

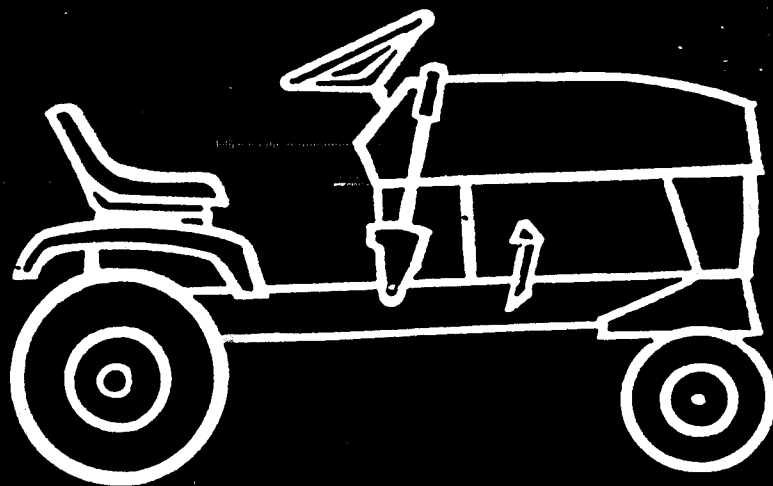
# Ariens

# 935

Series

Yard Tractor

## Owner's Manual



# A Message to Ariens Customers . . .

Welcome to the world of Ariens equipment. We are pleased that you have purchased the best equipment available. The care you give your 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 factory trained staff is kept well informed on the best methods of servicing Ariens equipment, and is ready and able to serve you. If engine repair or service 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 and Serial Number of the equipment and the 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 Number of your Yard Tractor are on a label on frame located near engine. Record numbers and use them whenever parts or service are required.

## Models

**Model 935015 (YT1238) Hydro**  
12 H.P. Kawasaki w/38" pan  
Serial No. 000101 and up

**Model 935019 (YT1232) Hydro**  
12 H.P. Briggs and Stratton w/32" pan  
Serial No. 000101 and up.

**Model 935020 (YT1238) Hydro**  
12 H.P. Briggs and Stratton w/38" pan  
Serial No. 000101 and up.

Model Number - Yard Tractor \_\_\_\_\_

Serial Number - Yard Tractor \_\_\_\_\_

Serial Number - Engine \_\_\_\_\_

## Safety Precautions

### Training

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

Understand and follow each Danger, Warning, Caution and instruction decal installed on equipment.

Use only attachments or accessories designed for your unit. See your Ariens Dealer for a complete list of recommended attachments or accessories.

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

NEVER allow children to operate equipment. DO NOT allow adults to operate unit without proper instructions.

DO NOT carry passengers.

### Preparation

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

Wear sturdy footwear. DO NOT operate tractor 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).

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 tractor 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. Wipe off any spilled gasoline before starting engine.

# Safety Precautions (Continued)

## 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.

Disengage power to attachment and make sure Speed Selector is in neutral (N) position before attempting to start engine.

Open doors if unit is run in garage, exhaust fumes contain carbon monoxide, an odorless and deadly gas. DO NOT run engine in an enclosed area.

Disengage power to attachment when tractor is being operated in reverse, transported or is not in use.

Look behind and use care when backing. Someone may have come up behind you.

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.

Tipping and/or loss of control of unit can be caused by; operating on slopes, rough terrain, turns, speed changes, slippery surfaces, and bagger load as well as any combination of them.

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

Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hazards and traffic.

Reduce speed and exercise extreme caution on slopes and in turns to prevent tipping or loss of control. Be especially cautious when changing direction on slopes and operating on wet or slippery surfaces.

DO NOT stop or start suddenly when going uphill or downhill. Mow up and down face of steep slopes. NEVER across face. If slope is too steep to back tractor up, slope is too steep for safe operation.

Use care when pulling loads or using grass bagger.

Use only approved draw bar hitch points. Limit loads to those you can safely control.

Disengage power to attachment, engage parking brake, stop engine, remove key, and wait for moving parts to stop before leaving operator's position for any reason, such as unclogging discharge chute, when making any repairs, adjustment, 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, disengage power to attachment, stop engine at once and remove key. Abnormal vibration is a warning of trouble. Repair any damage before restarting unit. (See your Ariens Dealer.)

After striking a foreign object, disengage power to attachment stop engine, and wait for moving parts to stop before leaving operator's position. Thoroughly inspect unit for any damage and repair damage before restarting and operating unit.

Take all possible precautions when leaving unit unattended. Disengage power to attachment, lower attachment so it is resting on ground or floor, engage parking brake, stop engine and remove key to prevent unauthorized use.

## Maintenance and Storage

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.

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

Use non-flammable solvent to clean parts - DO NOT use gasoline.

## Safety Precautions (Continued)

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 unit 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

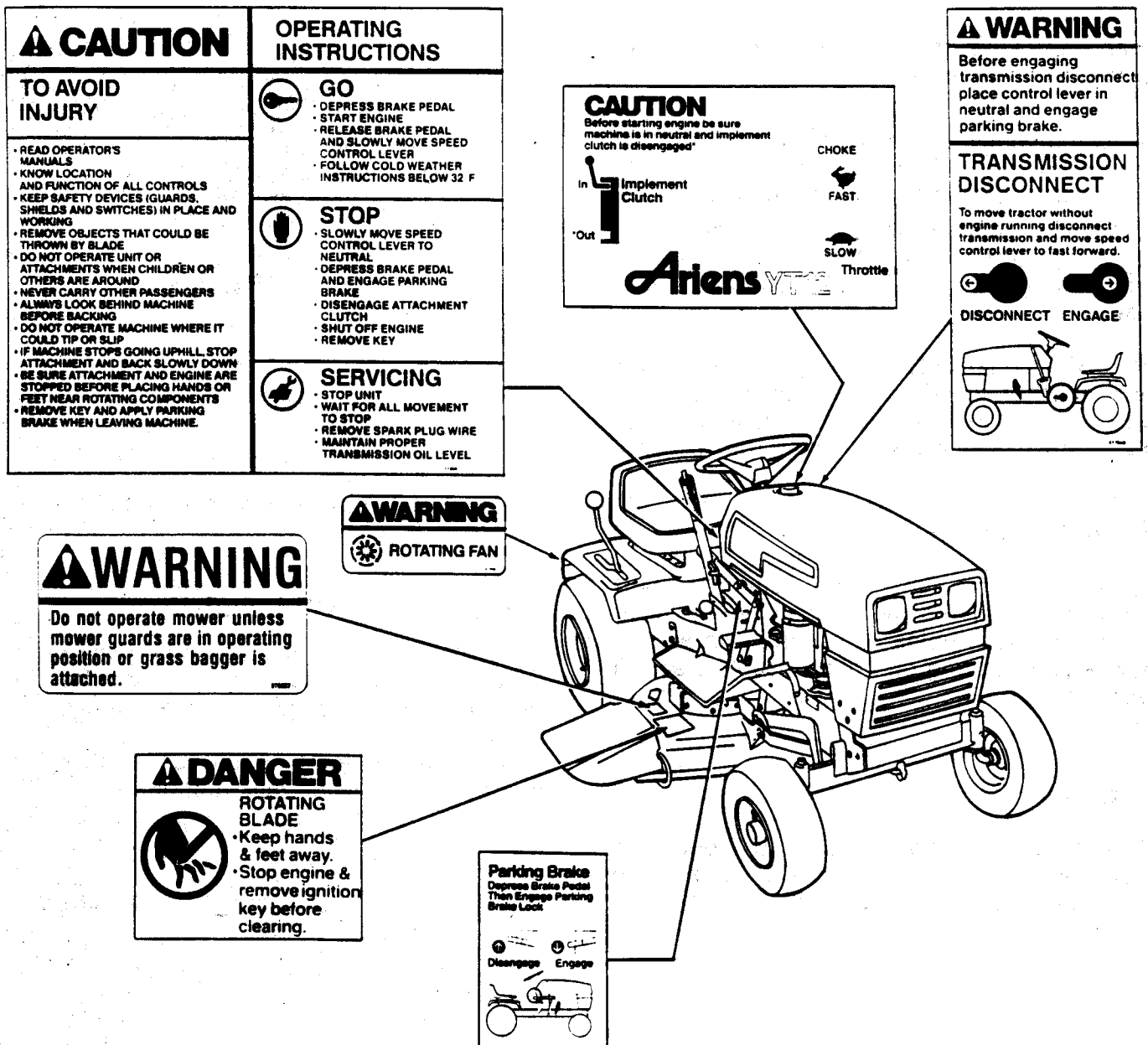


Figure 1: Decal Location

# 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 this unit.

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.

When removing tractor from carton, push manually only a short distance (10-15 feet)

To push on a level surface, disengage Parking Brake and with Speed Selector in Neutral, place Transmission Disconnect control in it's disconnect position, then place Speed Selector in fast forward. (Instructions for control operation are in Operation Section of this manual.)

**IMPORTANT:** NEVER push or pull (tow) tractor with another vehicle. Transmission damage will occur. When transporting use truck or trailer. Always shut fuel off when transporting.

