Brush Cutter

Owner/Operator Manual

Manuel du Propriétaire/Utilisateur

Model

911707 – Pro-24 HW Brush Cutter – CARB

Gasoline containing up to 10% ethanol (E10) or up to 10% MTBE (methyl tertiary butyl ether) is acceptable for use in this machine.
The use of any gasoline exceeding 10% ethanol (E10) or 10% MTBE will void the product warranty.

Il est possible d'utiliser de l'essence contenant jusqu'à 10% d'éthanol (E10) ou 10% de MTBE (éther méthyl-tertiobutylique) sur cette machine.
L'utilisation d'une essence contenant plus de 10% d'éthanol (E10) ou de 10% de MTBE annulent la garantie.

GB ENGLISH

F FRENCH

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Printed in USA

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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:

http://www.ariens.com

MANUALES EN IDIOMAS DIFERENTES DEL INGLES

Puede obtener manuales en idiomas diferentes del inglés en su distribuidor. Visite a su distribuidor o vaya a www.ariens.com para obtener una lista de idiomas disponibles para su equipo.

También puede imprimir manuales en idiomas diferentes del inglés descargándolos gratuitamente de nuestra página Web:

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MANUELS NON ANGLAIS

Des manuels dans différentes langues sont disponibles chez votre revendeur. Rendez-vous chez votre revendeur ou allez sur le site www.ariens.com pour consulter la liste des langues disponibles pour votre équipement.

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

http://www.ariens.com

THE MANUAL

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

All reference to left, right, front, or rear are given from the operator's position, 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.

SERVICE AND REPLACEMENT PARTS

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 also printed on a serial number label, located on the frame of your unit. See Figure 1.

• Record Unit Model and Serial numbers here:

• Record Engine Model & Serial numbers here:

Engine Serial Number Label

Unit Serial Number Label

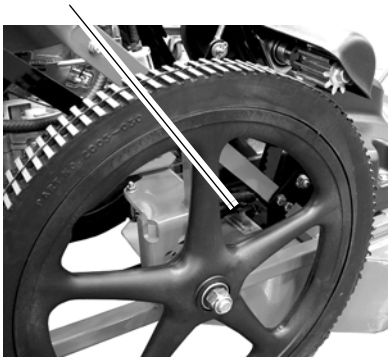


Figure 1

PRODUCT REGISTRATION

The Ariens dealer 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 or go to www.ariens.com on the internet.

UNAUTHORIZED REPLACEMENT PARTS

Use only Ariens replacement parts. Replacing any part on this vehicle with anything other than an 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.

DEALER DELIVERY

CAUTION: DO NOT drop machine when loading or unloading or damage to rear axle may occur. Dealer should advise customer of the same.

Dealer should:

1. Check that all assembly and adjustments have been properly completed.
2. Fill out Original Purchaser Registration Card and return the card to Ariens.
3. Explain Ariens 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 Rules. Give customer Owner/Operator, Parts, and Engine manuals. Advise customer to thoroughly read and understand them.

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 apply to your unit.

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 slip and fall accidents. Operation on all slopes requires extra caution. Maximum slope angle of operation is 25º.

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.

Stop unit and engine and allow moving parts to stop before leaving operator's position.

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.

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.

REQUIRED OPERATOR TRAINING

Original purchaser of this unit was instructed by the seller on safe and proper operation. If anyone other than the original purchaser will use the unit, ALWAYS provide this manual and any needed safety training before operation.

SAFETY DECALS AND LOCATIONS

ALWAYS replace missing or damaged safety decals. Refer to for safety decal locations.

Figure 2

1. DANGER!

TO AVOID SERIOUS INJURY OR DEATH


OL1801

Read the operator's manual.

Do not allow operation of machine by untrained personnel.


OL4370

Keep children and others away from unit while operating.


OL0910

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

Do not operate mower unless guards are in operating position or entire bagger is attached.


OL3030

Keep safety devices (guards, shields, switches, etc.) in place and working.

2. DANGER!

KEEP HANDS AND FEET AWAY

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

SAFETY RULES

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.

Learn applicable rules and laws in your area, including those that may restrict the age of the operator.

Read, understand and follow all safety practices in Owner/Operator Manual before beginning assembly. Failure to follow instructions could result in personal injury and/or damage to unit.

If the operator or the mechanic cannot read the manual, it is the owner's responsibility to explain it to them. Only the user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property.

Do not allow operation of machine by untrained personnel.

ALWAYS remove key (if equipped) and disconnect wire from spark plug before assembly. Unintentional engine start up can cause death or serious injury.

Complete a walk around inspection of unit and work area to understand:

- work area
- your unit
- all safety decals.

Clear work area of stones, sticks, wire and foreign objects which might be picked up and thrown. Tall grass can hide obstacles.

Know the work area. Stay alert for holes, rocks, rough terrain and hidden hazards.

Keep away from drop-offs, ditches, or embankments that could cause operator to lose footing or control of unit.

ALWAYS be aware of traffic when operating along streets or curbs.

Keep work area clear of all persons, children and pets.

Keep children out of the work area and under the watchful care of a responsible adult.

ALWAYS operate unit when there is good visibility and light.

DO NOT mow wet grass.

ALWAYS be sure of your footing. Keep a firm hold on handlebar. Walk, NEVER run.

Engine/blade control feature on mower stops engine and blade within 3 seconds whenever operator releases handlebar control. Check this feature frequently. If feature fails to operate, disconnect spark plug wire and adjust or have it repaired before using unit.

Only trained adults may operate or service unit. Training includes actual operation. The owner is responsible for training users.

NEVER operate after or during the use of medication, drugs or alcohol. Unit requires complete and unimpaired attention.

NEVER allow children to use or service mower.

ALWAYS keep hands and feet away from rotating parts. Rotating parts can cut off body parts.

ALWAYS keep hands away from pinch points.

Fumes from engine exhaust can cause death or serious injury. DO NOT run engine in an enclosed area.

ALWAYS protect eyes, face, and body with adequate safety gear and protective clothes. Wear sturdy footwear, gloves, a hard hat and safety goggles or safety glasses with side shields while operating mower.

Wear appropriate hearing protection.

NEVER operate mower barefoot or when wearing open sandals or canvas shoes.

NEVER wear loose clothes, long hair or jewelry that may get caught in rotating parts.

ALWAYS stand clear of discharge when operating unit.

NEVER direct discharge toward bystanders.

Operator is responsible for bystander safety.

DO NOT touch hot parts. Allow parts to cool.

Keep safety devices or guards in place and functioning properly. NEVER modify or remove safety devices.

Read, understand, and follow all instructions in the manual and on the machine before starting. Understand:

- How to operate all controls
- The functions of all controls
- How to STOP in an emergency.

DO NOT attempt to start your engine until you know what the controls do and how they work.

DO NOT tilt mower when starting it.

Keep feet away when starting engine.

Never leave a running unit unattended.

Take all possible precautions when leaving unit unattended.

ALWAYS shut off engine and disconnect spark plug wire to prevent accidental starting or unauthorized use.

Stop engine if anyone enters the work area.

NEVER attempt to make any adjustments to unit while engine is running (except where specifically recommended). Stop engine, remove key and wait for all moving parts to stop before servicing.

DO NOT make cutting height wheel adjustments while the engine is running.

If you strike an object, or if equipment vibrates abnormally, stop engine at once, wait for moving parts to stop and disconnect wire from spark plug. Repair any damage before restarting unit.

ALWAYS shut off engine, allow blade to stop and disconnect spark plug wire before clearing clogs or cleaning unit.

Check for wear, damage, and/or deterioration. Replace only with Ariens original equipment replacement parts for safety.

To reduce fire hazard and overheating, keep equipment free of grass, leaves, debris or excessive lubricants.

Use extra care when approaching blind corners, shrubs, trees, or other objects which may obscure vision.

DO NOT mow at too fast a rate. DO NOT change engine governor setting or over-speed the engine.

Do not operate mower on gravel or loose material such as sand. Stop mower when crossing drives, walks, or roads to prevent damage or injury from thrown objects.

DO NOT pull mower backwards unless absolutely necessary. Look down and back, especially for small children, before and while moving backwards.

On self-propelled models, releasing wheel drive control must stop mower's forward movement. If this feature fails to operate, disconnect spark plug wire and repair before using unit.

