



Professional Walk

Owner/Operator Manual

Manuel Du Propriétaire/Utilisateur

Models

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INTRODUCTION

NON-ENGLISH MANUALS



Manuals in languages other than English may be obtained from your Dealer. Visit your dealer or www.ariens.com for a list of languages available for your equipment.



Manuals printed in languages other than English are also available as a free download on our website:

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Les manuels imprimés dans des langues différentes de l'anglais sont également disponibles en téléchargement gratuit sur notre site Web :

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THE MANUAL

Before operation of unit, carefully and completely read your manuals. The contents will provide you with an understanding of safety instructions and controls during normal operation and maintenance.

All reference to left, right, front, or rear are given from operator standing in operation position and facing the direction of forward travel.

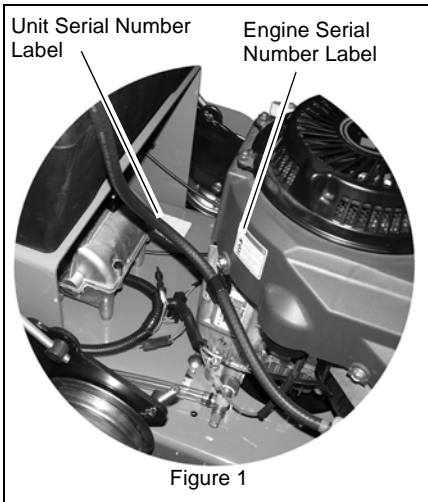
ENGINE MANUAL

The engine on this unit is covered by a separate manual specific to the engine. This manual is included in the literature package that shipped with the unit. Refer to this manual for engine service recommendations. If the engine manual is not available, contact the engine manufacturer for a replacement manual.

MODEL AND SERIAL NUMBERS

When ordering replacement parts or making service inquiries, know the Model and Serial numbers of your unit and engine.

Numbers are located on the product registration form in the unit literature package. They are printed on a serial number label, located on the frame of your unit.



- Record Unit Model and Serial numbers here.

- Record Engine Model and Serial numbers here.

PRODUCT REGISTRATION

The Ariensdealer must register the product at the time of purchase. Registering the product will help the company process warranty claims or contact you with the latest service information. All claims meeting requirements during the limited warranty period will be honored, whether or not the product registration card is returned. Keep a proof of purchase if you do not register your unit.

Customer Note: If the Dealer does not register your product, please fill out, sign and return the product registration card to Ariens.

UNAUTHORIZED REPLACEMENT PARTS

Use only Ariens replacement parts. The replacement of any part on this vehicle with anything other than a Ariens authorized replacement part may adversely affect the performance, durability, or safety of this unit and may void the warranty. Ariens disclaims liability for any claims or damages, whether warranty, property damage, personal injury or death arising out of the use of unauthorized replacement parts. To locate your nearest Ariens Dealer, go to www.ariens.com on the Internet.

DISCLAIMER

Ariens reserves the right to discontinue, make changes to, and add improvements upon its products at any time without public notice or obligation. The descriptions and specifications contained in this manual were in effect at printing. Equipment described within this manual may be optional. Some illustrations may not be applicable to your unit.

DEALER DELIVERY

Dealer should:

1. Check all controls for proper function.
2. Check the safety interlock system to make sure that it is functioning properly. (See *Check Safety Interlock System* on page 14.)
3. Fill out Original Purchaser Registration Card and return the card to Ariens Explain Limited Warranty Policy.
4. Explain recommended lubrication and maintenance. Advise customer on adjustments.
5. Instruct customer on controls and operation of unit. Discuss and emphasize the Safety Precautions. Give customer Owner/Operator, Parts, and Engine Manuals. Advise customer to thoroughly read and understand them.

SAFETY



WARNING: This cutting machine is capable of amputating hands and feet and throwing objects. Failure to observe the safety instructions in the manuals and on decals could result in serious injury or death.

Slopes are a major factor related to loss-of-control and tip-over accidents. Operation on all slopes requires extra caution.

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

Gasoline is extremely flammable and the vapors are explosive, handle with care.

Disengage attachment, stop unit and engine, remove key, engage parking brake, and allow moving parts to stop before leaving operator's position.



CAUTION: POTENTIALLY HAZARDOUS SITUATION! If not avoided, MAY RESULT in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTATIONS

NOTE: General reference information for proper operation and maintenance practices.

IMPORTANT: Specific procedures or information required to prevent damage to unit or attachment.

PRACTICES AND LAWS

Practice usual and customary safe working precautions, for the benefit of yourself and others. Understand and follow all safety messages. Be alert to unsafe conditions and the possibility of minor, moderate, or serious injury or death. Learn applicable rules and laws in your area, including those that may restrict the age of the operator.

REQUIRED OPERATOR TRAINING

Original purchaser of this unit was instructed by the seller on safe and proper operation. If unit is to be used by someone other than original purchaser; loaned, rented or sold, ALWAYS provide this manual and any needed safety training before operation.

SAFETY ALERTS



Look for these symbols to point out important safety precautions. They mean:



Attention!

Personal Safety Is Involved!

Become Alert!

Obey The Message!

The safety alert symbols above and signal words below are used on decals and in this manual.

Read and understand all safety messages.



DANGER: IMMINENTLY HAZARDOUS SITUATION! If not avoided, WILL RESULT in death or serious injury.



WARNING: POTENTIALLY HAZARDOUS SITUATION! If not avoided, COULD RESULT in death or serious injury.

SAFETY DECALS AND LOCATIONS

ALWAYS replace missing or damaged Safety Decals. Refer to figure below for Safety Decal locations.

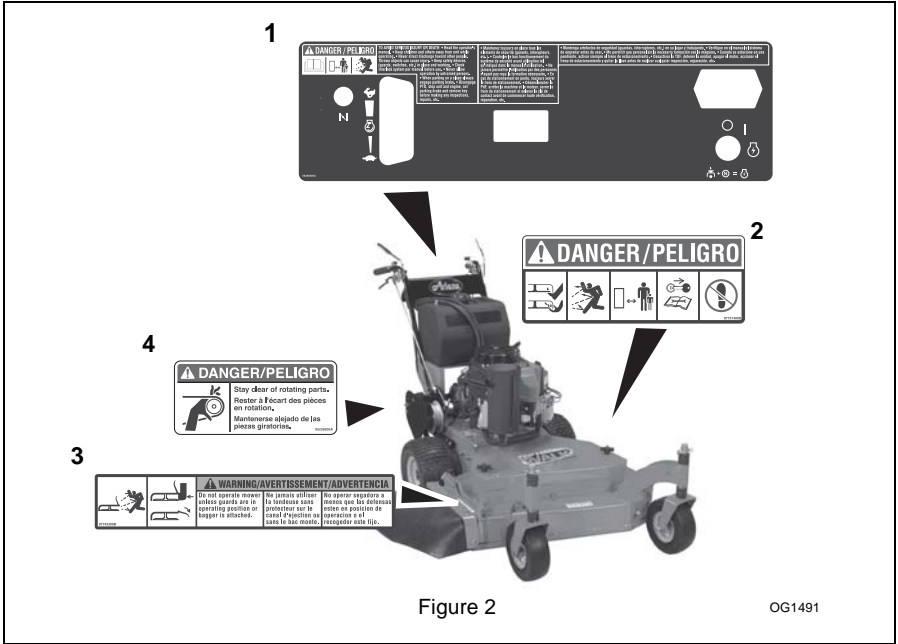


Figure 2

OG1491

1. Danger! To avoid serious injury or death

Read the operator's manual.



OL1801

Keep children and others away from unit while operating.



OL4370



Never direct discharge toward other people. Thrown objects can cause injury.

- Keep safety devices (guards, shields, switches, etc.) in place and working.
- Check interlock system per manual before use.
- Never allow operation by untrained persons.
- When parking on a slope always chock or block the wheels.
- Disengage PTO, stop unit and engine, set parking brake and remove key before making any inspections, repairs, etc.

2. Danger! Rotating Blades



OL3030

ROTATING BLADE! Keep hands and feet away.



OL0910

Always stand clear of discharge area. **DO NOT** direct discharge toward other people. Remove objects that could be thrown by the blade. **DO NOT** operate mower over gravel and hard surfaces.



OL4370

Keep people and pets away when operating unit. Keep children out of the work area and under the watchful care of a responsible adult.



OL4010

Shut off engine, remove key, read manual before you unplug, adjust or repair unit.



OL4420

NO STEP! Always keep feet away from rotating parts.

3. Warning!



OL0910

Always stand clear of discharge.



OL3320

DO NOT operate mower unless guards are in operating position or bagger is attached.

4. Danger!



OL5100

Stay clear of rotating parts.

EMISSION CONTROL SYSTEM

This equipment and/or its engine may include exhaust and evaporative emissions control system components required to meet U.S. Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB) regulations. Tampering with emission controls and components by unauthorized personnel may result in severe fines or penalties. Emission controls and components can only be adjusted by an Ariens Company dealer or an authorized engine manufacturer's service center. Contact your Ariens Company Equipment Retailer concerning emission controls and component questions.

SAFETY RULES

Operator Training Required

- Read the operator's manual and other training material. If the operator or mechanic cannot read English, it is the owner's responsibility to explain this material to them. This publication is available in other languages.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- All operators and mechanics should be trained. The owner of the machine is responsible for training the users.
- Never let children or untrained people operate or service the equipment. Local regulations may restrict the age of the operator.
- The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people, or property.
- Operate the machine in an open, unobstructed area under the direction of an experienced operator.

Preparation

- Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by the manufacturer.
- Wear appropriate clothing including hard hat, safety glasses and hearing protection. Long hair, loose clothing or jewelry may get tangled in moving parts.
- Inspect the area where the equipment is to be used and remove all objects such as rocks, toys and wire which can be thrown by the machine.

- Use extra care when handling gasoline and other fuels. They are flammable and vapors are explosive.
 - a. Use only an approved container.
 - b. Never remove gas cap or add fuel when engine is running. Do not smoke.
 - c. Never refuel or drain the machine indoors.
- Check that the operator's presence controls, safety switches and shields are attached and functioning properly. Do not operate unless they are functioning properly.

