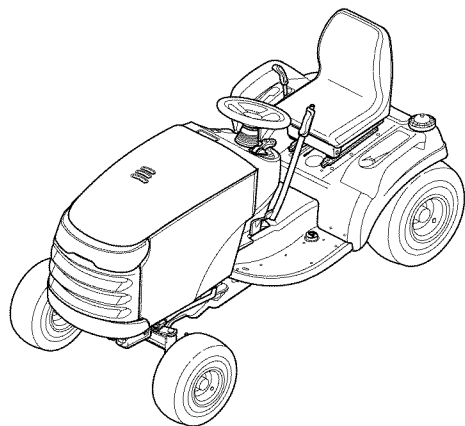


OPERATOR'S MANUAL



Prestige / 1800 / 2800 / GT
Conquest / 1700 / 2700 / YT
Broadmoor / 1600 / 2600 / LT
Series

16HP Hydro Tractors

Mfg. No.	Description
1694009	Broadmoor, 16HP
1694010	Broadmoor, 16HP
1694011	Conquest, 16HP Hydro
1694018	1606, 16HP Hydro
1694019	1616, 16HP Hydro
1694020	1716H, 16HP Hydro
1694027	2606, 16HP Hydro
1694028	2616, 16HP Hydro
1694029	2716H, 16HP Hydro
1694170	Conquest, 16HP Hydro (CE)
1694179	Broadmoor, 16HP Hydro (CE)
1694207	1616, 16HP Hydro (CE)
1694209	2616, 16HP Hydro (CE)
1694277	Broadmoor, 16HP Hydro
1694279	1626, 16HP Hydro
1694281	2626, 16HP Hydro
1694301	Broadmoor, 16HP Hydro (CE)
1694368	YT1644, 16HP Hydro
1694429	Broadmoor, 16HP Hydro
1694430	Broadmoor, 16HP Hydro (CE)
1694431	2616, 16HP Hydro
1694465	1616, 16HP Hydro
1694487	LT1644, 16HP Hydro

18HP Hydro Tractors

Mfg. No.	Description
1694013	Conquest, 18HP Hydro
1694022	1718H, 18HP Hydro
1694031	2718H, 18HP Hydro
1694369	YT1850, 18HP Hydro
1694467	1618, 18HP Hydro
1694468	Broadmoor, 18HP Hydro
1694469	2618, 18HP Hydro
1694470	Conquest, 18HP Hydro (CE)
1694475	YT1844, 18HP Hydro
1694518	YT1844, 18HP Hydro (CE)

20HP Hydro Tractors

Mfg. No.	Description
1694014	Conquest, 20HP Hydro
1694015	Prestige, 20HP Hydro
1694016	Prestige, 20HP Hydro PS
1694023	1720H, 20HP Hydro
1694024	1820H, 20HP Hydro
1694025	1820H, 20HP Hydro PS
1694032	2720H, 20HP Hydro
1694033	2820H, 20HP Hydro
1694034	2820H, 20HP Hydro PS
1694172	Prestige, 20HP Hydro (CE)
1694476	YT2050, 20HP Hydro
1694582	Prestige, 20HP Hydro (CE)

23HP Hydro Tractors

Mfg. No.	Description
1694017	Prestige, 23HP Hydro PS
1694026	1823H, 23HP Hydro PS
1694035	2823H, 23HP Hydro PS
1694370	GT2354, 23HP Hydro PS

38" Mower Decks

Mfg. No.	Description
1694036	38" Mower Deck
1694042	38" Mower Deck
1694453	38" Mower Deck (CE)

40" Mower Decks

Mfg. No.	Description
1694041	40" Mower Deck
1694047	40" Mower Deck
1694177	40" Mower Deck (CE)
1694210	40" Mower Deck (CE)
1694339	40" Mower Deck
1694340	40" Mower Deck
1694341	40" Mower Deck (CE)

44" Mower Decks

Mfg. No.	Description
1694037	44" Mower Deck
1694038	44" Mower Deck
1694043	44" Mower Deck
1694044	44" Mower Deck
1694173	44" Mower Deck (CE)
1694178	44" Mower Deck (CE)
1694371	44" Mower Deck
1694488	44" Mower Deck
1694519	44" Mower Deck (CE)

50" Mower Decks

Mfg. No.	Description
1694039	50" Mower Deck
1694045	50" Mower Deck
1694174	50" Mower Deck (CE)
1694372	50" Mower Deck

54" Mower Decks

Mfg. No.	Description
1694040	54" Mower Deck
1694046	54" Mower Deck
1694373	54" Mower Deck
1694366	54" Mower Deck
1694367	54" Mower Deck
1694491	54" Mower Deck

1723204

Revision 17

Rev. Date 9/2003

Supercedes 1723374

TP 100-2533-17-PR-SMAN

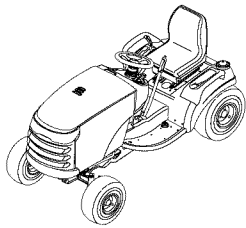


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NOTE: In this manual, "left" and "right" are referred to as seen from the operating position.




Safety Rules & Information



Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of unit, severe personal injury or death to you, or bystanders, or damage to property or equipment.

This mowing deck is capable of amputating hands and feet and throwing objects.

The triangle  in text signifies important cautions or warnings which must be followed.

GENERAL OPERATION

1. Read, understand, and follow all instructions in the manual and on the unit before starting.
2. Do not put hands or feet near rotating parts or under the machine. Keep clear of the discharge opening at all times.
3. Only allow responsible adults, who are familiar with the instructions, to operate the unit (local regulations can restrict operator age).
4. Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown by the blade(s).
5. Be sure the area is clear of other people before mowing. Stop the unit if anyone enters the area.
6. Never carry passengers.
7. Do not mow in reverse unless absolutely necessary. Always look down and behind before and while traveling in reverse.
8. Never direct discharge material toward anyone. Avoid discharging material against a wall or obstruction. Material may ricochet back toward the operator. Stop the blade(s) when crossing gravel surfaces.
9. Do not operate the machine without the entire grass catcher, discharge guard (deflector), or other safety devices in place.
10. Slow down before turning.
11. Never leave a running unit unattended. Always disengage the PTO, set parking brake, stop engine, and remove keys before dismounting.
12. Disengage blades (PTO) when not mowing. Shut off engine and wait for all parts to come to a complete stop before cleaning the machine, removing the grass catcher, or unclogging the discharge guard.
13. Operate the machine only in daylight or good artificial light.
14. Do not operate the unit while under the influence of alcohol or drugs.
15. Watch for traffic when operating near or crossing roadways.
16. Use extra care when loading or unloading the unit into a trailer or truck.
17. Always wear eye protection when operating this unit.
18. Data indicates that operators, age 60 years and above, are involved in a large percentage of riding mower-related injuries. These operators should evaluate their ability to operate the riding mower safely enough to protect themselves and others from injury.
19. Follow the manufacturer's recommendations for wheel weights or counterweights.
20. Keep in mind the operator is responsible for accidents occurring to other people or property.
21. All drivers should seek and obtain professional and practical instruction.
22. Always wear substantial footwear and trousers. Never operate when barefoot or wearing sandals.
23. Before using, always visually check that the blades and blade hardware are present, intact, and secure. Replace worn or damaged parts.
24. Disengage attachments before: refueling, removing an attachment, making adjustments (unless the adjustment can be made from the operator's position).
25. When the machine is parked, stored, or left unattended, lower the cutting means unless a positive mechanical lock is used.
26. Before leaving the operator's position for any reason, engage the parking brake, disengage the PTO, stop the engine, and remove the key.
27. To reduce fire hazard, keep the unit free of grass, leaves, & excess oil. Do not stop or park over dry leaves, grass, or combustible materials.
28. It is a violation of California Public Resource Code Section 4442 to use or operate the engine on or near any forest-covered, brush-covered, or grass-covered land unless the exhaust system is equipped with a spark arrester meeting any applicable local or state laws. Other states or federal areas may have similar laws.

TRANSPORTING AND STORAGE

1. When transporting the unit on an open trailer, make sure it is facing forward, in the direction of travel. If the unit is facing backwards, wind lift could damage the unit.
2. Always observe safe refueling and fuel handling practices when refueling the tractor after transportation or storage.
3. Never store the unit (with fuel) in an enclosed poorly ventilated structure. Fuel vapors can travel to an ignition source (such as a furnace, water heater, etc.) and cause an explosion. Fuel vapor is also toxic to humans and animals.
4. Always follow the engine manual instructions for storage preparations before storing the unit for both short and long term periods.
5. Always follow the engine manual instructions for proper start-up procedures when returning the unit to service.
6. Never store the unit or fuel container inside where there is an open flame or pilot light, such as in a water heater. Allow unit to cool before storing.

SLOPE OPERATION

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

Control of a ride-on machine sliding on a slope will not be regained by the application of the brake. The main reasons for loss of control are: insufficient tire grip on the ground, speed too fast, inadequate braking, the type of machine is unsuitable for its task, lack of awareness of the ground conditions, incorrect hitching and load distribution.

1. Mow up and down slopes, not across.
2. Watch for holes, ruts, or bumps. Uneven terrain could overturn the unit. Tall grass can hide obstacles.
3. Choose a slow speed so that you will not have to stop or change speeds while on the slope.
4. Do not mow on wet grass. Tires may lose traction.
5. Always keep unit in gear especially when traveling down slopes. Do not shift to neutral and coast downhill.
6. Avoid starting, stopping, or turning on a slope. If tires lose traction, disengage the blade(s) and proceed slowly straight down the slope.
7. Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction, which could cause the machine to rollover.
8. Use extra care while operating machines with grass catchers or other attachments; they can affect the stability of the unit.
9. Do not try to stabilize the machine by putting your foot on the ground.
10. Do not mow near drop-offs, ditches, or embankments. The mower could suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.
11. Do not use grass catchers on steep slopes.
12. Do not mow slopes you cannot back up.
13. See your authorized dealer/retailer for recommendations of wheel weights or counterweights to improve stability.
14. Remove obstacles such as rocks, tree limbs, etc.
15. Use slow speed. Tires may lose traction on slopes even through the brakes are functioning properly.
16. Do not turn on slopes unless necessary, and then, turn slowly and gradually downhill, if possible.

TOWED EQUIPMENT

1. Tow only with a machine that has a hitch designed for towing. Do not attach towed equipment except at the hitch point.
2. Follow the manufacturer's recommendations for weight limit for towed equipment and towing on slopes.
3. Never allow children or others in or on towed equipment.
4. On slopes, the weight of the towed equipment may cause loss of traction and loss of control.
5. Travel slowly and allow extra distance to stop.
6. Do not shift to neutral and coast downhill.

WARNING

Never operate on slopes greater than 17.6 percent (10°) which is a rise of 3-1/2 feet (106 cm) vertically in 20 feet (607 cm) horizontally.

When operating on slopes use additional wheel weights or counterweights. See your dealer/retailer to determine which weights are available and appropriate for your unit.

Select slow ground speed before driving onto slope. In addition to front weights, use extra caution when operating on slopes with rear-mounted grass catchers.

Mow UP and DOWN the slope, never across the face, use caution when changing directions and **DO NOT START OR STOP ON SLOPE.**

CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the unit and the mowing activity. Never assume that children will remain where you last saw them.

1. Keep children out of the mowing area and under the watchful care of another responsible adult.
2. Be alert and turn unit off if children enter the area.
3. Before and during reverse operation, look behind and down for small children.
4. Never carry children, even with the blade(s) off. They may fall off and be seriously injured or interfere with safe unit operation. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the machine.
5. Never allow children to operate the unit.
6. Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

EMISSIONS

1. Engine exhaust from this product contains chemicals known, in certain quantities, to cause cancer, birth defects, or other reproductive harm.
2. Look for the relevant Emissions Durability Period and Air Index information on the engine emissions label.

IGNITION SYSTEM

1. This spark ignition system complies with Canadian ICES-002.

Safety Rules & Information

SERVICE AND MAINTENANCE

Safe Handling of Gasoline

1. Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
2. Use only approved gasoline containers.
3. Never remove the gas cap or add fuel with the engine running. Allow the engine to cool before refueling.
4. Never fuel the machine indoors.
5. Never store the machine or fuel container where there is an open flame, spark, or pilot light such as near a water heater or other appliance.
6. Never fill containers inside a vehicle or on a truck bed with a plastic bed liner. Always place containers on the ground away from your vehicle before filling.
7. Remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
8. Keep nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
9. If fuel is spilled on clothing, change clothing immediately.
10. Never over-fill the fuel tank. Replace gas cap and tighten securely.
11. Use extra care in handling gasoline and other fuels. They are flammable and vapors are explosive.
12. If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.
13. Replace all fuel tank caps and fuel container caps securely.
12. Grass catcher components are subject to wear, damage, and deterioration, which could expose moving parts or allow objects to be thrown. Frequently check components and replace with manufacturer's recommended parts, when necessary.
13. Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves, and use extra caution when servicing them.
14. Check brake operation frequently. Adjust and service as required.
15. Use only factory authorized replacement parts when making repairs.
16. Always comply with factory specifications on all settings and adjustments.
17. Only authorized service locations should be utilized for major service and repair requirements.
18. Never attempt to make major repairs on this unit unless you have been properly trained. Improper service procedures can result in hazardous operation, equipment damage and voiding of manufacturer's warranty.
19. On multiple blade mowers, take care as rotating one blade can cause other blades to rotate.
20. Do not change engine governor settings or overspeed the engine. Operating the engine at excessive speed can increase the hazard of personal injury.
21. Disengage drive attachments, stop the engine, remove the key, and disconnect the spark plug wire(s) before: clearing attachment blockages and chutes, performing service work, striking an object, or if the unit vibrates abnormally. After striking an object, inspect the machine for damage and make repairs before restarting and operating the equipment.

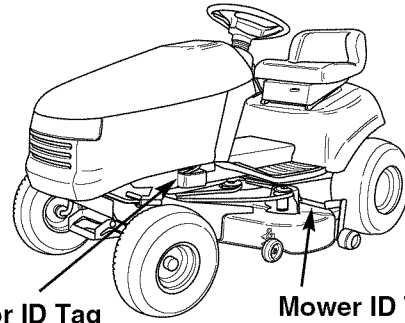
Service & Maintenance

1. Maintain or replace safety and instruction labels as necessary.
2. Never run the unit in an enclosed area where carbon monoxide fumes may collect.
3. Keep nuts and bolts, especially blade attachment bolts, tight and keep equipment in good condition.
4. Never tamper with safety devices. Check their proper operation regularly and make necessary repairs if they are not functioning properly.
5. Keep unit free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage.
6. Stop and inspect the equipment if you strike an object. Repair, if necessary, before restarting.
7. Never make adjustments or repairs with the engine running unless specified otherwise in the engine manufacturer's manual.
8. Do not remove the fuel filter when the engine is hot as spilled gasoline may ignite. Do not spread fuel line clamps further than necessary. Ensure clamps grip hoses firmly over the filter after installation.
9. Do not use gasoline containing METHANOL, gasohol containing more than 10% ETHANOL, gasoline additives, or white gas because engine/fuel system damage could result.
10. If the fuel tank must be drained, it should be drained outdoors.
11. Replace faulty silencers/mufflers.
22. Never place hands near the moving parts, such as a hydro pump cooling fan, when the tractor is running. (Hydro pump cooling fans are typically located on top of the transaxle).
23. Units with hydraulic pumps, hoses, or motors: **WARNING:** Hydraulic fluid escaping under pressure may have sufficient force to penetrate skin and cause serious injury. If foreign fluid is injected into the skin it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result. Keep body and hands away from pin holes or nozzles that eject hydraulic fluid under high pressure. Use paper or cardboard, and not hands, to search for leaks. Make sure all hydraulic hoses and lines are in good condition before applying pressure to the system. If leaks occur, have the unit serviced immediately by your authorized dealer.
24. **WARNING:** Stored energy device. Improper release of springs can result in serious personal injury. Springs should be removed by an authorized technician.
25. Models equipped with an engine radiator: **WARNING:** Stored energy device. To prevent serious bodily injury from hot coolant or steam blow-out, never attempt to remove the radiator cap while the engine is running. Stop the engine and wait until it is cool. Even then, use extreme care when removing the cap.

Identification Numbers

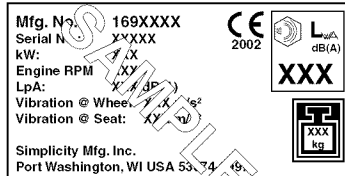


North American Models



Tractor ID Tag

Mower ID Tag



CE Models

When contacting your authorized dealer for replacement parts, service, or information you **MUST** have these numbers.

Record your model name/number, manufacturer's identification numbers, and engine serial numbers in the space provided for easy access. These numbers can be found in the locations shown.

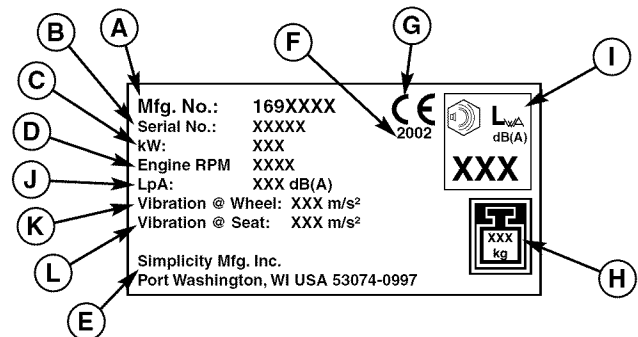
NOTE: For location of engine identification numbers, refer to the engine owner's manual.

CE Models: Place the extra copy of the identification tag in the manual

PRODUCT REFERENCE DATA	
Model Description Name/Number	
Unit MFG Number	Unit SERIAL Number
Mower Deck MFG Number	Mower Deck SERIAL Number
Dealer Name	Date Purchased
ENGINE REFERENCE DATA	
Engine Make	Engine Model
Engine Type/Spec	Engine Code/Serial Number

CE IDENTIFICATION TAG MARKINGS

- A. Manufacturer's Identification Number
- B. Manufacturer's Serial Number
- C. Power Rating in Kilowatts
- D. Maximum Engine Speed in Rotations per Minute
- E. Manufacturer's Address
- F. Year of Manufacture
- G. CE Compliance Logo
- H. Mass of Unit in Kilograms
- I. Sound Power in Decibels ***
- J. Sound Pressure at Operator's Position in Decibels **
- K. Vibration at the Steering Wheel *
- L. Vibration at the Seat *



This unit complies with European Harmonized Lawn Mower Standard EN 836, European Machinery Directive 98/37/EC, and European EMC Directive 89/336/EC

* Tested according to EN 836:1997/A2:2001, EN 1032:1996, EN 1033:1995

** Tested according to EN836:1997/A2:2001

*** Tested according to 2000/14/EC

*CE Models:
Place copy of
Identification Tag here.*

Safety Decals

SAFETY DECALS

This unit has been designed and manufactured to provide you with the safety and reliability you would expect from an industry leader in outdoor power equipment manufacturing.

Although reading this manual and the safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively, we have placed several safety labels on the unit to remind you of this important information while you are operating your unit.

NORTH AMERICAN MODELS



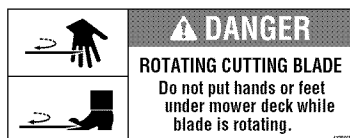
Decal - Operating Instructions, North American Models, Part No. 1722814



Decal - Danger, Side-Discharge Models
Part No. 1704276

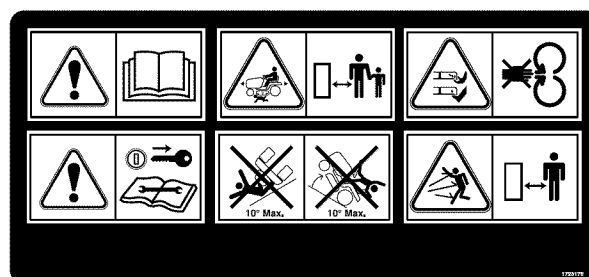


Decal - Danger, Side-Discharge Models
Part No. 1704277



Decal - Danger, Mulching Models
Part No. 1720660

CE MODELS

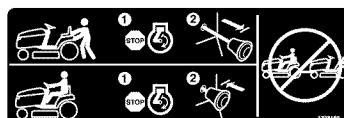


Decal - Operating Instructions, CE Models,
Part No. 1723175



Decal - Danger, Rotating Blades
Part No. 1720389

ALL MODELS



Decal - Transmission Release
Part No. 1723160



Decal - Ignition Switch
Positions
Part No. 1722806



Decal - Cutting
Height
Part No. 1723470



Decal - Cutting
Height
Part No. 1723847

SAFETY ICONS

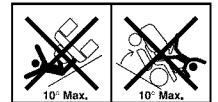
Warning: Read Operator's Manual.

Read and understand the Operator's Manual before using this machine.



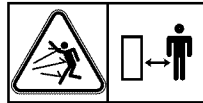
Danger: Machine Rollover.

Do not use this machine on slopes greater than 10°.



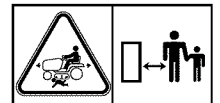
Danger: Thrown Objects.

This machine is capable of throwing objects and debris. Keep bystanders away.



Danger: Dismemberment.

This machine can amputate limbs. Keep bystanders and children away when engine is running.



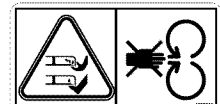
Warning: Remove Key Before Servicing.

Remove the key and consult technical literature before performing repairs or maintenance.

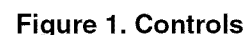


Danger: Dismemberment.

This mower deck can amputate limbs. Keep hands and feet away from blades.



A line drawing of a riding lawn mower, viewed from the side. It features a large front deck, a steering wheel, a seat, and four wheels. The mower is shown in a three-quarter perspective.



The information below briefly describes the function of individual controls. Starting, stopping, driving, and mowing require the combined use of several controls applied in specific sequences. To learn what combination and sequence of controls to use for various tasks see the OPERATION section.



The throttle/choke lever controls engine speed and choke. Move the throttle forward to increase engine speed and back to decrease engine speed. Always operate at FULL throttle. Move the control fully forward (past the detent) to close the choke. Close the choke for cold starting. Open the choke once the engine starts. A warm engine may not require choking.



The throttle controls engine speed. Move the throttle forward to increase engine speed and back to decrease engine speed. Always operate at FULL throttle.



Close the choke for cold starting. Open the choke once the engine starts. A warm engine may not require chocking. Move the lever forward to close the choke.



Headlights

The light switch turns the tractor headlights on and off.



PTO Switch

The PTO (Power Take-Off) switch engages and disengages attachments that use the PTO. To engage the PTO, pull UP on the switch. Push DOWN to disengage. *Note that the operator must be seated firmly in the tractor seat for the PTO to function.*



Ignition Switch

The ignition switch starts and stops the engine, it has three positions:



OFF Stops the engine and shuts off the electrical system.



RUN Allows the engine to run and powers the electrical system.



START Cranks the engine for starting.

NOTE: Never leave the ignition switch in the RUN position with the engine stopped—this drains the battery.



Brake Pedal

Depressing the brake pedal applies the tractor brake.



Ground Speed Pedals

The tractor's forward ground speed is controlled by the forward ground speed control pedal. The tractor's reverse ground speed is controlled by the reverse ground speed control pedal.

Depressing either pedal will increase ground speed. Note that the further down the pedal is depressed, the faster the tractor will travel.



Parking Brake

The parking brake knob is used to lock the parking brake when the tractor is stopped. Fully depressing the brake pedal and pulling up on the knob engages the parking brake. Refer to page 10 for a full explanation of parking brake functions.



Mower Height of Cut Adjustment

38", 44", 50", & 54" MOWER DECKS

The cutting height adjustment knob controls the mower cutting height. The cutting height is infinitely adjustable between 1" and 3-5/8."

40" MOWER DECKS

The cutting height adjustment lever controls the mower cutting height. Push down on the button to release the lever, move to the desired cutting height, and release the button to lock. The cutting height is infinitely adjustable between 1" and 3-5/8."



Cutting Height Fine Tuning Adjustment (40" Mower Decks Only)

The cutting height fine tuning adjustment is used to set the mower cutting height between two of the preset cutting positions.



Cruise Control

The cruise control is used to lock the ground speed control in forward. Move the lever forward until the desired ground speed is reached. To disengage the cruise control move the lever back. In the event you need to stop quickly, depressing the brake pedal will also return the cruise control to neutral.



Seat Adjustment Lever

The seat can be adjusted forward and back. Move the lever, position the seat as desired, and release the lever to lock the seat into position.



Transmission Release Valve Lever

The transmission release valve lever deactivates the transmission so that the tractor can be pushed by hand. See PUSHING THE TRACTOR BY HAND for operational information.



Transmission Oil Expansion Chamber (K71 Models Only)

Transmission oil is added through the transmission oil expansion chamber. It also serves as extra holding capacity for oil as the transmission heats up and the oil expands. See TRANSMISSION MAINTENANCE for oil level check and fill procedures.



Fuel Tank

To remove the cap, turn counterclockwise. On models with a dashboard display, the fuel gauge is part of the dashboard. Models without a dashboard display have a fuel gauge located under the seat.



Differential Lock Pedal (Select Models)

Depressing this pedal locks the transmission differential, locking both rear wheels into "drive".

Use this feature if the tractor is stuck because one wheel is slipping. **Engage the differential lock at slow ground speeds only.**

Features & Controls



Steering Tilt Adjust (Select Models)

Use the tilt knob located on the bellows to release the pivot mechanism and pivot the wheel to the desired position. Release the tilt knob to lock in position.



Attachment Lift Control Lever

When using the mower deck, lift the deck off the ground while transporting to and from the job site. **DO NOT** cut with the mower in the raised, transport position.

Hydraulic Lift Models: The attachment lift control lever raises and lowers attachments that utilize the tractor's hydraulic lift cylinder. Pushing the lever forward lowers the attachment while pulling the lever back raises the attachment.

IMPORTANT NOTE - On models equipped with hydraulic lift, the attachment lift will not work when the parking brake is engaged.

Manual Lift Models: The attachment lift control lever raises and lowers attachments that utilize the tractor's manual lift linkage. To lower an attachment: pull the lever back slightly, depress the release button, and push the lever forward until it locks in the lowered position. To raise an attachment: push the lever forward slightly, depress the release button, then pull the lever back until it locks in the raised position.

PARKING BRAKE FUNCTION

Applying the Parking Brake - See Figure 2. To lock the parking brake, release the ground speed pedals (A), fully depress the brake pedal (B), pull UP on the parking brake knob (C), and then release brake pedal.

Releasing the Parking Brake - See Figure 2. To release the parking brake, fully depress the brake pedal (B) and push the parking brake knob (C) DOWN.

IMPORTANT NOTE: The tractor's hydraulic attachment lift will not work when the parking brake is engaged.

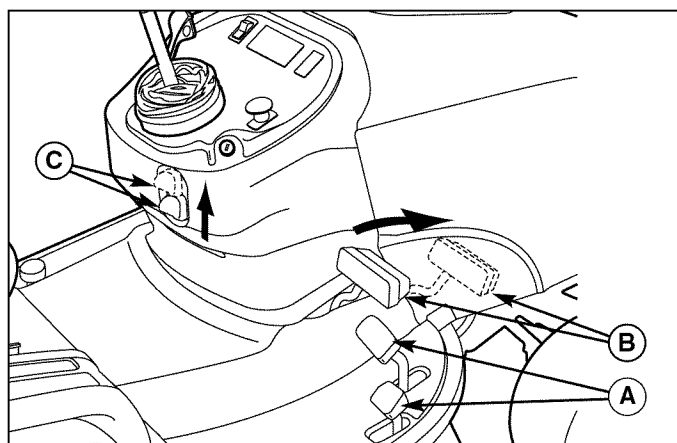


Figure 2. Engaging the Parking Brake

A. Ground Speed Pedals

B. Brake Pedal

C. Parking Brake Knob

AUTOMATIC CONTROLLED TRACTION

What is Automatic Controlled Traction?

Automatic Controlled Traction (ACT) is an exclusive feature of our transmissions that provides improved traction. ACT applies a preset amount of torque to both rear wheels even if one starts slipping (a transmission without ACT will lose traction completely if one rear wheel starts slipping). This preset torque is just enough to provide additional traction, and still allow the wheels to turn at different speeds in a tight turn without damaging the lawn.

What to Expect from Your ACT Tractor

For the most part, while using your tractor you will not notice ACT working, and you will simply become accustomed to increased traction an ACT transmission provides.

Under certain circumstances the ACT system limit can be exceeded, and one of the rear wheels may slip (for instance if trying to turn up a hill while accelerating). This is normal. If you start to lose traction, do not speed up. Instead, slow to a stop, straighten the steering wheel, and slowly accelerate. Stopping the tractor allows the transmission to regain more traction.

DASHBOARD DISPLAY (SELECT MODELS)

Display Items

Refer to Figures 3a and 3b.

A. FUEL LEVEL

Indicates the amount of fuel in the fuel tank. Left is empty; right is full.

B. HOUR METER / CLOCK / SERVICE INDICATOR

Displays the clock, hour meter, and maintenance reminder.

C. SELECT BUTTON

Used to set the clock and reset the maintenance reminder.

D. SET BUTTON

Used to set the clock and reset the maintenance reminder.

E. PTO LIGHT

Indicates the PTO switch is in the ON position.

F. CRUISE CONTROL LIGHT

Indicates that the cruise control is engaged.

G. LOW OIL PRESSURE LIGHT

Indicates that the engine oil pressure is low. The light will turn on when the tractor is first started and then go out. IF THIS LIGHT TURNS ON WHILE THE TRACTOR IS IN USE, TURN THE ENGINE OFF IMMEDIATELY. Contact your authorized dealer for service.

H. LOW VOLTAGE LIGHT

Indicates that the electrical system voltage is low. The light will turn on when the tractor is first started and then go out. IF THIS LIGHT TURNS ON WHILE THE TRACTOR IS IN USE, TURN THE ENGINE OFF IMMEDIATELY. Contact your authorized dealer for service.

Functions

EARLY MODELS (SEE FIGURE 3A)

Display Total Running Hours - When the key switch is first turned to the RUN position, all warning indicators will light and the total running hours will be displayed. Be sure all lights are functioning.

Display PTO Hours - Turn the key OFF, engage the PTO, and turn the key to RUN (engine off).

Set the Clock - Press and release the select button (C) to select hours or minutes. Depress the set button (D) to advance the selected number.

Demonstration Mode - Turn the key OFF, depress and hold the set button (D, Figure 3), turn the key to RUN and release the set button.

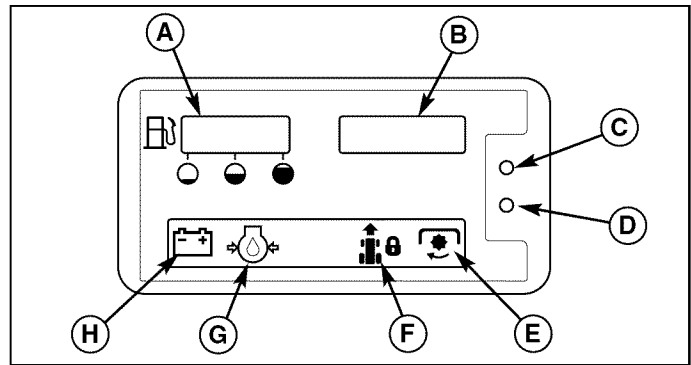


Figure 3a. Dashboard Display - Early Models

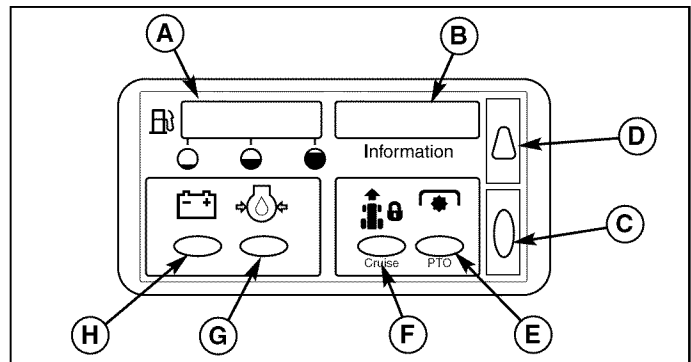


Figure 3b. Dashboard Display - Later Models

Maintenance Reminder - A maintenance reminder will display in the information window (B) after the first 5 hours of operation, and then after every 50 hours. The reminder will automatically reset after 5 hours.

LATER MODELS (SEE FIGURE 3B)

Display Total Running Hours - When the key switch is first turned to the RUN position, all warning indicators will light and the total running hours will be displayed. Be sure all lights are functioning.

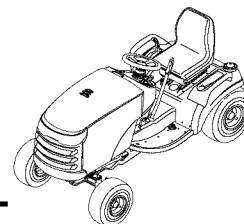
Display PTO Hours - Turn the key OFF, engage the PTO, and turn the key to RUN (engine off).

Set the Clock - Press and release the select button (C) to select hours or minutes. Depress the set button (D) to advance the selected number.

Demonstration Mode - With the engine off, hold down the set button (D) and turn the key switch to RUN.

Maintenance Reminder - A maintenance reminder will display in the information window (B) after the first 5 hours of operation, and then after every 50 hours. The reminder will automatically reset after 5 hours. The reminder can be manually reset by turning the key switch from OFF to RUN (with engine off) and then depressing the set (D) and select (C) buttons simultaneously for 5 seconds.

Operating the Tractor



SAFETY INTERLOCK SYSTEM TESTS

This unit is equipped with safety interlock switches and other safety devices. These safety systems are present for your safety: do not attempt to bypass safety switches, and never tamper with safety devices. Check their operation regularly.

Operational SAFETY Checks

Your unit is equipped with a seat switch safety system. Check the seat switch operation every fall and spring with the following tests.

Test 1 — Engine should NOT crank if:

- PTO switch is ON, OR
- Brake pedal is NOT fully depressed (parking brake OFF), OR
- The cruise control lever is NOT in NEUTRAL.

Test 2 — Engine SHOULD crank if:

- PTO switch is OFF, AND
- Brake pedal is fully depressed (parking brake ON), AND
- The cruise control lever is in NEUTRAL.

Test 3 — Engine should SHUT OFF if:

- Operator rises off seat with PTO engaged, OR
- Operator rises off seat with brake pedal NOT fully depressed (parking brake OFF).

Test 4 — Blade Brake Check

Mower blades and mower drive belt should come to a complete stop within five seconds after electric PTO switch is turned OFF (or operator rises off seat). If mower drive belt does not stop within five seconds, readjust the PTO clutch as described in the ADJUSTMENTS section or see your dealer.

NOTE: Once the engine has stopped, the PTO switch must be turned off after the operator returns to the seat in order to start the engine.



WARNING

If the unit does not pass a safety test, do not operate it. See your authorized dealer. Under no circumstance should you attempt to defeat the purpose of the safety interlock system.

GENERAL OPERATING SAFETY

Be sure to read all information in the Safety and Operation sections before attempting to operate this unit. Become familiar with all of the controls and how to stop the unit.

ADDING FUEL

To add fuel:

1. Remove the fuel cap (A, Figure 4).
2. Fill the tank. Do not overfill. Leave room in the tank for fuel expansion. Refer to your engine manual for specific fuel recommendations.
3. Install and hand tighten the fuel cap.



Do not use gasoline containing METHANOL, gasohol containing more than 10% ETHANOL, gasoline additives, or white gas because engine/fuel system damage could result.



WARNING

Gasoline is highly flammable and must be handled with care. Never fill the tank when the engine is still hot from recent operation. Do not allow open flame, smoking or matches in the area. Avoid over-filling and wipe up any spills.

STARTING THE ENGINE

1. While sitting in the operator's seat, fully depress the brake pedal or set the parking brake.
2. Make sure that your feet are not depressing the ground speed control pedals and that the cruise control lever is in neutral.
3. Disengage the PTO clutch.
4. Set the throttle to FULL.
5. Close the choke.

NOTE: A warm engine may not require choking.

6. Insert the ignition key and turn it to START.
7. After the engine starts, move the engine throttle control to SLOW. Warm up the engine by running it for at least a minute.
8. Set throttle to FULL.

NOTE: In the event of an emergency the engine can be stopped by simply turning the ignition switch to STOP. Use this method only in emergency situations. For normal engine shut down follow the procedure given in STOPPING THE TRACTOR.

STOPPING THE TRACTOR & ENGINE

1. Return the ground speed control(s) to neutral.
2. Disengage the PTO and wait for all moving parts to stop.
3. Place the throttle control in the position specified in the engine owner's manual provided in the operator's packet shipped with your tractor. Follow any recommended stopping procedures.
4. Turn the ignition switch to OFF. Remove the key.

DRIVING THE TRACTOR

1. Sit in the seat and adjust the seat so that you can comfortably reach all the controls and see the dash-board display.
2. Engage the parking brake.
3. Make sure the PTO switch is disengaged.
4. Start the engine (see STARTING THE ENGINE).
5. Disengage the parking brake and release the brake pedal.
6. Depress the forward ground speed control pedal to travel forward. Release the pedal to stop. Note that the further down the pedal is depressed the faster the tractor will travel.
7. Stop the tractor by releasing the ground speed control pedals, setting the parking brake, and stopping the engine (see STOPPING THE TRACTOR AND ENGINE).

MOWING

1. Set the mower cutting height to the desired level and set the gauge wheels to the appropriate position (if equipped).
2. Engage the parking brake. Make sure the PTO switch is disengaged.
3. Start the engine (see STARTING THE ENGINE).
4. Fully lower the mower using the attachment lift lever.
5. Set the throttle to FULL.
6. Engage the PTO (Mower Deck).
7. Begin mowing. See Section LC for tips on mowing patterns, lawn care, and troubleshooting information.
8. When finished, shut off the PTO and raise the mower using the attachment lift control lever.
9. Stop the engine (see STOPPING THE TRACTOR AND ENGINE).

PUSHING THE TRACTOR BY HAND

1. Disengage the PTO and turn the engine off.
2. Pull the transmission release (B, Figure 4) back approximately 2-1/2" (6 cm) to lock into released position.
3. The tractor can now be pushed by hand.



DO NOT TOW TRACTOR

Towing the unit will cause transmission damage. • Do not use another vehicle to push or pull this unit. • Do not actuate the transmission release valve lever while the engine is running.

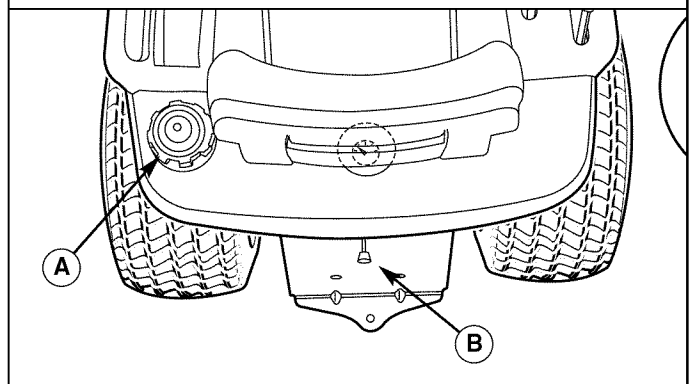
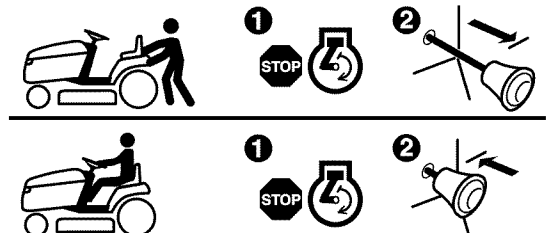


Figure 4. Transmission Release Lever & Fuel Tank
A. Fuel Tank Cap.
B. Transmission Release Lever

Operating the Tractor

USING A MULCHING MOWER (40" MOWER ONLY)

Benefits of Proper Mulching

Mulching consists of a mower deck which cuts and recuts clippings into tiny particles and then blows them down into the lawn. These tiny particles decompose rapidly into by-products that your lawn can use. Under proper conditions your mulching mower virtually eliminate noticeable clippings on the lawn surface.

Limitations of Mulching Decks

Mulching mowers cannot function properly if the grass is wet, or if the grass is simply too high. Even more than normal mowing, mulching requires that the grass be dry and that no more than 1/3 of the height is cut.

Do not use the mower as a mulching mower during the first two or three cuttings in the spring. The long grass blades, quick growth, and often wetter conditions are more suitable for broadcasting (side-discharging).

Correct Ground Speed & Engine Speed

Use full engine throttle to maximize mower blade tip speed matched with a slow ground speed so that clippings will be finely cut. Ground speed while mulching should be half the speed used when broadcasting (side-discharging) under similar conditions. Since mulching requires more horse power than broadcasting, using a proper ground speed is vitally important for good mulching operation.

Correct Cutting Height

Cutting off too much at one time shocks the plant's growth system and weakens the grass. A good rule of thumb is the 1/3 rule: to cut no more than one third of the grass height, and never more than 1 inch (2,5cm) at a time.

The best mulching action typically results from cutting only the top 1/2" to 3/4" (1,25 - 2cm) of the grass blade. This provides short clippings which decompose properly (much more quickly than longer clippings). The ideal cutting height will vary with climate, time of year, and quality of your lawn. We recommend that you experiment with both the cutting height and ground speed to achieve the best cut. Start with a high cutting height and use progressively lower heights until you find a cutting height that is matched to your mowing conditions and preferences. For best results, overlapping is recommended.

