

Cub Cadet®

OPERATOR'S MANUAL

Pro HW336

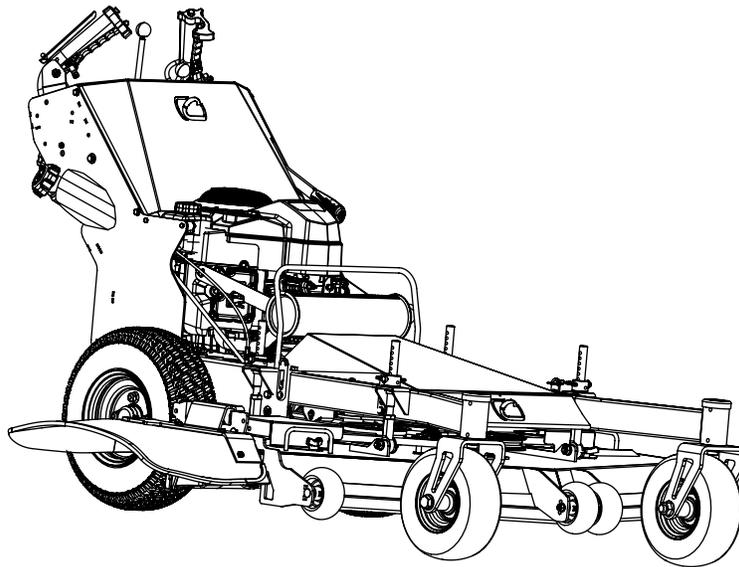


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⚠ WARNING

**READ AND FOLLOW ALL SAFETY RULES AND INSTRUCTIONS IN THIS MANUAL
BEFORE ATTEMPTING TO OPERATE THIS MACHINE.
FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.**

NOTE: This Operator's Manual covers several models. Features may vary by model. Not all features in this manual are applicable to all models and the model depicted may differ from yours.



▲ WARNING

▲ This symbol points out important safety instructions which, if not followed, could endanger the personal safety and/or property of yourself and others. Read and follow all instructions in this manual before attempting to operate this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol - **HEED ITS WARNING!**

▲ WARNING

CALIFORNIA PROPOSITION 65

Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

▲ DANGER

This machine was built to be operated according to the safe operation practices in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

General Operation

1. Read this Operator's Manual carefully in its entirety before attempting to assemble this machine. Read, understand, and follow all instructions on the machine and in the manuals before operation. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
IMPORTANT! If the operator cannot read English, the owner is responsible for explaining the information in this manual.
2. Be completely familiar with the controls and the proper use of this machine before operating it.
3. This machine is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times. This machine has been designed to perform one job: to mow grass. Do not use it for any other purpose.
4. Do not allow anyone to operate or maintain this machine who has not read the manual. **Never allow children under 16 years of age to operate this machine.**
5. Only responsible individuals who are familiar with these rules of safe operation should be allowed to use this machine. The owner is responsible for training the users, and is responsible for accidents or injuries occurring to themselves or others.
6. Thoroughly inspect the area where the equipment is to be used. Remove all stones, sticks, wire, bones, toys, and other foreign objects, which could be tripped over or picked up and thrown by the blade. Thrown objects can cause serious personal injury.
7. Plan your mowing pattern to avoid discharge of material toward roads, sidewalks, bystanders, and the like. Also, avoid discharging material against a wall or obstruction, which may cause discharged material to ricochet back toward the operator.
8. To help avoid blade contact or a thrown object injury, stay in operator zone behind handles and keep children, bystanders, helpers, and pets at least 75 feet (23 meters) from mower while it is in operation. Stop machine if anyone enters area.

9. Always wear safety glasses or safety goggles during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.
10. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Shirts and pants that cover the arms and legs and steel-toed shoes are recommended. Never operate this machine in bare feet, sandals, slippery, or light-weight (e.g. canvas) shoes.
11. Do not put hands or feet near rotating parts or under the cutting deck. Contact with blade can amputate fingers, hands, toes, and feet.
12. A missing or damaged discharge cover can cause blade contact or thrown object injuries.
13. Many injuries occur as a result of the mower being pulled over the foot during a fall caused by slipping or tripping. Do not hold on to the mower if you are falling; release the handle immediately.
14. Do not operate the mower while under the influence of alcohol or drugs.
15. Do not allow anyone to ride on this mower. No passengers.
16. Do not engage the self-propelled mechanism on machines so equipped while starting engine.
17. Slow down before turning. Operate the machine smoothly. Avoid erratic operation and excessive speed.
18. The operator presence control levers located at each handle are designed for your safety. Do not try to defeat their operation. If the blade clutch is engaged or the transmission is in gear, releasing both handles will shut off the mower's engine.
19. Never operate the mower in wet grass. Always be sure of your footing. A slip and fall can cause serious personal injury. If you feel you are losing your footing, release the blade control handle immediately and the blade will stop rotating within 7 seconds.
20. Mow only in daylight or good artificial light. Walk, never run.
21. Stop the blade when crossing gravel drives, walks, or roads.
22. Always keep both hands on the handles when mowing. Always walk, never run.
23. Never engage the blade clutch when the engine is running unless you are on grass that you intend to mow.
24. Never raise the mower deck while the blades are rotating.
25. Never walk or stand on the discharge side of a mower with the engine running. Disengage the blade clutch if another person approaches while you are operating a mower.
26. Never leave the mower unattended without disengaging the blade clutch, shifting the transmission into neutral, placing the neutral latch levers in the neutral lock position, shutting off the engine, and removing the key from the ignition switch.
27. Always park the mower and start the engine on a level surface with the transmission in neutral, the blade clutch disengaged, and the neutral latch levers in the neutral lock position.
28. If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
29. Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher or unclogging the chute. The cutting blade continues to rotate for 7 seconds after the blade control is released. Never place any part of the body in the blade area until you are sure the blade has stopped rotating.
30. Never operate mower without proper trail shield, discharge cover, grass catcher, blade control handle, or other safety protective devices in place and working. Never operate mower with damaged safety devices. Failure to do so can result in personal injury.
31. Muffler and engine become hot and can cause a burn. To avoid serious burns, do not touch the engine or muffler while the engine is running or until it has cooled for at least 30 minutes after it has been shut off.
32. Never attempt to make a wheel or cutting height adjustment while the engine is running.
33. Only use parts and accessories made for this machine by the manufacturer. Failure to do so can result in personal injury.
34. On pull-start models, when starting engine, pull cord slowly until resistance is felt, then pull rapidly. Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go. Broken bones, fractures, bruises, or sprains could result.

35. When operating this machine in the forward or reverse direction, do not allow the ground speed control levers to return to the neutral position on their own. Always maintain a firm grip on the levers, operate them smoothly and avoid any sudden movements of the levers when starting or stopping.
36. If situations occur which are not covered in this manual, use care and good judgement. Contact Customer Support for assistance or the name of the nearest service dealer.

Slope Operation

Slopes are a major factor related to slip and fall accidents, which can result in severe injury. Operation on slopes requires extra caution. If you feel uneasy on a slope, do not mow it. For your safety, use the slope gauge included as part of this manual to measure slopes before operating this machine on a sloped or hilly area. If the slope is greater than 15° (25%), do not mow it.

Do:

1. Mow across the face of slopes; never up and down. Always turn up hill. Exercise extreme caution when changing direction on slopes.
2. Watch for holes, sprinkler heads, ruts, rocks, hidden objects, or bumps which can cause you to slip or trip. Tall grass can hide obstacles.
3. Always be sure of your footing. A slip and fall can cause serious personal injury. Check the area thoroughly before mowing. Slow down and use extra care.

Do Not:

1. Do not mow near drop-offs, ditches, or embankments, you could lose your footing or balance.
2. Do not mow slopes greater than 15° (25%) as shown on the slope gauge.
3. Do not mow on wet grass. Unstable footing could cause slipping.

⚠ WARNING

Do not mow up and down the slope. You could slip and slide into the mower, or the mower could lose traction and steering control.

Children

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

1. Keep children out of the mowing area and under watchful care of a responsible adult other than the operator.
2. Be alert and turn mower off if a child enters the area.
3. Before and while moving backwards, look behind and down for small children.
4. Use extreme care when approaching blind corners, doorways, shrubs, trees, or other objects that may obscure your vision of a child who may run into the mower.
5. Keep children away from hot or running engines. They can suffer burns from a hot muffler.

6. Do not allow anyone to operate or maintain this machine who has not read the manual. Never allow children under 16 years of age to operate this machine.

Hydraulic Devices & Systems

Hydraulic fluid escaping under pressure may have sufficient force to penetrate skin and to 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.

⚠ WARNING

Keep body and hands away from pinholes or nozzles that could eject hydraulic fluid under high pressure. Use paper or cardboard, not hands, to search for leaks!

Safely relieve all pressure in the system before performing any work on the system, and make sure that:

- The ignition switch is OFF.
- The key is removed.
- The engine spark plug wire(s) is removed.
- All connections to the negative terminal of the battery are removed.
- The park brake is set.
- All by-pass valves, if so equipped, are open.
- Hydraulic controls are actuated to release pressure on pumps, cylinders, etc. If "float" positions are available, they should be used.

After the above operations are completed, it should be safe to begin disconnecting the lines or components. It is still a good idea to cover the connection with a cloth shield and then gently loosen connections.

⚠ WARNING

Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.

Service

Safe Handling of Gasoline:

1. To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes, which can ignite. Wash your skin and change clothes immediately.
2. Use only an approved gasoline container and fill slowly to decrease the chance of static electricity buildup and spillage.
3. Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.
4. 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.
5. Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
6. Extinguish all cigarettes, cigars, pipes, and other sources of ignition.

7. Never fuel machine indoors because flammable vapors will accumulate in the area.
8. If the fuel container spout will not fit inside the fuel tank opening, use a funnel.
9. If the fuel tank has to be drained, do this outdoors.
10. Never remove gas cap or add fuel while engine is hot or running. Allow engine to cool at least 5 minutes before refueling.
11. Never over fill fuel tank. Fill the tank to the bottom of the filler neck, allowing some space in the tank for fuel expansion.
12. Replace gasoline cap and tighten securely.
13. If gasoline is spilled, wipe it off the engine and equipment. Move engine to another area. Wait 5 minutes before starting engine.
14. Never store the machine or fuel container near an open flame, spark, or pilot light as on a water heater, space heater, furnace, clothes dryer, or other gas appliances.
15. To reduce fire hazard, keep machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage and remove any fuel soaked debris.
16. Allow machine to cool at least 5 minutes before storing.

General Service:

⚠ WARNING

Never let children or untrained people operate or service this mower.

1. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
2. Before cleaning, repairing, or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire and ground against the engine to prevent unintended starting.
3. Check the blade and engine mounting bolts at frequent intervals for proper tightness. Also, visually inspect blade for damage (e.g., bent, cracked, worn). Replace blade with the original equipment manufacturer's (O.E.M.) blade only, listed in this manual. Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!
4. Mower blades are sharp and can cut. Wrap the blade or wear gloves, and use extra caution when servicing them.
5. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
6. Never tamper with safety devices. Check their proper operation regularly.
7. If you hit a solid object while mowing, disengage the blade clutch, place the neutral latch levers in the neutral lock position, shift the transmission into neutral, and stop the engine. Disconnect the spark plug wire(s) and inspect for damage. Repair any damage and make sure the blades are in good condition and the blade bolts are tight before restarting the engine.