On self-propelled models, wheel drive must be disengaged when starting engine.

DO NOT operate on steep slopes.

NEVER leave unit unattended on a slope. Chock wheels if parking on a slope.

Mow across the face of slopes, never up and down. Be especially cautious when changing direction on slopes. Maximum slope angle of operation is 25º.

This product is equipped with an internal combustion engine. DO NOT use on or near any unimproved, forest or brush covered land unless the exhaust system is equipped with a spark arrestor meeting applicable local, state or federal laws. A spark arrestor, if used, must be maintained in effective working order by the operator. See your Ariens Dealer or engine manufacturer's service center.

Accidental engine start up can cause death or serious injury. Except where specifically recommended, ALWAYS stop engine wait for moving parts to stop, allow parts to cool and disconnect spark plug wire before inspecting, servicing, adjusting or repairing unit.

Avoid Electric Shock. DO NOT disconnect wire from spark plug while engine is running.

Keep equipment in good condition.

Maintain or replace safety and instruction labels, as necessary.

Follow engine manufacturer's safety instruction when servicing engine.

Check all hardware at regular intervals, especially blade attachment bolts. Keep all hardware properly tightened.

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.

Before tipping unit, remove fuel and battery (if equipped).

Use extra care when loading or unloading unit onto trailer or truck.

CAUTION: DO NOT drop machine when loading or unloading or damage to rear axle may occur.

Ensure all wheel blocks, jack stands and tie downs will support unit during maintenance.

Replace worn-out mufflers immediately. Continued use could result in fire or explosion.

Sharp edges can cut or amputate fingers or a hand. Wrap blade or wear sturdy gloves to service.

Only replace blades. NEVER straighten or weld blades.

Use only replacement parts designed for your unit. See your Ariens Dealer.

Allow engine to cool before storing in any enclosure.

ALWAYS clean unit before extended storage. See engine manual for proper storage.

DO NOT store unit inside a building with fuel in the fuel tank where any ignition sources are present.

Use only accessories which have been approved by Ariens and are properly installed.

Use only accessories or attachments that are designed for your unit and that can be used safely on your terrain.

Check attachments frequently and replace worn or damaged components with manufacturer's recommended parts.

Fuel and Fuel System

Fuel is highly flammable and its vapors are explosive. Handle with care. Use only an approved gasoline container with an appropriately sized dispensing spout.

- NO Smoking!
- NO Sparks!
- NO Flames!
- Allow engine to cool before filling fuel tank.

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.

IMPORTANT: Refer to Engine Manual for proper fuel type.

DO NOT OVERFILL. Fill fuel tank to below bottom of filler neck to allow for fuel expansion.

NOTE: See *SPECIFICATIONS* on page 29.

Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.

When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.

Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.

Check fuel supply before starting engine.

DO NOT fill gasoline tank indoors, when engine is running, or while engine is hot.

Allow engine to cool several minutes before removing fuel cap.

Replace gasoline tank cap securely and clean any spilled fuel before starting engine.

If fuel is spilled on clothing, change clothing immediately.

NEVER store fuel inside where there is an open flame, such as a water heater.

ALWAYS drain fuel outdoors away from ignition sources.

ALWAYS shut off engine, and remove key, and close fuel shutoff valve when transporting unit on a truck or trailer.

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.

ASSEMBLY

ASSEMBLY

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

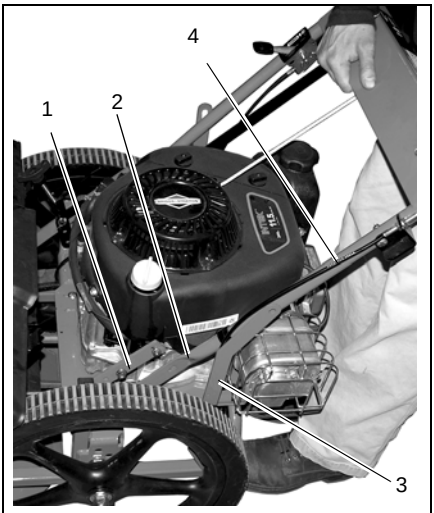
NOTE: The mounting hardware described in the following assembly procedures is factory-mounted on the mower in the proper locations.

Handlebar Installation

1. Remove mower and handlebar from carton.
2. Slowly pull out recoil starter rope to create enough slack to allow handlebar to be rotated up and back.

NOTE: Lower ends of handlebar are mounted forward of fuel tank and muffler.

3. Rotate handlebar up and back, while simultaneously pulling both handlebar supports back to vertical position, until handlebar lower ends are near frame mounting points. See Figure 3.

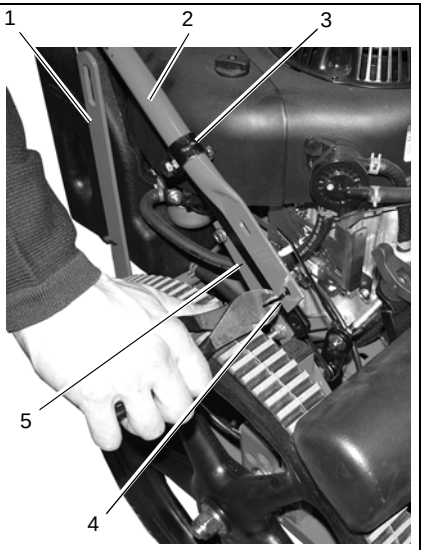


1. Frame
2. Handlebar
3. Handlebar Support
4. Cable

Figure 3

NOTE: Do not remove cable tie securing control cable to each handlebar support.

4. Remove cable tie securing actuation link to handlebar on each side. See Figures 3 and 4.



1. Handlebar Support
2. Handlebar
3. Support Clamp
4. Cable Tie
5. Frame

Figure 4

5. Remove and retain handlebar mounting hardware from each side of mower frame. See Figures 4 and 5.

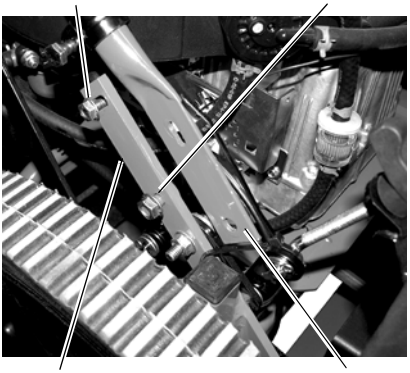


Figure 5

6. Place the lower hole of one side of the handlebar on frame outer stud. Spread lower ends of handlebar until opposite side can be installed on frame stud.

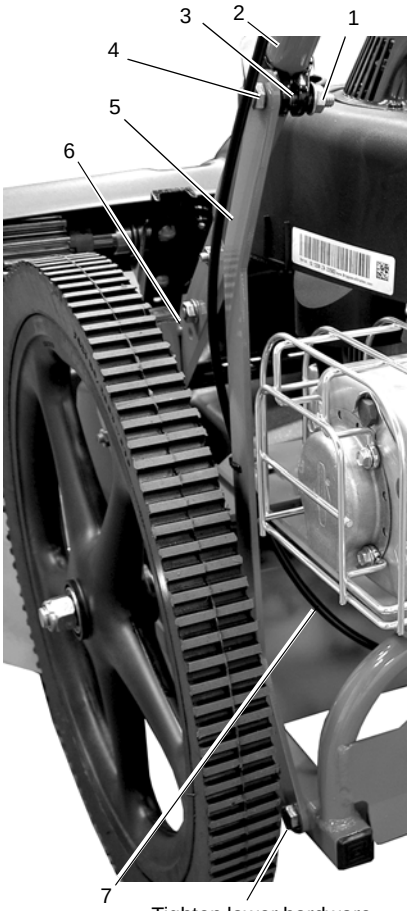
1. Handlebar
2. Frame
3. Lock nut on stud
4. Bellcrank

Figure 6

7. Install flanged lock nuts on lower studs. Do not tighten fully. See Figure 6.
8. Install round head square neck bolts through upper holes in frame and handlebar and secure loosely with flanged lock nuts. See Figure 6.

NOTE: Ensure that control cables are positioned to the rear of (outside) the support clamp connections.

9. Align each support clamp on handlebar with vertical support and connect with hex cap screw and flanged lock nut. Tighten to 14 lbf-ft (19 N•m). See Figure 7.
10. Tighten flanged locknuts (item 3, Figure 6) to 14 lbf-ft (19 N•m).
11. Tighten flanged locknuts, installed in step 8, to 7 lbf-ft (9.5 N•m). See Figure 6.