## Steering Wheel

Place steering wheel onto column shaft (lubricate shaft) and with holes lined up, drive roll pin through holes to secure. (Pin should have equal spacing on both sides of steering wheel base.)

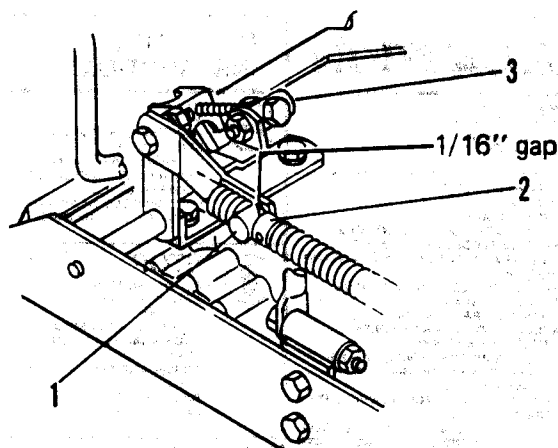
## Engine

**IMPORTANT:** Engine is shipped without oil in crankcase. Refer to instructions in Lubrication and Maintenance Section to fill.

## Parking Brake

Set Parking Brake and check gap between pivot and collar. There should be approximately 1/16" gap.

To adjust for 1/16" gap, loosen locking nut at clevis pivot, turn bolt in desired direction to obtain proper gap and tighten locking nut. Recheck gap by releasing and then engaging Parking Brake.



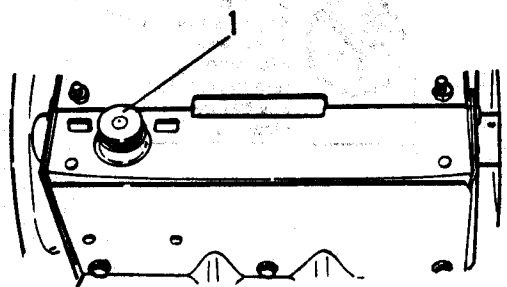
1. Pivot
2. Collar
3. Clevis Pivot

Figure 2: Parking Brake Adjustment

## Transmission Oil Level

**IMPORTANT:** Proper oil level and circulation is essential for hydro transmission operation and protection against severe internal damage.

When cold, oil level should be at mark indicated on expansion tank dipstick.



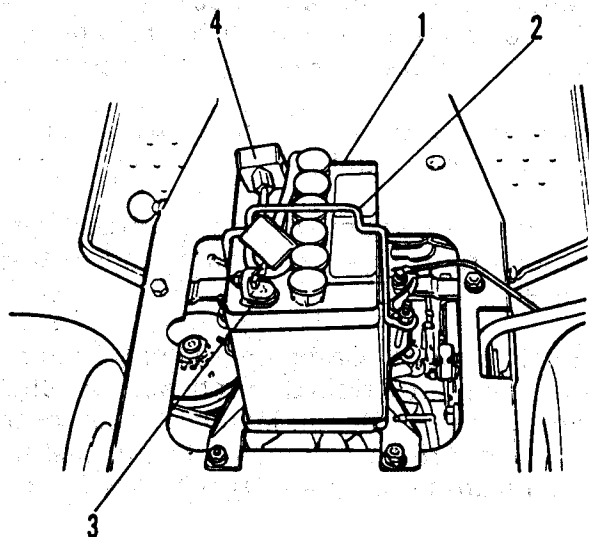
1. Tank Dipstick

Figure 3: Transmission Oil Tank

# Dealer Preparation For Operation

## Battery

Battery is shipped without electrolyte. After removing battery from tractor, fill each cell with electrolyte to level indicator and charge battery. (Instructions for battery removal and charging are in Lubrication and Maintenance section of this manual.)



1. Battery
2. Battery Hold Down
3. Positive Terminal (+)
4. Negative Terminal (-)

Figure 4: Battery

## Tire Pressure

Check tire pressure using a low pressure tire gauge for accurate reading. For correct pressures, refer to Lubrication and Maintenance Section.

## 38" Rotary Mower Attachment

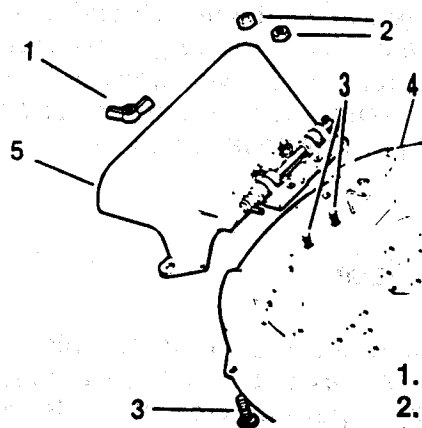
Install 38" Rotary Mower attachment according to instructions at end on Operation Section of this manual.

## 32" Rotary Mower Deflector



**WARNING: DO NOT** operate rotary mower without deflector properly installed and secured on mower pan.

Secure deflector to 32" rotary mower with two 1/4-20 X 5/8" carriage bolts (from inside out) and lock nuts on top of pan. Deflector is held down by one 1/4-20 X 3/4" carriage bolt and wing nut through deflector and pan flanges.



1. Wing Nut
2. Lock Nut
3. Carriage Bolt
4. Mower Pan
5. Chute Deflector

Figure 5: Chute Deflector Installation

## Rotary Mower - Level and Pitch

Check (and adjust if necessary) level and pitch of rotary mower according to instructions in Adjustments Section.

# Dealer Preparation For Operation

## Safety Interlock System



**DANGER:** Failure of interlock, together with improper operation of unit, could result in severe personal injury.

Check the safety interlock system to make sure that it is functioning properly. With operator on seat, tractor must not start unless Speed Selector is in neutral (N), Brake/Neutralizer pedal depressed and Implement Power is disengaged (Out). Engine **MUST** stop if operator leaves seat when Speed Selector is in any drive position, Parking Brake is not set or with Implement Power engaged (In). Refer to Repair Manual for adjustment or correction of improper interlock function.

## Brake/Neutralizer

With engine running, test unit by placing Speed Selector in forward and then depress Brake/Neutralizer pedal. Speed Selector should return to neutral (N) with no movement (creeping) of tractor. Repeat procedure for reverse. If movement (creeping) occurs, stop engine and refer to Repair Manual for adjustment procedures.

## Registration

Complete Yard Tractor Warranty Registration Form and mail original copy to Ariens Company.

Warranty is registered under model and serial number found on plate attached to frame near engine.

## Delivery

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

**IMPORTANT:** Remind customer to change oil in engine crankcase and check hydro transaxle oil level after first two (2) hours, and adjust mower belt after five (5) hours of operation.

Explain recommended lubrication and maintenance of unit.

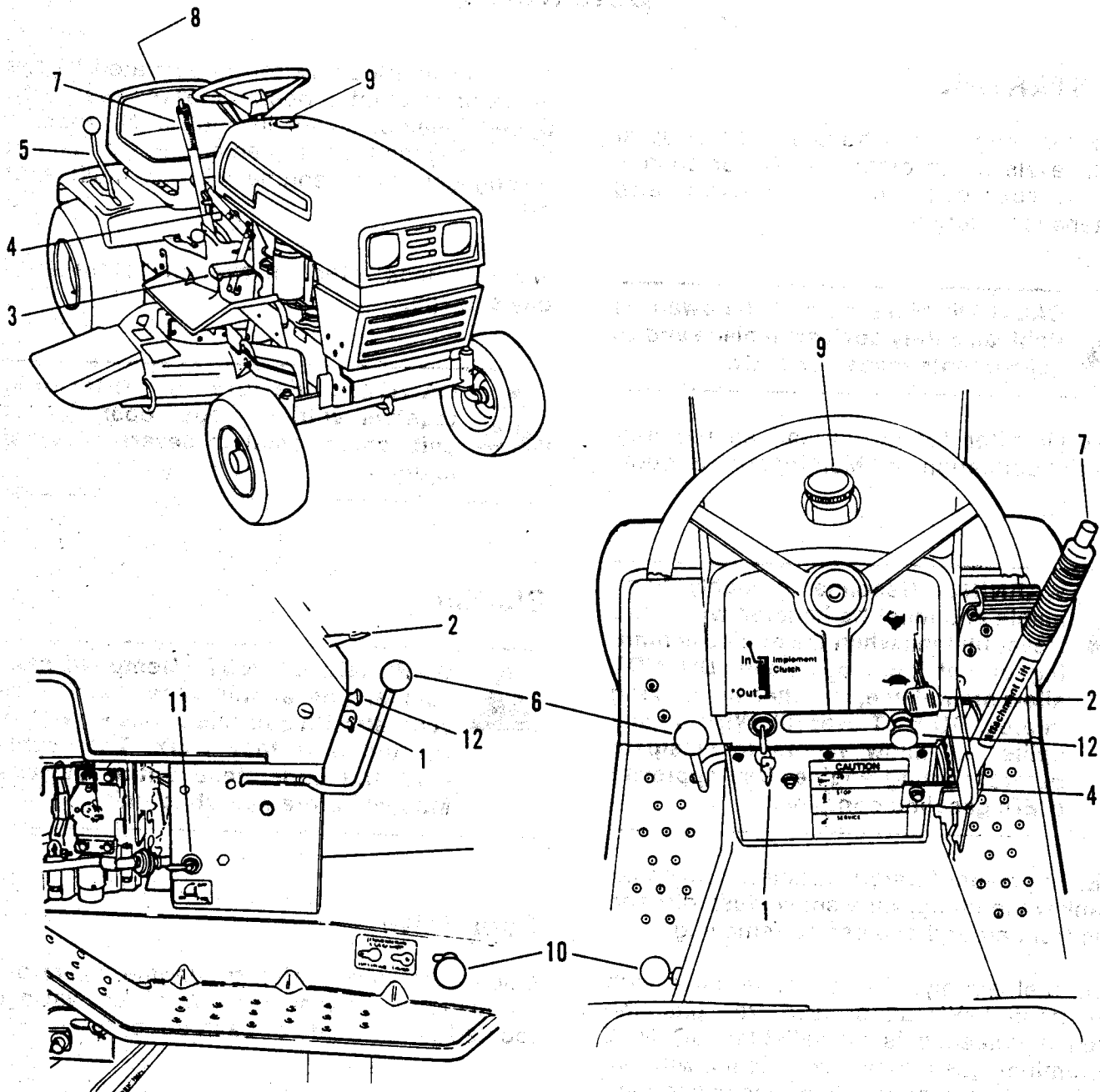
Advise customer on adjustments. Demonstrate how to mount and dismount mower.