8. Never attempt to make a wheel or cutting height adjustment while the engine is running.
9. Grass catcher components, discharge cover, and trail shield are subject to wear and damage which could expose moving parts or allow objects to be thrown. For safety protection, frequently check components and replace immediately with original equipment manufacturer's (O.E.M.) parts only, listed in this manual. Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!
10. Do not change the engine's governor setting or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
11. Check fuel line, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.
12. Do not crank engine with spark plug removed.
13. Maintain or replace safety and instruction labels, as necessary.
14. Follow this manual for safe loading, unloading, transporting, and storage of this machine.
15. Always refer to the Operator's Manual for proper instructions on off-season storage.
16. Observe proper disposal laws and regulations. Improper disposal of fluids and materials can harm the environment.

Do Not Modify Engine

To avoid serious injury or death, do not modify engine in any way. Tampering with the governor setting can lead to a runaway engine and cause it to operate at unsafe speeds. Never tamper with factory setting of engine governor.

Notice Regarding Emissions

Engines which are certified to comply with California and federal EPA emission regulations for SORE (Small Off Road Equipment) are certified to operate on regular unleaded gasoline, and may include the following emission control systems: Engine Modification (EM), Oxidizing Catalyst (OC), Secondary Air Injection (SAI) and Three Way Catalyst (TWC), if so equipped.

When required, models are equipped with low permeation fuel lines and fuel tanks for evaporative emission control. California models may also include a carbon canister. Please contact Customer Support for information regarding the evaporative emission control configuration for your model.

Spark Arrestor

▲ WARNING

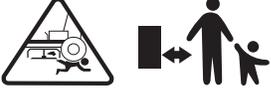
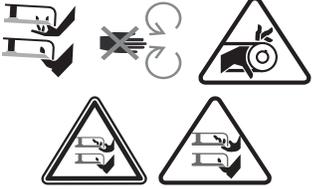
This machine is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered, or grass-covered land unless the engine's exhaust system is equipped with a spark arrestor meeting applicable local or state laws (if any).

If a spark arrestor is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands.

A spark arrestor for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 361131, Cleveland, Ohio 44136-0019.

Safety Symbols

This page depicts and describes safety symbols that may appear on this product. Read, understand, and follow all instructions on the machine before attempting to assemble and operate.

Symbol	Description
	READ THE OPERATOR'S MANUAL(S) Read, understand, and follow all instructions in the manual(s) before attempting to assemble and operate.
	DANGER — ROTATING BLADES To reduce the risk of injury, keep hands and feet away. Do not operate unless discharge cover or grass catcher is in its proper place. If damaged, replace immediately.
	DANGER — BYSTANDERS Do not mow when children or others are around.
	DANGER — HAND/FOOT CUT Keep hands and feet away from rotating parts.
	DANGER — THROWN DEBRIS Remove objects that can be thrown by the blade in any direction. Wear safety glasses.
	DANGER — SAFETY DEVICES Keep safety devices (guards, shields, switches, etc.) in place and working.
	DANGER — SLOPES Use extra caution on slopes. Do not mow slopes greater than 15° (25%).
	WARNING — GASOLINE IS FLAMMABLE Allow the engine to cool at least 5 minutes before refueling.
	WARNING — CARBON MONOXIDE Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
	WARNING — HOT SURFACE Engine parts, especially the muffler, become extremely hot during operation. Allow engine and muffler to cool before touching.

WARNING

Your Responsibility — Restrict the use of this power machine to persons who read, understand, and follow the warnings and instructions in this manual and on the machine.

SAVE THESE INSTRUCTIONS!

Slope Gauge

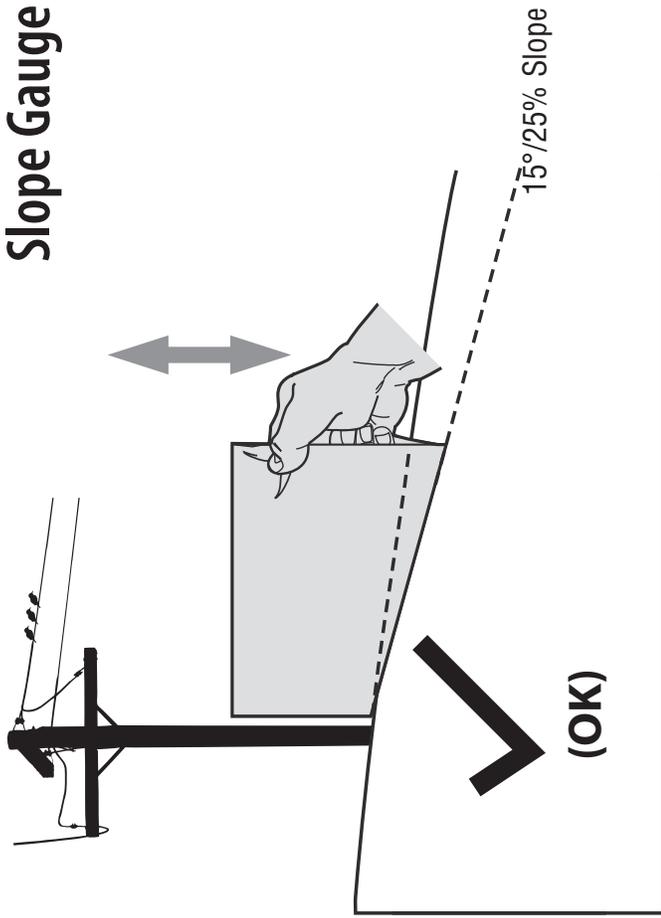


Figure 1

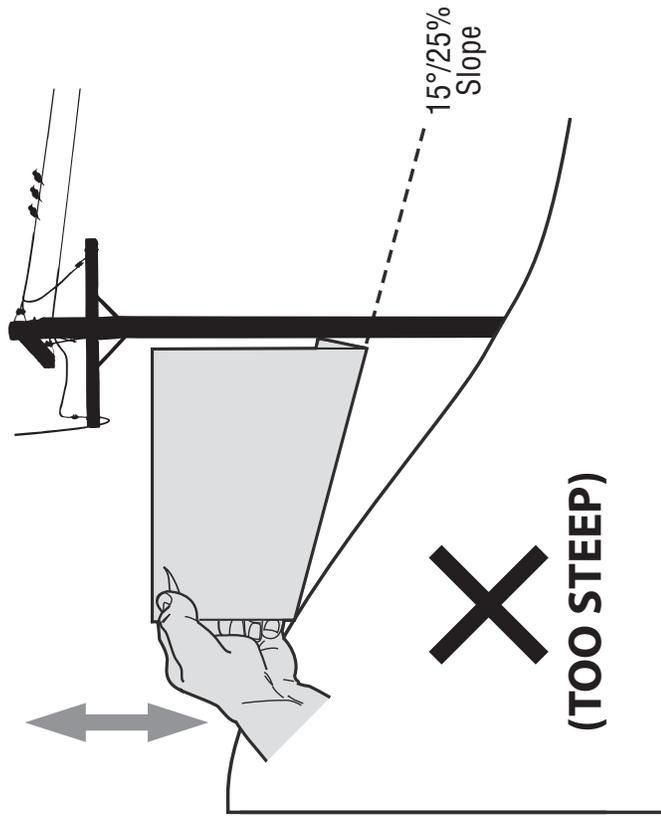


Figure 2

15°/25% dashed line

USE THIS SLOPE GAUGE TO DETERMINE IF A SLOPE IS TOO STEEP FOR SAFE OPERATION!

To check the slope, proceed as follows:

1. Remove this page and fold along the dashed line.
2. Locate a vertical object on or behind the slope (e.g. a pole, building, fence, tree, etc.)
3. Align either side of the slope gauge with the object (See Figure 1 and Figure 2).
4. Adjust gauge up or down until the left corner touches the slope (See Figure 1 and Figure 2).
5. If there is a gap below the gauge, the slope is too steep for safe operation (See Figure 2 above).



WARNING! Slopes are a major factor related to tip-over and roll-over accidents which can result in severe injury or death.

Do not operate machine on slopes in excess of 15° (25%). All slopes require extra caution. If you cannot back up the slope or if you feel uneasy on it, do not mow it. Always mow across slopes, never up and down the face of slopes.

Thank You

Thank you for purchasing this product. It was carefully engineered to provide excellent performance when properly operated and maintained.

Please read this entire manual prior to operating the equipment. It instructs you how to safely and easily set up, operate and maintain your machine. Please be sure that you, and any other persons who will operate the machine, carefully follow the recommended safety practices at all times. Failure to do so could result in personal injury or property damage.

All information in this manual is relative to the most recent product information available at the time. Review this manual frequently to familiarize yourself with the machine, its features and operation. Please be aware that this Operator's Manual may cover a range of product specifications for various models. Characteristics and features discussed and/or illustrated in this

manual may not be applicable to all models. We reserve the right to change product specifications, designs and equipment without notice and without incurring obligation.

If applicable, the power testing information used to establish the power rating of the engine equipped on this machine can be found at www.opei.org or the engine manufacturer's web site.

If you have any problems or questions concerning the machine, phone your local authorized service dealer or contact us directly. We want to ensure your complete satisfaction at all times.

Throughout this manual, all references to **right** and **left** side of the machine are observed from the operating position.

Contents of Carton

- Mower (1)
- Mower Operator's Manual (1)
- Engine Operator's Manual (1)

Mower Set-Up

Discharge Chute Deflector (If necessary)

The discharge chute deflector must be installed before operating the riding mower. To install the discharge chute deflector, proceed as follows:

1. Remove the carriage screws (a) and flange lock nuts (b) installed on the mounting bracket (c) on the deck. See Figure 2-1.

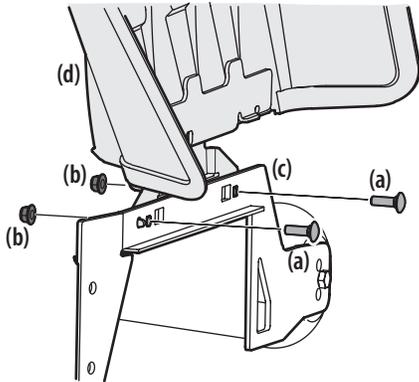


Figure 2-1

2. With the previously removed hardware (a & b), install the discharge chute deflector (d) on the deck as shown in Figure 2-1.

Connecting the Battery Cables

⚠ WARNING

CALIFORNIA PROPOSITION 65: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

⚠ CAUTION

When attaching battery cables, always connect the **POSITIVE (Red)** wire to its terminal first, followed by the **NEGATIVE (Black)** wire.

For shipping reasons, both battery cables on your equipment may have been left disconnected from the terminals at the factory. To connect the battery cables, proceed as follows:

Note: The positive battery terminal is marked Pos. (+). The negative battery terminal is marked Neg. (-).