1. Lock Nut
2. Handlebar
3. Support Clamp
4. Bolt
5. Handlebar Support
6. Frame
7. PTO Clutch Cable

Figure 7

12. Tighten hardware securing lower end of each handlebar support to frame to 23 lbf-ft (31 N•m). See Figure 7.

Wheel Drive Link Installation

See Figure 9.

1. Remove cable tie securing lower control lever to handlebar on each side. See Figure 8.

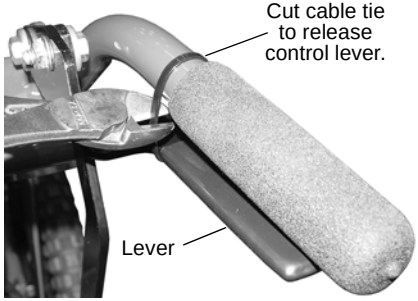
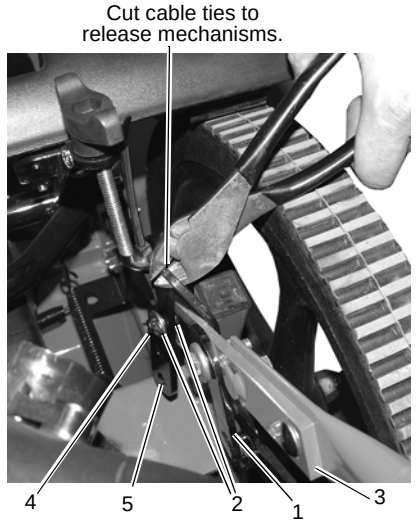


Figure 8

2. Install flat washer, actuation link and second flat washer on bellcrank stud. See Figure 9.



1. Bellcrank
2. Flat Washers
3. Frame
4. Hairpin
5. Actuation Link

Figure 9

3. Install hairpin through bellcrank stud to secure actuation link. See Figure 9.
4. Remove cable tie on each side of frame to release the wheel drive (self-propel) mechanism.
5. Adjust traction fine adjustment knob as shown in *Wheel Drive Traction Adjustment* on page 19.

Engine Preparation

1. Check engine oil level and add if necessary. See engine manual.
2. Fill fuel tank. See *FILLING FUEL TANK* on page 13.
3. Connect spark plug wire.
4. Check the engine throttle operation. Try starting the engine with the throttle pulled back fully to the stop position. Engine must not start. If engine starts, stop engine by disconnecting spark plug wire. Bring the unit to your dealer for adjustment or repair.

CONTROLS AND FEATURES

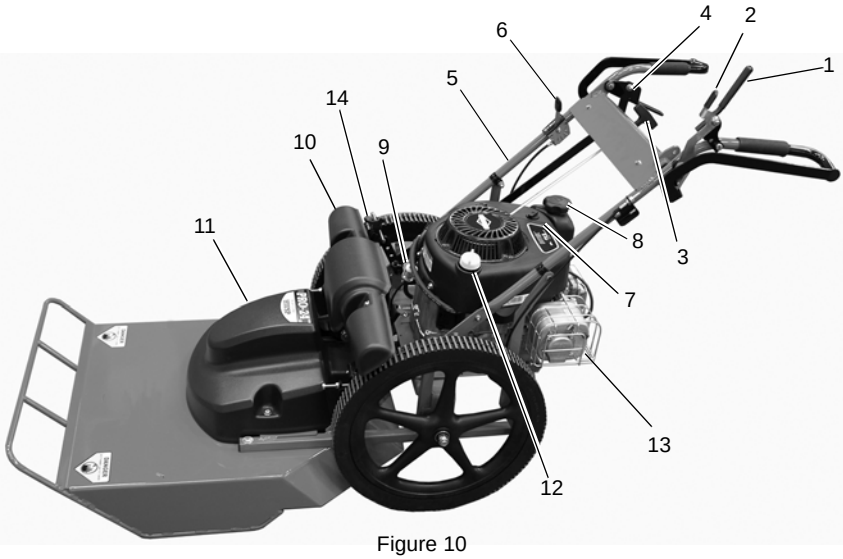


Figure 10

1. PTO Clutch Control Lever
2. PTO Clutch Interlock
3. Recoil Starter Handle
4. Wheel Drive Control Lever
5. Handlebars
6. Engine Throttle Control
7. Air Filter Cover
8. Fuel Tank and Cap
9. Fuel Filter
10. Upper Guard
11. Lower Guard
12. Oil Fill/Dipstick
13. Muffler
14. Traction Fine-Adjustment Knob

WARNING: Improper operation can lead to injury. Learn what the controls do and how they work. Thoroughly read and understand entire Operator Manual.

CAUTION: If clog or obstruction prevents grass flow, release engine/blade control and disconnect spark plug wire before attempting to clear.

CONTROLS AND FEATURES

See Figure 10.

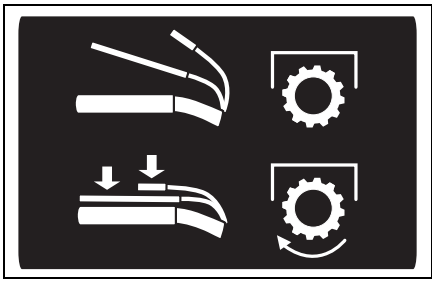
PTO Clutch Lever

CAUTION: Check function of Engine/Blade Control regularly. Improper function of control could cause injury.

PTO clutch control lever is used to release the blade pulley brake and engage the mower blade.

NOTE: Interlock prevents PTO clutch lever from being engaged accidentally. It engages each time clutch lever is released.

To start mower blade, press down interlock and then squeeze the PTO clutch lever against handlebar to release the blade brake. It is not necessary to hold down interlock once clutch lever is depressed.

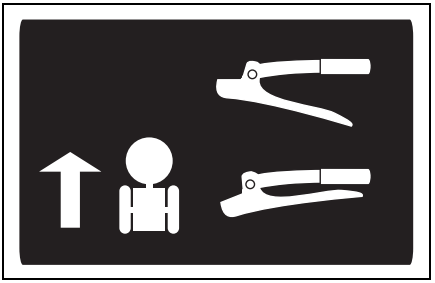


Release clutch lever to apply blade pulley brake. The blade should stop within 3 seconds.

CAUTION: Avoid Injury! Check blade brake frequently. If blade brake fails to stop mower blade within 3 seconds stop unit immediately, disconnect spark plug wire and adjust or repair unit before operating.

Wheel Drive Lever

Squeeze wheel drive lever to engage wheel drive. Release the lever to disengage. This lever allows for quick engagement and disengagement of wheel drive when maneuvering in tight areas or around obstacles.



NOTE: Engine must be running and PTO must be engaged for wheel drive to propel unit.

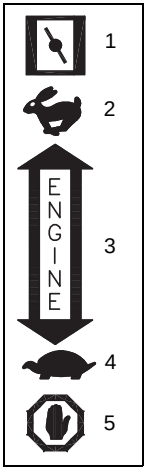
Wheel drive speed is preset and cannot be adjusted during mower operation. See *Wheel Drive Speed Adjustment* on page 19.

Recoil Starter Handle

When pulled, recoil starter handle will turn engine over.

Engine Throttle

The throttle lever controls the choke, engine speed and stops engine.



(1) Choke
(Gradually move lever to Slow position once engine starts.)

To increase or decrease engine speed:

(2) Fast
(3) Part-Throttle
(4) Slow

To stop engine:
(5) Stop (Stop Engine)

FILLING FUEL TANK

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

To add fuel to fuel tank:

1. Put unit in open or well-ventilated area.
2. Stop engine and allow to cool.
3. Clean fuel cap and surrounding area.
4. Remove cap.

IMPORTANT: See engine manual for proper fuel type and grade.

5. Fill fuel tank to below bottom of filler neck to allow for fuel expansion. See *SPECIFICATIONS* on page 29.

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.

6. Replace fuel cap and tighten.
7. ALWAYS clean any 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.

STARTING AND SHUT OFF

WARNING: Improper operation can lead to injury. Learn what the controls do and how they work. Thoroughly read and understand entire Operator Manual.

See Figure 10 for all Controls and Features.