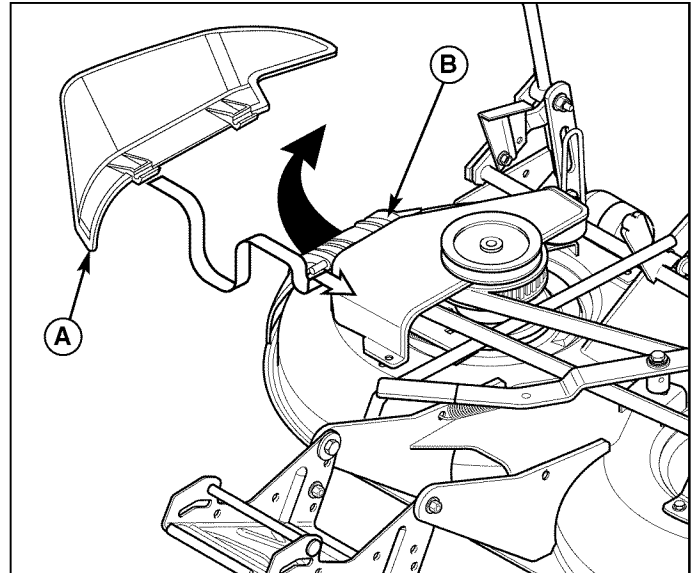


Figure 5. Installing the Side Discharge Deflector

A. Side Discharge Deflector

B. Mulching Cover

Using the Side Discharge Deflector

When to use the side discharge deflector: If you've been on vacation or missed a mowing and the grass has gotten very long, do not try to mulch at your normal cutting height. To handle these situations your mulching mower is equipped with a side discharge deflector. Installing the side discharge deflector allows you to broadcast clippings. Broadcasting, or side-discharging, disperses fine clippings evenly over the entire lawn. Always operate the engine at full throttle. Use an appropriate ground speed for the thickness and height of grass you are cutting. If you hear the engine slowing down, you are mowing too fast, use a slower ground speed. Mow when the grass is 3"-5" (7,6-12,7cm) long. Do not cut off more than 1" (2,5cm) in a single pass.

WARNING

Never operate the mower deck without either the discharge chute or mulching deflector in place.

To install the side discharge chute:

1. Lift up the mulching cover (B, Figure 5).
2. Install the side discharge deflector (A) under the mulching cover. The side discharge deflector hooks onto the mulching cover hinge rod, and is held in place by the mulching cover.
3. Release the mulching cover.

ADJUSTING MOWER CUTTING HEIGHT - 40" MOWER DECKS

The cutting height adjustment lever (A, Figure 6) controls the mower cutting height and has five positions. The highest cutting position should be used when transporting to and from the work site (do not cut with the lever in the highest position). The lower four positions are used when mowing.

Set this lever so that the deck is cutting off 1/3 the height of the grass or less.

If the desired cutting height falls between two notches, use the cutting height fine tuning adjuster (B) to achieve the correct height.

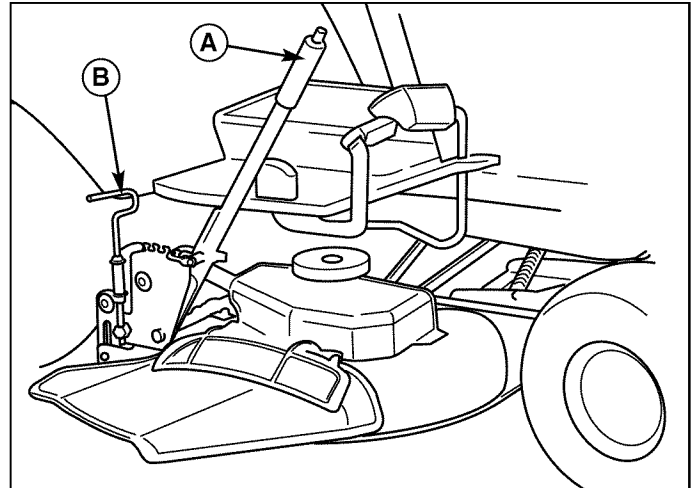


Figure 6. Cutting Height Adjustment - 40" Mowers
A. Cutting Height Lever
B. Fine Tuning Adjustment

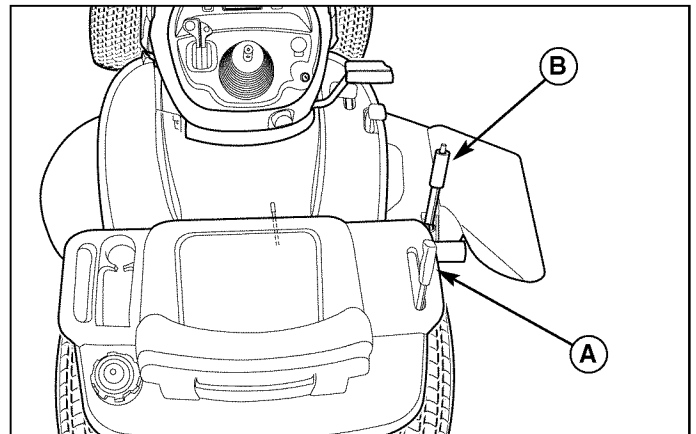


Figure 7. Raising & Lowering Mower - 40" Mowers
A. Mower Lift Lever
B. Mower Height Adjuster

ADJUSTING MOWER CUTTING HEIGHT - 38", 44", 50", & 54" MOWER DECKS

The cutting height adjustment knob (B, Figure 8) controls the mower cutting height. The cutting height is infinitely adjustable between approximately 1" and 3-5/8" (2,5-9,2cm). Turn the knob clockwise to raise the deck and counterclockwise to lower it.

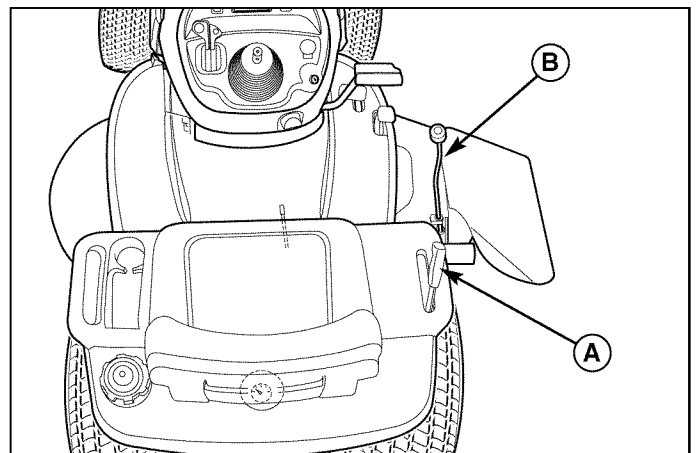
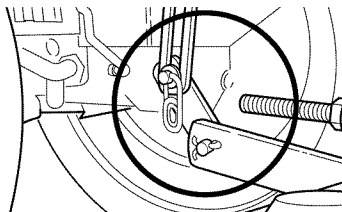


Figure 8. Raising & Lowering Mower
A. Mower Lift Lever
B. Mower Height Adjuster

Operating the Tractor

MOWER DECK REMOVAL & INSTALLATION

Lift Link Models



WARNING

Engage parking brake, disengage PTO, stop engine and remove key before attempting to install or remove the mower.

Removing the Mower Deck

1. Park tractor on a hard, level surface such as a concrete floor. Turn off PTO switch and engine, remove the key and apply parking brake.
2. Place mower in the lowest cutting position using the mower height adjuster.
3. Place the attachment lift in the lowest position.
4. Disconnect the mower lift arm (A, Figure 9) from the tractor lift arm (B). Re-install washer (C) and safety clip (D).
5. Remove belt from PTO pulley (B, Figure 10).

CAUTION

The muffler and surrounding areas may be hot.

6. Turn wheels straight ahead. Pull back on spring-loaded lever (B, Figure 11) and lift mower hitch off of the tractor brackets.
7. Turn wheels fully left, and slide mower deck out right side of tractor.

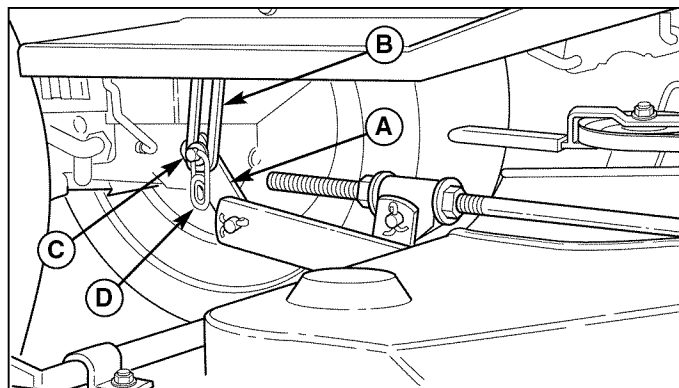


Figure 9. Lift Arms
(Viewed from underneath right side of tractor)
A. Mower Lift Arm C. Flat Washer
B. Tractor Lift Arm D. Safety Clip

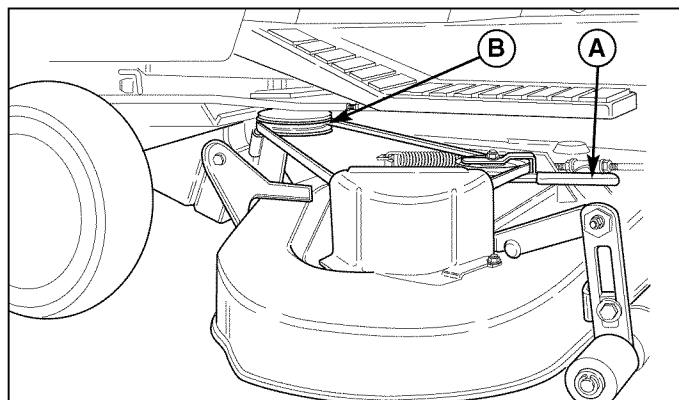


Figure 10. Removing & Installing Belt
A. Idler Arm
B. PTO Pulley

Installing the Mower Deck

1. Park tractor, shut off PTO and engine, remove the key and apply parking brake. Turn the wheels fully to the left.
2. Place mower height adjuster (B, Figures 7 & 8) in the lowest cutting position. Place the mower lift lever in the lowest position, also. Slide mower deck under right side of tractor so that mower hitch is aligned with the front tractor hitch.
3. See Figure 11. Turn wheels straight. Pull back on the spring-loaded lever (B) while lifting up on the mower hitch. Install mower hitch onto tractor hitch brackets (A). When properly installed, the spring-loaded lever should seat fully underneath the brackets.
4. See Figure 9. Connect the mower lift arm (A) to the tractor lift arm (B) using the flat washer (C) and safety clip (D).
5. See Figure 10. Move idler arm (A) to relieve belt tension. Install belt onto the PTO pulley (B).

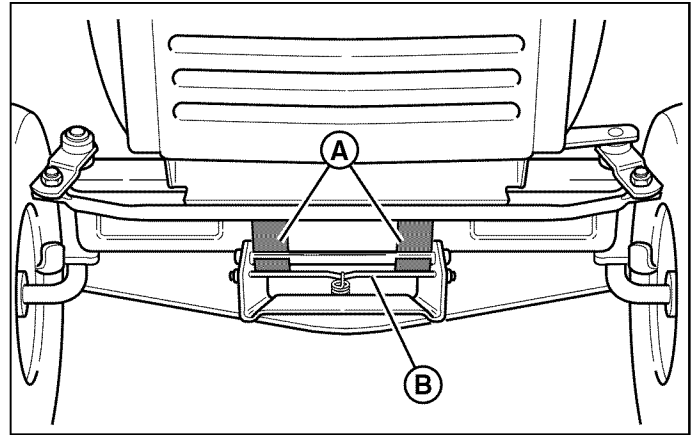
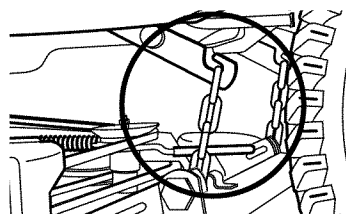


Figure 11. Mower Hitch
A. Tractor Hitch Brackets
B. Spring-Loaded Lever

Operating the Tractor

MOWER DECK REMOVAL & INSTALLATION

Chain Lift Models



WARNING

Engage parking brake, disengage PTO, stop engine and remove key before attempting to install or remove the mower.

Muffler and surrounding areas may be hot.

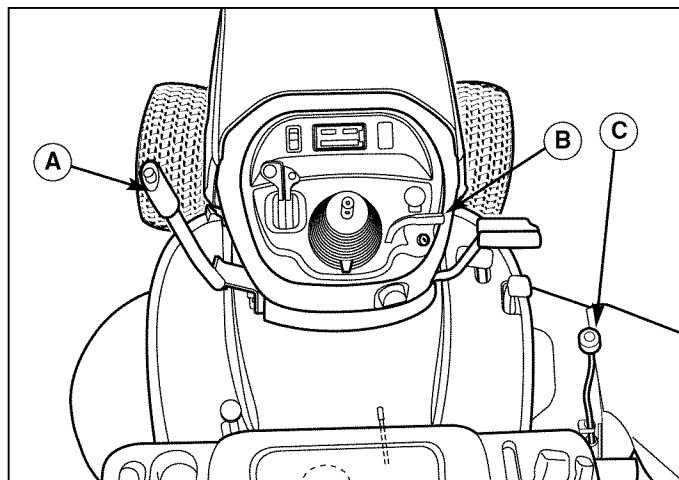


Figure 12. Raising & Lowering Mower

- A. Attachment Lift - Manual
- B. Attachment Lift - Hydraulic
- C. Cutting Height Control

Removing the Mower Deck

1. Park the tractor, fully lower the attachment lift, turn off the PTO, turn off the engine, remove the key, and engage the parking brake. If equipped, pivot the gauge wheels into sliding position (see Figure 13).
2. Place mower in the lowest cutting position using the mower height control.
3. Use the idler arm (D, Figure 14) to release tension on the PTO belt, and remove belt from the PTO pulley.
4. Pull down on the lift hooks (A, Figure 14) and unhook the lift chains (B).
5. Turn the wheels straight ahead. Pull back on spring-loaded lever (B, Figure 15) and lift mower hitch off of the tractor brackets (A).
6. Turn wheels fully left, and slide mower deck out from under the right side of the tractor.

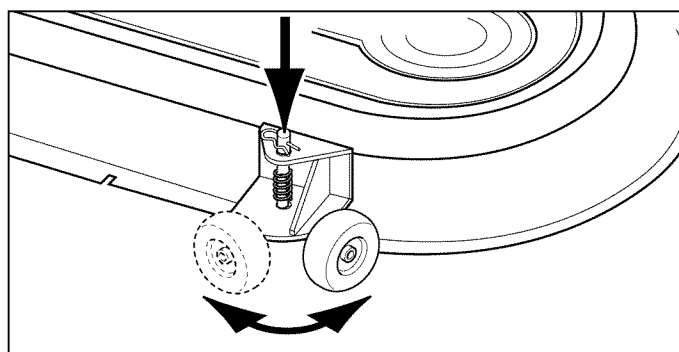


Figure 13. Gauge Wheels - 54" Models Only

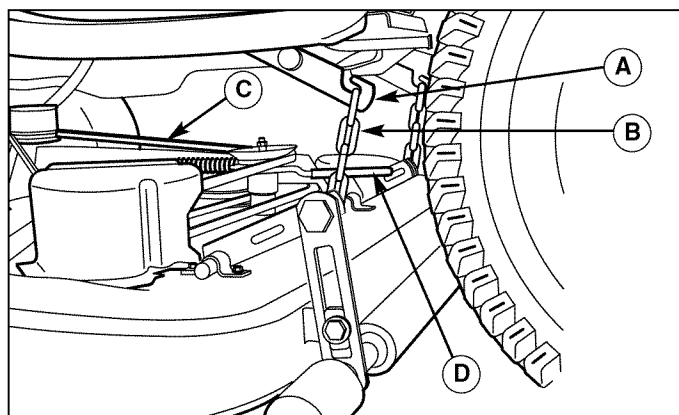


Figure 14. Mower Lift

- A. Lift Hook
- B. Lift Chain
- C. PTO Belt
- D. Idler Arm

Installing the Mower Deck

NOTE: Perform mower installation on a hard, level surface such as a concrete floor.

1. Park the tractor, fully lower the attachment lift, turn off the PTO switch, turn off the engine, remove the key, and engage the parking brake. Turn the wheels fully to the left.
2. Place mower in the lowest cutting position using the mower height adjuster. Slide the mower deck under the right side of tractor so that the mower hitch is aligned with front tractor hitch (A, Figure 15).
3. See Figure 15. Turn wheels straight. Pull back on the spring-loaded lever (B) while lifting up on the mower hitch. Install the mower hitch onto tractor hitch brackets (A). When properly installed, the spring-loaded lever should seat fully underneath the brackets (A).
4. See Figure 14. Connect the mower lift chains (B) to the tractor lift hooks (A).

NOTE 50" & 54" Mowers: The four-link lift chain is bolted to the mower deck using the third link. This is correct for most mowing applications. If mowing ditches or other surfaces that require the mower to travel below its normal range, use the fourth link.

5. See Figure 14. From left side of tractor, use the idler arm (D) to relieve belt tension. Install belt (C) onto the PTO pulley.
6. If equipped, raise the attachment lift and rotate the front gauge wheels (Figure 13) into cutting position.

ATTACHING A TRAILER

The maximum horizontal drawbar force allowed is 444 Newton. The maximum vertical drawbar force is 222 Newton. This equates to a 396 lbs (180 kg) trailer on a 10 degree hill. Secure the trailer with an appropriately sized clevis pin (A, Figure 16) and clip (B).

STORAGE

WARNING

Never store the unit (with fuel) in an enclosed, poorly ventilated structure. Fuel vapors can travel to an ignition source (such as a furnace, water heater, etc.) and cause an explosion.

Fuel vapor is also toxic to humans and animals.

Before you store your unit for the off-season, read the Maintenance and Storage instructions in the Safety Rules section, then perform the following steps:

- Disengage the PTO, set the parking brake, & remove the key.

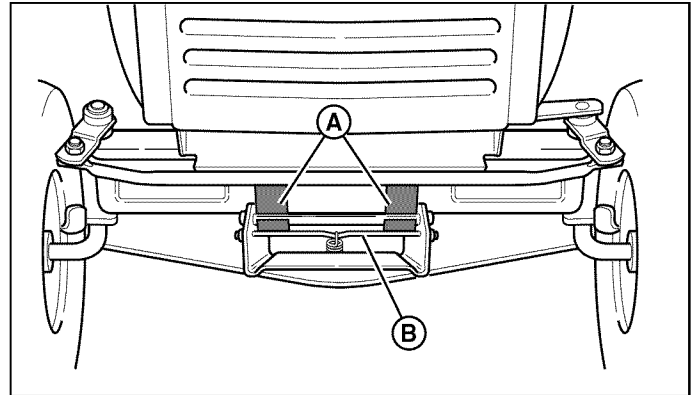


Figure 15. Mower Hitch
A. Tractor Hitch Brackets
B. Spring-Loaded Lever

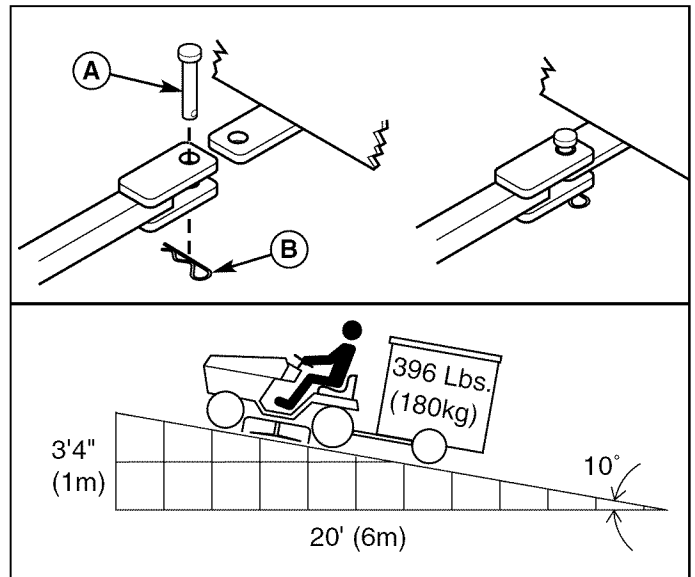


Figure 16. Trailer Weight Recommendations
A. Clevis Pin
B. Clip

- Perform engine maintenance and storage measures listed in the engine owner's manual. This includes draining the fuel system, or adding stabilizer to the fuel (do not store a fueled unit in an enclosed structure - see warning).
- Battery life will be increased if it is removed, put in a cool, dry place and fully charged about once a month. If the battery is left in the unit, disconnect the negative cable.

Before starting the unit after it has been stored:

- Check all fluid levels. Check all maintenance items.
- Perform all recommended checks and procedures found in the engine owner's manual.
- Allow the engine to warm up for several minutes before use.

Operating the Tractor

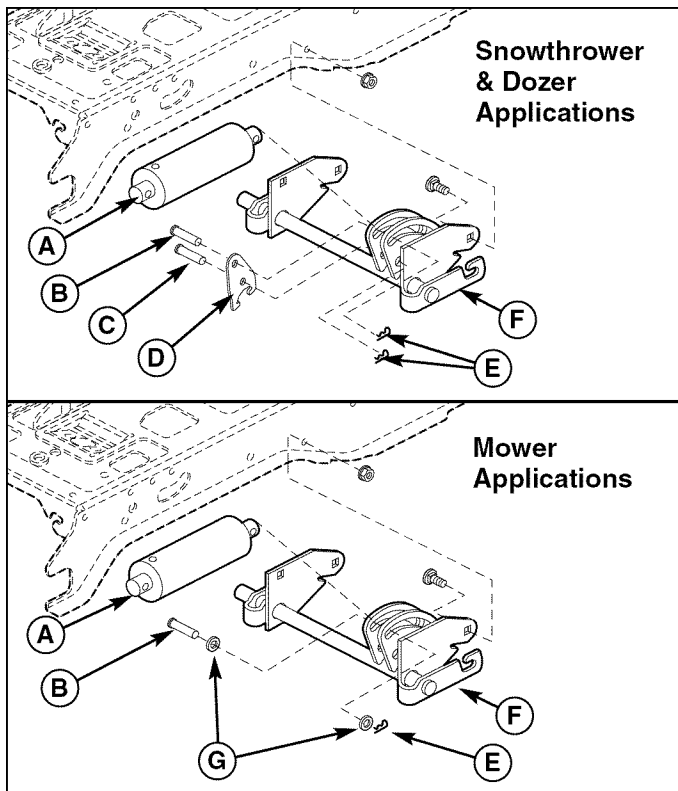


Figure 17. Lift Lock Plate - Hydraulic Lift Models

- A. Lift Cylinder
- B. Flat Head Pin (Original)
- C. Flat Head Pin (New)
- D. Lock Plate
- E. Hair Pin Clips
- F. Lift Shaft Assy.
- G. Washers

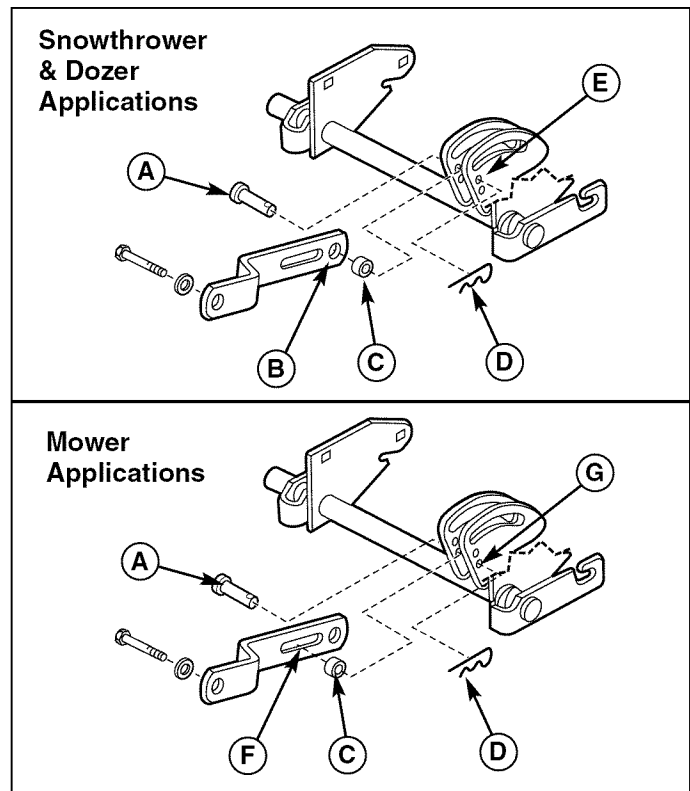


Figure 18. Lift Link - Manual Lift Models

- A. Pin
- B. Rear Hole of Lift Bar (Snowthrower Applications)
- C. Spacer
- D. Hair Pin Clip
- E. Upper Hole (Snowthrower Applications)
- F. Slot of Lift Link (Mower Applications)
- G. Lower Hole (Mower Applications)

LIFT VARIATIONS WHEN USING ATTACHMENTS

When a front-mounted attachment such as a snowthrower or dozer blade is used with the tractor, the lift mechanism must be locked to provide downward force. When the mower is reinstalled the downward pressure lock must be released so that the mower can float.

Hydraulic Lift Models

Fully lower the hydraulic lift. The lift assembly is spring loaded so it will need to be held in the down position to perform of the following procedures.

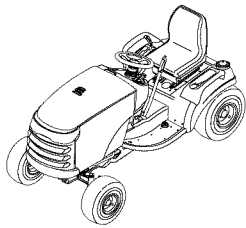
When using a snowthrower or dozer, the downward pressure lock plate (D, Figure 17) and an additional pin (C) is installed. These parts are included with the attachment. Note that the washers (G) are not used with the lock plate.

When mowing, the downward pressure lock plate (D) is removed and replaced with two washers (G). The additional pin (C) is also removed.

Manual Lift Models

NOTE: These instructions apply to Conquest / 1700 / 2700 / YT Series tractors or Broadmoor / 1600 / 2600 Series tractors equipped with a lift lever kit.

The lift link is installed differently depending on what attachment is being used. Refer to Figure 18 for link installation information.



Regular Maintenance

MAINTENANCE SCHEDULE & PROCEDURES

The following schedule should be followed for normal care of your tractor and mower.

SAFETY ITEMS	Before Each Use	Every 5 Hours	Every 25 Hours	Every 100 Hours	Every 250 Hours	Spring & Fall
Check Safety Interlock System						•
Check Tractor Brakes						•
Check Mower Blade Stopping Time				•		•
TRACTOR MAINTENANCE ITEMS	Before Each Use	Every 5 Hours	Every 25 Hours	Every 100 Hours	Every 250 Hours	Spring & Fall
Check Tractor/Mower for loose hardware		•				
Check / Clean Radiator (If Equipped) **	•	•				
Check / Clean Oil Cooler (If Equipped) **			•			
Check / Clean Cooling Fins (If Equipped)				•		
Check / Adjust PTO Clutch			****		•	
Lubricate Tractor & Mower **			•			
Lubricate Rear Axle Shafts						Yearly
Clean Battery & Cables				•		
Check Tire Pressure			•			
Clean Deck & Check/Replace Mower Blades**				•		
Perform Transmission Maint. (Varies by Model)					***	
Change Hydraulic System Filter (If Equipped)					**	
Check Mower Blade Timing (40" Mower)						Yearly
Check Arbor Drive Belt Tension (40" Mower)						Yearly
ENGINE MAINTENANCE ITEMS	Before Each Use	Every 5 Hours	Every 25 Hours	Every 100 Hours	Every 250 Hours	Spring & Fall
Check Engine Oil Level	•					
Check / Change Engine Air Filter *						
Change Engine Oil & Filter *						
Inspect Spark Plug(s) *						
Check / Replace Fuel Filter *						

* Refer to engine owner's manual. Change original engine oil after initial break-in period.

** More often in hot (over 85° F: 30° C) weather or dusty operating conditions.

*** Service after the first 50 hours of operation, then every 250 hours of operation.

**** Service after the first 25 hours of operation, then every 250 hours of operation.

Regular Maintenance

CHECK / CLEAN OIL COOLER (SELECT MODELS)

Service Interval: Every 25 Hours, or As Necessary

The engine oil cooler is located on the side of the engine (A, Figure 19) and should be cleaned with compressed air at regular intervals or if dirty.

SAFETY INTERLOCK SYSTEM CHECK

Service Interval: Every Fall & Spring

Check the function of the safety interlock system using the test procedure found on page 12 of this manual. If the tractor fails any of the tests, see your dealer.

BLADE BRAKE CHECK

Service Interval: Every 100 Hours or Fall & Spring

Mower blades and mower drive belt should come to a complete stop within five seconds after electric PTO switch is turned off.

1. With tractor in neutral, PTO disengaged and operator in seat, start the engine.
2. Look over the left-hand footrest at the mower drive belt. Engage the PTO and wait several seconds. Disengage the PTO and check the amount of time it takes for the mower drive belt to stop.
3. If mower drive belt does not stop within five seconds, re-adjust the clutch or see your dealer.

PTO CLUTCH ADJUSTMENT CHECK

Service Interval: After 25 Hrs, Then Every 250 Hrs

Check the PTO clutch adjustment after the initial 25 hour break-in period and then after every 250 hours of operation—or if the clutch starts slipping or will not engage. Check and adjust the clutch using the procedure outlined in the Adjustments section of this manual.

ENGINE MAINTENANCE

Refer to the engine owner's manual for all engine maintenance procedures and recommendations.

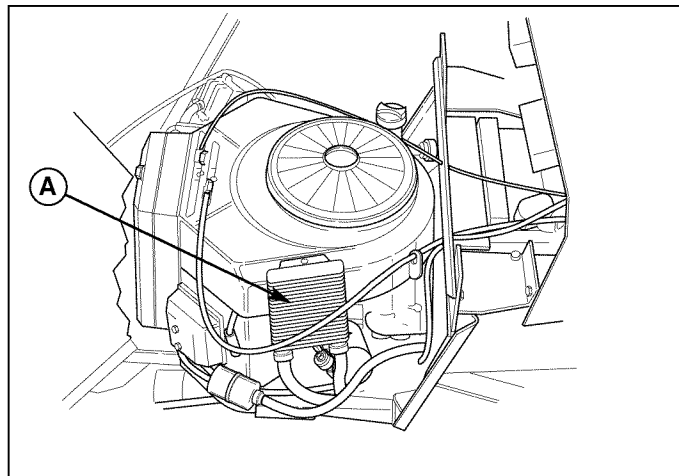


Figure 19. Clean Oil Cooler
A. Oil Cooler

CHECK TIRE PRESSURES

Service Interval: Every 25 Hours

Tire Pressure should be checked periodically, and maintained at the levels shown in the chart. Note that these pressures may differ slightly from the “Max Inflation” stamped on the side-wall of the tires. The pressures shown provide proper traction, improve cut quality, and extend tire life.

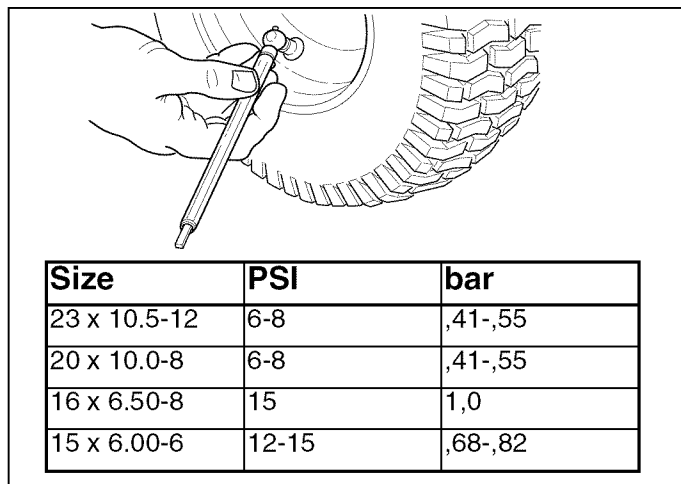


Figure 20. Tire Pressure

BATTERY MAINTENANCE

⚠ WARNING

When removing or installing battery cables, disconnect the negative cable **FIRST** and reconnect it **LAST**. If not done in this order, the positive terminal can be shorted to the frame by a tool.

Cleaning the Battery and Cables

Service Interval: Every 100 Hours

1. Disconnect the cables from the battery, negative cable first (A, Figure 21).
2. Remove the battery hold-down (C) and battery.
3. Clean the battery compartment with a solution of baking soda and water.
4. Clean the battery terminals and cable ends with a wire brush and battery terminal cleaner until shiny.
5. Reinstall the battery in the battery compartment, and secure with the battery hold-down (C).
6. Reattach the battery cables, positive cable first (B).
7. Coat the cable ends and battery terminals with petroleum jelly or non-conducting grease.

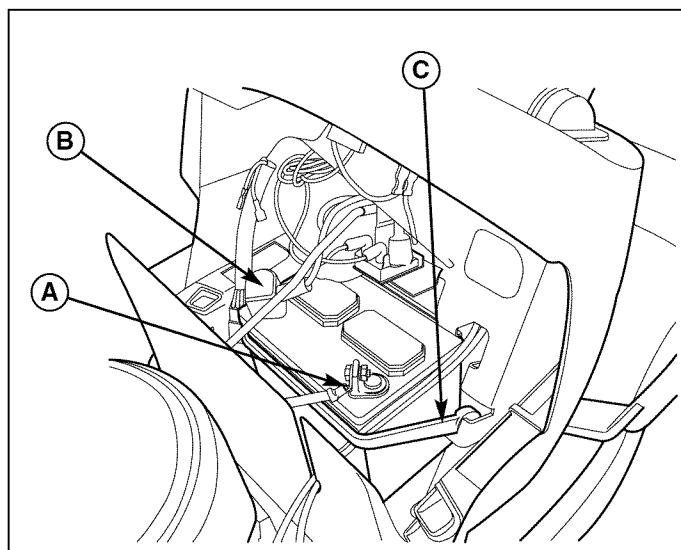


Figure 21. Battery
A. Negative Cable
B. Positive Cable & Cover
C. Rubber Hold-Down Strap

Regular Maintenance

LUBRICATION

Service Interval: Every 25 Hours

Lubricate the unit at the locations shown in Figures 22-26 as well as the lubrication points listed. Generally, all moving metal parts should be oiled where contact is made with other parts. Keep oil and grease off belts and pulleys. Wipe surfaces clean before and after lubrication.

Grease:



- steering linkage
- foot pedal
- mower linkage
- transmission idler assembly pivot
- rear axle shafts (remove wheel hubs)
- front axle where it contacts the frame

Use grease fittings when present. Automotive lithium grease is recommended.

Oil:



- control linkage
- seat adjustment assembly
- brake linkage
- mower deck height adjustment linkage
- manual lift lever

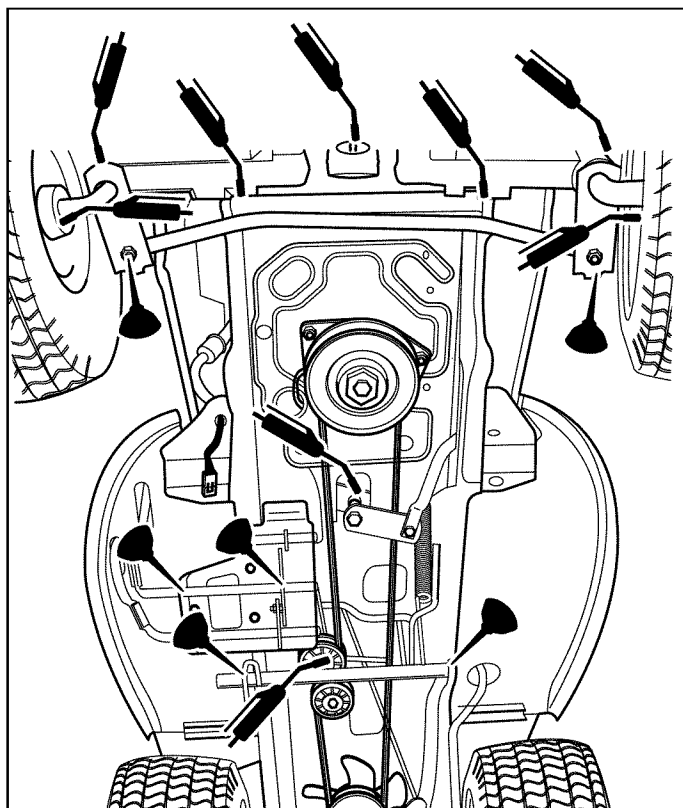


Figure 22. Lubricating the Tractor

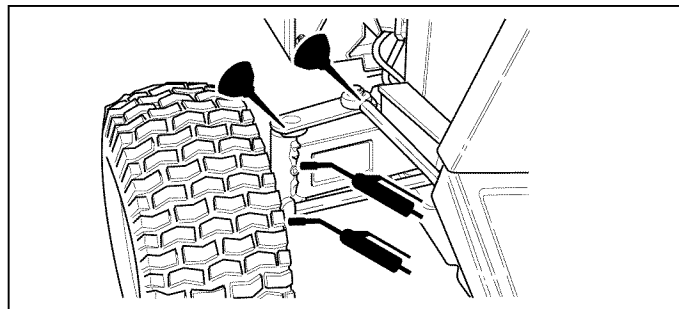


Figure 23. Lubricate Steering Linkage

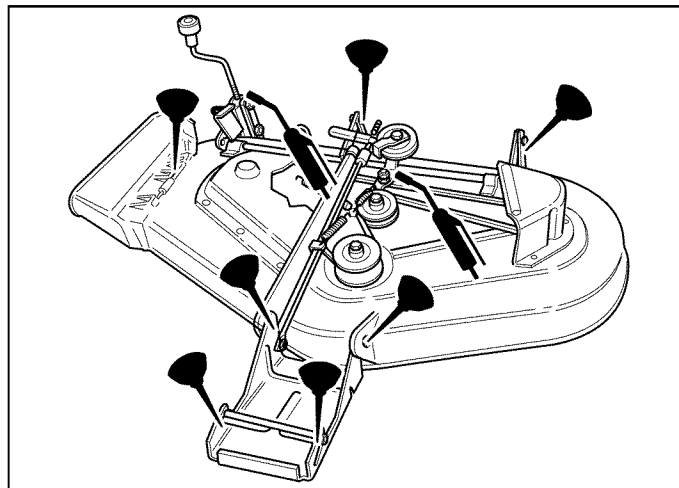


Figure 24. Mower Lubrication Points

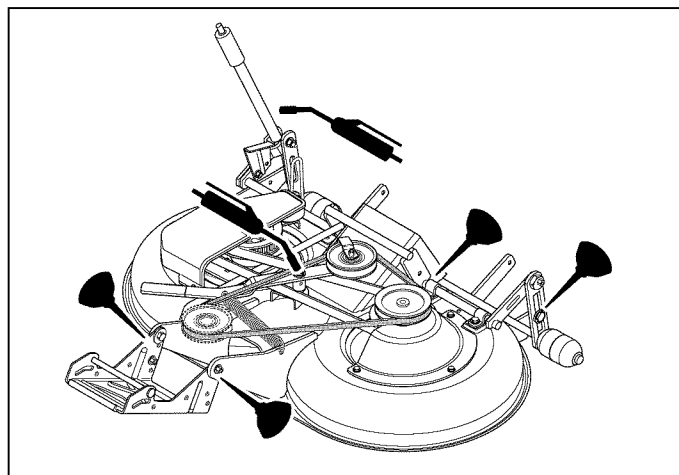


Figure 25. Mower Lubrication Points

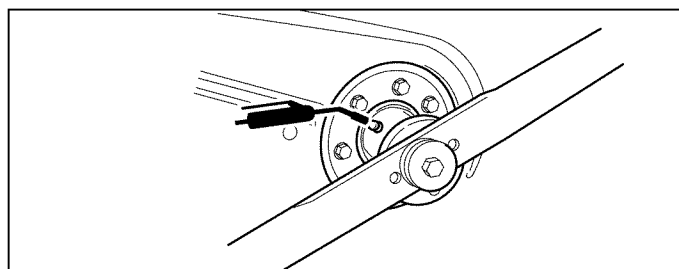


Figure 26. Arbor Lubrication Point

LUBRICATE REAR AXLE SHAFTS

Service Interval: Yearly

We recommend removing the rear wheel hubs and lubricating the axle shafts yearly. This prevents the wheel hubs from seizing onto the axle shaft and makes future service easier.

1. Turn off the ignition, turn off the PTO, engage the parking brake, and block the front tires.
2. Using a jack or chain hoist positioned at the center of the rear frame, carefully jack the unit up until the rear tires are approximately 1" - 2" (2.5-5cm) off the ground.

NOTE: For overall unit stability during service, do not jack rear end higher than required for wheel removal.

3. Support the rear of the unit on jackstands positioned under the rear frame.

NOTE: Your axle assembly may differ slightly from the assembly pictured: the quantity of washers is adjusted on a tractor by tractor basis during assembly to allow a small amount of axle end-play.

4. Remove the hardware retaining the wheel assembly to the axle and lubricate the axle shaft using anti-seize compound or lithium grease.
5. Reinstall the components in reverse order of disassembly and lower the unit. Be sure the key (A, Figure 27) is in place in the axle keyway.