1. Remove the plastic cover, if present, from the positive battery terminal and attach the red cable to the positive battery terminal (+) with the bolt (a) and sems nut (b). See Figure 2-2.

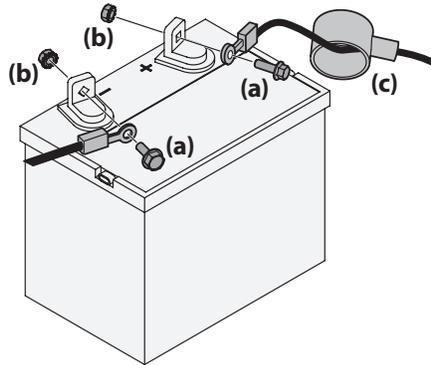


Figure 2-2

2. Remove the plastic cover, if present, from the negative battery terminal and attach the black cable to the negative battery terminal (-) with the bolt (a) and sems nut (b). See Figure 2-2.
3. Position the red rubber boot (c) over the positive battery terminal to help protect it from corrosion.

Note: If the battery is put into service after the date shown on top/side of battery, charge the battery as instructed in the Product Care section prior to operating the mower.

Fuel & Oil

1. The fuel tank has a capacity of five gallons. Remove the fuel cap by turning it counter-clockwise. Use only clean, fresh (no more than 30 days old), unleaded gasoline. Do not overfill the fuel tank. Fill the tank to the bottom of the filler neck, allowing some space in the tank for fuel expansion.

⚠ WARNING

Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel the machine indoors or while the engine is hot or running. Extinguish cigarettes, cigars, pipes, and other sources of ignition.

2. Your mower is shipped with oil in the engine. However, you **MUST** check the oil level before operating. Refer to the Engine Operator's Manual for oil checking procedures.

⚠ WARNING

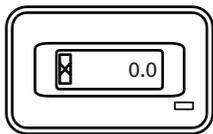
Always check the engine oil level before each use as instructed in the Engine Operator's Manual. Add oil as necessary. Failure to do so may result in serious damage to your engine.

Tire Pressure

The recommended operating rear tire pressure is 12 psi. The caster wheels are semi-pneumatic and do not require air pressure. Check the tire pressure periodically and maintain equal pressure in both rear tires at all times.

IMPORTANT! Refer to the tire sidewall for exact tire manufacturer's recommended or maximum psi. Do not overinflate. Uneven tire pressure could cause the cutting deck to mow unevenly.

Hour Meter (J)



The hour meter is located on the upper section of the control panel to the right of the speed control lever. The hour meter records the hours that the mower has been operated in the digital display and service reminders (oil, lube) in the digital display.

The hour meter is activated whenever the engine is running. Keep a record of the actual hours of operation to ensure all maintenance procedures are completed in accordance with the instructions in this Operator's Manual and the Engine Operator's Manual. The hour meter is equipped with a MODE button that can toggle between available functions and can be used to reset service alerts. Press and hold the MODE button for 3 seconds while in service alert mode or when in service alarm mode to reset.

Note: When the engine is running the hourglass symbol is illuminated/blinks to indicate it is recording the hours of mower operation, regardless of whether the engine is started.

Fuel Tank & Cap (K)

The fuel tank and cap are located on the right, rear side of the mower. Turn the fuel cap to remove. The fuel cap is tethered to the mower to prevent its loss. Do not attempt to remove the cap from the mower. Fill tank to the FULL (F) line. Do not overfill the tank.

Push the cap downward on the fuel tank fill neck and turn clockwise until it clicks to tighten. Always re-install the fuel cap tightly onto the fuel tank after removing.

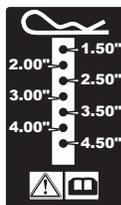


▲ WARNING

Never fill the fuel tank when the engine is running. If the engine is hot from recently running, allow to cool for several minutes before refueling. Highly flammable gasoline could splash onto the engine and cause a fire.

Deck Lift Adjustment Pins (L)

The four cotter pins are located on the frame of the mower and are used to change the cutting height of the deck. Each hole represents a 1/2" change in the deck height.

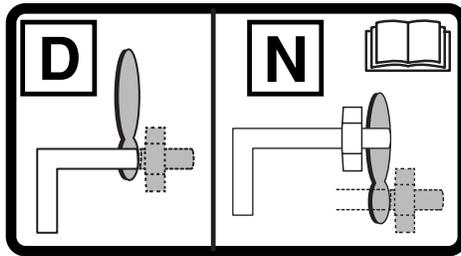


Transmission Oil Expansion

Reservoir Cap (M)

The transmission oil expansion reservoir cap is located on the right of the mower between the engine and the side panel. Turn the cap counter-clockwise to open and clockwise to close. Use only 20W50 Oil and see the Product Care section of this manual for filling instructions and more information.

Transmission Bypass Levers (Not Shown)



The transmission bypass valves (one for each RH and LH transmission) are located above the rear of the deck under the floor panel.

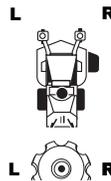
When engaged, the two valves open a bypass within the hydrostatic transmissions, which allows the mower to be pushed short distances by hand. Refer to the Product Care section for instructions on using the bypass feature.

▲ CAUTION

Never tow your mower. Towing the mower with the rear wheels on the ground may cause severe damage to the transmissions.

Tracking Knob (Not shown)

The tracking knob is located at the back of the mower under the right side of the control panel. The tracking knob is used to adjust mower creeping and/or mower tracking. See the Product Care section of this manual for more information.



Recoil Starter Handle (If equipped/Not shown)

The recoil starter is located on the engine on recoil starter models.

Operation

Starting the Engine

▲ WARNING

Never run the engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.

Refer to the Assembly & Set-Up section of this manual for gasoline and oil fill-up instructions. Make certain you thoroughly understand all of the safety precautions before you attempt to operate this machine. Move the mower outdoors to a "test area" where you can operate the mower for about half an hour without being disturbed. After the first full day of mowing, all nuts, bolts and screws should be rechecked for proper tightness and the belts should be rechecked for proper tension.

- To start the engine on electric start models proceed with Step a, for recoil starter models skip ahead to Step 2.
 - Move the speed control lever to the neutral (N) position.
 - Disengage the PTO.
 - Place the neutral latch levers in the neutral lock position.
 - Make sure the spark plug wire is connected.
 - Pull the choke knob all the way up to engage the choke.

Note: If the engine is warmed up, it may not be necessary to engage the choke.

- Move the throttle lever midway between the FAST and SLOW positions.

Note: When operating the mower be certain that the throttle lever is always in the FAST position. Operating with the throttle at less than full throttle may lead to shortened battery life.

- Put the power key in the key switch and turn the key to the START position. After the engine starts, release the key and the key will return to the ON position.

▲ CAUTION

Do not hold the key in the START position for longer than ten seconds at a time. Doing so may cause damage to your engine's electric starter.

- To start engine on recoil starter model, proceed with Step a.
 - Put the power key in the key switch and turn the key to the ON position.
 - Stand on the left side (as viewed from the operator's position behind the handlebars) of the mower. Be sure your feet are safely away from the underside of the mower deck and all mower controls are released.
 - Grasp the starter rope handle and pull slowly until the rope pulls slightly harder. Let rope rewind slowly. Then pull the rope with a rapid, full arm stroke. Let the rope return slowly. If the engine fails to start after three pulls, repeat the instructions (try moving the throttle lever into the FAST position).
 - When the engine starts, operate the mower in the FAST throttle setting and disengage the choke.

Stopping the Engine

▲ WARNING

If you strike a foreign object, stop the engine and remove the power key. Thoroughly inspect the machine for any damage. Repair the damage before restarting and operating.

- Place both steering levers in the neutral (N) position and lock into the neutral position with the neutral latch levers to stop the mower.
- Place the speed control lever into the neutral (N) position.
- If the PTO is engaged, push down on the PTO knob to disengage the PTO and stop the blades.
- Move the throttle control lever into the SLOW position.
- Let the mower run at idle for one minute.
- Turn the power key counter-clockwise to the OFF position.
- Remove the power key from the key switch to prevent unintended starting.

Engaging the Drive

⚠ WARNING

Avoid sudden starts, excessive speed, and sudden stops.

1. Start the engine as instructed earlier in this section and move the throttle control into the FAST position.
2. Refer to Figure 3-1 for the following instructions.

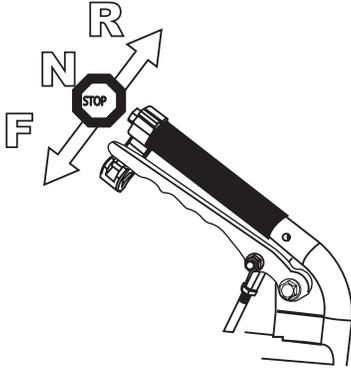


Figure 3-1

3. To travel FORWARD:
 - a. Move the speed control lever forward to about one third of full speed (position 2) until you are fully familiar with the operation of the mower.
 - b. Hold both steering levers and release the neutral latch levers from the neutral lock position.
 - c. Slowly release the steering levers and the mower will move ahead in a straight line. To turn the mower, squeeze the steering lever on the side to which you want to turn.
 - d. To stop the mower's forward motion, squeeze both steering levers until the mower stops and place the neutral latch levers into the neutral lock position.

IMPORTANT! Squeezing the left steering control only will create a counter-clockwise pivot or U-turn and applying the right steering control only will create a clockwise pivot or U-turn. Applying both levers will stop the machine without turning.

4. To travel in REVERSE:

⚠ DANGER

Look behind the mower before and during reverse operation. Stop the mower blades before operating in reverse.

- a. Disengage the blades.
- b. Stop the mower's forward motion by squeezing both steering levers to the neutral position.

⚠ WARNING

To avoid possible bodily injury and to prevent damage to the transmission, the mower must be completely stopped before attempting to shift from forward to reverse or reverse to forward.

- c. Check that the area behind is clear.
- d. Slowly squeeze the steering levers and the mower will begin to move backward.

⚠ WARNING

Do not leave the operator's position without first disengaging the PTO. If leaving the mower unattended, also turn the engine off and remove the ignition key.

Engaging the Blades

⚠ WARNING

To help avoid blade contact or a thrown object injury, keep bystanders, helpers, children, and pets at least 75 feet (23 meters) from the machine while it is in operation. Stop machine if anyone enters the area.

1. Move the throttle control lever to the FAST position.
2. Engage the operator presence levers.
3. Pull up on the PTO knob until it engages and the blades start rotating.

Operating on Slopes

Refer to the Slope Gauge in the Safe Operation Practices section to help determine slopes where you may safely operate the mower.

⚠ WARNING

Do not mow on inclines with a slope in excess of 15°/25% (a rise of approximately 2-1/2 feet every 10 feet). The mower could overturn and cause serious injury.

- Mow across the face of slopes; never up and down.
- Exercise extreme caution when changing direction on slopes.
- Watch for holes, ruts, rocks, hidden objects or bumps which can cause you to slip or trip. Tall grass can hide obstacles.
- Always be sure of your footing. A slip and fall can cause serious personal injury.
- Do not mow near drop-offs, ditches or embankments, you could lose your footing or balance.
- Do not mow slopes greater than 15°/25% as shown on the Slope Gauge.
- Do not mow on wet grass. Unstable footing could cause slipping.

