.1 All Bad Boy engines use 10W-30 engine oil. For maximum protection, Bad Boy synthetic blend engine oil is recommended.
- 1.2 All Bad Boy hydraulic systems use 20W-50 engine oil (Conventional or Synthetic). Bad Boy Hydrostatic oil is recommended.
- 1.3 All Bad Boy Mowers use hi-temp multi-purpose grease. NLGI No. 2 for the grease fittings.
- 1.4 Compact Outlaw models have 12 psi in both front and rear tires.
- 1.5 Most Briggs, Kawasaki, and Vanguard engines hold approximately two (2) quarts of motor oil. Be careful not to over fill engine oil. Refer to the engine's service manual.

## Warranty Registration

The Warranty Registration form must be completed within 30 days to validate your warranty. As the new equipment owner, you are expected to see that the form is completed and forwarded to Bad Boy, Inc., at time of delivery. Warranty is non transferable. **Warranty registration should be completed by the selling dealership using the on-line registration site.** 

## Model/Serial Number

Your Compact Outlaw model serial numbers are found on the SIN plate underneath seat. These numbers can assist you in the ordering of new parts when replacements become necessary.

## Parts/Service

Only Bad Boy replacement parts are to be used on your mower.

Replacement parts are available through your local Bad Boy Mower Dealer. Remember to always provide the following information when ordering parts:

- 1. Correct part number
- 2. Correct serial number

All warranty repair and service must be handled through your authorized Bad Boy Mowers dealer. To locate the nearest dealer, go to our website and click on Locate a Dealer.

## **EVAPORATIVE EMISSION CONTROL WARRANTY STATEMENT**

### Federal Evaporative Emission Control Warranty: Your Warranty Rights and Obligations

The Environmental Protection Agency (EPA), and Bad Boy Inc. are pleased to explain the evaporative emission control system's warranty on your **2017** equipment. New equipment that uses spark ignition engines for off-road use must be meet stringent anti-smog standards. The evaporative emission control system on your equipment is designed, built, and equipped so it conforms at the time of sale to the ultimate purchaser with the requirements of 40 CFR 1060. The evaporative emission control system is free from defects in materials and workmanship that may keep it from meeting said requirements. Bad Boy Inc. must warrant the evaporative emission control system on your equipment for two years provided there has been no abuse, neglect or improper maintenance. If an evaporative emission control system component does fail in a manner that would cause the equipment to no longer meet the requirements of 40 CFR 1060 within the first two years Bad Boy Inc. will replace the defective component. Your evaporative emission control system may include parts such as fuel tanks, fuel lines, carbon canisters, fuel caps, valves, vapor hoses, clamps, or connectors.



## **SECTION 2: MOWER SAFETY GUIDELINES**

Never allow untrained people to operate this machine. It is the owner's responsibility to get training and see to it that anyone who has permission to use your machine receives the proper training. Do not mow around people. The factory discharge chute is designed to deflect debris downward, but it could be possible for debris to be thrown in a way that can cause damage to people or property. Seek additional training when possible to learn more about safety techniques and practices. This cutting 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.

### **GENERAL OPERATION**

- 2.1 Read, understand, and follow all instructions on the machine and in the manual before starting.
- 2.2 Do not put hands or feet near rotating parts or under the machine. Keep clear of the discharge opening at all times.
- 2.3 Always remain seated while operating the machine. If the machine is equipped with Roll Over Protection (ROPs), always buckle your seat belt.
- 2.4 Only allow responsible adults who are familiar with the instructions to operate this machine.
- 2.5 Clear the area of objects such as rocks, wire, toys, etc., which could be thrown by the blades.
- 2.6 Always maintain a safe distance from people and pets just prior to, and during, operation. Stop the machine if anyone enters the area.
- 2.7 Never carry passengers.
- 2.8 Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
- 2.9 Never direct discharged material toward anyone. Avoid discharging material against a wall or obstruction as material may ricochet back toward the operator. Stop the blades when crossing gravel surfaces.
- 2.10 Never operate the machine without the discharge chute, grass catcher, or other safety devices correctly in place and functioning properly.
- 2.11 Slow down before turning.
- 2.12 Always disengage blades, place steering controls in neutral, engage parking brake, and remove ignition key when leaving operators seat. Never leave a running machine unattended.
- 2.13 Disengage blades when not mowing. Shut off engine and wait for all parts to come to a complete stop before cleaning the machine, inspecting the machine for damage, removing the grass catcher, or unclogging the discharge guard.
- 2.14 Always operate machine in daylight or with adequate working lights.
- 2.15 Do not operate the machine while under the influence of alcohol or drugs.
- 2.16 Watch for traffic when operating near or crossing roadways.
- 2.17 Always wear eye protection when operating or servicing the machine.
- 2.18 Always wear ear protection, such as earplugs, while mowing.
- 2.19 Use extra care when loading or unloading the machine into a trailer or truck.
- 2.20 Be alert of surroundings. Watch for rocks, stumps, mounds, depressions, and low hanging limbs or objects that could be potentially hazardous while mowing.
- 2.21 Data indicates that operators 60 years of age and above are involved in a large percentage of riding mower related injuries. These operators should periodically evaluate their ability to operate the riding mower safely enough to protect themselves and others from serious injury.

## **SLOPE OPERATION**

Slopes are a major factor related to loss of control and tip over accidents, which can result in severe injury or death. Operation on all slopes requires extra caution. If you cannot back up the slope, or you feel uneasy on it, do not mow it.

- 2.22 Mow up and down slopes, not across.
- 2.23 Watch for holes, ruts, bumps, rocks, or other hidden objects that tall grass can obscure. Uneven terrain could overturn the machine.
- 2.24 Choose a low ground spend when operating the machine on a slope.
- 2.25 Do not mow on wet grass, the tires may lose traction.
- 2.26 Do not attempt to coast down a slope in the neutral position.
- 2.27 Avoid starting, stopping, or turning on a slope. If the tires lose traction, disengage the blades and proceed slowly, straight down the slope.
- 2.28 Keep all movement on slopes slow and gradual. Sudden changes in speed or direction could cause the machine to roll over.
- 2.29 Use extra care while operating machine with grass catchers or other attachments: they can affect the stability of the machine. Do not use on steep slopes.
- 2.30 Do not try to stabilize the machine by putting your foot on the ground.
- 2.31 Do not mow near drop offs, ditches or embankments. The machine could suddenly roll over if a wheel goes over the edge or the edge caves in.
- 2.32 Be aware of what is located at the bottom of slopes. For example: rocks water, cliffs, and roadways.

### CHILDREN

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.

- 2.33 Keep children out of the mowing area and in the watchful care of a responsible adult other that the operator.
- 2.34 Maintain alertness and turn machine off if a child enters the area.
- 2.35 Before and while backing, look behind and down for small children.
- 2.36 Never carry children, even with the blades shut off. They may fall off and be seriously injured or interfere with safe machine operation. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the machine.
- 2.37 Never allow children to operate the machine.
- 2.38 Never leave key in the ignition, especially around children.
- 2.39 Use extreme care when approaching blind corners, shrubs, trees, or other objects that may block your view of a child.

### TOWING

- 2.40 Tow only with a machine that has a hitch specifically designed for towing. Do not attach towed equipment except at the hitch point.
- 2.41 Follow the manufacturer's recommendation for weight limits for towed equipment and towing on slopes.
- 2.42 Never allow children or others in or on towed equipment.
- 2.43 On slopes, the weight of the towed equipment may cause loss of traction and loss of control.
- 2.44 Travel slowly and allow extra distance to stop.



## SERVICE:

### SAFE HANDLING OF GASOLINE

To avoid personal injury or property damage, use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive.

- 2.45 Extinguish all cigarettes, cigars, pipes, and all other sources of ignition.
- 2.46 Use only an approved gasoline container.
- 2.47 Never remove gas cap or add fuel with the engine running.
- 2.48 Allow engine to cool before refueling.
- 2.49 Never fuel the machine indoors.
- 2.50 Do not store machine near open flame or source of ignition, such as a water heater or furnace.
- 2.51 Remove gas powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment with a portable container, rather than from a gasoline dispenser nozzle.
- 2.52 Never fill gasoline containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.
- 2.53 Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until the fueling is complete. Do not use a nozzle lock-open device.
- 2.54 If fuel is spilled on clothing, change clothing immediately.
- 2.55 Never overfill fuel tank. Replace gas cap and tighten securely. Tank is full when level reaches bottom of fill tube.

## **GENERAL SERVICE**

- 2.56 Never operate machine in a closed area where dangerous carbon monoxide fumes can collect.
- 2.57 Keep all nuts and bolts tight to be sure the equipment is in safe working condition. Never operate a poorly maintained machine.
- 2.58 Do not touch hot areas of the machine.
- 2.59 Never interfere with the intended function of a safety device or reduce the protection provided by a safety device. Check their proper operation regularly.
- 2.60 Keep the entire machine free of grass, leaves, or other debris build up. Clean up oil or fuel spillage and remove any fuel soaked debris. Failure to do so can affect the safety and functionality of the machine, as well as increase the danger of a fire due to contact with the hot surfaces of the machine.
- 2.61 Allow machine to cool before storing.
- 2.62 If you strike something with the mower, turn the mower and blades off, engage the parking brake, and inspect the machine for damage. Repair, if necessary, before resuming.
- 2.63 Never make any adjustments or repairs with the engine running.
- 2.64 Check grass catcher components and the discharge guard frequently and replace with manufacturer's recommended parts, when necessary.
- 2.65 Mower blades are sharp. Wrap the blade or wear gloves before servicing them.
- 2.66 Check parking brake operation frequently. Adjust and service as required.
- 2.67 Maintain or replace safety and instruction labels, as necessary.
- 2.68 Do not attempt to mount a tire without the proper equipment and experience to perform the job.

- 2.69 Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.
- 2.70 Park machine on level ground. Never allow untrained personnel to service machine. Understand service procedure before doing work.

### SAFETY INTERLOCK SYSTEM

Your Bad Boy mower is equipped with a safety interlock system. This system is designed to prevent serious injury or death to the operator and other people or property damage. The system consists of an operator presence switch in the seat, the parking brake, drive lever neutral position, the mower blade engagement switch, and the ignition switch.

These interlocks are vitally important and must be tested frequently. Following are instructions to test these very important safety precautions. Note: the operator must be seated properly on the machine during these tests and the engine should have been previously allowed to warm to operating temperature.

- 2.71 With the parking brake engaged, bring lever arms to their inward position, then attempt to start the machine (the blade actuator should be in off position); the engine should not start.
- 2.72 On a level surface, disengage the parking brake and place lever arms to their outward position, then attempt to start the machine (the blade actuator should be in off position); the engine should not start.
- 2.73 Engage parking brake and leave lever arms in outward position, put blade actuator in the on position, then attempt to start the machine; the engine should not start.
- 2.74 Next, start the engine as stated in the "Mower Operation Section", disengage parking brake, and Very Slowly begin to rise from the seat; the engine should stop.

If any of these tests fail to produce the results indicated and the problem cannot be identified, contact your Bad Boy Mower dealer or the support contacts in the rear of this manual.

## **ROLL OVER PROTECTION STRUCTURES (ROPS)**

Your machine has been equipped with ROPS; it is of utmost importance that they are used properly. ROPS, when used correctly, dramatically decrease the fatality rate in instances when the machine overturns.

- 2.75 Periodically ensure the bolts that attach the ROPS to the machine are securely fastened.
- 2.76 Always operate the machine with the ROPS secured in the upright position.
- 2.77 If the surrounding environment (e.g. low lying limbs, signage, etc.) makes it impossible to mow with the ROPS upright, lower the ROPS at the hinge point, mow the area, then immediately secure the ROPS upright.
- 2.78 Upright ROPS are taller than then operators head. Be aware of this and your surrounding environment, as referenced above. The mower and operator may clear low lying items, but the ROPS may not.
- 2.79 Always wear the provided seat belt when ROPS are utilized. Failure to use the seat belt severely handicaps the safety benefits of the ROPS.
- 2.80 In the event of a roll-over, replace the ROPS before resuming use of the machine.



## **SECTION 3: MOWER OPERATION**

Never operate the machine with faulty equipment. Always be alert of sudden changes in landscape, as the mower will react differently on slopes or embankments than it will on flat surfaces. Never operate the mower with the discharge chute open. Do not cross terrain, other than grass, with blades turning. This could cause damage to property or bystanders.

