

Ariens®

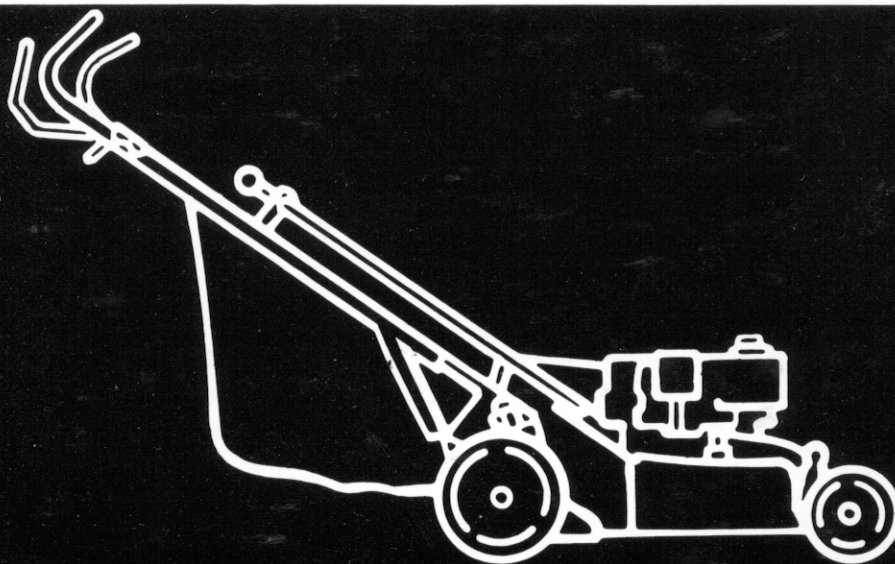
911 Series

**Walk Behind
Lawn Mowers**

⚠ SAFETY MESSAGE ⚠

The product for which you have requested information or replacement parts is not a current product. The replacement models incorporate product designs, safety features, safety instructions or warnings which represent the latest "State Of The Art" developments. For your safety and those around you please contact your nearest Ariens/Gravely Dealer for a demonstration of the current product safety provisions and features.

Owner's Manual



A Message to Ariens Customers...

Welcome to the world of Ariens equipment. We are pleased that you have selected Ariens and sincerely believe you have purchased the best equipment available. The care you give your new Ariens equipment will determine the satisfaction and service life you will obtain from it. Use this manual and the engine manual supplied as your guide. By observing the instructions and suggestions in these manuals, your Ariens equipment will serve you well for many years.

Your Ariens dealer will be happy to supply any service or advice which may be required to keep your Ariens equipment operating at peak efficiency. He stocks genuine Ariens parts and lubricants, manufactured with the same precision and skill as the original equipment. His trained staff is kept well informed on the best methods of servicing Ariens equipment and is ready and able to serve you. If engine repairs or

services are required, they can be obtained from an Ariens dealer or from an authorized engine manufacturer's service center. If service is required, be prepared to supply the service person with the Model Number and Serial Number of the equipment and engine, as well as a full description of the problem encountered.

NOTE: The descriptions and specifications contained in this manual were in effect at the time the manual was approved for printing. Ariens company reserves the right to discontinue models without notice and without incurring obligation. The equipment described within this manual may not be identified as either standard or optional and the various illustrations may not all be applicable to your particular unit. If you have questions, always check with your Ariens dealer.

Safety Alert Symbol and Notations

The following safety notations are used throughout this manual to call attention to special information or operating procedures. Understand the message in each notation and be alert to unsafe conditions and the possibility of personal injury.

NOTE: A **NOTE** points out general reference information regarding proper operation and maintenance practices.

IMPORTANT: An **IMPORTANT** statement indicates specific procedures or information that is required to prevent damage to the machine or its attachments.



This safety alert symbol is used to attract your attention! **PERSONAL SAFETY IS INVOLVED!** When you see this symbol - **BECOME ALERT - HEED ITS MESSAGE.**



CAUTION: A **CAUTION** identifies safe operating practices or indicates unsafe conditions that could result in personal injury.



WARNING: A **WARNING** describes a condition where failure to follow the instructions could result in severe personal injury.



DANGER: A **DANGER** designates a condition where failure to follow instructions or heed warning will most likely result in serious personal injury or death.

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This manual covers the above models. Specific Model and Serial Numbers of your mower are on a serial number decal located on mower pan. Record these numbers below and use them whenever parts and/or service are required.

Model Number - Mower	_____
Serial Number - Mower	_____
Serial Number - Engine	_____

Models

Model 911014 (LM21)
4 Cycle Tecumseh 5 HP
Engine Ignition/Brake (EI/B)
Recoil, Push
Serial Number 019901 and up

Model 911016 (LM21s)
4 Cycle Tecumseh 5 HP
Engine Ignition/Brake (EI/B)
Recoil, Self Propelled
Serial Number 045201 and up

Model 911019 (LM21se)
4 Cycle Tecumseh 5 HP
Engine Ignition/Brake (EI/B)
Electric Start, Self Propelled
Serial Number 017301 and up

Model 911020 (LM21sb)
4 Cycle Tecumseh 5 HP
Blade Brake/Clutch (BB/C)
Recoil, Self Propelled
Serial Number 012401 and up

Model 911026 (LM21se)
4 Cycle Tecumseh 5 HP
Engine Ignition/Brake (EI/B)
Electric Start, Self Propelled
Serial Number 001101 and up

Model 911029 (LM21sbe)
4 Cycle Tecumseh 5 HP
Blade Blade/Clutch (BB/C)
Electric Start, Self Propelled
Serial Number 002501 and up

Model 911030 (LM21sc)
4 Cycle Briggs & Stratton 5 HP
Engine Ignition/Brake (EI/B)
Professional Recoil, Self Propelled
Serial Number 001601 and up

Safety Precautions

Training

Read and understand this Owner's Manual and engine manufacturer's instructions before operating unit. Be thoroughly familiar with controls and proper use of equipment. Know how to disengage controls and stop unit quickly in an emergency.

Understand and follow each Danger, Warning, Caution and Instructional decal installed on mower.

NEVER allow children to operate mower. **DO NOT** allow adults to operate it without proper instruction.

Keep the area of operation clear of all persons, particularly children and pets.

Preparation

Thoroughly inspect and clear work area of objects which might be picked up and thrown. Remove all stones, sticks, wires, and other foreign objects.

Wear sturdy footwear. **DO NOT** operate mower barefoot or when wearing open sandals or canvas shoes. **DO NOT** wear loose clothing that may get caught in rotating parts of unit.

NEVER attempt to make any adjustments to unit while engine is running (except where specifically recommended). **DO NOT** make cutting height wheel adjustment while engine is running.

Gasoline is highly flammable and its vapors are explosive. Handle with care. Use an approved (RED) gasoline container.

NEVER allow smoking materials, sparks or flame (match, pilot light, etc.) near mower or gasoline container.

Check fuel supply before starting engine. **DO NOT** fill gasoline tank indoors, when engine is running, or while engine is still hot. Allow engine to cool several minutes before removing fuel cap. Replace gasoline tank cap securely and clean up any spilled fuel before starting engine.

Be sure Side Discharge Deflector or Grass Bagger and Side Discharge Opening Cover are properly secured before starting mower.

Operation

Keep equipment in good condition. Keep all shields in place and safety devices operating properly.

Operate unit only when there is good visibility and light.

DO NOT put hands or feet near, or under, rotating parts. Keep clear of the discharge opening and mower pan at all times.

Open doors if unit is run in garage, exhaust fumes are dangerous. **DO NOT** run engine in an enclosed area.

DO NOT operate mower in wet grass. Always be sure of your footing, keep a firm hold on handlebar and walk, never run.

Do not operate mower on gravel or on loose material such as sand. Stop mower/blade when crossing gravel drives, walks, or roads. Objects may be picked up and thrown, causing damage or injury.

NEVER direct discharge of material toward bystanders nor allow anyone near equipment while unit is in operation. The operator is responsible for the safety of bystanders.

Be familiar with area of operation. Stay alert for holes, rocks, roots and hidden hazards in area of operation. Keep away from drop-offs.

Mow across face of slopes, never up and down. Be especially cautious when changing direction on slopes. **DO NOT** mow steep slopes.