Explain Ariens Company, Limited Warranty Policy, fill out Original Purchaser Registration Card, Parts and Repair Manuals 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 instructions. Advise him to thoroughly read and understand them.



# Controls and Features



1. Ignition/Key Switch
2. Throttle/Choke Lever
3. Brake/Neutralizer
4. Parking Brake
5. Speed Selector
6. Implement Power Lever
7. Attachment Lift lever
8. Battery
9. Fuel Tank Fill
10. Transmission Disconnect
11. Fuel Shut-Off (Kawasaki Models)
12. Light Switch

Figure 6: Controls and Features

# Operation

## PRE-STARTING

Check that engine and transmission oil is at proper levels using dipsticks. Fill or change per instructions in Lubrication and Maintenance Section.



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

Check air filter for dirt. Clean as required. Refer to Lubrication and Maintenance Section.

## Fuel



**WARNING:** Gasoline is highly flammable and must be handled with care. Never fill tank when the engine is running or hot from operation. DO NOT allow open flame, matches or smoking in area. DO NOT over fill. Wipe up any spills and allow vapors to dissipate before starting engine. Use approved (RED) gasoline container.

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

Check fuel supply. Fill gasoline tank with clean, fresh low lead or lead free gasoline (leaded if unleaded is unavailable). DO NOT use premium, gasohol or mix gasoline with oil. Use of lead free gasoline produces fewer combustion deposits.

**NOTE:** For cold weather starts, use a winter grade gasoline which has a higher volatility to improve starting. DO NOT use gasoline left over from summer.

## Seat

Be sure all controls can be reached safely from operator's position. To adjust seat, loosen the two rear mounting cap screws located under rear of seat. Slide seat to a safe comfortable position and tighten cap screws. (For extended movement, remove cap screws that retain seat frame to rear deck and secure in required position.)

The seat interlock switch is activated by the operator's weight. If operator leaves seat when Speed Selector is not in neutral (N), Parking Brake engaged or Implement Power is not disengaged (Out), engine ignition must shut off.

**NOTE:** Check interlock system before each day's usage.



**DANGER:** Failure of interlock, together with improper operation of unit, could result in severe personal injury.

## Starting



**WARNING:** DO NOT attempt to start your engine at this time. Familiarize yourself with controls to see what they do and how they work. Thoroughly read and understand entire Owner's Manual before operating unit.

## Fuel Valve

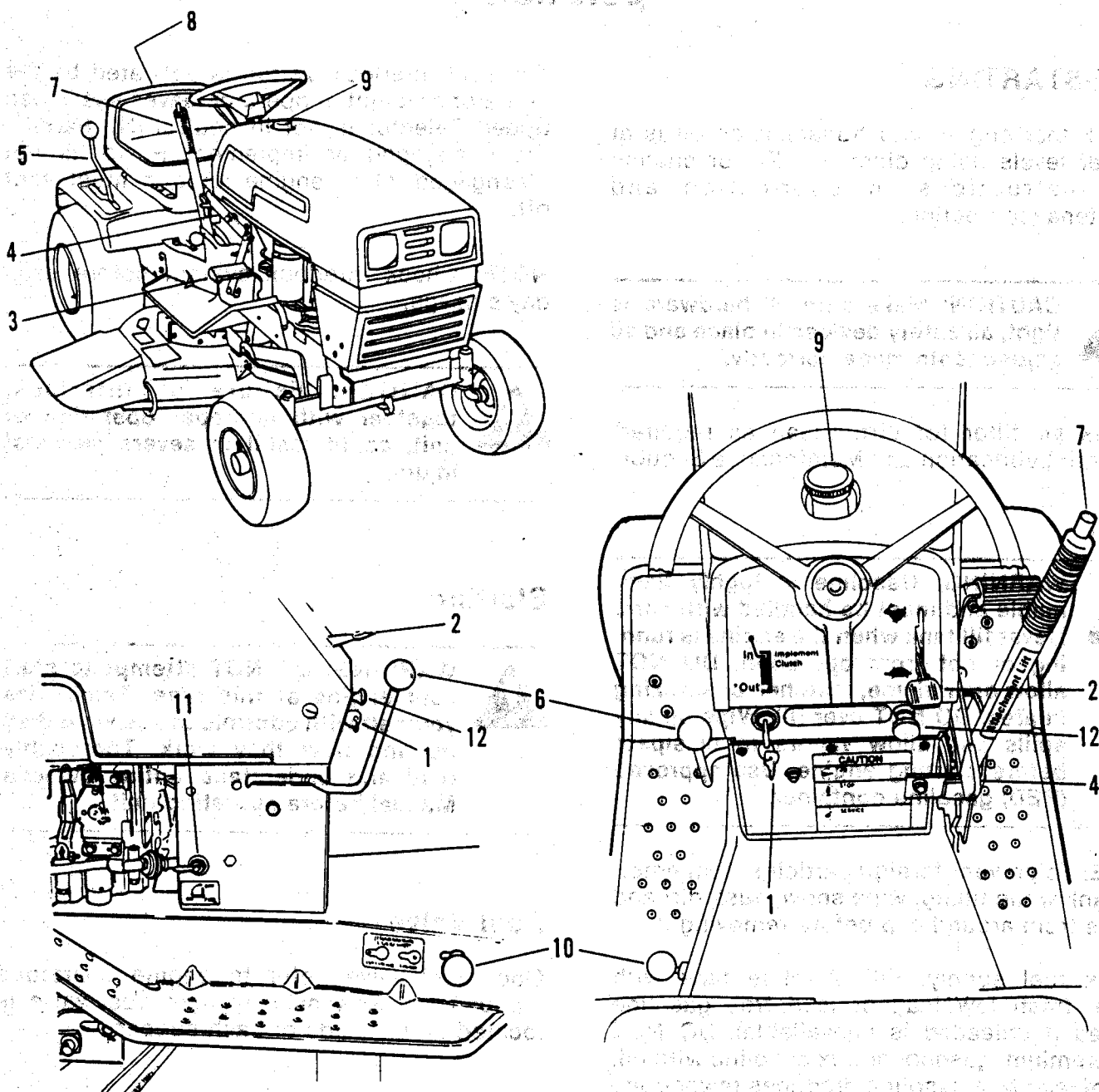
Open fuel valve (refer to engine operator's manual). On Kawasaki engines, fuel valve is located on L.H. side of dash support.

## Throttle/Choke

Throttle/Choke lever controls engine speed (to increase, push up - to decrease, pull down) and activates choke (push lever up and to right past offset).

To start a cold engine move lever to "CHOKE" position and after engine has started, gradually pull lever down to open choke and allow engine to warm up at 1/2 throttle setting. (It should not be necessary to choke a warm engine).

# Controls and Features



1. Ignition/Key Switch
2. Throttle/Choke Lever
3. Brake/Neutralizer
4. Parking Brake
5. Speed Selector
6. Implement Power Lever
7. Attachment Lift lever
8. Battery
9. Fuel Tank Fill
10. Transmission Disconnect
11. Fuel Shut-Off (Kawasaki Models)
12. Light Switch

Figure 6: Controls and Features

## Operation (Continued)



**CAUTION:** Idle speed of engine is 1400 RPM and top governed engine speed is 3250 RPM for Briggs & Stratton and 2800 RPM for Kawasaki engines. **DO NOT** change engine governor setting or over speed engine.

Attachments should be operated at full throttle unless otherwise specified in attachment Owner's Manual. Select desired travel speeds with Speed Selector.

### Ignition

With operator on seat, tractor will not start unless Speed Selector is in neutral (N), Implement Power is disengaged (Out) and Brake Pedal is depressed.

To start engine, place ignition key in ignition switch and turn it clockwise to (START) position. When engine starts, release ignition key. Turn ignition key counterclockwise to (OFF) to stop engine.