- 3.1 Place parking brake in "up" position
- 3.2 Drive arms must be in the "open" position. While sitting on the machine, each arm is positioned away from the operator, to the right and left. Drive arms will lock into place and must be in this position to start machine.
- 3.3 Put PTO switch in the "OFF" position.
- 3.4 Your machine has been equipped with a ROPS (Roll Over Protection Structure); you must fasten seatbelt.
- 3.5 If machine has not been started recently, engage the choke.
- 3.6 Make sure nothing is under or around machine.
- 3.7 Place key in ignition and turn.
- 3.8 Once machine is started, disengage the choke.
- 3.9 Increase RPM by sliding the throttle to fast position, toward the rabbit.
- 3.10 Owners must become familiar with the controls before operating a zero-turn radius vehicle.
- 3.11 Start slowly and build your skill level. Have ample practice before using the machine at full capabilities.
- 3.12 Be comfortable with machine before engaging blades. Know what each component controls before using machine.
- 3.13 Your mower will perform differently on an incline /decline. Be cautious, slow down, and do not make any sudden jerking movements with control arms. The machine could lose traction on a decline or tip backwards on an incline.
- 3.14 Once you become comfortable with your Bad Boy Mower you will notice your overall mowing time will decrease.

### Avoid operating your mower on side hills of over 5 degrees, inclines of over 10 degrees, and declines of over 15 degrees.

## **SECTION 4: MOWER MAINTENANCE**

	Interval					
		First	Every 50	Every 100	Every	
	Daily	8	hours or	hours or	250	Section
Maintenance		hours	annually*	annually*	hours	
Check and add engine oil	•					Section 3
						Section 2
Check all belts for proper alignment	•					(Pump) 6
						(Deck)
Check tire pressure and wheel lug	•					Section 5
nuts	•					Section 5
Check battery terminal connections	•					Section 4
Check condition of blades	٠					Section 6
Check for fule and oil leakage	٠					Section 3
Initial oil change		•				Section 3
Change engine oil and filter			•			Section 3
Tighten nuts and screws			•			
initial change of hydraulic oil and			•			Section 1
filter			•			Section 1
Grease mower				•		Section 5
Replace air element and pre-cleaner				•		Section 3
<u> </u>				•		Section 5
Replace fuel filter ◊				•		Section 3
Clean or replace spark plugs and set				•		Section 3
gap						Section 5
Change hudraulic oil and filter					•	Section 1
Clean combustion chamber Dealer					•	
Check and adjust valve clearance Dealer					•	
Clean and lap valve seating surface					•	

\*Maintenance by hour or annually, which ever comes first

Check air and fuel filter more often in dusty conditions

Dealer Get maintenance performed at a registered dealership



## **MAINTENANCE LOG**

Date:	Hours:	Performed:	
Date:	Hours:	Performed :	
Date:	Hours:	Performed:	
Date:	Hours:	Performed :	
Date:	Hours:	Performed:	
Date:	Hours:	Performed:	
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## **SECTION 5: MOWER STORAGE & TRANSPORTATION**

- 5.1 Keep machine from collecting debris by storing in a covered area while not in use.
- 5.2 Fuel can harm your machine if left for more than 30 days without changing, especially if the fuel contains ethanol. Never use fuel with more than 10% ethanol by volume. E-15 is not permitted.
- 5.3 Disconnect the negative battery cable when machine will be stored for more than 30 days.
- 5.4 Always secure machine properly when transporting machine.
- 5.5 Do not load machine on trailer with blades engaged.
- 5.6 Do not use ramps to load the machine.
- 5.7 Make sure Parking Brake is in "up" position.
- 5.8 In wet conditions tires may spin while loading / unloading. If necessary, wait for dry conditions before loading / unloading.
- 5.9 Make sure mode of transportation is suitable to bear the weight of mower.
- 5.10 Deck height should be set at maximum before attempting to load.
- 5.11 Secure mower with at least two straps capable of securing weight of mower.



## **SECTION 6: TROUBLESHOOTING**

### 6.1 **Q:** How do I prevent an uneven cutting pattern and increase the quality of cut?

6.1 A: Check tire pressure, check blade sharpness (replace blades or sharpen at least once per year or when needed), make sure blades are tightened properly, check spring and belt tension, check the underside of the deck to ensure the mower deck is free of grass build-up and debris, make sure your machine is at full throttle, and vary your mowing pattern each time you cut your grass.

### 6.2 **Q:** What should I do if my mower won't start?

6.2 **A:** Check battery charge and connection (grounds), check your fuel (make sure fuel is less than 30 days old and contains no water), make sure your spark plug is in good condition and spark plug wire is attached, and make sure air filter is clean (a dirty filter makes it more difficult for the engine to draw air). Check the integrity of the 25 amp main fuse; also check for any bare wires and/or bad connections.

### 6.3 **Q:** What should I do if the blades won't engage?

6.3 **A:** Make sure the safety switch is plugged in on the bottom of seat. Check the underside of the PTO engager to ensure the plug is secure at switch. Also check PTO fuse underneath operator console (10amps)

### 6.4 **Q:** What type of fuel is recommended for my mower?

6.4 A: We recommend that you use a name brand fuel to ensure quality. Use fuel with an octane rating near 87. Higher octane fuels offer no benefit. By law, E-15 fuel is not permitted. Usage of E-15 will result in premature engine failure.

### 6.5 **Q:** Do you offer touch-up paint for your mowers?

6.5 **A:** Touch-up paint is available. Contact your local dealer for more information.

### 6.6 **Q:** How durable is the electric deck lift?

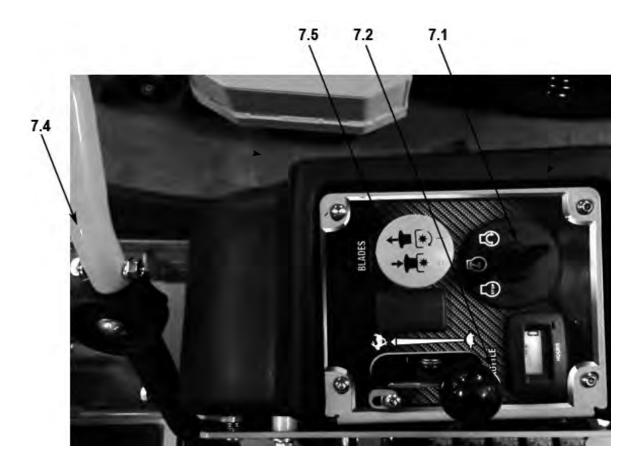
6.6 A: The actuator which controls the deck height is designed for moving loads of up to 1000 pounds and has a static holding capability which exceeds 3,000 pounds. Our ¼<sup>"</sup> deck weighs approximately 250 pounds which is only 25% of working capability. If deck lift will not operate, check fuse located underneath operator console (15amp).

### 6.7 **Q:** How do I clean my mower?

6.7 **A:** It is recommended that you use an air hose or blower to remove dust and debris from the mower, to ensure there is not a build up of grass on the mower deck and engine compartment, which could become a fire hazard. If you must wash the mower, ensure you run the engine to operating temp to dry water and engage the blades to spin off any standing water on the pulleys. Avoid spraying water onto electrical components and bearings, to prevent premature failure of these parts.

## **SECTION 7: CONTROLS**

- 7.1 **Ignition Switch**—Bad Boy mowers have a three position ignition switch: off, run, and start. With key inserted, rotate it clockwise to START position and release key when engine starts, and switch will automatically return to the RUN position.
- 7.2 **Throttle Control**—A cable is connected to the engine throttle for controlling engine speed. Move lever forward to increase engine rpm, move lever backward to decrease engine rpm.
- 7.3 **Choke Control**—(Not pictured) When the lever is in the down position, the choke is in the off (run) position. When the lever is pulled up, the choke is in the on (start) position. Do not operate the machine in the on (start) position.
- 7.4 **Control Levers**—These levers control the mower's speed, direction, and neutral lock. These levers are used to steer, accelerate, decelerate and change direction. (Drive Arms)
- 7.5 **Blade Engage Switch**—This switch engages the blades. Pull the switch up to engage the blades and push the switch down to disengage the blades.





## **SECTION 8: MOVING INOPERABLE MOWER**

- 8.1 Do not tow machine. Use a winch to load on a trailer for transporting.
- 8.2 Compact Outlaw Models are equipped with two neutral engage/disengage arms, located at the rear of the mower protruding from the frame and under the muffler. By pulling the arms out, the mower can be put in a neutral position. Return the arms to the "forward position" for normal operation.
- 8.3 Your Bad Boy Mower Weighs: SERIES: COMPACT OUTLAW 862—925 Ibs \*\*\* Weights fluctuate with the addition of accessories.
- 8.4 As you can see by the weights of the machines, you shouldn't ever try to push or pull a Bad Boy Mower by hand. This could cause serious bodily injury.
- 8.5 Hopefully, you'll never need to use this section of the manual. However, if you do, use extreme caution when moving machine!

## **SECTION 9: INSTRUMENTATION**

9.1 **Electronic Hour Meter**—Registers Hour increments up to 9,999.9 total hours. This meter records the cumulative time the engine is running.

## **SECTION 10: MOWER BLADE MAINTENANCE**

- 10.1 Check mower blades after each use. This is essential for maintaining well-groomed turf. Keep the blades sharp. If a dull blade is used for cutting, the grass will tear rather than cut. This could damage the grass leaving a brown frayed top on the grass within a few hours. A dull blade will also require more power from the engine.
- 10.2 NEVER attempt to straighten a bent blade by heating. NEVER attempt to weld a cracked blade. The blades can break and cause serious injury or death.
- 10.3 NEVER work with blades while engine is running or deck clutch is engaged.
- 10.4 ALWAYS place deck clutch in DISENGAGE position while performing maintenance.
- 10.5 Use blocks when you MUST work under mower.
- 10.6 ALWAYS wear thick gloves when handling blades.
- 10.7 ALWAYS check for blade damage if mower strikes rocks, branches, or other objects that could potentially damage the blade.

### (REMEMBER: NEVER CHECK BLADE WHILE ENGINE IS ON! NEVER CHECK BLADES WHILE BLADES ARE ENGAGED!)

## **SECTION 11: EQUIPMENT LUBRICATION**

- 11.1 Park the machine on a level surface and disengage the blade control switch.
- 11.2 Move the motion control levers outward to the neutral position, engage parking brake, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 11.3 Grease Type: NGLI grade #2 multi-purpose gun grease.
- 11.4 Clean the grease fittings with a cloth. Scrape any paint off the front of the fitting(s).
- 11.5 Connect a grease gun to each fitting. Pump grease into fittings until grease seepage is observed. Be mindful of over-pressurization. Do not force the lever arm if there is strong back pressure as this can lead to reduced life of the component(s). Wipe up excess grease.
- 11.6 Refer to service manual section for grease fitting locations.



## HOW TO CHOOSE THE RIGHT BLADE

Essentially there are only TWO basic styles of mowing blades used or approved for use on our current products:

- The standard style of mowing blade is essentially designed for cutting grass and effectively discharging the clippings out from the deck to fall onto the lawn or to be captured in a grass collection system. Standard blades are also referred to as "2-in-1" (discharging & bagging ) or "high-lift" blades (because they are designed to create a higher-lifting airflow).
- 2) Mulching blades generally have a more curved style surface and frequently include extra cutting surfaces along the blade edges. These blades may also come in a "+" design (which is actually two individual blades arranged in a perpendicular fashion to enhance mulching). The "+" blades are usually found on older style mowers; newer ones utilize blades with more advanced mulching technology. Mulching blades may also be referred to as "3-in-1" (mulching, discharging & bagging) or "all-purpose" blades.

Bear in mind that the re-circulating airflow design of 3/1 blades makes them less efficient at discharging grass clippings than a standard 2/1 blade. As with most all-purpose tools, there is some give and take as opposed to using a tool designed for a more specific purpose.

If you're experiencing less-than-desired cutting or discharging performance with a 3/1 blade, you may want to check into using a 2/1 blade. Conversely, if you're using a 2/1 blade and want to mulch clippings, you should see about the availability of mulching blades or a mulching kit.\*

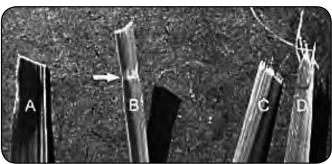
The type of blade installed on a new mower is a decision the retailer makes for each model of mower, based on the expected needs of most customers. If you're unsure of which blade is on a particular model, inspect the blade. Blades have part numbers stamped into them. Then compare these part numbers with the unit's Operator's Manual or Parts List.

It is true there are many other styles of blades available. But since we don't manufacture or recommend using these other aftermarket styles, we will leave them out of this discussion. Should you want more information on special application or aftermarket blades, you should contact the companies that make these products. NOTE: Customers using non-OEM blades do so at their own risk. The use of unapproved (non-OEM) blades may void any or all of the mower and engine factory warranties.