Operating Safely

- Never run an engine in an enclosed area where dangerous carbon monoxide fumes can collect.
- Only operate in good light, keeping away from holes and hidden hazards.
- Be sure all drives are in neutral and parking brake is engaged before starting engine. Only start engine from the operator's position.
- Be sure of your footing while using pedestrian-controlled equipment, especially when backing up. Walk, don't run. Never operate on wet grass. Reduced footing could cause slipping.
- Slow down and use extra care on hillsides. Be sure to travel in the recommended direction on hillsides. For this machine, drive across hillsides, not up and down. Turf conditions can affect the machine's stability. Use caution while operating near drop-offs.
- Slow down and use caution when making turns and when changing directions on slopes.
- Never raise deck with the blades running.
- Never operate with guards not securely in place. Be sure all interlocks are attached, adjusted properly, and functioning properly.
- Never operate with the discharge deflector raised, removed or altered, unless using a grasscatcher. Do not operate mower without discharge chute or entire grasscatcher in place.
- Do not change the engine governor setting or overspeed the engine. Operating the engine at excessive speed can increase the hazard of personal injury.
- Stop on level ground, lower implements, disengage drives, engage parking brake, and shut off engine before leaving the operator's position for any reason including emptying the grasscatchers or unclogging the chute.
- Stop equipment and inspect blades after striking objects or if an abnormal vibration occurs. Make necessary repairs before resuming operations.
- Keep hands and feet away from the cutting units.
- Look behind and down before backing up to be sure of a clear path.
- Never carry passengers and keep pets and bystanders away.
- Slow down and use caution when making turns and crossing roads and sidewalks. Stop blades if not mowing. Watch for traffic when operating near or crossing roadways.
- Be aware of the mower discharge direction and do not point it at anyone.
- Do not operate the machine while under the influence of alcohol or drugs.
- Use care when loading or unloading the machine into or off of a trailer or truck.
- Use care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.
- Inspect machine before you operate. Be sure hardware is tight. Repair or replace damaged, badly worn, or missing parts. Be sure guards and shields are in good condition and fastened in place. Make any necessary adjustments before you operate.
- Before using, always visually inspect to see that the blades, blade bolts and the mower assembly are not worn and damaged. Replace worn and damaged blades and bolts in sets to preserve balance.
- Keep safety labels visible when installing accessories and attachments.
- Do not wear radio or music headphones. Safe service and operation require your full attention.
- When machine is left unattended, stored, or parked, lower the mower deck unless a positive mechanical lock is used.
- Be sure all drives are in neutral and parking brake is locked before starting engine. Stand as far away from the discharge chute as possible with feet well away from the underside of the deck to start machine.
- Do not hang or secure any item to the control console. The operator's station should always remain unobstructed.
- Do not pull mower backwards while the blades are rotating. Use the reverse gear to move the machine in reverse.

Using a Spark Arrestor

The engine in this machine is not equipped with a spark arrestor muffler. It is a violation of California Public Resource Code Section 4442 to use or operate this engine on or near any forest-covered, brush-covered or grass-covered land unless the exhaust system is equipped with a spark arrestor meeting any applicable local or state laws. Other states or federal areas may have similar laws.

A spark arrestor for your machine may be available from your authorized dealer. An installed spark arrestor must be maintained in good working order by the operator.

Checking Mowing Area

- Clear mowing area of objects that might be thrown. Keep people and pets out of mowing area.
- Low-hanging branches and similar obstacles can injure the operator or interfere with mowing operation. Before mowing, identify potential obstacles such as low-hanging branches, and trim or remove those obstacles.
- Study mowing area. Set up a safe mowing pattern. Do not mow where traction or stability is doubtful.



Parking Safely

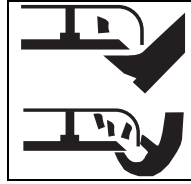
1. Stop machine on a level surface, not on a slope.
2. Disengage mower blades.
3. Lock the park brake.
4. Stop the engine.
5. Remove the key.
6. Wait for engine and all moving parts to stop before you leave the operator's station.
7. Close fuel shut-off valve, if your machine is equipped.
8. Remove the spark plug wire (for gasoline engines) before servicing the machine.

Operating Safely on Slopes

- Slopes are a major factor related to slip and fall accidents which can result in severe injury. Operation on all slopes requires extra caution. If you feel uneasy on a slope, do not mow it.
- Mow across the face of slope, never up and down. Use extreme caution when changing direction on slopes.
- Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction.

- Watch for holes, ruts, bumps, rocks or other hidden objects. Uneven terrain could cause a slip and fall accident. Tall grass can hide obstacles.
- Do not mow on wet grass or excessively steep slopes. Poor footing could cause a slip and fall accident.
- Do not mow near drop-offs, ditches, embankments, as well as ponds and other bodies of water. The operator could lose footing or balance. The machine could suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.
- Follow the manufacturer's recommendations for counterweights for added stability when operating on slopes. Remove weights when not required.
- Use extra care with grasscatchers. These can change the stability of the machine. Do not use grasscatcher on steep slopes.

Rotating Blades are Dangerous



HELP PREVENT SERIOUS OR FATAL ACCIDENTS:

- Rotating blades can cut off arms and legs, and throw objects. Failure to observe

safety instructions could result in serious injury or death.

- Keep hands, feet and clothing away from mower deck when engine is running.
- Be alert at all times, drive forward carefully. People, especially children can move quickly into the mowing area before you know it.
- Before backing up, stop mower blades or attachments and look down and behind the machine carefully, especially for children.
- Do not mow in reverse.
- Shut off blades when you are not mowing.
- Park machine safely before leaving the operator's station for any reason including emptying the catchers or unplugging the chute.



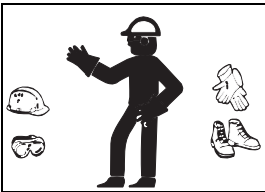
Rotating Blades are Dangerous - Protect Children and Prevent Accidents

Protect Children:

- Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to lawn-mowing machines and mowing activity. Stay alert to the presence of children. Never assume that children will remain where you last saw them.
- Keep children indoors, out of the mowing area, and in the watchful eye of a responsible adult, other than the operator, when a mower is being operated.
- Be alert and turn mower off if a child enters the work area. They don't understand the dangers of rotating blades or the fact that the operator is unaware of their presence.
- Never allow a child or an untrained person to operate the machine.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may block your view of a child.

Checking Wheel Hardware

- A serious accident could occur causing serious injury if wheel hardware is not tight.
- Check wheel hardware tightness often during the first 100 hours of operation.
- Wheel hardware must be tightened to specified torque using the proper procedure anytime it is loosened.



Wear Appropriate Clothing

• Always wear safety goggles, or safety glasses with side shields, and a hard hat

when operating the machine.

- Wear close fitting clothing and safety equipment appropriate for the job.
- While mowing, always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing open sandals.
- Wear a suitable protective device such as earplugs. Loud noise can cause impairment or loss of hearing.



Maintenance and Storage

• Never operate machine in a closed area where dangerous carbon monoxide fumes can collect.

• Disengage drives, lower implement, lock parking brake, stop engine and remove key or disconnect spark plug (for gas engines). Wait for all movement to stop before adjusting, cleaning or repairing.

- Clean grass and debris from cutting units, drives, mufflers, and engine to help prevent fires. Clean up oil or fuel spillage.
- Let engine cool before storing and do not store near flame.
- Shut off fuel while storing or transporting. Do not store fuel near flames or drain indoors.
- Park machine on level ground. Never allow untrained personnel to service machine. Understand service procedure before doing work.
- Use jack stands or lock service latches to support components when required. Securely support any machine elements that must be raised for service work.
- Before servicing machine or attachment, carefully release pressure from any components with stored energy, such as hydraulic components or springs.
- Release hydraulic pressure by lowering attachment or cutting units to the ground or to a mechanical stop and move hydraulic control levers back and forth.
- Disconnect battery or remove spark plug (for gas engines) before making any repairs. Disconnect the negative terminal first and the positive last. Reconnect positive first and negative last.
- Use care when checking blades. Wrap the blades or wear gloves, and use caution when servicing them. Only replace blades. Never straighten or weld them.
- Keep hands, feet, clothing, jewelry and long hair away from moving parts. If possible, do not make adjustments with the engine running.

- Charge batteries in an open well ventilated area, away from spark and flames. Unplug charger before connecting or disconnecting from battery. Wear protective clothing and use insulated tools.
- Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.
- Check grasscatcher components and the discharge guard frequently and replace with manufacturer's recommended parts, when necessary. Grasscatcher components are subject to wear, damage, and deterioration which could expose moving parts or allow objects to be thrown.
- Keep all nuts and bolts tight, especially blade attachment bolts, to be sure the equipment is in safe working condition.
- Check brake operation frequently. Adjust and service as required.
- On multi-bladed machines, take care as rotating one blade can cause other blades to rotate.

Avoid High Pressure Fluids

- Hydraulic hoses and lines can fail due to physical damage, kinks, age, and exposure. Check hoses and lines regularly. Replace damaged hoses and lines.
- Hydraulic fluid connections can loosen due to physical damage and vibration. Check connections regularly. Tighten loose connections.
- Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.
- Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.
- If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.

Prevent Fires

- Machine fires and structure fires can occur if a machine is stored before allowing it to cool, or if debris is not removed from around the engine and muffler, or if stored near combustible materials.
- Remove grass and debris from engine compartment and muffler area, before and after operating machine, especially after mowing or mulching in dry conditions.

- Empty the grasscatcher completely before storing. Always shut off fuel when storing or transporting machine, if the machine has a fuel shutoff.
- Do not store machine near an open flame or source of ignition, such as a water heater or furnace.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.



Tire Safety

Explosive separation of a tire and rim parts can cause serious injury or death:

- Do not attempt to mount a tire without the proper equipment and experience to perform the job.
- 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.
- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly.
- Check tires for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

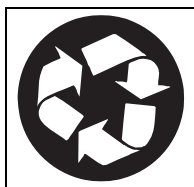


Handling Fuel Safely

To avoid personal injury or property damage, use extreme care in handling fuel. Fuel is extremely flammable and fuel vapors are explosive:

- Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
- Use only an approved fuel container. Use only non-metal, portable fuel containers approved by the Underwriter's Laboratory (U.L.) or the American Society for Testing & Materials (ASTM). If using a funnel, make sure it is plastic and has no screen or filter.
- Never remove the fuel tank cap or add fuel with the engine running. Allow engine to cool before refueling.

- Never add fuel to or drain fuel from the machine indoors. Move machine outdoors and provide adequate ventilation.
- Clean up spilled fuel immediately. If fuel is spilled on clothing, change clothing immediately. If fuel is spilled near machine, do not attempt to start the engine but move the machine away from the area of spillage. Avoid creating any source of ignition until fuel vapors have dissipated.
- Never store the machine or fuel container where there is an open flame, spark, or pilot light such as on a water heater or other appliance.
- Prevent fire and explosion caused by static electric discharge. Static electric discharge can ignite fuel vapors in an ungrounded fuel container.
- Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before fueling.
- Remove fuel-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 fuel dispenser nozzle.
- 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.
- Never overfill fuel tank. Replace fuel tank cap and tighten securely.
- Replace all fuel container caps securely after use.
- Fuel is highly flammable and its vapors are explosive. Handle with care. Use only an approved gasoline container with an appropriately sized dispensing spout.
- For gasoline engines, do not use gas with methanol. Methanol is harmful to your health and to the environment.
- A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques. The seller of the chemical products used with your machine is responsible for providing the MSDS for that product.



Handling Waste Product and Chemicals

Waste products, such as, used oil, fuel, coolant, brake fluid, and batteries, can

harm the environment and people:

- Do not use beverage containers for waste fluids - someone may drink from them.
- See your local Recycling Center or authorized dealer to learn how to recycle or get rid of waste products.