**CAUTION:** Turn ignition Key (OFF) and remove it before attempting any maintenance, adjustments, or leaving tractor unattended.

If engine fails to start on first attempt, turn ignition key (OFF), wait a few seconds and try again. Best starter life is obtained by using short starting cycles.

**IMPORTANT:** DO NOT operate starter motor more than 15 seconds per minute, as overheating and damage can occur.

After engine has started, allow it to warm up before applying load.

**IMPORTANT:** Run engine at 1/2 of (FAST) engine speed for at least five minutes in below freezing temperatures to prevent internal damage to engine and transaxle.

### Transmission Disconnect

**IMPORTANT:** DO NOT push or pull (tow) tractor with another vehicle as transmission damage will occur. When transporting, use truck or trailer.

**IMPORTANT:** When starting engine, in below freezing temperatures (32 degrees F or below) depress brake, place Transmission Disconnect in its disconnect position, allow engine to warm up, then slowly engage Transmission Disconnect and allow transmission to warm up before applying load.

To disconnect transmission, pull knob out, move it forward and release. To engage, move knob to rear and slowly release.

To manually push tractor short distances (10 to 15 feet), with engine stopped, place transmission disconnect in its disconnect position. Move Speed Selector to fast forward and manually push tractor to desired position. Return Speed Selector to neutral (N), apply Parking Brake and engage Transmission Disconnect.

### Speed Selector

Speed Selector control lever is used to select neutral (N) or variable forward or reverse speeds.

Speed Selector must be in neutral (N) position before engine will start and controls both tractor speed and direction. Moving Speed Selector forward from neutral (N) increases forward travel speed. Moving Speed Selector to the rear from (N), increases reverse travel speed.

Returning Speed Selector from any position to neutral (N) stops tractor.

### Brake/Neutralizer Pedal

Depressing Brake/Neutralizer pedal returns Speed Selector to neutral (N) and then applies brake. The pedal is an alternate to the Speed Selector for slowing down or stopping.

To stop tractor in emergency situations, fully depress Brake/Neutralizer pedal.

## Operation (Continued)

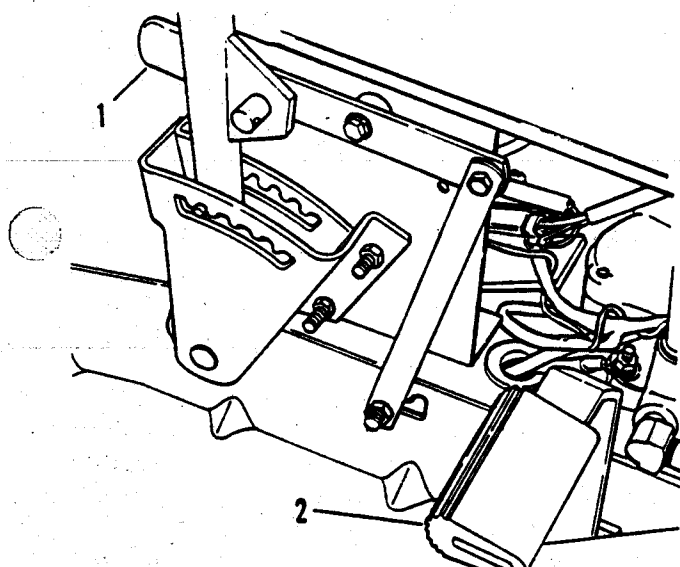
### Parking Brake



**CAUTION:** Before leaving operators position, engage parking brake and lock.

Parking Brake is provided to prevent tractor from rolling when parked or left unattended.

To engage parking brake, depress brake pedal and move Parking Brake lever to it's engaged position, then release brake pedal. To disengage, depress brake pedal and move Parking Brake lever to it's disengaged position.



1. Parking Brake Lever
2. Brake/Neutralizer Pedal

Figure 7: Parking Brake Lever

### Attachment Lift

To raise attachment, depress thumb button, pull Attachment Lift lever to rear, release button, and release Attachment Lift lever slowly.

To lower attachment, pull Attachment Lift lever to rear, depress thumb button and slowly allow lever to move forward until attachment rests on ground. Push lever all the way forward and release thumb button to allow for attachment float.

### Implement Power



**DANGER:** Failure of interlock, together with improper operation of unit, could result in severe personal injury. Engine must not start unless Implement Power is disengaged (Out).



**WARNING:** Keep hands, feet, hair and clothing away from rotating parts.

To engage Implement Power, push lever forward to (In) position to start attachment rotation. To disengage, pull lever to rear (Out) position to automatically apply blade brake and stop attachment rotation.

### Light Switch



**CAUTION:** Operate equipment only with good visibility and light.

Pull light switch knob out to turn front and rear lights on and push knob in to turn them off. (Lights on tractor will not light unless engine is running.)

### Stopping

To stop, move Speed Selector to neutral (N), disengage Implement Power (Out), lower attachment so that it rests on floor or ground, and engage Parking Brake.

Lower engine speed to idle, and allow engine to idle for a few minutes so that engine parts can cool evenly before shutting engine off.

Turn Ignition Key counterclockwise to stop engine.

Close fuel valve (refer to engine manufacturer's operator's manual). On Kawasaki engines, fuel valve is located on L.H. side of dash support.



**CAUTION:** Remove Ignition Key to prevent accidental starting or unauthorized use of tractor.

# Operation (Continued)

## Operating Tips

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

Be sure your mower blade(s) is/are 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.)

Proper leveling and pitch of rotary mower pan is essential to obtain a smooth even lawn mowing operation. Reverse or inadequate pitch makes blade cut grass twice, resulting in frazzled fresh cut lawn. Too much pitch causes trough type uneven cut. Improper leveling results in step type uneven cut. (Refer to Adjustments Section for Level and Pitch instructions.)

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.

When first using your rotary mower, cut grass a little longer than you did with narrower cutting units until you are sure that a greater cutting width will not cause scalping due to irregularities in lawn.

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 pan set high and then cut it with mower pan set lower. This gives better distribution 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 of grass clippings.



**WARNING:** NEVER attempt to clear rotary mower pan or discharge while engine is running. Disengage Implement Power (Out), stop engine, remove key, wait for moving parts to stop before attempting to clear away any obstruction.

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



**CAUTION:** Stay alert for holes, rocks, roots and hidden hazards in area of operation. Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for traffic.

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

Plan your cutting so that you always trim with the left side of mower pan.

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.

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.

Slow down when making turns. Short, fast turns can cause scuffing (outside front tire slides and pulls out grass), step type cutting or some grass may not be cut.

## Operation (Continued)

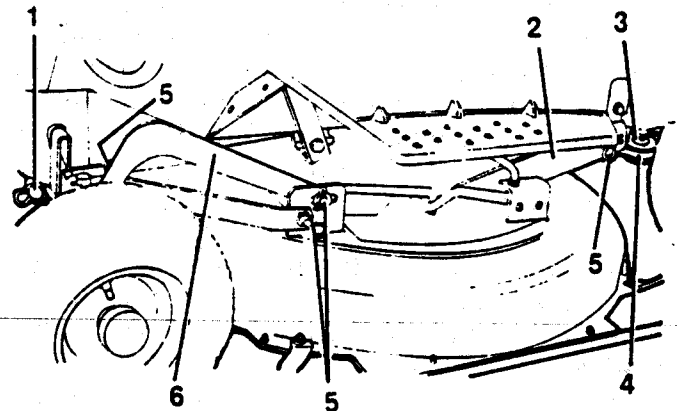
When mowing, regulate forward travel speed with Speed Selector and always operate engine at full throttle. This maintains proper blade speed and air flow to facilitate discharging of clippings. Mowing with a lower throttle setting causes blade to tear grass, resulting in poor lawn appearance.

A good fertilization program and frequent watering will help 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 clean mower pan after each use. Do not allow grass clumps or a coating of grass and debris to collect inside of mower pan. Avoid operation over bare ground intermittent with grass cutting as this causes dirt and grass to collect and cake under pan surface.

Remove rear hangers from tractor by removing hair pins, washers and clevis pins then hanger from unit and pull mower pan from under tractor.

Install rotary mower in reverse order being sure to check belt, mower brake, level and pitch according to instructions in Adjustments Section of this manual.



### Rotary Mower Removal

With rotary mower lowered, remove hair pin, washer and brake link from stud at attachment idler.

With Implement Clutch disengaged, raise rotary mower, loosen power take-off (PTO) belt finger hardware and remove mower drive belt from pulley.

Lower rotary mower, remove hair pins and washers that secure front hangers to mower pan and tow hook to mounting post. Disconnect tow hook and hanger arms from unit.