\* **MULCHING KITS** – These generally consist of mulching blades and a mulching plug (which closes off the discharge opening to keep the clippings contained under the deck for re-cutting) plus any necessary hardware for installation. Please check with your parts distributor regarding the contents of a particular mulching kit.

### **MOWING TIPS:**

- Mow header strips at the ends of the lawn and around flower beds first. Make them wide enough that you can turn the mower around in the already mown section. Then mow back and forth between these header strips overlapping each lap by about 1/8 the width of the mower's deck.
- Don't cut your grass too short, particularly for cool season grasses. Higher heights usually provide for a deeper root system, looks better, and is less likely to have weeds invading, particularly crabgrass.
- Don't remove any more than one third of the grass leaf at any one cutting. If circumstances arise that a lawn gets too tall and you just have to lop off a bunch to get caught up, bite the bullet and break it down into several mowings to get caught up with 3 or so days between cuttings.
- NEVER SCALP YOUR LAWN. Scalping severely damages the root system to such a degree that it may die.
- Avoid mowing when the grass is wet or when it's dark
- Avoid throwing grass clippings into the street and driveway where they can be washed into the sewer system. After mowing, clean up driveway and walkways.
- When mowing remove only a third with each cutting (except for the first mowing of the season when it's ok to remove more). You can safely leave clippings that will quickly decompose and add nutrients back into the soil. Contrary to popular opinion, grass clippings do not add to thatch buildup. Grass blades are made up of about 75% water.
- Mow your lawn in a different direction with each mowing, especially with lawns of shorter grass types. Altering the direction ensures a more even cut since grass blades will grow more erect and less likely to develop into a set pattern.
- Keep your mower's blade sharp, which means having it sharpened several times during the mowing season. Keep several blades around so you'll always have a sharp one on hand. Sharp blades cut the grass cleanly and help mulch clippings into small pieces which break down quickly.
- Don't forget to change your mower's oil at least once during the mowing season. For brand new mowers, change the oil after about 5 hours of operation during the initial break-in period.
- At the end of the mowing season use a fuel stabilizer in the remaining gasoline
- In the spring, don't use that old gas unless you properly used a fuel stabilizer, it can cause a number of problems. Better to use fresh gasoline to begin the new mowing season.
- Leaf blade A demonstrates what a leaf blade should look like after mowing with a sharp blade.
- Leaf blade B demonstrates a leaf blade that was injured by a dull mower blade.
- Leaf blade C was cut by the mower but indicates that the mower blade is not sharp enough. The shredded white tissue protruding from the leaf blades C and D is the vascular tissue of the plant.



• Leaf blade D has been mown for quite some time with a dull mower blade.

## To bag or mulch?

Grass clippings DO NOT contribute to thatch buildup or increase the chances of disease. If you mow your lawn at the right height, without removing any more than 1/3 of it's total height, clippings will quickly breakdown without a trace. These clippings contribute additional nitrogen and other nutrients to the soil and supply it with additional organic materials. Clippings from a 1000 sq. ft. lawn can add as much as 1 - 2 pounds of nitrogen back into the soil.

If you have a compost pile, then you may want to bag your clippings occasionally to add much needed green-matter to the compost pile. Make sure it is mixed thoroughly with brown matter to avoid a strong ammonia odor. **DO NOT COMPOST CLIPPINGS** after applying any weed control or weed-feed type product. Before adding clippings to the compost pile wait at least 3 mowings after these products have been applied.



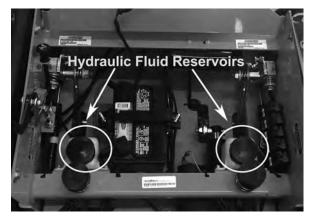
# **SERVICE SECTION**

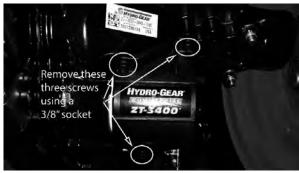
## **SECTION 1: HYDROSTATIC SYSTEM**

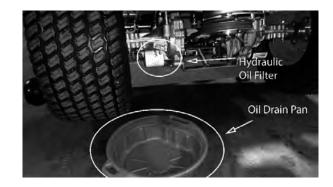
The hydraulic fluid reservoirs are located on the sides of the rear cover. Notice the "full cold" line at the bottom of the tank. Use only 20W-50 motor oil in this tank. (Bad Boy Hydrostatic oil is recommended)

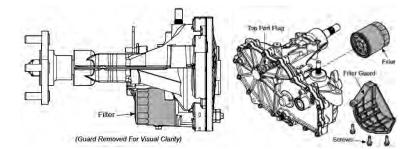
#### Changing your hydraulic oil and filter :

- Remove the tops from the hydraulic fluid reservoirs and get an oil drain pan. Lifting the mower from the rear will make access to the transaxles easier and allow you to purge the air from the transaxles.
- Remove the three ¼" filter guard screws and filter guard from the ZT-3400 Transaxle. Clean any loose debris from around the perimeter of the filter.
- Place the oil drain pan under the oil filter as the oil filter serves as the drain as well. Remove the oil filter from the transaxle.
- 4) After the oil has drained, wipe the filter base surface off and apply a film of new oil to the gasket of the new replacement filter.
- Install the new filter by hand, turn <sup>3</sup>/<sub>4</sub> to one full turn after the filter gasket contacts the filter base surface.
- 6) Re-install the filter guard with three <sup>1</sup>/<sub>4</sub>" screws. Torque screws to 65 in. lbs. (7.3 Nm) each.
- 7) Repeat steps 1-6 on the opposite side transaxle drive.







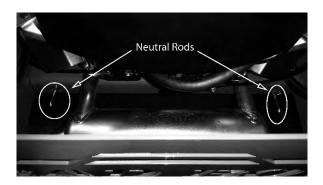


- Drain old oil filters of all free flowing oil prior to disposal. Place used oil in appropriate containers and deliver to an approved recycling collection facility.
- Remove the top port plug from the left side and right side transaxles prior to filling with oil. This will allow the transaxles to vent during oil fill and prevent any air lock within the transaxles.
- 10) Fill with 20W-50 motor oil (Bad Boy Hydrostatic oil is recommended) through the hydraulic fluid reservoirs until it just appears at the bottom of each transaxle's top port (approximately 2 quarts per transaxle, 4 quarts total). Install the top port pug into each transaxle as the oil level reaches this port.
- 11) Install and torque the top port plugs to 180 in. lbs. (20.3 Nm).
- 12) Continue to fill the transaxle through the hydraulic fluid reservoirs until the "Full Cold" line is reached on the hydraulic fluid reservoirs.
- 13) Re-install the caps on the hydraulic fluid reservoirs.
- 14) Now we need to purge the air from the transaxle. With your mowers tires off the ground disengage the brake and start the engine.
- 15) Pull the neutral bypass levers which are located on each side of the muffler. Then slowly move the drive arms in the forward and reverse direction 5 to 6 times.
- 16) Push the neutral bypass levers back into place. Move the drive arms forward and backward 5 to 6 times slowly. Check the oil level, and add oil as required after stopping the engine.
- 17) It may be necessary to repeat steps 15 and 16 until all the air is completely purged from the system. When the transaxle operates at normal noise levels and moves smoothly forward and reverse at normal speeds, then the transaxle is considered purged.

Under the rear of the mower, you will find the two levers shown in the image. These bypass levers serve as a neutral for moving the mower while the engine is not running. Pull the levers out and lock them into place to activate the bypass.

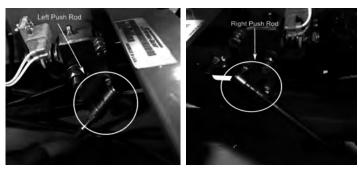








When adjusting the tracking on the mower, the length of the pushrods can be changed by screwing the swivel joint in or out on the ends of the rods. Shortening the overall length of the rod slows the pump down. Lengthening the rod will increase the speed of the pump.



### **SECTION 2: DRIVE BELT**

Shown on the right is the tensioner for your pump belt. Adjusting this will either increase or decrease tension on the belt. Use a  $\frac{3}{4}$ " wrench to loosen the jam nuts and either tighten for more belt tension or loosen for less belt tension.

The belt tension should be set between 60-65 lbs.

Use a belt tension gauge to ensure the proper tension. Your dealer or service center will have a belt tension gauge or you can buy one (Part Number 041-9999-00).





## SECTION 3: ENGINE 810cc Vanguard

This machine has an oil drain hose installed on the engine to allow for easier oil changes. Bad Boy recommends that the oil and filter be changed after the initial 8 hrs of use, and at intervals of 50 usage hours or yearly, whichever occurs first after that. The oil capacity is 2 quarts. Bad Boy 10W-30 synthetic blend engine oil is recommended for maximum protection.

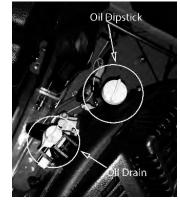
#### 3.1 Changing your engine oil and oil filter :

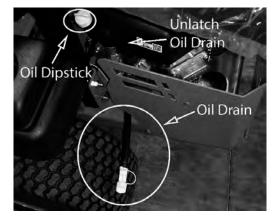
- Remove oil dipstick and open oil drain. Allow oil to completely drain. (Make sure to have an oil pan ready to capture old oil and properly dispose of old oil.)
- The oil filter is located on the right side of the engine. Clean area around oil filter. Place a container under the oil filter to capture any oil

and remove filter. Wipe off mounting surface and reinstall drain plug. Torque to 10 ft-lb.

- Place new filter in shallow pan with open end up. Fill with new oil until oil reaches the bottom of the threads. Allow 2 minutes for oil to be absorbed by filter material.
- 4) Apply a thin film of clean oil to rubber gasket on new filter
- 5) Refer to instructions on oil filter for proper installation.
- Fill crankcase with approximately 2 quarts of new oil. Level should top of indicator on dipstick.
- Reinstall oil fill/dipstick and tighten securely.
- Start engine; check for oil leaks. Stop Engine; correct oil leaks. Recheck oil level
- Dispose of used oil and filter in accordance with local ordinances.



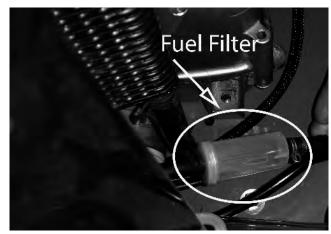






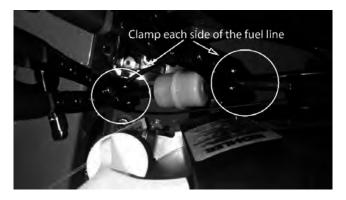


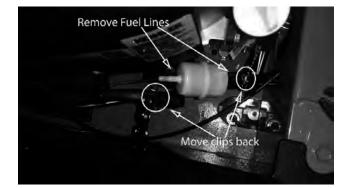
The fuel filter is located in the fuel line about 12" from the carburetor on the side of the engine. Replace the filter yearly. Prior to the removal of the old filter, note the direction of fuel flow as indicated on the filter. Have towels readily available in order to quickly remove any fuel leakage. Always use new hose clamps and ensure the security of the new filter by lightly pulling on each hose. Always perform maintenance outdoors or in a well ventilated area. Do not smoke or allow any open flames in the vicinity of any maintenance activities.



#### 3.2 Changing your fuel filter :

- Locate your fuel filter and mark the direction it is facing.
- 2) Clamp each side of the fuel filter to minimize any gas spills.
- 3) Remove the clips from each side of the fuel filter and remove the fuel filter.
- Place the new fuel filter in the same direction as the old one and replace the clips back into position and remove clamps.





The air cleaner is the engine's only defense against damaging foreign particles. It is very important that the air cleaner element is inspected prior to each use. Remove the element and tap its sides in order to remove debris. Do not blow the filter out using compressed air. Doing so will greatly reduce the air cleaner's effectiveness. Replace yearly; more often in dusty environments. Adhering to these practices will help prevent loss of power and premature engine failure.

810 Vanguard Air Cleaner Component List		
А	Latches	
В	Сар	
С	Outer Air Filter	
D	Inner Air Filter	
Е	Air Intake	

#### 3.3 Changing the air cleaner :

- 1) Unlock the air cleaner cover and remove to access the air cleaner.
- 2) Remove the outer and inner air filters.
- Replace inner and outer filter then place he inner filter into the air intake followed by fitting the outer filter over the inner filter
- 4) Place cap back on and close the latches.







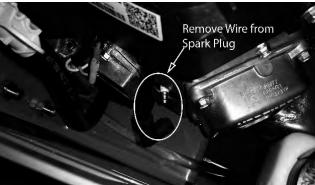
### 3.4 Changing the spark plugs and checking the spark plug gap:

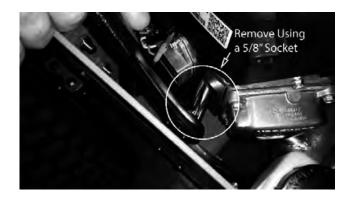
1) Remove the wire on the spark plug and use a 5/8" socket to remove the spark plug.