ASSEMBLY



WARNING: AVOID INJURY. Read and understand the entire *Safety* section before proceeding.

1. Remove the unit from shipping container.
2. Adjust tire pressure to 8 to 16 psi (55 to 110 kPa).



CAUTION: Avoid injury! Explosive separation of tire and rim parts is possible when they are serviced incorrectly:

- Do not attempt to mount a tire without the proper equipment and experience to perform the job.
- Do not inflate the tires above the recommended pressure.
- Do not weld or heat a wheel and tire assembly. Heat can cause an increase in air pressure resulting in an explosion. Welding can structurally weaken or deform the wheel.
- Do not stand in front or over the tire assembly when inflating. Use a clip-on chuck and extension hose long enough to allow you to stand to one side.

3. Check the adjustments outlined in *Service & Adjustments*.
4. Check engine oil level. See engine manual.
5. Fill fuel tank. **DO NOT OVERFILL!** See *FILLING FUEL TANK* on page 15
6. Check for loose hardware.
7. Be sure that safety interlock system operates correctly. See *Check Safety Interlock System* on page 14.
8. Be sure that unit tracks straight. Unit must not pull sharply to the left or right when the steering levers are released. See *TRACKING ADJUSTMENT* on page 22.

CONTROLS AND FEATURES

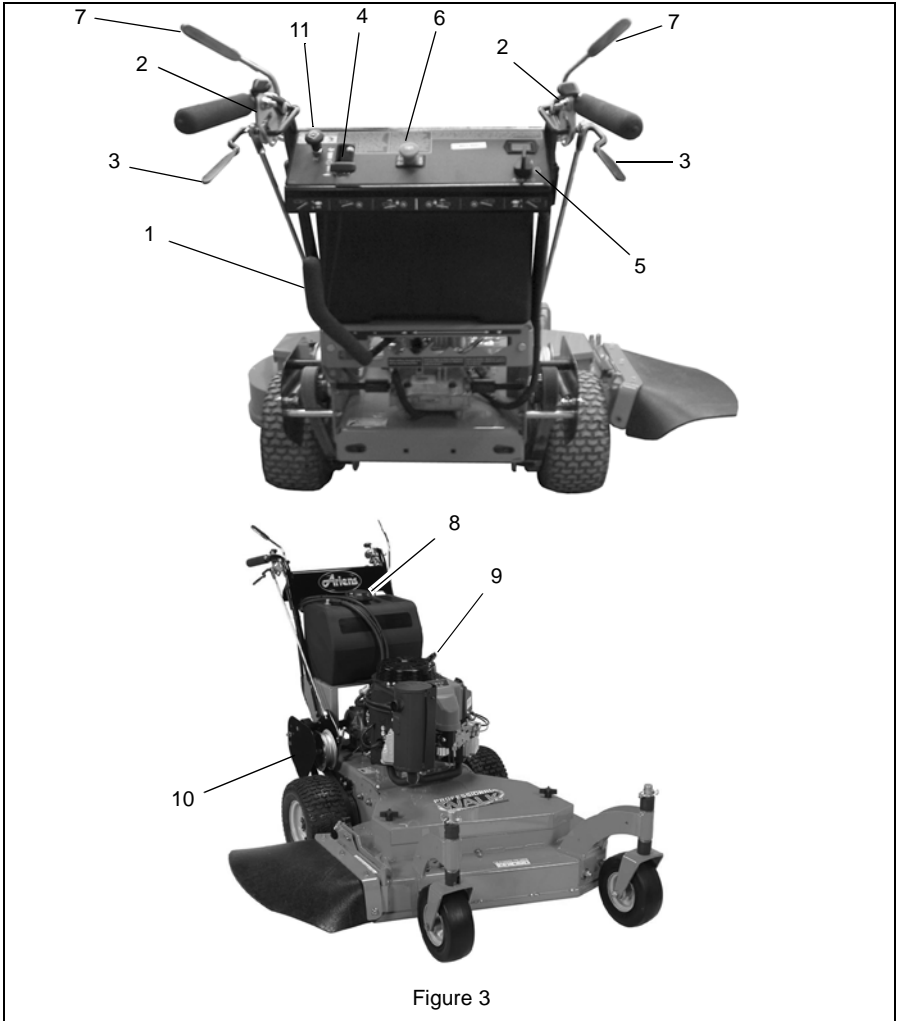


Figure 3

1. Shift Lever
2. Steering Lever Latches
3. Steering Levers
4. Throttle Lever
5. Ignition Switch
6. PTO Switch
7. Operator Presence Controls
8. Fuel Cap
9. Recoil Starter Handle
10. Traction Belt Guard
11. Choke Control

OPERATION



WARNING: AVOID INJURY. Read and understand the entire *Safety* section before proceeding.

CONTROLS AND FEATURES

See Figure 3 for controls and features locations.

SAFETY INTERLOCK SYSTEM



DANGER: SAFETY INTERLOCK SYSTEM FAILURE and improper operation of unit can result in death or serious injury. ALWAYS know the safety interlock system is operating properly. See *Check Safety Interlock System* on page 14 for testing instructions.

Check Safety Interlock System

Test the safety interlock system at each operation. If the system does not function properly, do not operate the unit until repairs are made.

The engine will only start with the PTO disengaged. The shift lever must be in neutral for engine to start.

Engine must not start unless PTO is disengaged and the shift lever is in neutral. To test:

1. With engine off, engage PTO.
2. Turn ignition switch to On. Pull recoil start handle. Engine must not start.
3. Disengage PTO.

The engine MUST stop whenever the operator removes both hands from controls while the PTO or transmission is engaged. To test:

1. Start engine and engage PTO.
2. Release operator presence control lever(s). Engine must stop.
3. Disengage PTO.
4. Restart engine.
5. Place shift lever in Forward.
6. Release operator presence control lever. Engine must stop.

Operator Presence Control

The operator presence control lever must be pressed to operate the PTO or traction drive. When the shift lever or PTO is engaged, releasing the operator presence control lever stops the engine.



CAUTION: AVOID INJURY. Operate only when operator presence control is functioning correctly. See *Check Safety Interlock System* on page 14 for testing instructions.

Steering Levers



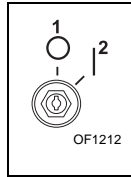
WARNING: AVOID INJURY. When the engine is running and the shift lever is engaged, releasing only one steering latch causes the unit to circle around one drive wheel. ALWAYS hold both steering levers against the handlebar when releasing the steering lever latches. ALWAYS release levers slowly.

The steering levers are used to steer, operate in forward and reverse, and stop the unit. When held against the handlebar, the brakes are engaged.

Steering Lever Latches

The steering lever latches hold the steering levers in the neutral position and keep the brakes applied.

Ignition Switch



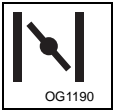
Operate the ignition switch with the removable key. The switch uses two positions: Off (1) and On (2). To start the engine, turn the key to On (2) and pull the recoil handle. To stop the engine, turn the key to Off (1).

Throttle Lever



The throttle lever changes the speed of the engine. Move the throttle lever to Fast (1) to increase engine speed. Move the lever to Slow (2) to decrease engine speed.

Choke Control



Use the choke control to start a cold engine. Pull the control out to choke the engine. Push the control in when the engine gets warm.

Shift Lever

The shift lever sets the direction and speed of the unit.

- R = reverse
- N = neutral
- 1 = the slowest forward speed
- 5 = the fastest forward speed.

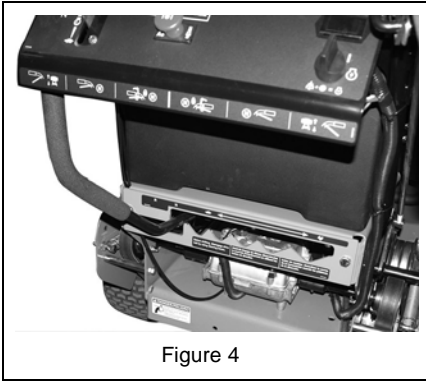
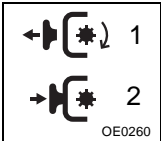


Figure 4

PTO Clutch



Pull the PTO (power take off) switch On (1) to engage the mower blades. Push the PTO switch Off (2) to disengage the mower blades.

Recoil Starter Handle

Pull the recoil starter handle to start the engine.

FILLING FUEL TANK

To add fuel to the fuel tank:

1. Clean fuel cap and surrounding area to prevent dust, dirt, and debris from entering fuel tanks.
2. Remove fuel cap.

IMPORTANT: Refer to Engine Manual for correct type and grade of fuel.

3. Fill fuel tank to the bottom of filler neck. See *SPECIFICATIONS* on page 31 for fuel tank capacity.

IMPORTANT: DO NOT OVERFILL! This equipment and/or its engine may include evaporative emissions control system components, required to meet EPA and/or CARB regulations, that will only function properly when the fuel tank has been filled to the recommended level. Overfilling may cause permanent damage to evaporative emissions control system components. Filling to the recommended level ensures a vapor gap required to allow for fuel expansion. Pay close attention while filling the fuel tank to ensure that the recommended fuel level inside the tank is not exceeded. Use a portable gasoline container with an appropriately sized dispensing spout when filling the tank. Do not use a funnel or other device that obstructs the view of the tank filling process.

4. Replace fuel cap and tighten.
5. ALWAYS clean up spilled fuel.

GASOLINE

IMPORTANT: ALWAYS use gasoline that meets the following guidelines:

- Clean, fresh gasoline.
- A minimum of 87 octane/87 AKI (91 RON). High altitude use may require a different octane. Consult your engine manual.
- Gasoline with up to 10% ethanol (gasohol) or up to 10% MTBE (methyl tertiary butyl ether) is acceptable.
- Use of any gasoline other than those approved above will void the engine warranty. If the pumps are not marked for the content of alcohol or ethers, check ethanol and MTBE levels with the fuel supplier.
- Do not modify the fuel system to use different fuels.
- Never mix oil and gasoline.

NOTE: All gasoline is not the same. If the engine experiences starting or performance problems after using a new gasoline, switch to a different fuel provider or fuel brand.

IMPORTANT: Excessively oxygenated or reformulated fuels (fuels blended with alcohols or ethers) can damage the fuel system or cause performance problems. If any undesirable operating problems occur, use a gasoline with a lower percentage of alcohol or ether.

Fuel Stabilizer

Gasoline left in the fuel system for extended periods without a stabilizer will deteriorate, resulting in gum deposits in the system. These deposits can damage the carburetor and the fuel hoses, filter and tank. Prevent deposits from forming in the fuel system during storage by adding a quality fuel stabilizer to the fuel. Follow the recommended mix ratio found on the fuel stabilizer container.

TO STOP IN AN EMERGENCY

1. Release operator presence control(s).
2. Turn the ignition key Off.
3. Allow engine to stop completely.
4. Lock steering levers in neutral.

STARTING AND SHUT OFF

Before Each Use

Check each item in *Each Use* in the Maintenance Schedule.