Engine (Blade) Control feature on mower will cause engine and/or blade to stop whenever operator releases control on handlebar. If feature fails to operate, disconnect spark plug wire and adjust or have it repaired before using unit.

Safety Precautions

Stop engine, wait for moving parts to stop, and remove wire from spark plug before attempting to; unclogging discharge chute, when making any repairs, adjustments, inspections or cleaning unit.

DO NOT touch equipment parts which might be hot from operation. Before attempting to maintain, adjust or service allow such parts to cool.

If equipment vibrates abnormally, stop engine at once, wait for moving parts to stop and remove wire from spark plug. Abnormal vibration is a warning of trouble. Repair any damage before restarting unit. (See your Ariens Dealer.)

After striking a foreign object, stop engine, wait for moving parts to stop and remove wire from spark plug. Thoroughly inspect unit for any damage and repair damage before restarting and operating unit.

Take all possible precautions when leaving unit unattended. Remove and keep wire away from spark plug to prevent accidental starting or unauthorized use. (On electric start units, remove key or unplug battery.)

Maintenance and Storage

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

DO NOT change engine governor setting or over speed engine.

Keep all nuts, bolts and screws tight and be sure equipment is in safe working condition. Check all hardware at regular intervals.

Check grass bag for wear and/or deterioration. Replace only with Ariens original equipment replacement part for safety.

Before tipping mower to work or clean underside. Disconnect spark plug wire and follow instructions in Lubrication and Maintenance Section of this manual.

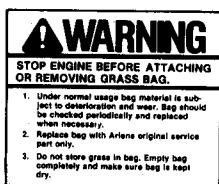
To reduce fire hazard and overheating, keep equipment free of grass, leaves, debris or excessive lubricants.

Worn out mufflers are more than just a noise nuisance and should be replaced immediately. Continued use could result in fire or explosion.

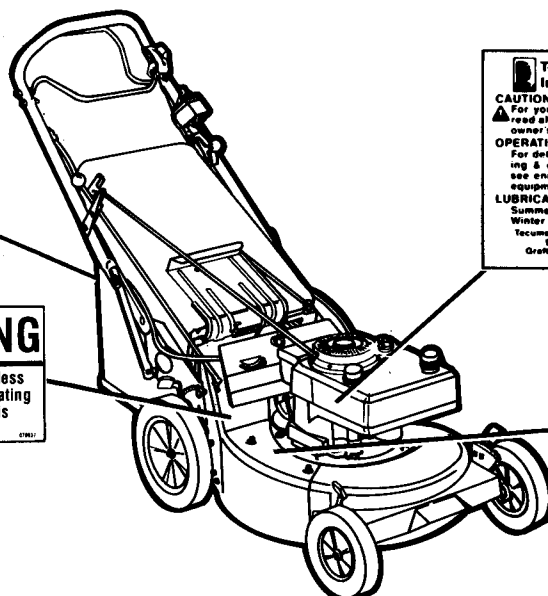
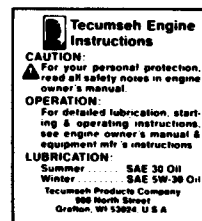
NEVER store equipment with gasoline in tank inside a building where fumes may reach an open flame or spark. Allow engine to cool before storing in any enclosure.

Refer to Storage Section of this Owner's Manual for important instructions if unit is to be stored for extended periods.

Decals



(ON BAG)



Dealer Preparation for Operation

Customer Note: Your Ariens Dealer is expected to complete these preparation steps and review important information, including this manual, with you before or upon delivery of your mower.

The preparation information is included here so that you and your dealer may review it together.

NOTE: All references to "Left", "Right", "Front" and "Rear" are given from operator's position.



WARNING: Failure to follow all instructions could result in personal injury and/or damage to mower. Remove wire from spark plug before attempting any adjustment or assembly procedure.

Instructions contained in this manual apply to several models of mower. Use the instructions that apply to your unit.

IMPORTANT: Engines on Walk Behind Lawn Mowers are shipped without oil in engine crankcase. Refer to Lubrication and Maintenance Section for filling instructions.

Handlebar

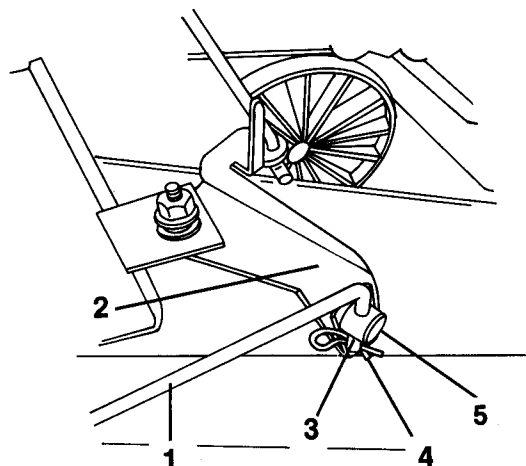
Unfold the handlebar. Select a safe comfortable handlebar operating height, place hole in braces onto pins on both sides of mower. (Refer to Adjustments Section.)

On Professional models, nuts and bolts are used to secure handlebar. Also, Throttle/Choke control was mounted on outside of handlebar for shipping purposes, it should be remounted on inside of handlebar.

Speed Selector Rod (Self Propelled Models)

On self propelled models, Speed Selector rod is shipped on handlebar with hardware in posi-

tion. Remove hair pin and washer, insert bent end of rod through hole in swivel of speed control bell crank, place washer onto rod and retain with hair pin.

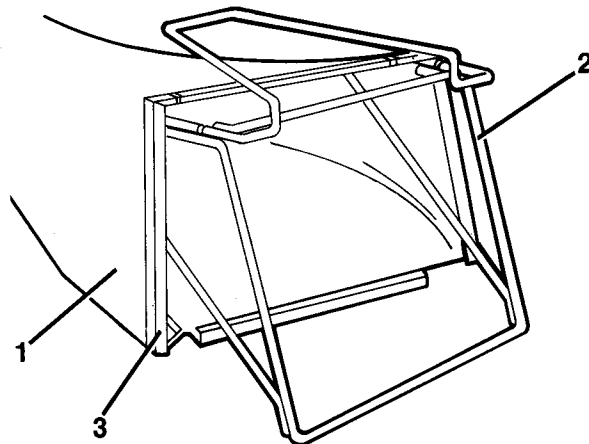


1. Speed Selector Rod
2. Speed Control Bell Crank
3. Washer
4. Hair Pin
5. Swivel

Figure 2: Speed Selector

Grass Bag

Assemble grass bag onto bag frame by sliding bag over frame (longest side of bag is top and goes over long side of frame).



1. Grass Bag
2. Bag Frame
3. Bag Molding

Figure 3: Grass Bagger

Dealer Preparation for Operation (Continued)

Secure bag to each side of bag frame by separating molding on bag enough to slide frame into molding. Be sure molding is completely seated on all four sides of bag frame.

To install grass bag or side discharge deflector on mower refer to Pre-Starting in Operation Section of this manual.



WARNING: DO NOT operate mower unless either side discharge opening cover or side discharge deflector is installed. Objects may be picked up and thrown causing damage or personal injury. Never operate engine with rear door open unless grass catcher is in place.

Battery (electric start models)

On electric start models, battery was charged before unit was shipped but may start mower only a few times because of long term self discharge. Fully charge battery before delivery of mower to customer. (Refer to instructions in Lubrication and Maintenance Section.)

Engine (Blade) Control

Engine (Blade) Control feature on this mower must cause engine and/or blade to stop within 3 (three) seconds whenever operator releases control on handlebar. Control was adjusted at factory but must be checked according to instructions in Adjustments Section of this manual.

Air Cleaner

Oil air cleaner precleaner per instructions in Lubrication and Maintenance section of this manual before delivery to customer.

Professional Fuel Tank

On professional models, secure fuel tank to bracket with 4 cap screws. Connect and clamp short fuel line to tank, then shut off valve and remaining fuel line to valve and fuel filter.

Registration

Complete Walk Behind Lawn Mower Warranty Registration Form and mail original copy to Ariens Company.

Warranty is registered under model and serial number found on decal on mower pan.

Delivery

Using the Owner's Manual, instruct customer on controls and operation of unit. Emphasize safety and discuss the Safety Precautions.

Explain recommended lubrication and maintenance of the unit.