1. Tow Hook and Mounting Post
2. Rear Hanger
3. Attachment Idler
4. Mower Drive Belt
5. Hair Pins
6. Front Hanger

Figure 8: Rotary Mower Removal

## Lubrication and Maintenance

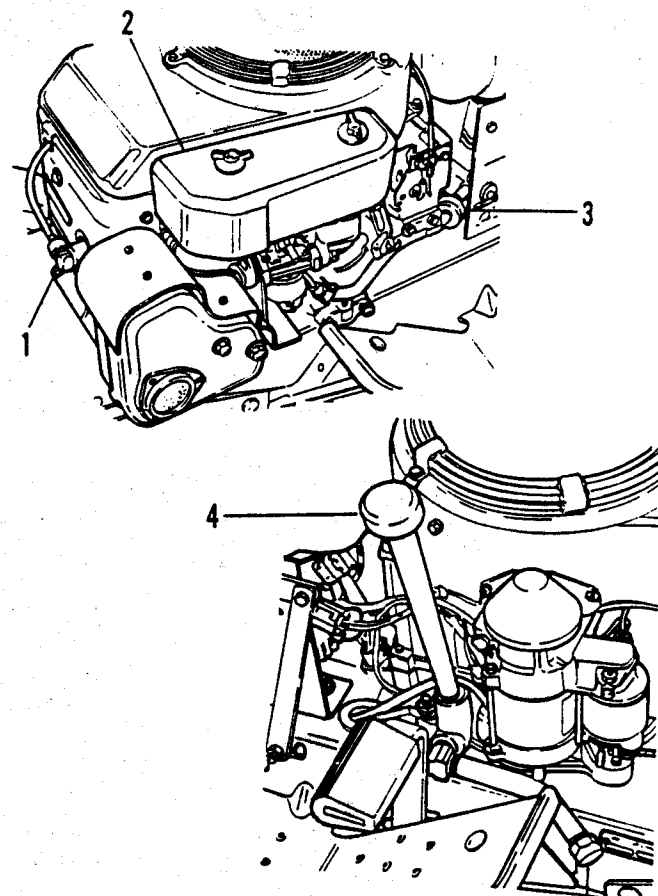
Ariens dealers will provide any service which may be required to keep tractor operating at peak efficiency. Should engine or transaxle service be required, it can be obtained from an Ariens dealer or an authorized engine or transaxle manufacturer's service center.



**WARNING:** Stop engine, remove key and wait for moving parts to stop before attempting any lubrication or maintenance procedures.



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



1. Spark Plug
2. Air Cleaner
3. Fuel Filler
4. Oil Filter
5. Oil Drain

### Figure 9: Engine Components

## Engine Oil

Use a high quality oil classified for Service SF, SE, SD or SC. These oils keep engine cleaner and retard formation of gum and varnish deposits. DO NOT add anything to recommended oil.

Refer to chart for recommended viscosity grades to use with temperature range anticipated before next oil change.

Chart from engine manufacturers instructions.

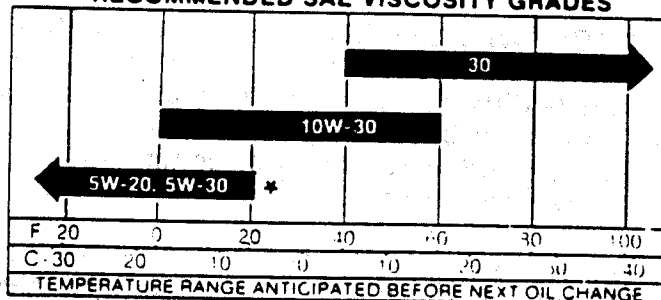
\*If not available, a synthetic oil may be used having 5W-20 or 5W-30 viscosity.

## Lubrication and Maintenance Schedule

Hours of Operation/ Time Interval	Service Required
Every 5 Hours Or Daily	Check Engine
Every 25 Hours or Monthly	Check Hydro Oil Oil Pivot Points as Illustrated *Service Engine Air Filter *Change Engine Crankcase Oil Service Battery Check Tire Pressure Check Brake Adjustment Check Mower Belt Adjustment
Every 50 Hours Or Quarterly	Grease Steering System, Front Axle Spindles, Intermediate Shaft and Mower Input Spindle
Every 100 Hours Or Annually	Check Spark Plugs Replace Fuel Filter *Clean Air Filter *Clean Engine and Hydro Cooling Fins

\*Under extremely dusty dirty conditions it may be necessary to service more often.

### RECOMMENDED SAE VISCOSITY GRADES





## Lubrication and Maintenance (Continued)

### Checking

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

To check oil, park tractor on a flat level surface, stop engine, raise hood and wipe all debris from around dipstick cap.

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

### Changing

**IMPORTANT:** Change oil after first 2 hours of operation. Thereafter change oil every 25 hours of operation (more often in dusty, dirty conditions). See chart for proper type and viscosity.

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

Drain engine crankcase by removing oil drain cap. After oil has drained, replace cap and lift hood.

Remove oil fill cap and dipstick. Pouring slowly, fill crankcase with approximately 3 pints of oil. Check oil level with dipstick, making sure you replace dipstick and tighten cap firmly.

### Air Cleaner

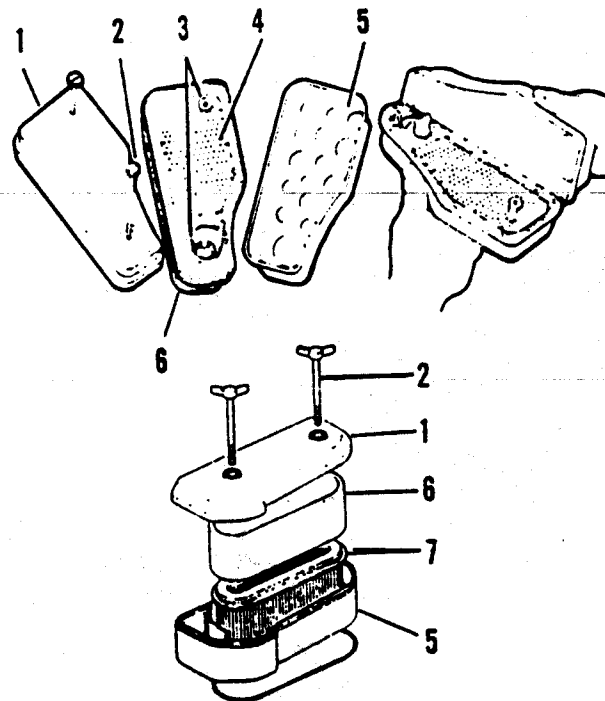
**IMPORTANT:** DO NOT run engine with air cleaner removed. Operating engine with an extremely dirty air cleaner for only a brief period of time can cause engine damage. DO NOT blow dirt off cartridge with compressed air. This will damage cartridge.

Inspect foam filter every twenty five (25) operating hours (more often if unit is used under extremely dirty or dusty conditions).

On units with paper cartridge, clean every fifty (50) hours by tapping gently to remove dust. If very dirty, wash in detergent and water and dry thoroughly. Replace with new paper cartridge yearly or every 300 hours or if cartridge becomes distorted.

Remove the air cleaner cover by; removing screws, or lifting up and outward on tab depending on which type of air cleaner is on your engine.

Remove filter and wash thoroughly in warm water and detergent. Rinse in clear water and wrap filter in clean cloth and squeeze (DO NOT twist) until dry.



1. Cover
2. Screws
3. Spacers
4. Screen
5. Body
6. Foam
7. Paper Cartridge

Figure 10: Air Cleaner (Typical Examples)

Saturate filter with engine oil and squeeze (DO NOT twist) to distribute and remove excess oil.

Clean inside of cover and air cleaner body. Install filter, cover and secure.

# Lubrication and Maintenance (Continued)

## Fuel Filter



**WARNING:** Gasoline is flammable and must be handled with care. DO NOT allow open flame, matches or smoking in area. Wipe up any spills. Use approved (RED) fuel container.

Fuel filter should be replaced every season.

## Engine Cooling

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



**CAUTION:** Use non-flammable solvent to clean parts - DO NOT use gasoline.

Every 100 operating hours or yearly (more often if conditions require) remove blower housing and clean cooling fins. Also clean external surfaces of your 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 Plugs

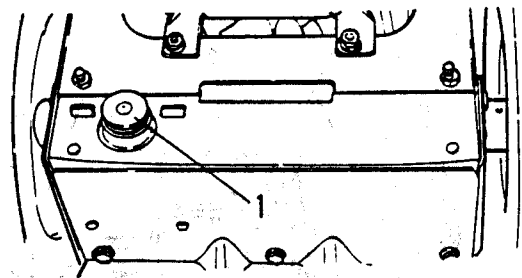
Spark plugs should be cleaned or replaced (if necessary) and gap reset to .030" every 100 hours of operation or yearly, whichever comes first.

To clean, remove spark plug from engine, scrape or wire brush, and wash with a commercial solvent. DO NOT blast clean.

**NOTE:** Sparking can occur if wire terminal does not fit firmly on spark plug. Re-form terminals if necessary.

## Transaxle

Hydro transaxle should be checked for proper oil level every 25 hours (unless leakage is apparent).



1. Tank Dipstick

Figure 11: Transmission Oil Tank

**IMPORTANT:** Proper oil level and circulation is essential for hydro transmission operation and protection against severe internal damage.

To check, raise rear deck, clean area around expansion tank cap. When cold, oil level should be at mark indicated on expansion tank dipstick. If level is low, add SAE 20W-20 motor oil to bring level up to mark. DO NOT use multiviscosity oils.