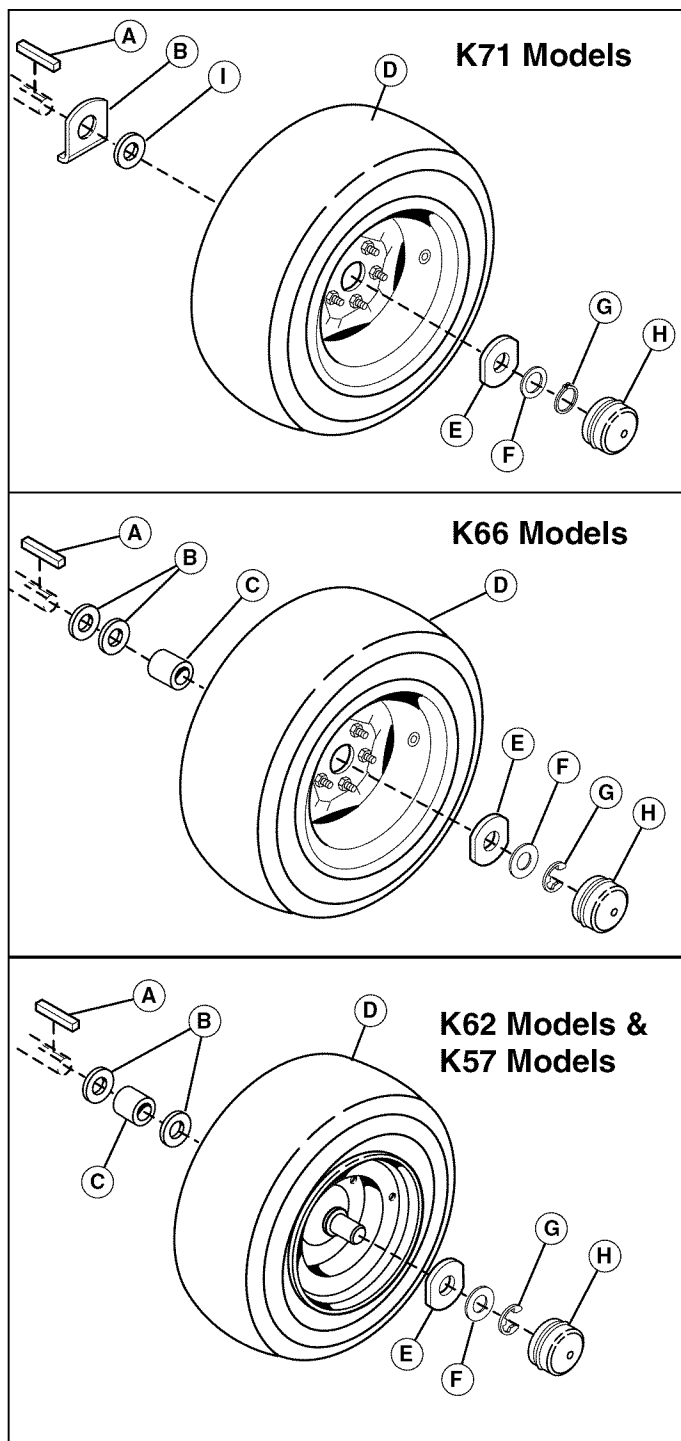


Figure 27. Rear Axle Hardware

- | | |
|-------------------------------|-------------------|
| A. Key | F. Small Washer |
| B. Stationary Washer / Washer | G. Retaining Ring |
| C. Spacer | H. Axle Cap |
| D. Wheel & Hub | I. Large Washer |
| E. Axle Cap Retainer | |

Regular Maintenance

WARNING

For your personal safety, do not handle the sharp mower blades with bare hands. Careless or improper handling of blades may result in serious injury.

WARNING

For your personal safety, blade mounting capscrews must each be installed with a hex/spline washer and spring washer, then securely tightened. Torque blade mounting capscrew to 45 - 55 ft. lbs. (61 - 75 N.m.)

SERVICING THE MOWER BLADES

Service Interval: Every 100 Hours or As Required

NOTE: Mower blades must be timed perpendicular to each other.

1. Remove mower deck (see "Mower Deck Removal").
2. See Figure 28. To remove blade for sharpening, use a block of wood to prevent blade rotation while loosening the capscrew.

3. **38", 44", & 50" Mowers:** Remove the capscrew (D, Figure 30), spring washer (C), hex washer (B), and blade.

40" Mowers: Remove the capscrew (A, Figure 32), spring washer (F), spline washer (G), alignment pin (E) and blade (D). Do not remove the blade adapter (C).

54" Mowers: Remove the capscrew (D, Figure 31), spring washer (C), spline washer (B), and blade.

4. Use a file to sharpen blade to a fine edge. If blade is damaged, it must be replaced.
5. Balance the blade as shown in Figure 29. Center the blade's hole on a nail lubricated with a drop of oil. A balanced blade will remain level.
6. Reinstall the blade (Figures 30-32) with the tabs pointing up toward the mower deck as shown. Reinstall the alignment pin (E).
7. **38", 44", & 50" Mowers:** Reinstall the hex washer (B, Figure 30), spring washer (C) and capscrew (D). Use a wooden block (A) to prevent blade rotation while tightening the capscrew (D) to 61-75 N.m (45-55 ft. lbs.).

40" Mowers: Be sure the blades are positioned perpendicular to each other as shown in Figure 33. If not, perform the Mower Blade Timing procedure found in this section. Reinstall the spline washer (G, Figure 32), spring washer (F) and capscrew (A). Use a wooden block (B) to prevent blade rotation while tightening the capscrew (A) to 61-75 N.m (45-55 ft. lbs.).

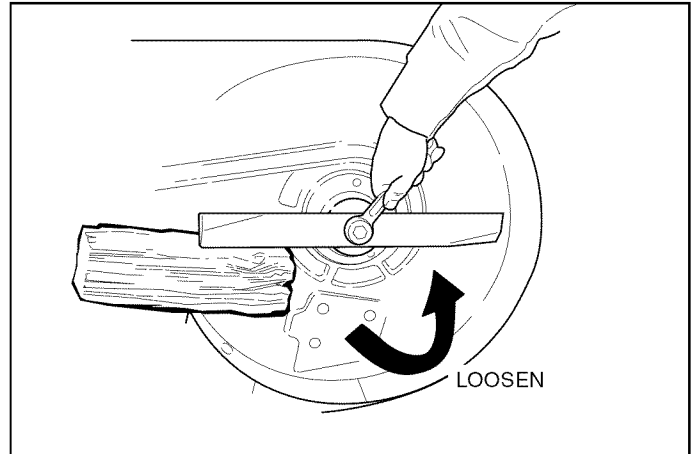


Figure 28. Blade Removal

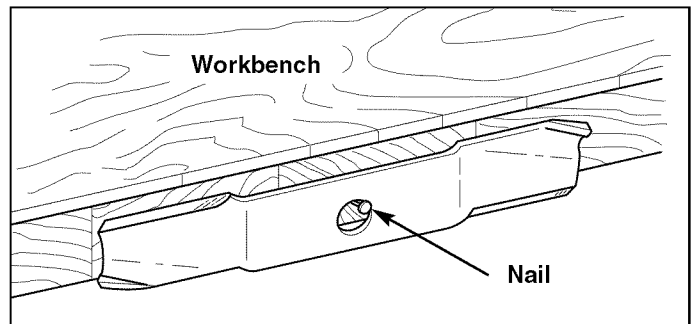


Figure 29. Balancing The Blade

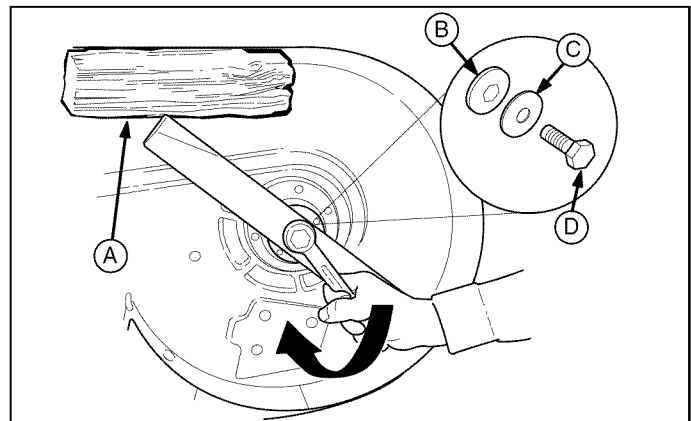


Figure 30. Blade Installation - 38", 44", 50" Mowers

- A. 4x4 Wood Block
- B. Hex Washer
- C. Spring Washer
- D. Blade Bolt

54" Mowers: Reinstall the spline washer (B, Figure 31), spring washer (C) and capscrew (D). Use a wooden block (A) to prevent blade rotation while tightening the capscrew (D) to 61-75 N.m (45-55 ft. lbs.).

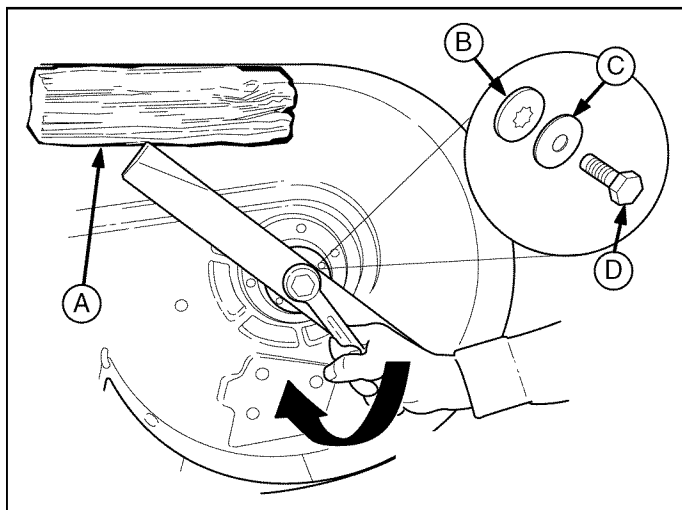


Figure 31. Blade Installation - 54" Mowers

- A. 4x4 Wood Block
- B. Spline Washer
- C. Spring Washer
- D. Blade Bolt

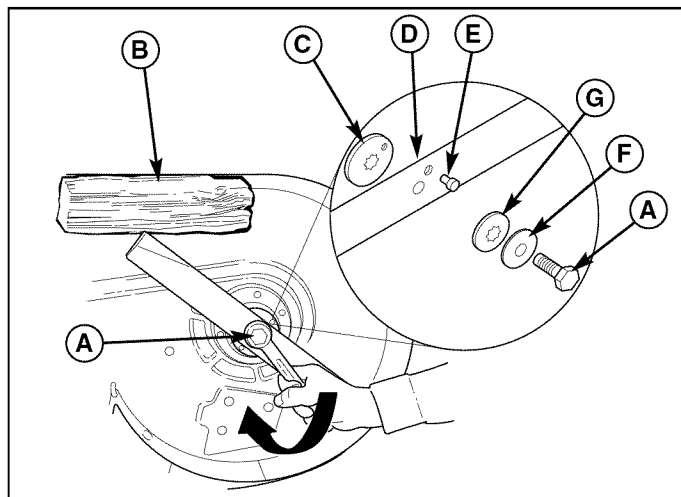


Figure 32. Blade Installation - 40" Mowers

- A. Blade Mounting Capscrew
- B. 4x4 Wood Block
- C. Blade Adapter
- D. Blade
- E. Alignment Pin
- F. Spring Washer
- G. Spline Washer

CHECK MOWER BLADE TIMING - 40" MOWERS

Service Interval: Yearly

1. Turn the PTO OFF, engage the parking brake, turn the engine off, and remove the key. Remove the mower deck (see "Mower deck removal").
2. Turn the mower deck over and check the position of the blades. The blades must be positioned perpendicular to each other as shown in Figure 33. If not, proceed to step 3.
3. Use a block of wood (B, Figure 28) to prevent blade rotation while loosening the capscrew.
4. Remove the capscrew (A, Figure 32), spring washer (F), and spline washer (G).
5. Remove the alignment pin (E, Figure 32). Rotate the blade (D) manually until the blades are perpendicular to each other as shown in Figure 33. It may be necessary to remove and rotate the blade adapter (C) to align the blade hole and adapter hole.
6. Reinstall the alignment pin (E), spline washer (G), spring washer (F) and capscrew (A). Use a wooden block (B) to prevent blade rotation while tightening the capscrew (A) to 61-75 N.m (45-55 ft. lbs.).

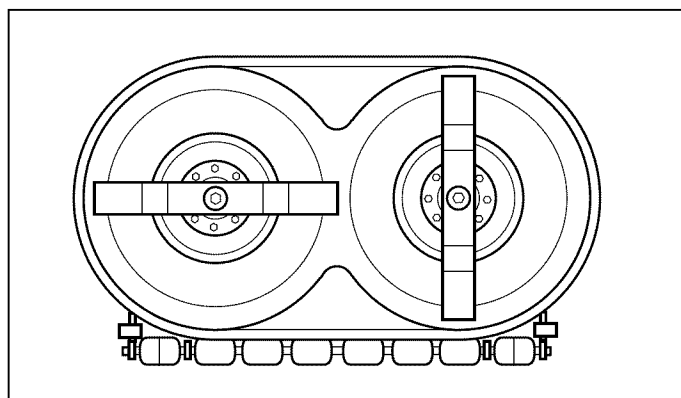


Figure 33. Check Blade Timing

Regular Maintenance

TRANSMISSION IDENTIFICATION

Several service procedures within this book are identified by, and vary by, transmission type. To determine what transmission is in your tractor, check the identification tag attached to the axle of the transmission (Figure 34), or check your tractor's parts book.

TRANSMISSION MAINTENANCE



Do not allow dirt, water, or other debris to enter the expansion chamber or transmission. Even a small amount of dirt can damage the transmission.

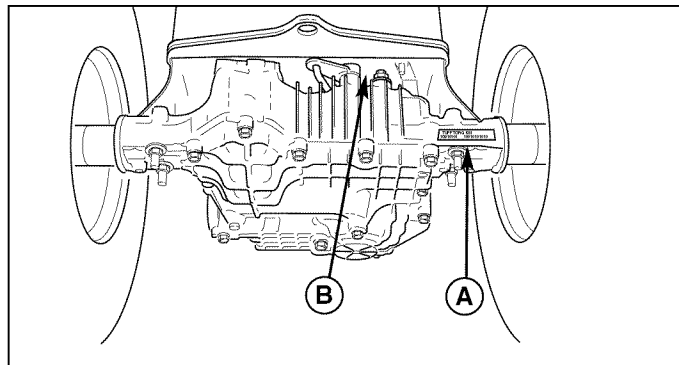


Figure 34. Transmission ID Tag Location

A. ID Tag

B. K62 Expansion Chamber

K57 Maintenance

The K57 is a sealed unit and does not require regular maintenance.

K62 Maintenance

The K62 is a sealed unit and does not require regular maintenance. The transmission oil level can be checked at the expansion chamber located on top of the transmission (see Figure 34). Shine a light at the back of the expansion chamber to see the oil level. There should be approximately 7/16" (1 cm) of oil in the chamber. If there is no oil in the chamber, see your dealer.

TRANSMISSION INFORMATION

Transmission Oil Capacity: Apx. 2.6 qt (2,5L).

Transmission Oil Type: SAE 10W-30 with a minimum API rating of SG/CD.

K66 Maintenance

The K66 is a sealed unit and does not require regular maintenance. The transmission oil level can be checked at the access hole located behind the left rear wheel (see Figure 35). Shine a light at the back of the expansion chamber to see the oil level. There should be approximately 7/16" (1 cm) of oil in the chamber. If there is no oil in the chamber, see your dealer.

TRANSMISSION INFORMATION

Transmission Oil Capacity: Apx. 2.6 qt (2.5L).

Transmission Oil Type: SAE 10W-30 with a minimum API rating of SG/CD.

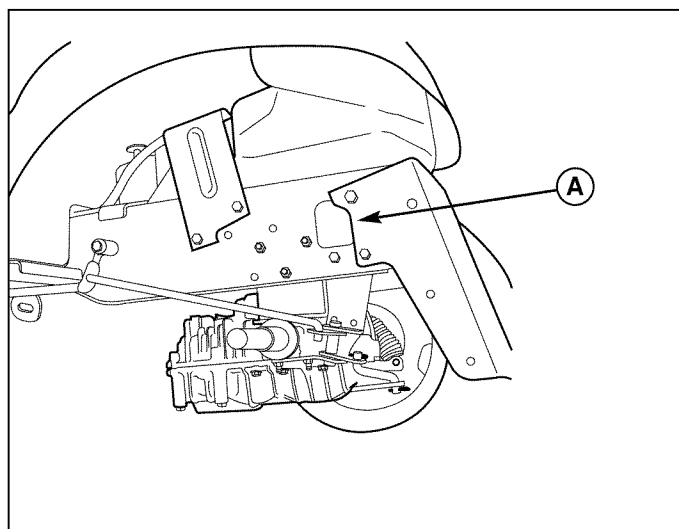


Figure 35. Transmission Oil Reservoir - K66

A. K66 Reservoir Access Hole

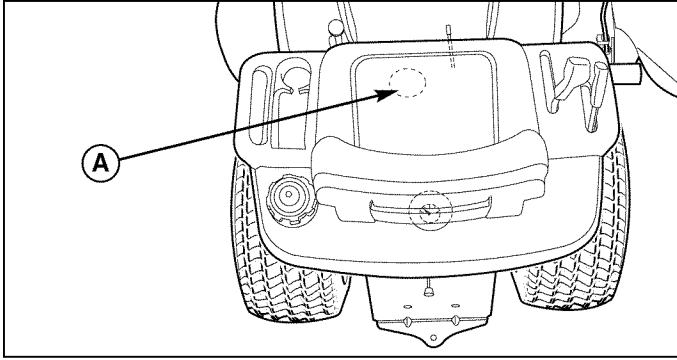


Figure 36. Seat Deck Access Plug
A. Expansion Chamber Access Plug

K71 Maintenance

The following maintenance procedures must be performed on the K71 transmission after the first 50 hours of operation and then after every 250 hours.

TRANSMISSION INFORMATION

Transmission Oil Capacity: Apx. 4-1/2 qt (4.25L)

Transmission Oil Type: SAE 10W-30 with a minimum API rating of SG/CD.

Internal Oil Filter Part Number: 1719832

Hydraulic System Oil Filter Part Number: 1719168

CHECK TRANSMISSION OIL LEVEL

Service Interval: Every 5 Hours

NOTE: Lift cylinder should be extended.

1. Slide the seat assembly back to access the plastic plug in the top of the seat deck (see Figure 36). Remove the plug.
2. Clean the area around the expansion chamber. Open the lid and check that there is oil present in the bottom of the expansion chamber. If there is no oil present, add 10W-30 SG engine oil until the oil level is 7/16" (1 cm) above the bottom. **DO NOT OVER-FILL.** Empty space is required in the expansion chamber for heat expansion.

CHANGE TRANSMISSION OIL, INTERNAL FILTER, & HYDRAULIC SYSTEM FILTER

Service Interval: After 50 Hrs, Then Every 250 Hrs

NOTE: The oil should also be changed whenever it has become discolored from overheating or contamination.

NOTE: Support the frame with jackstands and remove the left rear wheel for easier access to the differential fill plug (Figure 37).

1. Place a drain pan under the transmission and remove the two 14mm drain plugs (A, Figure 38).
2. Remove the differential fill cap (B, Figure 39).
3. Remove the filter access cap (B, Figure 38).
4. Remove and replace the hydraulic system filter (A, Figure 39). Thread the new filter onto the filter base and tighten 1/2 to 3/4 turns past finger tight.

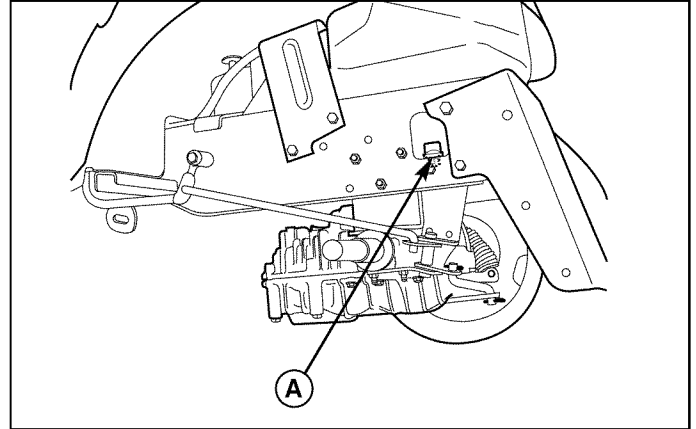


Figure 37. Differential Fill Plug Access
A. Differential Fill Plug

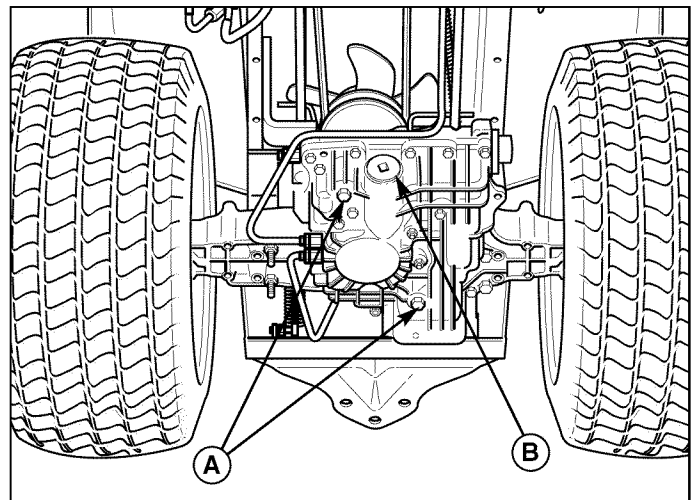


Figure 38. Transmission Drain Plugs
A. 14mm Drain Plugs
B. Filter Access Cap

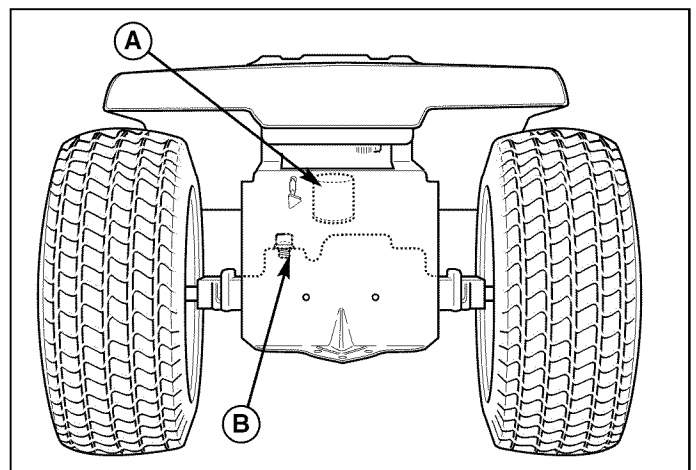


Figure 39. Hydraulic System Oil Filter
A. Hydraulic System Filter
B. Differential Fill Cap

Regular Maintenance

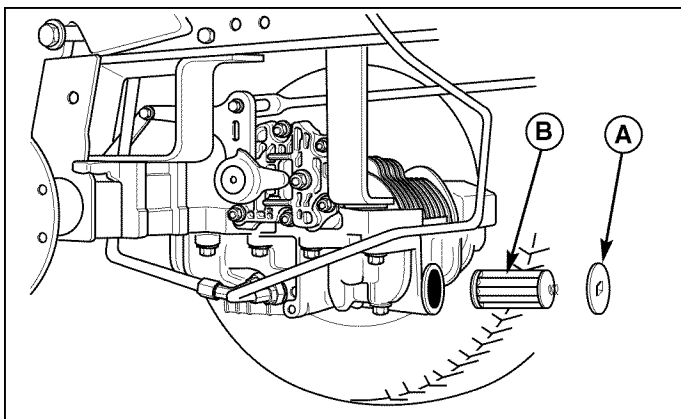


Figure 40. Internal Transmission Filter Service
A. Filter Access Cap **B. Internal Filter**

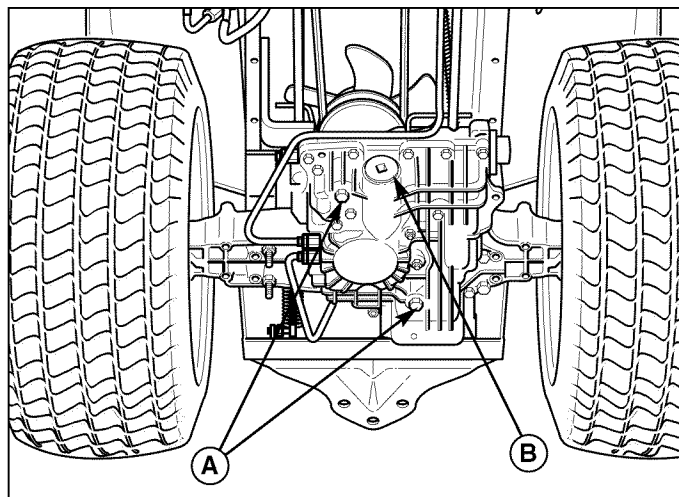


Figure 41. Transmission Drain Plugs
A. 14mm Drain Plugs
B. Filter Access Cap

5. Remove and replace the internal transmission filter (B, Figure 40).
6. Reinstall the filter access cap (A, Figure 40) and the two 14mm drain plugs (A, Figure 41).
7. Using a long funnel, add 2 quarts of oil to the differential fill (See Figure 37). The differential fill cap should have been removed earlier).
8. Reinstall the differential fill cap (A, Figure 37).
9. Remove the expansion chamber access plug (A, Figure 42) and expansion chamber cover. Add 2 quarts (1.9L) of oil to the expansion chamber a few ounces at a time.
10. Reinstall the expansion chamber cover and access plug (Figure 42).
11. Test run the tractor for 10 minutes. Drive forward and backward; raise and lower the attachment lift several times.
12. Recheck the transmission oil level. There should be 7/16" (1 cm) of oil visible in expansion chamber. **DO NOT OVERFILL.** Empty space is required for heat expansion.

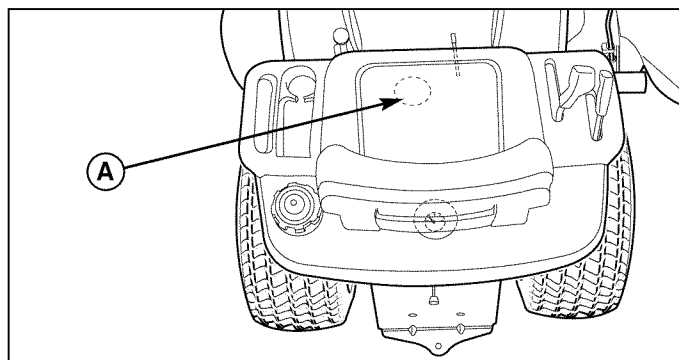
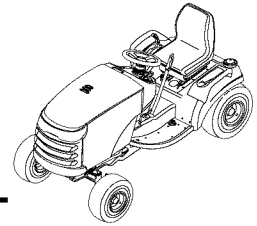


Figure 42. Seat Deck Access Plug
A. Expansion Chamber Access Plug

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Troubleshooting, Adjustment, & Service



TROUBLESHOOTING

While normal care and regular maintenance will extend the life of your equipment, prolonged or constant use may eventually require that service be performed to allow it to continue operating properly.

The troubleshooting guide below lists the most common problems, their causes, and remedies.

See the information on the following pages for instructions on how to perform most of these minor adjustments and service repairs yourself. If you prefer, all of these procedures can be performed for you by your local authorized dealer.

WARNING

To avoid serious injury, perform maintenance on the tractor or mower only when the engine is stopped and the parking brake engaged.

Always remove the ignition key, disconnect the spark plug wire and fasten it away from the plug before beginning the maintenance, to prevent accidental starting of the engine.

TROUBLESHOOTING THE TRACTOR

PROBLEM	CAUSE	REMEDY
Engine will not turnover or start.	1. Brake pedal not depressed.	Fully depress brake pedal.
	2. PTO (electric clutch) switch in ON position.	Place in OFF position.
	3. Cruise control engaged.	Move lever to Neutral position.
	4. Out of fuel.	If engine is hot, allow it to cool, then refill the fuel tank.
	5. Engine flooded.	Disengage choke.
	6. Circuit breaker tripped.	Wait one minute for automatic reset.
	7. Battery terminals require cleaning.	Replace if defective.
	8. Battery discharged or dead.	See Battery Maintenance Section.
	9. Wiring loose or broken.	Recharge or replace.
	10. Solenoid or starter motor faulty.	Visually check wiring & replace broken or frayed wires. Tighten loose connections.
	11. Safety interlock switch faulty	See your dealer.
	12. Spark plug(s) faulty, fouled or incorrectly gapped.	See your dealer.
	13. Water in fuel.	Clean and gap or replace.
	14. Gas is old or stale.	See engine manual.
Engine starts hard or runs poorly.	1. Fuel mixture too rich.	Drain fuel & refill with fresh fuel. Replace fuel filter.
	2. Spark plug(s) faulty, fouled, or incorrectly gapped.	Drain fuel & refill with fresh fuel. Replace fuel filter.
Engine knocks.	1. Low oil level.	Clean air filter. Check choke adjustment
	2. Using wrong grade oil.	Clean and gap or replace.
Excessive oil consumption.	1. Engine running too hot.	See engine manual.
	2. Using wrong weight oil.	Clean engine fins, blower screen and air cleaner. Clean radiator screen.
	3. Too much oil in crankcase.	See engine manual.
Engine exhaust is black.	1. Dirty air filter.	Drain excess oil.
	2. Choke closed.	Replace air filter. See engine manual.
Engine runs, but tractor will not drive.	1. Ground speed control pedals not depressed.	Open choke.
	2. Transmission release lever in "push" position.	Depress pedals.
	3. Drive belt is broken.	Move into drive position.
	4. Drive belt slips.	See Drive Belt Replacement.
	5. Parking brake is engaged.	See cause and remedy below.

Tractor Troubleshooting Cont.

Tractor drive belt slips.	<ol style="list-style-type: none"> 1. Clutch/brake is out of adjustment. 2. Pulleys or belt greasy or oily. 3. Belt stretched or worn. 4. Idler pulley pivot bracket "frozen" in declutched position. 	<p>See Adjustments Section. Clean as required. Replace with new belt. Remove idler pulley bracket, clean and lubricate.</p>
Brake will not hold.	<ol style="list-style-type: none"> 1. Brake is incorrectly adjusted. 2. Internal brake worn. 	<p>See Brake Adjustment. See your dealer.</p>
Tractor steers hard or handles poorly.	<ol style="list-style-type: none"> 1. Steering linkage is loose. 2. Improper tire inflation. 3. Front wheel spindle bearings dry. 	<p>Check and tighten any loose connections. See Steering Gear Adjustment. Check and correct. Grease spindles. See Lubricating the Tractor.</p>

TROUBLESHOOTING THE MOWER

PROBLEM	CAUSE	REMEDY
Mower will not raise.	<ol style="list-style-type: none"> 1. Lift linkage not properly attached or damaged. 2. Dirt in hydraulic lines. 3. Brake pedal depressed. 	<p>Attach or repair. Change hydraulic system filter. Release brake pedal to power transmission.</p>
Mower cut is uneven.	<ol style="list-style-type: none"> 1. Mower not leveled properly. 2. Tractor tires not inflated equally or properly. 	<p>See Mower Adjustment. See Maintenance Section.</p>
Mower cut is rough looking.	<ol style="list-style-type: none"> 1. Engine speed too slow. 2. Ground speed too fast. 3. Blades are dull. 4. Mower drive belt slipping because it is oily or worn. 5. Check PTO (Electric Clutch) Adjustment. 6. Blades not properly fastened to arbors. 	<p>Set to full throttle. Slow down. Sharpen or replace blades. See Mower Blade Service. Clean or replace belt as necessary. See Adjustments Section. See Servicing the Mower Blades.</p>
Engine stalls easily with mower engaged.	<ol style="list-style-type: none"> 1. Engine speed too slow. 2. Ground speed too fast. 3. Carburetor improperly adjusted. 4. Cutting height set too low. 5. Discharge chute jamming with cut grass. 6. Engine not up to operating temperature. 7. Starting mower in tall grass. 	<p>Set to full throttle. Slow down. See Engine Manual. Cut tall grass at maximum cutting height during first pass. Cut grass with discharge pointing toward previously cut area. Run engine for several minutes to warm-up. Start the mower in a cleared area.</p>
Excessive mower vibration.	<ol style="list-style-type: none"> 1. Blade mounting screws are loose. 2. Mower blades, arbors, or pulleys are bent. 3. Mower blades are out of balance. 4. Belt installed incorrectly. 	<p>Tighten to 45-55 ft.lbs. (61-75 N.m.). Check and replace as necessary. Remove, sharpen, and balance blades. See Servicing the Mower Blades. Reinstall Correctly.</p>
Excessive belt wear or breakage.	<ol style="list-style-type: none"> 1. Bent or rough pulleys. 2. Using incorrect belt. 	<p>Repair or replace. Replace with correct belt.</p>
Mower drive belt slips or fails to drive.	<ol style="list-style-type: none"> 1. Idler pulley spring broken or not properly attached. 2. Belt stops out of adjustment. 3. Mower drive belt broken. 4. PTO clutch out of adjustment. 	<p>Repair or replace as needed. Check belt stops. Replace drive belt. Adjust PTO clutch.</p>
Mower blades collide (40" Mower).	<ol style="list-style-type: none"> 1. Blade shear pin broken. 	<p>Replace shear pin.</p>

BATTERY CHARGING

WARNING

Keep open flames and sparks away from the battery; the gasses coming from it are highly explosive. Ventilate the battery well during charging.

A dead battery or one too weak to start the engine may be the result of a defect in the charging system or other electrical component. If there is any doubt about the cause of the problem, see your dealer. If you need to replace the battery, follow the steps under Cleaning the Battery & Cables in the Regular Maintenance Section.

To charge the battery, follow the instructions provided by the battery charger manufacturer as well as all warnings included in the safety rules sections of this book. Charge the battery until fully charged (until the specific gravity of the electrolyte is 1.250 or higher and the electrolyte temperature is at least 60° F). Do not charge at a rate higher than 10 amps.

SEAT ADJUSTMENT

Pitch Adjustment

The pitch of the seat can be adjusted to one of three positions. To adjust, remove the carriage bolts, spacers, washers, and nuts (B, Figure 43) from the hinge and reinstall them in the desired holes.

Seat Slide Adjustment

The seat can also be adjusted forward and back. Move the lever (A, Figure 43), position the seat as desired, and release the lever to lock the seat into position.

Seat Spring Adjustment

The seat springs (C, Figure 43) can be adjusted to provide a softer or firmer ride. Tilt the seat forward and slide the spring assembly (C) forward for a softer ride, and back for a firmer ride.

MANUAL LIFT ASSIST ADJUSTMENT

Models with large, left-side lift lever.

The manual lift assist spring tension can be adjusted to compensate for the additional load of various attachments.

1. Locate the adjustment bolt (A, Figure 44) at the lower left corner of the engine compartment bulkhead.
2. Turn the bolt (A) clockwise to increase assist. Turn the bolt (A) counterclockwise to reduce lift assist.

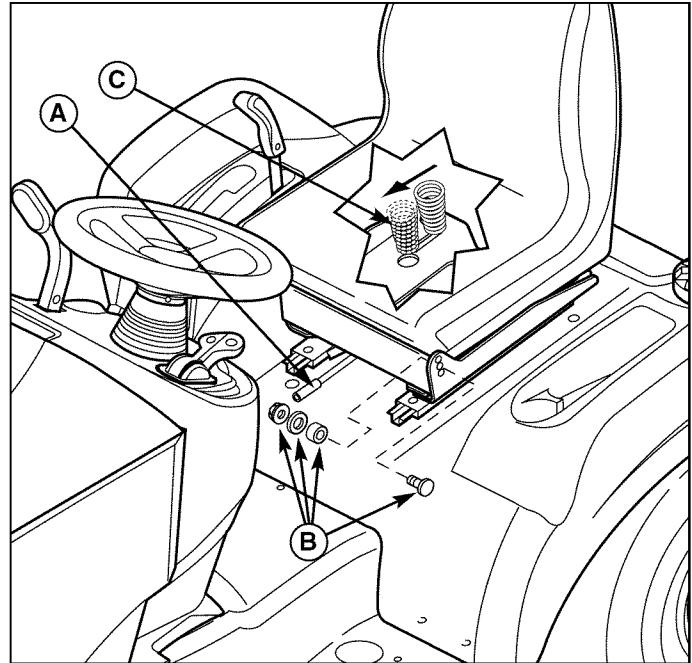


Figure 43. Seat Adjustment

- A. Seat Adjustment Lever
B. Carriage Bolt, Spacer, Washer, & Nut
C. Seat Spring

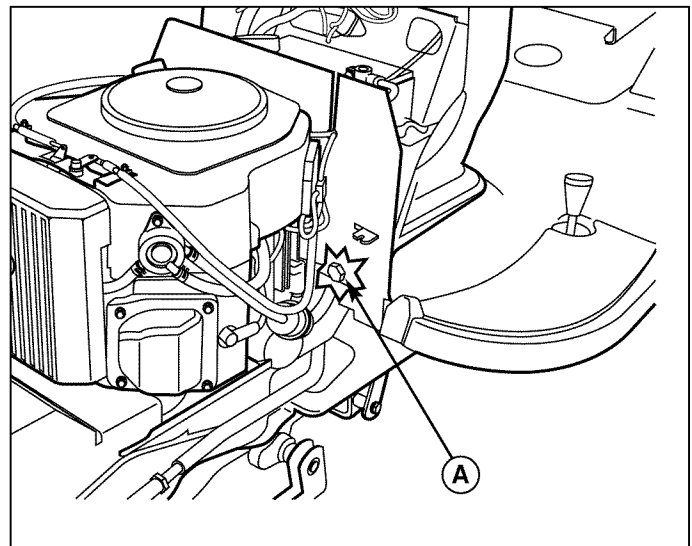


Figure 44. Manual Lift Assist Adjustment

- A. Adjustment Bolt

STEERING WHEEL ADJUSTMENT

NOTE: The steering wheel on Snapper models is not adjustable.

1. Use a suitable punch to remove the roll pin at the base of the steering wheel (B, Figure 45).
2. Pull down on the rubber boot to expose the two holes in the steering shaft (A).
3. Align the hole in the steering wheel with the appropriate steering shaft hole and install the roll pin.

NOTE: Steering wheel is factory installed with the roll pin in the bottom hole.

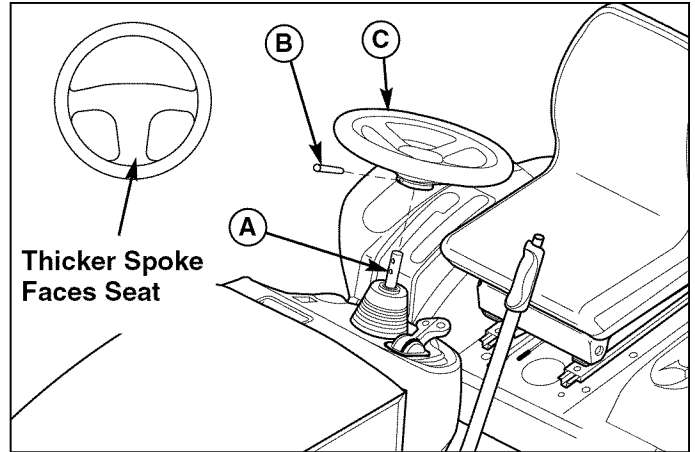


Figure 45. Steering Wheel Components

- A. Steering Shaft**
B. Roll Pin
C. Steering Wheel

STEERING GEAR ADJUSTMENT

If there is excessive slack in the steering system, the steering gear backlash can be removed.

1. See Figure 46. Locate the steering gear assembly on the underside of the tractor. Loosen the two nuts and adjust the bracket so the gear teeth are closely meshed.
2. Tighten nuts (A, Figure 46) to 36-44 ft. lbs. (49-59 Nm) after adjustment.

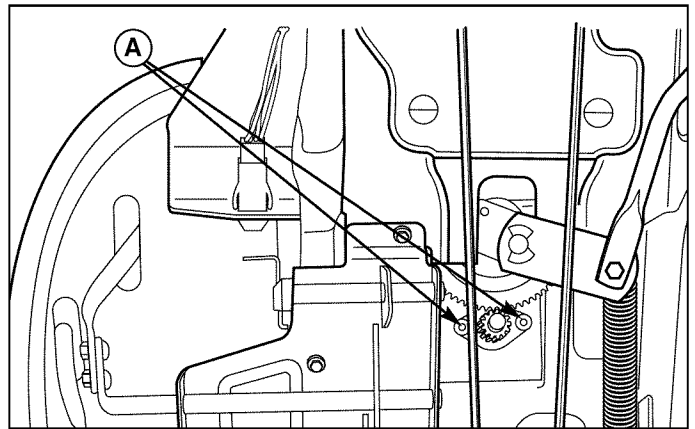


Figure 46. Steering Gear Adjustment
A. Nuts

BRAKE ADJUSTMENT

1. Disengage the PTO, stop the engine, block the wheels, remove the ignition key, and engage the parking brake.
2. Remove the mower deck (see Mower Deck Removal).
3. Locate the brake spring (A, Figure 47) and adjustment nut (B).
4. With the parking brake engaged, measure the compressed spring length. The spring should be 2-1/2" (6,4 cm) when compressed.

If the spring is not within this range, turn the adjustment nut (B, Figure 47) to compress or release the spring.

If this adjustment does not correct a braking problem, see your dealer.

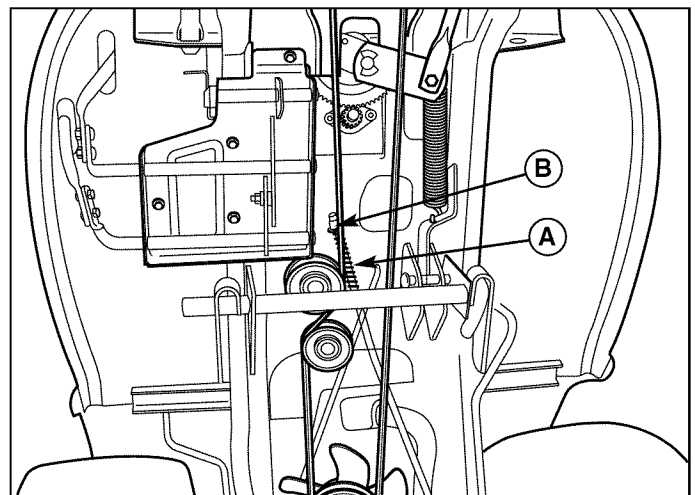


Figure 47. Brake Spring Adjustment
A. Brake Spring
B. Adjustment Nut

PTO CLUTCH ADJUSTMENT

WARNING

To avoid serious injury, perform adjustments only with engine stopped, key removed and tractor on level ground.