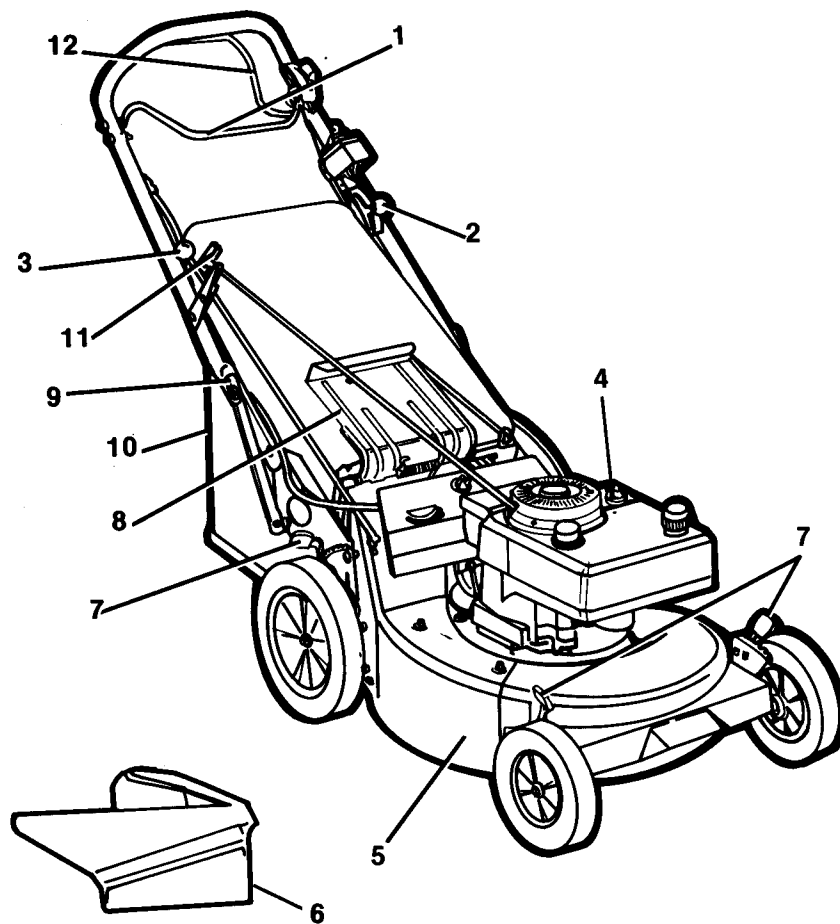
IMPORTANT: Remind customer to change oil in 4 cycle engine crankcase after first two (2) hours of operation.

Advise customer on adjustments, demonstrate how to install grass bagger, deflector and discharge opening cover.

Explain Ariens Company, Limited Warranty Policy, and fill out Original Purchaser Registration Card, Parts and Repair Manual Order Form and return to Ariens Company. Place Model and Serial Number on page (1) of this manual.

Give customer his Owner's Manual and engine manufacturer's instructions. Advise him to thoroughly read and understand them.

Controls and Features



- 1. Engine (Blade) Control
- 2. Electric Start Control (Electric Start Models)
- 3. Speed Selector (Self Propelled Models)
- 4. Primer (Tecumseh engine powered models)
- 5. Side Discharge Opening Cover
- 6. Side Discharge Deflector
- 7. Cutting Height Levers (Wheel Adjustors)
- 8. Rear Door
- 9. Adjustable and Folding Handlebars
- 10. Rear Grass Bag
- 11. Rewind Starter
- 12. Wheel Drive Control (Self Propelled Models)

Figure 4: Control and Feature Locations

Operation

PRE-STARTING

Check that engine crankcase oil is at proper level using dipstick. Fill or change as per instructions in Lubrication and Maintenance Section.

NOTE: 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 arrester meeting applicable local, state or federal laws. A spark arrester, if used, must be maintained in effective working order by the operator. See your Ariens Dealer or engine manufacturer's service center.



CAUTION: Make sure all hardware is tight, all safety devices in place and all adjustments made correctly.

Check air cleaner for dirt. Clean as required. See Lubrication and Maintenance Section of this manual.

Fuel



WARNING: Gasoline is highly flammable and must be handled with care. Allow engine to cool several minutes before removing fuel tank cap. Never fill tank when engine is running or is hot from operation. DO NOT allow open flame, matches, or smoking in area. DO NOT over fill. Wipe up any spills. Use approved (Red) gasoline container.

NOTE: To prevent foreign particles from entering tank while filling; wipe dust, dirt and debris from around cap before removing it.

Check fuel supply. Fill fuel tank with a good grade of fresh lead free gasoline (leaded if lead free is unavailable). DO NOT use premium, gasahol, or mix gasoline with oil. Use of lead free gasoline produces fewer combustion deposits.

Handlebar Height

Handlebar adjusts to four positions by selecting holes in braces. Select a safe comfortable height and place pin through hole in brace that is closest to that height. Refer to Adjustment Section. (On professional models, nuts and carriage bolts replace pin). Adjust handlebar to a safe, comfortable operator height according to instructions in Adjustments Section of this manual.

Mower Configurations



WARNING: DO NOT operate mower unless either side discharge opening cover or side discharge deflector is installed. Objects may be picked up and thrown causing damage or personal injury. Never operate engine with rear door open unless grass catcher is in place.

To configure your mower for bagging, side discharge or mulching, proceed as follows:

Bagging: Lift rear door, place bar of bag frame on lip of mounting flange and lower rear door. If necessary, lift up on rear of bag frame to lock in position.

Be sure there are no openings between bag and mounting surface after installing bag, if necessary clear bag mounting surface of debris.

Operation (Continued)

To remove grass bag, lift rear door, then with handle, lift bag up off mounting flange and close rear door.



CAUTION: Objects may be thrown. Check Grass Bag frequently for wear or deterioration. Replace worn or damaged bag with Ariens original equipment replacement part only.

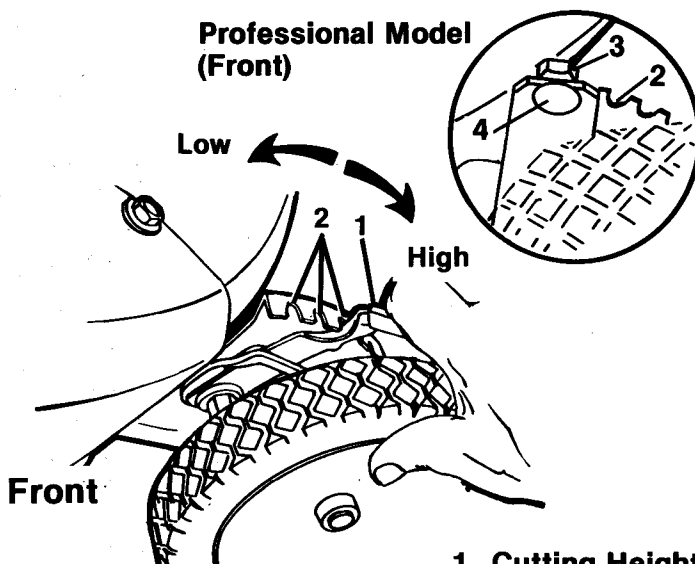
Side Discharge: With grass bag removed, remove two lock nuts and washers that secure side discharge opening cover to mower. Lift cover to free tabs from slots and remove cover from mower.

Position holes in side discharge deflector over studs on mower with tab on rear edge of deflector placed onto edge of discharge opening. Secure deflector with cover hardware.



CAUTION: NEVER direct discharge of material toward bystanders nor allow anyone near equipment while unit is in operation.

Mulching: With grass bag removed and side discharge opening cover installed, your mower can be used for mulching.



- | | |
|-------------------------|---------|
| 1. Cutting Height Lever | 3. Nut |
| 2. Notch | 4. Bolt |

Figure 5: Cutting Height Levers (Wheel Adjusters)

Cutting Height



DANGER: To avoid inadvertent blade contact, NEVER attempt to make any cutting height adjustments while engine is running.



CAUTION: On self-propelled models, both rear wheels must be positioned at same height or traction drive may not clutch or operate properly.

To change cutting height, move Cutting Height levers on notch at a time on each wheel until desired height of cut is obtained. (Professional models front wheels are adjustable with nuts and bolts.)