Setting Deck Height

To adjust the deck height, adjust the clevis pin location in the deck adjustment pins and the deck lift adjustment collars.

1. Securely grasp one of the three handles on the deck (see Figure 3-2 for location) and lift slightly to remove the cotter pin (a). See Figure 3-3.

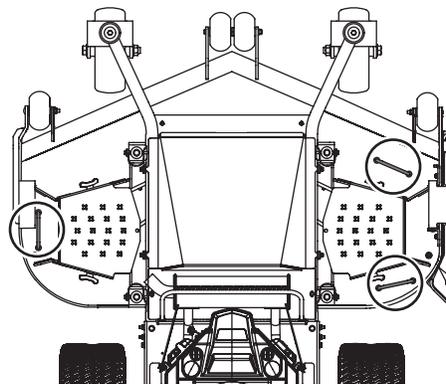


Figure 3-2

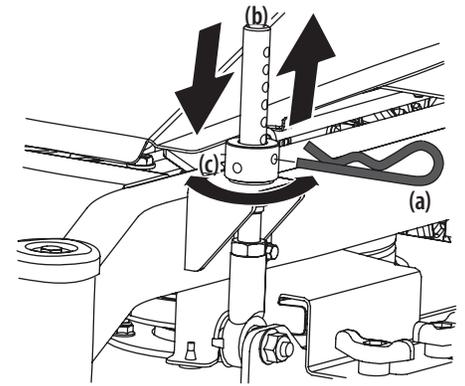


Figure 3-3

2. Raise or lower the deck on the deck adjustment pin (b) and in combination with the deck lift adjustment collar (c), find the desired height.
3. Insert the cotter pin (a) back into the deck adjustment pin (b) at the desired position.
4. Repeat these steps for the other three deck adjustment pins (b) making sure the height is the same for all four deck adjustment pins (b).

Mowing

The following information will be helpful when operating your mower.

⚠ WARNING

Plan your mowing pattern to avoid discharge of materials toward roads, sidewalks, bystanders, and the like. Also, avoid discharging material against a wall or obstruction which may cause discharged material to ricochet back toward the operator.

- Be sure area is clear of rocks, sticks, toys, wire or other objects that could be thrown by the mower. Survey the entire area to be mowed. Make sure that the accessories and attachments would be suitable for use on the terrain.
- Use care when approaching blind corners, shrubs, trees or other objects that could obstruct vision.
- To mow grass and produce a striped pattern:
 - Pick a point on the opposite side of the area to be mowed (post, tree, shrub, etc).
 - If on a hillside, start at the bottom so that the turns are uphill rather than downhill.
 - Align the mower so as to head directly toward the object on the far side.
 - Slowly increase the speed of the machine to match cutting conditions, terrain and operator familiarity with the controls and keep the machine headed directly toward the alignment object. Do not go fast as to reduce cut quality or to be uncomfortable in controlling the speed and direction of the machine.
 - When approaching the other end of a strip, slow down or stop before turning. A U-turn is recommended.

Product Care

Maintenance Schedule

	Before Each Use	1st Five Hours	Every 40 Hours	Every 100 Hours	Every 300 Hours	Prior to Storing
Check/Clean Engine Intake Screens & Cooling Fans *	✓					✓
Check/Clean Exhaust Manifold, Muffler Pipe & Muffler Shields *	✓					✓
Check/Clean Top & Underside of Deck, Under & Around Spindle Covers & Belt Area *	✓					✓
Check/Clean Around Fuses, Wiring & Wiring Harnesses *	✓					✓
Check/Clean Around Transmission, Axle & Fans *	✓					✓
Clean Mower	✓					✓
Check Fuel Level	✓					
Check Belts & Controls	✓					
Check Engine Oil Level	✓					
Check Loose or Missing Parts	✓					
Clean or Replace Air Filter Element	✓		✓			
Lube Deck Idler Pulley Pivot Arms	✓					
Change Engine Oil & Filter		✓		✓		
Sharpen & Balance Blades			✓			
Lube Brake Lever Points			✓			
Lube Handle Control Bellcrank Pivot			✓			
Lube Transmission-Jackshaft Couplers			✓			
Lube Ball Joint			✓			
Check Spark Plug Condition & Gap				✓		✓
Change Hydraulic Oil & Filter †					✓	

* — Perform more frequently under dusty conditions.

† — Change the hydraulic oil and filter after the first 50-100 hours.

Note: This Operator's Manual covers several models. Mower features may vary by model. Not all features in this manual are applicable to all mower models and the mower depicted may differ from yours.

▲ WARNING

Before performing any maintenance or repairs, disengage the PTO, engage the parking brake, stop the engine, and remove the key to prevent unintended starting.

Post-Operation Mower Care

After each operation of the mower, the following procedures should be implemented to extend the life of your mower and ensure safe operating conditions.

▲ DANGER

Failure to follow these recommendations may result in serious injury to yourself or others and may cause damage to the mower.

Cleaning the Underside of the Deck

Rinse grass clippings from the deck's underside and prevent the buildup of corrosive chemicals.

▲ WARNING

Make certain the mower's discharge chute is directed AWAY from people, your house, garage, parked cars, etc.

1. Disengage the PTO, set the parking brake and stop the engine.
2. Use a hose to spray the underside of the deck.

Note: Make sure that the hose is not routed under the deck and is clear of all moving parts.

3. After cleaning your deck, return to the operator's position and engage the PTO. Keep the deck running for a minimum of two minutes, allowing the underside of the deck to thoroughly dry.

Cleaning the Mower

▲ WARNING

If the mower has been recently run, the engine, muffler, and surrounding metal surfaces will be hot and can cause burns to the skin. Let the engine cool for at least five minutes. Exercise caution to avoid burns.

Your mower should be cleaned after each use and under certain conditions, i.e. dry conditions and/or mulching situations, additional cleaning may be necessary.

One of the best ways to keep your mower running efficiently and to reduce fire risk is to regularly remove debris buildup from the mower. Follow the recommendations below and contact your authorized dealer with any questions.

- Allow the machine to cool in an open area before cleaning.
- Do not use water on any part of the mower except the underside of the cutting deck. Doing so can cause damage to the mower's spindle bearings, electrical system and engine, leading to premature failures. The use of compressed air and/or leaf blower will help keep the mower clean.

- Clean around the exhaust manifold, fuses, all wiring and harnesses, muffler pipe, muffler shield, engine intake screens and cooling fins, etc. See Figure 4-1.

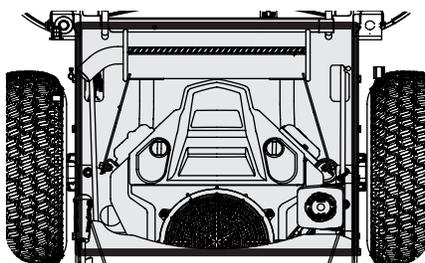


Figure 4-1

- Clean the top of the mower deck, under the spindle covers and belt area. See Figure 4-2.

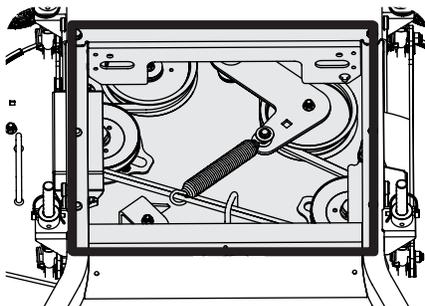
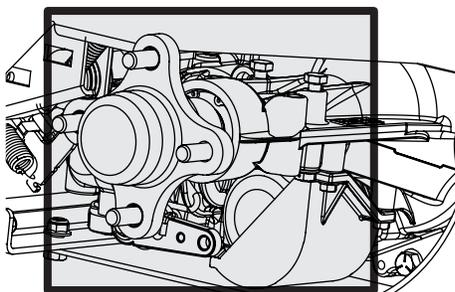


Figure 4-2

- Clean around and near the transmission, axle and the fan area. See Figure 4-3.



Wheel Not Shown For Clarity

Figure 4-3

- Debris can accumulate anywhere on the mower, especially on horizontal surfaces. Additional cleaning may be necessary when mowing in dry conditions or when mulching.
- Fuel leaks/spills, oil leaks/spills and excess lubrication can also become collection sites for debris. Immediate repair and cleaning up oil or fuel spills can help reduce fire hazards.
- In addition to cleaning the mower before operating and storing, do not attempt to mow unusually tall grass (10" or higher), dry grass (e.g., pasture) or piles of dry leaves. Dry grass or leaves may contact the engine exhaust and/or build up on the mower deck presenting a potential fire hazard.

Storing the Mower

- Allow the machine to cool in an open area before storing.
- Do not park the mower near any flammable materials (wood, cloth or chemicals) or any open flames or other potential source of ignition (furnace, water heater or any other type of heater).
- Remove all combustible materials from the mower before storing. Empty cargo boxes, grass catchers or containers.
- Always shut off fuel flow when storing or transporting if mower is equipped with a fuel shutoff.
- Check the fuel system (lines, tank, cap and fittings) frequently for cracks or leaks. Repair and clean as necessary.

Maintenance

Engine

Refer to the Engine Operator's Manual for all engine maintenance intervals, procedures, specifications and instructions.

Changing the Engine Oil

▲ WARNING

If the engine has been recently run, the engine, muffler, and surrounding metal surfaces will be hot and can cause burns to the skin. Exercise caution to avoid burns.

Maintain oil level as instructed in Engine Operator's Manual. Be careful not to spill oil on any of the belts.

To complete an oil change, proceed as follows:

1. Run the engine for a short time to warm the engine oil. The oil will flow more freely and carry away more impurities. Use care to avoid burns from hot oil.
2. Locate the oil drain hose on the engine. See Figure 4-4.

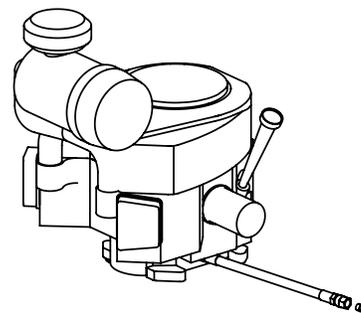


Figure 4-4

3. Route the free end of the oil drain hose toward an appropriate oil collection container with at least a 2.5 quart capacity, to collect the used oil.

Note: Avoid getting oil on the muffler when draining.
4. While holding the free end of the oil drain hose over the oil collection container, unscrew the square-head hose plug from the end of the hose. See Figure 4-4. Drain the engine oil into the collection container.
5. Remove the oil filter to make sure all the oil is drained.

- After draining the oil, wipe any residual oil from the oil drain hose. Thread the square head plug into the drain hose fitting and fully tighten the plug.
- Replace the oil filter and refill the engine with new oil as instructed in the Engine Operator's Manual. Refer to the Engine Operator's Manual for information regarding the volume and weight of engine oil.
- Route the hose back along the frame as it was before removal.

Lubrication

Periodically lubricate all pivot points with a quality lubricating oil.