**IMPORTANT:** If leakage occurs, the natural color of the fluid has become black or milky, is possible that overheating or water contamination exists. Have transaxle checked by your Ariens Dealer.

# Lubrication and Maintenance (Continued)

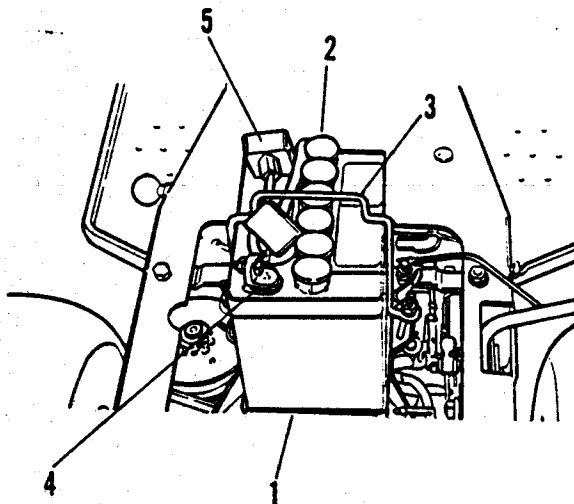
## Battery



**WARNING:** Batteries produce explosive gases which can cause personal injury. DO NOT allow flames, sparks or any ignited object to come near battery. When charging or working near a battery, always shield your eyes and provide ventilation.



**CAUTION:** Keep batteries out of reach of children. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing. In case of acid contact with skin, eyes or clothing, flush immediately with water for a minimum of 15 minutes. If acid is swallowed, drink large quantities of milk, egg or vegetable oil. Call a physician immediately.



1. Battery
2. Battery Caps
3. Hold Down
4. Positive Terminal (+)
5. Negative Terminal (-)

Figure 12: Battery

Every 25 hours or each week check electrolyte level of each cell by removing caps one at a time. The electrolyte level should be at level indicator. Use distilled water to fill each cell if needed. Install and tighten each cap after checking.

**IMPORTANT:** When distilled water is added to battery during freezing weather, battery must be charged to mix water with electrolyte, or water will remain at top and freeze.

Keep battery and its terminals clean, and inspect monthly to maintain best performance.



**WARNING:** DO NOT allow tools or other objects to come into contact with both terminals at same time. When removing battery from tractor, remove negative (-) cable first to reduce risk of sparks.

To clean terminals remove battery from tractor by removing cables. Loosen tie down rod nuts and lift battery out. Clean or service battery away from unit. Remove corrosion from battery terminals and cable connections with a wire brush, then wash with a weak baking soda solution.

After cleaning, apply a thin coat of grease or petroleum jelly to terminals and cable ends to retard corrosion. Reinstall battery.



**CAUTION:** Connect positive (+) cable first, negative (-) cable last.

To charge battery remove battery from tractor, remove vents, and charge at a rate of 4 to 6 amps for 10 hours on a fully discharged battery. (Specific Gravity reading of 1260 plus or minus 5 points on all cells.)

**IMPORTANT:** DO NOT fast charge. Charging at a higher rate will damage or destroy battery.



**WARNING:** When charging battery, remove it from tractor and make certain that you connect positive (+) lead of charger to positive (+) terminal, and negative (-) lead to negative (-) terminal. Reverse connections can cause sparks and potential unsafe conditions.

# Lubrication and Maintenance (Continued)

## General Lubrication

**IMPORTANT:** Wipe each grease zerk fitting clean before and after lubrication. Keep grease and oil off belts to avoid slippage and deterioration.

**NOTE:** Use Ariens Multi-Purpose Grease (Part Number 000150) or good grade of general purpose grease at zerk fittings and oil at lubrication points.

The steering system, front wheels, brake/neutralizer shaft support and pivot points, should be lubricated every 50 hours of operation, or every 3 months, whichever occurs first.

Oil locations and grease fittings are indicated below.

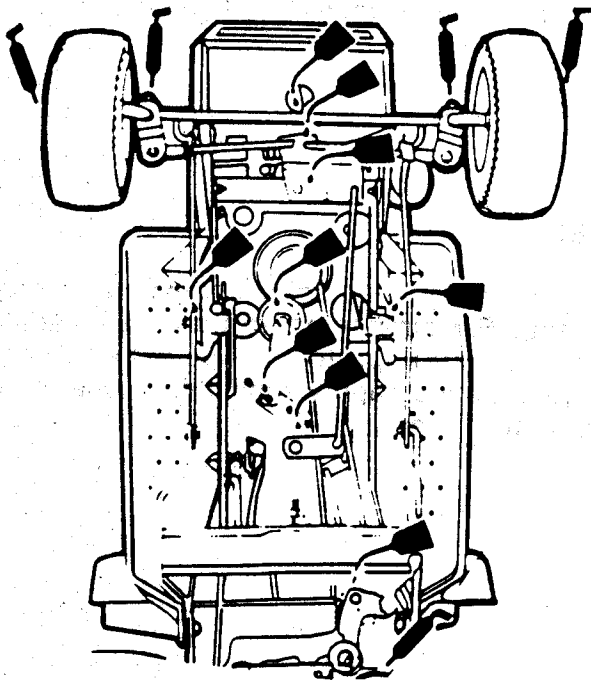


Figure 13: Oil and Grease Locations

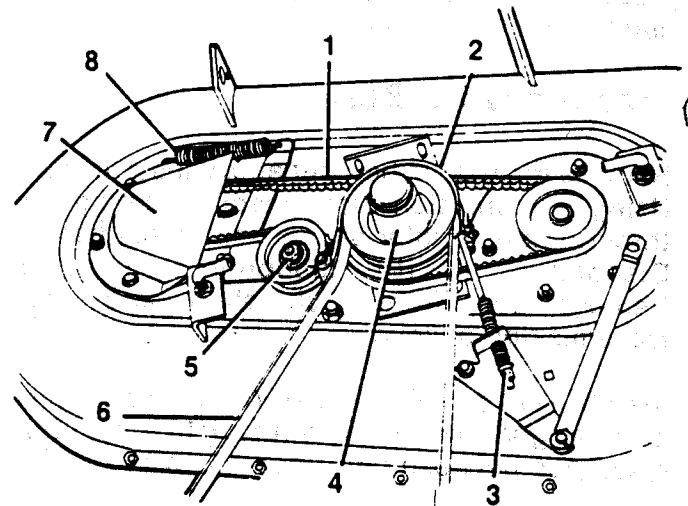
## 38" Rotary Mower Belt

To replace belt on 38" rotary mower, remove mower from tractor (per above instructions) and belt cover from pan.

Disconnect idler spring, and remove hair pin that secures brake band at pivot point. Raise brake band up and rotate it away from pulley.

Remove old belt from pan and install new belt in reverse order being sure that belt is seated in pulley grooves.

After installation of new belt, check belt adjustment according to Mower Brake in Adjustments Section of this manual.



- |                     |                 |
|---------------------|-----------------|
| 1. Mower Belt       | 5. Idler        |
| 2. Brake Band       | 6. Mower Belt   |
| 3. Brake Adjustment | 7. Belt Cover   |
| 4. Drive Pulley     | 8. Idler Spring |

Figure 14: 38" Mower Belt Replacement

# Lubrication and Maintenance (Continued)

## Main Drive Belt



**WARNING:** Stop engine, remove key and remove wire from spark plug before attempting to replace belts.

Remove front or center mounted attachment according to instructions in this or attachment Owner's Manual.

Remove cotter pin, washer and transmission disconnect actuating rod from idler arm.

Disconnect main idler spring from frame and remove belt from engine pulley.

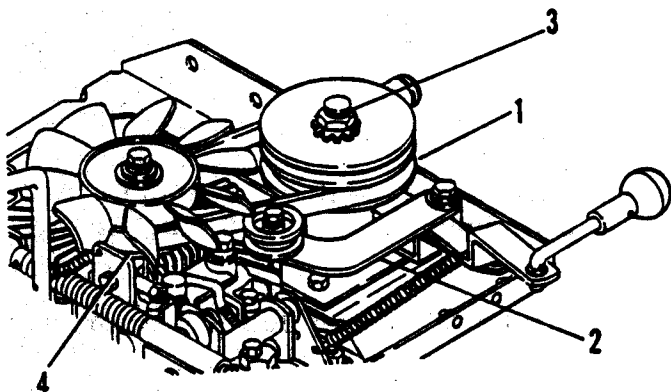
Remove belt from jack shaft pulley and from unit.

Install new belt in reverse checking for belt alignment and clearance.

## Traction Drive Belt

Remove main drive belt per above instructions. Using transmission disconnect actuating rod through hole in idler arm, place Transmission Disconnect in it's disconnect position. Remove belt from jack shaft and then transmission pulleys.

Install new belt in reverse order and secure belt finger hardware with 1/16" to 1/8" clearance between belt fingers and belt.



1. Traction Drive Belt
2. Idler Arm
3. Jackshaft
4. Transmission Pulley

Figure 15: Traction Drive Belt

## Tires

**NOTE:** Keep tires properly inflated at all times. For proper tire inflation when working under various conditions, refer to chart below. Use a low pressure tire gauge for accurate pressure readings.