NOTE: Each Wheel on mower must be set at the same height for a level cut.

Low Setting = 1-1/4" cut grass length.

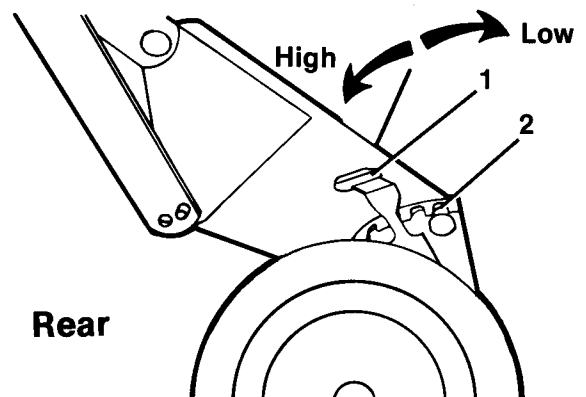
Second Notch = 1-3/4" cut grass length.

Third Notch = 2-1/8" cut grass length.

Fourth Notch = 2-5/8" cut grass length.

Fifth Notch = 3" cut grass length.

High Setting = 3-1/2" cut grass length.



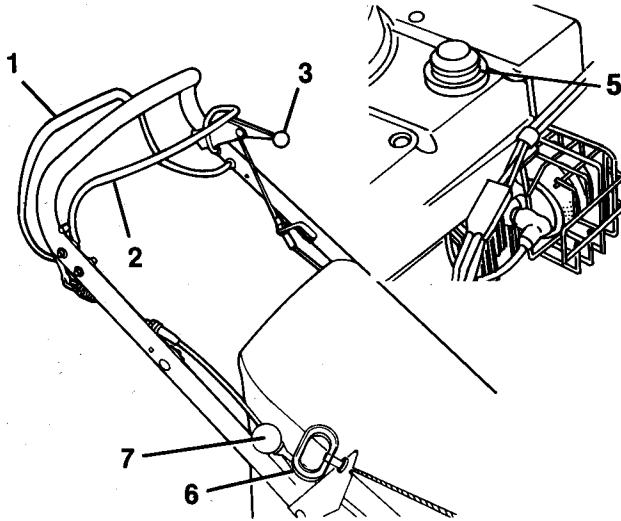
Operation (Continued)

STARTING

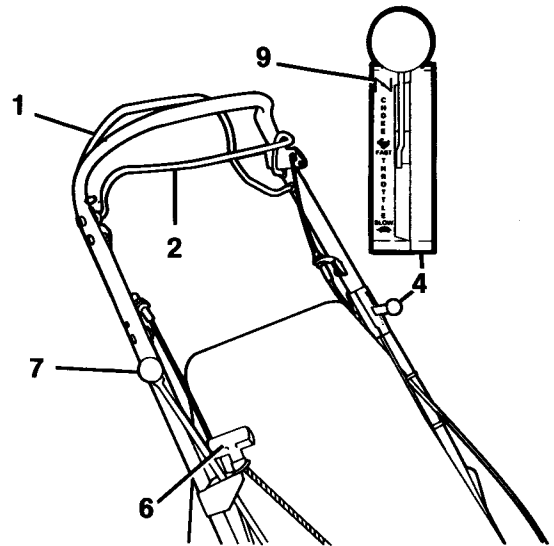
Use illustration that applies to your unit for reference. (Self Propelled models shown. For push mowers disregard Wheel Drive Control and Speed Selector.)



WARNING: DO NOT attempt to start your engine at this time. Familiarize yourself with controls to see what they do, how they work and thoroughly read and understand entire Operator's Manual first.



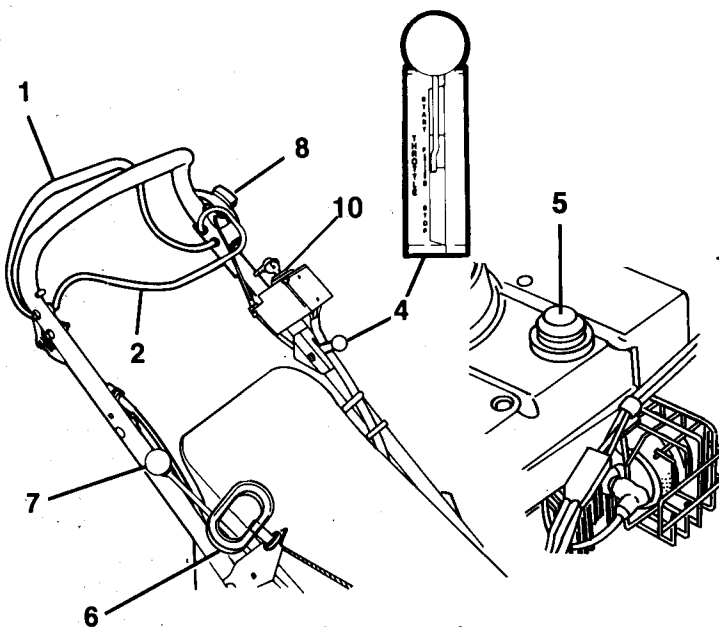
**Tecumseh powered
Engine Ignition/Brake
(EI/B) model**



**Briggs & Stratton powered
Engine Ignition/Brake
(EI/B) model**

1. Wheel Drive Control (Self Propelled Model)
2. Engine (Blade) Control
3. Electric Start Knob (Electric Start Model)
4. Throttle
5. Primer
6. Rewind Starter
7. Speed Selector (Self Propelled Model)
8. Blade Control Release Lever (BB/C Model)
9. Choke
10. Key Switch

Figure 6: Controls



**Tecumseh powered
Blade Brake/Clutch
(BB/C) model**

Operation (Continued)

Choke or Primer

To start a cold engine, move lever to the **CHOKE** position. For models with Primer, push Primer bulb two or three times.

NOTE: It is not necessary to choke or prime a warm engine.

On units with choke, move lever to **FAST** position after engine has started.

Throttle

Engine should be operated at fastest speed when performing cutting or bagging operations.

On Blade Brake/Clutch (BB/C) Model operate with Throttle at **START** position and to stop engine, move Throttle to **STOP**.

Engine (Blade) Control

On Engine Ignition/Brake (EI/B) models, engine is equipped with a device that stops engine ignition and a brake that stops engine (blade) within 3 seconds after operator releases Engine Control.

On models with Engine Ignition (EI/B), Engine Control must be held against handlebar in order to start engine as well as during mowing operations to keep engine running. Releasing control when engine is running stops engine.



CAUTION: Function of Engine (Blade) Control should be checked regularly per instructions in Adjustment Section of this manual. Improper function of control could contribute to operator or bystander injury.

On Blade Brake/Clutch (BB/C) models, unit is equipped with a blade brake that stops blade within 3 seconds after operator releases Blade Clutch Control.

On models with Blade Brake/Clutch (BB/C), it is not necessary to hold the Blade Clutch Control against handlebar to start engine but it must be held against handlebar to engage blade clutch and rotate blade for cutting operations. When control is released, blade brake is automatically applied.

NOTE: Engage Blade Clutch Control in one rapid, continuous motion. (At intermediate position brake and clutch are both engaged and may stall engine.)

Rewind Starter

Grasp Rewind Starter handle and pull rope out slowly until it pulls harder (this is the compression stroke) and let rope rewind slowly. Then pull rope with rapid continuous full arm stroke to start engine and allow rope to rewind slowly.

IMPORTANT: DO NOT let starter rope snap back against bracket.

Repeat above instructions until engine starts. (Refer to engine manufacturer's instructions.)

NOTE: Start engine (blade) on a hard level surface that is free of debris. To start on lawn, push down on handlebar to allow blade to rotate above grass.

Electric Start

On electric start models, with Engine (Blade) Control held against handlebar, push Electric Start knob to start engine. On BB/C models, turn key with Engine (Blade) control released. (Recoil may be used to start unit.)

Wheel Drive Control (self-propelled models)



CAUTION: Holding Wheel Drive Control of self-propelled models against handlebar, when attempting to start mower, will propel mower forward.

On self-propelled models, with engine running, slowly squeeze and hold Wheel Drive Control against handlebar to propel mower forward. Release Wheel Drive Control to stop forward motion.