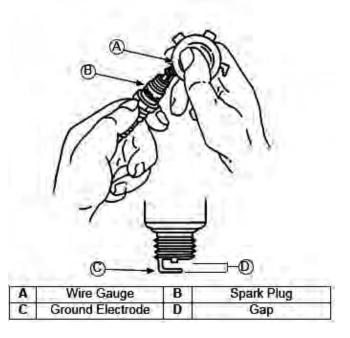
2) Check the gap on the spark plug to verify that it is 0.0.3 in using a feeler gauge.

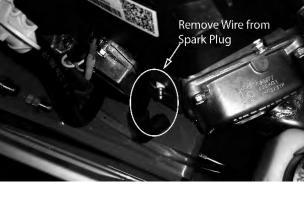
3) If the spark plug is worn, overheated, wet or carbon fouled replace the spark plug.

4) Install the plug into cylinder head and torque to 20ft.-lbs. Be careful not to overtighten the spark plug.







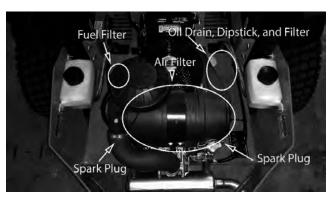


## Kawasaki FX691V

This machine has an oil drain hose installed on the engine to allow for easier oil changes. Bad Boy recommends that the oil and filter be changed after initial 8 hrs of use, and at intervals of 50 usage hours or yearly, whichever occurs first after that. The oil capacity is 2 quarts. Bad Boy 10W-30 synthetic blend engine oil is recommended for maximum protection.

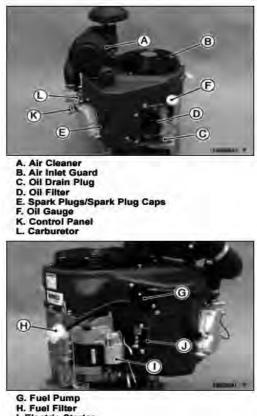
#### 3.1 Changing your engine oil and oil filter :

- Remove oil dipstick and open oil drain using a 10 mm socket or a flat head screwdriver until oil begins flowing. Allow oil to completely drain. (Make sure to have an oil pan ready to capture old oil and properly dispose old oil.)
- The oil filter is located on the right side of the engine. Clean area around oil filter. Place a container under the oil filter to capture any oil and remove filter. Wipe off mounting surface and reinstall drain plug. Torque to 10 ft.\*lb.
- Place new filter in shallow pan with open end up. Fill with new oil until oil reaches the bottom of the threads. Allow 2 minutes for oil to be absorbed by filter material.
- 4) Apply a thin film of clean oil to rubber gasket on new filter
- 5) Refer to instructions on oil filter for proper installation.
- Fill crankcase with approximately 2 quarts of new oil. Level should top of indicator on dipstick.
- 7) Reinstall oil fill/dipstick and tighten securely.
- 8) Start engine; check for oil leaks. Stop Engine; correct oil leaks. Recheck oil level
- 9) Dispose of used oil and filter in accordance with local ordinances.





Parts Location



I. Electric Starter J. Voltage Regulator

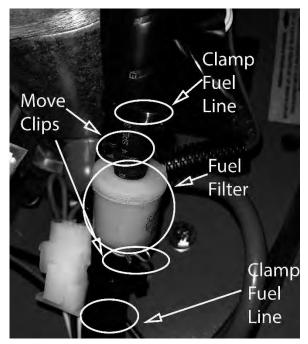


The fuel filter is located in the fuel line on the left side of the engine by the starter motor. Replace the filter yearly. Prior to the removal of the old filter, note the direction of fuel flow as indicated on the filter. Have towels readily available in order to quickly remove any fuel leakage. Always use new hose clamps and ensure the security of the new filter by lightly pulling on each hose. Always perform maintenance outdoors or in a well ventilated area. Do not smoke or allow any open flames in the vicinity of any maintenance activities.

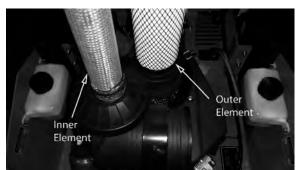
### 3.2 Changing your fuel filter :

- 1) Locate your fuel filter and mark the direction it is facing.
- 2) Clamp each side of the fuel filter to minimize any gas spills.
- 3) Remove the clips from each side of the fuel filter and remove the fuel filter.
- Place the new fuel filter in the same direction as the old and place clips back into place and remove clamps.

The air cleaner is the engine's only defense against damaging foreign particles. It is very important that the air cleaner element is inspected prior to each use. Remove the element and tap its sides in order to remove debris. Do not blow the filter out using compressed air. Doing so will greatly reduce the air cleaner's effectiveness. Replace yearly; more often in dusty environments. Adhering to these practices will help prevent loss of power and premature engine failure.

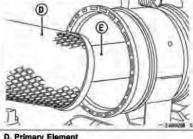






### **3.3 Changing the air cleaner :**

- 1) Locate the air filter and unbuckle the air filter cover.
- Remove the cover and take out the outer white element and the inner blue element.
- 3) Clean or replace elements.
- Reattach the cover making sure the air intake is facing down.



D. Primary Element E. Secondary Element

A. Retaining Clamps B. Case C. Air Cleaner Body F. Cap (Dust Ejector Valve)

 Remove the wire on the spark plug and use a 13/16" socket to remove the spark plug.

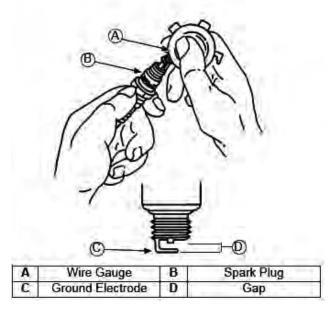
2) Check the gap on the spark plug to verify that it is 0.03 in using a feeler gauge.

3) if the spark plug is worn, overheated, wet, or carbon fouled replace the spark plug.

4) Install the plug into cylinder head and torque it 16 ft.-lbs. Be careful not to overtighten the spark plug.









### **SECTION 4: ELECTRICAL SYSTEM**

This mower is equipped with three protective fuses:

- 25 amp main fuse (pictured to the right).
- 15 amp linear actuator fuse (deck lift)
- 10 amp clutch fuse (blade engagement)

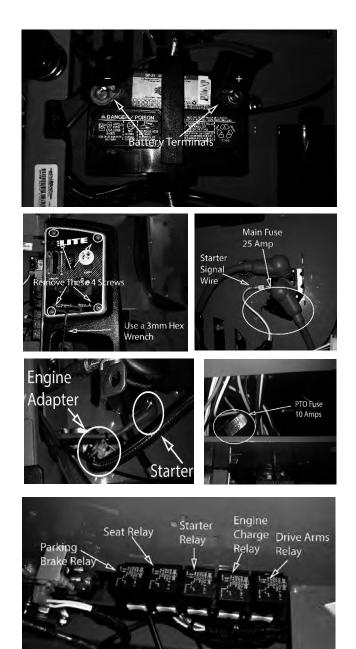
The 25 amp main fuse is located on the left side of the unit, by the starter solenoid. The 15 amp actuator and 10 amp clutch fuses are located just underneath the control panel. You will need to remove the four screws that hold the control panel to the tank using a 3mm or 1/8" hex wrench.

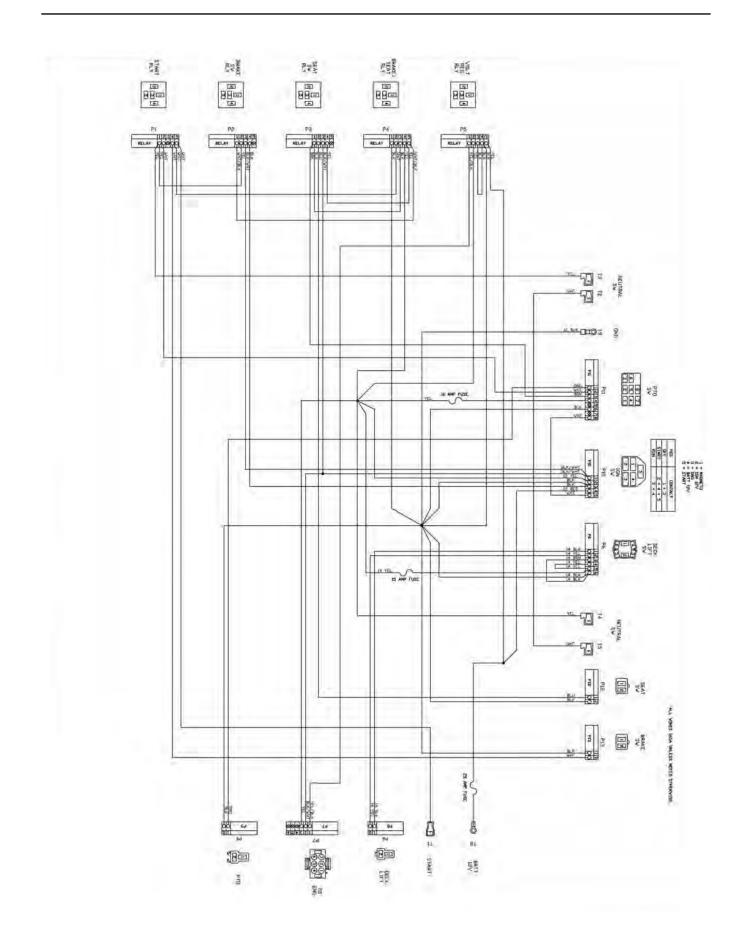
A blown fuse usually indicates a problem within the electrical system or an electrical component. Ensure the battery terminals are tightly fastened. Never replace a fuse with one of a higher amperage rating or 'bypass' a fuse in any way. Doing so creates a significant fire hazard and can cause severe damage to the mower's electrical components. If a fuse is repeatedly blowing, contact your Bad Boy dealer.

On most models, the red wire coming out of the engine is the charging wire from the alternator. Check for 13.6 -14.2 volts dc at this wire with engine at full throttle.

If you are having issues starting your mower ensure the signal wire is connected to your starter solenoid.

Check the condition and connection of the relays located under the control panel. Ensure that they are clean and connected. Make sure that wire terminal ends have not been pushed out of the relay block.

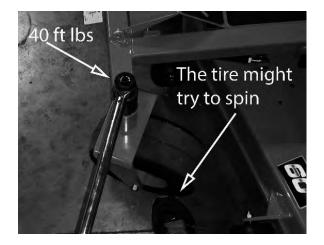






### **SECTION 5: FRAME**

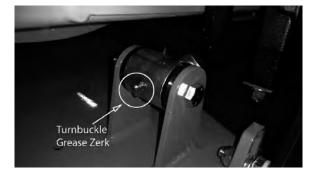
The front fork nuts require a torque of 40ft-lbs. While applying this torque, turn the fork itself to ensure no damage is done to the bearing. This operation is only necessary if a repair requires it.



Torque rear wheel lugs to 65-75 ft. lbs. Re-torque at every oil change and check at every mowing.



There are two grease zerks located on each of the two turnbuckles (4 Total). Grease at every oil change.



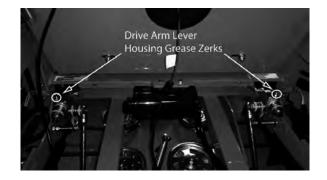
The pump belt tensioner is located under the engine and has a grease fitting at its pivot point. Grease at every engine oil change.



The deck belt tensioner is located at the rear of the deck and has a grease fitting on its pivot point. Grease at every engine oil change.

The control arm blocks have grease fittings located on the top of each block. Grease one time a year.







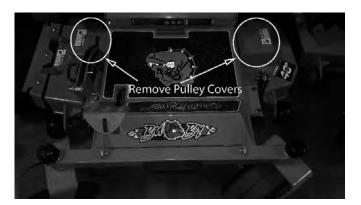
### **SECTION 6: CUTTING DECK**

### DECK BELT REMOVAL:

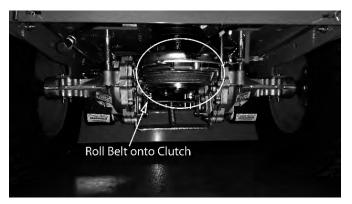
- 1) Removeignitionkey.
- 2) Raise the deck to its highest position.
- 3) Remove the right pulleycover.
- 4) Whileliftinguponthebelt (as shownin the photograph), rotate the pulley until the belt is free of the pulley. Exercise caution while performing this step as fingers can easily become caught between the belt and pulley.