NOTE: The engine will not start unless the shift lever is in neutral, and the Power Take Off (PTO) is Off.

Recoil Start

1. Lock the steering lever latches in neutral.
2. Put the shift lever in neutral.
3. Move PTO switch to Off.
4. Set throttle to the proper starting position. If the engine is cold, choke the engine.
5. Turn ignition switch to On.
6. Grasp recoil starter handle and pull rope out slowly until it pulls harder. This is the compression stroke.
7. Let the rope rewind slowly.
8. Pull rope with rapid continuous full arm stroke to start engine. Allow rope to rewind slowly.

IMPORTANT: DO NOT let starter handle snap against engine.

9. Repeat until engine starts. (If engine does not start, refer to Engine Manual.)
10. After engine starts, adjust choke as needed. Allow engine to warm and run smoothly before operating unit.

Shut Off

1. Lock steering levers in neutral.
2. Shut off the PTO.
3. Move the throttle lever to Slow.
4. Put the shift lever in neutral.
5. Turn the ignition key Off.
6. Allow engine to stop completely.

TO OPERATE UNIT

Operate the unit only in the operator's position directly behind the handlebars.



WARNING: AVOID INJURY. When the engine is running and the speed control lever is engaged, holding only one steering lever in neutral causes the unit to circle sharply around one drive wheel.

To shift unit:

1. Stop unit movement by pulling both steering levers all the way up.
2. You can move the shift lever one of two ways:
 - Continue to hold up both steering levers and use your knee to move the shift lever to the desired position.
 - Lock both steering levers. Move the shift lever to the desired position. Hold the steering levers up as you unlock them.
3. Release both steering levers slowly.

To operate:

1. Start the engine (See *STARTING AND SHUT OFF* on page 16).
2. Move the throttle lever to the Fast position.
3. Engage the operator presence control and move shift lever to desired direction and speed.
4. Hold steering levers against the handlebar and release steering latch levers.



WARNING: AVOID INJURY. When the engine is running and the shift lever is engaged, releasing only one steering latch causes the unit to circle around one drive wheel. ALWAYS hold both steering levers against the handlebar when releasing the steering lever latches. ALWAYS release levers slowly.

- To move straight forward; slowly release both steering levers to the full outward position.



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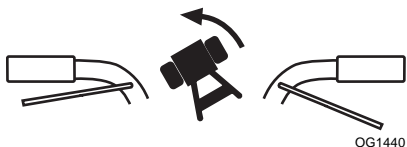
- To stop unit in neutral, hold levers in the neutral position.



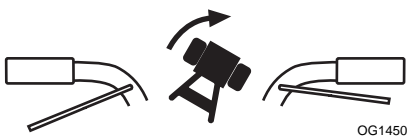
- To lock unit in neutral, engage both steering latches.



- To turn to the left, pull the left hand lever up.



- To turn to the right, pull the right hand lever up.



To move in reverse:

- Hold the steering levers against the handlebar.
- Engage steering lever latches.
- Engage the operator presence control and move shift lever to Reverse.
- Release steering levers slowly.

WARNING: Uncontrolled reverse travel can result in serious injury. Do not put shift lever into the reverse position unless you are prepared to operate in reverse.

To mow:

- Lock steering levers in neutral.
- Put the shift lever in neutral.
- Move the throttle lever to the fast position.
- Engage the operator presence control lever.

NOTE: Operator presence control must remain engaged.

- Move the PTO switch to On to engage mower.

IMPORTANT: NEVER engage the PTO if the mower is plugged with grass or other material. This will damage the PTO belt.

- Move the shift lever to set a slow ground speed.
- Hold steering levers against the handlebar and release the lock latches.
- Release steering levers slowly.

When you know how to operate the unit, select a speed appropriate to your mowing conditions.

To stop mowing:

- Lock the steering levers in neutral.
- Keep one hand on the operator presence control and move the shift lever to the neutral position.
- Move the throttle lever to 1/2 speed.
- Turn off PTO switch.

CUTTING HEIGHT ADJUSTMENT



WARNING: ALWAYS block wheels, engage parking brake and know all jack stands are strong, secure and will hold weight of unit during maintenance.

NOTE: Adjust the cutting height using a combination of the deck mounting location on the deck carrier frame, spacers on the front casters, and spacers between the mower blades and the deck spindles. The desired cutting height may be set by adjusting only the blade spacers and caster spacers.

Refer to the cutting height charts below to determine which combination of deck mounting location, blade spacers and caster spacers will set the desired cutting height.

- Shut off the unit. See *Shut Off* on page 16 and "To stop mowing."
- Support the rear of the machine and the back edge of the mower deck.
- Remove the six deck mounting bolts (three per side).
- Align the mounting holes in the deck frame with the unit frame and re-install the mounting bolts in the appropriate holes and tighten to 35–40 lbf-ft (47–54 N•m).

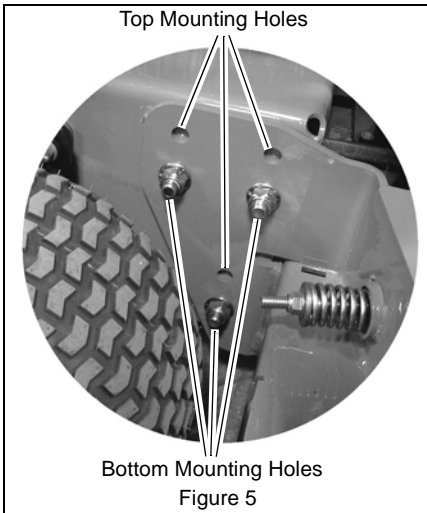


Figure 5

5. Using a suitable lifting device, lift the front of the machine.

6. Remove lynch pin and spacer bushing.

IMPORTANT: Do not allow washer (item 4 in Figure 6) to sit on caster yoke (item 5 in Figure 6). It must be on top of height-of-cut spacer bushings (item 3 in Figure 6).

NOTE: Adjust caster wheel spacers to keep mower deck tilted slightly down at the front.

7. Adjust caster wheel spacers to set the front cutting height accordingly.

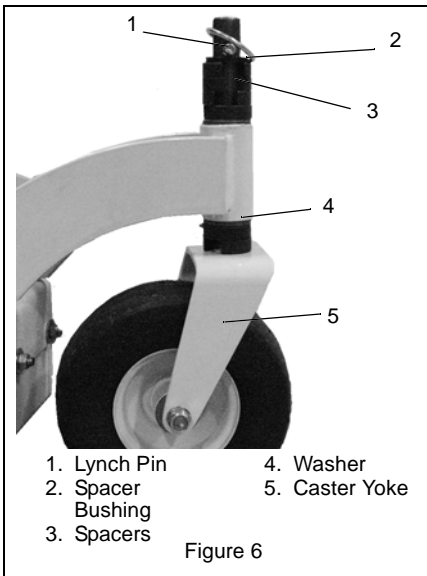


Figure 6

- | | |
|-------------------|----------------|
| 1. Lynch Pin | 4. Washer |
| 2. Spacer Bushing | 5. Caster Yoke |
| 3. Spacers | |



WARNING: Sharp edges can cut. Moving parts can cut off fingers or a hand. Wrap blade(s), wear sturdy gloves and use extreme caution when servicing. On multi-blade mowers, rotation of one blade will cause all blades to rotate.

8. Remove the mower blade from the spindle and place the appropriate number of 1/4" spacers between the spindle and the blade.

IMPORTANT: DO NOT allow the blade to be less than 1/8 in. (3.2mm) above the lip of the mower deck.

IMPORTANT: If two or three spacers are removed, shorter blade bolts must be used. The shorter blade bolts for this application are mounted under the belt cover.

9. Replace mower blade and tighten mounting bolt to 120 lbf-ft (163 N•m).

10. Remove supports from deck and mower frame.

NOTE: Store the unused 1/4" blade spacers on hex bolts mounted to the deck:

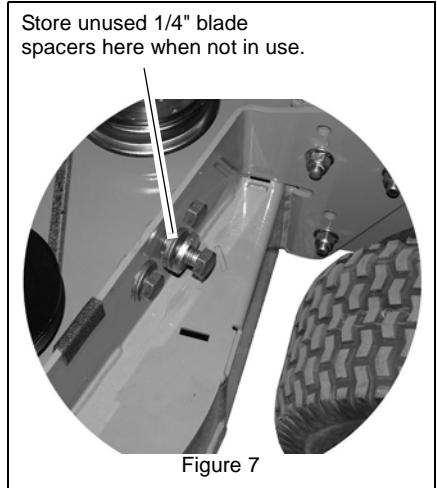


Figure 7

Cutting Height Chart – Deck Bolted to Frame with Top Holes

Approximate Cutting Height	1/4" Blade Spacers		1/2" Caster Spacers	
Inches (cm)	Stored	Between Spindle and Blade	Below Weldment	Above Weldment
1.25 (3.2)	0	3	0	6
1.5 (3.8)	1	2	0	6
1.75 (4.4)	2	1	0	6
2.0 (5.1)	3	0	0	6
1.5 (3.8)	0	3	1	5
1.75 (4.4)	1	2	1	5
2.0 (5.1)	2	1	1	5
2.25 (5.7)	3	0	1	5
1.75 (4.4)	0	3	2	4
2.0 (5.1)	1	2	2	4
2.25 (5.7)	2	1	2	4
2.5 (6.35)	3	0	2	4
2.0 (5.1)	0	3	3	3
2.25 (5.7)	1	2	3	3
2.5 (6.35)	2	1	3	3
2.75 (7.0)	3	0	3	3

Recommended Range for Best Cut Quality

Cutting Height Chart – Deck Bolted to Frame with Bottom Holes

Approximate Cutting Height	1/4" Blade Spacers		1/2" Caster Spacers	
Inches (cm)	Stored	Between Spindle and Blade	Below Weldment	Above Weldment
2.75 (7.0)	0	3	3	3
3.0 (7.62)	1	2	3	3
3.25 (8.3)	2	1	3	3
3.5 (8.9)	3	0	3	3
3.0 (7.62)	0	3	4	2
3.25 (8.3)	1	2	4	2
3.5 (8.9)	2	1	4	2
3.75 (9.5)	3	0	4	2
3.25 (8.3)	0	3	5	1
3.5 (8.9)	1	2	5	1
3.75 (9.5)	2	1	5	1
4.0 (10.2)	3	0	5	1
3.5 (8.9)	0	3	6	0
3.75 (9.5)	1	2	6	0
4.0 (10.2)	2	1	6	0
4.25 (10.8)	3	0	6	0

Recommended Range for Best Cut Quality

PARKING

1. Shut off the unit. See *Shut Off* on page 16 and "To stop mowing."
2. Remove the key.
3. Lock both steering lever latches in neutral to engage the brakes.
4. Chock or block the wheels if parked on a slope.

TO PUSH UNIT BY HAND

To move the unit without the engine running:

1. Put the shift lever in neutral.
2. Disengage the lock latches. Release steering levers. The brake is disengaged when the steering levers are released.
3. Push unit to desired location.