Operation (Continued)

Speed Selector (self-propelled models)

Speed Selector is used to select variable forward travel speeds of mower.

Lowest speed is when Speed Selector is pulled all the way to rear and highest speed is provided when it is pushed all the way forward.

With Speed Selector set at a slow travel speed and engine running, engage Wheel Drive Control, then increase speed with Speed Selector to a safe comfortable walking pace. Once speed has been selected, Speed Selector should remain in this position, if not, adjust speed control bell crank spring tension per instructions in Adjustments Section.

STOPPING

Release control(s), on BB/C model move Throttle Control to STOP and allow engine to cool.



CAUTION: Remove wire from spark plug to prevent accidental starting or unauthorized use of mower.

Operating Tips

The following tips will help you to mow safely, achieve maximum performance from your mower and maintain the appearance of your lawn.

When mowing with models that provide a throttle, always operate engine at full throttle. This maintains proper blade speed and air flow to facilitate bagging or discharge of clippings. Mowing with a lower throttle setting causes blade to tear grass, resulting in poor lawn appearance.

When Bagging, be sure to release Engine (Blade) Control before attempting to remove and empty grass bag. Empty bag before it becomes overloaded, clogs mower and/or affects performance.



CAUTION: If clog or obstruction prevents grass flow, release Engine (Blade) Control (on BB/C model, move Throttle control to Stop) and disconnect spark plug wire before attempting to clear away any clogs.

Restarting engine will be easier if mower is allowed to completely discharge clippings before stopping engine.

On BB/C model; if engine stalls when engaging Blade Brake/Clutch control because of grass buildup under deck, rotate blade with rewind starter while holding control against handlebar to clear blockage.

On electric start model, if starter will not cycle because of grass buildup under deck, rotate blade with rewind starter to clear blockage.

Be sure your mower blade is sharp. A dull blade will tear grass blades. This usually results in a white cast over a freshly cut lawn. Later, tips of grass blades will turn brown.

A new lawn has much softer blades of grass and has a higher moisture content. It is important for this type of lawn to be cut with sharp blades.

Cutting height will vary with different types of grass, climate and individual preference. Generally, grass should be cut about 1-1/2" long in spring, and not less than 2" long in hot summer weather.

If grass is high, or if it contains a high degree of moisture, cut it first with mower set high and then cut it with mower set lower. This gives better distribution or collection of clippings and provides a clean second cut.

Height of cut should not be set too low on thick, lush lawns. Such grass, if cut too short, may die. This also applies to springy, heavy growth lawns. If blade is set too low, mower pan will drag on grass and restrict air flow thus reducing discharge or collection of clippings.

Grass should be cut when it is dry; not when it is wet from dew, rain or from watering. When wet, grass tends to pack inside mower pan or chute and will not discharge, mulch or bag properly, especially if height of cut is set too low.

To insure most complete and even cut, overlap each swath.

Operation (Continued)

Following the same pattern each time you mow your lawn can develop ridges at right angles to direction of mowing. By changing direction of mowing (when possible) you can prevent this.

When using side discharge, turn clockwise (right turn) when beginning to mow large open areas. This discharges clippings away from borderline objects (sidewalks, driveways, fences, etc.). After making a clockwise pass, mow in a counterclockwise (left turn) direction. This discharges clippings evenly over cut grass. Continuous clockwise mowing will cause a build up of clippings, preventing a uniform cut. Also, plan cutting so that you always trim with the left side of mower when using side discharge.

When mulching, grass clippings and/or leaves are circulated under mower pan and blade chops them into a fine mulch. This mulch is then evenly distributed over lawn. Best mulching is attained when cutting not more than 3/4 inch of grass.

A good fertilization program and frequent watering will keep your lawn weed free and green all year long. Due to variations in climate, soil and grass varieties, contact your local garden supply dealer, park or golf course superintendent, or county agent to obtain specific information pertaining to your area.

NOTE: Be sure to empty bagger and clean mower pan after each use. A dirty unit may not bag and/or cut grass properly.

Do Not allow grass clumps or a coating of grass and debris to collect inside of bag or mower pan. Avoid operating over bare ground intermittent with grass cutting as this causes dirt and grass to collect and cake under pan surface as well as in bag. To tip mower for cleaning under side of pan refer to Lubrication and Maintenance section of this manual.

Bag should be washed with hose and allowed to dry. Washing bag prevents debris buildup, that will clog mesh of bag, which will prevent proper air circulation and bagging of grass.

Lubrication and Maintenance

Ariens Dealers will provide any service which may be required to keep your mower operating at peak efficiency. Should engine repair or service be required, it can be obtained from an Ariens Dealer or an authorized engine manufacturer's service center.



WARNING: Stop engine, wait for moving parts to stop, and remove wire from spark plug (keep wire away from plug to prevent accidental starting) before attempting any lubrication or maintenance procedures.



CAUTION: DO NOT touch engine or parts which are hot from operation. Allow such parts to cool before servicing unit.

General

Mower does not require any lubrication. Wheel assemblies are designed for long life without additional lubrication. (Professional models have zerk fittings on drive carrier and rear axle).

Service Position

A handlebar position is provided for most convenient cleaning and service operations. (Tipping mower on its right side is best for Briggs & Stratton engine powered models.

To place handlebar in service position, remove braces from pins, rotate handlebar forward and place pins into holes of braces. (On Professional models, nuts and bolts replace pins.)

Lubrication and Maintenance (Continued)

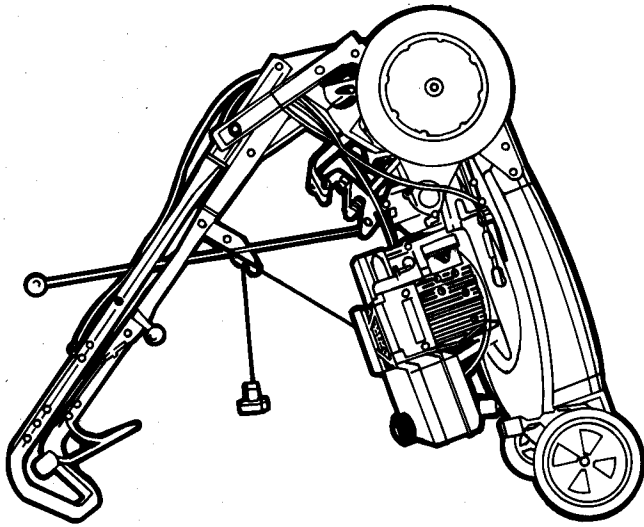


Figure 7: Service Position

IMPORTANT: When tipping to service engine or unit, keep engine spark plug or air cleaner side up.

NOTE: A piece of plastic bag may be used to seal fuel tank opening when tipping mower. To seal, remove fuel tank cap, cover fuel tank opening with plastic, replace and tighten cap securely before tipping mower. Be sure to remove plastic before attempting to operate mower.



WARNING: Gasoline is highly flammable and must be handled with care.

NOTE: On Briggs & Stratton powered models with fuel shut off valve, turn valve off and run engine dry before tipping unit.

IMPORTANT: If 4 cycle engine becomes "flooded" due to accidental tipping, clean air cleaner. Gasoline, drawn into cylinder may wash cylinder wall and shorten engine life. If cylinder wall becomes washed with gasoline, remove spark plug, put one teaspoon of oil in cylinder, turn engine over a few times and replace spark plug.

ENGINE OIL (4 cycle engines)

Use a high quality detergent oil classified "For Service SF, SE, SD or SC" with a viscosity of 10W-30 or straight 30 weight. Capacity is approximately 1-1/4" pints (1-3/4 pints for Professional model). Detergent oils keep engine cleaner and retard formation of gum and varnish deposits. DO NOT add anything to recommended oil.

Checking

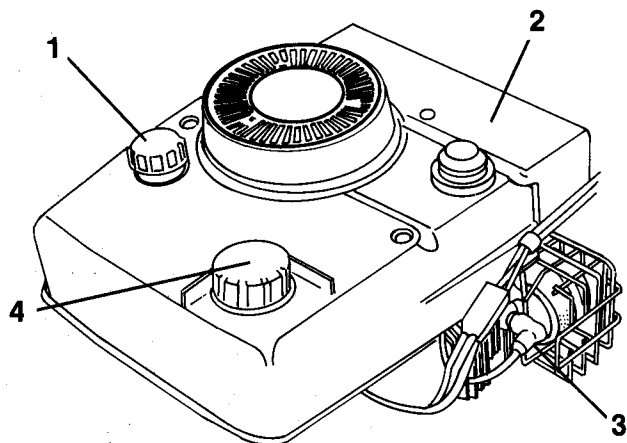
The engine crankcase oil should be checked daily or every five (5) hours of operation.