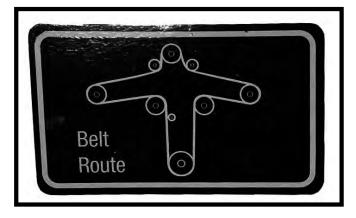
#### DECK BELT REMOVAL:

- 1) Follow steps 1 and 2 from the deck removal section.
- Take off both pulley covers and route the belt by following the belt route sticker.
- The easiest way to finish running the belt is routing the belt through the deck pulleys and carefully slipping the belt onto the clutch in the rear of the engine.
- Verify that the belt is routed properly as improper routing can damage the spindles as well as the engine.



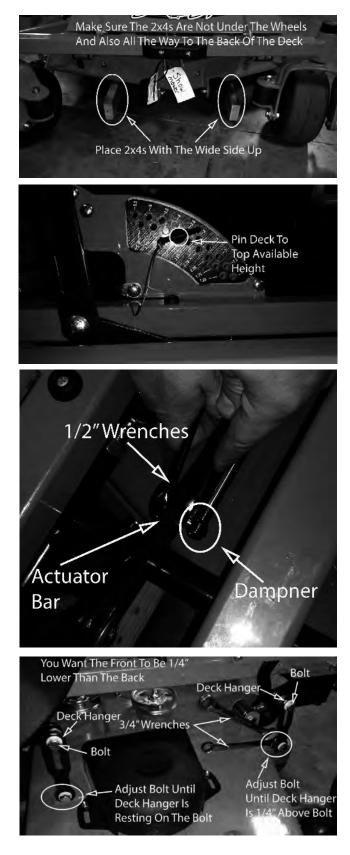






#### **LEVELING THE DECK:**

- Start on a flat level surface and set the air pressure in all four tires to 12 psi.
- Get two 2x4s and make sure that the wider sides are similar length.
- 3) Take off the foot pedal and raise the floor plate.
- Lower the deck onto the 2x4s and pin the deck into its top available height. Remove the dampener that attaches to the actuator bar using two <sup>1</sup>/<sub>2</sub>" wrenches.
- 5) Now ensure that the deck is level left to right and has a pitch down of ¼" from the back to the front. This can be done by adjusting the tabs on the deck.
- Loosen the bolts on the back of the deck using two ¾" wrenches until the deck hanger is resting against the bolt.
- Adjust the front deck hanger until there is ¼" gap between the deck hanger and the bolt that it rests on.
- 8) Reattach the dampener to the actuator bar.
- Place the floorplate down and place the foot pedal back on and you should be ready to mow.

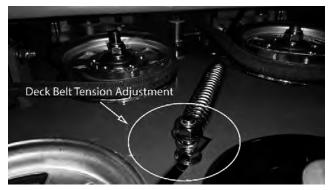




The deck spring tension is critical. If the tension is too high, premature failure of the deck belt and blade spindles can occur. If the tension is too low, the belt can 'jump off' or slip on the pulleys. This results in reduced cut quality and early belt failure.

Spring tension adjustments can be made by sliding the bolt shown above forward or backward in the slot of the deck. Belt tension should be 60-65 lbs. for a 42" and 48" deck, with the deck at its lowest setting.

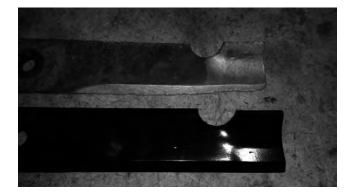
Use a belt tension gauge to ensure the proper tension. Your dealer or service center will have a belt tension gauge or you can buy one (Part Number 041-9999-00).





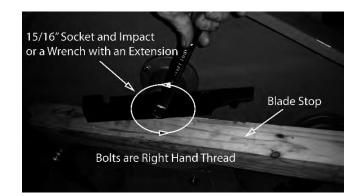
#### **BLADE SHARPENING:**

The blade on the top (see photo) was utilized long after replacement was required. In addition to a decline in cut quality, failure to replace a worn or damaged blade creates a major safety hazard. Bad Boy recommends that blade sharpening be performed by a professional.



#### **BLADE REMOVAL:**

To change blades, it may be easier to use a piece of wood to keep the blade from turning so that the bolt can be loosened. Use a 15/16" socket and impact Drill, or a wrench and an extension to gain more leverage. You might need to put a  $\frac{3}{4}$ " wrench on top of the pulley bolt to keep the blade from spinning. Bolts used have right-handed threads.

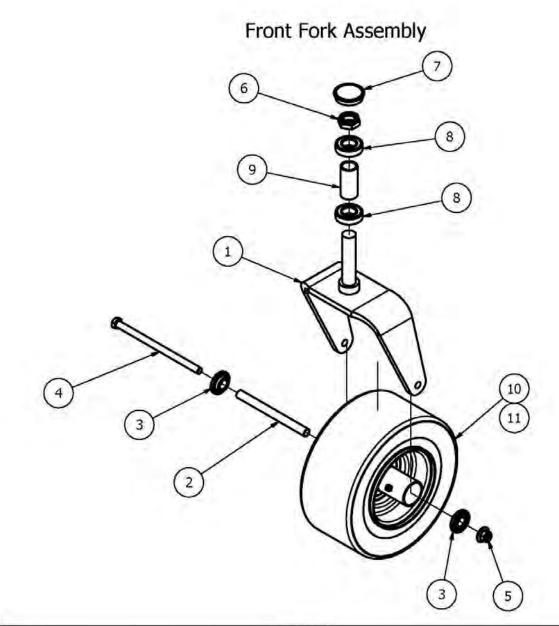


Re-torque theblade bolts to 90-110 lbs.

The blade spindles contain a sealed ballbearing inside the top and bottom of the spindle. The bearings are replaceable for a more cost effective repair.

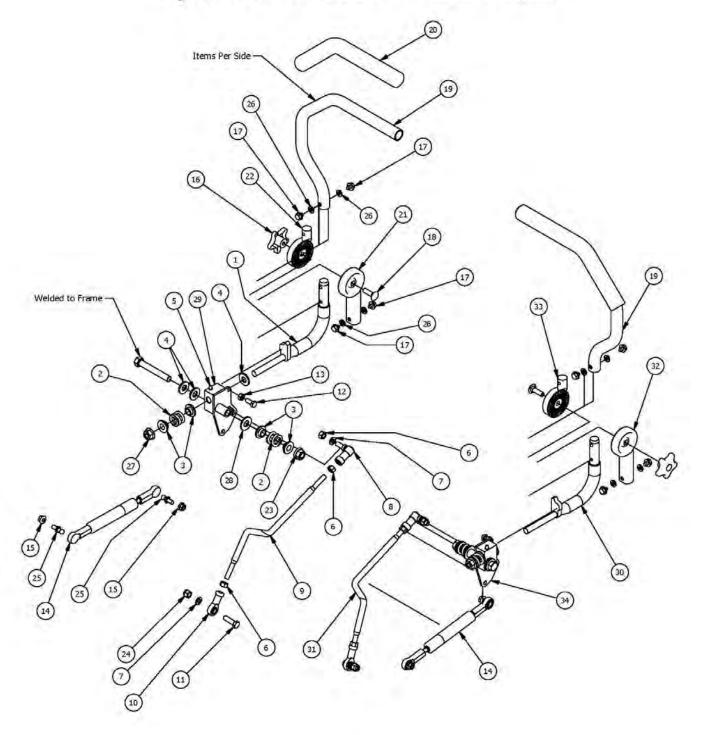






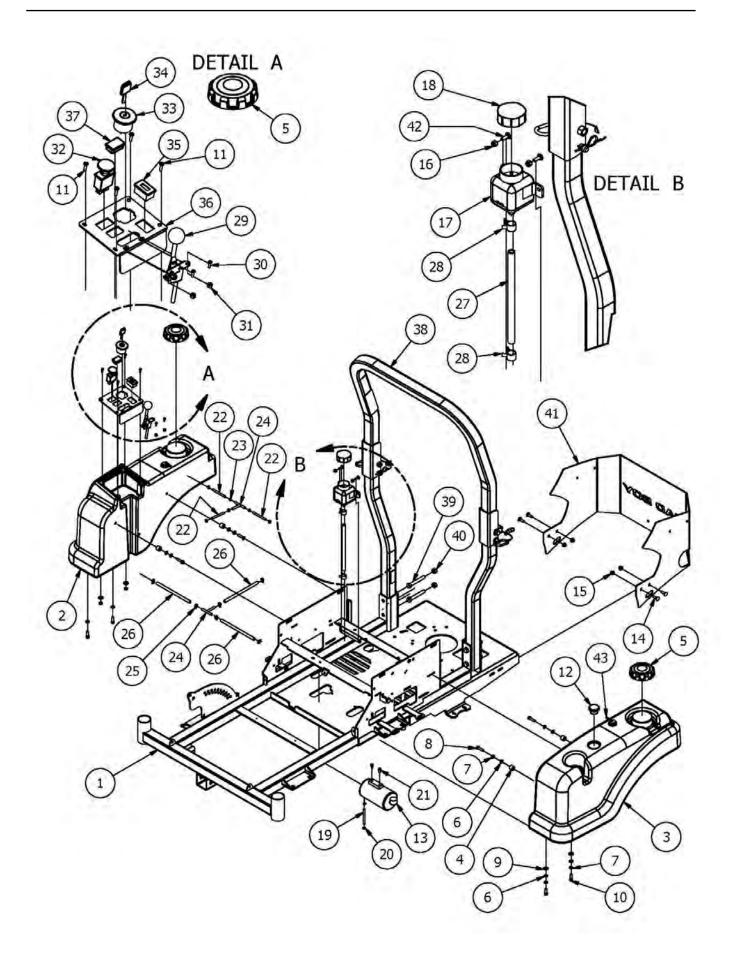
		Parts List	
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	023-7913-00	Front Fork
2	1 1	025-5202-00	Front Wheel Spanner
3	2	022-7010-00	1-3/4" Bearing-Large Bore
4	1	018-7010-00	1/2" x 9" GR 5 Hex Bolt
5	1	013-8050-00	1/2-13 Nylon Flange Nut
6	1	013-9004-00	1" Fine Thread 1/2 Nylock Nut
7	1	014-2025-00	2017 Bearing Cover
8	2	010-1050-00	Caster Bearing 2016 - 1641 Bearing
9	1	025-0003-00	2016 Front Bearing Spacer
10	1	022-3085-00	Tire and black wheel assembly
11	1	022-5347-00	13 x 6.50 - 6 Tire Only