Check the PTO clutch adjustment after the initial 25 hour break-in period and then after every 250 hours of operation. Also perform the following procedure if the clutch is slipping or will not engage, or if a new clutch has been installed.

1. Remove key from ignition switch and disconnect spark plug wires to prevent the possibility of accidental starting while the PTO is being adjusted.
2. See Figure 48. Note the position of the 3 adjustment windows (A) in the side of the brake plate and the nylock adjustment nuts (B).
3. Insert a .012"-.015" (2.5-4mm) feeler gauge (C) through each window, positioning the gauge between the rotor face and the armature face as shown in Figure 49.
4. Alternately tighten the adjustment nuts (B, Figure 48) until the rotor face and armature face just contacts the gauge.
5. Check the windows for an equal amount of tension when the gauge is inserted and removed, and make any necessary adjustments by tightening or loosening the adjustment nuts.

NOTE: The actual air gap between the rotor and armature may vary even after performing the adjustment procedure. This is due to dimensional variations on component parts, and is an acceptable condition.

6. Check the mower blade stopping time. The mower blades and mower drive belt should come to a complete stop within five seconds after the electric PTO switch is turned off.
7. Perform the BLADE BRAKE CHECK found in the MAINTENANCE Section. Mower blades and mower drive belt should come to a complete stop within five seconds after electric PTO switch is turned off.

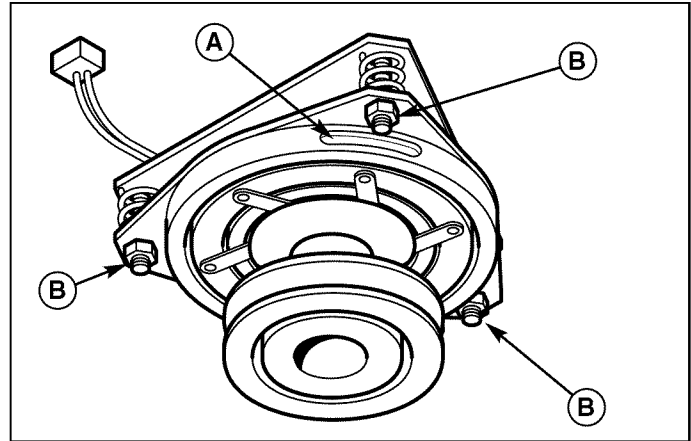


Figure 48. PTO Clutch Adjustment
A. Adjustment Window (Qty. 3, one shown)
B. Adjustment Nut

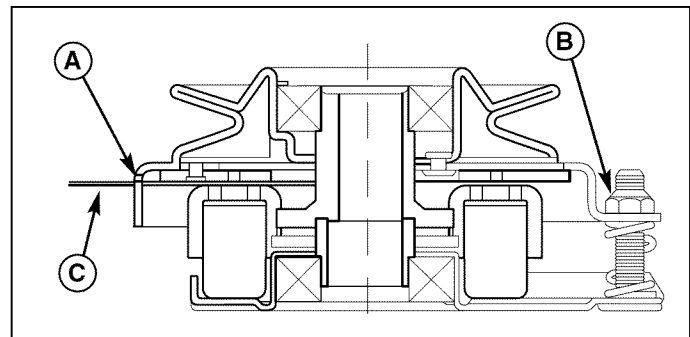


Figure 49. Adjust PTO Clutch
A. Window
B. Adjustment Nut
C. Feeler Gauge

MOWER ADJUSTMENTS

Gauge Wheels (Select Models)

The mower gauge wheels can be placed in two positions depending on the height of cut. When using higher cutting heights, set the wheels in the lower position. When using lower cutting heights, set the wheels in the upper position. To adjust:

1. Remove the hair pin clip (A, B, Figure 50).
2. For upper position, install the pin (A) through the spindle above the bracket (C). For the lower position, push down on the top of the spindle, and install the hair pin clip (B) below the top of the bracket (C).

Leveling The Mower

If the cut is uneven, the mower may need leveling. Unequal or improper tire pressure may also cause an uneven cut. Make sure tire pressure is correct as specified in Checking Tire Pressure.

SIDE-TO-SIDE LEVELING

1. With the mower installed, place the tractor on a smooth, level surface such as a concrete floor. Turn the front wheels straight forward.
2. Check for bent blades and replace if necessary.
3. Place the mower in mid-cut position. Arrange the outside mower blades so that they are pointing from side-to-side.
4. Measure the distance between the outside tips of each blade and the ground. If there is more than 1/8" (3mm) difference between the measurements on each side, proceed to step 5. If the difference is 1/8" (3mm) or less, proceed to step 6.
5. See Figure 51. Loosen the outside nut (A). Turn the eccentric nut (B) to raise or lower left-hand side of mower. When mower is level, hold the eccentric nut while tightening the outside nut.

NOTE: 44", 50", & 54" Mowers. When using a turbo collection system, raise the discharge side of the mower approximately 1/4" (6mm) to compensate for turbo assembly weight. Check the level of the cut grass and adjust the 1/4" (6mm) measurement as necessary for a smooth, even cut.

WARNING

Before checking mower, shut off PTO and engine, remove the key, and allow all moving parts to stop.

CAUTION

DO NOT remove the mower deck baffles. The baffles help prevent grass clippings from becoming airborne and plugging up the engine cooling fins.

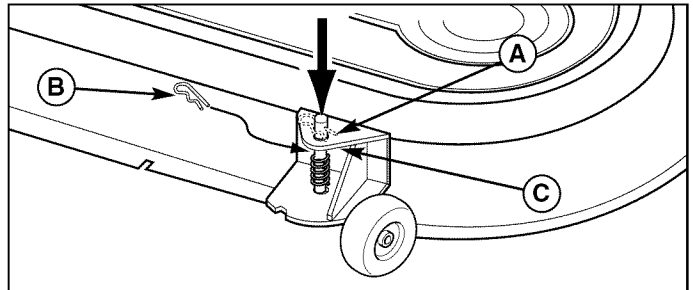


Figure 50. Gauge Wheel Adjustment

- A. Hair Pin (Upper Position)
- B. Hair Pin (Lower Position)
- C. Gauge Wheel Bracket

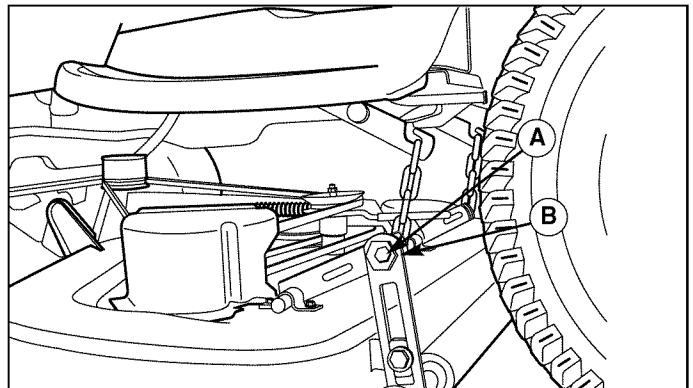


Figure 51. Leveling The Mower Side-to-Side

- A. Outside Nut
- B. Eccentric Nut

Troubleshooting, Adjustment, & Service

FRONT-TO-BACK LEVELING

NOTE: 54" mowers have two adjustment rods that should be adjusted simultaneously.

6. Arrange the blades so they face front-to-back.
7. Measure the distance from the ground to the front tip of the center blade, and from the ground to rear tips of left-hand and right-hand blades.
Front tip of the center blade should be 1/4" (6mm) higher than rear tips of left-hand and right-hand blades. If not, proceed with steps 8 - 9.
8. To raise front of mower deck, loosen front nut (B) and turn rear nut (A, Figure 52) against bracket. To lower front of mower deck, loosen rear nut (A) and the bracket will move backwards to lengthen rod.
10. Re-check the blade measurement then tighten the front nut (B) against the bracket to secure.

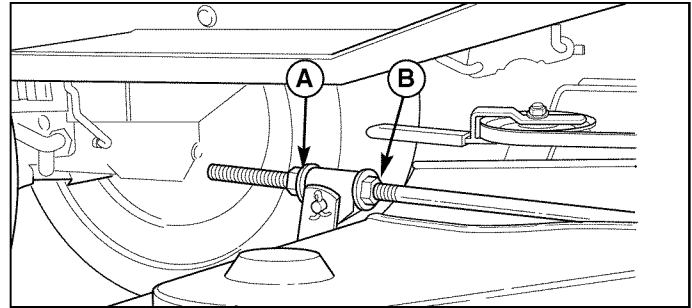


Figure 52. Front to Back Leveling

A. Rear Nut

B. Front Nut

MOWER BELT REPLACEMENT



To avoid damaging belts, **DO NOT PRY BELTS OVER PULLEYS.**

44" & 50" PTO Belt Replacement

1. Park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, turn off the engine and lock the parking brake. Remove the key. Remove the mower or place in the lowest cutting position.
2. Move the idler arm (A, Figure 53) to relieve belt tension. Drop the belt from the PTO (electric clutch) pulley.

IMPORTANT: Note the position of all belt guides relative to the belt and pulleys before loosening.

3. Loosen the nut and lockwasher securing the idler pulley belt guide (C, Figure 53).
4. See Figure 54. Remove three capscrews securing left-hand arbor cover (D).
5. Remove the old belt and replace with a new one. Make sure the belt is seated in the pulley grooves.
6. See Figure 53. Position the idler pulley belt stop (C) in its original position so that there is a 1/8" (3mm) gap between the pulley and belt stop.
7. See Figure 54. Reinstall the left-hand arbor cover (D). Reinstall the mower deck if removed.
8. Run the mower under a no-load condition for about 5 minutes.

54" PTO Belt Replacement

1. Park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, turn off the engine and lock the parking brake. Remove the key.
2. Move the idler arm (A, Figure 53) to relieve belt tension. Drop the belt from the PTO (electric clutch) pulley.
3. Remove the old belt and replace with a new one. Make sure the V-side of belt runs in the pulley grooves.
4. Install the drive belt on the PTO pulley. Move the idler arm and install the belt on the idler pulley.
5. Run the mower under no-load condition for about 5 minutes.

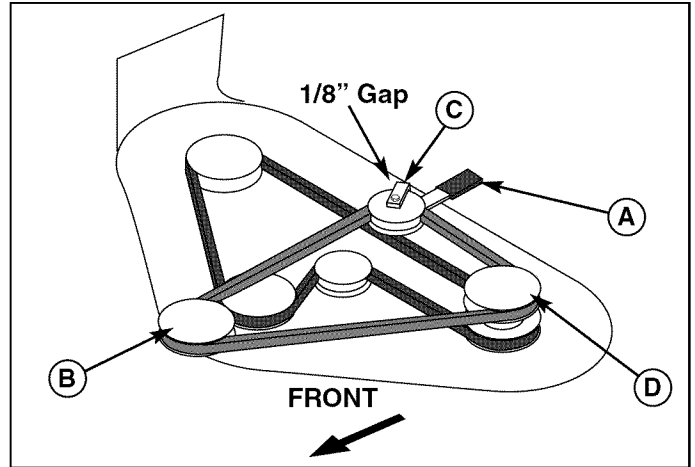


Figure 53. Mower Belt Routing

A. Idler Pulley Arm

B. PTO Clutch Pulley

C. Belt Guide (44" & 50")

D. Arbor Drive Pulley

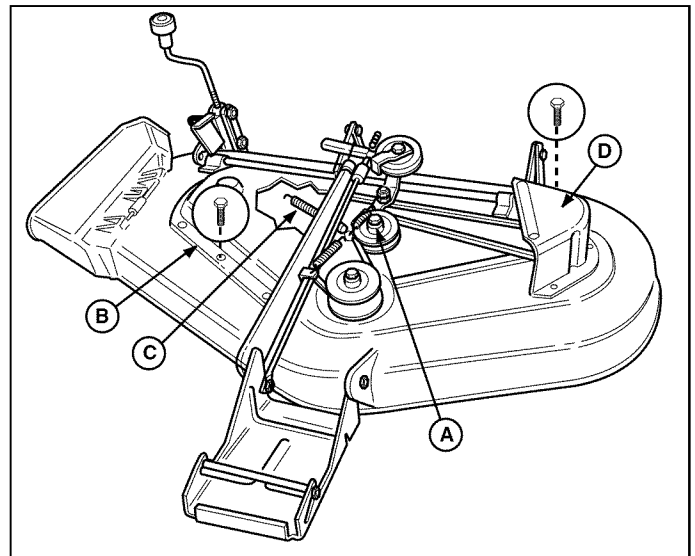


Figure 54. Mower Deck - 44" & 50" Mowers

A. Capscrew

B. Right-hand Arbor Cover

C. Spring

D. Left-hand Arbor Cover

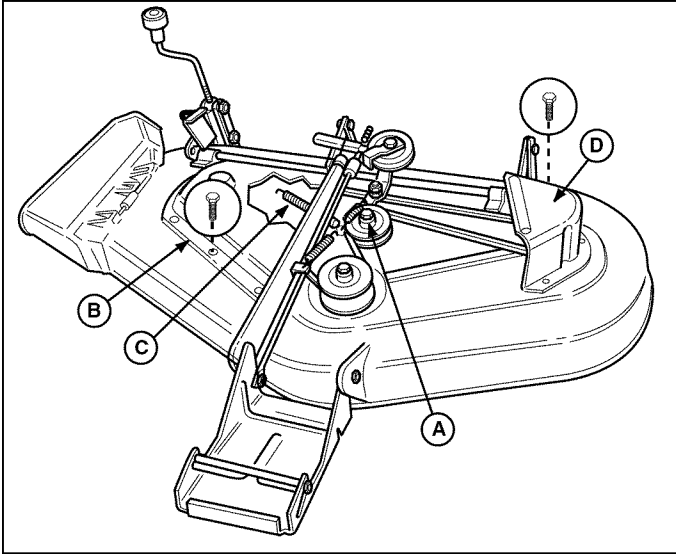


Figure 55. Mower Deck - 44" & 50" Mowers

- A. Capscrew
- B. Right-hand Arbor Cover
- C. Spring
- D. Left-hand Arbor Cover

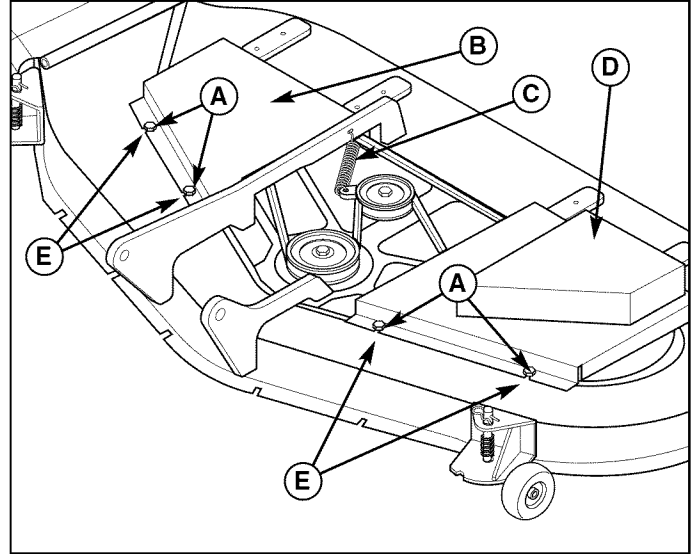


Figure 56. Mower Deck - 54" Mowers

- A. Taptite Screws
- B. Right-hand Arbor Cover
- C. Spring
- D. Left-hand Arbor Cover
- E. Alignment Notches

Arbor Drive Belt Replacement - 44", 50", & 54" Mowers

NOTE: Be sure to use only genuine Simplicity replacement parts.

1. Park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, turn off the engine and lock the parking brake. Remove the key.
2. Remove the mower from the tractor. See Mower Removal in the Operation section.

44" & 50" MODELS

3. Remove the capscrews securing the right-hand arbor cover (B, Figure 55). Remove three capscrews securing left-hand arbor cover (D).

54" MODELS

3. Remove the PTO belt. Remove the taptite screws (A, Figure 56) securing the belt covers and remove the belt covers (B, D).

ALL MODELS

4. Using a pair of locking pliers or a spring puller, remove the idler pulley spring (C, Figures 55, 56) from slot in deck.
5. Loosen capscrew (A, Figure 55) securing the idler pulley to the bracket. The belt can now be slipped between the pulley and idler bracket hub.
6. Install a new belt as shown in Figure 57. Make sure that V-side of belt runs in arbor pulley (A) grooves and flat side of belt runs against idler pulley (B).
7. Tighten the capscrew (A, Figure 55).

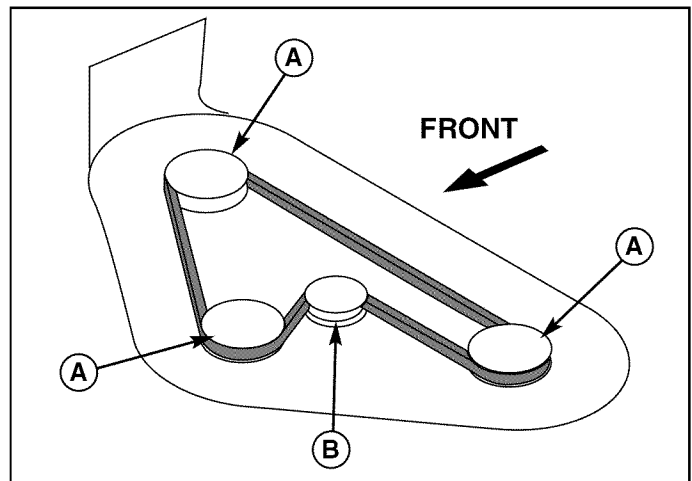


Figure 57. Mower Deck Drive Belt Routing All Models

- A. Arbor Drive Pulley (V-sided)
- B. Idler Pulley (Flat-sided)

8. Reinstall spring (C, Figures 55, 56) into its slot in mower deck.
9. Reinstall the left and right arbor covers (B and D, Figures 55, 56). **54" Models:** To provide proper belt cover clearance, make sure the alignment notches (E, Figure 56) are centered on the taptite screws (A).
10. Install the mower onto the tractor.

40" Mower PTO Belt Replacement

1. With the mower deck installed, park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, engage the parking brake, shut the engine off, and remove the key.
2. Remove the mower deck (see "Mower deck removal"). Remove the belt covers.
3. Note the position of the idler pulley belt guides (E & F, Figure 58) when installed. Loosen the idler pulley capscrews and remove the belt from the idler pulleys (D & G).
4. Install the new belt (B) as shown. When the mower deck is installed on the tractor, the belt wraps around the PTO clutch pulley (A), backside idler pulley (D), mower deck drive pulley (C), and v-idler pulley (G).
5. Return the idler pulley belt guides (E & F) to their original positions and tighten the idler pulley capscrews.

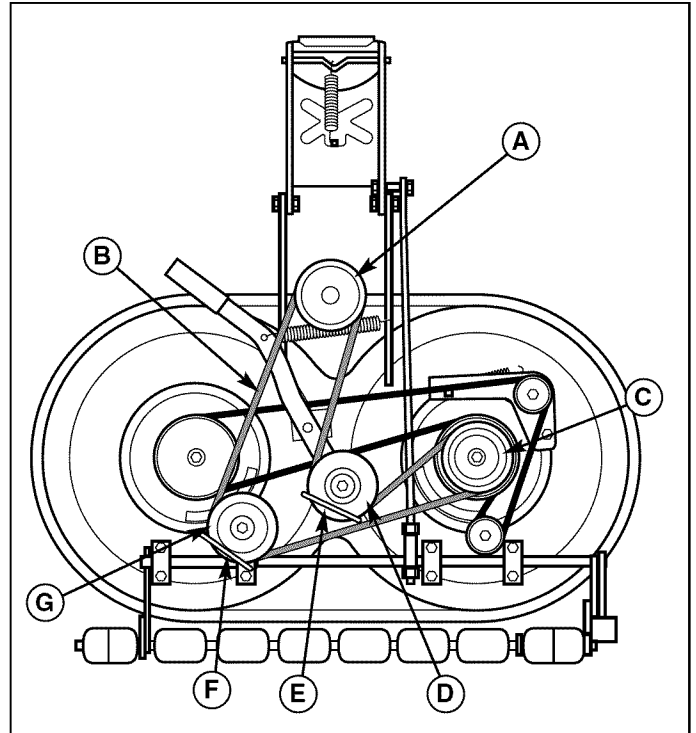


Figure 58. PTO Belt Replacement

- A. Engine PTO Clutch Pulley
- B. PTO Belt
- C. Mower Deck Drive Pulley
- D. Backside Idler Pulley
- E. Belt Guide
- F. Belt Guide
- G. V-Idler Pulley

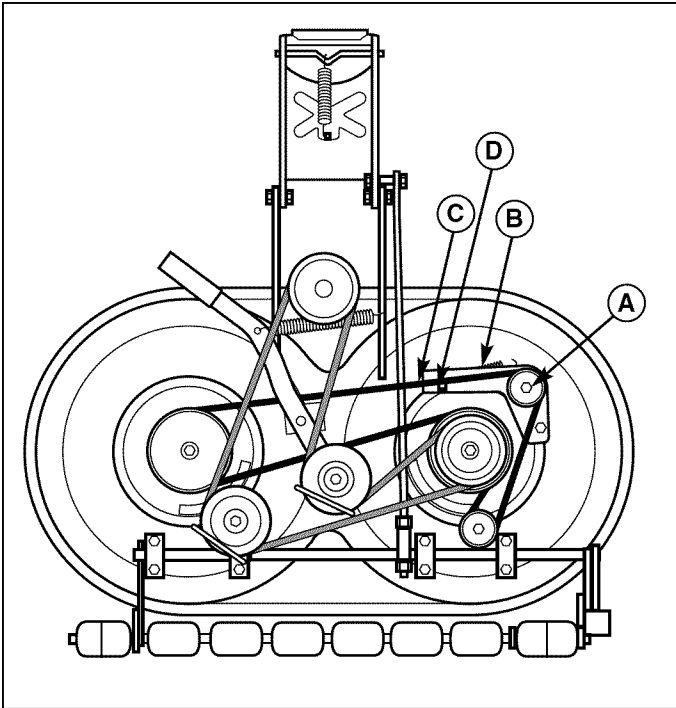


Figure 59. Mulching Deck (Belt Covers Removed)

- A. Idler Assembly Capscrew
- B. Spring-Loaded Idler Assembly
- C. Belt
- D. Square Hole

40" Mower Arbor Drive Belt Replacement

1. With the mower deck installed, park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, engage the parking brake, shut the engine off, and remove the key.
2. Remove the mower deck (see "Mower Deck Removal"). Remove the belt covers.
3. Loosen the idler assembly capscrew (A, Figure 59).
4. Using a ratchet (A, Figure 60), insert the end of the extension into the square hole (D, Figure 59) and move the idler assembly (B, Figure 59) to relieve tension on the belt (C).
5. Remove the belt (C).
6. Install a new belt (C) on the pulleys as shown. Releasing the idler assembly (A) allows the spring to automatically tension the cogged belt.
7. Tighten the idler assembly capscrew (A). Reinstall the belt covers.
8. Check that the blades are positioned perpendicular to each other (see Figure 61). If not, perform the mower blade timing procedure found in the Regular Maintenance section.

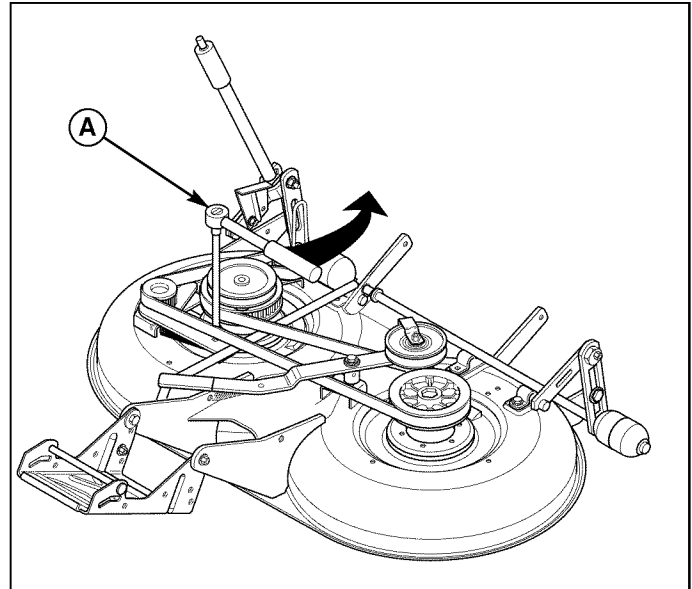


Figure 60. Release Cogged Belt Tension
A. 3/8" Ratchet and Extension

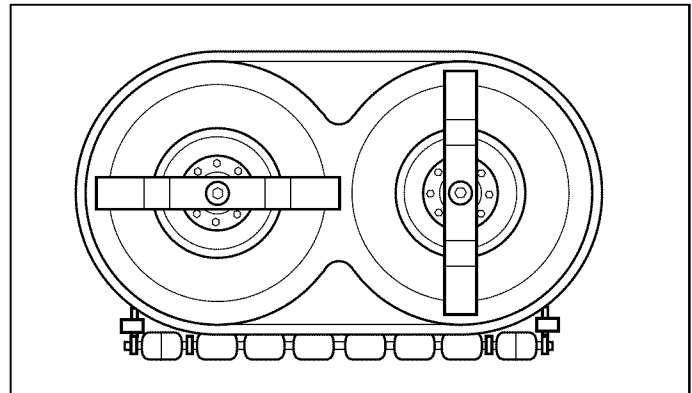


Figure 61. Mower Blade Timing

38" Mower Drive Belt Replacement

NOTE: Be sure to use only genuine Simplicity replacement parts. Check the back of this manual or the decal under the hood for common replacement part numbers.

NOTE: It is not necessary to remove the mower to install a new belt. However, for easier access mower can be removed. See Mower Removal in the Operation section.

Refer to Figure 62.

1. Park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, turn off the engine and lock the parking brake. Remove the key.
2. If mower is not removed, lower the mower lift and place the mower in the lowest cutting position.
3. Push the idler arm (A) away from you to relieve belt tension. Drop the belt from the PTO (electric clutch) pulley.

IMPORTANT: Note the position of all belt guides relative to the belt and pulleys before loosening.

4. Loosen the two belt stop brackets (C) and idler pulley belt guide (D).
5. Remove the old belt and replace with a new belt. Make sure V-side of belt runs in arbor pulley grooves and the flat backside runs against the idler pulley.
6. Position the belt stop brackets (C) in their original positions. There must be 1/8" clearance between the belt stop and the pulleys.
7. Position the idler pulley belt guide (D) in its original position up against arm (A) so that there is a 1/8" gap between the pulley and belt guide.
8. Install mower on tractor if it was removed. See Operation section.
9. Run the mower under no-load condition for about 5 minutes.

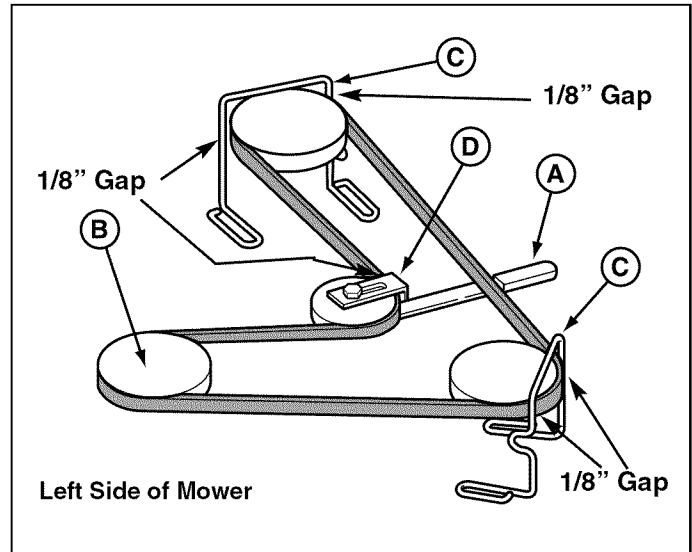
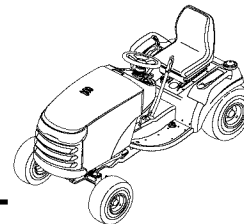


Figure 62. Mower Belt Routing - 38" Mower Deck
A. Idler Pulley Arm C. Belt Stop Bracket
B. PTO Pulley D. Idler Pulley Belt Guide

Specifications



NOTE: Specifications are correct at time of printing and are subject to change without notice.

** Actual sustained equipment horsepower will likely be lower due to operating limitations and environmental factors.*

ENGINE:

23 HP* Kohler

Make	Kohler
Model	CV23S
Horsepower	23 @ 3600 rpm
Displacement	41.1 Cu. in (674 cc)
Electrical System	12 Volt, 15 amp. Alternator, Battery: 500 CCA
Oil Capacity	2 qt. (1.9L)

20 HP* Kohler

Make	Kohler
Model	CV20S
Horsepower	20 @ 3600 rpm
Displacement	38.1 Cu. in (624 cc)
Electrical System	12 Volt, 15 amp. Alternator, Battery: 500 CCA
Oil Capacity	2 qt. (1.9 L)

20 HP* Briggs & Stratton

Make	Briggs & Stratton
Model	Vanguard
Horsepower	20 @ 3600 rpm
Displacement	34.8 Cu. in (570 cc)
Electrical System	12 Volt, 16 amp. Alternator, Battery: 340 CCA
Oil Capacity	56 Oz. (1.7 L)

18 HP* Briggs & Stratton

Make	Briggs & Stratton
Model	Vanguard
Horsepower	18 @ 3600 rpm
Displacement	34.8 Cu. in (570 cc)
Electrical System	12 Volt, 16 amp. Alternator, Battery: 340 CCA
Oil Capacity	2 qt. (1.9 L)

16 HP* Briggs & Stratton

Make	Briggs & Stratton
Model	Intek
Horsepower	16 @ 3600 rpm
Displacement	40 Cu. in (656 cc)
Electrical System	12 Volt, 16 amp. Alternator, Battery: 230 CCA
Oil Capacity	1-7/8 Quarts (1,8 L)

Make	Briggs & Stratton
Model	Vanguard
Horsepower	16 @ 3600 rpm
Displacement	29.3 Cu. in (480 cc)
Electrical System	12 Volt, 9 amp. Alternator, Battery: 340 CCA
Oil Capacity	4 Pints (1.9 L)

16 HP* Kohler

Make	Kohler
Model	Command CV460
Horsepower	16 @ 3600 rpm
Displacement	28 Cu. in (460 cc)
Electrical System	12 Volt, 15 amp. Alternator, Battery: 230 CCA
Oil Capacity	2 Quarts (1,9 L)

16 HP* Honda

Make	Honda
Model	GXV530
Horsepower	16 @ 3600 rpm
Displacement	32 Cu. in (530 cc)
Electrical System	12 Volt, 12 amp. Alternator, Battery: 230 CCA
Oil Capacity	1.1 Quarts (1,0 L)

CHASSIS:

Prestige / 1800 / 2800 / GT & Conquest / 1700 / 2700 / YT Series

Fuel Tank Cap.	Capacity: 4.0 Gallons (15 L)
Rear Wheels	Tire Size: 23 x 10.50 -12 Inflation Pressure: 6-8 psi (.41-.55 bar)
Front Wheels	Tire Size: 16 x 6.50-8 Inflation Press.: 15 psi (1.0 bar)

Broadmoor / 1600 / 2600 Series

Fuel Tank Cap.	Capacity: 4.0 Gallons (15 L)
Rear Wheels	Tire Size: 20 x 10.00 -10 Inflation Pressure: 6-8 psi (.41-.55 bar)
Front Wheels	Tire Size: 15 x 6.00-6 Inflation Press.: 12-15 psi (.8-1 bar)

TRANSMISSIONS:

K71

Type	Hydrostatic Tuff Torq K71
Hydraulic Fluid	10w 30 Premium Engine Oil
Capacity	4.8 qt (4,6 L)
Speeds	Forward: 0-7.2 MPH (0-11.6 km/h)
@ 3400 rpm	Reverse: 0-4.5 MPH (0-7.2 km/h)
Continuous Torque	410 ft. lbs. (554 N.m.)
Output	
Drawbar Rating	440 lbs. (200 Kg)
Maximum Weight on Axle	728 lbs. (330 Kg)

K66

Type	Hydrostatic Tuff Torq K66
Hydraulic Fluid	10w 30 Premium Engine Oil
Capacity	2.6 qt (2,5 L)
Speeds	Forward: 0-5.8 MPH (9.3 km/h)
@ 3400 rpm	Reverse: 0-3.5 MPH (5.6 km/h)
Continuous Torque	310 ft. lbs. (419 N.m.)
Output	
Drawbar Rating	440 lbs. (200 Kg)
Maximum Weight on Axle	697 lbs. (316 Kg)

K62

Type	Hydrostatic Tuff Torq K62
Hydraulic Fluid	10w 30 Premium Engine Oil
Capacity	2.6 qt (2,5 L)
Speeds	Forward: 5.5 MPH (8,9 km/h)
@ 3400 rpm	Reverse: 3.5 MPH (5,6 km/h)
Continuous Torque	217 ft. lbs. (294 Nm)
Output	
Drawbar Rating	440 lbs. (200 Kg)
Maximum Weight on Axle	697 lbs. (316 Kg)

K57

Type	Hydrostatic Tuff Torq K57
Hydraulic Fluid	10w 30 Premium Engine Oil
Capacity	2.1 qt (2,0 L)
Speeds	Forward: 5.5 MPH (8,9 km/h)
@ 3400 rpm	Reverse: 3.5 MPH (5,6 km/h)
Continuous Torque	159 ft. lbs. (216 Nm)
Output	
Drawbar Rating	440 lbs. (200 Kg)
Maximum Weight on Axle	674 lbs. (306 Kg)

DIMENSIONS:

Prestige / 1800 / 2800 / GT Series

Overall Length	75" (190,5 cm)
Overall Width	39" (99 cm)
Height	At Top of Seat: 50" (127 cm)
Weight	
Tractor	666 lbs. (302 kg)
4 50" Mower Deck	125 lbs. (57 kg)
54" Mower Deck	192 lbs. (87 kg)

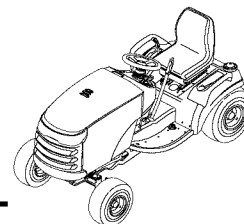
Conquest / 1700 / 2700 / YT Series

Overall Length	75" (190,5 cm)
Overall Width	39" (99 cm)
Height	At Top of Seat: 50" (127 cm)
Weight	
Tractor	586 lbs. (266 kg)
44" Mower Deck	112 lbs. (51 kg)
50" Mower Deck	125 lbs. (57 kg)

Broadmoor / 1600 / 2600 Series

Overall Length	74" (187 cm)
Overall Width	42" (107 cm)
Height	At Top of Seat: 43" (109 cm)
Weight	
Broadmoor / 1600 / 2600 Series Tractor	477 lbs. (217 kg)
40" Mower Deck	121 lbs. (55 kg)

Parts & Accessories



REPLACEMENT PARTS

Replacement parts are available from your authorized dealer. Always use genuine Simplicity Service Parts.

MAINTENANCE ITEMS

Many convenient and helpful service and maintenance items are available from your authorized dealer. Some of these items include:

Engine Oil	Tire Sealant
Touch-Up Paint	Degreaser/Degreaser
Grease Gun Kit	Gas Stabilizer
8 oz. Grease Tube	

OPTIONAL ACCESSORIES

Snowthrower Cab	Gas Cans
Snowthrower Attachments	Rear Weight Carrier
42" Dozer/Snow Blade	Front Weight Carrier
Rear Wheel Weights	Triple Bag Collector
Tire Chains	Turbo Collector
Twin Bag Grass Catcher	Tiller
Dump Cart	
Hour Meter Kit	

TECHNICAL MANUALS

Additional copies of this manual are available, as well as fully illustrated parts lists. These manuals show all of the product's components in exploded views (3D illustrations which show the relationship of parts and how they go together) as well as part numbers and quantities used. Important assembly notes and torque values are also included.

For applicable manuals currently available for your model, contact our Customer Publications Department at 262-284-8519. Have the information listed in the box below available when phoning in your request. Technical manuals can be downloaded from www.simplicitymfg.com

Model: _____
Mfg. No.: _____
Your Name: _____
Address: _____
City, State, Zip: _____
Visa/Mastercard No.: _____
Card Expiration Date: _____



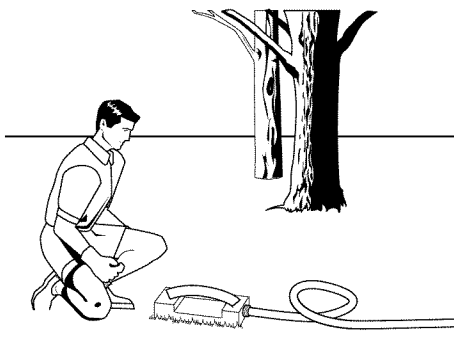
Lawn Care & Mowing Information

HOW AND WHEN TO WATER, FERTILIZE & AERATE

Most lawns are watered too often, but with too little water. However too much water can allow development of diseases with your lawn. **It is best to water the lawn only when necessary, and then to water it slowly, evenly, and deeply—imitating a slow, soaking rain.**

WHEN TO WATER YOUR LAWN

When the lawn begins to wilt, the grass's color dulls, or footprints stay compressed for more than a few seconds, the lawn is beginning to dry out, and needs additional moisture. The best time to water is early morning to allow the water to soak deeply into the lawn and reduce the amount that evaporates in the hot afternoon sun.



HOW TO WATER YOUR LAWN

The best method of watering a lawn is to imitate a slow, soaking rain, applying about 1 inch of water.

HOW TO FERTILIZE YOUR LAWN

Fertilizing with a slow-release fertilizer provides missing nutrients which help create slow, even growth. Remember that over-fertilizing can cause harm, and that most fertilizing should be applied in the spring so that it will release into the lawn through the summer.

AERATING YOUR LAWN

Consider aerating your lawn in spring. Using an aerator to remove cores of soil from the lawn increases the speed of clipping decomposition and encourages deeper root growth by opening up the soil and permitting greater movement of water, fertilizer and air.

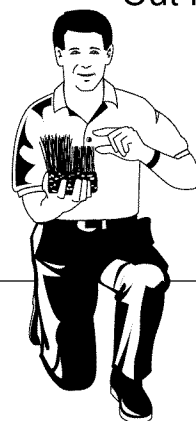
HOW HIGH TO MOW THE GRASS

Cutting the grass too short causes weak, thin grass plants, which are easily damaged by dry periods and pests.

Letting grass grow a bit longer—especially when it is hot and dry—reduces heat build-up, preserves needed moisture and protects the grass from heat damage and other problems.

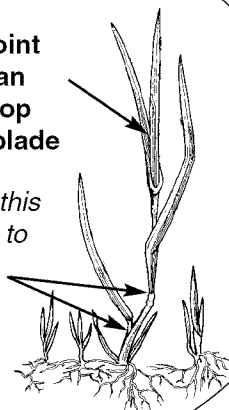
Cutting off too much at one time shocks the plant's growth system and weakens the grass plants. **A good rule of thumb is the 1/3 rule: to cut no more than one third of the grass height, and never more than 1 inch at a time.**

Cut less than
1/3



**Optimal
cutting point
at less than
1/3 from top
of grass blade**

*Cutting down to this
area contributes to
thatch problems*



**Cut Here On
First Pass**

**Cut
Here On
Second
Pass**

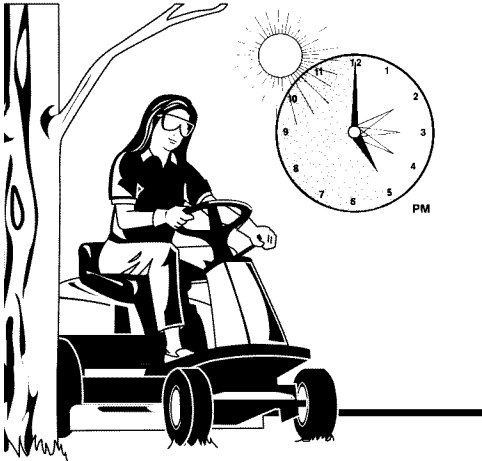


Tall Grass Requires Incremental Cutting

For extremely tall grass, set the cutting height at maximum for the first pass, and then reset it to the desired height and mow a second or third time.

Don't cover the grass surface with a heavy layer of clippings.

Lawn Care & Mowing Information



WHEN AND HOW OFTEN TO MOW

The time of day and condition of the grass greatly affect the results you'll get when mowing. For the best results, follow these guidelines:

- Mow when the grass is between 3"-4" (7,5-10 cm) high.
- Mow with sharp blades. Short clippings of grass one inch or shorter decompose more quickly than longer blades. Sharp mower blades cut grass cleanly and efficiently, preventing frayed edges which harm the grass.
- Mow at time of day when the grass is cool and dry. Late afternoon or early evening often provide these ideal mowing conditions.
- Avoid mowing after rain or even heavy dew, and never mulch when the grass is wet (moist grass does not mulch well, and clumps beneath the mower deck).

Note: Always operate the engine at full throttle when mowing.

PROPER MOWING SPEED

ENGINE SPEED & GROUND SPEED

Always operate the engine at full throttle when mowing. If you hear the engine slowing down, you are mowing too fast—maintaining a slower ground speed will improve the cutting efficiency of the blades and prevents many common cutting problems.

Select an appropriate ground speed for the thickness and height of the grass you are cutting (3rd gear or slower for manual gear models, or mid-range or slower for hydro models). If you hear the engine slowing down you are mowing too fast, use a slower ground speed.

HOW MUCH GRASS TO CUT OFF

Mow when the grass is 3"-4" inches (7,5-10cm) long. Do not cut off more than 1" (2.5cm) of grass in a single pass.