To check oil, place mower on flat, level surface. Wipe all debris from around oil fill cap.

Turn cap, remove dipstick from engine and wipe oil off dipstick. Insert dipstick into fill hole and turn slowly until cap bottoms firmly. Remove dipstick and observe oil level. If low, add fresh clean oil (of same type and viscosity as is in engine) to bring oil level to full (F) mark. Replace dipstick being sure to tighten cap firmly.

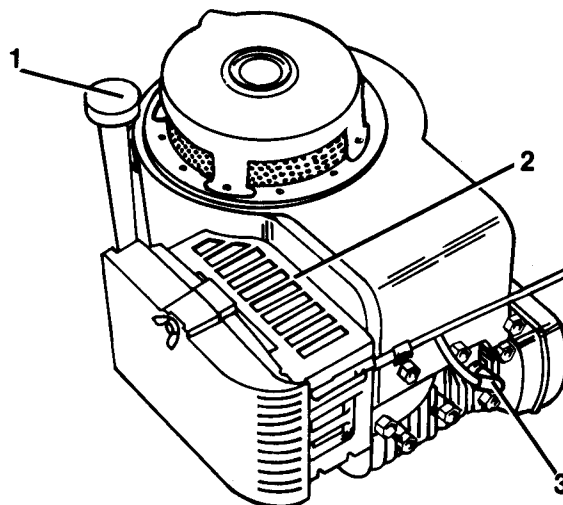
IMPORTANT: DO NOT over fill. Level must not exceed full (F) mark. Oil level MUST be maintained in safe operating range on dipstick at all times or engine damage will result.

Lubrication and Maintenance (Continued)



Tecumseh Engine

1. Oil Fill Cap and Dipstick
2. Air Cleaner



Briggs & Stratton Professional Engine

3. Spark Plug and Wire
4. Fuel Cap and Tank

Figure 8: Engine Service Locations

Changing Oil

IMPORTANT: Change engine crankcase oil after first two (2) hours of operation, thereafter, change oil every twenty five hours of operation (more often in dusty dirty conditions).

NOTE: Run engine just prior to changing oil. Oil will flow more freely and carry away more contaminants when warm.

Tecumseh engines: Place handlebar into service position and tip machine forward. Place a suitable container under oil fill, remove oil fill cap with dipstick and allow oil to drain into container.

Place machine back onto wheels, add fresh clean oil to proper level and be sure to replace oil fill cap with dipstick.

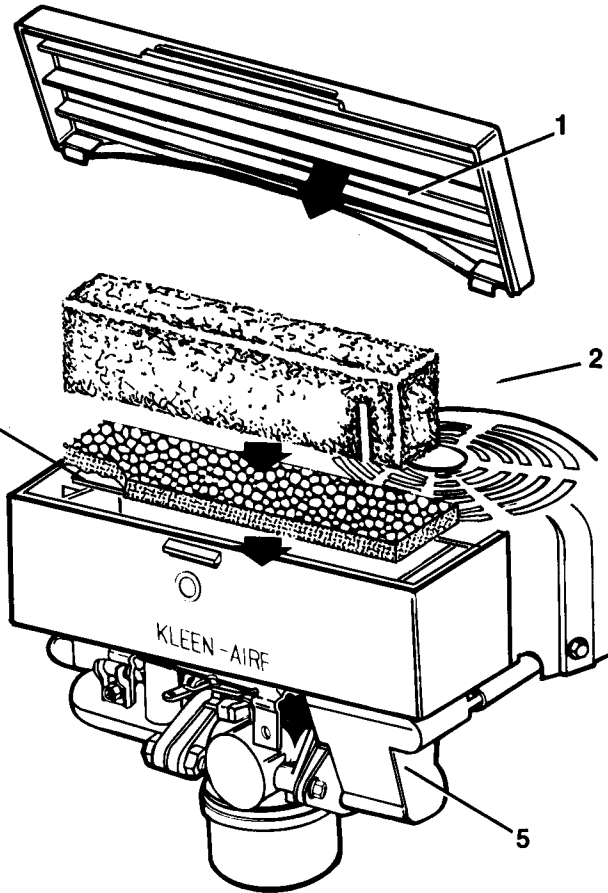
Briggs & Stratton engines: Remove Side Discharge Deflector if attached, tip machine onto right side, place a suitable container under oil fill, remove oil fill cap with dipstick and allow oil to drain into container.

Place machine back onto wheels, add fresh clean new oil to proper level. Be sure to replace oil fill cap with dipstick and Side Discharge Deflector if removed.

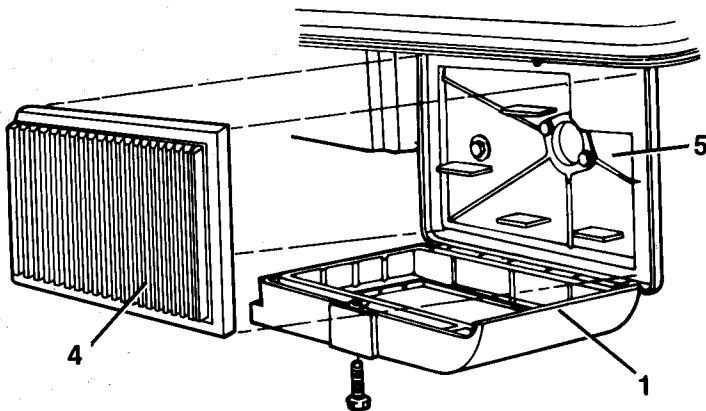
Lubrication and Maintenance (Continued)

Air Cleaner

IMPORTANT: DO NOT run engine with air cleaner removed. Operating engine with dirty air cleaner for only a brief time can cause engine damage.



Tecumseh Air Cleaner



Briggs & Stratton Air Cleaner

1. Cover
2. Foam Filter Element (Pre-cleaner)
3. Felt Filter Element
4. Cartridge
5. Body

Figure 9: Air Cleaners

Lubrication and Maintenance (Continued)

Inspect air cleaner every 25 hours of operation or every three months, whichever occurs first. On Sachs powered models, engine will run rough or become hard starting when air cleaner needs cleaning.

When dirty, filter elements should be removed and cleaned per the following instructions.

NOTE: Inspect air cleaner more often if unit is used under dirty dusty conditions.

To inspect and/or clean remove cover and filter element(s) and/or cartridge from air cleaner body.

NOTE: Clean air cleaner cover and body before installing clean or new components.

Foam Filter Element (Pre-cleaner) - Wash foam elements in warm water with detergent. Rinse thoroughly until all traces of detergent are eliminated, squeeze (don't wring) away excess water and air dry.

Soak foam element in clean fresh oil, wrap in paper towel or rag and squeeze out excess oil.

Felt Element - DO NOT bend, fold or twist felt filter element. Wash felt element in water and detergent solution. Rinse thoroughly in clear water until all traces of detergent are eliminated and air dry. DO NOT oil felt filter element.

Cartridge - Clean cartridge by tapping gently on flat surface. Replace cartridge if it is very dirty or becomes distorted.

Engine Cooling

The engine is air cooled. Air must circulate freely around engine and over cooling fins on cylinder head and block to prevent overheating.

Once a year or every one hundred (100) operating hours (more often if conditions require) clean engine fins and external surfaces of engine of dust, dirt, and oil deposits which can contribute to improper cooling.

IMPORTANT: DO NOT operate engine with blower housing removed - this will cause overheating and engine damage.



CAUTION: Periodically clean muffler and manifold areas to remove all grass, dirt and combustible debris. If engine muffler is equipped with spark arrester screen assembly, remove every 50 hours for cleaning and inspection. Replace if damaged.

Spark Plug

Spark plug should be cleaned or replaced (if necessary) and gap reset to .030" every 100 hours of operation or yearly whichever comes first.

To clean, remove debris from area around spark plug base, remove spark plug from engine, scrape and wash with a commercial solvent. DO NOT blast clean.