## Adjustable Drive Arm Assemblies



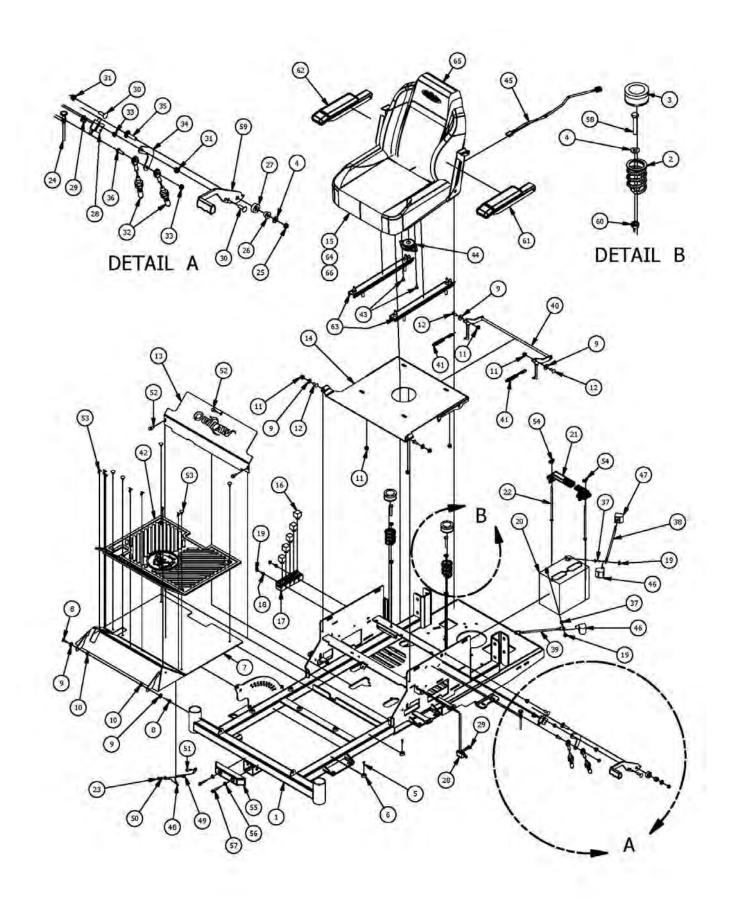


		Adjustable D	Drive Arm Assemblies	
ITEM	QTY	PART NUMBER	DESCRIPTION	
1	1	031-9020-00	Steering Arm Elbow - Left	
2	4	034-8025-00	Drive Lever Spring	
3	8	019-8027-00	.515 ID Nylon Shoulder Washer	
4	6	019-8054-00	.505 Nylon Spacer	
5	2	024-6034-00	1/4" Press in Grease Fitting	
6	6	013-6051-00	3/8" Fine Threaded Jam Nut	
7	4	019-5037-00	3/8" Lock Washer	
8	2	099-2009-00	3/8-24 Quick Release Ball Joint	
9	1	035-5451-00	Push Rod - Left	
10	2	048-3000-00	Spherical Rod End - Outlaw	
11	2	018-5040-00	3/8" x 1 1/4" Hex Bolt	
12	2	018-8063-00	5/16" x 3/4" Hex Bolt	
13	2	013-8043-00	5/16" Nut	
14	2	087-0001-00	Steering Damper	
15	4	013-9002-00	5/16" Flange Nut	
16	2	045-5000-00	Black Knob for Adjustable Steering Arm	
17	8	018-2020-00	5/16-18 1/2 HWH Bolt-Steering	
18	2	018-5043-00	3/6" x 1 1/4" Carriage Bolt	
19	2	031-9010-00	Upper Tube-Adjustable Steering	
20	2	069-4010-00	Black Steering Grip	
21	1	031-9014-00	Lower Adjuster - Steering Arm- Left	
22	1	031-9017-00	Upper Adjuster-Steering Arm- Left	
23	2	013-0085-00	1/2-13 Hex Flange (GR.G) ZC	
24	2	013-5041-00	3/8 Nylock Nut	
25	2	018-2050-00	10mm Damper Ball Stud-Steering	
26	8	019-8051-00	5/16" Lock Washer	
27	2	013-8050-00	1/2-13 Nylon Insert Flange Nut Zinc Orange Nylon	
28	2	019-5702-00	1/2" Washer (Grade 8)	
29	1	031-0017-98	2017 Drive Lever Housing - Left	
30	1	031-9025-00	Steering Arm Elbow - Right	
31	1	035-5450-00	Push Rod - Right	
32	1	031-9015-00	Lower Adjuster - Steering Arm- Right	
33	1	031-9016-00	Upper Adjust Steering Arm- Right	
34	1	031-0018-98	2017 Drive Lever Housing - Right	



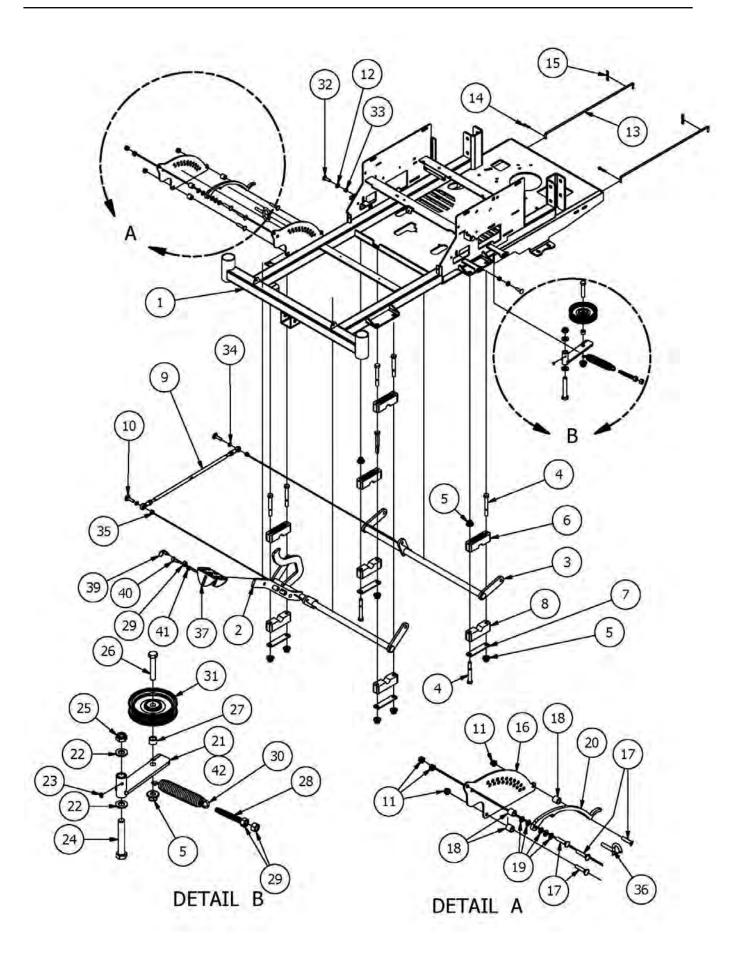


		Parts List	
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	070-5500-17	2017 Compact Outlaw Frame
2	1	067-5000-50	Right Fuel Tank/Outlaw/2012/EPA
3	1	067-5001-50	Left Fuel Tank/Outlaw/2012/EPA
4	4	025-2000-00	.380x.735x.470 Nylon Spacer
5	2	066-8083-00	Fuel Cap
6	8	019-7040-00	1/4" Flat Washer
7	8	019-8051-00	5/16" Lock Washer
8	4	018-2006-00	5/16 x 1 1/4 Hex Bolt
9	4	019-6042-00	.360 ID Plastic Washer
10	4	018-2007-00	5/16" x 1" Bolt
11	4	018-2010-00	10-32 x 3/8" Button Socket Head Bolt
12	1	067-4050-00	Fuel Gauge Tanks W/downtube
13	1	067-0020-00	Carbon Canister
14	4	018-8065-00	5/16" x 1" Carriage Bolt
15	4	013-8049-00	5/16" Nylock Flange Nut
16	4	013-8073-00	1/4 Nylock Nut
17	2	067-8090-00	350ml Expansion Tank
18	2	066-5050-00	Hydraulic Tank Cap
19	1	051-8073-00	3/16 Vinyl Tubing
20	2	072-8073-00	3/16" Vinyl Hose Clamp
21	2	018-0024-00	M6-1.0 X 16MM Hex Bolt
22	3	051-8072-00	1/4" Vinyl Tubing
23	6	072-8072-00	1/4" Hose Clamp
24	2	073-8068-00	fuel line T
25	6	072-8069-00	1/4 Fuel Hose Clamp
26	3	051-8067-00	1/4" Fuel Line Hose
27	2	051-8063-00	3/8" Clear Hose
28	4	072-8065-00	3/8" Hose Clamp
29	1	055-8020-00	Throttle Lever Assembly
30	2	018-5200-00	10-24 X 5/8 BS Button Head Bolt
31	2	013-5019-00	10-24 Nylon Insert Locknut
32	1	056-8058-00	PTO Switch
33	1	077-8076-00	Ignition Switch
34	1	042-9000-00	Ignition Key
35	1	083-4013-00	Tachometer
36	î	079-3450-00	Control Panel
37	1	018-1040-00	Plug
38	1	089-0005-00	2016 2X2 ROPS
39	4	018-6054-00	1/2-13 x 3 1/2 GR 5 Hex Bolt
40	4	013-0005-00	1/2" Center Lock Nut
40	1	026-0090-00	2017 ZT Rear Plate
41 42	4	018-8040-00	
43	2	067-6052-00	1/4" x 3/4" Carriage Bolt Rollover Valve



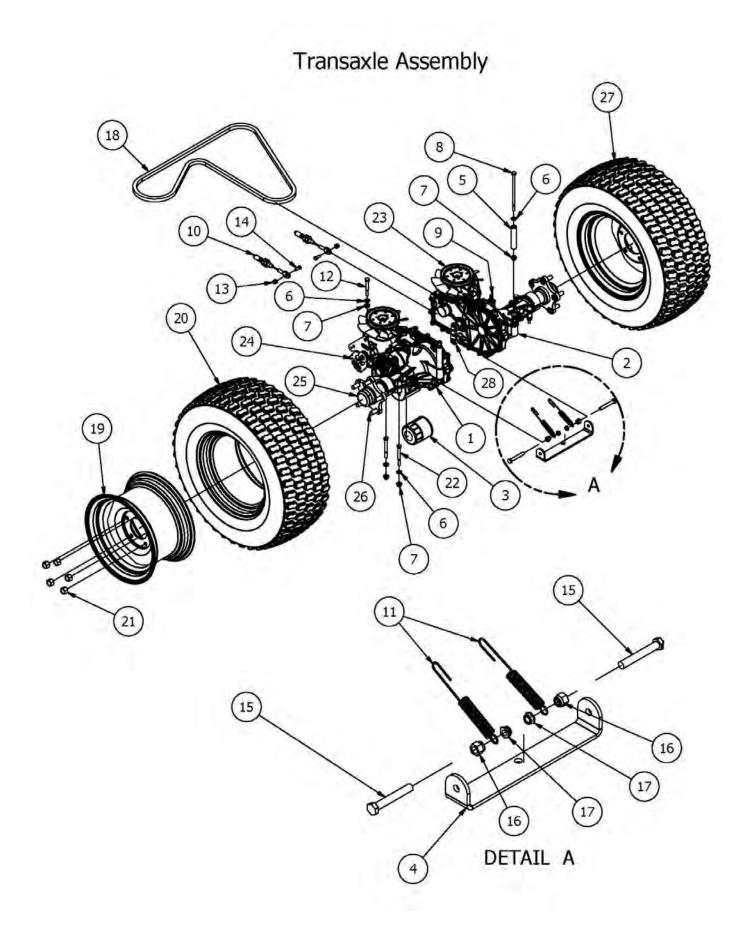


ITEM	QTY	PART NUMBER	DESCRIPTION
t	1	070-5500-17	2017 Compact Outlaw Frame
2	2	034-8045-00	Seat Spring
3	2	014-8047-00	Seat Spring Cap Cover
4	3	019-5029-00	3/8" Flat Washer
5	6	030-3050-00	#10 x 1/2" Self Taping Screw
6	6	029-4010-00	Button Bumper
7	1	079-3120-00	
			Compact Outlaw Floorboard
8	2	019-8040-00	1/4" x 3/4" Carriage Bolt
9	5	019:6042-00	.360 ID Plastic Washer
10	2	013-8073-00	1/4 Nylock Nut
11	8	013-8049-00	5/16-18 Nylon Flange Nut
12	*	018-8066-00	5/16" x 7/6" Carriage Bolt
13	1	014-3500-00	Compact Outlaw Cooler Cover
14	1	026-1016-00	Seat Plate 2016
15	1	071-5055-00	Compact Outlaw Seat
16	5	086-1201-00	Relay
17	1	086-3050-17	Wire Harness
18	2	015-2012-00	1/4" x 1/2" B5 C/5 18-8 S5
19	4	013-9001-00	1/4-20 Hex Flange Nuts Zinc W/Serrations
20	1	065-6049-00	Battery
21	1	043-8929-00	Battery Hold Down
22	2	018-8050-00	1/4-20 X 8 Carriage Bolt
23	1	013-8039-00	1/4-20 Hex Nut
24	1	054-8017-00	Choke
25	1	013-0012-00	3/8-16 Centerlock Half Nut
26	1	032-5053-00	Bronze Bushing 5F-1220-8
27	1	025-0001-00	2015 Brake Lever Spacer
28	3	077-8073-00	Safety Switch
29	6	018-1080-00	12-24x 1/2 HWH Bolt
30	2		
31	2	018-8065-00	5/16" x 1" Carriage Bolt
		013-9002-00	5/16" Flange Nut w/Serrations
32	2	064-3000-00	Brake Cable
33	2	013-9005-00	5/16-18 Nylock Jam Nut 1/2 Nut
34	1	039-0150-00	Brake Cable Adapter Bracket
35	· · · ·	018-4706-00	3/8 x 1 1/2 Carriage Bolt
36	1	018-8063-00	5/16° x 3/4° Hex Bolt
37	2	018-8052-00	1/4" x 3/4" Hex Bolt
38	1	064-5300-00	24" Red Battery Cable
39	- 1°	064-8061_00	Ground Cable
40	1	028-0090-00	Seat Latch Rod Assembly
41	2	034-1025-00	Seat Latch Spring
42	1	081-1000-00	Compact Outlaw Floor Mat
43	2	030-7041-00	1/4-20x1/2 HWH Bolt Slot
44	1	071-8061-00	Seat Safety Switch
45	1	036-5300-00	Seat Switch Adapter
46	2	103-5400-00	Black Boot For Ground Cable
47	1	103-5300-00	Red Boot
48	1	064-2006-00	Floor board Cable W/ Swivel Ends
48	1		1/4" x 5/8" B5 C/S 18-8 55
	-	018-8064-00	
50	1	019-4008-00	1/4" Lock Washer
51	1	030-7040-00	1/4 x 1 Hex Head Tek screw
52	3	030-7042-00	5/16 x 3/4 washer head type F screw
53	12	040-6090-00	5/8" Christmas Tree Fastener
54	2	013-8051-00	1/4" Wing Nut
55	1	029-7038-00	8" Rubber Bumper
56	2	019-8044-00	5/16" Flat Washer
57	2	030-7039-00	1/4" x 1 1/2" Self Tapping Screw
58	2	016-3000-00	3/8"-16 x 2" Gr 5 Hex Bolt
59	4	069-1050-00	Brake Handle
60	2	013-5201-00	3/8" Flange Nut
61	111	071-5056-00	Left Arm Rest
62	1	071-5057-00	Right Arm Rest
63	1	071-2020-50	Seat Rails
64	1	071-2013-00	Seat Belt Kit (Not Shown)
65	1	071-5058-00	Seat Back Cover
66	-		Seat Bottom Cover