Simplicity

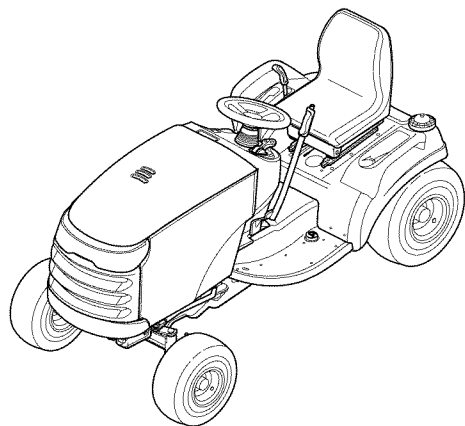
MANUFACTURING, INC.
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www.simplicitymfg.com

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OPERATOR'S MANUAL



Prestige / 1800 / 2800 / GT
Conquest / 1700 / 2700 / YT
Broadmoor / 1600 / 2600 / LT
Series

16HP Hydro Tractors

Mfg. No.	Description
1694009	Broadmoor, 16HP
1694010	Broadmoor, 16HP
1694011	Conquest, 16HP Hydro
1694018	1606, 16HP Hydro
1694019	1616, 16HP Hydro
1694020	1716H, 16HP Hydro
1694027	2606, 16HP Hydro
1694028	2616, 16HP Hydro
1694029	2716H, 16HP Hydro
1694170	Conquest, 16HP Hydro (CE)
1694179	Broadmoor, 16HP Hydro (CE)
1694207	1616, 16HP Hydro (CE)
1694209	2616, 16HP Hydro (CE)
1694277	Broadmoor, 16HP Hydro
1694279	1626, 16HP Hydro
1694281	2626, 16HP Hydro
1694301	Broadmoor, 16HP Hydro (CE)
1694368	YT1644, 16HP Hydro
1694429	Broadmoor, 16HP Hydro
1694430	Broadmoor, 16HP Hydro (CE)
1694431	2616, 16HP Hydro
1694465	1616, 16HP Hydro
1694487	LT1644, 16HP Hydro

18HP Hydro Tractors

Mfg. No.	Description
1694013	Conquest, 18HP Hydro
1694022	1718H, 18HP Hydro
1694031	2718H, 18HP Hydro
1694369	YT1850, 18HP Hydro
1694467	1618, 18HP Hydro
1694468	Broadmoor, 18HP Hydro
1694469	2618, 18HP Hydro
1694470	Conquest, 18HP Hydro (CE)
1694475	YT1844, 18HP Hydro
1694518	YT1844, 18HP Hydro (CE)

20HP Hydro Tractors

Mfg. No.	Description
1694014	Conquest, 20HP Hydro
1694015	Prestige, 20HP Hydro
1694016	Prestige, 20HP Hydro PS
1694023	1720H, 20HP Hydro
1694024	1820H, 20HP Hydro
1694025	1820H, 20HP Hydro PS
1694032	2720H, 20HP Hydro
1694033	2820H, 20HP Hydro
1694034	2820H, 20HP Hydro PS
1694172	Prestige, 20HP Hydro (CE)
1694476	YT2050, 20HP Hydro
1694582	Prestige, 20HP Hydro (CE)

23HP Hydro Tractors

Mfg. No.	Description
1694017	Prestige, 23HP Hydro PS
1694026	1823H, 23HP Hydro PS
1694035	2823H, 23HP Hydro PS
1694370	GT2354, 23HP Hydro PS

38" Mower Decks

Mfg. No.	Description
1694036	38" Mower Deck
1694042	38" Mower Deck
1694453	38" Mower Deck (CE)

40" Mower Decks

Mfg. No.	Description
1694041	40" Mower Deck
1694047	40" Mower Deck
1694177	40" Mower Deck (CE)
1694210	40" Mower Deck (CE)
1694339	40" Mower Deck
1694340	40" Mower Deck
1694341	40" Mower Deck (CE)

44" Mower Decks

Mfg. No.	Description
1694037	44" Mower Deck
1694038	44" Mower Deck
1694043	44" Mower Deck
1694044	44" Mower Deck
1694173	44" Mower Deck (CE)
1694178	44" Mower Deck (CE)
1694371	44" Mower Deck
1694488	44" Mower Deck
1694519	44" Mower Deck (CE)

50" Mower Decks

Mfg. No.	Description
1694039	50" Mower Deck
1694045	50" Mower Deck
1694174	50" Mower Deck (CE)
1694372	50" Mower Deck

54" Mower Decks

Mfg. No.	Description
1694040	54" Mower Deck
1694046	54" Mower Deck
1694373	54" Mower Deck
1694366	54" Mower Deck
1694367	54" Mower Deck
1694491	54" Mower Deck

1723204

Revision 17

Rev. Date 9/2003

Supercedes 1723374

TP 100-2533-17-PR-SMAN

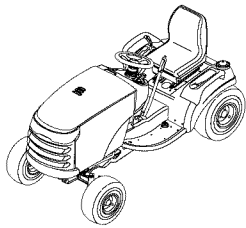


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NOTE: In this manual, "left" and "right" are referred to as seen from the operating position.




Safety Rules & Information



Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of unit, severe personal injury or death to you, or bystanders, or damage to property or equipment.

This mowing deck is capable of amputating hands and feet and throwing objects.

The triangle  in text signifies important cautions or warnings which must be followed.

GENERAL OPERATION

1. Read, understand, and follow all instructions in the manual and on the unit before starting.
2. Do not put hands or feet near rotating parts or under the machine. Keep clear of the discharge opening at all times.
3. Only allow responsible adults, who are familiar with the instructions, to operate the unit (local regulations can restrict operator age).
4. Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown by the blade(s).
5. Be sure the area is clear of other people before mowing. Stop the unit if anyone enters the area.
6. Never carry passengers.
7. Do not mow in reverse unless absolutely necessary. Always look down and behind before and while traveling in reverse.
8. Never direct discharge material toward anyone. Avoid discharging material against a wall or obstruction. Material may ricochet back toward the operator. Stop the blade(s) when crossing gravel surfaces.
9. Do not operate the machine without the entire grass catcher, discharge guard (deflector), or other safety devices in place.
10. Slow down before turning.
11. Never leave a running unit unattended. Always disengage the PTO, set parking brake, stop engine, and remove keys before dismounting.
12. Disengage blades (PTO) when not mowing. Shut off engine and wait for all parts to come to a complete stop before cleaning the machine, removing the grass catcher, or unclogging the discharge guard.
13. Operate the machine only in daylight or good artificial light.
14. Do not operate the unit while under the influence of alcohol or drugs.
15. Watch for traffic when operating near or crossing roadways.
16. Use extra care when loading or unloading the unit into a trailer or truck.
17. Always wear eye protection when operating this unit.
18. Data indicates that operators, age 60 years and above, are involved in a large percentage of riding mower-related injuries. These operators should evaluate their ability to operate the riding mower safely enough to protect themselves and others from injury.
19. Follow the manufacturer's recommendations for wheel weights or counterweights.
20. Keep in mind the operator is responsible for accidents occurring to other people or property.
21. All drivers should seek and obtain professional and practical instruction.
22. Always wear substantial footwear and trousers. Never operate when barefoot or wearing sandals.
23. Before using, always visually check that the blades and blade hardware are present, intact, and secure. Replace worn or damaged parts.
24. Disengage attachments before: refueling, removing an attachment, making adjustments (unless the adjustment can be made from the operator's position).
25. When the machine is parked, stored, or left unattended, lower the cutting means unless a positive mechanical lock is used.
26. Before leaving the operator's position for any reason, engage the parking brake, disengage the PTO, stop the engine, and remove the key.
27. To reduce fire hazard, keep the unit free of grass, leaves, & excess oil. Do not stop or park over dry leaves, grass, or combustible materials.
28. It is a violation of California Public Resource Code Section 4442 to use or operate the engine on or near any forest-covered, brush-covered, or grass-covered land unless the exhaust system is equipped with a spark arrester meeting any applicable local or state laws. Other states or federal areas may have similar laws.

TRANSPORTING AND STORAGE

1. When transporting the unit on an open trailer, make sure it is facing forward, in the direction of travel. If the unit is facing backwards, wind lift could damage the unit.
2. Always observe safe refueling and fuel handling practices when refueling the tractor after transportation or storage.
3. Never store the unit (with fuel) in an enclosed poorly ventilated structure. Fuel vapors can travel to an ignition source (such as a furnace, water heater, etc.) and cause an explosion. Fuel vapor is also toxic to humans and animals.
4. Always follow the engine manual instructions for storage preparations before storing the unit for both short and long term periods.
5. Always follow the engine manual instructions for proper start-up procedures when returning the unit to service.
6. Never store the unit or fuel container inside where there is an open flame or pilot light, such as in a water heater. Allow unit to cool before storing.

SLOPE OPERATION

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

Control of a ride-on machine sliding on a slope will not be regained by the application of the brake. The main reasons for loss of control are: insufficient tire grip on the ground, speed too fast, inadequate braking, the type of machine is unsuitable for its task, lack of awareness of the ground conditions, incorrect hitching and load distribution.

1. Mow up and down slopes, not across.
2. Watch for holes, ruts, or bumps. Uneven terrain could overturn the unit. Tall grass can hide obstacles.
3. Choose a slow speed so that you will not have to stop or change speeds while on the slope.
4. Do not mow on wet grass. Tires may lose traction.
5. Always keep unit in gear especially when traveling down slopes. Do not shift to neutral and coast downhill.
6. Avoid starting, stopping, or turning on a slope. If tires lose traction, disengage the blade(s) and proceed slowly straight down the slope.
7. Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction, which could cause the machine to rollover.
8. Use extra care while operating machines with grass catchers or other attachments; they can affect the stability of the unit.
9. Do not try to stabilize the machine by putting your foot on the ground.
10. Do not mow near drop-offs, ditches, or embankments. The mower could suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.
11. Do not use grass catchers on steep slopes.
12. Do not mow slopes you cannot back up.
13. See your authorized dealer/retailer for recommendations of wheel weights or counterweights to improve stability.
14. Remove obstacles such as rocks, tree limbs, etc.
15. Use slow speed. Tires may lose traction on slopes even through the brakes are functioning properly.
16. Do not turn on slopes unless necessary, and then, turn slowly and gradually downhill, if possible.

TOWED EQUIPMENT

1. Tow only with a machine that has a hitch designed for towing. Do not attach towed equipment except at the hitch point.
2. Follow the manufacturer's recommendations for weight limit for towed equipment and towing on slopes.
3. Never allow children or others in or on towed equipment.
4. On slopes, the weight of the towed equipment may cause loss of traction and loss of control.
5. Travel slowly and allow extra distance to stop.
6. Do not shift to neutral and coast downhill.

WARNING

Never operate on slopes greater than 17.6 percent (10°) which is a rise of 3-1/2 feet (106 cm) vertically in 20 feet (607 cm) horizontally.

When operating on slopes use additional wheel weights or counterweights. See your dealer/retailer to determine which weights are available and appropriate for your unit.

Select slow ground speed before driving onto slope. In addition to front weights, use extra caution when operating on slopes with rear-mounted grass catchers.

Mow UP and DOWN the slope, never across the face, use caution when changing directions and **DO NOT START OR STOP ON SLOPE.**

CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the unit and the mowing activity. Never assume that children will remain where you last saw them.

1. Keep children out of the mowing area and under the watchful care of another responsible adult.
2. Be alert and turn unit off if children enter the area.
3. Before and during reverse operation, look behind and down for small children.
4. Never carry children, even with the blade(s) off. They may fall off and be seriously injured or interfere with safe unit operation. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the machine.
5. Never allow children to operate the unit.
6. Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

EMISSIONS

1. Engine exhaust from this product contains chemicals known, in certain quantities, to cause cancer, birth defects, or other reproductive harm.
2. Look for the relevant Emissions Durability Period and Air Index information on the engine emissions label.

IGNITION SYSTEM

1. This spark ignition system complies with Canadian ICES-002.

Safety Rules & Information

SERVICE AND MAINTENANCE

Safe Handling of Gasoline

1. Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
2. Use only approved gasoline containers.
3. Never remove the gas cap or add fuel with the engine running. Allow the engine to cool before refueling.
4. Never fuel the machine indoors.
5. Never store the machine or fuel container where there is an open flame, spark, or pilot light such as near a water heater or other appliance.
6. Never fill containers inside a vehicle or on a truck bed with a plastic bed liner. Always place containers on the ground away from your vehicle before filling.
7. Remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
8. Keep nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
9. If fuel is spilled on clothing, change clothing immediately.
10. Never over-fill the fuel tank. Replace gas cap and tighten securely.
11. Use extra care in handling gasoline and other fuels. They are flammable and vapors are explosive.
12. If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.
13. Replace all fuel tank caps and fuel container caps securely.
12. Grass catcher components are subject to wear, damage, and deterioration, which could expose moving parts or allow objects to be thrown. Frequently check components and replace with manufacturer's recommended parts, when necessary.
13. Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves, and use extra caution when servicing them.
14. Check brake operation frequently. Adjust and service as required.
15. Use only factory authorized replacement parts when making repairs.
16. Always comply with factory specifications on all settings and adjustments.
17. Only authorized service locations should be utilized for major service and repair requirements.
18. Never attempt to make major repairs on this unit unless you have been properly trained. Improper service procedures can result in hazardous operation, equipment damage and voiding of manufacturer's warranty.
19. On multiple blade mowers, take care as rotating one blade can cause other blades to rotate.
20. Do not change engine governor settings or overspeed the engine. Operating the engine at excessive speed can increase the hazard of personal injury.
21. Disengage drive attachments, stop the engine, remove the key, and disconnect the spark plug wire(s) before: clearing attachment blockages and chutes, performing service work, striking an object, or if the unit vibrates abnormally. After striking an object, inspect the machine for damage and make repairs before restarting and operating the equipment.

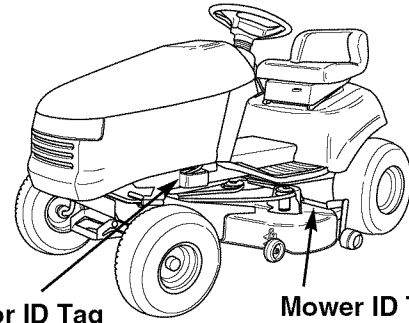
Service & Maintenance

1. Maintain or replace safety and instruction labels as necessary.
2. Never run the unit in an enclosed area where carbon monoxide fumes may collect.
3. Keep nuts and bolts, especially blade attachment bolts, tight and keep equipment in good condition.
4. Never tamper with safety devices. Check their proper operation regularly and make necessary repairs if they are not functioning properly.
5. Keep unit free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage.
6. Stop and inspect the equipment if you strike an object. Repair, if necessary, before restarting.
7. Never make adjustments or repairs with the engine running unless specified otherwise in the engine manufacturer's manual.
8. Do not remove the fuel filter when the engine is hot as spilled gasoline may ignite. Do not spread fuel line clamps further than necessary. Ensure clamps grip hoses firmly over the filter after installation.
9. Do not use gasoline containing METHANOL, gasohol containing more than 10% ETHANOL, gasoline additives, or white gas because engine/fuel system damage could result.
10. If the fuel tank must be drained, it should be drained outdoors.
11. Replace faulty silencers/mufflers.
22. Never place hands near the moving parts, such as a hydro pump cooling fan, when the tractor is running. (Hydro pump cooling fans are typically located on top of the transaxle).
23. Units with hydraulic pumps, hoses, or motors: **WARNING:** Hydraulic fluid escaping under pressure may have sufficient force to penetrate skin and cause serious injury. If foreign fluid is injected into the skin it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result. Keep body and hands away from pin holes or nozzles that eject hydraulic fluid under high pressure. Use paper or cardboard, and not hands, to search for leaks. Make sure all hydraulic hoses and lines are in good condition before applying pressure to the system. If leaks occur, have the unit serviced immediately by your authorized dealer.
24. **WARNING:** Stored energy device. Improper release of springs can result in serious personal injury. Springs should be removed by an authorized technician.
25. Models equipped with an engine radiator: **WARNING:** Stored energy device. To prevent serious bodily injury from hot coolant or steam blow-out, never attempt to remove the radiator cap while the engine is running. Stop the engine and wait until it is cool. Even then, use extreme care when removing the cap.

Identification Numbers

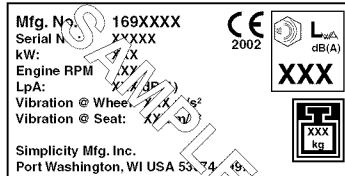


North American Models



Tractor ID Tag

Mower ID Tag



CE Models

When contacting your authorized dealer for replacement parts, service, or information you **MUST** have these numbers.

Record your model name/number, manufacturer's identification numbers, and engine serial numbers in the space provided for easy access. These numbers can be found in the locations shown.

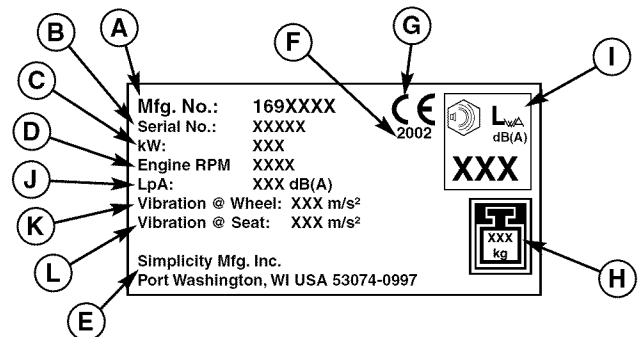
NOTE: For location of engine identification numbers, refer to the engine owner's manual.

CE Models: Place the extra copy of the identification tag in the manual

PRODUCT REFERENCE DATA	
Model Description Name/Number	
Unit MFG Number	Unit SERIAL Number
Mower Deck MFG Number	Mower Deck SERIAL Number
Dealer Name	Date Purchased
ENGINE REFERENCE DATA	
Engine Make	Engine Model
Engine Type/Spec	Engine Code/Serial Number

CE IDENTIFICATION TAG MARKINGS

- A. Manufacturer's Identification Number
- B. Manufacturer's Serial Number
- C. Power Rating in Kilowatts
- D. Maximum Engine Speed in Rotations per Minute
- E. Manufacturer's Address
- F. Year of Manufacture
- G. CE Compliance Logo
- H. Mass of Unit in Kilograms
- I. Sound Power in Decibels ***
- J. Sound Pressure at Operator's Position in Decibels **
- K. Vibration at the Steering Wheel *
- L. Vibration at the Seat *



This unit complies with European Harmonized Lawn Mower Standard EN 836, European Machinery Directive 98/37/EC, and European EMC Directive 89/336/EC

* Tested according to EN 836:1997/A2:2001, EN 1032:1996, EN 1033:1995

** Tested according to EN836:1997/A2:2001

*** Tested according to 2000/14/EC

*CE Models:
Place copy of
Identification Tag here.*

Safety Decals

SAFETY DECALS

This unit has been designed and manufactured to provide you with the safety and reliability you would expect from an industry leader in outdoor power equipment manufacturing.

Although reading this manual and the safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively, we have placed several safety labels on the unit to remind you of this important information while you are operating your unit.

NORTH AMERICAN MODELS



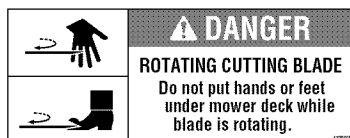
Decal - Operating Instructions, North American Models, Part No. 1722814



Decal - Danger, Side-Discharge Models
Part No. 1704276

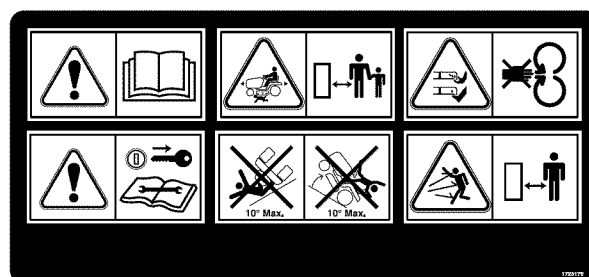


Decal - Danger, Side-Discharge Models
Part No. 1704277



Decal - Danger, Mulching Models
Part No. 1720660

CE MODELS

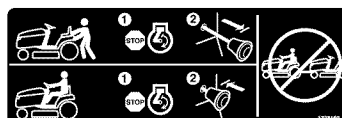


Decal - Operating Instructions, CE Models,
Part No. 1723175



Decal - Danger, Rotating Blades
Part No. 1720389

ALL MODELS



Decal - Transmission Release
Part No. 1723160



Decal - Ignition Switch
Positions
Part No. 1722806



Decal - Cutting
Height
Part No. 1723470



Decal - Cutting
Height
Part No. 1723847

SAFETY ICONS

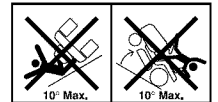
Warning: Read Operator's Manual.

Read and understand the Operator's Manual before using this machine.



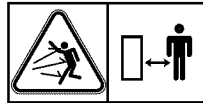
Danger: Machine Rollover.

Do not use this machine on slopes greater than 10°.



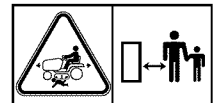
Danger: Thrown Objects.

This machine is capable of throwing objects and debris. Keep bystanders away.



Danger: Dismemberment.

This machine can amputate limbs. Keep bystanders and children away when engine is running.



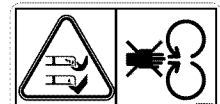
Warning: Remove Key Before Servicing.

Remove the key and consult technical literature before performing repairs or maintenance.

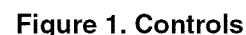


Danger: Dismemberment.

This mower deck can amputate limbs. Keep hands and feet away from blades.



A line drawing of a riding lawn mower, viewed from the side. It features a large front deck, a steering wheel, a seat, and a rear wheel. The mower is shown in a three-quarter perspective.



The information below briefly describes the function of individual controls. Starting, stopping, driving, and mowing require the combined use of several controls applied in specific sequences. To learn what combination and sequence of controls to use for various tasks see the OPERATION section.



The throttle/choke lever controls engine speed and choke. Move the throttle forward to increase engine speed and back to decrease engine speed. Always operate at FULL throttle. Move the control fully forward (past the detent) to close the choke. Close the choke for cold starting. Open the choke once the engine starts. A warm engine may not require choking.



The throttle controls engine speed. Move the throttle forward to increase engine speed and back to decrease engine speed. Always operate at FULL throttle.



Close the choke for cold starting. Open the choke once the engine starts. A warm engine may not require choking. Move the lever forward to close the choke.



Headlights

The light switch turns the tractor headlights on and off.



PTO Switch

The PTO (Power Take-Off) switch engages and disengages attachments that use the PTO. To engage the PTO, pull UP on the switch. Push DOWN to disengage. *Note that the operator must be seated firmly in the tractor seat for the PTO to function.*



Ignition Switch

The ignition switch starts and stops the engine, it has three positions:



OFF Stops the engine and shuts off the electrical system.



RUN Allows the engine to run and powers the electrical system.



START Cranks the engine for starting.

NOTE: Never leave the ignition switch in the RUN position with the engine stopped—this drains the battery.



Brake Pedal

Depressing the brake pedal applies the tractor brake.



Ground Speed Pedals

The tractor's forward ground speed is controlled by the forward ground speed control pedal. The tractor's reverse ground speed is controlled by the reverse ground speed control pedal.

Depressing either pedal will increase ground speed. Note that the further down the pedal is depressed, the faster the tractor will travel.



Parking Brake

The parking brake knob is used to lock the parking brake when the tractor is stopped. Fully depressing the brake pedal and pulling up on the knob engages the parking brake. Refer to page 10 for a full explanation of parking brake functions.



Mower Height of Cut Adjustment

38", 44", 50", & 54" MOWER DECKS

The cutting height adjustment knob controls the mower cutting height. The cutting height is infinitely adjustable between 1" and 3-5/8."

40" MOWER DECKS

The cutting height adjustment lever controls the mower cutting height. Push down on the button to release the lever, move to the desired cutting height, and release the button to lock. The cutting height is infinitely adjustable between 1" and 3-5/8."



Cutting Height Fine Tuning Adjustment (40" Mower Decks Only)

The cutting height fine tuning adjustment is used to set the mower cutting height between two of the preset cutting positions.



Cruise Control

The cruise control is used to lock the ground speed control in forward. Move the lever forward until the desired ground speed is reached. To disengage the cruise control move the lever back. In the event you need to stop quickly, depressing the brake pedal will also return the cruise control to neutral.



Seat Adjustment Lever

The seat can be adjusted forward and back. Move the lever, position the seat as desired, and release the lever to lock the seat into position.



Transmission Release Valve Lever

The transmission release valve lever deactivates the transmission so that the tractor can be pushed by hand. See PUSHING THE TRACTOR BY HAND for operational information.



Transmission Oil Expansion Chamber (K71 Models Only)

Transmission oil is added through the transmission oil expansion chamber. It also serves as extra holding capacity for oil as the transmission heats up and the oil expands. See TRANSMISSION MAINTENANCE for oil level check and fill procedures.



Fuel Tank

To remove the cap, turn counterclockwise. On models with a dashboard display, the fuel gauge is part of the dashboard. Models without a dashboard display have a fuel gauge located under the seat.



Differential Lock Pedal (Select Models)

Depressing this pedal locks the transmission differential, locking both rear wheels into "drive".

Use this feature if the tractor is stuck because one wheel is slipping. **Engage the differential lock at slow ground speeds only.**

Features & Controls



Steering Tilt Adjust (Select Models)

Use the tilt knob located on the bellows to release the pivot mechanism and pivot the wheel to the desired position. Release the tilt knob to lock in position.



Attachment Lift Control Lever

When using the mower deck, lift the deck off the ground while transporting to and from the job site. **DO NOT** cut with the mower in the raised, transport position.

Hydraulic Lift Models: The attachment lift control lever raises and lowers attachments that utilize the tractor's hydraulic lift cylinder. Pushing the lever forward lowers the attachment while pulling the lever back raises the attachment.

IMPORTANT NOTE - On models equipped with hydraulic lift, the attachment lift will not work when the parking brake is engaged.

Manual Lift Models: The attachment lift control lever raises and lowers attachments that utilize the tractor's manual lift linkage. To lower an attachment: pull the lever back slightly, depress the release button, and push the lever forward until it locks in the lowered position. To raise an attachment: push the lever forward slightly, depress the release button, then pull the lever back until it locks in the raised position.

PARKING BRAKE FUNCTION

Applying the Parking Brake - See Figure 2. To lock the parking brake, release the ground speed pedals (A), fully depress the brake pedal (B), pull UP on the parking brake knob (C), and then release brake pedal.

Releasing the Parking Brake - See Figure 2. To release the parking brake, fully depress the brake pedal (B) and push the parking brake knob (C) DOWN.

IMPORTANT NOTE: The tractor's hydraulic attachment lift will not work when the parking brake is engaged.

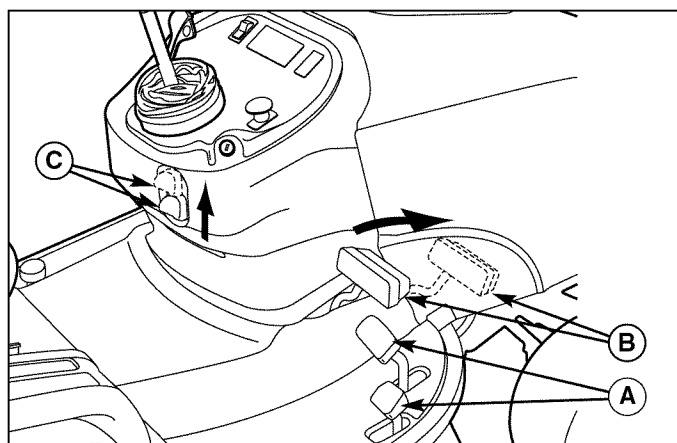


Figure 2. Engaging the Parking Brake

- A. Ground Speed Pedals
- B. Brake Pedal
- C. Parking Brake Knob

AUTOMATIC CONTROLLED TRACTION

What is Automatic Controlled Traction?

Automatic Controlled Traction (ACT) is an exclusive feature of our transmissions that provides improved traction. ACT applies a preset amount of torque to both rear wheels even if one starts slipping (a transmission without ACT will lose traction completely if one rear wheel starts slipping). This preset torque is just enough to provide additional traction, and still allow the wheels to turn at different speeds in a tight turn without damaging the lawn.

What to Expect from Your ACT Tractor

For the most part, while using your tractor you will not notice ACT working, and you will simply become accustomed to increased traction an ACT transmission provides.

Under certain circumstances the ACT system limit can be exceeded, and one of the rear wheels may slip (for instance if trying to turn up a hill while accelerating). This is normal. If you start to lose traction, do not speed up. Instead, slow to a stop, straighten the steering wheel, and slowly accelerate. Stopping the tractor allows the transmission to regain more traction.

DASHBOARD DISPLAY (SELECT MODELS)

Display Items

Refer to Figures 3a and 3b.

A. FUEL LEVEL

Indicates the amount of fuel in the fuel tank. Left is empty; right is full.

B. HOUR METER / CLOCK / SERVICE INDICATOR

Displays the clock, hour meter, and maintenance reminder.

C. SELECT BUTTON

Used to set the clock and reset the maintenance reminder.

D. SET BUTTON

Used to set the clock and reset the maintenance reminder.

E. PTO LIGHT

Indicates the PTO switch is in the ON position.

F. CRUISE CONTROL LIGHT

Indicates that the cruise control is engaged.

G. LOW OIL PRESSURE LIGHT

Indicates that the engine oil pressure is low. The light will turn on when the tractor is first started and then go out. IF THIS LIGHT TURNS ON WHILE THE TRACTOR IS IN USE, TURN THE ENGINE OFF IMMEDIATELY. Contact your authorized dealer for service.

H. LOW VOLTAGE LIGHT

Indicates that the electrical system voltage is low. The light will turn on when the tractor is first started and then go out. IF THIS LIGHT TURNS ON WHILE THE TRACTOR IS IN USE, TURN THE ENGINE OFF IMMEDIATELY. Contact your authorized dealer for service.

Functions

EARLY MODELS (SEE FIGURE 3A)

Display Total Running Hours - When the key switch is first turned to the RUN position, all warning indicators will light and the total running hours will be displayed. Be sure all lights are functioning.

Display PTO Hours - Turn the key OFF, engage the PTO, and turn the key to RUN (engine off).

Set the Clock - Press and release the select button (C) to select hours or minutes. Depress the set button (D) to advance the selected number.

Demonstration Mode - Turn the key OFF, depress and hold the set button (D, Figure 3), turn the key to RUN and release the set button.

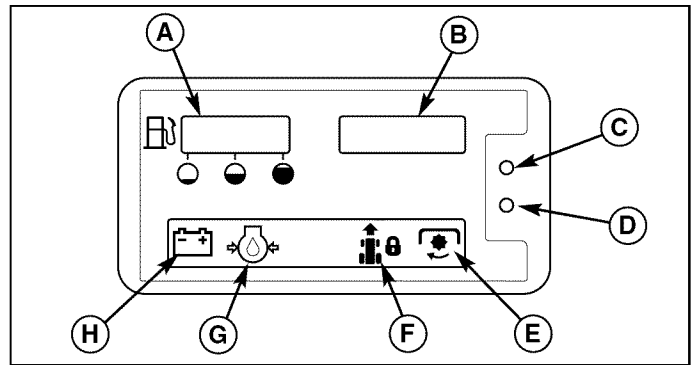


Figure 3a. Dashboard Display - Early Models

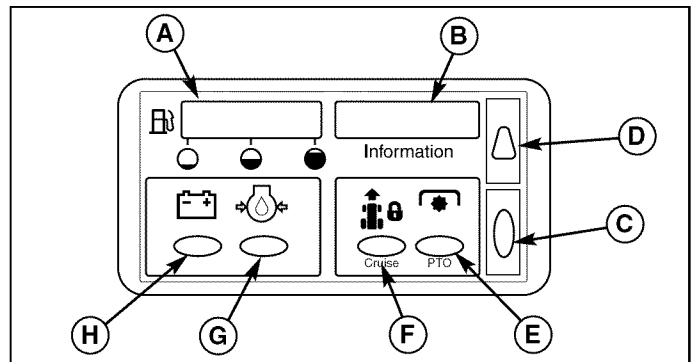


Figure 3b. Dashboard Display - Later Models

Maintenance Reminder - A maintenance reminder will display in the information window (B) after the first 5 hours of operation, and then after every 50 hours. The reminder will automatically reset after 5 hours.

LATER MODELS (SEE FIGURE 3B)

Display Total Running Hours - When the key switch is first turned to the RUN position, all warning indicators will light and the total running hours will be displayed. Be sure all lights are functioning.

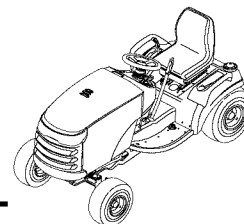
Display PTO Hours - Turn the key OFF, engage the PTO, and turn the key to RUN (engine off).

Set the Clock - Press and release the select button (C) to select hours or minutes. Depress the set button (D) to advance the selected number.

Demonstration Mode - With the engine off, hold down the set button (D) and turn the key switch to RUN.

Maintenance Reminder - A maintenance reminder will display in the information window (B) after the first 5 hours of operation, and then after every 50 hours. The reminder will automatically reset after 5 hours. The reminder can be manually reset by turning the key switch from OFF to RUN (with engine off) and then depressing the set (D) and select (C) buttons simultaneously for 5 seconds.

Operating the Tractor



SAFETY INTERLOCK SYSTEM TESTS

This unit is equipped with safety interlock switches and other safety devices. These safety systems are present for your safety: do not attempt to bypass safety switches, and never tamper with safety devices. Check their operation regularly.

Operational SAFETY Checks

Your unit is equipped with a seat switch safety system. Check the seat switch operation every fall and spring with the following tests.

Test 1 — Engine should NOT crank if:

- PTO switch is ON, OR
- Brake pedal is NOT fully depressed (parking brake OFF), OR
- The cruise control lever is NOT in NEUTRAL.

Test 2 — Engine SHOULD crank if:

- PTO switch is OFF, AND
- Brake pedal is fully depressed (parking brake ON), AND
- The cruise control lever is in NEUTRAL.

Test 3 — Engine should SHUT OFF if:

- Operator rises off seat with PTO engaged, OR
- Operator rises off seat with brake pedal NOT fully depressed (parking brake OFF).

Test 4 — Blade Brake Check

Mower blades and mower drive belt should come to a complete stop within five seconds after electric PTO switch is turned OFF (or operator rises off seat). If mower drive belt does not stop within five seconds, readjust the PTO clutch as described in the ADJUSTMENTS section or see your dealer.

NOTE: Once the engine has stopped, the PTO switch must be turned off after the operator returns to the seat in order to start the engine.



WARNING

If the unit does not pass a safety test, do not operate it. See your authorized dealer. Under no circumstance should you attempt to defeat the purpose of the safety interlock system.

GENERAL OPERATING SAFETY

Be sure to read all information in the Safety and Operation sections before attempting to operate this unit. Become familiar with all of the controls and how to stop the unit.

ADDING FUEL

To add fuel:

1. Remove the fuel cap (A, Figure 4).
2. Fill the tank. Do not overfill. Leave room in the tank for fuel expansion. Refer to your engine manual for specific fuel recommendations.
3. Install and hand tighten the fuel cap.



Do not use gasoline containing METHANOL, gasohol containing more than 10% ETHANOL, gasoline additives, or white gas because engine/fuel system damage could result.



WARNING

Gasoline is highly flammable and must be handled with care. Never fill the tank when the engine is still hot from recent operation. Do not allow open flame, smoking or matches in the area. Avoid over-filling and wipe up any spills.

STARTING THE ENGINE

1. While sitting in the operator's seat, fully depress the brake pedal or set the parking brake.
 2. Make sure that your feet are not depressing the ground speed control pedals and that the cruise control lever is in neutral.
 3. Disengage the PTO clutch.
 4. Set the throttle to FULL.
 5. Close the choke.
- NOTE: A warm engine may not require choking.*
6. Insert the ignition key and turn it to START.
 7. After the engine starts, move the engine throttle control to SLOW. Warm up the engine by running it for at least a minute.
 8. Set throttle to FULL.

NOTE: In the event of an emergency the engine can be stopped by simply turning the ignition switch to STOP. Use this method only in emergency situations. For normal engine shut down follow the procedure given in STOPPING THE TRACTOR.

STOPPING THE TRACTOR & ENGINE

1. Return the ground speed control(s) to neutral.
2. Disengage the PTO and wait for all moving parts to stop.
3. Place the throttle control in the position specified in the engine owner's manual provided in the operator's packet shipped with your tractor. Follow any recommended stopping procedures.
4. Turn the ignition switch to OFF. Remove the key.

DRIVING THE TRACTOR

1. Sit in the seat and adjust the seat so that you can comfortably reach all the controls and see the dash-board display.
2. Engage the parking brake.
3. Make sure the PTO switch is disengaged.
4. Start the engine (see STARTING THE ENGINE).
5. Disengage the parking brake and release the brake pedal.
6. Depress the forward ground speed control pedal to travel forward. Release the pedal to stop. Note that the further down the pedal is depressed the faster the tractor will travel.
7. Stop the tractor by releasing the ground speed control pedals, setting the parking brake, and stopping the engine (see STOPPING THE TRACTOR AND ENGINE).

MOWING

1. Set the mower cutting height to the desired level and set the gauge wheels to the appropriate position (if equipped).
2. Engage the parking brake. Make sure the PTO switch is disengaged.
3. Start the engine (see STARTING THE ENGINE).
4. Fully lower the mower using the attachment lift lever.
5. Set the throttle to FULL.
6. Engage the PTO (Mower Deck).
7. Begin mowing. See Section LC for tips on mowing patterns, lawn care, and troubleshooting information.
8. When finished, shut off the PTO and raise the mower using the attachment lift control lever.
9. Stop the engine (see STOPPING THE TRACTOR AND ENGINE).

PUSHING THE TRACTOR BY HAND

1. Disengage the PTO and turn the engine off.
2. Pull the transmission release (B, Figure 4) back approximately 2-1/2" (6 cm) to lock into released position.
3. The tractor can now be pushed by hand.



DO NOT TOW TRACTOR

Towing the unit will cause transmission damage. • Do not use another vehicle to push or pull this unit. • Do not actuate the transmission release valve lever while the engine is running.

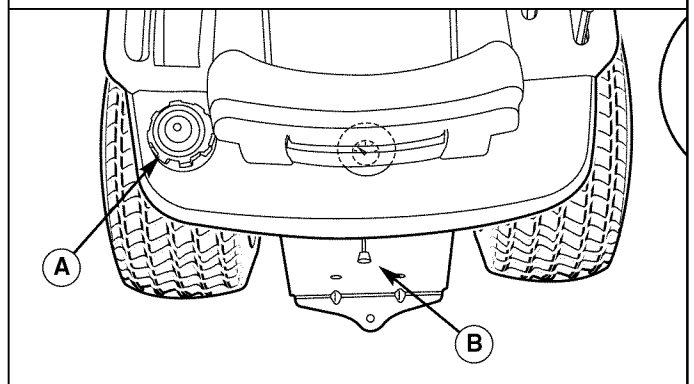
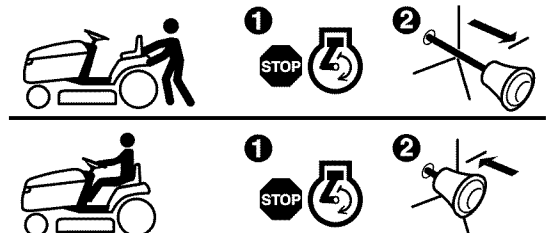


Figure 4. Transmission Release Lever & Fuel Tank
A. Fuel Tank Cap.
B. Transmission Release Lever

Operating the Tractor

USING A MULCHING MOWER (40" MOWER ONLY)

Benefits of Proper Mulching

Mulching consists of a mower deck which cuts and recuts clippings into tiny particles and then blows them down into the lawn. These tiny particles decompose rapidly into by-products that your lawn can use. Under proper conditions your mulching mower virtually eliminate noticeable clippings on the lawn surface.

Limitations of Mulching Decks

Mulching mowers cannot function properly if the grass is wet, or if the grass is simply too high. Even more than normal mowing, mulching requires that the grass be dry and that no more than 1/3 of the height is cut.

Do not use the mower as a mulching mower during the first two or three cuttings in the spring. The long grass blades, quick growth, and often wetter conditions are more suitable for broadcasting (side-discharging).

Correct Ground Speed & Engine Speed

Use full engine throttle to maximize mower blade tip speed matched with a slow ground speed so that clippings will be finely cut. Ground speed while mulching should be half the speed used when broadcasting (side-discharging) under similar conditions. Since mulching requires more horse power than broadcasting, using a proper ground speed is vitally important for good mulching operation.

Correct Cutting Height

Cutting off too much at one time shocks the plant's growth system and weakens the grass. A good rule of thumb is the 1/3 rule: to cut no more than one third of the grass height, and never more than 1 inch (2,5cm) at a time.

The best mulching action typically results from cutting only the top 1/2" to 3/4" (1,25 - 2cm) of the grass blade. This provides short clippings which decompose properly (much more quickly than longer clippings). The ideal cutting height will vary with climate, time of year, and quality of your lawn. We recommend that you experiment with both the cutting height and ground speed to achieve the best cut. Start with a high cutting height and use progressively lower heights until you find a cutting height that is matched to your mowing conditions and preferences. For best results, overlapping is recommended.