IMPORTANT: Towing the unit will damage transmission.

TO TRANSPORT UNIT

Transporting Machine on a Trailer

Use a heavy-duty trailer to transport your machine. Trailer

must have signs and lights required by law.




CAUTION: Avoid injury! Use extra care when loading or unloading the machine into a trailer or truck.

Close fuel shut-off valve, if your machine is equipped.

IMPORTANT: Avoid damage! Transporting a machine on a trailer or on a truck bed at high speeds can result in hood or engine cover raising and possibly coming off machine if not secured.

- Position machine on trailer so hood or engine cover opens from rear of trailer to prevent wind from blowing hood or cover open.
 - Secure hood or engine cover with existing machine locks or latches.
 - Secure hood or engine cover with tie down straps if no locks or latches exist.
1. Drive machine onto a trailer.
 2. Engage brake lever locks.
 3. Place transmission in NEUTRAL.
 4. Shut engine off.
 5. Remove key.
 6. Turn fuel shutoff valve to off position.
 7. Fasten machine to trailer with heavy-duty straps, chains or cables. Both front and rear straps must be directed down and outward from machine.

MAINTENANCE SCHEDULE

Period	Service	Task
Each Use	Check Safety Interlock System	 WARNING: Safety interlock system failure and improper operation of unit can result in death or serious injury. Test this system each time the unit is operated. If this system does not function as described, do not operate until repairs are made. See <i>Check Safety Interlock System</i> on page 14.
	Check Air Cleaner	Check the air cleaner element before each use. See engine manual for detailed instructions.
	Check Engine Oil	Check the engine oil level before each use. Never operate the engine when the oil level is low. See engine manual for detailed instructions.
	Check Engine Cooling	Check the engine air cooling system before each use. See engine manual for detailed instructions.
	Check Fasteners	Check all nuts, bolts, and other fasteners before each use. Replace missing or damaged fasteners.
	Check Tire Pressure	Check tires for proper inflation, excessive wear or damage before each use. The correct air pressure is 8 – 16 psi (55 – 110 kPa).
	Follow Engine Manual Maintenance Schedule	Perform scheduled engine maintenance. See engine manual for detailed instructions.
Every 25 Hours	Check All Belts	Check all belts for wear or damage. If belts slip, check for damaged belt tensioner.
	Mower Blades	Check mower blades for wear. Sharpen or replace as needed. See <i>MOWER BLADES</i> on page 26.
	Clean Air Cleaner Foam Element	See engine manual for detailed instructions.
Every 50 Hours	General Lubrication	Oil all pivot points and pin connections. Grease lube fittings. See <i>GENERAL LUBRICATION</i> on page 22.
Every 100 Hours	Change Engine Oil*	Open the petcock to drain oil through oil drain hose on the right side of engine. See engine manual for additional instructions.
	Check Fuel Filter	See engine manual for detailed instructions.
	Check Spark Plug	See engine manual for detailed instructions.
	Check Muffler	Check muffler for damage or wear. Replace if necessary.
	Clean Air Cleaner Paper Element	See engine manual for detailed instructions.

* Change oil after first 8 hours of operation and every 100 hours thereafter.

SERVICE AND ADJUSTMENTS



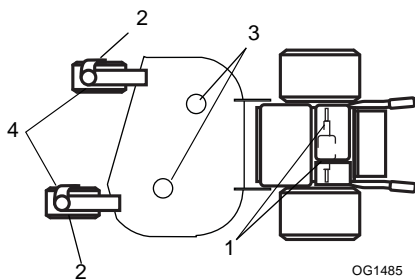
WARNING: AVOID INJURY. Read and understand the entire *Safety* section before proceeding.

GENERAL LUBRICATION

Apply a small amount of oil to the pivot points as required for smooth operation (Figure 8).

Apply high quality lithium based grease to all lube fittings every 50 hours of operation (spindle bearings every 160 hours).

NOTE: 32-Inch Deck Shown.



1. Half Shafts
2. Wheel Bearings
3. Spindle Bearings
4. Caster Pivots

Figure 8

TRACKING ADJUSTMENT

Check Forward Tracking

1. Start engine and run unit at full throttle.
2. Shift into a forward gear and slowly release both steering levers to the full outward position.
3. Note to which direction, if any, the unit pulls.
4. Stop unit and engine.
5. Adjust tracking if needed.

Try each of the following steps until the unit tracks straight. It may not be necessary to perform all the steps.

If unit turns to the right:

1. Reduce the air pressure in the left tire.
2. Increase the air pressure in the right tire.
3. Check for brake binding on right wheel and adjust as needed.

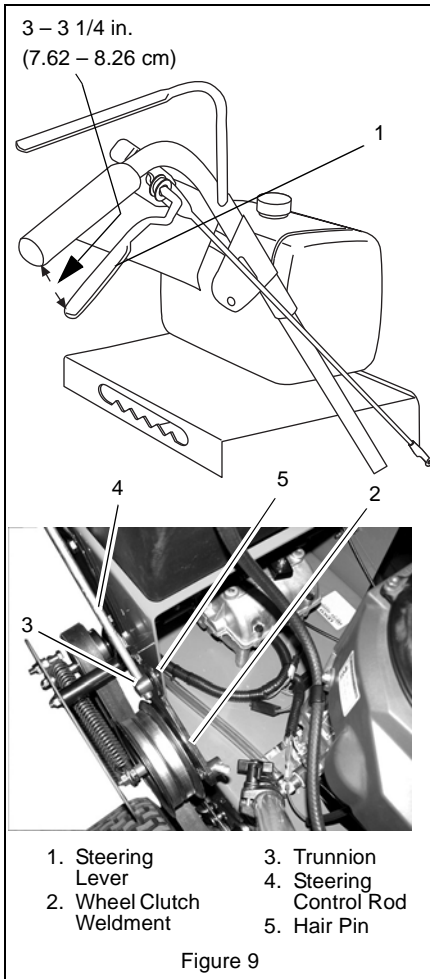
If unit turns to the left:

1. Reduce the air pressure in the right tire.
2. Increase the air pressure in the left tire.
3. Check for brake binding on left wheel and adjust as needed.

ADJUST STEERING LEVERS

For each lever:

1. Turn off the engine, remove the key and allow unit to cool.
2. Release steering or control levers (Figure 9).
3. Shift transmission into neutral. Operate steering or control lever several times. Do not move unit.
4. Remove the hair pin and disconnect the trunnion from the wheel clutch weldment.
5. Adjust the trunnion on the steering control rod until the gap between the ends of the steering lever and handlebar grip is 3 – 3 1/4 in. (7.62 – 8.26 cm).
6. Connect trunnion to wheel clutch weldment and secure with hair pin.
7. Repeat for other steering lever.

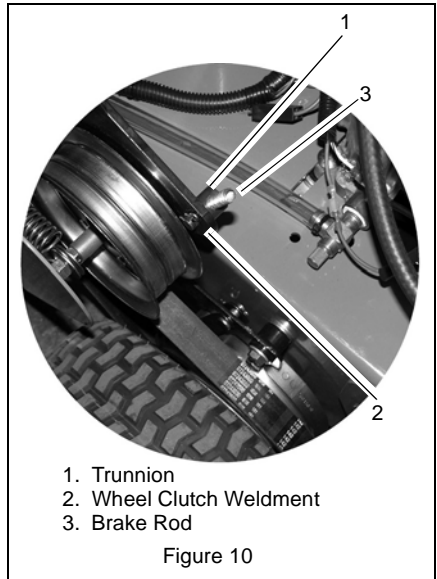


ADJUST BRAKES

NOTE: The traction belt must disengage as the brake starts to engage.

1. Turn off the engine, remove the key and allow unit to cool.
2. If brakes do not disengage fully when traction belt is engaged, the brakes are too tight. Disconnect trunnion from the clutch weldment and turn the trunnion up the brake rod to reduce braking. Reconnect the trunnion to the clutch weldment (Figure 9).
3. If brakes do not engage fully when traction belt is disengaged, the brakes are too loose. Disconnect trunnion from the clutch weldment and turn the trunnion down the brake rod to increase braking. Reconnect the trunnion to the clutch weldment (Figure 10).

4. Start engine and test in low gear for proper brake engagement.



REPLACE TRACTION BELTS

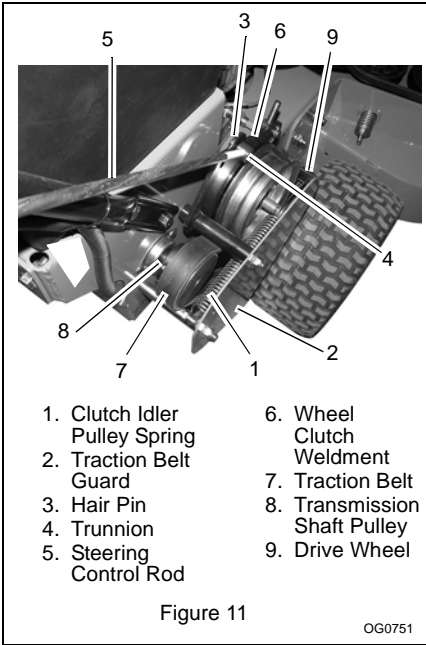
1. Turn off the engine, remove the key and allow unit to cool.
2. Release the steering levers.
3. Raise the rear of the unit so that the drive wheels are off the ground.
4. Disconnect clutch idler pulley spring (Figure 11).
5. Remove traction belt guard.



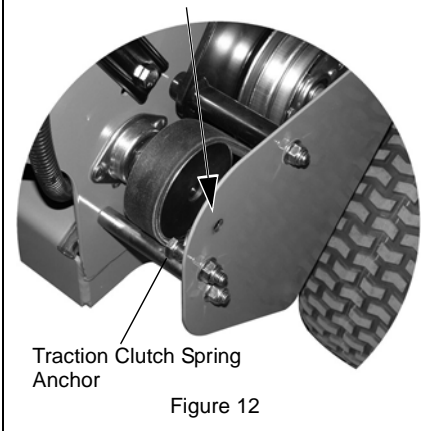
WARNING: AVOID INJURY. An extension spring, when extended, stores energy and can be dangerous. Always use tools specifically designed for installing or removing an extension spring. Always compress or extend springs slowly.

6. Remove hair pin and trunnion holding steering control rod to wheel clutch weldment.
7. While slowly turning the drive wheel, work the traction belt off the transmission shaft pulley and drive wheel.
8. Install new traction belt.
9. Connect steering control rod to wheel clutch arm weldment with trunnion and hair pin.
10. Replace traction belt guard.
11. Replace clutch idler pulley spring.