NOTE: Start engine on a level surface that is free of debris. It is recommended that the engine is started over a non-grassy area, or over grass that has been cut short.

Starting

1. Check each item in the Before Each Use section of the *MAINTENANCE SCHEDULE* on page 15.
2. Ensure the wheel drive is disengaged.
3. Place engine throttle in high-speed (Fast) position for warm start. Place throttle in Choke position for cold start.

NOTE: PTO Clutch lever must be released.

4. Grasp starter handle and pull rope slowly until it pulls harder. This is the compression stroke.
5. Pull rope with rapid continuous full arm stroke to start engine. Allow rope to rewind slowly.

IMPORTANT: DO NOT let starter handle snap against bracket.

6. Repeat step 4 and step 5 until engine starts. (If engine does not start, see *TROUBLESHOOTING* on page 27.)
7. Bring engine throttle off Choke position once engine is warm.

Shut Off

1. Release wheel drive control lever. Allow unit to stop completely.
2. Release PTO Clutch lever.
3. Place engine throttle in Stop position.

EMERGENCY STOPPING

To stop the mower in an emergency:

1. Release PTO Clutch lever.
2. Release the wheel drive control lever.
3. Place engine throttle in Stop position.
4. Allow all moving parts to stop before leaving operator's position.

MOWING TIPS

Cut grass when it is dry.

Keep mower blades sharp.

Do not set cutting height too low. For tall grass, mow twice.

Do not mow too fast.

Mow with engine at full (Fast) throttle.

Discharge clippings into areas already cut.

Vary cutting pattern with each mowing.

NOTE: To prevent dirt and grass from collecting on inside of mower deck, avoid operating over bare ground with only patches of grass.

MAINTENANCE

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

Ariens Dealers will provide any service, parts or adjustments which may be required to keep your unit operating at peak efficiency. Should engine require service, contact an Ariens Dealer or an authorized engine manufacturer's service center.

MAINTENANCE SCHEDULE

NOTE: Some working conditions (heavy loads, high ambient temperatures, dusty conditions, or airborne debris) may require more frequent service.

See engine manual for further maintenance and troubleshooting information.

WARNING: HOT SURFACES can cause death or serious injury. DO NOT TOUCH parts which are hot from operation. ALWAYS allow parts to cool.

MAINTENANCE SCHEDULE

Service Performed	Before Each Use	25 Hours	50 Hours	100 Hours or Annually
Check PTO Clutch Lever	•			
Check Wheel Drive Lever	•			
Clean Unit	•			
Check Engine Oil	•			
Check Fasteners	•			
Check Mower Blade	•			
Check Drive Belts		•		
General Lubrication		•		
Check Muffler			•	
Clean Air Filter			•	
Check Engine Cooling				•
Change Engine Oil *				
Replace Fuel Filter *				
Replace Spark Plug *				
* Refer to engine manual for recommended intervals.				

CHECK PTO CLUTCH LEVER

The blade must stop within 3 seconds after releasing this control lever. If the blade continues to run, adjust or repair the control components immediately. See *PTO CLUTCH CABLE ADJUSTMENT* on page 17.

NOTE: If the blade makes a scraping sound when the PTO lever is released, the blade brake is faulty. Contact an Ariens Dealer immediately for repair.

CHECK WHEEL DRIVE LEVER

The unit must stop quickly and completely when control lever is released. Adjust or repair if necessary. See *Wheel Drive Lever* on page 12.

CLEAN UNIT

Before each use, use a brush to clean recoil guard, all control linkage and muffler guard of debris. See engine manual for instructions. Clean oil, grease or fuel spills to prevent fires.

CHECK ENGINE OIL

IMPORTANT: Maintain proper oil level at all times or engine damage will result.

Check the level of the engine crankcase oil before each use.

Make sure engine is level when checking oil. See engine manual for instructions.

CHECK FASTENERS

Check all fasteners for proper tightness. Pay special attention to blade hardware and all guards, shields and safety devices.

CHECK MOWER BLADE

Check blade mounting: blade must be secure and bolt torqued to 187 – 253 lb-ft (254 – 343 N•m).

Check blade for nicks and dull cutting edges. Sharpen if necessary.

Check blade for rounded or broken ends, thinned metal or other damage. Replace if necessary.

CAUTION: Mower blades are sharp and can cut you. Wrap the blades or wear gloves, and use extra caution when servicing them.

Remove Mower Blade

1. Place mower in the Service Position. See *SERVICE POSITION* on page 17.
2. Block blade to prevent rotation.
3. Remove lock nut, flat washer, blade and remaining flat washer from shaft.

Install Mower Blade

NOTE: Ensure blade air lift points upward. See Figure 11.

1. Replace flat washer, blade, flat washer and lock nut on shaft.
2. Torque lock nut to 187 – 253 lbf-ft (254 – 343 N•m).
3. Connect spark plug wire to spark plug.

Sharpening Mower Blades

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

NEVER weld or straighten bent blades.

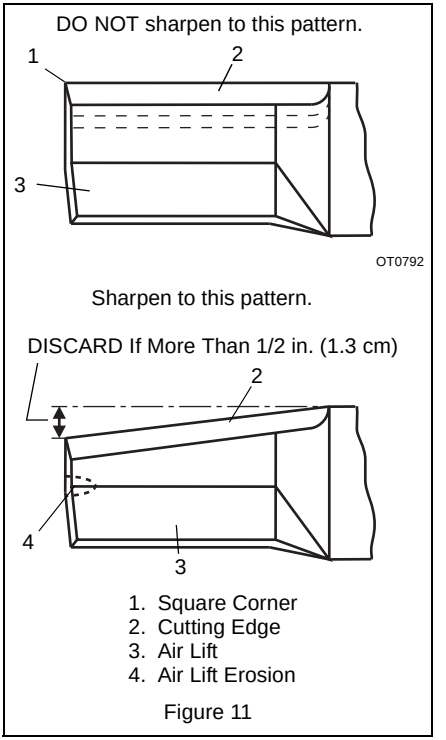
CAUTION: Mower blades are sharp and can cut you. Wrap the blades or wear gloves, and use extra caution when servicing them.

1. Remove mower blade from unit. See *Remove Mower Blade* on page 15.

Discard mower blade if:

- More than 1/2 in. (1.3 cm) of metal is removed. See Figure 11.
- 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. Blade should be sharpened back at an angle from the center to the outside tip. DO NOT change vertical angle of cutting edge or round corner of mower blade. See Figure 11.



1. Square Corner
2. Cutting Edge
3. Air Lift
4. Air Lift Erosion

Figure 11

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. See Figure 12.

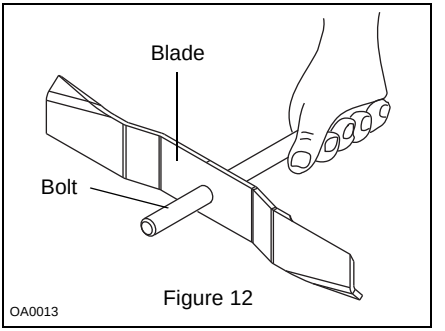


Figure 12

4. Install mower blade on unit. See *Install Mower Blade* on page 15.
5. Tighten mounting bolt to a torque of 187 – 253 lbf-ft (254 – 343 N•m).

CHECK DRIVE BELTS

Check tension of mower blade and wheel drive belts. See *BELT TENSION ADJUSTMENT* on page 20. Check drive belts for wear and/or damage and replace as necessary. See *BELT REPLACEMENT* on page 22.

GENERAL LUBRICATION

Lubricate wheel drive shaft through grease fitting every 16 hours of operation. Lightly oil all other moving parts every 25 hours of operation. Wipe off excess oil to avoid accumulation of dirt and debris.

CHECK MUFFLER

Check muffler for debris, cracks, wear, or other damage every 50 hours of operation.

CAUTION: Replace worn-out mufflers immediately. Continued use could result in fire or explosion.

CLEAN AIR FILTER

Clean air filter every 50 hours of operation. See engine manual for specific information.

CHANGE ENGINE OIL

See engine manual for oil type and recommended service intervals.

IMPORTANT: Proper oil level must be maintained at all times or engine damage will result. DO NOT overfill. Be sure engine is level when adding oil.

REPLACE FUEL FILTER

See engine manual for recommended service interval.

REPLACE SPARK PLUG

See engine manual for recommended service interval.