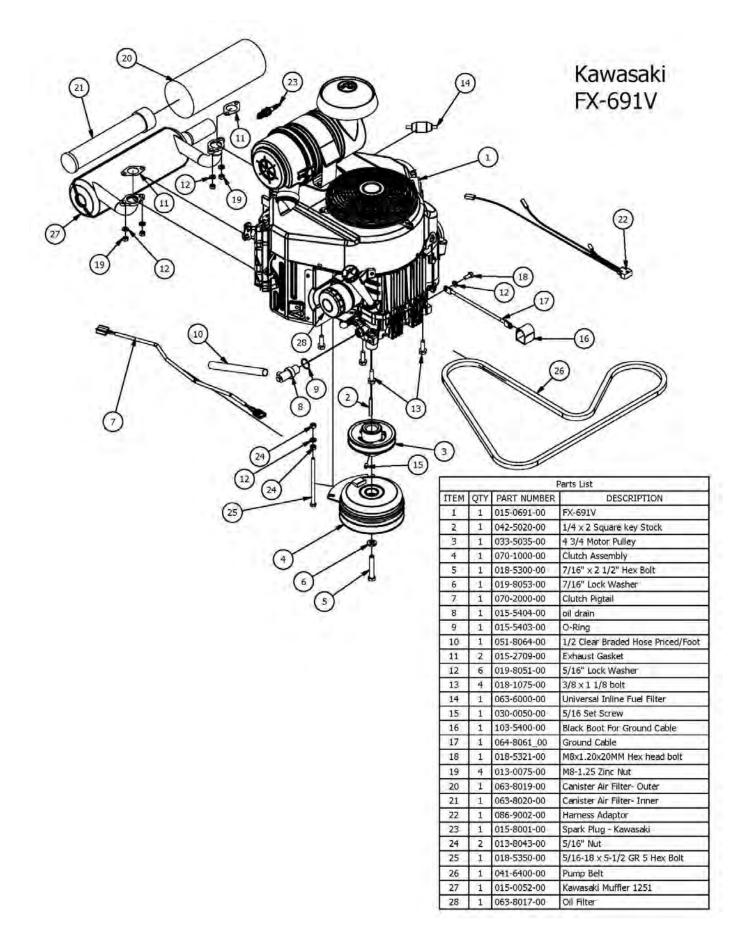


TEM	QTY	PART NUMBER	DESCRIPTION
1	1	070-5500-17	2017 Compact Outlaw Frame
2	1	028-0005-00	Actuator Bar Front- 2016 Compact Outlaw
3	1	028-0006-00	Actuator Bar Rear- 2016 Compact Outlaw
4	8	018-5019-00	1/2" x 4" Bolt (Grade 8)
5	9	013-8050-00	1/2-13 Nylon Flange Nut
6	4	017-9000-00	Two Piece Pillow Block (Male)
7	4	017-9025-00	Two Piece Pillow Block Strap
8	4	017-9050-00	Two Piece Pillow Block (Female)
9	1	028-7000-00	Actuator Bar Linkage Assembly
10	2	018-4706-00	3/8 x 1-1/2 Carriage Bolt
11	4	013-5202-00	3/8" Nylock Flange Nut
12	2	019-5029-00	3/8" Flat Washer
13	2	031-0060-00	ZT Neutral level rod 2011
14	2	044-2004-00	Bow Pin
15	2	044-2008-00	Neutral Rod Clip
16	1	026-2100-00	Outlaw Height Indicator Plate (Outer)
17	4	018-0009-00	3/8 x 1 3/4 Carriage Bolt
18	3	025-5203-00	3/4 OD x 1/2 ID x 3\4 Length
19	5	019-2003-00	.390 x .750 x .062 Nylon Washer
20	1	031-0100-00	Outlaw Deck Lever Lock
21	1	039-5944-00	Pump Idler Bracket
22	2	019-6017-00	.630 ID Plastic Washer
23	1	024-6034-00	1/4" Press in Grease Fitting
24	1	018-5311-00	5/8" x 4" Hex Bolt
25	1	013-5301-00	5/8" Nylock (1/2 Jam)
26	1	018-6036-00	1/2" x 2 3/4" Hex Bolt
27	1	025-7036-00	1/2 x 1/2 Spacer
28	1	018-2004-50	All Thread-Pump Idler Tensioner
29	3	013-7018-00	1/2" Hex Nut
30	1	034-2020-00	2015 Deck Idler Spring
31	1	033-6001-00	4 3/4" Idler Pulley
32	2	018-5043-00	3/8" x 1 1/4" Carriage Bolt
33	2	013-6014-00	3/8" Hex Nut
34	2	019-5037-00	3/8" Lock Washer
35	2	013-5041-00	3/8 Nylock Nut
36	1	040-4000-00	Deck height lever pin
37	1	026-0013-00	Outlaw Deck Lift Pedal
38	1	039-0029-00	Pedal Tab (Foot Assist)
39	1	040-5000-00	Pull Pin
40	1	030-0010-00	5/16-18 x1 Thumb Screw Zinc
41	1	013-9002-00	5/16" Flange Nut
42	1	039-5944-01	Pump Idler Assembly (Parts 5,21,23,26,27,31)

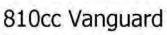


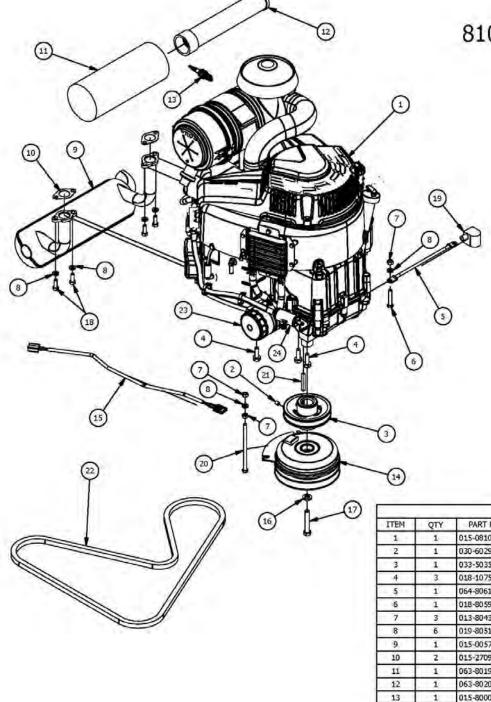


		Parts List	
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	050-6000-00	Left 3400 IZT
2	1	050-6001-00	Right 3400 IZT
3	2	063-1050-00	Hydraulic Filter
4	1	028-4802-00	Crossover Bar for ZT 2016
5	2	025-0070-00	2017 Transaxle Spacer
6	8	019-8044-00	5/16" Flat Washer
7	8	013-8049-00	5/16" Nylock Flange Nut
8	2	018-5355-00	5/16" x 6" Bolt
9	2	024-1200-00	45 degree fitting
10	2	064-3000-00	Brake Cable
11	2	034-1025-00	Brake Spring
12	2	018-5344-00	5/16" x 2 1/2" Bolt
13	2	013-2050-00	1/4-20 Nylon Insert flange Nut
14	2	018-8052-00	1/4" x 3/4" Hex Bolt
15	2	018-2071-00	3/8 x 2 1/2 Hex Tap Bolt
16	2	013-5041-00	3/8 Nylock Nut
17	2	013-9003-00	3/8 Nylock Jam Nut 1/2 Nut
18	1	041-6400-00	Pump Belt
19	2	022-3011-00	12" x 7"Black Wheel
20	2	022-3025-00	23 x 8.50 -12 Tire
21	10	013-3000-00	Acorn Lug Nut
22	4	018-4701-00	5/16" x 3" Hex Bolt
23	2	050-2072-00	Fan/Pully kit
24	2	034-9080-00	Transaxle Spring
25	2	050-2076-00	Transaxle Hub
26	10	050-2012-00	Transaxle Wheel Studs
27	2	022-3010-00	Wheel and Tire Assembly (19 and 20)
28	2	092-8000-00	Transaxle Brake Lever