Tires

Check the tire air pressure after every 50 hours of operation, or weekly. Keep the tires inflated to the recommended pressures. Improper inflation will shorten the tire service life and produce an uneven cut. The recommended operating rear tire pressure is 12 psi. Observe the following guidelines:

- Do not inflate a tire above the maximum pressure shown on the sidewall of the tire.
- Do not reinflate a tire that has been run flat or seriously under-inflated. Have it inspected and serviced by a qualified tire mechanic.

Battery Information

⚠ WARNING

Should battery acid accidentally splatter into the eyes or onto the skin, rinse the affected area immediately with clean cold water. If there is any further discomfort, seek prompt medical attention.

If acid spills on clothing, first dilute it with clean water, then neutralize with a solution of ammonia/water or baking soda/water.

NEVER connect (or disconnect) battery charger clips to the battery while the charger is turned on, as it can cause sparks.

Keep all sources of ignition (cigarettes, matches, lighters) away from the battery. The gas generated during charging can be combustible.

As a further precaution, only charge the battery in a well ventilated area.

Always shield eyes and protect skin and clothing when working near batteries.

Batteries contain sulfuric acid and may emit explosive gases. Use extreme caution when handling batteries. Keep batteries out of the reach of children.

Battery Maintenance

- The battery is filled with battery acid and then sealed at the factory. However, even a "maintenance free" battery requires some maintenance to ensure its proper life cycle.
- Spray the terminals and exposed wire with a battery terminal sealer, or coat the terminals with a thin coat of grease or petroleum jelly, to protect against corrosion.
- Always keep the battery cables and terminals clean and free of corrosion.

- Some models are equipped with a battery containing a liquid electrolyte. Handle the battery with care and avoid tipping to prevent leakage.

⚠ WARNING

Batteries contain sulfuric acid and may emit explosive gases. Use extreme caution when handling batteries. Keep batteries out of the reach of children.

Battery Storage

- When storing the mower for extended periods, disconnect the negative battery cable. It is not necessary to remove the battery.
- All batteries discharge during storage. Keep the exterior of the battery clean, especially the top. A dirty battery will discharge more rapidly.
- The battery must be stored with a full charge. A discharged battery can freeze sooner than a charged battery. A fully charged battery will store longer in cold temperatures than hot.
- Recharge the battery before returning to service. Although the mower may start, the engine charging system may not fully recharge the battery.

Removing the Battery

- Remove the flange lock nut (a) and carriage screw (b) holding the battery hold-down bracket (c) in place. See Figure 4-5.

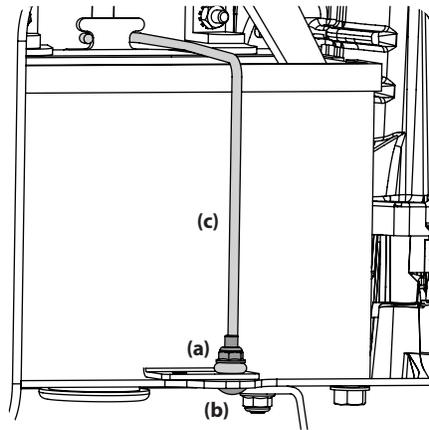


Figure 4-5

- Remove the battery hold-down bracket.
- Remove the hex cap screw and sems nut securing the black negative battery lead to the negative battery post (marked NEG). Move the cable away from the negative battery post.
- Remove the hex cap screw and sems nut securing the red positive battery lead to the positive battery post (marked POS).
- Carefully slide the battery out of the mower.
- Install the battery by repeating the above steps in the reverse order.

Using the Transmission Bypass Rods

If for any reason the mower will not drive or you wish to move the mower, the two hydrostatic transmissions are equipped with a bypass rod that will allow you to manually move the mower short distances.

⚠ WARNING

Do not tow the mower, even with the bypass rod engaged. Serious transmission damage will result from doing so.

- Engage the transmission bypass by pulling out on the bypass rod (a) and then placing it down in the slot before releasing. See Figure 4-6.

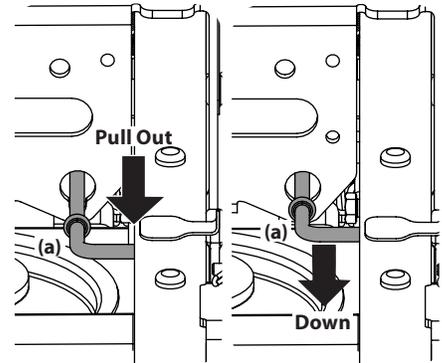


Figure 4-6

- To release the transmission bypass, pull out and let the bypass rod slide back into the frame.

Hydrostatic Transmission

The mower is equipped with dual integrated hydrostatic pumps/transaxles that are sealed. However, this model is equipped with a transmission oil expansion reservoir. Under normal operating conditions, the oil level in the expansion reservoir does not need to be checked and no additional oil is needed. If checking the reservoir oil level, proceed as follows:

Note: See the Maintenance Schedule table for transmission oil changing intervals.

⚠ WARNING

Check the oil level ONLY before starting the mower when the transmission oil is fully cooled.

- Clean the reservoir cap and the area around the cap to prevent debris from contaminating the transmission oil. See Figure 4-7.

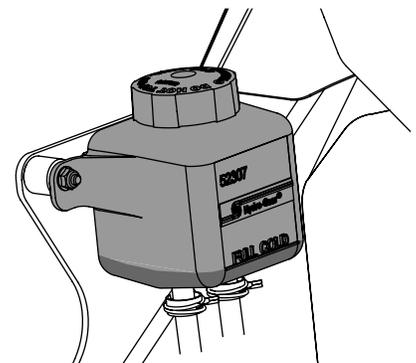


Figure 4-7

2. Turn the reservoir cap counter-clockwise to remove, then check the oil level in the reservoir. Oil should be visible at the bottom of the cup, but the oil level must NOT be above the "FULL COLD" line. See Figure 4-7. DO NOT FILL THE RESERVOIR.
3. If necessary to add oil because of some type of leakage, use a quality 20W50 motor oil and add only enough oil to bring the level to the "FULL COLD" line. Reinstall the cap and fully tighten.

Note: Prior to the initial operation of the mower, the oil level in the reservoir may be slightly higher than the maximum due to air in the oil lines. Operation of the mower will eventually purge the air from the lines and the oil level will settle to the maximum.

Mower Storage

If your mower is not going to be operated for an extended period of time (30 days to approximately six months), the mower should be prepared for storage. Store the mower in a dry and protected location. If stored outside, cover the mower (including the tires) to protect it from the elements. The procedures outlined below should be performed whenever the mower is placed in storage.

1. Change the engine oil and filter following the instructions provided in the Engine Operator's Manual packed with this manual.

⚠ WARNING

Never store the mower with fuel in the tank indoors or in poorly ventilated enclosures, where fuel fumes may reach an open flame, spark, or pilot light as on a furnace, water heater, clothes dryer, etc.

2. If storing the mower for 30 days or more:
 - a. To prevent gum deposits from forming inside the engine's carburetor and causing possible malfunction of the engine, the fuel system must be either completely emptied, or the gasoline must be treated with a stabilizer to prevent deterioration.

⚠ WARNING

Fuel left in the fuel tank deteriorates and will cause serious starting problems.

- b. Use a fuel stabilizer for storage between 30 and 90 days:
 - Read the product manufacturer's instructions and recommendations.
 - Add to clean, fresh gasoline the correct amount of stabilizer for the capacity (approximately 3 gallons) of the fuel system.
 - Fill the fuel tank with treated fuel and run the engine for 2-3 minutes to get stabilized fuel into the carburetor.

- c. Emptying the fuel system for storage of more than 90 days:
 - Prior to putting the mower in storage, monitor fuel consumption with the goal of running the fuel tank empty.
 - Run the engine until it begins to stall. Use the choke to keep the engine running until all fuel in the carburetor has been exhausted.
 - Referring to the Engine Operator's Manual, drain the fuel from the carburetor bowl.

3. Clean the engine and the entire mower thoroughly.
4. Fully charge the battery, then disconnect the negative cable at the battery to prevent possible discharge. Recharge the battery periodically when in storage.

Note: Remove the battery if exposed to prolonged periods of sub-freezing temperatures. Store in a cool, dry location where temperatures are above freezing.

5. Lubricate all lubrication points.

Note: Using a pressure washer or garden hose is not recommended for cleaning your mower. It may cause damage to electrical components, spindles, pulleys, bearings or the engine. The use of water will result in shortened life and reduce serviceability.

Removing the Mower from Storage

1. Check the engine oil.
2. Fully charge the battery and inflate the tires to the recommended pressure.
3. Fill the fuel tank with clean, fresh gasoline.
4. Start the engine and allow to idle for a few minutes to ensure engine is operating properly.
5. Drive the mower without a load to make certain all the mower systems are functioning properly.

Adjustments

⚠ WARNING

Shut the engine off, remove the key, and engage the parking brake before making adjustments. Protect your hands by using heavy gloves when handling the blades.

Deck Leveling

⚠ WARNING

Shut the engine off, remove the key, and engage the parking brake before making adjustments. Protect your hands by using heavy gloves when handling the blades.

Leveling the Deck

Note: Check the mower's tire pressure before performing any deck leveling adjustments.

Refer to Tires for information regarding tire pressure. Always level the deck side-to-side before front-to-rear.

If the cutting deck appears to be mowing unevenly, a side-to-side adjustment can be performed. Adjust if necessary as follows:

1. Park the mower on a flat level surface.
2. Measure the distance from the outside of the left blade tip to the ground and the distance from the outside of the right blade tip to the ground. Both measurements taken should be equal. If they are not, proceed to the next step.
3. There are four adjustment points on the deck. Each of the deck lift adjustment pins has an adjustment bolt (a). See Figure 4-8. Raise or lower each side of the deck using the four bolts (a) until the side-to-side height is equal.

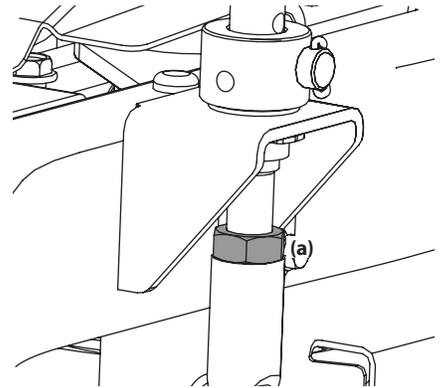


Figure 4-8

The front of the deck should be between 1/4-3/8" lower than the rear of the deck. Adjust if necessary as follows:

1. Raise or lower the front and/or rear of the deck using the four adjustment bolts (a) on the deck lift adjustment pins until the front of the deck is 1/4-3/8" lower than the rear of the deck. See Figure 4-8.

Adjusting the Gauge Wheels (If equipped)

⚠ WARNING

Keep hands and feet away from the discharge opening of the cutting deck.

The front gauge wheels on the mower deck are an anti-scalp feature, and should not ride on the ground. The front gauge wheels should be approximately 1/4-1/2" above the ground when the deck is set in the desired height setting.