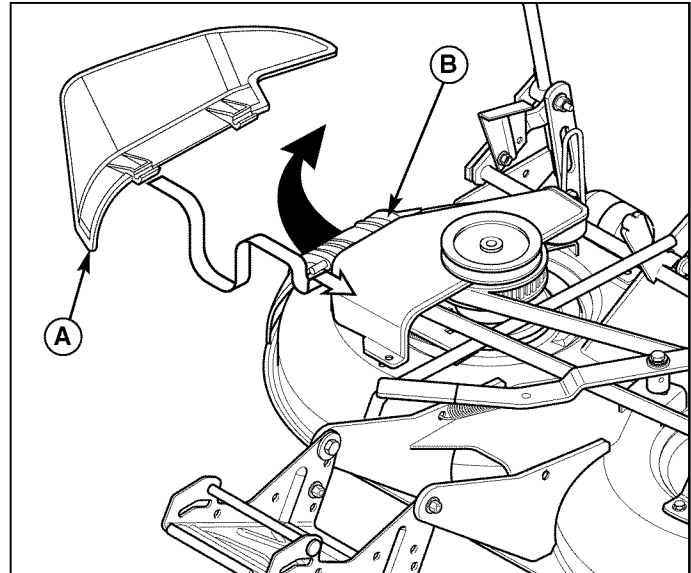


Figure 5. Installing the Side Discharge Deflector

- A. Side Discharge Deflector**
B. Mulching Cover

Using the Side Discharge Deflector

When to use the side discharge deflector: If you've been on vacation or missed a mowing and the grass has gotten very long, do not try to mulch at your normal cutting height. To handle these situations your mulching mower is equipped with a side discharge deflector. Installing the side discharge deflector allows you to broadcast clippings. Broadcasting, or side-discharging, disperses fine clippings evenly over the entire lawn. Always operate the engine at full throttle. Use an appropriate ground speed for the thickness and height of grass you are cutting. If you hear the engine slowing down, you are mowing too fast, use a slower ground speed. Mow when the grass is 3"-5" (7,6-12,7cm) long. Do not cut off more than 1" (2,5cm) in a single pass.

WARNING

Never operate the mower deck without either the discharge chute or mulching deflector in place.

To install the side discharge chute:

1. Lift up the mulching cover (B, Figure 5).
2. Install the side discharge deflector (A) under the mulching cover. The side discharge deflector hooks onto the mulching cover hinge rod, and is held in place by the mulching cover.
3. Release the mulching cover.

ADJUSTING MOWER CUTTING HEIGHT - 40" MOWER DECKS

The cutting height adjustment lever (A, Figure 6) controls the mower cutting height and has five positions. The highest cutting position should be used when transporting to and from the work site (do not cut with the lever in the highest position). The lower four positions are used when mowing.

Set this lever so that the deck is cutting off 1/3 the height of the grass or less.

If the desired cutting height falls between two notches, use the cutting height fine tuning adjuster (B) to achieve the correct height.

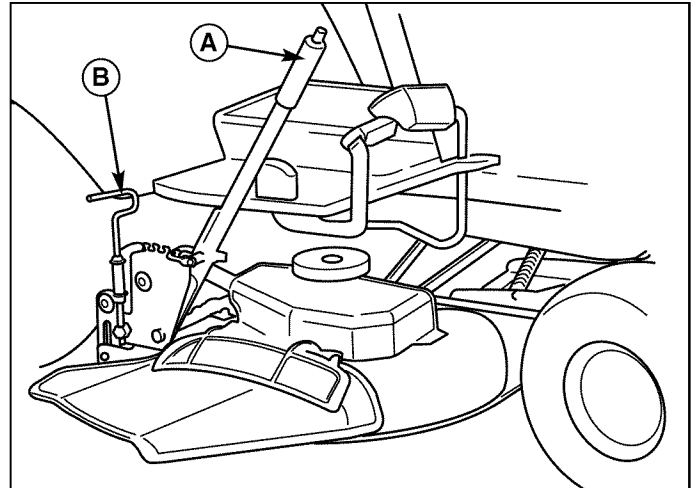


Figure 6. Cutting Height Adjustment - 40" Mowers
A. Cutting Height Lever
B. Fine Tuning Adjustment

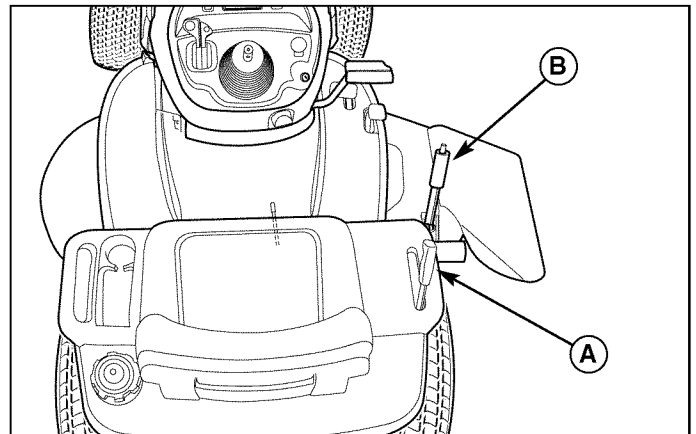


Figure 7. Raising & Lowering Mower - 40" Mowers
A. Mower Lift Lever
B. Mower Height Adjuster

ADJUSTING MOWER CUTTING HEIGHT - 38", 44", 50", & 54" MOWER DECKS

The cutting height adjustment knob (B, Figure 8) controls the mower cutting height. The cutting height is infinitely adjustable between approximately 1" and 3-5/8" (2,5-9,2cm). Turn the knob clockwise to raise the deck and counterclockwise to lower it.

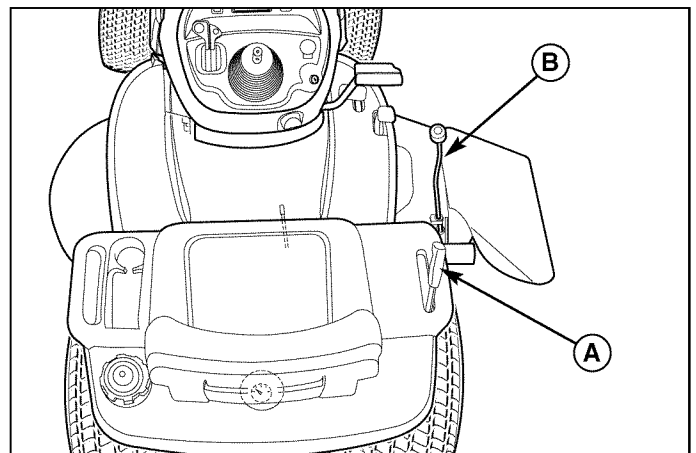
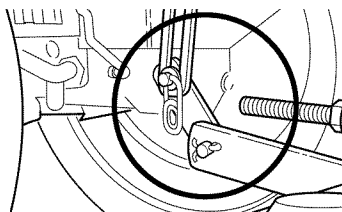


Figure 8. Raising & Lowering Mower
A. Mower Lift Lever
B. Mower Height Adjuster

Operating the Tractor

MOWER DECK REMOVAL & INSTALLATION

Lift Link Models



WARNING

Engage parking brake, disengage PTO, stop engine and remove key before attempting to install or remove the mower.

Removing the Mower Deck

1. Park tractor on a hard, level surface such as a concrete floor. Turn off PTO switch and engine, remove the key and apply parking brake.
2. Place mower in the lowest cutting position using the mower height adjuster.
3. Place the attachment lift in the lowest position.
4. Disconnect the mower lift arm (A, Figure 9) from the tractor lift arm (B). Re-install washer (C) and safety clip (D).
5. Remove belt from PTO pulley (B, Figure 10).

CAUTION

The muffler and surrounding areas may be hot.

6. Turn wheels straight ahead. Pull back on spring-loaded lever (B, Figure 11) and lift mower hitch off of the tractor brackets.
7. Turn wheels fully left, and slide mower deck out right side of tractor.

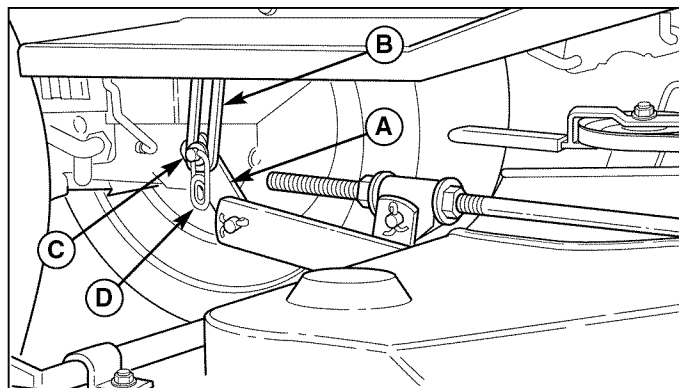


Figure 9. Lift Arms
(Viewed from underneath right side of tractor)
A. Mower Lift Arm C. Flat Washer
B. Tractor Lift Arm D. Safety Clip

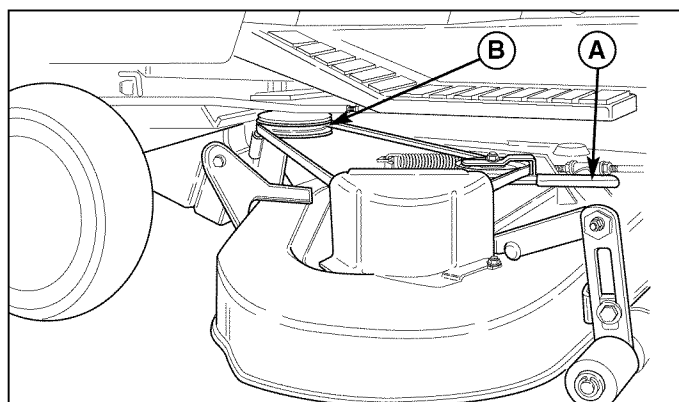


Figure 10. Removing & Installing Belt
A. Idler Arm
B. PTO Pulley

Installing the Mower Deck

1. Park tractor, shut off PTO and engine, remove the key and apply parking brake. Turn the wheels fully to the left.
2. Place mower height adjuster (B, Figures 7 & 8) in the lowest cutting position. Place the mower lift lever in the lowest position, also. Slide mower deck under right side of tractor so that mower hitch is aligned with the front tractor hitch.
3. See Figure 11. Turn wheels straight. Pull back on the spring-loaded lever (B) while lifting up on the mower hitch. Install mower hitch onto tractor hitch brackets (A). When properly installed, the spring-loaded lever should seat fully underneath the brackets.
4. See Figure 9. Connect the mower lift arm (A) to the tractor lift arm (B) using the flat washer (C) and safety clip (D).
5. See Figure 10. Move idler arm (A) to relieve belt tension. Install belt onto the PTO pulley (B).

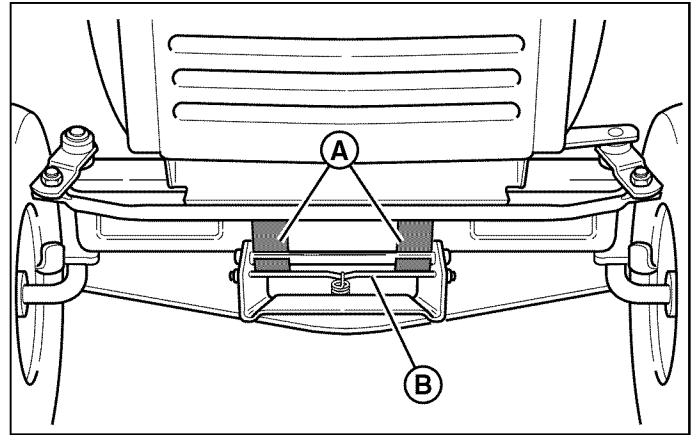
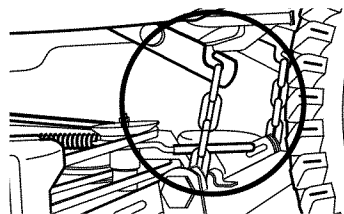


Figure 11. Mower Hitch
A. Tractor Hitch Brackets
B. Spring-Loaded Lever

Operating the Tractor

MOWER DECK REMOVAL & INSTALLATION

Chain Lift Models



WARNING

Engage parking brake, disengage PTO, stop engine and remove key before attempting to install or remove the mower.

Muffler and surrounding areas may be hot.

Removing the Mower Deck

1. Park the tractor, fully lower the attachment lift, turn off the PTO, turn off the engine, remove the key, and engage the parking brake. If equipped, pivot the gauge wheels into sliding position (see Figure 13).
2. Place mower in the lowest cutting position using the mower height control.
3. Use the idler arm (D, Figure 14) to release tension on the PTO belt, and remove belt from the PTO pulley.
4. Pull down on the lift hooks (A, Figure 14) and unhook the lift chains (B).
5. Turn the wheels straight ahead. Pull back on spring-loaded lever (B, Figure 15) and lift mower hitch off of the tractor brackets (A).
6. Turn wheels fully left, and slide mower deck out from under the right side of the tractor.

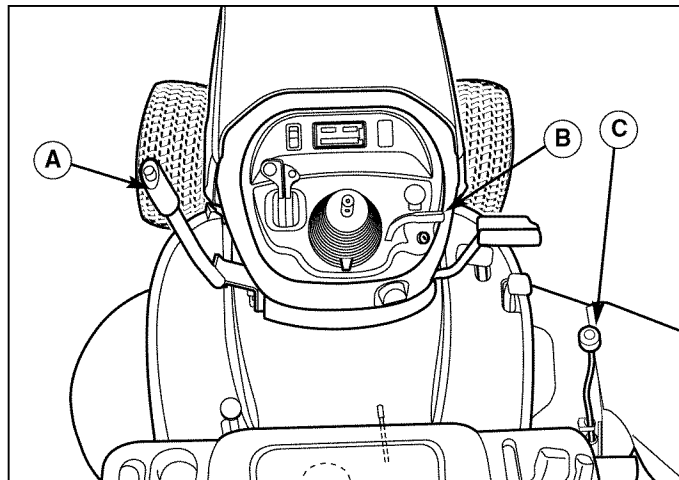


Figure 12. Raising & Lowering Mower

- A. Attachment Lift - Manual
- B. Attachment Lift - Hydraulic
- C. Cutting Height Control

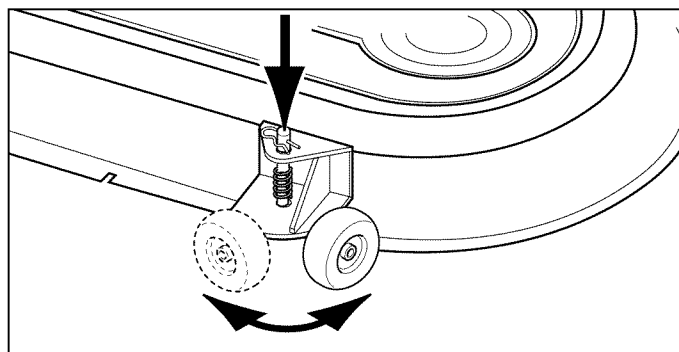


Figure 13. Gauge Wheels - 54" Models Only

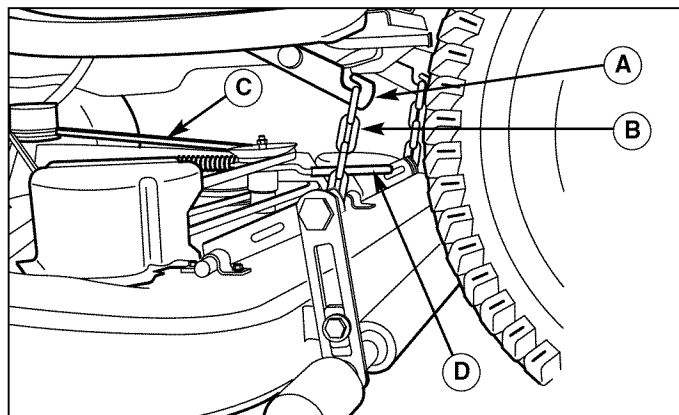


Figure 14. Mower Lift

- A. Lift Hook
- B. Lift Chain
- C. PTO Belt
- D. Idler Arm

Installing the Mower Deck

NOTE: Perform mower installation on a hard, level surface such as a concrete floor.

1. Park the tractor, fully lower the attachment lift, turn off the PTO switch, turn off the engine, remove the key, and engage the parking brake. Turn the wheels fully to the left.
2. Place mower in the lowest cutting position using the mower height adjuster. Slide the mower deck under the right side of tractor so that the mower hitch is aligned with front tractor hitch (A, Figure 15).
3. See Figure 15. Turn wheels straight. Pull back on the spring-loaded lever (B) while lifting up on the mower hitch. Install the mower hitch onto tractor hitch brackets (A). When properly installed, the spring-loaded lever should seat fully underneath the brackets (A).
4. See Figure 14. Connect the mower lift chains (B) to the tractor lift hooks (A).

NOTE 50" & 54" Mowers: The four-link lift chain is bolted to the mower deck using the third link. This is correct for most mowing applications. If mowing ditches or other surfaces that require the mower to travel below its normal range, use the fourth link.

5. See Figure 14. From left side of tractor, use the idler arm (D) to relieve belt tension. Install belt (C) onto the PTO pulley.
6. If equipped, raise the attachment lift and rotate the front gauge wheels (Figure 13) into cutting position.

ATTACHING A TRAILER

The maximum horizontal drawbar force allowed is 444 Newton. The maximum vertical drawbar force is 222 Newton. This equates to a 396 lbs (180 kg) trailer on a 10 degree hill. Secure the trailer with an appropriately sized clevis pin (A, Figure 16) and clip (B).

STORAGE

⚠ WARNING

Never store the unit (with fuel) in an enclosed, poorly ventilated structure. Fuel vapors can travel to an ignition source (such as a furnace, water heater, etc.) and cause an explosion. Fuel vapor is also toxic to humans and animals.

Before you store your unit for the off-season, read the Maintenance and Storage instructions in the Safety Rules section, then perform the following steps:

- Disengage the PTO, set the parking brake, & remove the key.

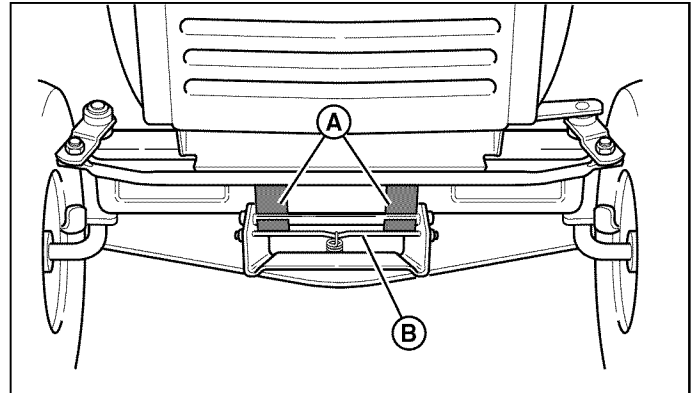


Figure 15. Mower Hitch
A. Tractor Hitch Brackets
B. Spring-Loaded Lever

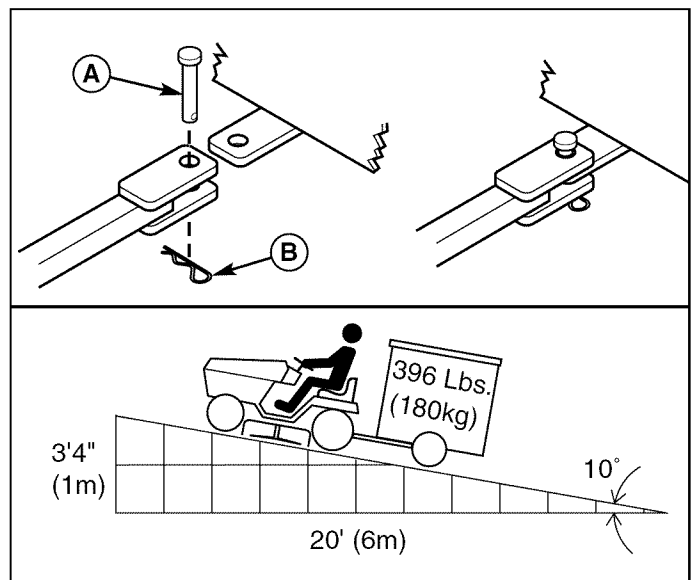


Figure 16. Trailer Weight Recommendations
A. Clevis Pin
B. Clip

- Perform engine maintenance and storage measures listed in the engine owner's manual. This includes draining the fuel system, or adding stabilizer to the fuel (do not store a fueled unit in an enclosed structure - see warning).
- Battery life will be increased if it is removed, put in a cool, dry place and fully charged about once a month. If the battery is left in the unit, disconnect the negative cable.

Before starting the unit after it has been stored:

- Check all fluid levels. Check all maintenance items.
- Perform all recommended checks and procedures found in the engine owner's manual.
- Allow the engine to warm up for several minutes before use.

Operating the Tractor

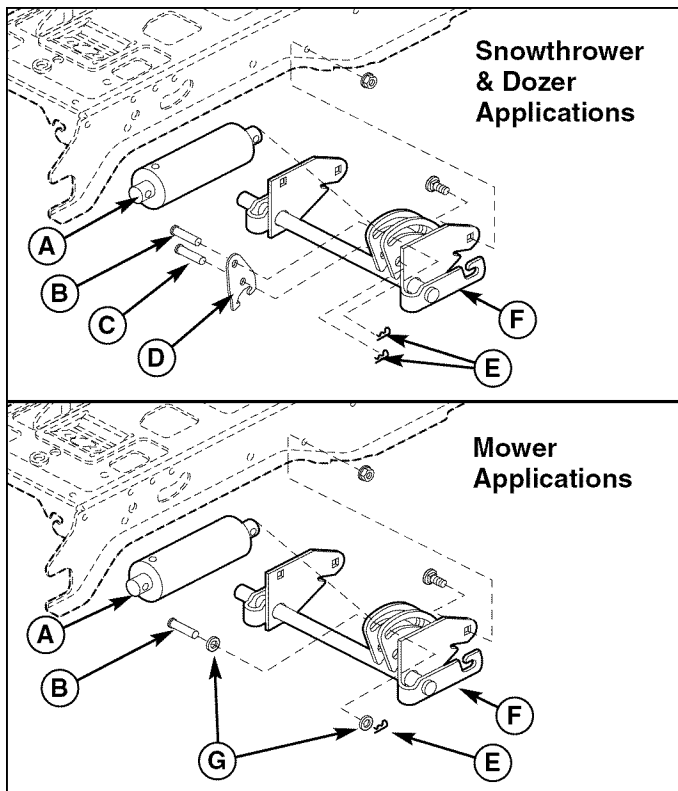


Figure 17. Lift Lock Plate - Hydraulic Lift Models

- A. Lift Cylinder
- B. Flat Head Pin (Original)
- C. Flat Head Pin (New)
- D. Lock Plate
- E. Hair Pin Clips
- F. Lift Shaft Assy.
- G. Washers

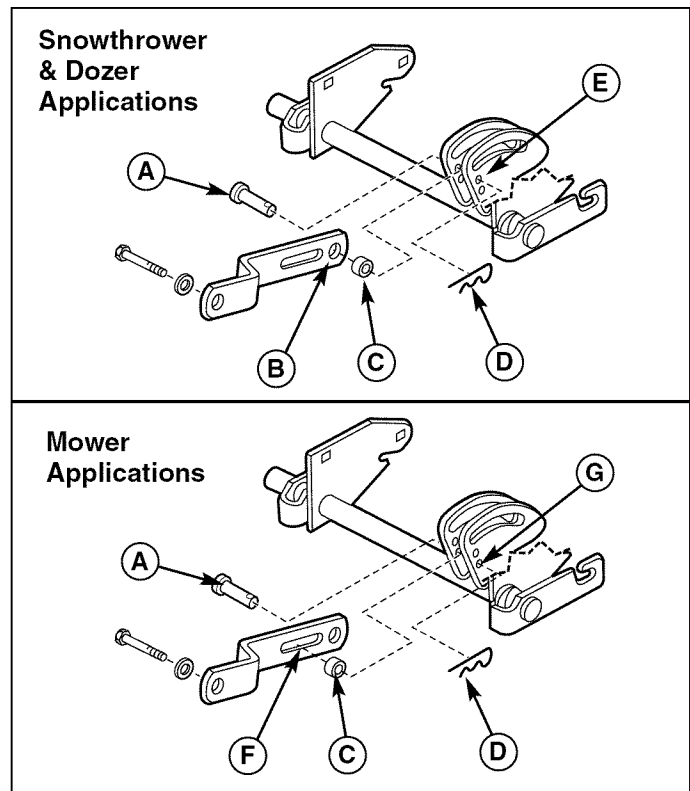


Figure 18. Lift Link - Manual Lift Models

- A. Pin
- B. Rear Hole of Lift Bar (Snowthrower Applications)
- C. Spacer
- D. Hair Pin Clip
- E. Upper Hole (Snowthrower Applications)
- F. Slot of Lift Link (Mower Applications)
- G. Lower Hole (Mower Applications)

LIFT VARIATIONS WHEN USING ATTACHMENTS

When a front-mounted attachment such as a snowthrower or dozer blade is used with the tractor, the lift mechanism must be locked to provide downward force. When the mower is reinstalled the downward pressure lock must be released so that the mower can float.

Hydraulic Lift Models

Fully lower the hydraulic lift. The lift assembly is spring loaded so it will need to be held in the down position to perform of the following procedures.

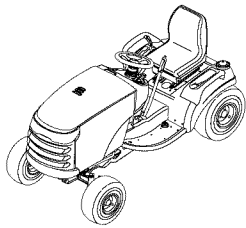
When using a snowthrower or dozer, the downward pressure lock plate (D, Figure 17) and an additional pin (C) is installed. These parts are included with the attachment. Note that the washers (G) are not used with the lock plate.

When mowing, the downward pressure lock plate (D) is removed and replaced with two washers (G). The additional pin (C) is also removed.

Manual Lift Models

NOTE: These instructions apply to Conquest / 1700 / 2700 / YT Series tractors or Broadmoor / 1600 / 2600 Series tractors equipped with a lift lever kit.

The lift link is installed differently depending on what attachment is being used. Refer to Figure 18 for link installation information.



Regular Maintenance

MAINTENANCE SCHEDULE & PROCEDURES

The following schedule should be followed for normal care of your tractor and mower.

SAFETY ITEMS	Before Each Use	Every 5 Hours	Every 25 Hours	Every 100 Hours	Every 250 Hours	Spring & Fall
Check Safety Interlock System						•
Check Tractor Brakes						•
Check Mower Blade Stopping Time				•		•
TRACTOR MAINTENANCE ITEMS	Before Each Use	Every 5 Hours	Every 25 Hours	Every 100 Hours	Every 250 Hours	Spring & Fall
Check Tractor/Mower for loose hardware		•				
Check / Clean Radiator (If Equipped) **	•	•				
Check / Clean Oil Cooler (If Equipped) **			•			
Check / Clean Cooling Fins (If Equipped)				•		
Check / Adjust PTO Clutch			****		•	
Lubricate Tractor & Mower **			•			
Lubricate Rear Axle Shafts						Yearly
Clean Battery & Cables				•		
Check Tire Pressure			•			
Clean Deck & Check/Replace Mower Blades**				•		
Perform Transmission Maint. (Varies by Model)					***	
Change Hydraulic System Filter (If Equipped)					**	
Check Mower Blade Timing (40" Mower)						Yearly
Check Arbor Drive Belt Tension (40" Mower)						Yearly
ENGINE MAINTENANCE ITEMS	Before Each Use	Every 5 Hours	Every 25 Hours	Every 100 Hours	Every 250 Hours	Spring & Fall
Check Engine Oil Level	•					
Check / Change Engine Air Filter *						
Change Engine Oil & Filter *						
Inspect Spark Plug(s) *						
Check / Replace Fuel Filter *						

* Refer to engine owner's manual. Change original engine oil after initial break-in period.

** More often in hot (over 85° F: 30° C) weather or dusty operating conditions.

*** Service after the first 50 hours of operation, then every 250 hours of operation.

**** Service after the first 25 hours of operation, then every 250 hours of operation.

Regular Maintenance

CHECK / CLEAN OIL COOLER (SELECT MODELS)

Service Interval: Every 25 Hours, or As Necessary

The engine oil cooler is located on the side of the engine (A, Figure 19) and should be cleaned with compressed air at regular intervals or if dirty.

SAFETY INTERLOCK SYSTEM CHECK

Service Interval: Every Fall & Spring

Check the function of the safety interlock system using the test procedure found on page 12 of this manual. If the tractor fails any of the tests, see your dealer.

BLADE BRAKE CHECK

Service Interval: Every 100 Hours or Fall & Spring

Mower blades and mower drive belt should come to a complete stop within five seconds after electric PTO switch is turned off.

1. With tractor in neutral, PTO disengaged and operator in seat, start the engine.
2. Look over the left-hand footrest at the mower drive belt. Engage the PTO and wait several seconds. Disengage the PTO and check the amount of time it takes for the mower drive belt to stop.
3. If mower drive belt does not stop within five seconds, re-adjust the clutch or see your dealer.

PTO CLUTCH ADJUSTMENT CHECK

Service Interval: After 25 Hrs, Then Every 250 Hrs

Check the PTO clutch adjustment after the initial 25 hour break-in period and then after every 250 hours of operation—or if the clutch starts slipping or will not engage. Check and adjust the clutch using the procedure outlined in the Adjustments section of this manual.

ENGINE MAINTENANCE

Refer to the engine owner's manual for all engine maintenance procedures and recommendations.

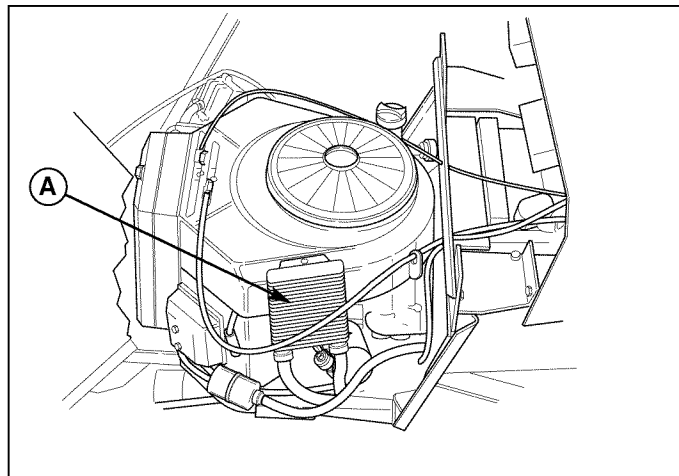


Figure 19. Clean Oil Cooler
A. Oil Cooler

CHECK TIRE PRESSURES

Service Interval: Every 25 Hours

Tire Pressure should be checked periodically, and maintained at the levels shown in the chart. Note that these pressures may differ slightly from the “Max Inflation” stamped on the side-wall of the tires. The pressures shown provide proper traction, improve cut quality, and extend tire life.

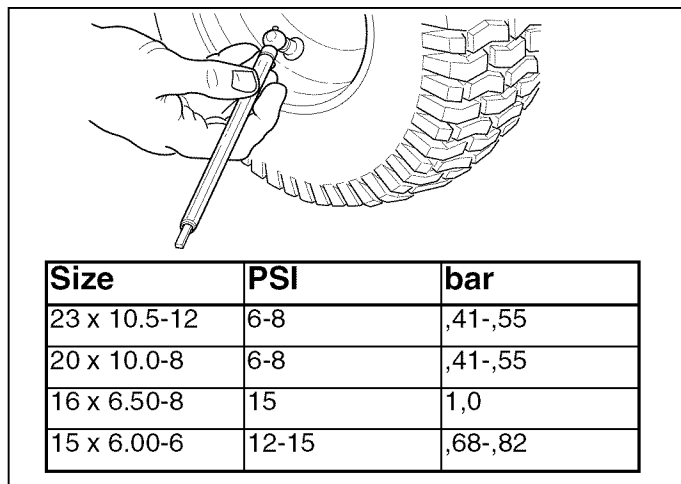


Figure 20. Tire Pressure

BATTERY MAINTENANCE

⚠ WARNING

When removing or installing battery cables, disconnect the negative cable **FIRST** and reconnect it **LAST**. If not done in this order, the positive terminal can be shorted to the frame by a tool.

Cleaning the Battery and Cables

Service Interval: Every 100 Hours

1. Disconnect the cables from the battery, negative cable first (A, Figure 21).
2. Remove the battery hold-down (C) and battery.
3. Clean the battery compartment with a solution of baking soda and water.
4. Clean the battery terminals and cable ends with a wire brush and battery terminal cleaner until shiny.
5. Reinstall the battery in the battery compartment, and secure with the battery hold-down (C).
6. Reattach the battery cables, positive cable first (B).
7. Coat the cable ends and battery terminals with petroleum jelly or non-conducting grease.

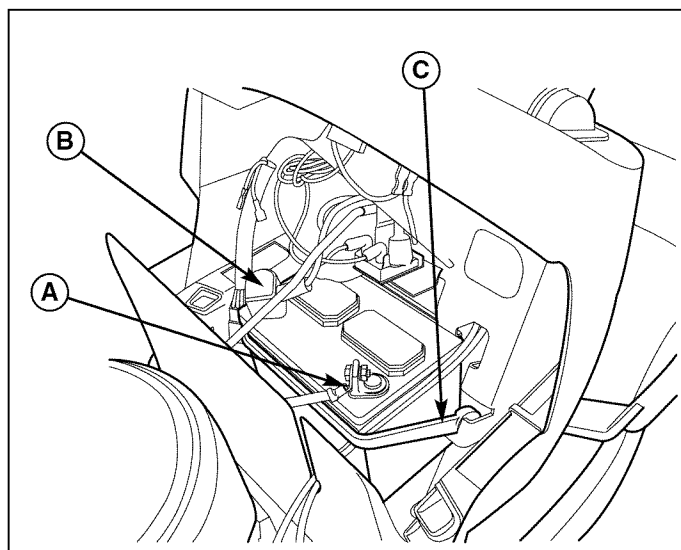


Figure 21. Battery
A. Negative Cable
B. Positive Cable & Cover
C. Rubber Hold-Down Strap

Regular Maintenance

LUBRICATION

Service Interval: Every 25 Hours

Lubricate the unit at the locations shown in Figures 22-26 as well as the lubrication points listed. Generally, all moving metal parts should be oiled where contact is made with other parts. Keep oil and grease off belts and pulleys. Wipe surfaces clean before and after lubrication.

Grease:



- steering linkage
- foot pedal
- mower linkage
- transmission idler assembly pivot
- rear axle shafts (remove wheel hubs)
- front axle where it contacts the frame

Use grease fittings when present. Automotive lithium grease is recommended.

Oil:



- control linkage
- seat adjustment assembly
- brake linkage
- mower deck height adjustment linkage
- manual lift lever

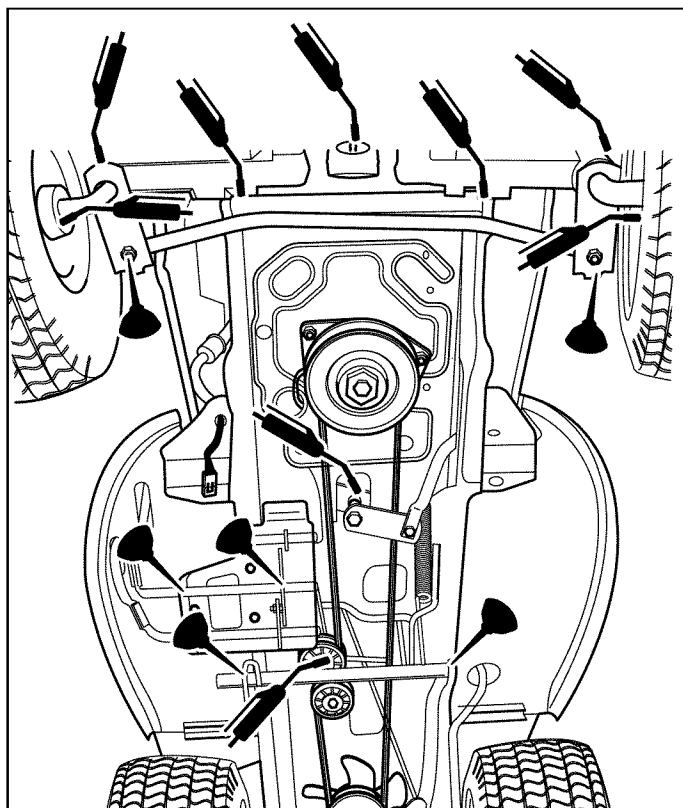


Figure 22. Lubricating the Tractor

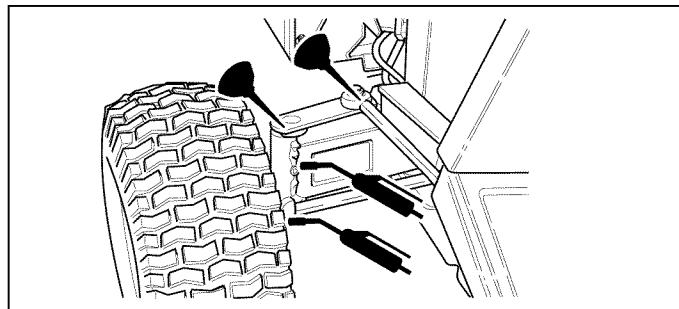


Figure 23. Lubricate Steering Linkage

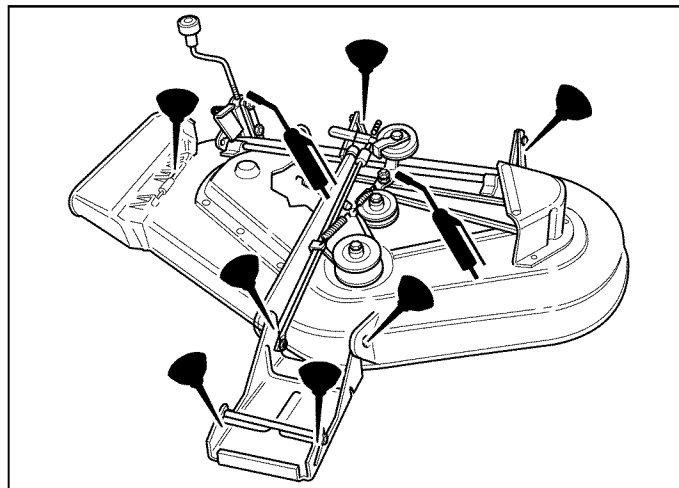


Figure 24. Mower Lubrication Points

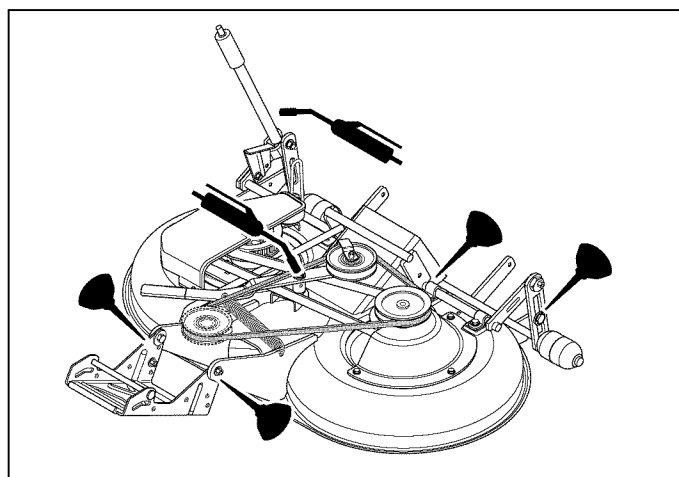


Figure 25. Mower Lubrication Points

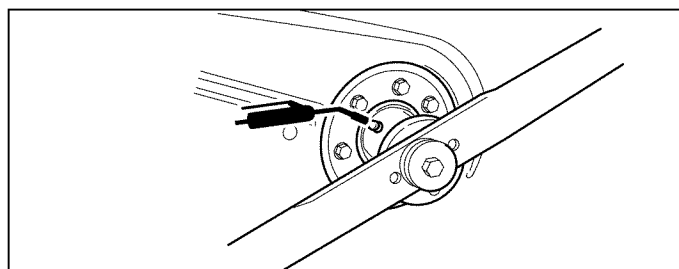


Figure 26. Arbor Lubrication Point

LUBRICATE REAR AXLE SHAFTS

Service Interval: Yearly

We recommend removing the rear wheel hubs and lubricating the axle shafts yearly. This prevents the wheel hubs from seizing onto the axle shaft and makes future service easier.

1. Turn off the ignition, turn off the PTO, engage the parking brake, and block the front tires.
2. Using a jack or chain hoist positioned at the center of the rear frame, carefully jack the unit up until the rear tires are approximately 1" - 2" (2.5-5cm) off the ground.

NOTE: For overall unit stability during service, do not jack rear end higher than required for wheel removal.

3. Support the rear of the unit on jackstands positioned under the rear frame.

NOTE: Your axle assembly may differ slightly from the assembly pictured: the quantity of washers is adjusted on a tractor by tractor basis during assembly to allow a small amount of axle end-play.

4. Remove the hardware retaining the wheel assembly to the axle and lubricate the axle shaft using anti-seize compound or lithium grease.
5. Reinstall the components in reverse order of disassembly and lower the unit. Be sure the key (A, Figure 27) is in place in the axle keyway.