NOTE: Sparking can occur if wire terminal does not fit firmly on spark plug. Reform terminal if necessary.

Muffler

Worn out mufflers are more than just a noise nuisance and should be replaced immediately. Continued use could result in fire or explosion.

Mower Blade



CAUTION: Use sturdy gloves or padding to protect hands when working with mower blades.

Regularly check mower blades for wear and that lock washer(s) is fully compressed by cap screw(s) (requires 25-30 foot pounds of torque on cap screw(s)).

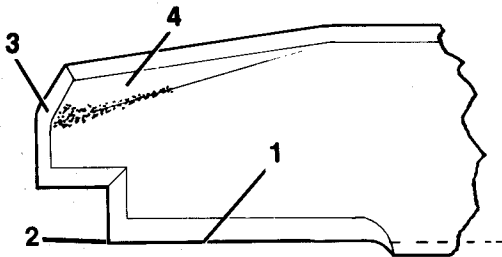
Lubrication and Maintenance (Continued)



WARNING: Stop engine, wait for moving parts to stop and remove wire from spark plug before attempting any maintenance procedures.

When blade needs sharpening, block blade to prevent rotation, remove cap screw(s), lock washer(s) and blade from shaft.

Sharpen both ends of blade at original angle (25 degrees), removing equal amounts of material from each end to maintain proper blade balance. New blades are balanced to within 1.3 inch ounces at factory, DO NOT grind around corner at tip of blade. If cutting edge of blade cannot be sharpened in a straight line to within 1/8 of an inch of its end, replace blade with Ariens replacement blade only. Blades are available through your Ariens Dealer.

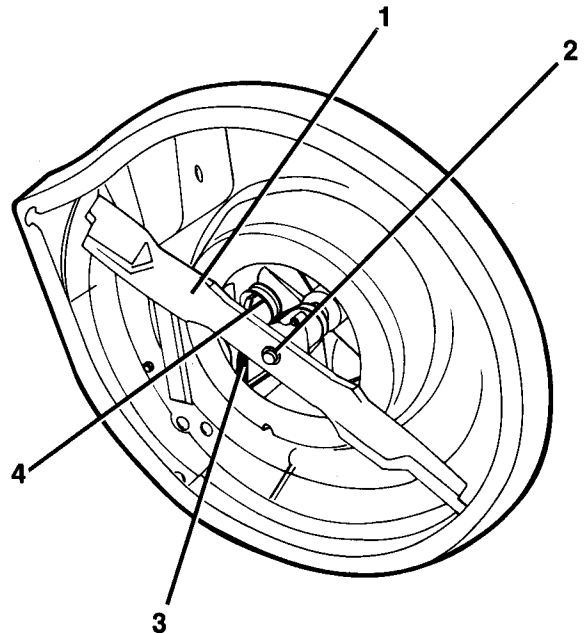


1. Cutting Edge
2. Square Corner
3. Air Lift Erosion
4. Air Lift

Figure 10: Mower Blade

Install blade, lock washer(s) and tighten cap screw(s) until lock washer is fully compressed (requires 25-30 foot pounds of torque on nuts).

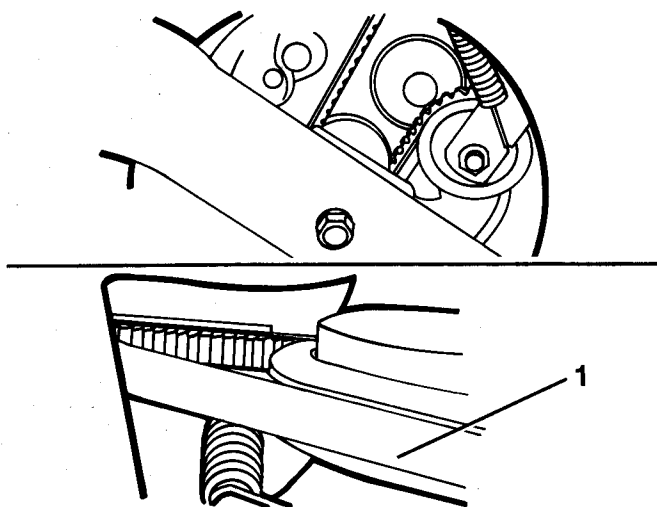
IMPORTANT: If mower is used under sandy soil conditions, replace blades when air lifts become eroded through at end.



1. Blade
2. Cap Screws & Lock Washer
3. Drive Belt
4. Idler

Figure 11: Mower Blade Replacement

Lubrication and Maintenance (Continued)



1. Drive Belt

Figure 12: Drive Belt

Drive Belt (self propelled models)

On BB/C model, brake/clutch assembly must be removed in order to change belt. See your Ariens Dealer if belt needs replacing.

To remove drive belt, position right hand rear wheel Height Adjustment lever in first notch and left hand rear wheel Height Adjustment lever in third notch. This provides clearance between friction wheel and drive disk.

Remove belt from idler, drive disk and engine pulley. Pull belt through opening under mower pan and over blade.

Check idler for free rotation of pulley and movement of pivot.

Replace drive belt in reverse order being sure that belt seats in pulley grooves with idler positioned on back (flat) side of belt.

Battery (electric start model)



CAUTION: Do not put battery in fire or mutilate; battery may burst or release toxic materials. Do not short circuit; battery may cause burns.

A 12 volt, 2.5 ampere hour sealed lead acid battery is supplied with unit. Engine alternator will normally keep battery fully charged with a 3 to 5 minute start/run cycle.

IMPORTANT: Use battery supplied only. DO NOT attempt to "jump start" mower.

To charge with battery charger, connect charger plug to mating plug on battery (not engine) and plug charger into 120 volt Alternating Current (A.C.) outlet. Charge for 24 to 48 hours (battery may be charged for up to 72 hours with no harmful effects).

An engine run time of at least 8 hours is required to charge a fully discharged battery.

Adjustments



WARNING: Stop engine, wait for moving parts to stop and remove wire form spark plug before attempting any adjustment procedures.



CAUTION: DO NOT change engine governor setting or over speed engine. Top governed no load speed at which engine may be operated is stated on I.D. Plate. DO NOT exceed this speed as personal injury may result.

Handlebar

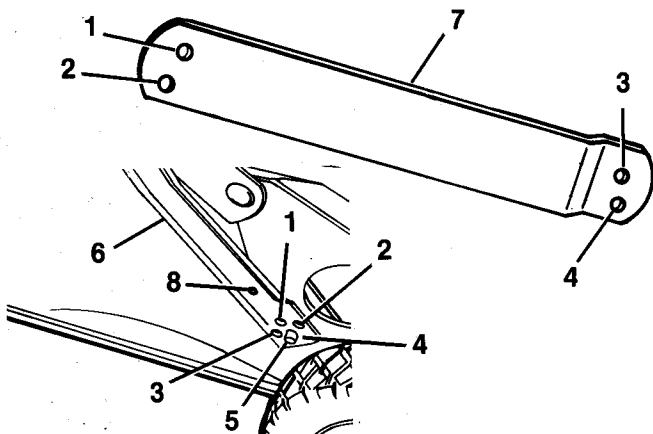
Holes in handlebar braces provide four height positions, a service and (except on professional models) a storage position.

To adjust to a safe comfortable operating height, use one of four hole positions; 1,2,3, or 4 in order of increasing height, in brace on both sides of mower and place pin through hole in brace. (On Professional models use hole positions 1 & 3, 1 & 4, 2 & 3 or 2 & 4.) Refer to illustration.

NOTE: Nuts and bolts replace pin on Professional models.

To place handlebar into the service position, rotate handlebar forward and place pin through hole in braces in any one of the above positions.

For storage, rotate handlebar forward and place pins through holes further up braces.