Using the deck lift handle, set the deck in the desired height setting, then check the gauge wheel distance from the ground below. If necessary adjust the front gauge wheels as follows:

1. Visually check the distance between the front gauge wheels and the ground. If the gauge wheels are near or touching the ground, they should be raised. If more than 1/2" above the ground, they should be lowered.

- Remove the lock nut (a) securing one of the front gauge wheels (b) to the deck. Remove the front gauge wheel (b), hex screw (c) and spacer (d). See Figure 4-9.

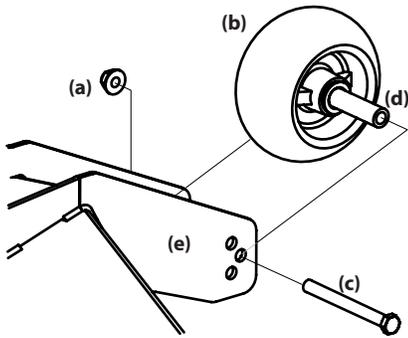


Figure 4-9

- Insert the hex screw (c) into one of the three index holes in the front gauge wheel bracket (e) that will give the front gauge wheel (b) a 1/4-1/2" clearance with the ground.
- Note the index hole of the just-adjusted front gauge wheel (b), and adjust the other front gauge wheels (b) into the respective index hole of the other front gauge wheel brackets (e).

Service

Charging the Battery

Test and, if necessary, recharge the battery after the tractor has been stored for a period of time.

Models with Lead-Acid Battery

- A voltmeter or load tester should read 12.6 volts (DC) or higher across the battery terminals. See Figure 4-10.

Voltmeter Reading	State of Charge	Charging Time
12.7	100%	Full Charge
12.4	75%	90 Min.
12.2	50%	180 Min.
12.0	25%	280 Min.

Figure 4-10

- Charge the battery with a 12-volt battery charger at a MAXIMUM rate of 10 amps.

Models with AGM Battery

- An AGM Battery charger should be used. Recommended charge rate is 1.1A/14.8V.
Note: Do NOT use an automotive charger.
- If your battery charger is automatic, charge the battery until the charger indicates that charging is complete. If the charger is not automatic, charge for no fewer than eight (8) hours.

Jump Starting

⚠ WARNING

Failure to use this starting procedure can cause sparking, and the gases in the battery to explode.

- Connect the end of one cable to the disabled machine battery's positive terminal; then connect the other end of that cable to the booster battery's positive terminal.
- Connect one end of the other cable to the booster battery's negative terminal; then connect the other end of that cable to the frame of the disabled mower, as far from the battery as possible.
- Start the disabled mower following the normal starting instructions previously provided; then disconnect the jumper cables in the exact reverse order of their connection.
- Have the mower's electrical system checked and repaired as soon as possible to eliminate the need for jump starting.

Servicing Electrical System

Fuse

Always use the same capacity fuse for replacement. If you have a recurring problem with blown fuses, have the mower's electrical system checked by your authorized service dealer.

Safety Interlock System & Switch Operation Checks

After the engine has warmed up, shut off the ignition and check the operation of the safety switches.

- Make certain that the engine will not start unless the key switch is turned on, the transmission is in neutral and the blade clutch is disengaged. Place the neutral latch levers in the neutral lock position. If the engine will start with the transmission in any gear (not neutral), immediately shut off the engine and contact customer service. If the engine will start with the blade clutch engaged, immediately shut off the engine and contact customer service.

To check operator presence controls:

- With the neutral locks engaged, start the engine and hold the left operator presence control lever down against the left handle and move the transmission shift lever into first gear. Now take your hand off the operator presence control lever and the engine should die. If it does not, immediately shut off the engine and contact customer service.
- Repeat this procedure using the right operator presence control lever.
- Shift the transmission into neutral, restart the engine, hold one of the operator presence controls down against the handle and engage the blade clutch. Now take your hand off of the operator presence lever and the engine should die. If it does not, immediately shut off the engine and disengage the blade.

Electric PTO Clutch

This clutch operates when the engine is running, the operator is in the operator's position and the PTO is engaged. This electric clutch is normally a trouble free device. If a problem develops and the blades do not turn, first check the 20 amp fuse, then investigate the wiring harness and the connections to the seat switch, the PTO switch and the electric blade clutch. Then check the PTO switch and the electric blade clutch. If the PTO clutch is still not working properly, see an authorized service dealer.

Deck Removal

⚠ WARNING

The muffler and any surrounding parts at the rear of the mower may be extremely hot, and could cause serious burns. Use extreme caution when near the muffler. Allow the muffler to fully cool before removing the belt from the PTO pulley.

Remove the mower deck from the mower as follows:

- Lower the deck to the ground.
- Apply the parking brake. Remove ignition key and the spark plug cap.
- Using a 1/2" drive in the idler pulley bracket (a), turn the wrench counter-clockwise and slide the deck belt off the PTO pulley. See Figure 4-11 for 36" decks and Figure 4-12 for 48" and 54" decks.

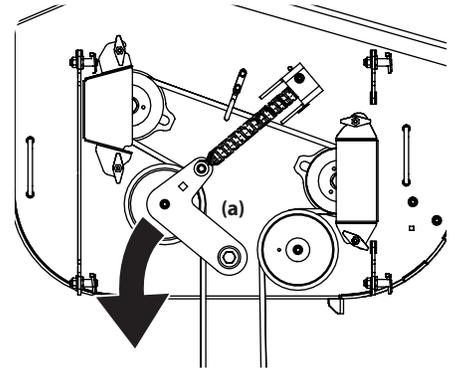


Figure 4-11

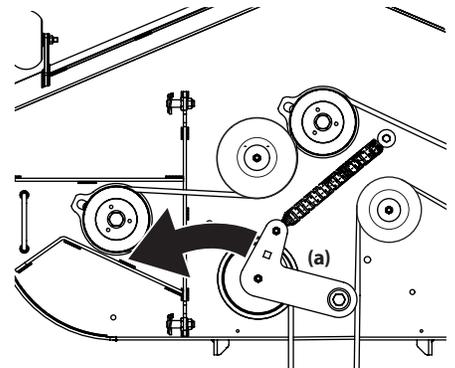


Figure 4-12

- Remove the four lynch pins (a) that secure the deck to the deck lift assembly. See Figure 4-13.

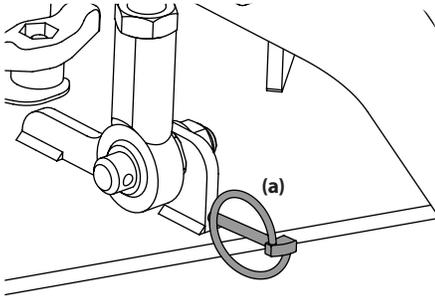


Figure 4-13

- Turn front wheels as if to make a pivot turn.
- Shift the deck toward the right side of the mower and remove.
- To install, reverse the process.

Replacing the Deck Belt

- Set the parking brake. Remove ignition key and both spark plug caps.
- Remove the deck, (refer to Deck Removal).
- Remove the wing knobs (a) securing the belt covers (b) to the deck. See Figure 4-14.

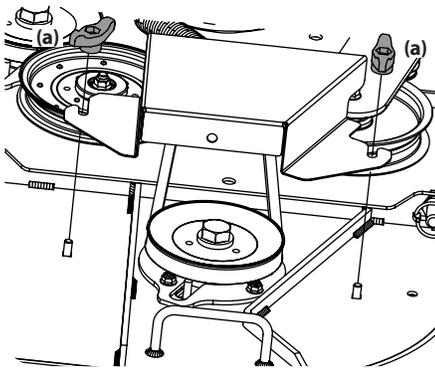


Figure 4-14

- The speed nut should hold the carriage screw in place.
- Remove the belt from around the pulleys. On 36" decks, a belt keeper rod (a) will also need removed. Remove the two bolts securing the belt keeper rod (a) to the deck. See Figure 4-15.

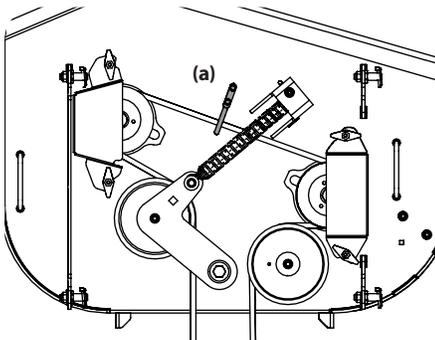


Figure 4-15

⚠ WARNING
Avoid pinching injuries. Never place your fingers on the idler spring or between the belt and a pulley while removing the belt.

- Route the new belt as shown in Figure 4-15 for 36" decks and Figure 4-16 for 48" and 54" decks. Then reinstall the deck.

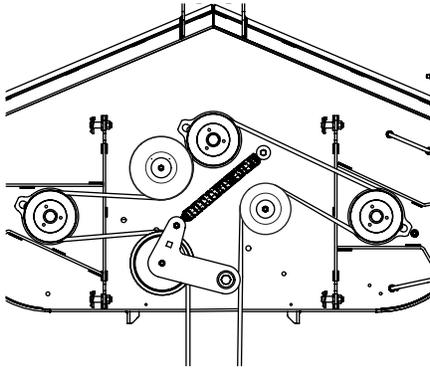


Figure 4-16

Replacing the Blades

⚠ WARNING
Before performing any maintenance, disengage the PTO, engage the parking brake lever, turn the ignition key to the OFF position and remove the key from the switch. Protect your hands by using heavy gloves when handling the blades. When servicing the mower deck, be careful not to cut yourself on the sharpened blades.

- Remove the deck as instructed in the Deck Removal section.
- Jack up the front of the mowing deck about one foot and block it in that position.
- Wrap a rag around one end of the blade (a) and grasp it to prevent it from turning, or secure the blade (a) by placing a block of wood (b) between the blade (a) and the deck housing (c). See Figure 4-17.

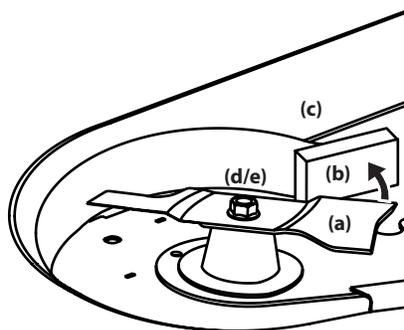


Figure 4-17

- Remove the flange lock nut (d) and flat washer (e) at the blade (a) and remove the blade.
- To replace the blade reverse the above process and tighten nut to 90-110 ft-lbs.

Note: When replacing the blade, be sure to install the blade with the side of the blade marked "Bottom" or "Grass Side" (or with a part number stamped in it) facing the ground when the mower is in the operating position.

⚠ WARNING
Never mow with dull blades. Blades that are bent should be replaced. The cutting blades are sharp and can cause severe injury. Wrap the cutting surface of the blade with a rag to avoid injury.

Sharpening the Blades

- Set the parking brake.
- Clean any debris from the blades. Keep blades sharp and free of build up at all times.
- To properly sharpen the cutting blades, remove equal amounts of metal from both ends of the blades along the cutting edges, parallel to the trailing edge, at a 25°-30° angle. Always grind each cutting blade edge equally to maintain proper blade balance. See Figure 4-18.