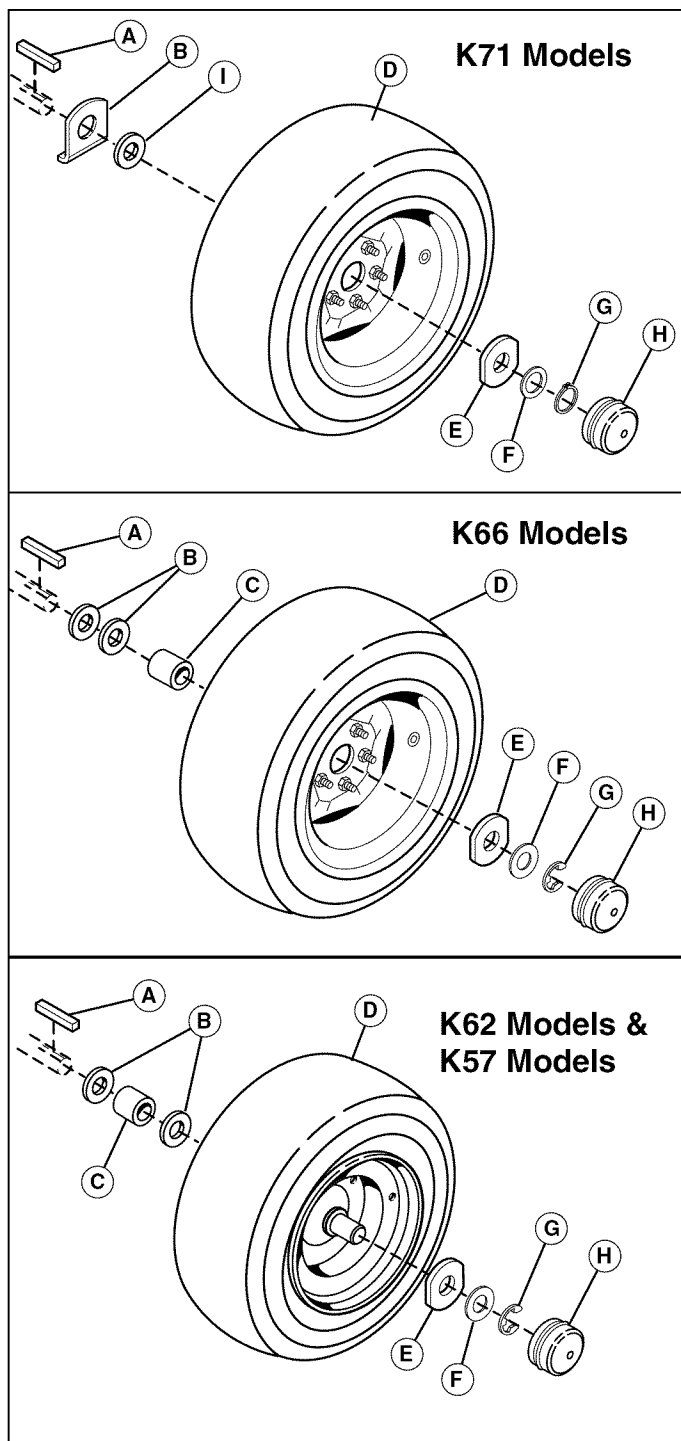


Figure 27. Rear Axle Hardware

- | | |
|-------------------------------|-------------------|
| A. Key | F. Small Washer |
| B. Stationary Washer / Washer | G. Retaining Ring |
| C. Spacer | H. Axle Cap |
| D. Wheel & Hub | I. Large Washer |
| E. Axle Cap Retainer | |

Regular Maintenance

WARNING

For your personal safety, do not handle the sharp mower blades with bare hands. Careless or improper handling of blades may result in serious injury.

WARNING

For your personal safety, blade mounting capscrews must each be installed with a hex/spline washer and spring washer, then securely tightened. Torque blade mounting capscrew to 45 - 55 ft. lbs. (61 - 75 N.m.)

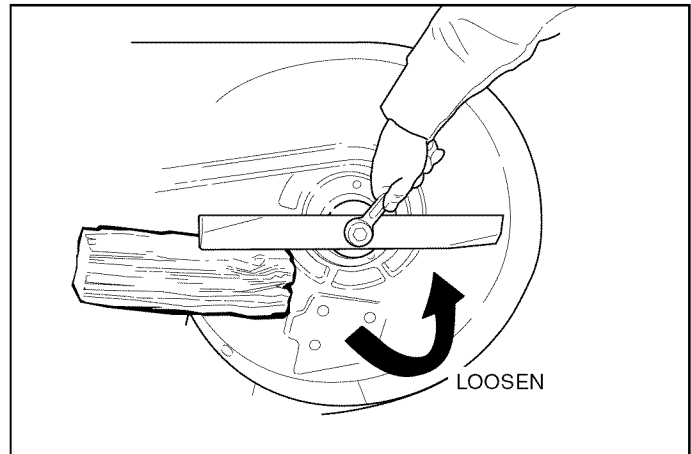


Figure 28. Blade Removal

SERVICING THE MOWER BLADES

Service Interval: Every 100 Hours or As Required

NOTE: Mower blades must be timed perpendicular to each other.

1. Remove mower deck (see "Mower Deck Removal").
2. See Figure 28. To remove blade for sharpening, use a block of wood to prevent blade rotation while loosening the capscrew.
3. **38", 44", & 50" Mowers:** Remove the capscrew (D, Figure 30), spring washer (C), hex washer (B), and blade.

40" Mowers: Remove the capscrew (A, Figure 32), spring washer (F), spline washer (G), alignment pin (E) and blade (D). Do not remove the blade adapter (C).

54" Mowers: Remove the capscrew (D, Figure 31), spring washer (C), spline washer (B), and blade.

4. Use a file to sharpen blade to a fine edge. If blade is damaged, it must be replaced.
5. Balance the blade as shown in Figure 29. Center the blade's hole on a nail lubricated with a drop of oil. A balanced blade will remain level.
6. Reinstall the blade (Figures 30-32) with the tabs pointing up toward the mower deck as shown. Reinstall the alignment pin (E).
7. **38", 44", & 50" Mowers:** Reinstall the hex washer (B, Figure 30), spring washer (C) and capscrew (D). Use a wooden block (A) to prevent blade rotation while tightening the capscrew (D) to 61-75 N.m (45-55 ft. lbs.).

40" Mowers: Be sure the blades are positioned perpendicular to each other as shown in Figure 33. If not, perform the Mower Blade Timing procedure found in this section. Reinstall the spline washer (G, Figure 32), spring washer (F) and capscrew (A). Use a wooden block (B) to prevent blade rotation while tightening the capscrew (A) to 61-75 N.m (45-55 ft. lbs.).

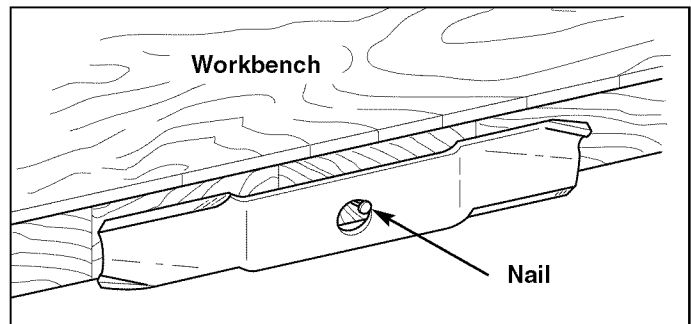


Figure 29. Balancing The Blade

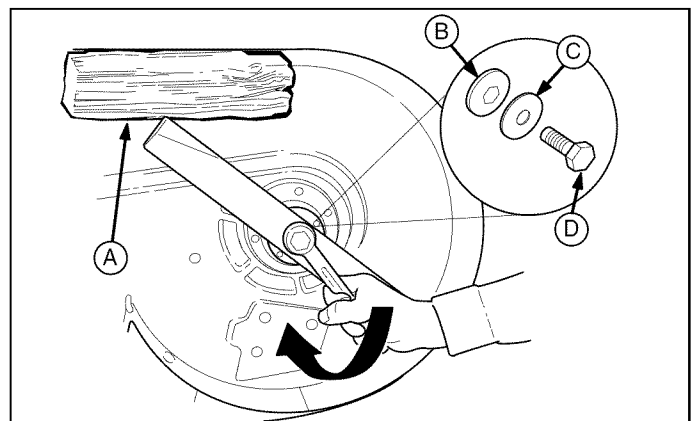


Figure 30. Blade Installation - 38", 44", 50" Mowers

- A. 4x4 Wood Block
- B. Hex Washer
- C. Spring Washer
- D. Blade Bolt

54" Mowers: Reinstall the spline washer (B, Figure 31), spring washer (C) and capscrew (D). Use a wooden block (A) to prevent blade rotation while tightening the capscrew (D) to 61-75 N.m (45-55 ft. lbs.).

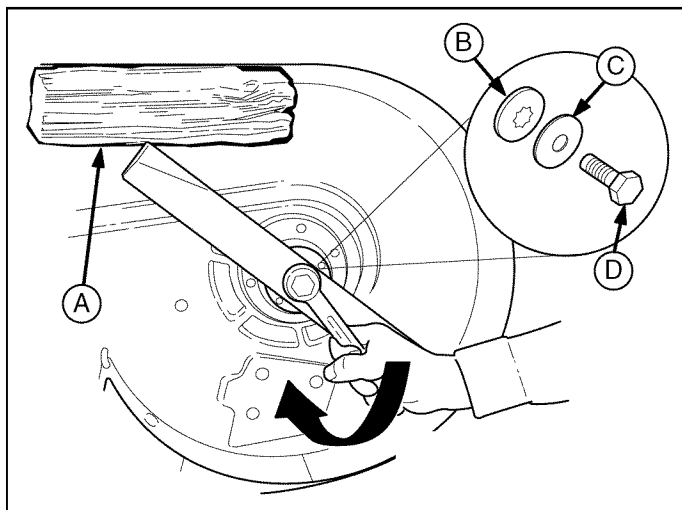


Figure 31. Blade Installation - 54" Mowers

- A. 4x4 Wood Block
- B. Spline Washer
- C. Spring Washer
- D. Blade Bolt

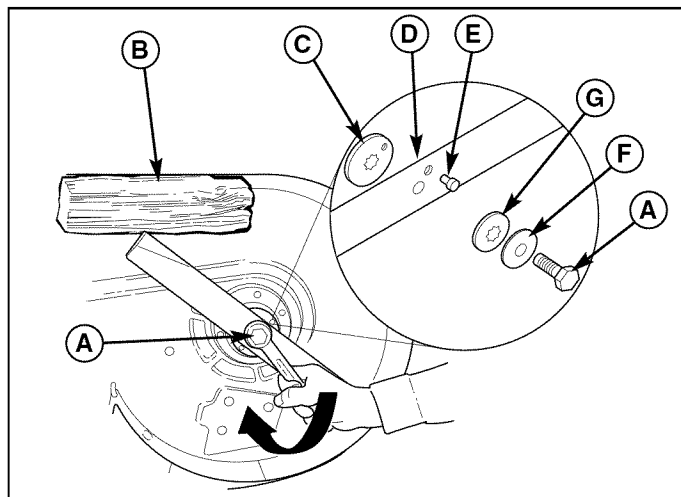


Figure 32. Blade Installation - 40" Mowers

- A. Blade Mounting Capscrew
- B. 4x4 Wood Block
- C. Blade Adapter
- D. Blade
- E. Alignment Pin
- F. Spring Washer
- G. Spline Washer

CHECK MOWER BLADE TIMING - 40" MOWERS

Service Interval: Yearly

1. Turn the PTO OFF, engage the parking brake, turn the engine off, and remove the key. Remove the mower deck (see "Mower deck removal").
2. Turn the mower deck over and check the position of the blades. The blades must be positioned perpendicular to each other as shown in Figure 33. If not, proceed to step 3.
3. Use a block of wood (B, Figure 28) to prevent blade rotation while loosening the capscrew.
4. Remove the capscrew (A, Figure 32), spring washer (F), and spline washer (G).
5. Remove the alignment pin (E, Figure 32). Rotate the blade (D) manually until the blades are perpendicular to each other as shown in Figure 33. It may be necessary to remove and rotate the blade adapter (C) to align the blade hole and adapter hole.
6. Reinstall the alignment pin (E), spline washer (G), spring washer (F) and capscrew (A). Use a wooden block (B) to prevent blade rotation while tightening the capscrew (A) to 61-75 N.m (45-55 ft. lbs.).

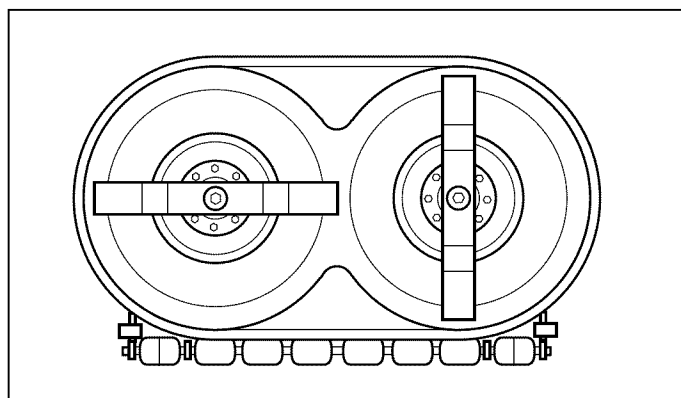


Figure 33. Check Blade Timing

Regular Maintenance

TRANSMISSION IDENTIFICATION

Several service procedures within this book are identified by, and vary by, transmission type. To determine what transmission is in your tractor, check the identification tag attached to the axle of the transmission (Figure 34), or check your tractor's parts book.

TRANSMISSION MAINTENANCE



Do not allow dirt, water, or other debris to enter the expansion chamber or transmission. Even a small amount of dirt can damage the transmission.

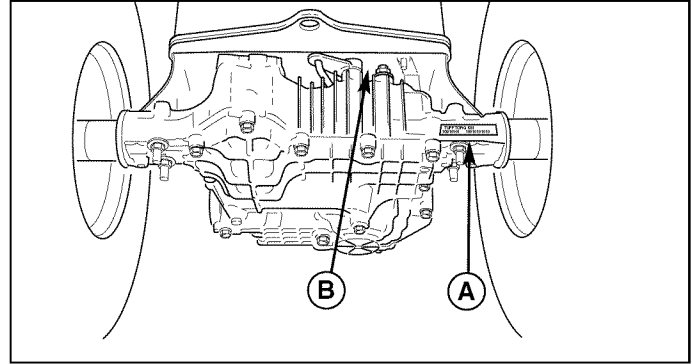


Figure 34. Transmission ID Tag Location

A. ID Tag

B. K62 Expansion Chamber

K57 Maintenance

The K57 is a sealed unit and does not require regular maintenance.

K62 Maintenance

The K62 is a sealed unit and does not require regular maintenance. The transmission oil level can be checked at the expansion chamber located on top of the transmission (see Figure 34). Shine a light at the back of the expansion chamber to see the oil level. There should be approximately 7/16" (1 cm) of oil in the chamber. If there is no oil in the chamber, see your dealer.

TRANSMISSION INFORMATION

Transmission Oil Capacity: Apx. 2.6 qt (2,5L).

Transmission Oil Type: SAE 10W-30 with a minimum API rating of SG/CD.

K66 Maintenance

The K66 is a sealed unit and does not require regular maintenance. The transmission oil level can be checked at the access hole located behind the left rear wheel (see Figure 35). Shine a light at the back of the expansion chamber to see the oil level. There should be approximately 7/16" (1 cm) of oil in the chamber. If there is no oil in the chamber, see your dealer.

TRANSMISSION INFORMATION

Transmission Oil Capacity: Apx. 2.6 qt (2.5L).

Transmission Oil Type: SAE 10W-30 with a minimum API rating of SG/CD.

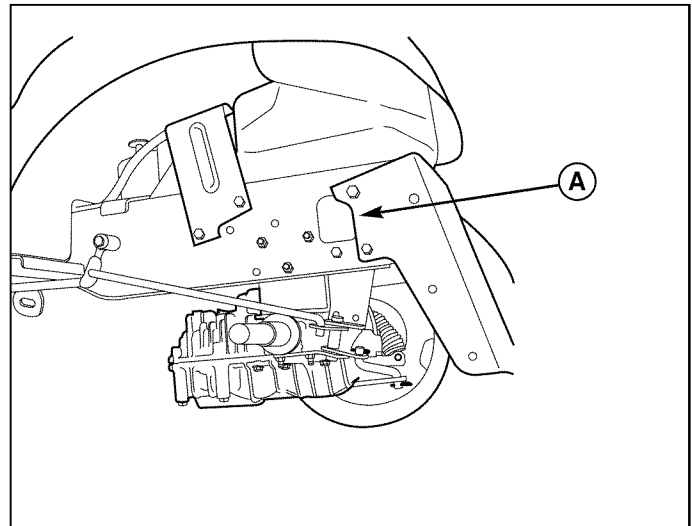


Figure 35. Transmission Oil Reservoir - K66

A. K66 Reservoir Access Hole

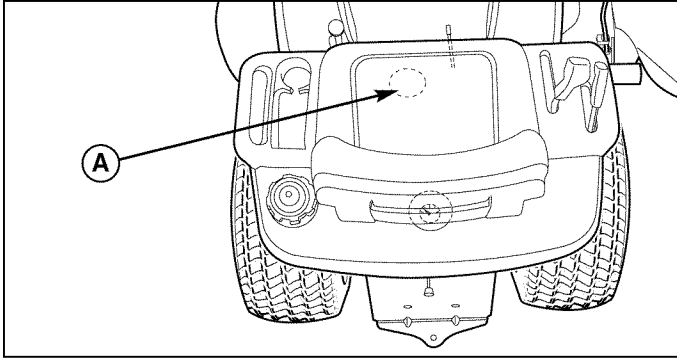


Figure 36. Seat Deck Access Plug
A. Expansion Chamber Access Plug

K71 Maintenance

The following maintenance procedures must be performed on the K71 transmission after the first 50 hours of operation and then after every 250 hours.

TRANSMISSION INFORMATION

Transmission Oil Capacity: Apx. 4-1/2 qt (4.25L)

Transmission Oil Type: SAE 10W-30 with a minimum API rating of SG/CD.

Internal Oil Filter Part Number: 1719832

Hydraulic System Oil Filter Part Number: 1719168

CHECK TRANSMISSION OIL LEVEL

Service Interval: Every 5 Hours

NOTE: Lift cylinder should be extended.

1. Slide the seat assembly back to access the plastic plug in the top of the seat deck (see Figure 36). Remove the plug.
2. Clean the area around the expansion chamber. Open the lid and check that there is oil present in the bottom of the expansion chamber. If there is no oil present, add 10W-30 SG engine oil until the oil level is 7/16" (1 cm) above the bottom. **DO NOT OVER-FILL.** Empty space is required in the expansion chamber for heat expansion.

CHANGE TRANSMISSION OIL, INTERNAL FILTER, & HYDRAULIC SYSTEM FILTER

Service Interval: After 50 Hrs, Then Every 250 Hrs

NOTE: The oil should also be changed whenever it has become discolored from overheating or contamination.

NOTE: Support the frame with jackstands and remove the left rear wheel for easier access to the differential fill plug (Figure 37).

1. Place a drain pan under the transmission and remove the two 14mm drain plugs (A, Figure 38).
2. Remove the differential fill cap (B, Figure 39).
3. Remove the filter access cap (B, Figure 38).
4. Remove and replace the hydraulic system filter (A, Figure 39). Thread the new filter onto the filter base and tighten 1/2 to 3/4 turns past finger tight.

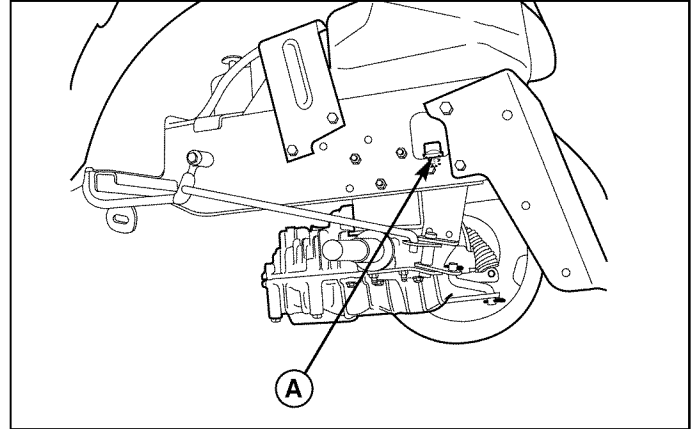


Figure 37. Differential Fill Plug Access
A. Differential Fill Plug

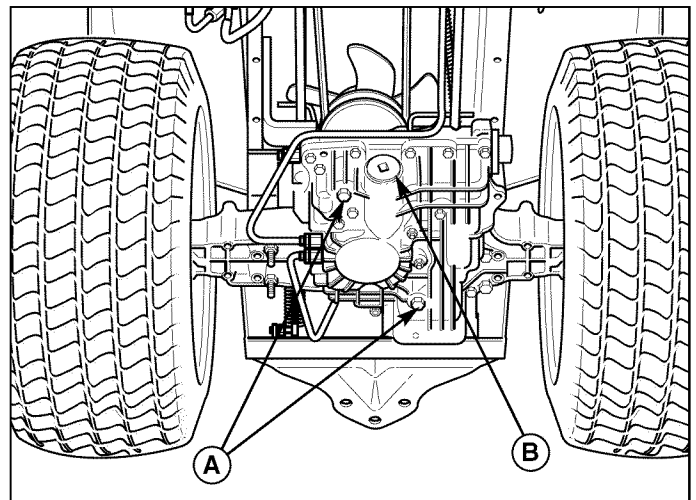


Figure 38. Transmission Drain Plugs
A. 14mm Drain Plugs
B. Filter Access Cap

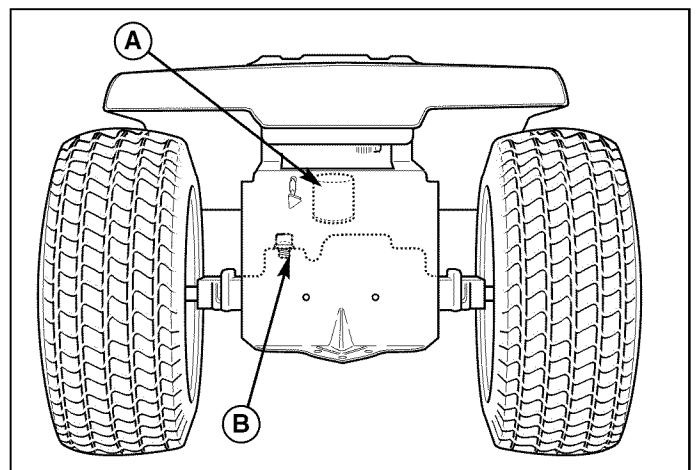


Figure 39. Hydraulic System Oil Filter
A. Hydraulic System Filter
B. Differential Fill Cap

Regular Maintenance

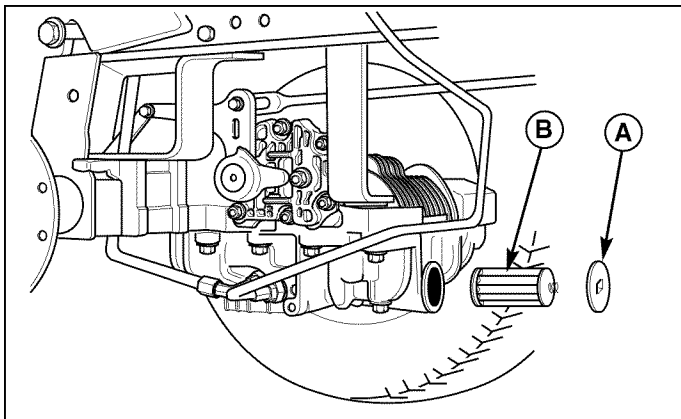


Figure 40. Internal Transmission Filter Service
A. Filter Access Cap B. Internal Filter

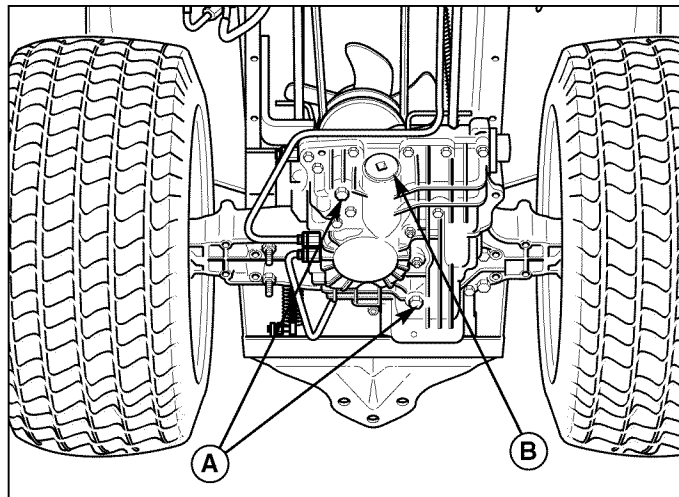


Figure 41. Transmission Drain Plugs
A. 14mm Drain Plugs
B. Filter Access Cap

5. Remove and replace the internal transmission filter (B, Figure 40).
6. Reinstall the filter access cap (A, Figure 40) and the two 14mm drain plugs (A, Figure 41).
7. Using a long funnel, add 2 quarts of oil to the differential fill (See Figure 37). The differential fill cap should have been removed earlier).
8. Reinstall the differential fill cap (A, Figure 37).
9. Remove the expansion chamber access plug (A, Figure 42) and expansion chamber cover. Add 2 quarts (1.9L) of oil to the expansion chamber a few ounces at a time.
10. Reinstall the expansion chamber cover and access plug (Figure 42).
11. Test run the tractor for 10 minutes. Drive forward and backward; raise and lower the attachment lift several times.
12. Recheck the transmission oil level. There should be 7/16" (1 cm) of oil visible in expansion chamber. **DO NOT OVERFILL.** Empty space is required for heat expansion.

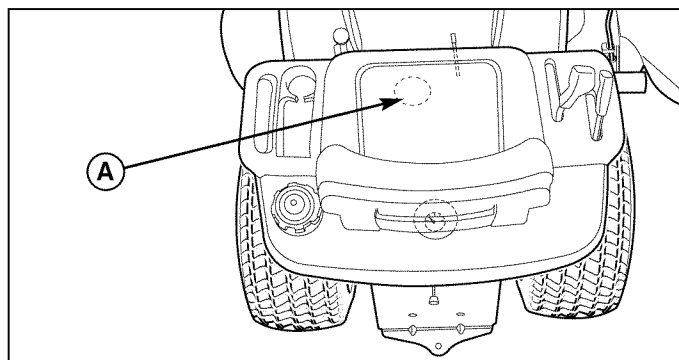
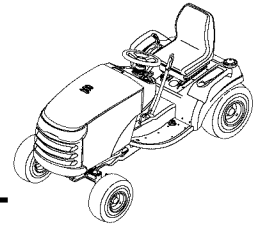


Figure 42. Seat Deck Access Plug
A. Expansion Chamber Access Plug

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Troubleshooting, Adjustment, & Service



TROUBLESHOOTING

While normal care and regular maintenance will extend the life of your equipment, prolonged or constant use may eventually require that service be performed to allow it to continue operating properly.

The troubleshooting guide below lists the most common problems, their causes, and remedies.

See the information on the following pages for instructions on how to perform most of these minor adjustments and service repairs yourself. If you prefer, all of these procedures can be performed for you by your local authorized dealer.

WARNING

To avoid serious injury, perform maintenance on the tractor or mower only when the engine is stopped and the parking brake engaged.

Always remove the ignition key, disconnect the spark plug wire and fasten it away from the plug before beginning the maintenance, to prevent accidental starting of the engine.

TROUBLESHOOTING THE TRACTOR

PROBLEM	CAUSE	REMEDY
Engine will not turnover or start.	1. Brake pedal not depressed.	Fully depress brake pedal.
	2. PTO (electric clutch) switch in ON position.	Place in OFF position.
	3. Cruise control engaged.	Move lever to Neutral position.
	4. Out of fuel.	If engine is hot, allow it to cool, then refill the fuel tank.
	5. Engine flooded.	Disengage choke.
	6. Circuit breaker tripped.	Wait one minute for automatic reset.
	7. Battery terminals require cleaning.	Replace if defective.
	8. Battery discharged or dead.	See Battery Maintenance Section.
	9. Wiring loose or broken.	Recharge or replace.
	10. Solenoid or starter motor faulty.	Visually check wiring & replace broken or frayed wires. Tighten loose connections.
	11. Safety interlock switch faulty	See your dealer.
	12. Spark plug(s) faulty, fouled or incorrectly gapped.	See your dealer.
	13. Water in fuel.	Clean and gap or replace.
	14. Gas is old or stale.	See engine manual.
Engine starts hard or runs poorly.	1. Fuel mixture too rich.	Drain fuel & refill with fresh fuel. Replace fuel filter.
	2. Spark plug(s) faulty, fouled, or incorrectly gapped.	Drain fuel & refill with fresh fuel. Replace fuel filter.
Engine knocks.	1. Low oil level.	Clean air filter. Check choke adjustment
	2. Using wrong grade oil.	Clean and gap or replace.
Excessive oil consumption.	1. Engine running too hot.	See engine manual.
	2. Using wrong weight oil.	Clean engine fins, blower screen and air cleaner. Clean radiator screen.
	3. Too much oil in crankcase.	See engine manual.
Engine exhaust is black.	1. Dirty air filter.	Drain excess oil.
	2. Choke closed.	Replace air filter. See engine manual.
Engine runs, but tractor will not drive.	1. Ground speed control pedals not depressed.	Open choke.
	2. Transmission release lever in "push" position.	Depress pedals.
	3. Drive belt is broken.	Move into drive position.
	4. Drive belt slips.	See Drive Belt Replacement.
	5. Parking brake is engaged.	See cause and remedy below.

Tractor Troubleshooting Cont.

Tractor drive belt slips.	<ol style="list-style-type: none"> 1. Clutch/brake is out of adjustment. 2. Pulleys or belt greasy or oily. 3. Belt stretched or worn. 4. Idler pulley pivot bracket "frozen" in declutched position. 	<p>See Adjustments Section. Clean as required. Replace with new belt. Remove idler pulley bracket, clean and lubricate.</p>
Brake will not hold.	<ol style="list-style-type: none"> 1. Brake is incorrectly adjusted. 2. Internal brake worn. 	<p>See Brake Adjustment. See your dealer.</p>
Tractor steers hard or handles poorly.	<ol style="list-style-type: none"> 1. Steering linkage is loose. 2. Improper tire inflation. 3. Front wheel spindle bearings dry. 	<p>Check and tighten any loose connections. See Steering Gear Adjustment. Check and correct. Grease spindles. See Lubricating the Tractor.</p>

TROUBLESHOOTING THE MOWER

PROBLEM	CAUSE	REMEDY
Mower will not raise.	<ol style="list-style-type: none"> 1. Lift linkage not properly attached or damaged. 2. Dirt in hydraulic lines. 3. Brake pedal depressed. 	<p>Attach or repair. Change hydraulic system filter. Release brake pedal to power transmission.</p>
Mower cut is uneven.	<ol style="list-style-type: none"> 1. Mower not leveled properly. 2. Tractor tires not inflated equally or properly. 	<p>See Mower Adjustment. See Maintenance Section.</p>
Mower cut is rough looking.	<ol style="list-style-type: none"> 1. Engine speed too slow. 2. Ground speed too fast. 3. Blades are dull. 4. Mower drive belt slipping because it is oily or worn. 5. Check PTO (Electric Clutch) Adjustment. 6. Blades not properly fastened to arbors. 	<p>Set to full throttle. Slow down. Sharpen or replace blades. See Mower Blade Service. Clean or replace belt as necessary. See Adjustments Section. See Servicing the Mower Blades.</p>
Engine stalls easily with mower engaged.	<ol style="list-style-type: none"> 1. Engine speed too slow. 2. Ground speed too fast. 3. Carburetor improperly adjusted. 4. Cutting height set too low. 5. Discharge chute jamming with cut grass. 6. Engine not up to operating temperature. 7. Starting mower in tall grass. 	<p>Set to full throttle. Slow down. See Engine Manual. Cut tall grass at maximum cutting height during first pass. Cut grass with discharge pointing toward previously cut area. Run engine for several minutes to warm-up. Start the mower in a cleared area.</p>
Excessive mower vibration.	<ol style="list-style-type: none"> 1. Blade mounting screws are loose. 2. Mower blades, arbors, or pulleys are bent. 3. Mower blades are out of balance. 4. Belt installed incorrectly. 	<p>Tighten to 45-55 ft.lbs. (61-75 N.m.). Check and replace as necessary. Remove, sharpen, and balance blades. See Servicing the Mower Blades. Reinstall Correctly.</p>
Excessive belt wear or breakage.	<ol style="list-style-type: none"> 1. Bent or rough pulleys. 2. Using incorrect belt. 	<p>Repair or replace. Replace with correct belt.</p>
Mower drive belt slips or fails to drive.	<ol style="list-style-type: none"> 1. Idler pulley spring broken or not properly attached. 2. Belt stops out of adjustment. 3. Mower drive belt broken. 4. PTO clutch out of adjustment. 	<p>Repair or replace as needed. Check belt stops. Replace drive belt. Adjust PTO clutch.</p>
Mower blades collide (40" Mower).	<ol style="list-style-type: none"> 1. Blade shear pin broken. 	<p>Replace shear pin.</p>

BATTERY CHARGING

WARNING

Keep open flames and sparks away from the battery; the gasses coming from it are highly explosive. Ventilate the battery well during charging.

A dead battery or one too weak to start the engine may be the result of a defect in the charging system or other electrical component. If there is any doubt about the cause of the problem, see your dealer. If you need to replace the battery, follow the steps under Cleaning the Battery & Cables in the Regular Maintenance Section.

To charge the battery, follow the instructions provided by the battery charger manufacturer as well as all warnings included in the safety rules sections of this book. Charge the battery until fully charged (until the specific gravity of the electrolyte is 1.250 or higher and the electrolyte temperature is at least 60° F). Do not charge at a rate higher than 10 amps.

SEAT ADJUSTMENT

Pitch Adjustment

The pitch of the seat can be adjusted to one of three positions. To adjust, remove the carriage bolts, spacers, washers, and nuts (B, Figure 43) from the hinge and reinstall them in the desired holes.

Seat Slide Adjustment

The seat can also be adjusted forward and back. Move the lever (A, Figure 43), position the seat as desired, and release the lever to lock the seat into position.

Seat Spring Adjustment

The seat springs (C, Figure 43) can be adjusted to provide a softer or firmer ride. Tilt the seat forward and slide the spring assembly (C) forward for a softer ride, and back for a firmer ride.

MANUAL LIFT ASSIST ADJUSTMENT

Models with large, left-side lift lever.

The manual lift assist spring tension can be adjusted to compensate for the additional load of various attachments.

1. Locate the adjustment bolt (A, Figure 44) at the lower left corner of the engine compartment bulkhead.
2. Turn the bolt (A) clockwise to increase assist. Turn the bolt (A) counterclockwise to reduce lift assist.

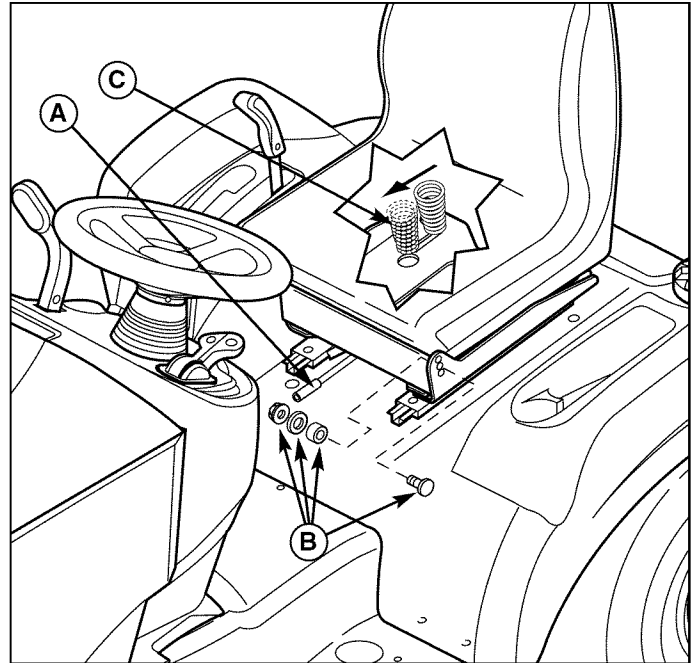


Figure 43. Seat Adjustment

- A. Seat Adjustment Lever
B. Carriage Bolt, Spacer, Washer, & Nut
C. Seat Spring

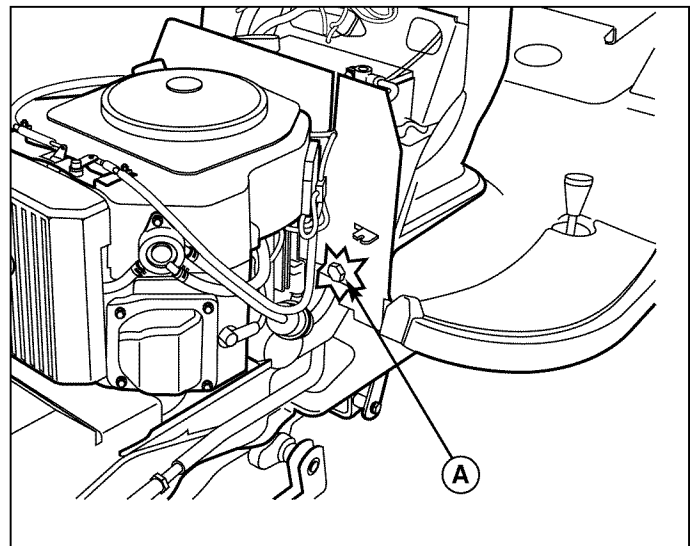


Figure 44. Manual Lift Assist Adjustment

- A. Adjustment Bolt

STEERING WHEEL ADJUSTMENT

NOTE: The steering wheel on Snapper models is not adjustable.

1. Use a suitable punch to remove the roll pin at the base of the steering wheel (B, Figure 45).
2. Pull down on the rubber boot to expose the two holes in the steering shaft (A).
3. Align the hole in the steering wheel with the appropriate steering shaft hole and install the roll pin.

NOTE: Steering wheel is factory installed with the roll pin in the bottom hole.

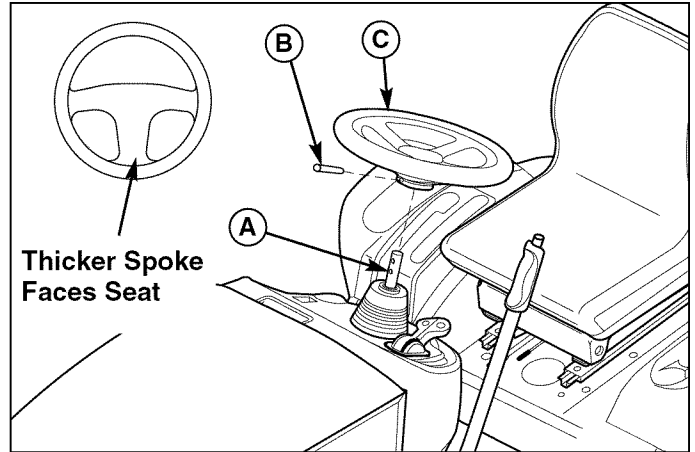


Figure 45. Steering Wheel Components

- A. Steering Shaft**
B. Roll Pin
C. Steering Wheel

STEERING GEAR ADJUSTMENT

If there is excessive slack in the steering system, the steering gear backlash can be removed.

1. See Figure 46. Locate the steering gear assembly on the underside of the tractor. Loosen the two nuts and adjust the bracket so the gear teeth are closely meshed.
2. Tighten nuts (A, Figure 46) to 36-44 ft. lbs. (49-59 Nm) after adjustment.

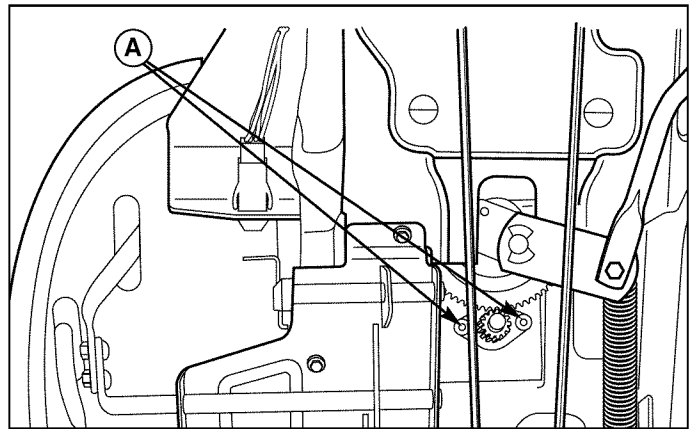


Figure 46. Steering Gear Adjustment
A. Nuts

BRAKE ADJUSTMENT

1. Disengage the PTO, stop the engine, block the wheels, remove the ignition key, and engage the parking brake.
2. Remove the mower deck (see Mower Deck Removal).
3. Locate the brake spring (A, Figure 47) and adjustment nut (B).
4. With the parking brake engaged, measure the compressed spring length. The spring should be 2-1/2" (6,4 cm) when compressed.

If the spring is not within this range, turn the adjustment nut (B, Figure 47) to compress or release the spring.

If this adjustment does not correct a braking problem, see your dealer.

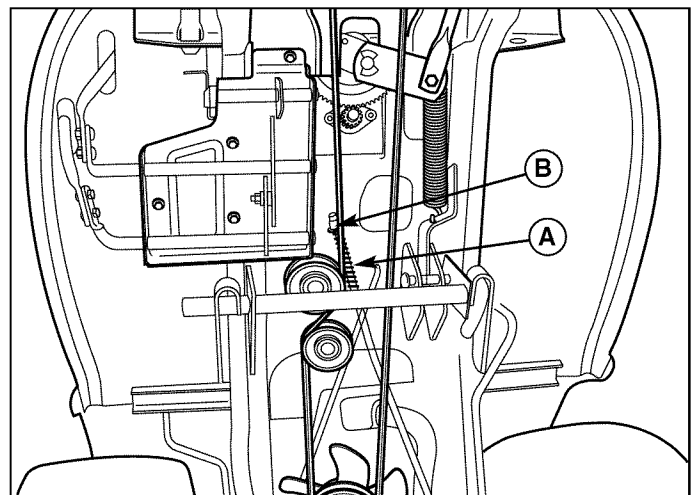


Figure 47. Brake Spring Adjustment
A. Brake Spring
B. Adjustment Nut

PTO CLUTCH ADJUSTMENT

WARNING

To avoid serious injury, perform adjustments only with engine stopped, key removed and tractor on level ground.