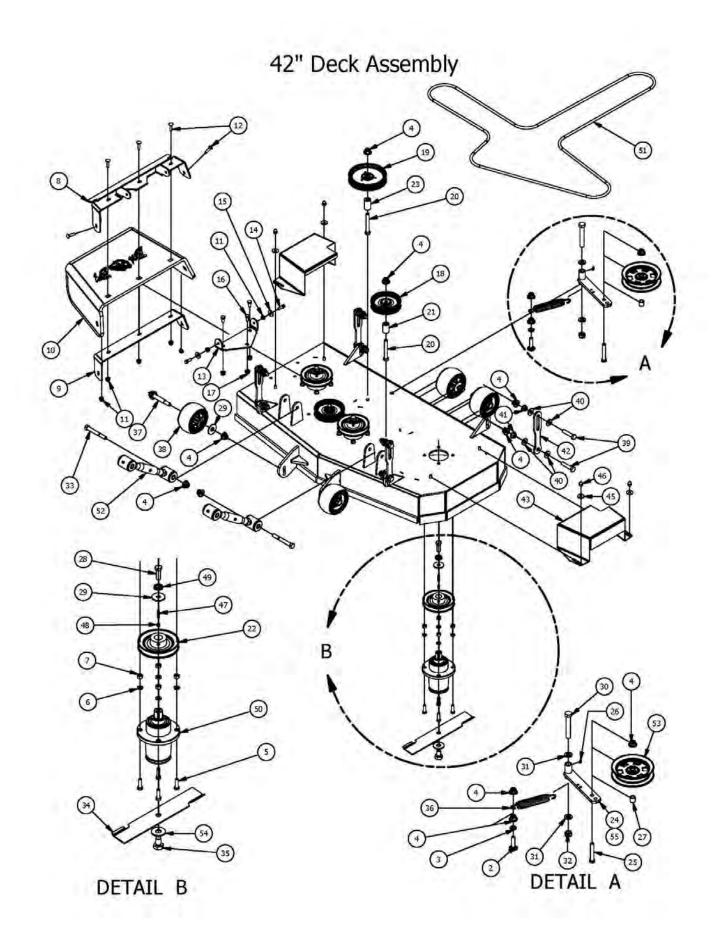






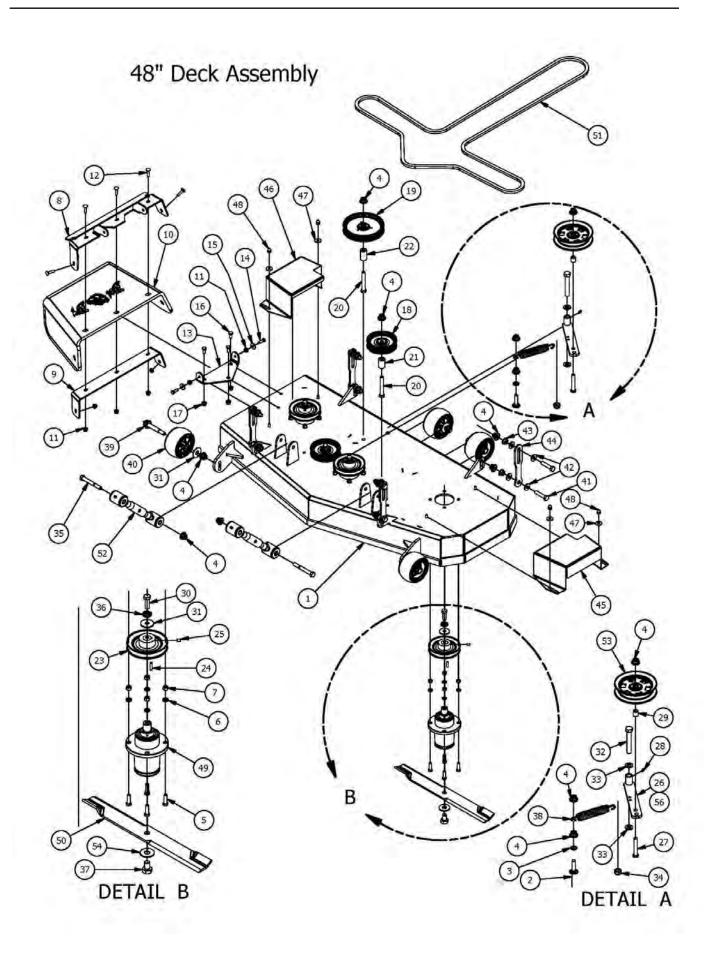


		Parts Li	st
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	015-0810-00	810 Vanguard
2	1	030-6029-00	3/8" Set Screw
3	1	033-5035-00	4 3/4 Motor Pulley
4	3	018-1075-00	3/8 x 1 1/8 bolt
5	1	064-8061_00	Ground Cable
6	1	018-8059-00	5/16" x 1 3/4" Hex Bolt
7	3	013-8043-00	5/16" Nut
8	6	019-8051-00	5/16" Lock Washer
9	1	015-0057-00	Briggs Exhaust
10	2	015-2709-00	Exhaust Gasket
11	1	063-8019-00	Canister Air Filter- Outer
12	1	063-8020-00	Canister Air Filter- Inner
13	1	015-8000-00	Spark Plug
14	1	070-1000-00	Clutch Assembly
15	1	070-2000-00	Clutch Pigtail
16	1	019-8053-00	7/16" Lock Washer
17	1	018-5300-00	7/16" x 2 1/2" Hex Bolt
18	4	018-0017-00	Torx Bolt-Exhaust
19	1	103-5400-00	Black Boot For Ground Cable
20	1	018-5350-00	5/16-18 x 5-1/2 GR 5 Hex Bolt
21	1	042-5020-00	1/4 x 2 Square key Stock
22	1	041-6400-00	Pump Belt
23	1,	063-8018-00	Briggs Oil Filter
24	1	063-6000-00	Universal Fuel Filter



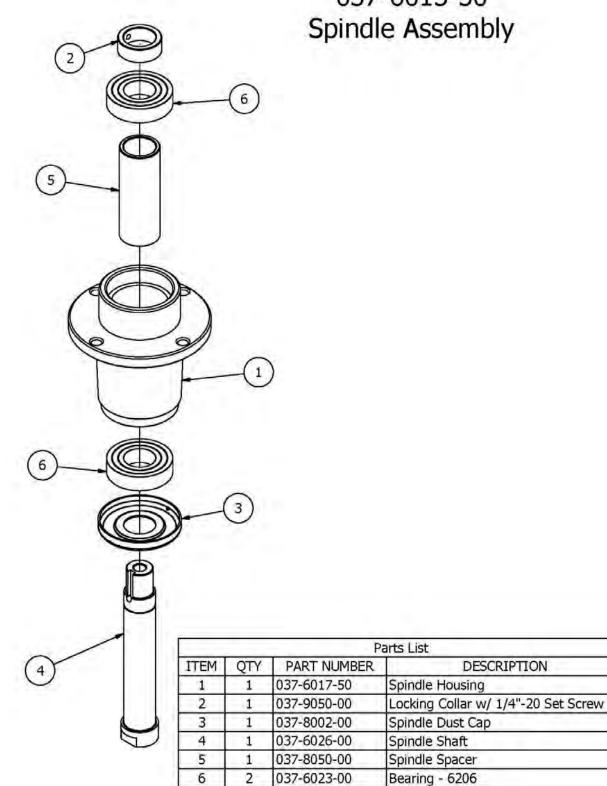


ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	060-5442-00	42" Compact Outlaw Deck-Welded Shell
2	1	018-1050-00	1/2 x 2" Carriage Bolt
3	1	019-0007-00	.517 Square Hole Round Washer
4	20	013-8050-00	1/2-13 Nylon Flange Nut
5	12	018-5040-00	3/8" x 1 1/4" Hex Bolt
6	12	019-5037-00	3/8" Lock Washer
7	12	013-6014-00	3/8" Hex Nut
8	4	039-4870-00	Discharge Upper Chute Bracket
9	1	039-4871-00	Discharge Lower Chute Bracket
10	1	210-6005-00	Rubber Discharge Chute
11	7	013-8049-00	5/16" Nylon Flange Nut
12	5	018-4703-00	5/16" x 1 1/4" Carriage Bolt
13	1	206-6017-00	Discharge Chute Hanger (Deck Mounted)
14	2	018-2007-00	5/16" x 1" Bolt
15	2	019-6042-00	.360 ID Plastic Washer
16	3	018-5250-00	3/8" x 3/4" Hex Bolt
17	3	013-5201-00	3/8" Flange Nut
18	2	033-6001-00	4 3/4" Idler Pulley
19	1	033-7201-25	5-3/4 Idler Pulley-Capitol Stampings
20	3	018-2018-00	1/2 x 3 1/2 Flange Bolt Grade 8
21	2	025-5338-00	Idler Pulley Standoff
22	3	033-6003-00	5" Spindle Deck Pulley
23	1	025-5339-00	1 3/4" Pulley Spacer
24	1	039-6945-00	Deck Idler
25	1	018-7016-00	1/2-13 x GR 5 Hex Bolt Zinc
26	5	024-6034-00	1/4" Press in Grease Fitting
27	1	025-5203-00	Spacer 3/4 OD x 1/2 ID x 3\4 Length
28	3	018-6019-00	1/2"-20 x 1 1/2 - Grade 5 Fine Thread Bolt
29	7	019-6020-00	1/2" Belleville Washer
30	1	018-5311-00	5/8" x 4" Hex Bolt
31	2	019-6017-00	.630 ID X 1.122 OD X .142 THK Flat Washer Nylon
32	1	013-5301-00	5/8" Nylock (1/2 Jam)
33	2	018-5019-00	1/2" x 4" Bolt (Grade 8)
34	3	038-4226-00	42" High Lift Blade
35	3	018-6020-00	5/8" x 1 1/2" Grade 8 Hex Bolt (Fine)
36	1	034-2020-00	2015 Deck Idler Spring
37	4	018-0010-00	Deck Wheel Bolt
38	4	022-1000-00	Anti-Scalp Roller
39	8	018-6037-00	1/2-13X 2-1/4 GR. Hex Bolts
40	16	019-8054-00	-505 Nylon Spacer
41	8	013-5300-00	1/2" Flange Nut
42	4	039-2125-00	Deck_Hanging_Tab longer
43	1	014-4805-00	Pulley Cover Compact Outlaw-Left
44	1	014-4810-00	Pulley Cover Compact Outlaw-Right
		110 17 10	
45	4	019-6050-00	360 ID Plastic Washer-Black
46	4	013-0004-00	Acom nut-pulley Cover
48	3	042-6030-00	1/4" x 1" Key
48	3	030-0050-00 019-5007-00	5/16 Set Screw
50	3	037-6015-50	1/2" Lock Washer Zinc Spindle Assembly
50	1	041-4022-00	Spindle Assembly B 138 Deck Belt
52	2	048-7000-00	Tumbuckle
53	1	033-8050-00	
54	3	019-5038-00	5" Idler Pully 5/8" Flat Washer
55	1	039-6945-01	Deck Idler Assembly (Parts 4,24,25,26,27,53)
	1	10.01.01	were the Asserbly (rate 7,27,22,20,21,33)





TEM	QTY	PART NUMBER	DESCRIPTION
1	1	060-5448-00	48" Compact Outlaw Deck-Welded Shell
2	1	018-1050-00	1/2 x 2" Carriage Bolt
3	1	019-0007-00	.517 Square Hole Round Washer
4	20	013-8050-00	1/2-13 Nylon Flange Nut
5	12	018-5040-00	3/6" x 1 1/4" Hex Bolt
6	12	019-5037-00	3/8" Lock Washer
7	12	013-6014-00	3/8" Hex Nut
8	1	039-4870-00	Discharge Upper Chute Bracket
9	1	039-4871-00	Discharge Lower Chute Bracket
10	1	210-6005-00	Rubber Discharge Chute
11	7	013-8049-00	5/16" Nylon Flange Nut
12	5	018-4703-00	5/16" x 1 1/4" Carriage Bolt
13	1	205-5017-00	Discharge Chute Hanger (Deck Mounted)
14	2	018-2007-00	5/16" x 1" Bolt
15	2	019-6042-00	.360 ID Plastic Washer
15	3	019-6042-00	3/8" x 3/4" Hex Bolt
10	3	013-5201-00	3/8" Flange Nut
1/	2	033-6001-00	4 3/4" Idler Pulley
18	1	033-6001-00	5-3/4 Idler Pulley
20	3	018-2018-00	1/2 x 3 1/2 Flange Bolt Grade 8
		025-5338-00	
21	2	141 0001010	Idler Pulley Standoff
22	1	025-5339-00	1 3/4" Pulley Spacer
23	3	033-6003-00	5" Spindle Deck Pulley
24	3	042-6030-00	1/4" × 1" Key
25	3	030-0050-00	5/16 Set Screw
26	1	039-6945-00	Deck Idler
27	1	018-7016-00	1/2-13 x GR 5 Hex Bolt Zinc
28	5	024-6034-00	1/4" Press in Grease Fitting
29	1	025-5203-00	Spacer 3/4 OD x 1/2 ID x 3\4 Length
30	3	018-6019-00	1/2"-20 x 1 1/2 - Grade 5 Fine Thread Bolt
31	7	019-6020-00	1/2" Belleville Washer
32	1	018-5311-00	5/8" x 4" Hex Bolt
33	2	019-6017-00	.630 ID X 1.122 OD X .142 THK Flat Washer Nylon
34	1	013-5301-00	5/8" Nylock (1/2 Jam)
35	2	018-5019-00	1/2" x 4" Bolt (Grade 8)
36	3	019-5007-00	1/2" Lock Washer Zinc
37	3	018-6020-00	5/8" x 1 1/2" Grade 8 Hex Bolt (Fine)
38	1	034-2020-00	2015 Deck Idler Spring
39	4	018-0010-00	Deck Wheel Bolt
40	4	022-1000-00	Anti-Scalp Roller
41	8	018-6037-00	1/2-13X 2-1/4 GR Hex Bolts
42	16	019-8054-00	.505 Nylon Spacer
43	8	013-5300-00	1/2" Flange Nut
44	4	039-2125-00	Deck. Hanging Tab longer
45	1	014-4805-00	Pulley Cover Compact Outlaw-Left
46	1	014-4810-00	Pulley Cover Compact Outlaw-Right
47	4	019-6050-00	.360 ID Plastic Washer-Black
48	4	013-0004-00	Acom nut-pulley Cover
49	3	037-6015-50	Spindle Assembly
50	3	038-5350-00	Fusion Blade
51	1	041-1470-00	48 Deck Belt
52	2	048-7000-00	Tumbuckle
53	1	033-8050-00	5" Idler Pully
54	3	019-5038-00	5/8" Flat Washer
55	1	039-6945-01	Idler Arm Assembly (Parts 4,26,27,28,29,53)



037-6015-50 Spindle Assembly

DESCRIPTION

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0	ногие с нос в лос в оно и истон стор соно лици, чите ное ногие с нос в лос в лос и ност на н	WHEN ADDING OIL FOR HYDROSTATICS, USE 20W-50 MOTOR OIL DO NOT ADD ATTOMATIC FLUIDI THIS WILL VOID THE WARRANTY 091-1020-00 Hydraulic Tank	091-0901-00 Instrument Panel Decal	Innoted	091-1048-00 42" Deck Decal
091-3150-00 Outlaw Warning Decal	Rest aver Bern A: Over A: Over A:     Next aver Over A: Over A:     A Over A: Over A:     Shut off engine before refueing: Near full fuel tank indoors or whene regne is hot.       Image: Construction of the state	O91-0919-00 ArmorTek Decal	091-0206-00 Left Steering Control Decal Control Decal	Image: Steps   Steps   Steps   Steps   Steps   Steps	091-0903-00 48" Deck Decal
	od od 091-1105-00 Mode Mode Outlaw Deck Height Decal	52555 4.155	091-0902-00 Logo Decal Front	091-3017-00 Pump Belt Route Decal	091-0406-00 726cc Decal
	091-0339-00 Brake Decal		Decal Front	091-3309-00 Deck Belt Route Decal	091-0407-00 810cc Decal

NOTES:	

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## FOR ALL OF YOUR PARTS NEEDS CALL



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