NOTE: Loose spark plug wire terminals can cause sparking. Replace terminal if damaged.

SERVICE POSITION

Put unit into service position for easy access to underside of deck.

CAUTION: Avoid fuel spills. Follow steps below to help prevent fuel spills. If fuel leaks into air cleaner, replace air cleaner. ALWAYS clean up any spilled fuel.

1. Stop engine, wait for all moving parts to stop and hot parts to cool.
2. Place unit on a flat, level surface.
3. Disconnect spark plug wire from spark plug.
4. Remove fuel cap, place a piece of fuel-resistant plastic bag over the opening and tighten cap securely.
5. Tip unit up onto left (muffler) side.
   Make sure unit is secure and will not tip over.

IMPORTANT: After service is complete and unit is upright, remove plastic from fuel cap and connect spark plug wire to spark plug.

SERVICE AND ADJUSTMENTS

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

PTO CLUTCH CABLE ADJUSTMENT

WARNING: If you cannot adjust the controls so the unit drives properly, immediately take the unit to your local authorized dealer for repairs.

1. Shut off engine.
2. Remove lower drive belt guard. See *Drive Belt Guards* on page 18.
3. Test the PTO clutch adjustment:
   - Disengage control l lever (Figure 10, item 1).
   - The blade brake pad should contact the mower spindle lower pulley and the tensioner assembly should not contact the mower blade drive belt.
   - Engage control lever.
   - The blade brake pad should not contact the mower spindle lower pulley and the tensioner assembly should contact the mower blade drive belt.

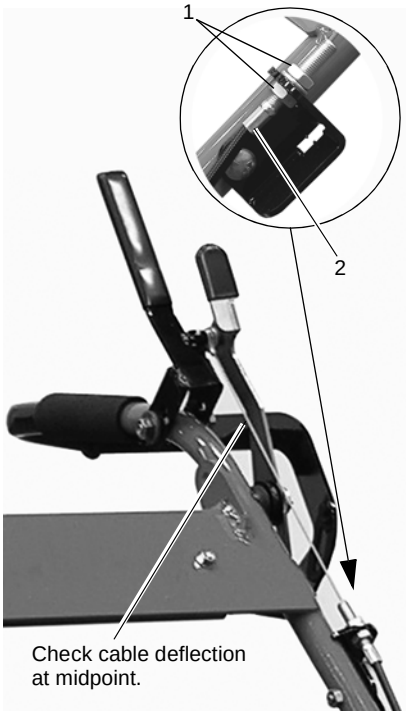
NOTE: Belt tension is adjusted by moving the engine mounting plate. See *Adjust Mower Blade Drive Belt Tension* on page 21.

4. With the control lever disengaged, loosen the lock nuts on the cable adjuster. See Figure 13.
5. Turn the adjuster body in its mounting bracket to tighten or loosen the clutch cable.

6. Gently press against cable between control lever and adjuster. There must be a slight amount of deflection in cable with clutch disengaged.
7. Tighten lock nuts.

WARNING: Test PTO clutch. The blade must stop within 3 seconds after releasing control lever. If blade continues to run, adjust or repair control components immediately.

IMPORTANT: If you cannot adjust the PTO clutch or if it fails to operate properly, immediately take the unit to your Ariens dealer for repair.



1. Lock Nuts 2. Cable Adjuster

Figure 13

WHEEL DRIVE ADJUSTMENTS

The unit should stop immediately when the wheel drive control lever (Figure 10, item 4) is released. The unit should not creep forward when the wheel drive control lever is released and the engine running.

If the unit creeps, the gap between the drive rollers and tires must be adjusted. If the unit does not accelerate smoothly or slips under load, increase the traction and speed. See *Wheel Drive Traction Adjustment* on page 19.

Drive Belt Guards

DANGER: Avoid injury from rotating blade.
ALWAYS shut off engine, wait for moving parts to stop and allow engine to cool before removing guards.

The lower guard covers the blade spindle and drive belt. The upper guard covers the wheel drive components.

To remove a guard:

1. Shut off unit.
2. Disconnect spark plug wire from spark plug.
3. Unscrew two hex bolts from mounting brackets and remove guard.

NOTE: Each mounting bolt includes a captive flat washer and nyloc nut. The captive nut prevents the bolt from separating from the guard. The mounting bolt secures to a weldnut on the back of each mounting bracket.

To install a guard:

1. Position guard on mower and slide bolts with captive nyloc nuts into mounting brackets.
2. Thread each mounting bolt into mounting bracket and tighten to 63 lbf-ft (85 N•m). Do not overtighten.
3. Connect spark plug wire to spark plug.

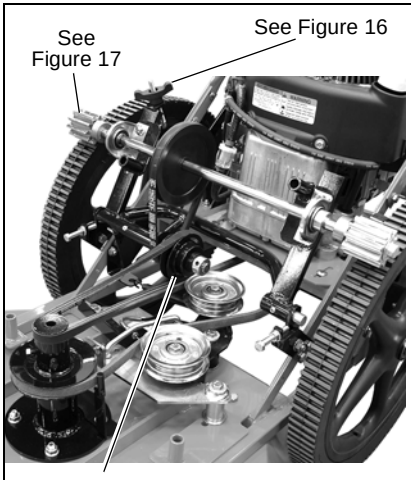


Figure 14

Wheel Drive Speed Adjustment

See Figures 14 and 15.

Wheel drive speed is determined by how deep the wheel drive lower belt rides in the variable speed (VS) pulley. The higher the belt rides in the VS pulley groove, the slower the wheel drive speed. The lower the belt rides in the VS pulley groove, the faster the wheel drive speed. To adjust wheel drive speed:

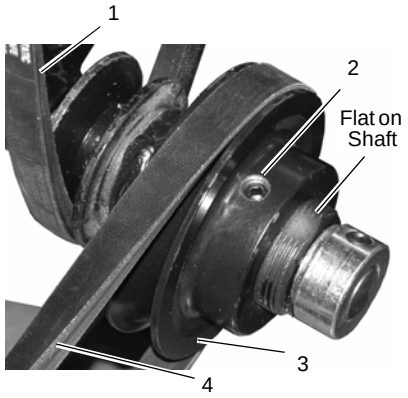
1. Remove upper and lower drive belt guards. See *Drive Belt Guards* on page 18.
2. Release the tension from the wheel drive lower belt. See *Adjust Wheel Drive Lower Belt Tension* on page 20.
3. Loosen set screw in VS pulley.
4. To decrease wheel drive speed:

- Rotate the pulley outer half clockwise, moving it inward. This causes the belt to ride higher in pulley.

To increase wheel drive speed:

- Rotate the pulley outer half counterclockwise, moving it outward. This causes the belt to ride lower in pulley.

5. Tighten the VS pulley set screw. Ensure that set screw fully engages one of the flats of the shaft.
6. Increase wheel drive lower belt tension. See *Adjust Wheel Drive Lower Belt Tension* on page 20.
7. Install drive belt guards.



1. Wheel Drive Upper Belt
2. Set Screw
3. VS Pulley Outer Half
4. Wheel Drive Lower Belt

Figure 15

Wheel Drive Traction Adjustment

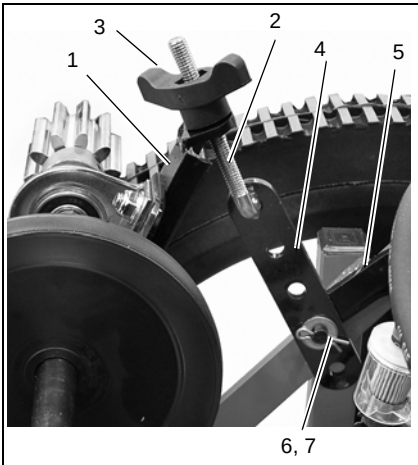
The gap between the drive rollers and tires, when wheel drive is disengaged determines the amount of contact force when wheel drive is engaged. Drive roller to wheel gap should be 1/8 – 1/4" (3 – 6 mm).

NOTE: A smaller gap between rollers and tires when wheel drive is disengaged provides for more engaged traction, which is helpful on sloped terrain.

1. Remove upper and lower drive belt guards. See *Drive Belt Guards* on page 18.
2. Loosen fine-adjustment knob to top end of adjustment link. Do not remove.
3. Remove hairpin, washer and engage plate from bell crank post.
4. Push the wheel drive frame back until drive roller gap at wheels is 1/8 – 1/4" (3 – 6 mm). See Figure 17.