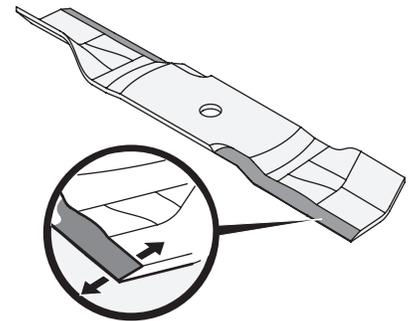


Figure 4-18

⚠ WARNING
If a blade is bent or otherwise damaged, replace the blade with a new one. Use only original equipment blades.

⚠ WARNING
A poorly balanced blade will cause excessive vibration, may damage the machine and/or result in personal injury.

- Test the blade's balance using a blade balancer. Grind metal from the heavy side until it balances evenly.
- Note:** When replacing the blade, be sure to install the blade with the side of the blade marked "Bottom" or "Grass Side" (or with a part number stamped in it) facing the ground when the mower is in the operating position.

⚠ WARNING
Use a torque wrench to tighten the blade spindle hex flange nut to between 90-110 ft-lbs.

Changing the Spindle Assembly

1. Remove the deck as instructed in the Deck Removal section.
2. Jack up the front of the mowing deck about one foot and block it in that position.
3. Remove the deck cover.
4. Remove the drive belts. See Replacing the Deck belt.
5. Remove the blade. See Replacing the Blades.
6. Remove the hex lock screw (a) and flat washer (b) securing the spindle pulley (c) to the spindle assembly (d). See Figure 4-19.

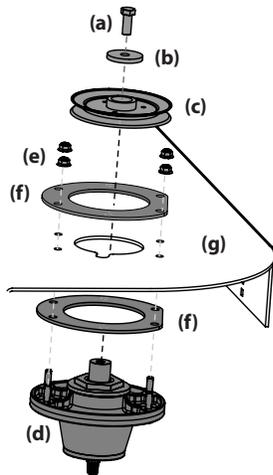


Figure 4-19

7. Remove the four (4) flange lock nuts (e) securing the spindle assembly (d) and the two support plates (f) to the deck shell (g). See Figure 4-19.
8. Reverse the process to install the spindle assembly. When installing the new spindle assembly be sure to install the hardware exactly as shown in Figure 4-19. Torque the hex lock screws (a) to 90-110 ft-lbs and the flange lock nuts (e) to 13-20 ft-lbs.

Changing the Transmission Drive Belt

Several components must be removed and special tools used in order to change the mower's transmission drive belt. See your authorized dealer to have the transmission drive belt replaced.

Mower Creeping

Creeping is the slight forward or backward movement of the mower when the throttle is on and the drive levers are in the neutral position. If your mower creeps, adjust the neutral control as follows:

1. Remove the four screws (a) that secure the front panel (b) and remove the front panel (b). See Figure 4-20.

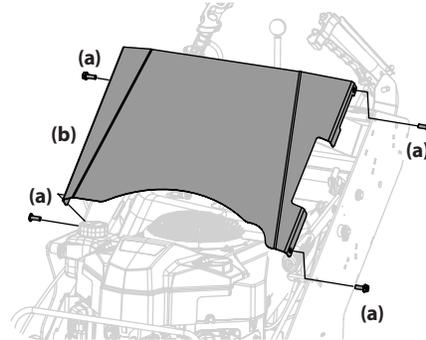


Figure 4-20

2. Adjust the tracking knob (a) until the threaded rod (b) is flush with the end. See Figure 4-21. The length of the spring should be approximately 3-1/2" for proper adjustment.

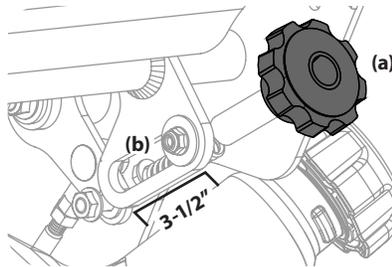


Figure 4-21

Note: The tracking knob is left-hand threaded, turn right to loosen and left to tighten.

3. Move the neutral lock levers (a) to the OPEN position. See Figure 4-22.

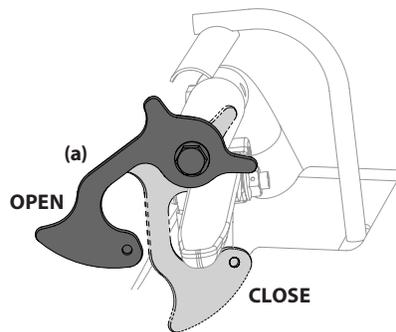


Figure 4-22

4. Loosen the jam nut (a) and zero out the transmission. See Figure 4-23. Perform on both sides of the mower.

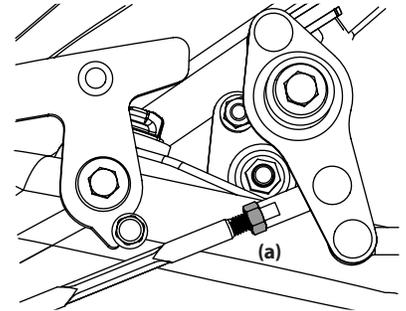


Figure 4-23

5. Move the neutral lock levers into the CLOSED position. See Figure 4-22.
6. Loosen the jam nut (a) and adjust the rod until the steering lever (b) is seated in the neutral lock lever (c). See Figure 4-24.

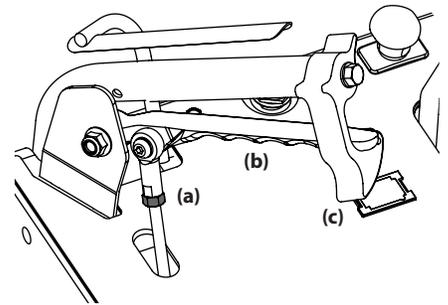


Figure 4-24

7. CLOSE the neutral lock levers (see Figure 4-22) and move the speed control lever to verify that there is no creeping. If the mower still creeps, try the adjustment again.

Mower Tracking

If your mower tracks to the left or right, a tracking adjustment is needed.

To adjust the tracking, use the tracking knob on the back of the mower and follow these instructions:

1. If the mower tracks (pulls) to the right, rotate the tracking knob to the left in 1/4-turn increments until the mower tracks straight. See Figure 4-25. Turn left to go left.

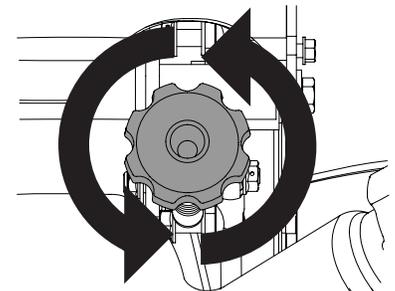


Figure 4-25

2. If the mower tracks (pulls) to the left, rotate the tracking knob to the right in 1/4-turn increments until the mower tracks straight. See Figure 4-25. Turn right to go right.

Troubleshooting

Excessive vibration

1. Cutting blade loose or unbalanced.
 - Tighten blade and spindle.
2. Damaged or bent cutting blade.
 - Replace blade.

Uneven cut

1. Deck not properly leveled.
 - Perform side-to-side deck adjustment.
2. Cutting blade dull or damaged.
 - Sharpen or replace cutting blade.
3. Uneven tire pressure.
 - Check and correct tire pressure in the rear tires.

Mower will not mulch grass

1. Engine speed too low.
 - Place throttle in FAST (rabbit) position.
2. Wet grass.
 - Do not mulch when grass is wet.
3. Excessively high grass.
 - Mow once at a high cutting height, then mow again at desired height or make a narrower cutting swath.
4. Dull blade.
 - Sharpen or replace blade.

Mower creeping

1. Neutral control linkage needs adjusted.
 - Adjust neutral control linkage.

Mower drifting

1. Mower tracking needs adjusted.
 - Adjust mower tracking.

Engine fails to start

1. PTO/Blade engaged.
 - Place blade engage lever in disengaged (OFF) position.
2. Blown fuse.
 - Replace fuse(s).
3. Parking brake not engaged.
 - Engage parking brake.
4. See Engine Operator's Manual.

Notes

Part Number	Description
954-05703	36" Deck Belt
954-05812	Drive Belt
942-05458	Hi-Lift Blade, 18.5 (36" Deck)
618-07406	Deck Spindle
731-13254	Deck Skid Guard, 36" Deck
751-15884	Gas Cap
946-05434	Throttle Control Cable (If Equipped)
946-05341B	Choke Control (If Equipped)
925-06908	Ignition Key
946-05420B 946-05421B	Park Brake Cable, Left Park Brake Cable, Right
931-05396C	Chute Assembly
634-05446	Rear Wheel Assembly, 36" Decks, 18 x 6.5-8
634-05413A	Front Wheel Assembly, 11 x 4-5

Attachments & Accessories

Part Number	Description
59A50009150	Double Wheel Sulky
59A50008150	Single Wheel Sulky
59C50004150	Bagger
59A50003150	Mulch Kit
59A50006150	Discharge Restrictor Kit
59B50005150	LED Light Kit
59A50007150	Mesh Storage Bag

MTD Product Warranty

1. Statutory Warranty

- 1.1 If you are a “consumer” pursuant to the Australian Consumer Law, then MTD Products Australia Pty Ltd ACN 004 873 572 (**MTD**) confirms the following: *Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.*
- 1.2 Your right to replacement, refund or compensation under the Australian Consumer Law may be against MTD and/or the party that supplied the relevant product to you, as specified in the Australian Consumer Law.
- 1.3 The benefits provided to you by this Warranty are in addition to other rights and remedies available to you under the law.

2. Contractual Warranty

- 2.1 In addition to the rights and remedies you have under law :

MTD Products Australia Pty Ltd
of 6-8 Zenith Road, Dandenong South, Victoria 3175
Email: enquiries@mtdproducts.com
Telephone: 1300 951 594

provides the following additional contractual warranty in support of the products listed in Table A (**MTD Product**), supplied by MTD or an authorised MTD dealer within Australia to you.

- 2.2 Subject to the terms and conditions of the warranty set out in this document (**Warranty**), MTD warrants that the MTD Product will be free from defects in materials and workmanship for the period set out in Table A below (**Warranty Period**).
- 2.3 The Warranty Period will commence on the date you purchase the MTD Product from MTD or an MTD dealer. The Warranty Period varies, as set out in the Table A, according to:
- (a) the type of MTD Product;
 - (b) the part of the MTD Product that is defective; and
 - (c) whether the MTD Product is:
 - (i) solely used for personal and domestic purposes, which excludes any use in connection with a business or trade (**Residential Use**); or
 - (ii) not solely used for personal and domestic purposes, or is used in connection with a business or trade (**Commercial Use**).