12. Lower the unit.
13. Check steering lever adjustment. See *ADJUST STEERING LEVERS* on page 22.



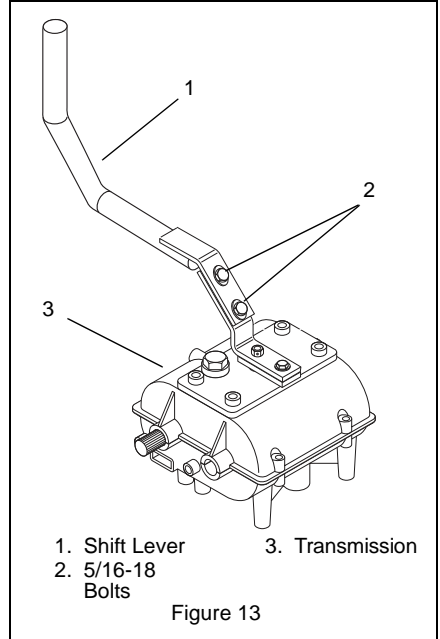
NOTE: Move spring anchor location to hole to gain more traction on hilly terrain.



ADJUST SHIFT LEVER LINKAGE

IMPORTANT: If the shift lever and the transmission detent are improperly aligned, the transmission may fail prematurely. Align the shift lever and detent as carefully as possible. The .030 (.8mm) clearance helps prevent premature wear of the detent plate and shift lever.

The transmission shift lever is attached to the transmission shift arm with two 5/16-18 bolts (Figure 13).



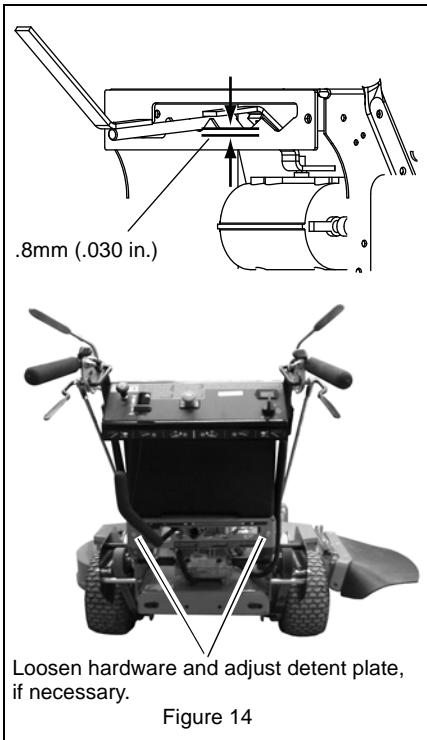
To adjust:

1. Stop the engine. Remove ignition key. Put PTO lever in the "OFF" position. Put the shift lever in neutral.
2. Loosen two 5/16-18 bolts on shift lever.
3. Align the shift lever so it is centered in gear position 2 on the detent plate and is .030 in. (.8mm) from the V (Figure 14).

NOTE: If the shift lever cannot be adjusted to tolerance with the shift lever hardware alone, loosen the hardware holding the detent plate to the frame and adjust the detent plate to tolerance.

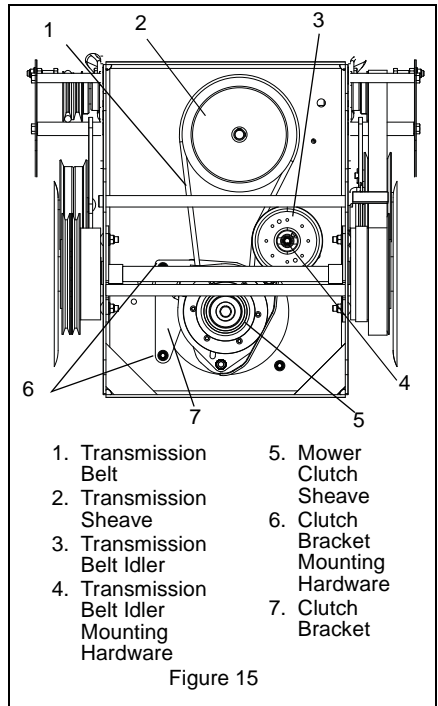
4. Tighten bolts securely.

NOTE: Before starting unit, test the shift lever to make sure it engages all gear positions.

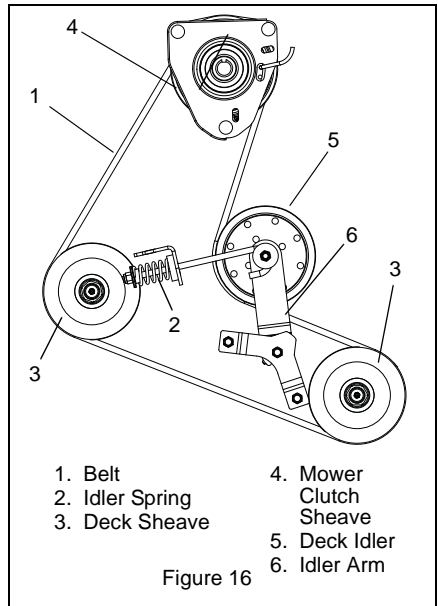


REPLACE TRANSMISSION BELT

1. Stop the engine. Remove ignition key. Put PTO switch in the "OFF" position. Put the shift lever in neutral.
2. Remove mower drive belt from mower clutch sheave. See *36" BELT REPLACEMENT* on page 25 or *48" BELT REPLACEMENT* on page 26.
3. Loosen idler pulley mounting bolt and slide idler pulley away from the belt (Figure 15).
4. Loosen one and remove one engine mounting bolt and turn the clutch stop away from the clutch. Save the hardware.
5. Remove old transmission belt from mower clutch sheave and transmission sheave.
6. Install new transmission belt in the top groove of the clutch hub and on the transmission sheave.
7. Slide idler pulley to the belt to tension it, and then tighten the mounting bolt to hold the position. (Figure 15).
8. Reposition clutch stop, replace engine bolt, and torque both engine bolts to 17 lbf-ft (23 N•m).
9. Reinstall mower drive belt on mower clutch sheave.



36" BELT REPLACEMENT



1. Stop engine, remove key and wait for all hot parts to cool.

2. Remove deck cover.
3. Turn the idler spring adjusting nut to relieve tension from the idler spring.
4. Remove belt from deck sheaves and mower clutch sheave.
5. Install new belt.
6. Tighten the adjusting nut to tension the belt. Tighten the nut until the idler spring compresses to 2 in. \pm 1/8 in. (5.1cm \pm .32 cm). See Figure 16.
7. Replace deck cover and secure.

48" BELT REPLACEMENT

Deck Belt

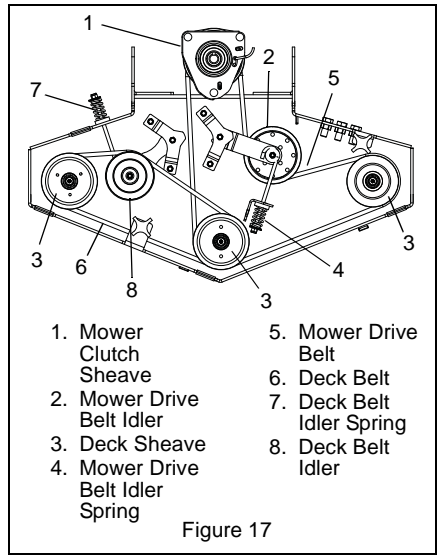
1. Stop engine, remove key and wait for all hot parts to cool.
2. Remove deck cover.
3. Turn the deck belt idler spring adjusting nut to relieve tension from the idler spring.
4. Remove deck belt from deck sheaves.
5. Install new deck belt.
6. Tighten the adjusting nut to tension the belt. Tighten the nut until the idler spring compresses to 2 in. \pm 1/8 in. (5.1cm \pm .32 cm). See Figure 17.
7. Replace deck cover.

Mower Drive Belt

NOTE: Deck belt must be removed before removing the mower drive belt.

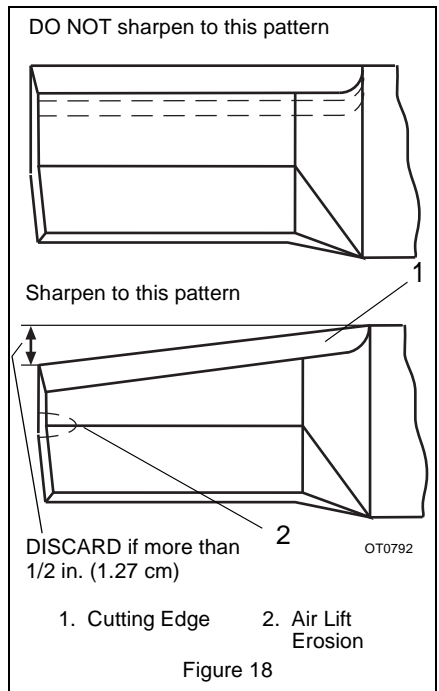
1. Stop engine, remove key and wait for all hot parts to cool.
2. Remove deck cover.
3. Remove deck belt.
4. Turn the mower drive belt idler spring adjusting nut to relieve tension from the idler spring (Figure 17).
5. Remove mower drive belt from deck sheaves and mower clutch sheave.
6. Install new mower drive belt on deck sheaves and mower clutch sheave.
7. Tighten the adjusting nut to tension the belt. Tighten the nut until the idler spring compresses to 2 in. \pm 1/8 in. (5.1cm \pm .32 cm). See Figure 17.
8. Replace deck belt.
9. Replace deck cover and secure.

NOTE: Make sure wing knobs do not interfere with cutting height adjustments.



MOWER BLADES

NOTE: If mower is used under sandy soil conditions, replace blades when air lifts become eroded through at ends (Figure 18).



Remove Mower Blades



WARNING: Sharp edges can cut. Moving parts can cut off fingers or a hand. Wrap blade(s), wear sturdy gloves and use extreme caution when servicing. On multi-blade mowers, rotation of one blade will cause all blades to rotate.

1. Turn the engine off. Remove the ignition key. Remove the ignition wire from the spark plugs.
2. Block the blades with a wooden block to prevent blade rotation.
3. Remove the bolts, blades and spacers from the spindle shafts.

Replace Mower Blades

1. Install the spacers, blades, and bolts on the spindle shafts.
2. Block blades with a wooden block to prevent blade rotation.
3. Tighten each blade bolt to a torque of 120 lbf-ft (163 N•m).
4. Replace ignition wire on spark plugs.

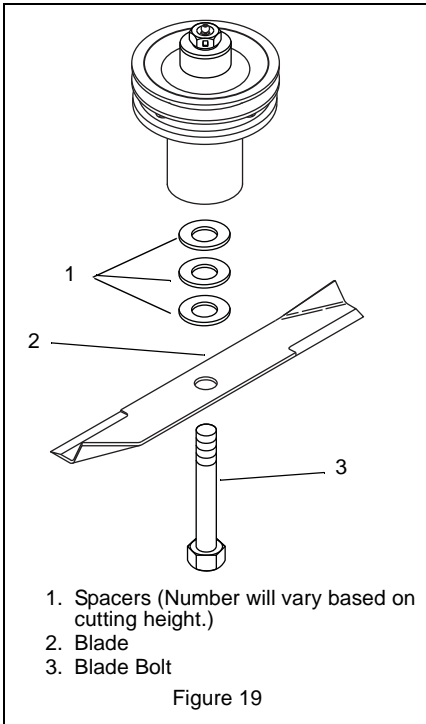


Figure 19

Sharpen the Mower Blades

Figure 18.