Check the PTO clutch adjustment after the initial 25 hour break-in period and then after every 250 hours of operation. Also perform the following procedure if the clutch is slipping or will not engage, or if a new clutch has been installed.

1. Remove key from ignition switch and disconnect spark plug wires to prevent the possibility of accidental starting while the PTO is being adjusted.
2. See Figure 48. Note the position of the 3 adjustment windows (A) in the side of the brake plate and the nylock adjustment nuts (B).
3. Insert a .012"-.015" (2.5-4mm) feeler gauge (C) through each window, positioning the gauge between the rotor face and the armature face as shown in Figure 49.
4. Alternately tighten the adjustment nuts (B, Figure 48) until the rotor face and armature face just contacts the gauge.
5. Check the windows for an equal amount of tension when the gauge is inserted and removed, and make any necessary adjustments by tightening or loosening the adjustment nuts.

NOTE: The actual air gap between the rotor and armature may vary even after performing the adjustment procedure. This is due to dimensional variations on component parts, and is an acceptable condition.

6. Check the mower blade stopping time. The mower blades and mower drive belt should come to a complete stop within five seconds after the electric PTO switch is turned off.
7. Perform the BLADE BRAKE CHECK found in the MAINTENANCE Section. Mower blades and mower drive belt should come to a complete stop within five seconds after electric PTO switch is turned off.

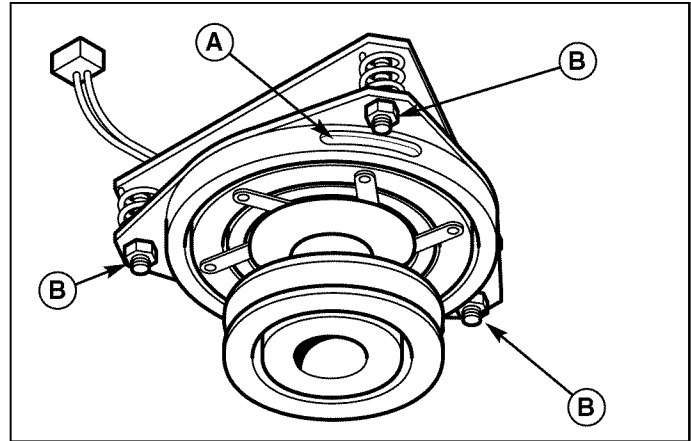


Figure 48. PTO Clutch Adjustment
A. Adjustment Window (Qty. 3, one shown)
B. Adjustment Nut

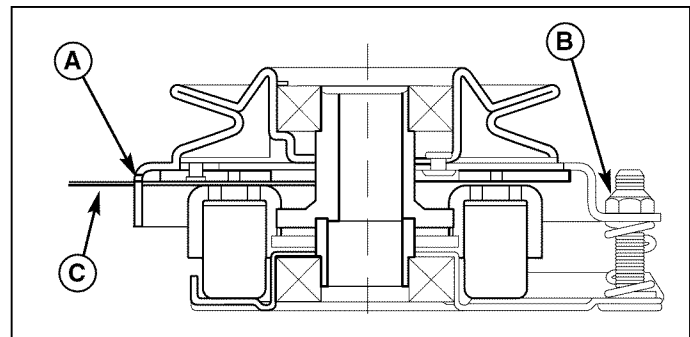


Figure 49. Adjust PTO Clutch
A. Window
B. Adjustment Nut
C. Feeler Gauge

MOWER ADJUSTMENTS

Gauge Wheels (Select Models)

The mower gauge wheels can be placed in two positions depending on the height of cut. When using higher cutting heights, set the wheels in the lower position. When using lower cutting heights, set the wheels in the upper position. To adjust:

1. Remove the hair pin clip (A, B, Figure 50).
2. For upper position, install the pin (A) through the spindle above the bracket (C). For the lower position, push down on the top of the spindle, and install the hair pin clip (B) below the top of the bracket (C).

Leveling The Mower

If the cut is uneven, the mower may need leveling. Unequal or improper tire pressure may also cause an uneven cut. Make sure tire pressure is correct as specified in Checking Tire Pressure.

SIDE-TO-SIDE LEVELING

1. With the mower installed, place the tractor on a smooth, level surface such as a concrete floor. Turn the front wheels straight forward.
2. Check for bent blades and replace if necessary.
3. Place the mower in mid-cut position. Arrange the outside mower blades so that they are pointing from side-to-side.
4. Measure the distance between the outside tips of each blade and the ground. If there is more than 1/8" (3mm) difference between the measurements on each side, proceed to step 5. If the difference is 1/8" (3mm) or less, proceed to step 6.
5. See Figure 51. Loosen the outside nut (A). Turn the eccentric nut (B) to raise or lower left-hand side of mower. When mower is level, hold the eccentric nut while tightening the outside nut.

NOTE: 44", 50", & 54" Mowers. When using a turbo collection system, raise the discharge side of the mower approximately 1/4" (6mm) to compensate for turbo assembly weight. Check the level of the cut grass and adjust the 1/4" (6mm) measurement as necessary for a smooth, even cut.

WARNING

Before checking mower, shut off PTO and engine, remove the key, and allow all moving parts to stop.

CAUTION

DO NOT remove the mower deck baffles. The baffles help prevent grass clippings from becoming airborne and plugging up the engine cooling fins.

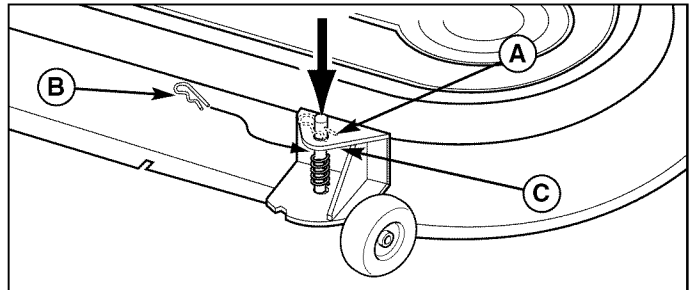


Figure 50. Gauge Wheel Adjustment

- A. Hair Pin (Upper Position)
- B. Hair Pin (Lower Position)
- C. Gauge Wheel Bracket

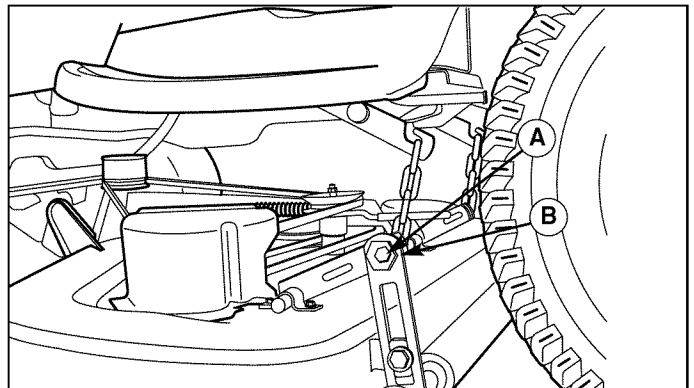


Figure 51. Leveling The Mower Side-to-Side

- A. Outside Nut
- B. Eccentric Nut

Troubleshooting, Adjustment, & Service

FRONT-TO-BACK LEVELING

NOTE: 54" mowers have two adjustment rods that should be adjusted simultaneously.

6. Arrange the blades so they face front-to-back.
7. Measure the distance from the ground to the front tip of the center blade, and from the ground to rear tips of left-hand and right-hand blades.
Front tip of the center blade should be 1/4" (6mm) higher than rear tips of left-hand and right-hand blades. If not, proceed with steps 8 - 9.
8. To raise front of mower deck, loosen front nut (B) and turn rear nut (A, Figure 52) against bracket. To lower front of mower deck, loosen rear nut (A) and the bracket will move backwards to lengthen rod.
10. Re-check the blade measurement then tighten the front nut (B) against the bracket to secure.

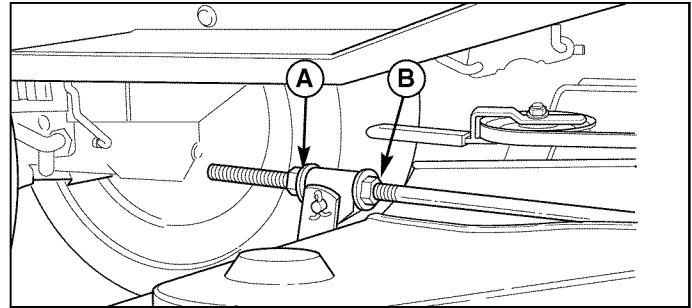


Figure 52. Front to Back Leveling

A. Rear Nut

B. Front Nut

MOWER BELT REPLACEMENT



To avoid damaging belts, **DO NOT PRY BELTS OVER PULLEYS.**

44" & 50" PTO Belt Replacement

1. Park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, turn off the engine and lock the parking brake. Remove the key. Remove the mower or place in the lowest cutting position.
2. Move the idler arm (A, Figure 53) to relieve belt tension. Drop the belt from the PTO (electric clutch) pulley.

IMPORTANT: Note the position of all belt guides relative to the belt and pulleys before loosening.

3. Loosen the nut and lockwasher securing the idler pulley belt guide (C, Figure 53).
4. See Figure 54. Remove three capscrews securing left-hand arbor cover (D).
5. Remove the old belt and replace with a new one. Make sure the belt is seated in the pulley grooves.
6. See Figure 53. Position the idler pulley belt stop (C) in its original position so that there is a 1/8" (3mm) gap between the pulley and belt stop.
7. See Figure 54. Reinstall the left-hand arbor cover (D). Reinstall the mower deck if removed.
8. Run the mower under a no-load condition for about 5 minutes.

54" PTO Belt Replacement

1. Park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, turn off the engine and lock the parking brake. Remove the key.
2. Move the idler arm (A, Figure 53) to relieve belt tension. Drop the belt from the PTO (electric clutch) pulley.
3. Remove the old belt and replace with a new one. Make sure the V-side of belt runs in the pulley grooves.
4. Install the drive belt on the PTO pulley. Move the idler arm and install the belt on the idler pulley.
5. Run the mower under no-load condition for about 5 minutes.

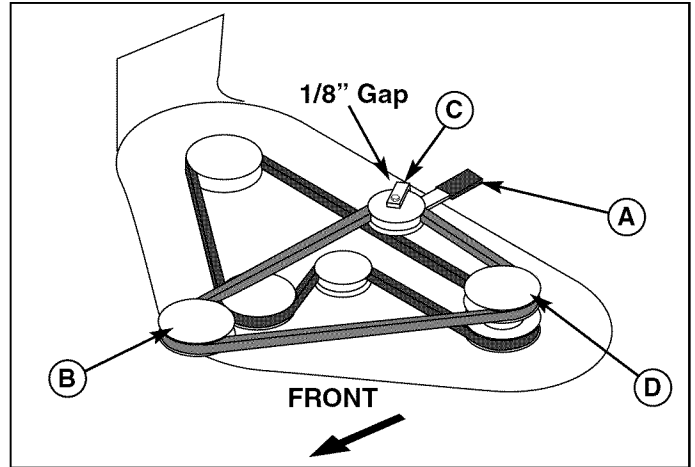


Figure 53. Mower Belt Routing

A. Idler Pulley Arm

B. PTO Clutch Pulley

C. Belt Guide (44" & 50")

D. Arbor Drive Pulley

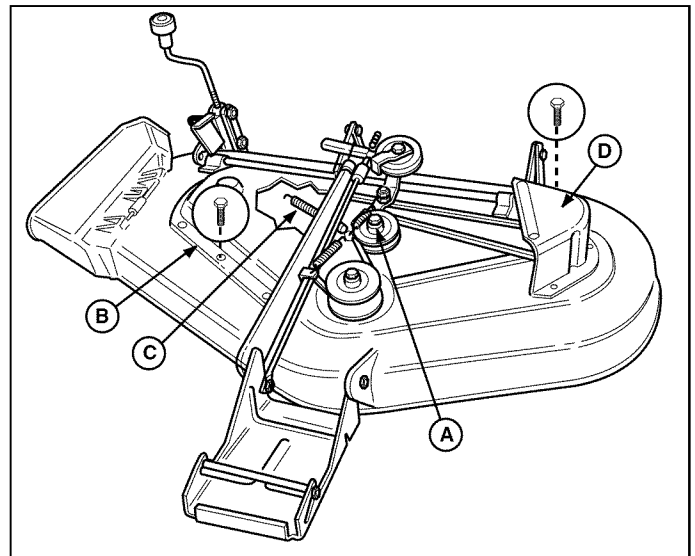


Figure 54. Mower Deck - 44" & 50" Mowers

A. Capscrew

B. Right-hand Arbor Cover

C. Spring

D. Left-hand Arbor Cover

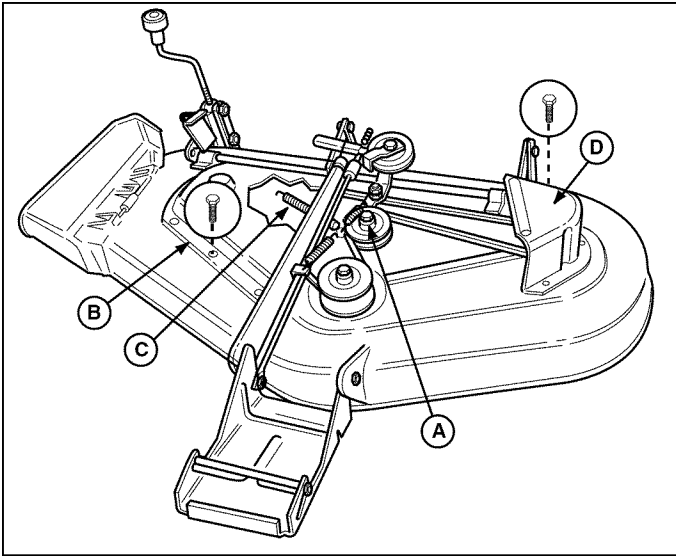


Figure 55. Mower Deck - 44" & 50" Mowers

- A. Capscrew
- B. Right-hand Arbor Cover
- C. Spring
- D. Left-hand Arbor Cover

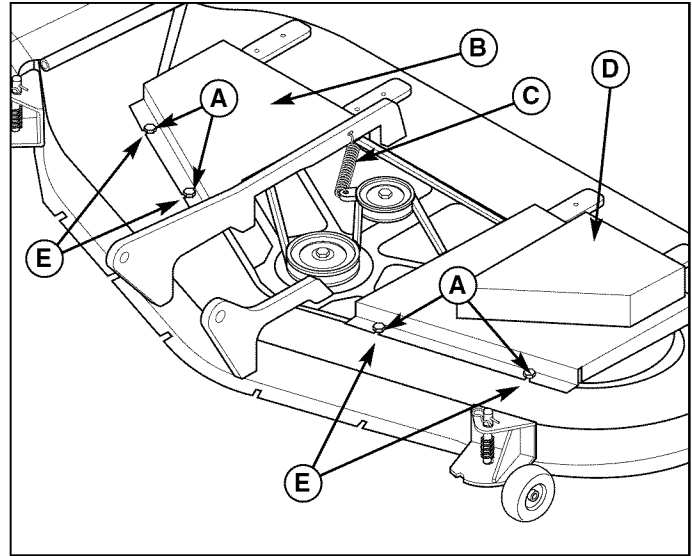


Figure 56. Mower Deck - 54" Mowers

- A. Taptite Screws
- B. Right-hand Arbor Cover
- C. Spring
- D. Left-hand Arbor Cover
- E. Alignment Notches

Arbor Drive Belt Replacement - 44", 50", & 54" Mowers

NOTE: Be sure to use only genuine Simplicity replacement parts.

1. Park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, turn off the engine and lock the parking brake. Remove the key.
2. Remove the mower from the tractor. See Mower Removal in the Operation section.

44" & 50" MODELS

3. Remove the capscrews securing the right-hand arbor cover (B, Figure 55). Remove three capscrews securing left-hand arbor cover (D).

54" MODELS

3. Remove the PTO belt. Remove the taptite screws (A, Figure 56) securing the belt covers and remove the belt covers (B, D).

ALL MODELS

4. Using a pair of locking pliers or a spring puller, remove the idler pulley spring (C, Figures 55, 56) from slot in deck.
5. Loosen capscrew (A, Figure 55) securing the idler pulley to the bracket. The belt can now be slipped between the pulley and idler bracket hub.
6. Install a new belt as shown in Figure 57. Make sure that V-side of belt runs in arbor pulley (A) grooves and flat side of belt runs against idler pulley (B).
7. Tighten the capscrew (A, Figure 55).

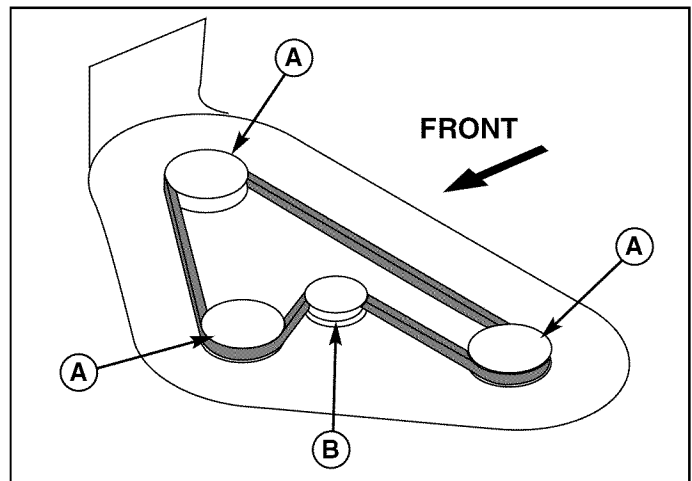


Figure 57. Mower Deck Drive Belt Routing All Models

- A. Arbor Drive Pulley (V-sided)
- B. Idler Pulley (Flat-sided)

8. Reinstall spring (C, Figures 55, 56) into its slot in mower deck.
9. Reinstall the left and right arbor covers (B and D, Figures 55, 56). **54" Models:** To provide proper belt cover clearance, make sure the alignment notches (E, Figure 56) are centered on the taptite screws (A).
10. Install the mower onto the tractor.

40" Mower PTO Belt Replacement

1. With the mower deck installed, park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, engage the parking brake, shut the engine off, and remove the key.
2. Remove the mower deck (see "Mower deck removal"). Remove the belt covers.
3. Note the position of the idler pulley belt guides (E & F, Figure 58) when installed. Loosen the idler pulley capscrews and remove the belt from the idler pulleys (D & G).
4. Install the new belt (B) as shown. When the mower deck is installed on the tractor, the belt wraps around the PTO clutch pulley (A), backside idler pulley (D), mower deck drive pulley (C), and v-idler pulley (G).
5. Return the idler pulley belt guides (E & F) to their original positions and tighten the idler pulley capscrews.

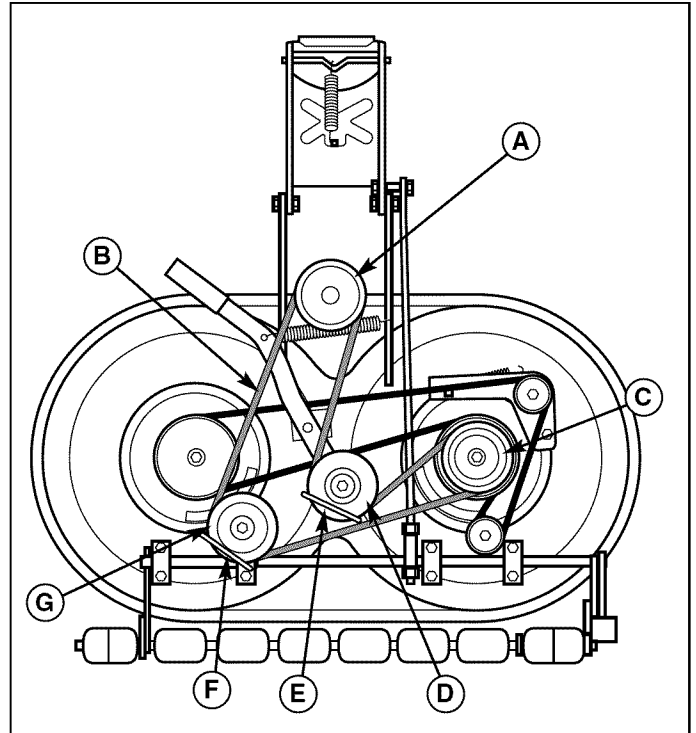


Figure 58. PTO Belt Replacement

- A. Engine PTO Clutch Pulley
- B. PTO Belt
- C. Mower Deck Drive Pulley
- D. Backside Idler Pulley
- E. Belt Guide
- F. Belt Guide
- G. V-Idler Pulley

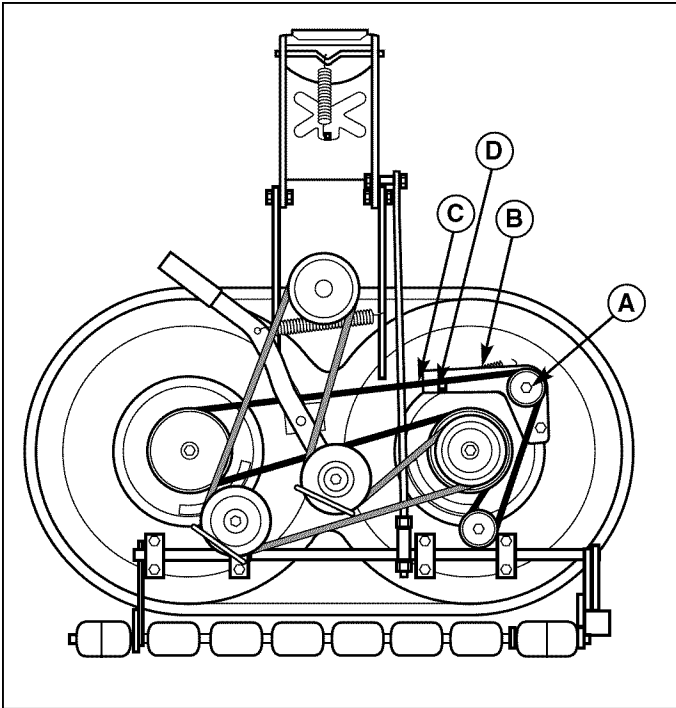


Figure 59. Mulching Deck (Belt Covers Removed)

- A. Idler Assembly Capscrew
- B. Spring-Loaded Idler Assembly
- C. Belt
- D. Square Hole

40" Mower Arbor Drive Belt Replacement

1. With the mower deck installed, park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, engage the parking brake, shut the engine off, and remove the key.
2. Remove the mower deck (see "Mower Deck Removal"). Remove the belt covers.
3. Loosen the idler assembly capscrew (A, Figure 59).
4. Using a ratchet (A, Figure 60), insert the end of the extension into the square hole (D, Figure 59) and move the idler assembly (B, Figure 59) to relieve tension on the belt (C).
5. Remove the belt (C).
6. Install a new belt (C) on the pulleys as shown. Releasing the idler assembly (A) allows the spring to automatically tension the cogged belt.
7. Tighten the idler assembly capscrew (A). Reinstall the belt covers.
8. Check that the blades are positioned perpendicular to each other (see Figure 61). If not, perform the mower blade timing procedure found in the Regular Maintenance section.

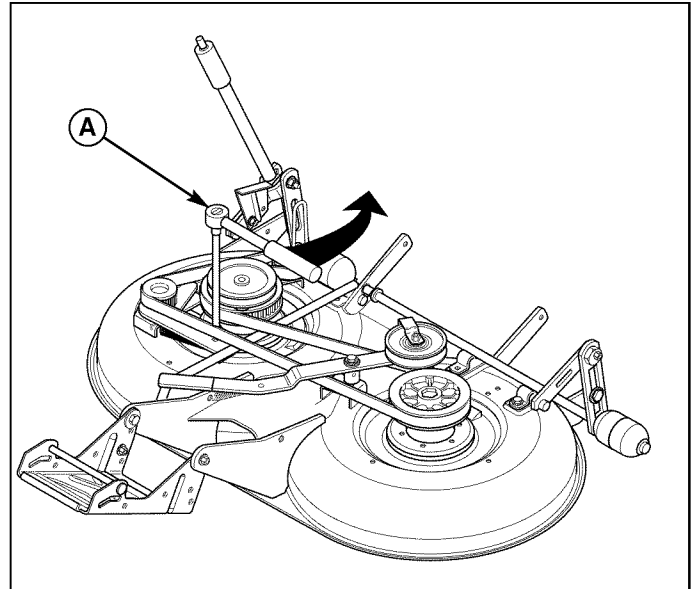


Figure 60. Release Cogged Belt Tension
A. 3/8" Ratchet and Extension

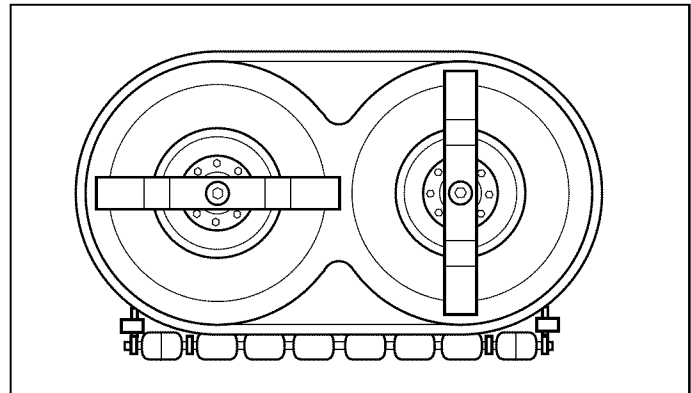


Figure 61. Mower Blade Timing

38" Mower Drive Belt Replacement

NOTE: Be sure to use only genuine Simplicity replacement parts. Check the back of this manual or the decal under the hood for common replacement part numbers.

NOTE: It is not necessary to remove the mower to install a new belt. However, for easier access mower can be removed. See Mower Removal in the Operation section.

Refer to Figure 62.

1. Park the tractor on a smooth, level surface such as a concrete floor. Disengage the PTO, turn off the engine and lock the parking brake. Remove the key.
2. If mower is not removed, lower the mower lift and place the mower in the lowest cutting position.
3. Push the idler arm (A) away from you to relieve belt tension. Drop the belt from the PTO (electric clutch) pulley.

IMPORTANT: Note the position of all belt guides relative to the belt and pulleys before loosening.

4. Loosen the two belt stop brackets (C) and idler pulley belt guide (D).
5. Remove the old belt and replace with a new belt. Make sure V-side of belt runs in arbor pulley grooves and the flat backside runs against the idler pulley.
6. Position the belt stop brackets (C) in their original positions. There must be 1/8" clearance between the belt stop and the pulleys.
7. Position the idler pulley belt guide (D) in its original position up against arm (A) so that there is a 1/8" gap between the pulley and belt guide.
8. Install mower on tractor if it was removed. See Operation section.
9. Run the mower under no-load condition for about 5 minutes.

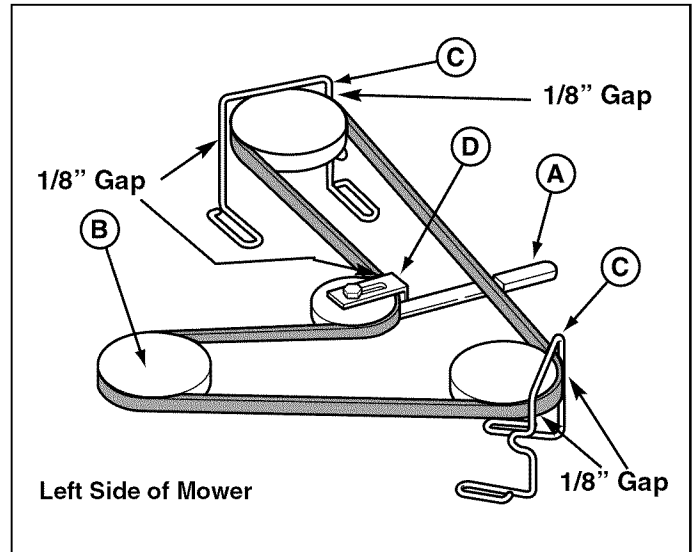
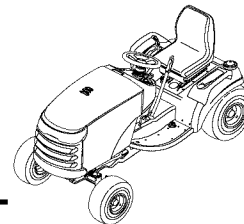


Figure 62. Mower Belt Routing - 38" Mower Deck
A. Idler Pulley Arm C. Belt Stop Bracket
B. PTO Pulley D. Idler Pulley Belt Guide

Specifications



NOTE: Specifications are correct at time of printing and are subject to change without notice.

** Actual sustained equipment horsepower will likely be lower due to operating limitations and environmental factors.*

ENGINE:

23 HP* Kohler

Make	Kohler
Model	CV23S
Horsepower	23 @ 3600 rpm
Displacement	41.1 Cu. in (674 cc)
Electrical System	12 Volt, 15 amp. Alternator, Battery: 500 CCA
Oil Capacity	2 qt. (1.9L)

20 HP* Kohler

Make	Kohler
Model	CV20S
Horsepower	20 @ 3600 rpm
Displacement	38.1 Cu. in (624 cc)
Electrical System	12 Volt, 15 amp. Alternator, Battery: 500 CCA
Oil Capacity	2 qt. (1.9 L)

20 HP* Briggs & Stratton

Make	Briggs & Stratton
Model	Vanguard
Horsepower	20 @ 3600 rpm
Displacement	34.8 Cu. in (570 cc)
Electrical System	12 Volt, 16 amp. Alternator, Battery: 340 CCA
Oil Capacity	56 Oz. (1.7 L)

18 HP* Briggs & Stratton

Make	Briggs & Stratton
Model	Vanguard
Horsepower	18 @ 3600 rpm
Displacement	34.8 Cu. in (570 cc)
Electrical System	12 Volt, 16 amp. Alternator, Battery: 340 CCA
Oil Capacity	2 qt. (1.9 L)

16 HP* Briggs & Stratton

Make	Briggs & Stratton
Model	Intek
Horsepower	16 @ 3600 rpm
Displacement	40 Cu. in (656 cc)
Electrical System	12 Volt, 16 amp. Alternator, Battery: 230 CCA
Oil Capacity	1-7/8 Quarts (1,8 L)

Make	Briggs & Stratton
Model	Vanguard
Horsepower	16 @ 3600 rpm
Displacement	29.3 Cu. in (480 cc)
Electrical System	12 Volt, 9 amp. Alternator, Battery: 340 CCA
Oil Capacity	4 Pints (1.9 L)

16 HP* Kohler

Make	Kohler
Model	Command CV460
Horsepower	16 @ 3600 rpm
Displacement	28 Cu. in (460 cc)
Electrical System	12 Volt, 15 amp. Alternator, Battery: 230 CCA
Oil Capacity	2 Quarts (1,9 L)

16 HP* Honda

Make	Honda
Model	GXV530
Horsepower	16 @ 3600 rpm
Displacement	32 Cu. in (530 cc)
Electrical System	12 Volt, 12 amp. Alternator, Battery: 230 CCA
Oil Capacity	1.1 Quarts (1,0 L)

CHASSIS:

Prestige / 1800 / 2800 / GT & Conquest / 1700 / 2700 / YT Series

Fuel Tank Cap.	Capacity: 4.0 Gallons (15 L)
Rear Wheels	Tire Size: 23 x 10.50 -12 Inflation Pressure: 6-8 psi (.41-.55 bar)
Front Wheels	Tire Size: 16 x 6.50-8 Inflation Press.: 15 psi (1.0 bar)

Broadmoor / 1600 / 2600 Series

Fuel Tank Cap.	Capacity: 4.0 Gallons (15 L)
Rear Wheels	Tire Size: 20 x 10.00 -10 Inflation Pressure: 6-8 psi (.41-.55 bar)
Front Wheels	Tire Size: 15 x 6.00-6 Inflation Press.: 12-15 psi (.8-1 bar)

TRANSMISSIONS:

K71

Type	Hydrostatic Tuff Torq K71
Hydraulic Fluid	10w 30 Premium Engine Oil
Capacity	4.8 qt (4,6 L)
Speeds	Forward: 0-7.2 MPH (0-11.6 km/h)
@ 3400 rpm	Reverse: 0-4.5 MPH (0-7.2 km/h)
Continuous Torque	410 ft. lbs. (554 N.m.)
Output	
Drawbar Rating	440 lbs. (200 Kg)
Maximum Weight on Axle	728 lbs. (330 Kg)

K66

Type	Hydrostatic Tuff Torq K66
Hydraulic Fluid	10w 30 Premium Engine Oil
Capacity	2.6 qt (2,5 L)
Speeds	Forward: 0-5.8 MPH (9.3 km/h)
@ 3400 rpm	Reverse: 0-3.5 MPH (5.6 km/h)
Continuous Torque	310 ft. lbs. (419 N.m.)
Output	
Drawbar Rating	440 lbs. (200 Kg)
Maximum Weight on Axle	697 lbs. (316 Kg)

K62

Type	Hydrostatic Tuff Torq K62
Hydraulic Fluid	10w 30 Premium Engine Oil
Capacity	2.6 qt (2,5 L)
Speeds	Forward: 5.5 MPH (8,9 km/h)
@ 3400 rpm	Reverse: 3.5 MPH (5,6 km/h)
Continuous Torque	217 ft. lbs. (294 Nm)
Output	
Drawbar Rating	440 lbs. (200 Kg)
Maximum Weight on Axle	697 lbs. (316 Kg)

K57

Type	Hydrostatic Tuff Torq K57
Hydraulic Fluid	10w 30 Premium Engine Oil
Capacity	2.1 qt (2,0 L)
Speeds	Forward: 5.5 MPH (8,9 km/h)
@ 3400 rpm	Reverse: 3.5 MPH (5,6 km/h)
Continuous Torque	159 ft. lbs. (216 Nm)
Output	
Drawbar Rating	440 lbs. (200 Kg)
Maximum Weight on Axle	674 lbs. (306 Kg)

DIMENSIONS:

Prestige / 1800 / 2800 / GT Series

Overall Length	75" (190,5 cm)
Overall Width	39" (99 cm)
Height	At Top of Seat: 50" (127 cm)
Weight	
Tractor	666 lbs. (302 kg)
4 50" Mower Deck	125 lbs. (57 kg)
54" Mower Deck	192 lbs. (87 kg)

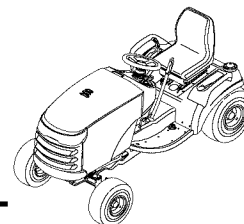
Conquest / 1700 / 2700 / YT Series

Overall Length	75" (190,5 cm)
Overall Width	39" (99 cm)
Height	At Top of Seat: 50" (127 cm)
Weight	
Tractor	586 lbs. (266 kg)
44" Mower Deck	112 lbs. (51 kg)
50" Mower Deck	125 lbs. (57 kg)

Broadmoor / 1600 / 2600 Series

Overall Length	74" (187 cm)
Overall Width	42" (107 cm)
Height	At Top of Seat: 43" (109 cm)
Weight	
Broadmoor / 1600 / 2600 Series Tractor	477 lbs. (217 kg)
40" Mower Deck	121 lbs. (55 kg)

Parts & Accessories



REPLACEMENT PARTS

Replacement parts are available from your authorized dealer. Always use genuine Simplicity Service Parts.

MAINTENANCE ITEMS

Many convenient and helpful service and maintenance items are available from your authorized dealer. Some of these items include:

Engine Oil	Tire Sealant
Touch-Up Paint	Degreaser/Degreaser
Grease Gun Kit	Gas Stabilizer
8 oz. Grease Tube	

OPTIONAL ACCESSORIES

Snowthrower Cab	Gas Cans
Snowthrower Attachments	Rear Weight Carrier
42" Dozer/Snow Blade	Front Weight Carrier
Rear Wheel Weights	Triple Bag Collector
Tire Chains	Turbo Collector
Twin Bag Grass Catcher	Tiller
Dump Cart	
Hour Meter Kit	

TECHNICAL MANUALS

Additional copies of this manual are available, as well as fully illustrated parts lists. These manuals show all of the product's components in exploded views (3D illustrations which show the relationship of parts and how they go together) as well as part numbers and quantities used. Important assembly notes and torque values are also included.

For applicable manuals currently available for your model, contact our Customer Publications Department at 262-284-8519. Have the information listed in the box below available when phoning in your request. Technical manuals can be downloaded from www.simplicitymfg.com

Model: _____
Mfg. No.: _____
Your Name: _____
Address: _____
City, State, Zip: _____
Visa/Mastercard No.: _____
Card Expiration Date: _____



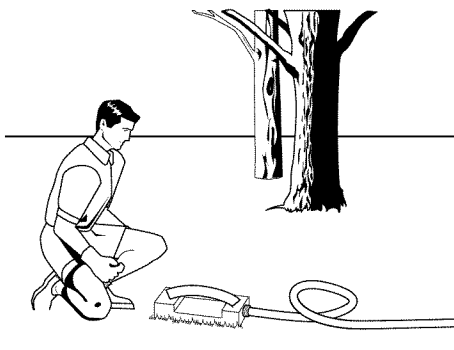
Lawn Care & Mowing Information

HOW AND WHEN TO WATER, FERTILIZE & AERATE

Most lawns are watered too often, but with too little water. However too much water can allow development of diseases with your lawn. **It is best to water the lawn only when necessary, and then to water it slowly, evenly, and deeply—imitating a slow, soaking rain.**

WHEN TO WATER YOUR LAWN

When the lawn begins to wilt, the grass's color dulls, or footprints stay compressed for more than a few seconds, the lawn is beginning to dry out, and needs additional moisture. The best time to water is early morning to allow the water to soak deeply into the lawn and reduce the amount that evaporates in the hot afternoon sun.



HOW TO WATER YOUR LAWN

The best method of watering a lawn is to imitate a slow, soaking rain, applying about 1 inch of water.

HOW TO FERTILIZE YOUR LAWN

Fertilizing with a slow-release fertilizer provides missing nutrients which help create slow, even growth. Remember that over-fertilizing can cause harm, and that most fertilizing should be applied in the spring so that it will release into the lawn through the summer.

AERATING YOUR LAWN

Consider aerating your lawn in spring. Using an aerator to remove cores of soil from the lawn increases the speed of clipping decomposition and encourages deeper root growth by opening up the soil and permitting greater movement of water, fertilizer and air.

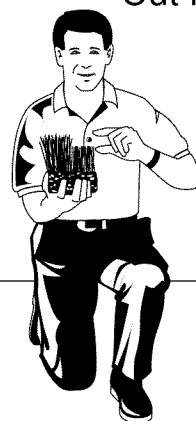
HOW HIGH TO MOW THE GRASS

Cutting the grass too short causes weak, thin grass plants, which are easily damaged by dry periods and pests.

Letting grass grow a bit longer—especially when it is hot and dry—reduces heat build-up, preserves needed moisture and protects the grass from heat damage and other problems.

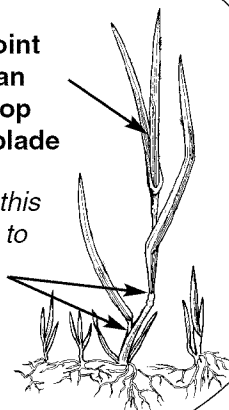
Cutting off too much at one time shocks the plant's growth system and weakens the grass plants. **A good rule of thumb is the 1/3 rule: to cut no more than one third of the grass height, and never more than 1 inch at a time.**

Cut less than
1/3



**Optimal
cutting point
at less than
1/3 from top
of grass blade**

*Cutting down to this
area contributes to
thatch problems*



**Cut Here On
First Pass**

**Cut
Here On
Second
Pass**

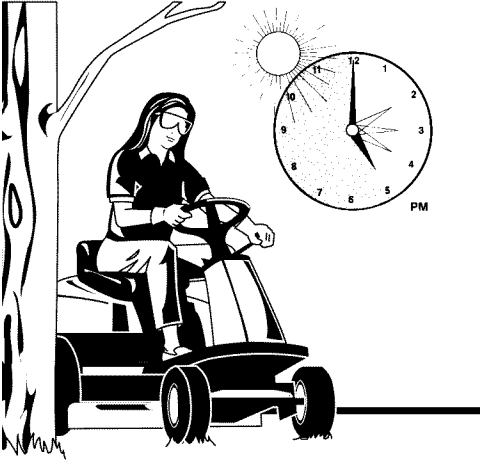


Tall Grass Requires Incremental Cutting

For extremely tall grass, set the cutting height at maximum for the first pass, and then reset it to the desired height and mow a second or third time.

Don't cover the grass surface with a heavy layer of clippings.

Lawn Care & Mowing Information



WHEN AND HOW OFTEN TO MOW

The time of day and condition of the grass greatly affect the results you'll get when mowing. For the best results, follow these guidelines:

- Mow when the grass is between 3"-4" (7,5-10 cm) high.
- Mow with sharp blades. Short clippings of grass one inch or shorter decompose more quickly than longer blades. Sharp mower blades cut grass cleanly and efficiently, preventing frayed edges which harm the grass.
- Mow at time of day when the grass is cool and dry. Late afternoon or early evening often provide these ideal mowing conditions.
- Avoid mowing after rain or even heavy dew, and never mulch when the grass is wet (moist grass does not mulch well, and clumps beneath the mower deck).

Note: Always operate the engine at full throttle when mowing.

PROPER MOWING SPEED

ENGINE SPEED & GROUND SPEED

Always operate the engine at full throttle when mowing. If you hear the engine slowing down, you are mowing too fast—maintaining a slower ground speed will improve the cutting efficiency of the blades and prevents many common cutting problems.

Select an appropriate ground speed for the thickness and height of the grass you are cutting (3rd gear or slower for manual gear models, or mid-range or slower for hydro models). If you hear the engine slowing down you are mowing too fast, use a slower ground speed.

HOW MUCH GRASS TO CUT OFF

Mow when the grass is 3"-4" inches (7,5-10cm) long. Do not cut off more than 1" (2.5cm) of grass in a single pass.





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