NOTE: Holes in the engage plate allow traction adjustments to match rear wheel height.

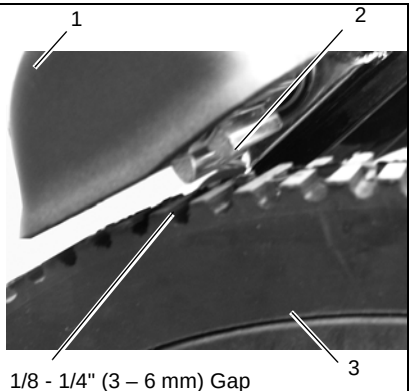
5. Install nearest hole of engage plate onto bell crank post. See Figure 16.
6. Install hairpin and washer on bell crank post.



1. Wheel Drive Frame
2. Adjustment Link
3. Fine Adjustment Knob
4. Engage Plate
5. Bell Crank
6. Washer
7. Hairpin

Figure 16

7. Tighten fine-adjustment knob to adjust drive roller gap at wheels to be 1/8 – 1/4" (3 – 6 mm).
8. Install drive belt guards. See *Drive Belt Guards* on page 18.



1. Upper Guard
2. Drive Roller
3. Tire

Figure 17

BELT TENSION ADJUSTMENT

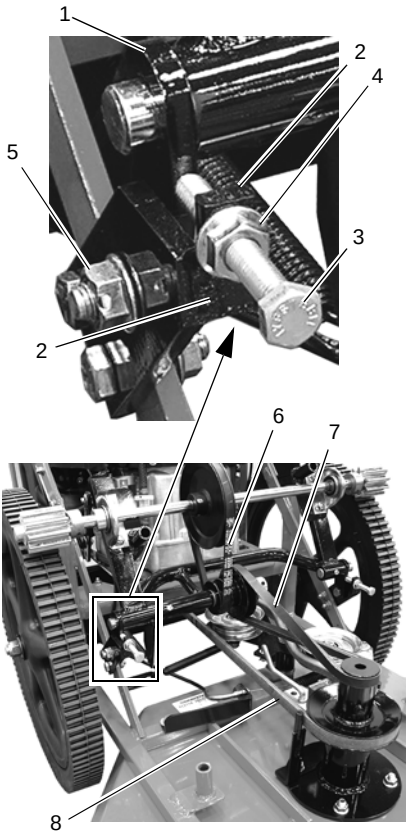
Adjust Wheel Drive Lower Belt Tension

See Figure 18.

1. Remove upper and lower drive belt guards. See *Drive Belt Guards* on page 18.

NOTE: The adjustment bracket bolt holes are threaded.

2. Loosen lock nut and bolt attaching each adjustment plate to the adjustment bracket. Do not remove hardware.



1. Adjustment Plate
2. Adjustment Bracket
3. Hex Bolt
4. Flanged Nut
5. Lock Nut
6. Wheel Drive Upper Belt
7. Wheel Drive Lower Belt
8. Blade Drive Belt

Figure 18

3. Loosen flanged nut on each adjustment hex bolt.

IMPORTANT: To avoid bending adjustment bolts, or have them slip off adjustment brackets, it may be necessary to pull back on wheel drive assembly as lower belt tension is adjusted.

4. Turn both adjustment bolts in/out evenly to achieve 1-1/4" – 1-1/2" (3 – 4 cm) deflection in belt. Use finger pressure at center of belt span to check for proper deflection.

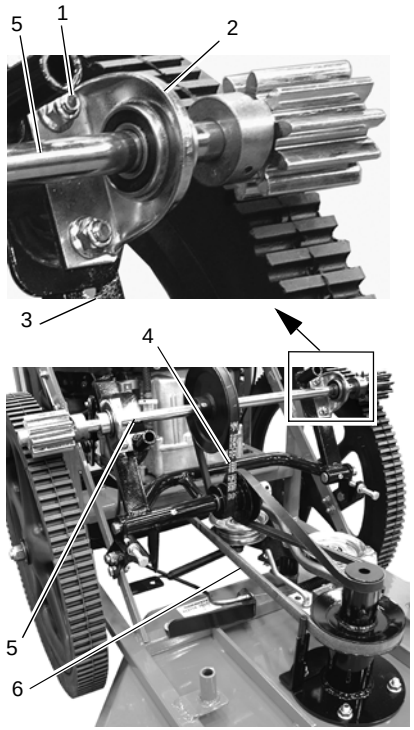
NOTE: Measure adjustment bolt lengths to ensure they are equal.

5. Hold adjustment bolt stationary and tighten flanged nut against adjustment bracket. Tighten to 26 lbf-ft (35 N•m).
6. Tighten lock nut and bolt attaching each adjustment plate to the adjustment bracket. Tighten to 23 lbf-ft (31 N•m).
7. Install drive belt guards. See *Drive Belt Guards* on page 18.

Adjust Wheel Drive Upper Belt Tension

See Figure 19.

1. Remove upper and lower drive belt guards. See *Drive Belt Guards* on page 18.
2. Loosen two flanged lock nuts and round head square neck bolts securing each bearing holder to wheel drive frame. Do not remove.
3. Pull drive roller shaft up to achieve a deflection of 1/8 – 3/8" (3 – 9 mm). Use finger pressure at center of belt span to check for proper deflection.
4. Lightly tighten two flanged lock nuts and round head square neck bolts securing each bearing holder to wheel drive frame.
5. Check that drive rollers shaft is level by measuring the position of both bearing holders on the wheel drive frame. The positions should be equal on both sides.
6. If adjustment is necessary, lightly tap on bearing holders.
7. Tighten hardware to 14 lbf-ft (19 N•m).
8. Install drive belt guards. See *Drive Belt Guards* on page 18.



1. Bolt and Flanged Lock Nut
2. Bearing Holder
3. Wheel Drive Frame
4. Wheel Drive Upper Belt
5. Drive Rollers Shaft
6. Blade Drive Belt

Figure 19

Adjust Mower Blade Drive Belt Tension

See Figure 20.

NOTE: Test and adjust the PTO clutch cable before adjusting the mower drive belt tension. See *PTO CLUTCH CABLE ADJUSTMENT* on page 17.

1. Shut off engine.
2. Remove lower drive belt guard. See *Drive Belt Guards* on page 18.
3. Loosen the four flanged lock nuts from the round head square neck bolts (two front/two rear) securing the engine mounting plate to mower frame. Do not remove.
4. Apply and hold PTO clutch control lever. See *PTO Clutch Lever* on page 12. See Figure 10.

5. Hold the flanged nyloc nut (on the inside of the engine mounting plate) stationary while turning the belt tensioning bolt clockwise to increase belt tension.

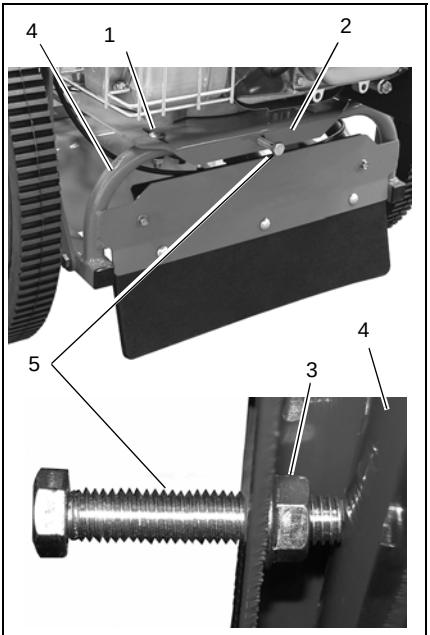
NOTE: As the end of the bolt extends against the mower frame, the engine mount plate is forced back, increasing belt tension.

- Adjust belt to 30-35 lbs tension. This equates to belt deflection of approximately 0.5 inches measured at the center of the longest belt span (RH side of machine as viewed from operator position). See Figure 19.

6. Turn bolt counterclockwise to decrease belt tension.

NOTE: Check belt deflection with approximately 3 lbs of force (average finger force).