CAUTION: DO NOT sharpen mower blades while on unit. An unbalanced mower blade will cause excessive vibration and eventual damage to unit. Check mower blade balance before reinstalling blades.

NEVER weld or straighten bent blades.

1. Remove mower blade from unit.

Discard mower blade if:

- More than 1/2 in. (1.27 cm) of metal is removed.
- Air lifts become eroded.
- Blade is bent or broken.

2. Sharpen mower blade by removing an equal amount of material from each end of mower blade. DO NOT change angle of cutting edge or round the corner of the mower blade.

3. Check mower blade balance.

Slide mower blade on an unthreaded bolt. A balanced blade should remain in a horizontal position. If either end of mower blade moves downward, sharpen the heavy end until blade is balanced.

4. Install mower blade(s) on unit (See *Replace Mower Blades* on page 27).

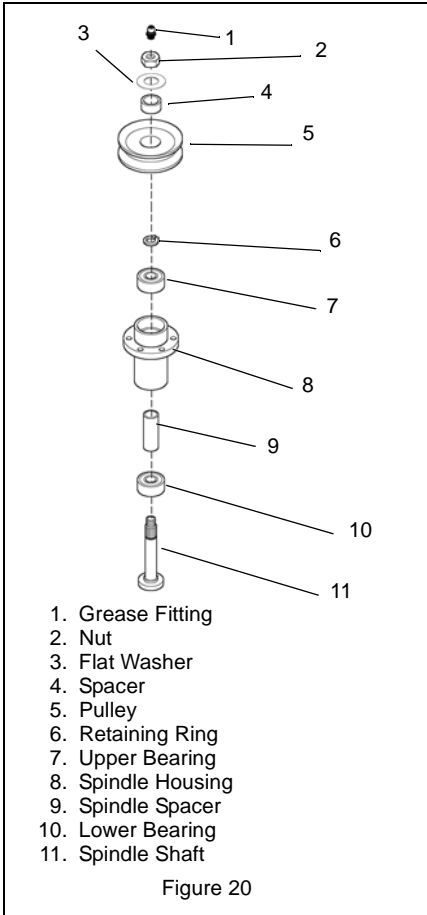
Replacing Mower Spindle Bearings

1. Turn the engine off. Remove the ignition key. Remove the ignition wire from the spark plugs.
2. Remove mower blade.
3. Remove nut, flat washer, spacer and pulley.
4. Remove spindle shaft, lower bearing and spacer from spindle housing. Discard bearing.
5. Remove and discard upper bearing.
6. Clean entire assembly.
7. Install a new lower bearing and spacer on the spindle shaft.

IMPORTANT: Avoid damage! The clearance between the lower bearing and the housing is only .002 in (.05 mm). Do not force bearing into housing.

8. Install the spindle shaft, lower bearing and spacer into the spindle housing.
9. Install the upper bearing.
10. Install spacer.
11. Install pulley and nut. Tighten nut to 85 lbf-ft (115 N•m).

- Grease the spindle. See *GENERAL LUBRICATION* on page 22.
- Install mower blade, blade washers and blade bolt assembly. Tighten bolt to 120 lbf-ft (163 N•m).

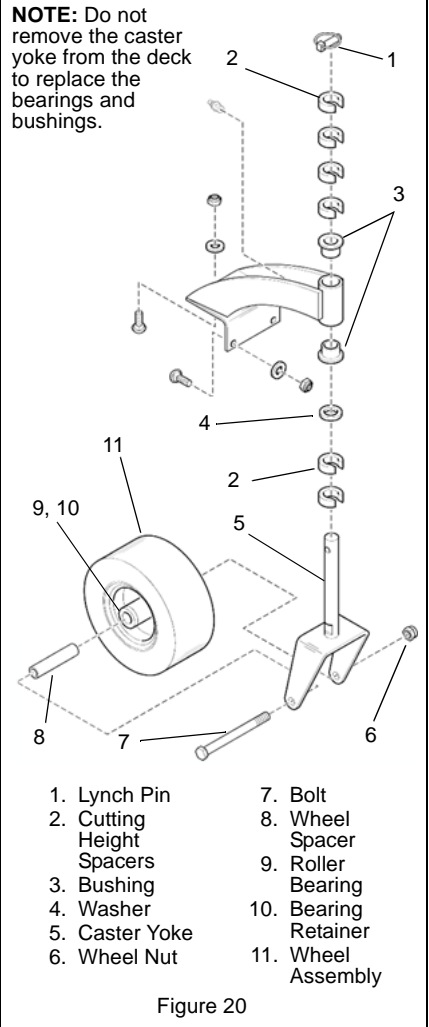


Replacing Caster Pivot Bearing Bushings

- Turn the engine off. Remove the ignition key. Remove the ignition wire from the spark plugs.
- Raise and securely support the front of the mower deck.
- Remove lynch pin, spacer bushings, washer and caster yoke and wheel assembly.
- Remove and discard upper and lower bushings.
- Install new bushings.

IMPORTANT: Do not allow washer to sit on castor yoke. It must be on top of height-of-cut spacer bushings.

- Install caster yoke and wheel assembly, washer, spacer bushings and lynch pin.
- Apply grease to lubrication fitting.



SERVICE ELECTRICAL

Replace Fuse

IMPORTANT: Avoid damage! When replacing fuses use only 25-amp fuses or you may damage the circuit.

The machine is equipped with one 25-amp fuse to protect the charging circuit. This fuse is located on the main harness, near the engine ground.

- Remove defective fuse from socket.

2. Check metal clip in fuse window and discard fuse if clip is broken.
3. Install new fuse into socket.

Fuse holder. Replace with an automotive type 25-amp fuse.



Figure 21

STORAGE



WARNING: AVOID INJURY. Read and understand the entire *Safety* section before proceeding.

Storage – Two Months or More

Check each item in the *MAINTENANCE SCHEDULE* on page 21, but do not add gasoline.

Clean the unit. Touch up all scratched painted surfaces.

IMPORTANT: Never spray unit with high-pressure water or store unit outdoors. Store unit in a cool, dry, protected location.

NOTE: Clean unit thoroughly with mild soap and low pressure water and lubricate (See *GENERAL LUBRICATION* on page 22). Touch up all scratched painted surfaces. Do not allow gasoline or oil to remain on any decals.

Engine

Refer to the engine manual to prepare the engine for storage.

Fuel System

Gasoline left in the fuel system for extended periods without a stabilizer will deteriorate, resulting in gum deposits in the system. These deposits can damage the carburetor and the fuel hoses, filter and tank. Prevent deposits from forming in the fuel system during storage by adding a quality fuel stabilizer to the fuel. Follow the recommended mix ratio found on the fuel stabilizer container.

To treat the fuel system for storage:

1. Add fuel stabilizer according to manufacturers's instructions.
2. Run engine for at least 10 minutes after adding stabilizer to allow it to reach the carburetor.

NEVER store the engine with fuel in the fuel tank inside of a building with potential sources of ignition.

ACCESSORIES

Part No.	Description
79260500	36-in. Mulch Kit (988811)
79260000	48-in. Mulch Kit (988812)

SERVICE PARTS

Always use genuine Ariens parts to keep your mower running like new.

00201010	1	Mower Deck Belt (36-in. Deck)
D38019	1	Mower Deck Belt (48-in. Deck)
07200533	1	Deck Drive Belt (48-in. Deck)
07243600	2	Traction Drive Belt
07225500	1	Transmission Belt
GDU10231	2	Blade (36-in. Decks)
GDU10230	3	Blade (48-in. Decks)
21538000	1	Air Filter Paper Element
21538100	1	Air Filter Foam Precleaner
21535800	1	Engine Oil Filter
21538400	1	Engine Fuel Filter
21533600	1	Spark Plug

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTION
Engine will not start	<ol style="list-style-type: none"> 1. Safety Interlock System is preventing start. 2. Fuel tank is empty or fuel is contaminated. 3. Air cleaner is clogged or damaged. 4. Safety Interlock System out of adjustment or defective. 5. Dirty or damaged spark plug. 	<ol style="list-style-type: none"> 1. The engine will not start unless the shift lever is in neutral, the key is in the On position, and the Power Take Off (PTO) is Off. 2. Add fuel. If necessary, replace the fuel with clean, fresh fuel. See <i>FILLING FUEL TANK</i> on page 15. 3. Clean or replace the filter element. See engine manual. 4. See your Dealer for repairs. 5. See Engine Manual.
Unit will not move or mow when the engine is running	<ol style="list-style-type: none"> 1. Transmission belt or mower belt is broken, worn, or off the pulleys. 	<ol style="list-style-type: none"> 1. Check belts for wear, damage and correct position on pulleys. Replace belts if worn or damaged. See <i>REPLACE TRANSMISSION BELT</i> on page 25.
Changes in the sound or vibrations of the unit	<ol style="list-style-type: none"> 1. Loose or missing fasteners. 2. Mower blade problem. 3. Worn or damaged clutch. 	<ol style="list-style-type: none"> 1. Check all the fasteners. Replace if necessary. 2. Check blades for wear or damage. See <i>MOWER BLADES</i> on page 26. 3. See your Dealer for repairs.
Unit does not straighten immediately when the steering levers are released	<ol style="list-style-type: none"> 1. Rust on the clutch sliding pin. 2. Steering levers out of adjustment. 	<ol style="list-style-type: none"> 1. Clean heavy rust deposits from the pin. See <i>Service and Adjustments</i>. 2. See <i>ADJUST STEERING LEVERS</i> on page 22.
Unit loses power	<ol style="list-style-type: none"> 1. Binding in the steering or brake linkage. 2. Steering levers out of adjustment. 3. Worn or damaged traction belts. 4. Traction belt slipping. 5. Transmission shaft pulley worn. 	<ol style="list-style-type: none"> 1. Check linkage for debris or damage. Repair if necessary. See <i>ADJUST BRAKES</i> on page 23 or your Dealer for repairs. 2. See <i>ADJUST STEERING LEVERS</i> on page 22. 3. Check belts for wear or damage. Replace if necessary. See <i>REPLACE TRACTION BELTS</i> on page 23. 4. Move the traction belt idler spring anchor to the rearmost position. See <i>REPLACE TRACTION BELTS</i> on page 23 5. If pulley shows excessive wear, replace it. See your Dealer for repairs.