1. Hole No. 1
2. Hole No. 2
3. Hole No. 3
4. Hole No. 4

5. Pin
6. Brace
7. Professional Brace
8. Storage Position

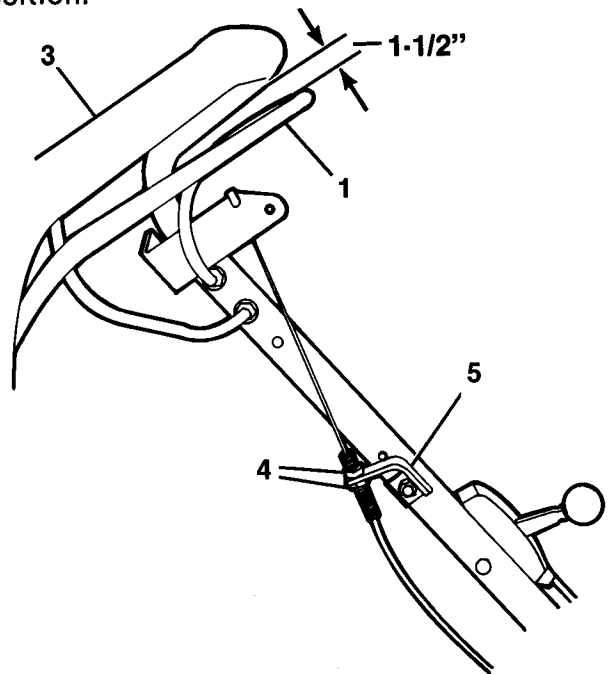
Figure 13: Handlebar Height

Engine (Blade) Control

On Engine Ignition/Brake (EI/B) models, Engine Control must stop engine ignition, at a point about 1-1/2" from handlebar as control is released. To check, start engine and slowly release Engine Control until engine stops firing.

Measure distance between handlebar and control at the point that engine stopped firing.

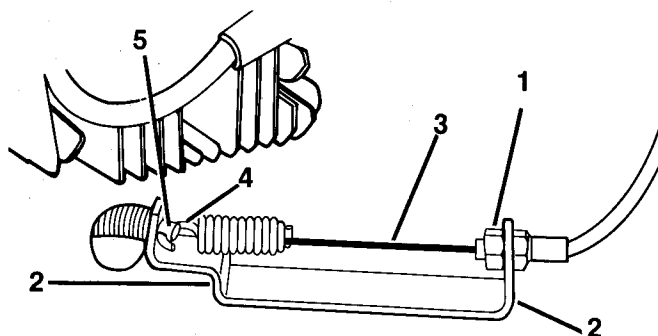
Turn cable nuts at handlebar mount clockwise if measurement is more than 1-1/2" or counterclockwise if measurement is less than 1-1/2". Turn nuts against mount to lock in position.



1. Engine Control
2. Blade Clutch Control
3. Handlebar
4. Cable Nuts
5. Mount

Figure 14: Engine (Blade) Control

Adjustments (Continued)



1. Cable Nuts
2. Bracket
3. Cable
4. Spring
5. Control Rod

Figure 15: Blade Clutch Control



CAUTION: Use sturdy gloves or padding to protect hands when working with mower blade.

On Blade Brake/Clutch (BB/C) models, there must be no slack in cable.

To check, rotate blade in it's cutting direction (this draws control rod fully in).

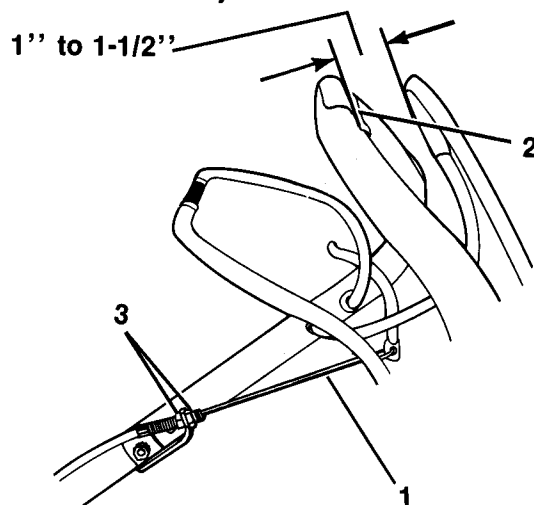
To adjust, if there is slack in cable, turn nuts on cable at handlebar end clockwise to remove slack.

Drive Wheel (self propelled model)

When Wheel Drive Control is squeezed toward handlebar, extension spring must start to extend when control is between 1" and 1-1/2" away from handlebar. To check, squeeze Wheel Drive Control toward handlebar until spring starts to open.

Measure distance between Wheel Drive Control and handlebar at handlebar indentation.

Turn cable nuts at handlebar mount clockwise if measurement is less than 1" or counter-clockwise if measurement is more that 1-1/2". Turn nuts against bracket to lock in position.

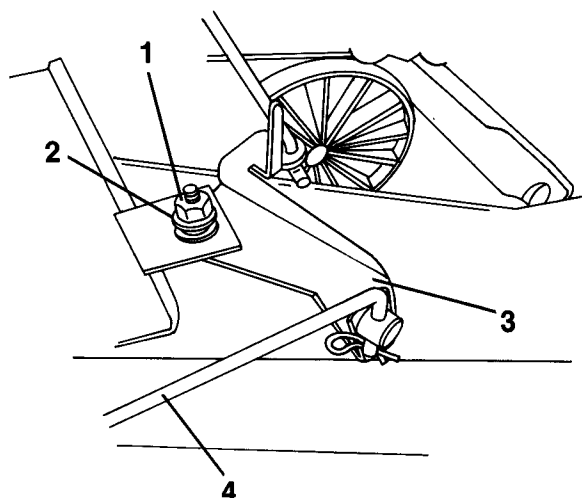


1. Extension Spring
2. Handlebar Indentation
3. Cable Nuts

Figure 16: Wheel Drive Control

Speed Control Bell Crank

To adjust, remove cover, fully compress the helical spring lockwashers with lock nut and then back lock nut off one half turn. Align notch in L.H. side of cover with bolt and secure with knob.



1. Lock Nut
2. Helical Spring Lockwashers
3. Speed Control Bell Crank
4. Speed Control Rod

Figure 17: Speed Control Bell Crank

Storage



WARNING: Never store mower in an enclosed area where fuel fumes may reach flame, sparks, pilot lights, or an ignited object. Drain fuel outdoors away from any ignition source. Use only approved (Red) fuel container.

Your authorized Ariens Dealer is trained and equipped to service your mower. A periodic checkup by your dealer will help reduce your maintenance costs.

Inspect mower for visible signs of wear, breakage or damage. Order any parts required and make necessary repairs to avoid delays when beginning use again.

Remove Grass Bag and clean out all debris prior to storage. Grass Bag may be stored in position on mower. Keep Grass Bag dry during storage.

On electric start models, fully charge battery and store in a cool dry location. (Refer to Battery in Lubrication and Maintenance Section.)

When storing mower for an extended period, refer to engine instruction for proper engine storage procedures.

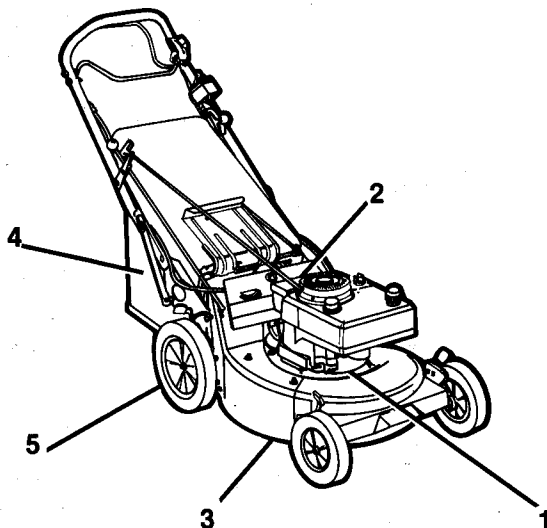
Clean unit thoroughly. Touch up all areas to prevent rust. Matching touch up paint is available from your Ariens Dealer. Store mower in a cool, dry protected location.

User Service Components

Publications are available for mower owners who wish to perform some of their own maintenance and service operations. Should a complete parts and/or repair manual be desired, use the convenient order form supplied with your warranty or order by machine model and serial number.

Mail Request to: Ariens Service
655 West Ryan Street
Brillion, WI 54110-1098

Components illustrated and described in this manual are most commonly used for consumer service and can be ordered through your Ariens Dealer. When ordering parts always include the Model and Serial Number of your unit to insure prompt service.



1. Drive Belt
2. Battery
3. Mower Blade
4. Grass Bag
5. Rear Protection Guard

Figure 18: User Service Components

Attachment

711024 Dethatcher

Contact your Ariens Dealer for more information.