### Tire Size -- Loading

	Light	Medium	Heavy
Front	8 psi	12 psi	16 psi
Rear	6 psi	8 psi	10 psi

Check tire pressure at least once a month. Over inflation may cause operator discomfort and excessive tire tracks on lawns or soft surfaces, while under inflation causes short tire life.

**NOTE:** After checking and/or inflating, replace and tighten valve caps to prevent air loss.

## Seat

Clean seat regularly, using a vinyl cleaner (not solvent). Extreme temperatures can damage seat when left unprotected against weather. If seat should tear, apply vinyl repair tape to protect damaged area.

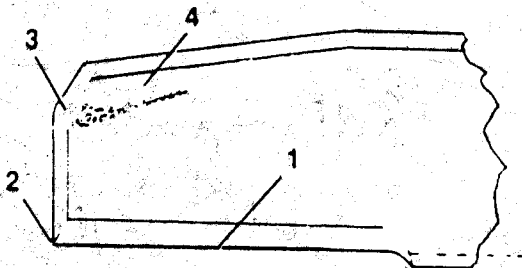
# Lubrication and Maintenance (Continued)

## Mower Blade



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

Regularly check mower blade(s) for wear (vanes if used) and that lock washer is fully compressed by nut (requires 50-60 ft. lbs. of torque on nuts).



- 1. Cutting Blade
- 2. Square Corner
- 3. Air Lift Erosion
- 4. Air Lift

Figure 16: Mower Blade



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



**CAUTION:** Wear of mower blade will cause structural weakness. DO NOT install new or replacement vanes on worn blades.

When blade needs sharpening, block blade to prevent rotation and remove nut, lock washer 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.

Install blade and lock washer and tighten nut until lock washer is fully compressed (requires 50-60 ft. lbs. of torque on nuts).

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

# Adjustments

Ariens Company recommends that you have adjustments made by your Ariens dealer. He has the knowledge and tools to properly perform adjustments which may be required to keep your equipment operating at peak efficiency. Should you decide to make the following adjustments on your unit yourself, Ariens Company recommends that you call your dealer for answers to any questions that might arise.

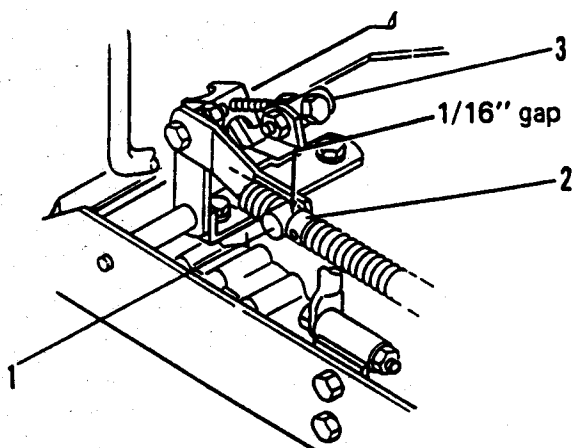


**WARNING:** Lower attachment, engage parking brake, stop engine, remove key, wait for moving parts to stop before leaving operator's position and attempting to make any adjustments.

## Parking Brake

Set Parking Brake and check gap between pivot and collar. There should be approximately 1/16" gap.

To adjust for 1/16" gap, loosen locking nut at clevis pivot, turn bolt in desired direction to obtain proper gap and tighten locking nut. Recheck gap by releasing and then engaging Parking Brake.

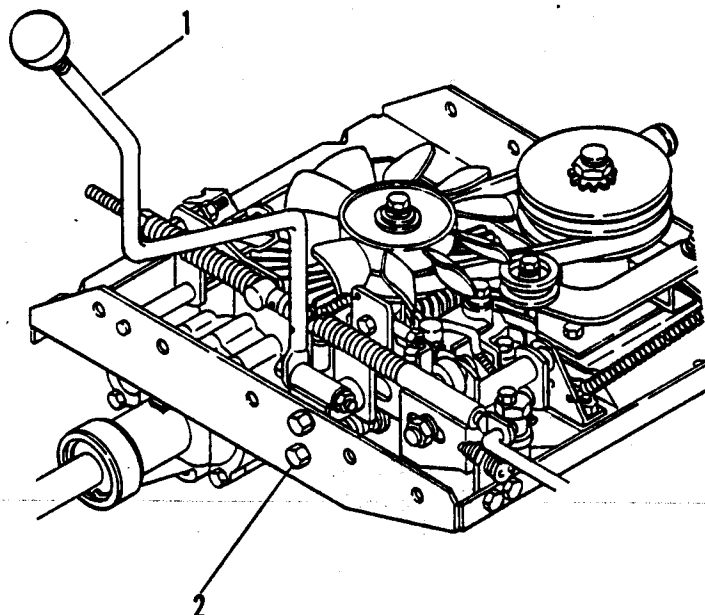


1. Pivot
2. Collar
3. Clevis Pivot

Figure 17: Parking Brake Adjustment

## Speed Selector

If tractor slows down or speeds up without manually moving Speed Selector, increase pressure of Speed Selector friction washers by turning friction bolt clockwise.



1. Speed Selector
2. Friction Bolt

Figure 18: Speed Selector Lever Adjustment

## Mower Level (Side to Side)

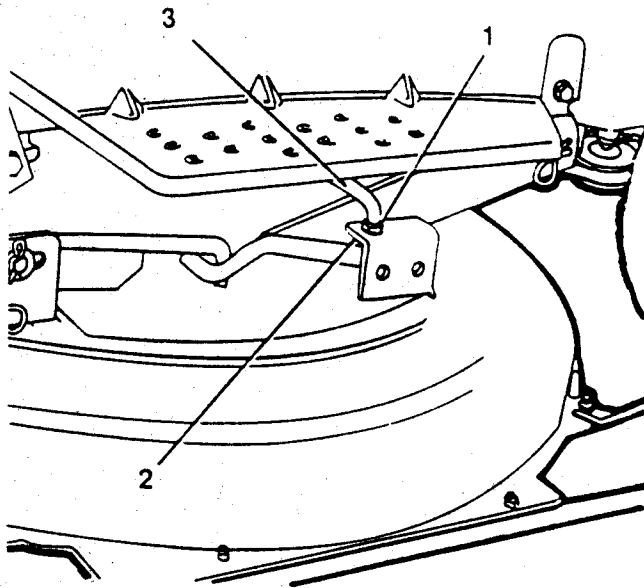


**WARNING:** Stop engine, remove key, wait for moving parts to stop and remove wire from spark plug before attempting the following adjustment procedures.



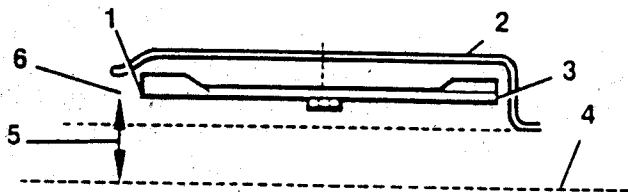
**CAUTION:** Use sturdy gloves or padding to protect hands when working with mower blade(s). Rotate mower blade with Implement Clutch disengaged (Out) and take measurements with Implement Clutch engaged (In).

## Adjustments (Continued)



- 1. Upper Nut
- 2. Lower Nut
- 3. Hanger Hook

**Figure 19: Mower Pan Leveling  
(Side to Side)**



- 1. Cutting Tip
- 2. Mower Pan
- 3. Blade
- 4. Ground Level
- 5. Cutting Height
- 6. Discharge Chute

**Figure 20: Mower Pan Leveling  
(Side to Side)**

**NOTE:** A wood block (about 1" square by 5" long) may be used under pan for blade measurement. Wrap block with masking tape, mark tape with cutting edge of blade and measure distance from end of block to mark(s). (This method avoids errors by having to read any measurements under pan.)

With tractor positioned on a smooth, flat, level surface and tire pressure properly set, perform the following procedures in order of appearance.

With blade(s) parallel to tractor wheels, measure distance of blade(s) tips to floor at right and left side of mower pan. Rotate blade(s) 180 degrees and check again. The measurement should be equal within 1/8 of an inch side to side.

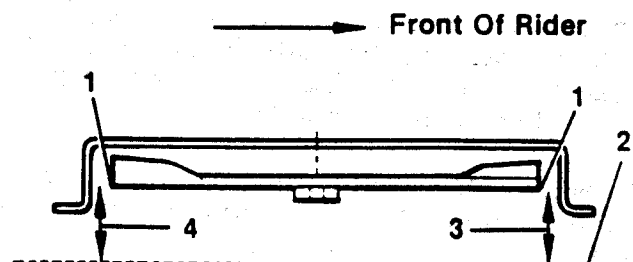
To correct for difference in height of blade tips from side to side, loosen upper nuts on hanger hooks. Turn lower nut clockwise on low side of mower pan to raise low side one half the difference in height. Turn lower nut counterclockwise on high side to lower high side the other one half of the height difference.

### Mower Pitch

Proper blade pitch is when blade tip (measured from surface) is 1/4" to 3/8" lower at front of mower pan than when same tip is at rear of mower pan.

Adjusting rear hanger hooks equally raises or lowers rear of mower pan and changes both cutting height and pitch. To adjust, loosen upper nuts on hanger hooks and turn lower nuts equally clockwise to raise or counterclockwise to lower rear of rotary mower.