SPECIFICATIONS

Model Number	988811	988812
Model	APWKA1636S	APWKA1648S
Engine		
Engine	Kawasaki	
Engine Model Number	FS481V	
Governed RPM (May be different from maximum RPM)	3600 ± 100	
Cooling Capacity	Air Cooled	
Speed		
Forward Maximum – mph (km/h)	5.4 (8.7)	
Reverse Maximum – mph (km/h)	Reverse Assist	
Turning Radius	0	
Brakes	6-Inch Band	
Electrical		
Starter	Recoil	
Power Take-Off	Electric PTO Clutch	
Fuel		
Fuel Type	Refer to Engine Manual	
Fuel Tank Capacity – gal. (L)	5.8 (22)	
Transmission		
Type	Peerless 5-Speed + Reverse	
Size and Weight		
Length – in. (cm)	75.6 (192.0)	70.9 (180.0)
Width – in. (cm)	48.4 (122.9)	60.8 (154.4)
Height – in. (cm)	41.9 (106.4)	41.9 (106.4)
Weight – lbs (kg)	464 (210.5)	530 (240.4)
Tires		
Tire Size – in. (cm)	13 x 6.5 4-Ply Rating	
Tire Pressure – psi (kPa)	8 - 16 (55 – 110)	
Mower Deck		
Cutting Width – in. (cm)	36 (91.4)	48 (121.9)
Cutting Height – in. (cm)	1.5 - 4.0 (3.8 - 10.2)	
Cutting Height Increments – in. (cm)	0.25 (0.64)	



Commercial Mowing Equipment Limited Warranty

Ariens Company (Ariens) warrants to the **original purchaser** that Ariens, Gravely and Countax brand products purchased on or after 1/1/2011 and designated or labeled commercial products by Ariens Company will be free from defects in material and workmanship for the time period noted in the chart below. Equipment put to personal use around a single household or residence is considered "Consumer Use"; equipment put to any business use (agricultural, commercial, or industrial) or used at multiple locations is considered "Commercial Use." If any product is rented or leased, then the duration of these warranties shall be 90 days after the date of purchase.

An authorized Ariens dealer (Ariens brand products), Gravely dealer (Gravely brand products), or Countax dealer (Countax brand products) will repair any defect in material or workmanship, and repair or replace any defective part, subject to the conditions, limitations and exclusions set forth herein. Such repair or replacement will be free of charge (labor and parts) to the original purchaser except as noted below.

Warranty Code	Product Group	Warranty Period Consumer Use	Warranty Period Commercial Use
CA	Pro-Turn, Pro-Master, Compact-Pro, Pro-Stance, Pro-Ride, Pro-Walk Mowers, Pro-Zoom, etc.	3 Years or 1000 hrs*	2 Years or 1000 hrs*
CB	Turf Mowing Equipment: CL, TRM, TVM, FP, PM-3084, etc.	3 Years or 1000 hrs*	2 Years or 1000 hrs*
CC	Pro 20 Series Walk-Behind Mowers	3 Years	1 Year
N/A	Service (replacement) Parts	90 Days (no labor)	90 Days (no labor)

*Whichever comes first.

Special Extensions

The chart below details special extensions to this warranty:

Warranty Code	Warranty Exception	Warranty Period	Use	Detail
CA	Mower Deck Shell on Commercial Mowers	Lifetime	All	2 Years parts and labor (Commercial), 3 Years parts and labor (Consumer), parts-only thereafter.
CA	Main Frame on Commercial Mowers	Lifetime	All	2 Years parts and labor (Commercial), 3 Years parts and labor (Consumer), parts-only thereafter.
CA	Cast Iron Deck Spindles	3 Years	All	3 Years for all users including Commercial.
CB	Reels	Lifetime	All	Warranty on reels only against bending or breaking.

Exceptions and Limitations

The chart below details special exceptions to this warranty:

Warranty Code	Warranty Exception	Warranty Period	Use	Detail
All	Batteries	1 Year	All	Prorated
All	Belts, Muffler, Tires	None	Commercial	These components are not covered when used commercially.
All	Cloth, Plastic, and Rubber Components (Including Belts and Cables)	Maximum 2 Year or 1000 hrs*	All	Warranty is limited to 2 years or 1000 hrs for consumer use. Except as noted above, these components are covered for defect, not for wear.
All	Engines	See Engine Manufacturer's Warranty	All	Engines are covered by engine manufacturer's warranty. Refer to engine manufacturer's warranty statement.

Customer Responsibilities

Register the product immediately at the time of sale. If the dealer does not register the product, the customer must complete the product registration card in the literature package and return it to the Ariens Company, or register the unit online at www.ariens.com, www.gravelly.com, www.countax.com.

To obtain warranty service, the **original purchaser** must:

- Perform the maintenance and adjustments explained in the owner's manual.
- Promptly notify Ariens or an authorized Ariens, Gravelly or Countax service representative of the need for warranty service.
- Transport the product to and from the place of warranty service at owner's expense.
- Have the warranty service performed by an authorized Ariens, Gravelly or Countax service representative.

To Find an Authorized Service Representative:

In the U.S. and Canada:		
Use the dealer locator on our websites: www.ariens.com • www.gravelly.com		
Or contact us by mail or by phone:		
In the U.S., Canada, Mexico, Caribbean, Central and South America:	In Europe, Asia, Africa or the Middle East:	In Australia or New Zealand:
Ariens Company 655 W. Ryan Street Brillion, WI 54110 Phone: (920) 756 - 4688 www.ariens.com	Countax Ltd, Countax House Great Haseley, Oxfordshire, OX44 7PF Phone: 0800 597 7777 www.countax.com	109-111 Abbot House Hallam, Victoria 3803 Australia Phone: (03) 9796 4244 1800 335 489 www.bynorm.com.au

Exclusions - Items Not Covered by This Warranty

- Parts that are not genuine Ariens, Gravelly or Countax service parts are not covered by this warranty and may void the warranty.
- Damages resulting from the installation or use of any part, accessory, or attachment which is not approved by the Ariens Company for use with product(s) identified herein are not covered by this warranty.
- The following maintenance, service and replacement items are not covered by this warranty unless they are noted in the Limitations section above: lubricants, spark plugs, oil, oil filters, air filters, fuel filters, brake linings, brake arms, brake shoes, skid shoes, scraper blades, shear bolts, mower blades, mower vanes, brushes, headlights, light bulbs, knives, cutters.
- Any misuse, alteration, improper assembly, improper adjustment, neglect, or accident which requires repair is not covered by this warranty.
- **Use of gasoline blends exceeding 10% ethanol voids any and all warranties.**
- Products are designed to the specifications in the area that the product was originally distributed. Different areas may have significantly different legal and design requirements. This warranty is limited to the requirements in the area in which the unit was originally distributed. Ariens Company does not warrant this product to the requirements of any other area. Warranty service is limited to service within the area originally distributed.
- In countries other than the United States and Canada, contact the Ariens Company dealer for warranty policies that govern within your country. Rights may vary from country to country and within any one country.

Disclaimer

Ariens Company may from time to time change the design of its products. Nothing contained in this warranty shall be construed as obligating the Ariens Company to incorporate such design changes into previously manufactured products, nor shall such changes be construed as an admission that previous designs were defective.

LIMITATION OF REMEDY AND DAMAGES

Ariens Company's liability under this warranty, and under any implied warranty that may exist, is limited to repair of any defect in workmanship, and repair or replacement of any defective part. Ariens Company shall not be liable for incidental, special, or consequential damages (including lost profits). Some states do not allow the exclusion of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

DISCLAIMER OF FURTHER WARRANTY

Ariens Company makes no warranty, express or implied, other than what is expressly made in this warranty. If the law of your state provides that an implied warranty of merchantability, or an implied warranty of fitness for particular purpose, or any other implied warranty, applies to Ariens Company, then any such implied warranty is limited to the duration of this warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from region to region.



California Evaporative Emission Control Warranty Statement

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board and Ariens Company are pleased to explain the evaporative emission control system's warranty on your 2011 model year small off-road equipment. In California, new equipment that use small off-road engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. Ariens Company must warrant the evaporative emission control system on your small off-road equipment for the period listed below provided there has been no abuse, neglect or improper maintenance of your equipment.

Your evaporative emission control system may include parts such as: fuel tanks, fuel lines, fuel caps, valves, canisters, filters, vapor hoses, clamps, connectors, and other associated components.

Manufacturer's Warranty Coverage:

This evaporative emission control system is warranted for two years. If any evaporative emission-related part on your equipment is defective, the part will be repaired or replaced by Ariens Company.

Owner's Warranty Responsibilities:

- As the small off-road equipment owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. Ariens Company recommends that you retain all receipts covering maintenance on your small off-road equipment, but Ariens Company cannot deny warranty solely for the lack of receipts.
- As the small off-road equipment owner, you should however be aware that the Ariens Company may deny you warranty coverage if your evaporative emission control system part has failed due to abuse, neglect, or improper maintenance or unapproved modifications.
- You are responsible for presenting your small off-road equipment to an authorized Ariens service representative as soon as the problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days. If you have a question regarding your warranty coverage, you should contact Ariens Company Technical Service Center at 1-920-756-4688.

Defects Warranty Requirements:

- (a) The warranty period begins on the date the small off-road equipment is delivered to an ultimate purchaser.
- (b) General Evaporative Emissions Warranty Coverage. Ariens Company warrants to the ultimate purchaser and any subsequent owner that the evaporative emission control system when installed was:
 - (1) Designed, built, and equipped so as to conform with all applicable regulations; and
 - (2) Free from defects in materials and workmanship that causes the failure of a warranted part for a period of two years.

- (c) The warranty on evaporative emissions-related parts will be interpreted as follows:
- (1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions must be warranted for the warranty period defined in subsection (b)(2). If any such part fails during the period of warranty coverage, it must be repaired or replaced by the Ariens Company. Any such part repaired or replaced under the warranty must be warranted for a time not less than the remaining warranty period.
 - (2) Any warranted part that is scheduled only for regular inspection in the written instructions must be warranted for the warranty period defined in subsection (b)(2). A statement in such written instructions to the effect of "repair or replace as necessary" will not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for a time not less than the remaining warranty period.
 - (3) Any warranted part that is scheduled for replacement as required maintenance in the written instructions must be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part must be repaired or replaced by the Ariens Company. Any such part repaired or replaced under warranty must be warranted for a time not less than the remainder of the period prior to the first scheduled replacement point for the part.
 - (4) Repair or replacement of any warranted part under the warranty provisions of this article must be performed at no charge to the owner at an authorized Ariens service representative.
 - (5) Notwithstanding the provisions of subsection (4) above, warranty services or repairs must be provided at authorized Ariens service representatives that are franchised to service the subject small off-road equipment.
 - (6) The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a authorized Ariens service representative.
 - (7) Throughout the evaporative emission control system's warranty period set out in subsection (b)(2), the Ariens Company must maintain a supply of warranted parts sufficient to meet the expected demand for such parts.
 - (8) Manufacturer approved replacement parts must be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of the manufacturer issuing the warranty.
 - (9) The use of any add-on or modified parts will be grounds for disallowing a warranty claim made in accordance with this article. The manufacturer issuing the warranty will not be liable under this Article to warrant failures of warranted parts caused by the use of an add-on or modified part.
 - (10) The Ariens Company shall provide any documents that describe the warranty procedures or policies within five working days of request by the Air Resources Board.



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WARNING



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

An *Ariens* Company Brand