TABLE A

LAWN MOWERS	General Warranty Period Domestic Use	General Warranty Period Commercial	Engine Warranty Period	Attachments Warranty Period
	Excludes engine, attachments and normal wear parts			
Rover Steel Deck / Rover Engine/Endeavor	2 Years	90 Days	5 Year Domestic / 90 Day Commercial	N/A
Steel Deck / Non-Rover Engine	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	Nil
Rover Steel Deck / Rover Engine	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	N/A
Rover Steel Deck / Non-Rover Engine	5 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Rover Alloy Deck / Rover Engine	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	N/A
Rover Alloy Deck / Non-Rover Engine	5 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Cylinder Mowers / Petrol	5 Years	Nil	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Cylinder Mowers / Battery	2 Years	Nil	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
HANDHELD EQUIPMENT	General Warranty Period Domestic Use	General Warranty Period Commercial	Engine Warranty Period	Attachments Warranty Period
	Excludes engine, attachments and normal wear parts			
Line Trimmers	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Blowers	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Chainsaws	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Hedge Trimmer	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Edger	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Rover Edger	5 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Rover Powered by CORE	General Warranty Period Domestic Use	General Warranty Period Commercial	Charger & Battery Warranty Period	Attachments Warranty Period
	Excludes motor, attachments and normal wear parts			
Rover CORE Powered Product	5 Years	90 Days	3 Years Domestic / 90 Day Commercial	N/A
SEASONAL	General Warranty Period Domestic Use	General Warranty Period Commercial	Engine Warranty Period	Attachments Warranty Period
	Excludes engine, attachments and normal wear parts			
Log Splitter	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Rover Log Splitters Rover Engine	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	N/A
Rover Log Splitters Non-Rover Engine	5 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Chipper Shredders	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Rover Chipper Shredders	5 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Chipper Shredder Vacs	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Rover Chipper Shredder Vacs Rover Engine	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	N/A
Rover Chipper Shredder Vacs Non-Rover Engine	5 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Tillers	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Rover Tillers Rover Engine	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	N/A
Rover Tillers Non-Rover Engine	5 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A
Wheeled String Trimmer	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	N/A

TABLE A CONTINUED

ROVER RIDE ONS & ZERO- TURNS	General Warranty Period Domestic Use	General Warranty Period Commercial Use	Engine Warranty Period	Attachments Warranty Period
	Excludes engine, attachments and normal wear parts			
Micro Rider 24"	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover Micro Rider 24"	5 Years	90 Days	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Mini Rider 30"	2 Years	90 Days	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover Mini Rider 30"	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover Mini Rider 30"Hydrostatic Transmission	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
439/38	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover 420/38	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover Rancher 547/38	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover Raider 17/42	5 Years	90 Days	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover Rancher 547/42	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover Lawn King 547/42	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover Lawn King 18/42 Kawasaki	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover Lawn King 24/42 Kawasaki	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover RZT L 34	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover RZT L 42 Kohler	5 Years	90 Days	3 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover RZT L 46 Kawasaki	5 Years	90 Days	2 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover RZT S 46 Kohler	5 Years	90 Days	3 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover RZ L 42 679cc	5 Years	90 Days	5 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
Rover RZT 50 Kohler	5 Years	90 Days	3 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
	5 Year fabricated deck shell.			
Rover RZ L 46 Kawasaki	5 Years	90 Days	3 Year Domestic / 90 Day Commercial	1 Year Domestic / 90 Day Commercial
	5 Year fabricated deck shell.			

TABLE A CONTINUED

CUB CADET RIDE ONS & ZERO-TURNS	General Warranty Period Domestic Use	General Warranty Period Commercial Use	Engine Warranty Period	Attachment Warranty Period
	Excludes engine, attachments and normal wear parts			
CC30 e (Electric Rider)	3 Years	90 Days	N/A	1 Year Domestic / Nil Commercial
LT42 e (Electric Rider)	3 Years	90 Days	N/A	1 Year Domestic / Nil Commercial
LX 42 Kohler	6 Years	90 Days	6 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
LX 42 EFI Cub Cadet	6 Years	90 Days	6 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
LX 46 Kohler	6 Years	90 Days	6 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
LX 54 Kohler	6 Years	90 Days	6 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
RZT L 42 Kohler	6 Years	90 Days	6 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
RZT S 42 Kohler	6 Years	90 Days	6 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
RZT L 50 Kohler	6 Years	90 Days	6 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
RZT S 50 Kohler	6 Years	90 Days	6 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
RZT S 46 Kohler	6 Years.	90 Days	6 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
ZT2 L 54 Kawasaki	3 Years.	90 Days	3 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
Z-Force LZ 54 Kohler	3 Years.	1 Year	3 Year Domestic / 90 Day Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
Z-Force LX 48 Kohler	3 Years.	1 Year	3 Year Domestic / 1 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
Z-Force SX 48 Kohler	3 Years.	1 Year	3 Year Domestic / 1 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
Z-Force LX 60 Kohler	3 Years.	1 Year	3 Year Domestic / 1 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
Z-Force SX Kawasaki Models	3 Years.	2 Years	3 Year Domestic / 2 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
ZTX5 Kawasaki Models	3 Years.	2 Years	3 Year Domestic / 2 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			

TABLE A CONTINUED

CUB CADET COMMERCIAL	General Warranty Period Domestic Use	General Warranty Period Commercial Use	Engine Warranty Period	Attachments Warranty Period
	Excludes engine, attachments and normal wear parts			
Handheld				
Brush Cutter	3 Years	1 year	1 year	N/A
Hedge Trimmer	3 Years	1 year	1 year	N/A
CUB CADET COMMERCIAL PRO Z	General Warranty Period Domestic Use	General Warranty Period Commercial Use	Engine Warranty Period	Attachments Warranty Period
	Excludes engine, attachments and normal wear parts			
PRO Z 148 S	3 Years.	2 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
PRO Z 154 L	3 Years.	2 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
PRO Z 154 S	3 Years.	2 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
PRO Z 554 S	3 Years.	3 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
PRO Z 760 L	3 Years.	3 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
PRO Z 760 L	3 Years.	3 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
PRO Z 760 S	3 Years.	3 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
PRO Z 972 S	3 Years.	3 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
PRO Z 972 SD & SDL	3 Years.	3 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
Pro HW300 Hydro Walk Kawasaki	3 Years.	2 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			
Pro X 648 Kawasaki	3 Years	2 Years	3 Year Domestic / 3 Year Commercial	1 Year Domestic / Nil Commercial
	5 Year fabricated deck shell.			

TABLE A CONTINUED

WOLF- Garten	General Warranty Period Domestic & Commercial Use	Engine Warranty Period	Attachments Warranty Period
WOLF-Garten multi-Star® unit system, multi-star® Minis and the multi-star® tree care without ladder	Lifetime	NA	NA
Hand tools and all manually controlled trimmers	10 years	NA	NA

2.4 For the purpose of Table A:

- (a) “*Attachments*” means any component of a product that is not a supplied as a standard component (i.e. it is purchased separately)
- (b) Where a primary or secondary school purchases an MTD Product for use by that school, that use will be classified as Residential Use;
- (c) Honda, Briggs & Stratton and Kohler & Kawasaki engines are “*NonRover*” engines;
- (d) Normal Wear Parts include batteries, blades, blade bolts, V-belts, line heads, spark plugs and filters, as classified by MTD; and
- (e) “*rolling chassis*” means the frame plus the "running gear" like handle bars, wheels, driveshaft and axle.

2.5 In the event of dispute, MTD will determine whether the MTD Product was used for a Residential Use or Commercial Use.

3. Exclusions and limitations

3.1 The Warranty ceases to apply to any MTD Product if it is:

- (a) serviced or repaired using non-genuine parts (being parts or components not originally manufactured or imported into Australia by MTD); or
- (b) assembled, serviced, modified or adjusted by a person not appropriately trained in the assembly, servicing, modification or adjustment of the MTD Product, as determined by MTD.

3.2 This Warranty does not apply to, or in any way cover:

- (a) normal wear and tear;
- (b) defects in or related to the battery;
- (c) any defect that was brought to your attention, or would reasonably have been revealed to you if you had conducted an examination, before acquiring the MTD Product;
- (d) any defect in, or defect caused by, parts or components that were not:
 - (i) manufactured or imported into Australia by MTD;

- (ii) supplied by a supplier approved by MTD; or
- (iii) approved by MTD for use with the MTD Product;
- (e) any failure arising from accident, abuse, act of God, fire, sabotage, vandalism, contaminated fluids or neglect or failure to operate, store and/or maintain and service the MTD Product in accordance with the instruction manual supplied with the MTD Product;
- (f) any parts or services required for the normal and regular maintenance of the MTD Product e.g. lubricants;
- (g) normal adjustments which are noted in the instruction manual supplied with the MTD Product;
- (h) any defect caused by the engine being turned other than in accordance with the instruction manual supplied with the MTD Product;
- (i) any alleged defect in the MTD Product that MTD or an authorised MTD dealer cannot establish after testing and inspection;
- (j) any MTD Product that has been used other than for the purpose for which it was designed;
- (k) any MTD Product that has been overloaded or involved in an accident; or
- (l) any defect arising from the use of:
 - (i) fuel or fuel and oil mix for the engine;
 - (ii) chain and bar oil for the oil pump; or
 - (iii) lubricating oil in a four-stroke engine;

in the MTD Product other than in accordance with the instruction manual supplied with the MTD Product.

3.3 This Warranty:

- (a) is not transferable; and
- (b) does not apply to an MTD Product acquired by way of auction, or online, or from a person other than MTD or an authorised MTD dealer.

3.4 This warranty does not cover the cost of claiming under the warranty, including any freight or delivery costs. Such costs must be paid by you.

3.5 Despite any other provision of this Warranty, MTD's liability arising from, under or in connection with this Warranty is limited as set out in paragraph 5.1. Except as expressly set out in paragraph 5 and subject to law, MTD is not liable under this Warranty for any damages, losses, costs or expenses including, without limitation, loss of profit, loss of production or any financial or economic loss, and other indirect or consequential loss, which may be suffered by you or by any third party arising out of or in any way connected with any defect in an MTD Product.

3.6 Except to the extent expressly set out in this warranty, and subject to law, MTD does not make any promise or representation as to the quality, performance, or freedom from defects, of any MTD Product.

4. How to claim

4.1 To make a claim under this Warranty you must promptly, and at your own expense, take your:

- (a) MTD Product;
- (b) proof of purchase with purchase date;
- (c) evidence of warranty registration; and
- (d) full details of the alleged MTD Product defect.

to an authorised MTD dealer upon discovery of any defect in the MTD Product, and within the relevant Warranty Period. Your nearest MTD dealer can be found at cubcadet.com.au, rover.com.au or mtd.com.au. You must also provide your name, address and phone number to the MTD dealer to whom you return the MTD Product.

4.2 If you have any inquiries about making a claim, please contact the MTD dealer from whom you purchased your MTD Product or your nearest MTD dealer.

5. MTD's Obligations

5.1 The obligations of MTD under this warranty will be limited to one of the following at the election of MTD:

- (a) repair of the MTD Product;
- (b) provision of a replacement MTD Product; or
- (c) a refund of the price you paid for the MTD Product.

5.2 MTD reserves the right to replace the defective parts or components of an MTD Product with parts and components of similar quality, grade and composition where an identical part or component is not available.