Secure hanger hooks in position by securely tightening top nuts.



- 1. Blade Cutting Edges
- 2. Ground Level
- 3. Front Blade Height
- 4. Rear Blade Height

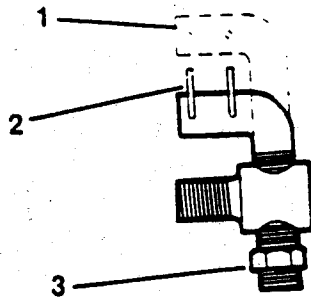
**Figure 21: Mower Level and Pitch**



## Adjustments (Continued)

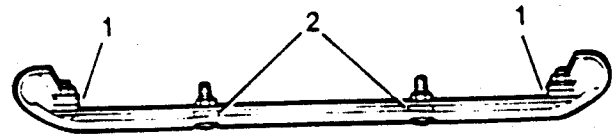
### Mower Cutting Height

Minor adjustments can be made in cutting height with adjustment link. To adjust, loosen jam nut on and remove hair pin on adjustment link. Turn link clockwise to increase or counterclockwise to decrease cutting height. Secure by replacing hair pin and tightening jam nut.

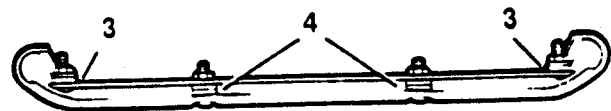


1. Adjustment Link
2. Hairpin
3. Jam Nut

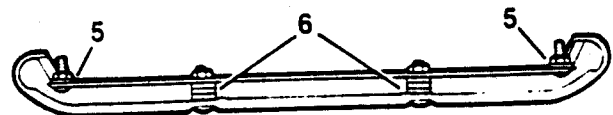
Figure 22: Mower Cutting Height



A. Lowest Cutting Height



B. Intermediate Cutting Height



C. Highest Cutting Height

1. Two Large Spacers
2. Small Spacers
3. One Large Spacer
4. One Large & One Small Spacer
5. No Spacer
6. Two Large & One Small Spacer

Figure 23: Mower Runners (32" Models)

### Mower Runners

On 32" models, runners may be adjusted to prevent scalping or removed entirely to operate at lowest cutting height. Scalping may occur if runners are removed or set too close to pan.

**NOTE:** When installing spacers, assemble spacers on ends of runners first, then install center spacers. This aids in alignment and ease of installation. Do not tighten hardware until all spacers are installed.

To adjust for lowest cutting height, place two large spacers at ends of runners and small spacers in center positions.

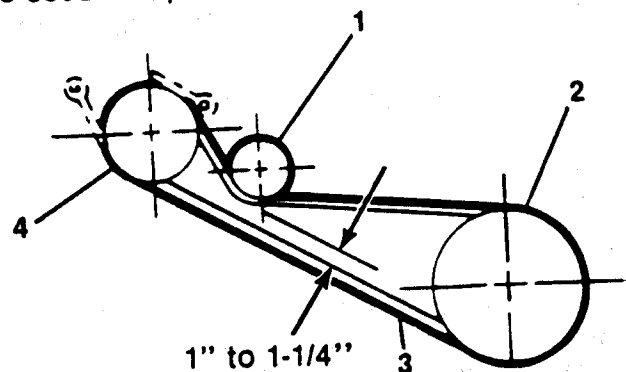
To adjust for an intermediate cutting height, place one large spacer at each end of runners and one large and one small spacer in center positions.

To adjust for highest cutting height, place two large and one small spacer in center position with no spacers at ends of runners.

### Mower Belt

For proper mower belt engagement and disengagement, there should be 1" to 1-1/4" between inside faces of belt at idler when rotary mower is in its highest position.

If belt is loose (distance less than 1"), loosen front nut on tow hook and tighten rear nut until proper dimension is obtained, then tighten nut to secure in position.



1. Idler
2. Mower Pulley
3. Mower Belt
4. Pulley

Figure 24: Mower Belt

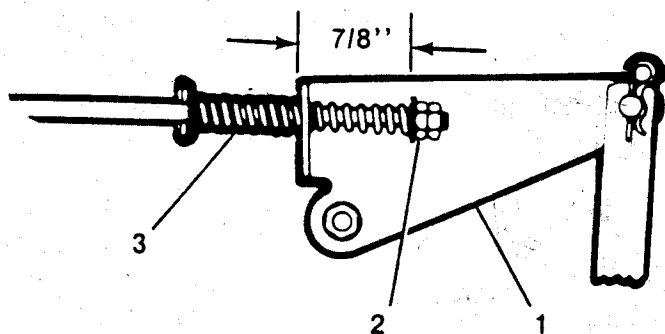
## Adjustments (Continued)

If belt is too tight (distance more than 1-1/4"), loosen rear nut until proper dimension is obtained, then tighten front nut to secure tow hook in position.

After adjusting mower belt, adjust mower brake as follows.

### Mower Brake

**WARNING:** With improper use, injury may result if Implement Power is disengaged "OUT" and brake does not stop rotary mower blade(s) within 5 seconds.



- 1. Brake Lever
- 2. Nuts
- 3. Spring

Figure 25: Mower Brake Adjustment

With Implement Power disengaged "OUT" adjust brake by turning nuts on brake rod so that there is 7/8" distance between washer and brake lever. Lock nuts in position by turning them against one another.

### Seat

Be sure all controls can be reached safely from operator's position. To adjust seat, loosen the two rear mounting cap screws located under rear of seat. Slide seat to a safe comfortable position and tighten cap screws. (For extended movement, remove cap screws that retain seat frame to rear deck and secure in required position.

### Steering

If looseness is noticed in steering system, check hardware for tightness and wear points for excessive wear. (Replace as needed.)

Proper front wheel toe-in is necessary to assure proper steering and to reduce tire wear. (Proper toe-in is when front of wheels are 1/16" to 1/8" closer together than rear of wheels (measured at horizontal center line of rim flange).

If tractor wanders or excessive tire wear develops, toe-in should be checked. To correct toe-in, loosen jam nuts at tie rod ends, turn tie rod clockwise to decrease or counterclockwise to increase toe-in and tighten jam nuts.

## Storage

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

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

Lubricate unit according to instructions in Lubrication and Maintenance Section of this manual.



**CAUTION:** Use non-flammable solvent to clean parts - DO NOT use gasoline.

Clean unit thoroughly. Touch up all painted areas to avoid rust and store in a cool, dry protected place.

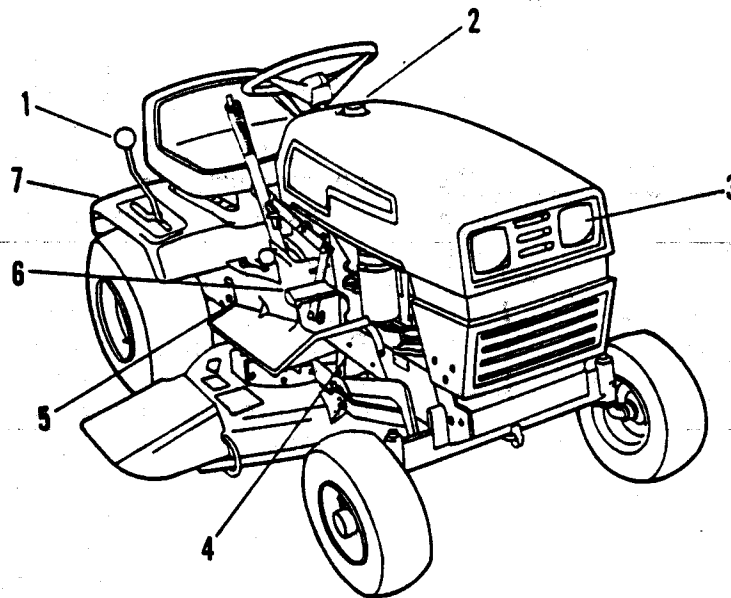
# User Service Components

Publications are available for tractor 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 registration or order by machine model and serial number.

Mail Requests 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 assure prompt service.



- 1. Speed Selector Ball
- 2. Fuel Filler
- 3. Headlight
- 4. Main Drive Belt

- 5. Traction Drive Belt
- 6. Brake/Neutralizer Pedal
- 7. Taillight Lamp No. 1895

Figure 26: User Service Components

## Attachments

835002 42" Front Blade  
835006 36" Sno-Thro  
835020 32" Mower Rear Bagger  
835021 38" Mower Rear Bagger  
831017 Ariens Trailer

## Accessories

710997  
713977  
735002  
735015  
735009

Sno-Thro Slicer Bar  
Tire Chains  
Rear Wheel Weights  
Rear Mounted Weight Box  
Dethatcher

**Ask your dealer for information about these other fine Ariens Products:**

- **Front and Rear Tine Tillers**
- **21" Walk-Behind Lawn Mowers**
- **Walk-Behind Sno-Thros**
- **Rear Engine Riding Mowers**
- **Yard and Garden Tractors**
- **Commercial Walk-Behind and Riding Mowers**

**Ariens**

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Brillion, WI 54110-1098