7. Tighten engine mounting hardware to 14 lbf-ft (19 N•m).
8. Release PTO clutch control lever.
9. Install lower belt drive guard. See *Drive Belt Guards* on page 18.
10. Test PTO clutch. The blade must stop within 3 seconds after releasing control lever. If blade continues to run, adjust or repair control components immediately. See *PTO CLUTCH CABLE ADJUSTMENT* on page 17.



1. Mounting Hardware
2. Engine Mounting Plate
3. Flanged Nyloc Nut
4. Frame
5. Belt Tensioning Bolt

Figure 20

BELT REPLACEMENT

Wheel Drive Lower Belt Replacement

See Figure 21.

1. Remove upper and lower drive belt guards. See *Drive Belt Guards* on page 18.

NOTE: The adjustment bracket bolt holes are threaded.

2. Loosen the lock nut and bolt attaching each adjustment plate to the adjustment bracket. Do not remove hardware.
3. Loosen the flanged nut on each adjustment hex bolt away from the adjustment bracket.
4. Turn both adjustment bolts out evenly until belt becomes loose enough to slide off blade shaft pulley.

CAUTION: If wheel drive lower belt is installed incorrectly, the variable speed (VS) pulley will rotate in reverse. The drive rollers shaft will then also be driven in reverse. If driven in reverse, the drive rollers will slip and produce a clicking noise.

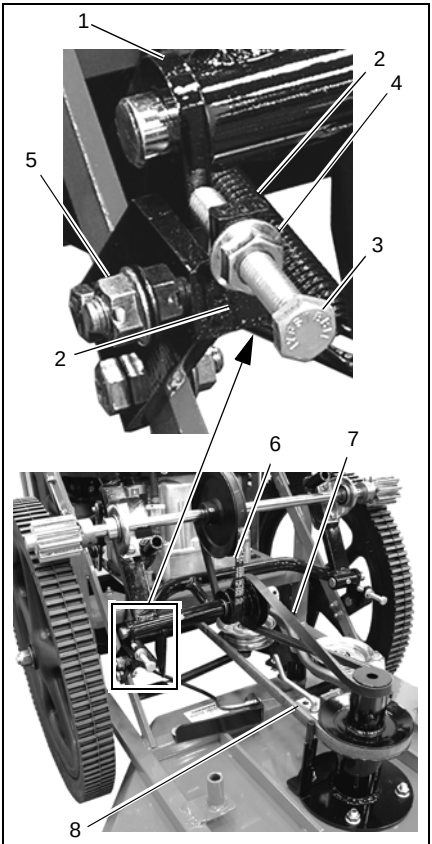
5. Twist belt 90º so left side goes to lower side of VS pulley. Also see Figure 19.

IMPORTANT: To avoid bending adjustment bolts, or have them slip off adjustment brackets, it may be necessary to pull back on wheel drive assembly as lower belt tension is adjusted.

6. Turn both adjustment bolts in/out evenly to achieve 1-1/4 – 1-1/2" (3 – 4 cm) deflection in belt. Use finger pressure at center of belt span to check for proper deflection.

NOTE: Measure bolt lengths to ensure they are equal.

7. Hold adjustment bolt stationary and tighten flanged nut against adjustment bracket to 26 lbf-ft (35 N•m).
8. Tighten lock nut and bolt attaching each adjustment plate to the adjustment bracket to 23 lbf-ft (31 N•m).
9. Install drive belt guards. See *Drive Belt Guards* on page 18.



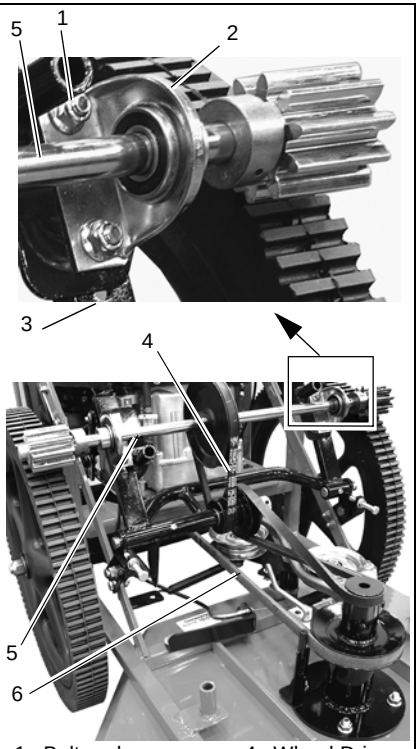
1. Adjustment Plate
2. Adjustment Bracket
3. Hex Bolt
4. Flanged Nut
5. Lock Nut
6. Wheel Drive Upper Belt
7. Wheel Drive Lower Belt
8. Blade Drive Belt

Figure 21

Wheel Drive Upper Belt Replacement

See Figure 22.

1. Remove wheel drive lower belt. See *Wheel Drive Lower Belt Replacement* on page 22.
2. Loosen two flanged lock nuts and round head square neck bolts securing each bearing holder to wheel drive frame. Do not remove mounting hardware.
3. Push drive rollers shaft down to release belt tension.
4. Remove two flanged lock nuts and round head square neck bolts securing left-side bearing holder to wheel drive frame.
5. Remove belt from drive rollers shaft pulley and then the variable speed (VS) pulley.
6. Guide belt over left-side bearing holder and remove.
7. Install new belt.
8. Install hardware removed in step 4.
9. Pull drive roller shaft up to achieve a deflection of 1/8 – 3/8" (3 – 9 mm). Use finger pressure at center of belt span to check for proper deflection.
10. Lightly tighten two flanged lock nuts and round head square neck bolts securing each bearing holder to wheel drive frame.
11. Check that drive rollers shaft is level by measuring the position of both bearing holders on the wheel drive frame. The positions should be equal on both sides.
12. If adjustment is necessary, lightly tap on bearing holders.
13. Tighten hardware to 14 lbf-ft (19 N•m).
14. Replace wheel drive lower belt. See *Wheel Drive Lower Belt Replacement* on page 22.



1. Bolt and Flanged Lock Nut
2. Bearing Holder
3. Wheel Drive Frame
4. Wheel Drive Upper Belt
5. Drive Rollers Shaft
6. Blade Drive Belt

Figure 22

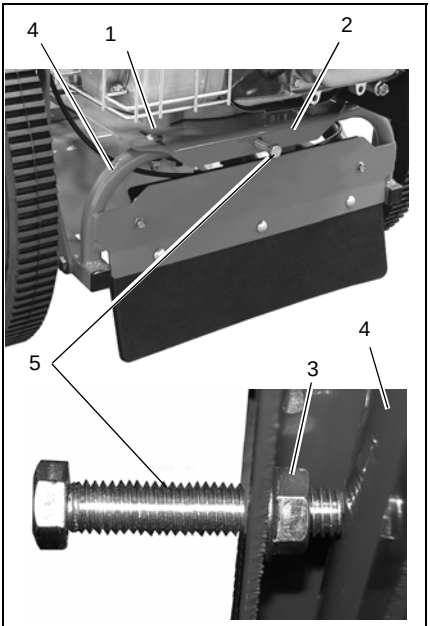
Mower Blade Drive Belt Replacement

See Figure 23.

1. Remove wheel drive lower belt. See *Wheel Drive Lower Belt Replacement* on page 22.
2. Loosen the four flanged lock nuts from the round head square neck bolts (two front/two rear) securing the engine mounting plate to mower frame. Do not remove.
3. To decrease belt tension, hold flanged nyloc nut (on the inside of the engine mounting plate) stationary while turning the belt tensioning bolt counterclockwise. This will back the bolt away from the mower frame.
4. Force the motor mount plate forward until belt is slack enough to remove from pulleys.

NOTE: Ensure belt is routed between pulley and belt guides at both the engine and blade spindle pulleys.

5. Install new belt. See Figure 22.
6. Adjust mower blade drive belt. See *Adjust Mower Blade Drive Belt Tension* on page 21.
7. Install wheel drive lower belt. See *Wheel Drive Lower Belt Replacement* on page 22.



1. Mounting Hardware
2. Engine Mounting Plate
3. Flanged Nyloc Nut
4. Frame
5. Belt Tensioning Bolt

Figure 23

STORAGE

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

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

Cleaning

IMPORTANT: NEVER spray unit with high pressure water or store unit outdoors.

- Allow unit to cool.
- Brush off dirt and debris from all surfaces.
- Clean unit thoroughly with mild soap and low pressure water. Do not use abrasives, solvents, or harsh cleaners.
- Touch up all scratched surfaces to prevent rust. Matching touch-up paint is available from your Ariens Dealer.
- Lubricate (see *GENERAL LUBRICATION* on page 17).
- Remove weight from wheels by putting blocks under frame or axles.

Inspection

Inspect mower and repair or replace worn or damaged parts to avoid delays when beginning use again.

Regularly check all hardware and keep fasteners tight. Know unit is in safe working condition.

Store unit in a cool, dry protected area.

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.

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

Add Fuel Stabilizer

1. Turn the fuel valve off while engine is running and allow the engine to run until it stops. Turn engine OFF when it begins surging to avoid engine damage.
2. Add fuel stabilizer, following the manufacturer's instructions.
3. Turn fuel valve on after adding fuel stabilizer.
4. Re-start engine.
5. Run the engine outdoors for 1 minute to be sure that treated gasoline has replaced the untreated gasoline in the carburetor.
6. Slow the engine to an idle speed.
7. Repeat step 1.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTION
Engine will not start	1. Fuel tank empty or low. 2. Spark plug wire loose or off. 3. Engine throttle lever in Stop (Off) position. 4. Air cleaner clogged. 5. Fuel filter is dirty. 6. Engine throttle control cable detached, broken, or not adjusted properly.	1. Check fuel level. Fill tank if necessary. (see *FILLING FUEL TANK* on page 13). 2. Check connection. 3. Verify position of engine throttle lever. 4. Clean air filter. Refer to Engine Manual. 5. Replace fuel filter. Refer to Engine Manual. 6. Check cable. Adjust, repair or replace as necessary.
Engine is difficult to restart	1. Air cleaner clogged. 2. Fuel filter is dirty.	1. Clean air filter. Refer to Engine Manual. 2. Replace fuel filter. Refer to Engine Manual.
Engine stalls when engaging PTO	1. Mower clogged with grass.	1. Clear clippings/debris from below mower deck. (Allow the mower to clear clippings before shutting off engine.)
Cut is poor	1. Worn blade. 2. Too much grass is being removed per cutting. 3. Grass is too wet. 4. Mowing speed is too fast. 5. Mower blade drive belt too loose.	1. Check blade (see *SERVICE POSITION* on page 17). 2. Raise cutting height (see *PTO CLUTCH CABLE ADJUSTMENT* on page 17). 3. Allow grass to dry. 4. Mow slower (see *Wheel Drive Speed Adjustment* on page 19). 5. See *Adjust Mower Blade Drive Belt Tension* on page 21.
Grass does not disperse evenly	1. Too much grass is being removed per cutting. 2. Grass is too wet. 3. Mowing speed is too fast.	1. Raise cutting height (see *PTO CLUTCH CABLE ADJUSTMENT* on page 17). 2. Allow grass to dry. 3. Mow slower (see *Wheel Drive Speed Adjustment* on page 19).

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTION
Wheel drive does not engage	1. Wheel drive control not engaged. 2. Wheel drive belts tension too loose. 3. Wheel drive belt worn or damaged. 4. Wheel drive control linkage detached or broken. 5. Bearings damaged. 6. Drive seems to slip or speed is too slow. Inadequate traction on sloped terrain. 7. Wheel drive rollers run in reverse.	1. Engage wheel drive control. 2. Check wheel drive belts tension. Adjust as necessary (see *BELT TENSION ADJUSTMENT* on page 20). 3. Replace belt (see *BELT REPLACEMENT* on page 22). 4. Check wheel drive control linkage. Adjust or replace as needed (*see CHECK WHEEL DRIVE LEVER* on page 15*).* 5. Contact your Dealer. 6. See *WHEEL DRIVE ADJUSTMENTS* on page 18. 7. Install wheel drive lower belt in correct orientation (see *Wheel Drive Lower Belt Replacement* on page 22).

SERVICE PARTS

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

Part Number	Description
20000001	Air Filter
21534100	Spark Plug
04167500	Blade, 24"
07200538	Wheel Drive Upper Belt
07206000	Wheel Drive Lower Belt
07200604	Mower Blade Drive Belt

SPECIFICATIONS	
Model Number	**911707**
Description	**Pro-24 HW Brush Cutter – CARB**
Length – in. (cm)	68.5 (174)
Height – in. (cm)	44.5 (113)
Width – in. (cm)	27.5 (69.9)
Actual Weight – lbs (kg)	220 (99.8)
Cutting Width – in. (cm)	24 (61)
Cutting Height – in. (cm)	3.3 (8.4)
Engine	Briggs & Stratton
Max Rotation Speed of Cutting Edge – feet per minute	16,100
Governed RPM (May be different from maximum rpm.)	3,200 ± 100
Displacement Cu. In. (cc)	21 (344)
Cylinder Bore	Cast Iron Sleeve
Engine Oil Type	See engine manual
Crank Case Capacity – Oz. (Liter)	See engine manual
Oil System	See engine manual
Spark Plug Gap	See engine manual
Fuel Type	Unleaded
Fuel Tank Capacity – qt (Liter)	2.8 (2.7)
Primer Bulb	N/A
Choke	Integrated in engine throttle.
Throttle	Cable-Actuated
Air Cleaner	Paper Element
Starting	Recoil
Variable Speeds – MPH (km/hr)	0 – 4.7 mph
Mower Deck	10 ga. Fabricated Steel
Rear Wheel Dia – in. (cm)	20 (50.8)

Commercial Mowing Equipment Limited Warranty

Ariens Company (Ariens) warrants to the **original purchaser** that Ariens, Gravely and Countax brand products purchased on or after 1/1/2012 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 100 & 200, Pro-Master, Compact-Pro, Pro-Stance, Pro-Ride, Pro-Walk Mowers, Pro-Zoom, etc.	3 Years	2 Years
CB	Turf Mowing Equipment: CL, TRM, TVM, FP, PM-3084, etc.	3 Years	2 Years
CC	Pro 20 Series Walk-Behind Mowers	3 Years	1 Year
N/A	Service (replacement) Parts	90 Days (no labor)	90 Days (no labor)
CD	Pro-Turn 400	3 Years	3 Years (Years 1 & 2: Parts & Labor, Year 3: Parts Only)

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	All	Warranty is limited to 2 years 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.gravely.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, Gravely 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, Gravely 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.gravely.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, Gravely 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.

AUSTRALIAN CONSUMER LAW

The following applies solely to warranties subject to Subsection 102(1) of the Australian Consumer Law: Our goods come with guarantees that cannot be excluded by the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and failure does not amount to a major failure.

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 AND EPA (UNITED STATES ENVIRONMENTAL PROTECTION AGENCY) EVAPORATIVE EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The CARB (California Air Resources Board), the EPA, and Ariens Company are pleased to explain the evaporative emission control system's warranty on your 2012 model year small off-road equipment. In California, new equipment that uses 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, Gravely, or Parker 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 1-920-756-2141.

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 EPA and CARB 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, Gravely, or Parker service representative.
(5.) Notwithstanding the provisions of subsection (4) above, warranty services or repairs must be provided at authorized Ariens, Gravely, or Parker 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 an authorized Ariens, Gravely, or Parker 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.

Evaporative Emission Warranty Parts List

The following parts are considered emission-related components for evaporative emissions:

- Fuel Tank, Fuel Cap and Tether
- Fuel Line, Fuel Line Fittings, Clamps*
- Pressure Relief Valves, Control Valves*
- Control Solenoids*, Electronic Controls*
- Vacuum Control Diaphragms*
- Control Cables*, Control Linkages*
- Purge Valves
- Vapor Hoses, Liquid/Vapor Separator
- Carbon Canister, Canister Mounting Brackets
- Carburetor Purge Port Connector

* As related to the evaporative emission control system

Disclaimer

New equipment sold in the state of California that uses small off-road engines must be exclusively certified and appropriately labeled for sale in California. Some equipment covered by this Owner's Manual my not be certified for sale in California and the presence of the preceding CARB and EPA Warranty Statement does not by its existence indicate which, if any, of the equipment covered by this Owner's Manual may be sold in California.

Some equipment covered by this Owner's Manual may have been manufactured prior to certain affectivity dates requiring the inclusion of evaporative emission control systems. Therefore some equipment covered by this Owner's Manual may not include the evaporative emission control systems referred to in the preceding CARB and EPA Warranty Statement.