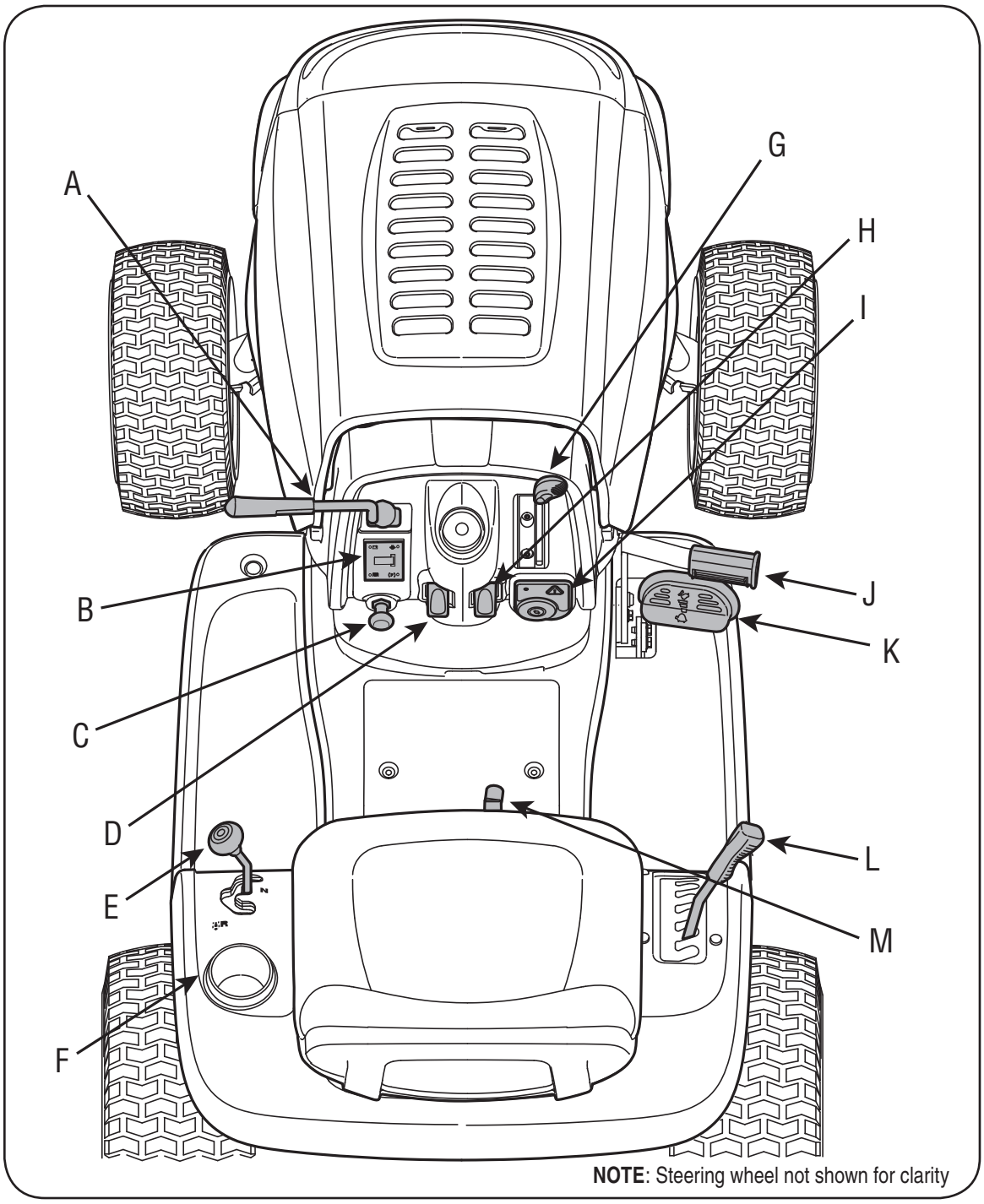
4

Operating Your Lawn Tractor

NOTE: Any reference in this manual to the RIGHT or LEFT side of the tractor is observed from operator's position.

Know Your Lawn Tractor



NOTE: Steering wheel not shown for clarity

Figure 8

A	PTO (Blade Engage) Lever†	G	Throttle Lever
	PTO (Blade Engage) Knob†	H	Cruise Control Button
B	Systems Indicator Monitor†/Ammeter	I	Ignition Switch Module
C	Choke Knob†	J	Brake Pedal
D	Parking Brake Button	K	Drive Pedal
E	Shift Lever	L	Deck Lift Lever
F	Cup Holder	M	Seat Adjustment Lever†

† If so equipped

NOTE: Any reference in this manual to the RIGHT or LEFT side of the tractor is observed from operator's position.

Throttle Control Lever

The throttle control lever is located on the right side of the tractor's dash panel. This lever controls the speed of the engine and, on some models, when pushed all the way forward, the choke control also. When set in a given position, the throttle will maintain a uniform engine speed. See Figure 9.

IMPORTANT: When operating the tractor with the cutting deck engaged, be certain that the throttle lever is always in the FAST (rabbit) position.

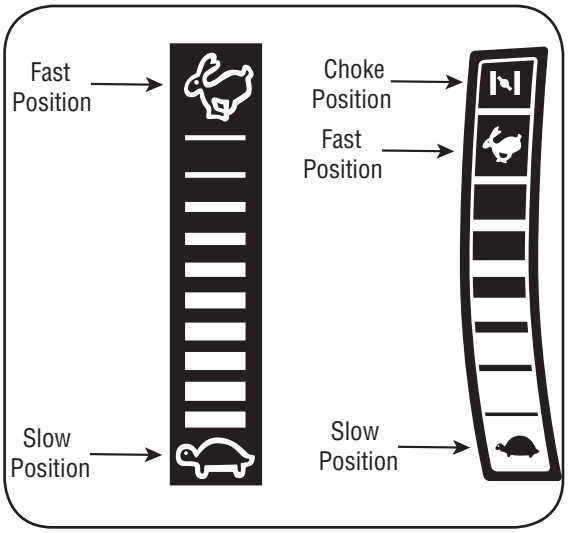
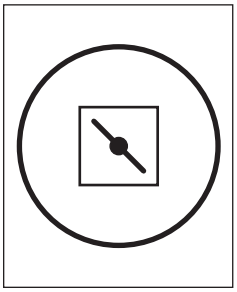


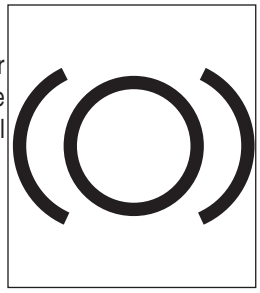
Figure 9

Choke Control



On some models, moving the throttle lever all the way forward activates the engine's choke control. On all other models, the choke control can be found on the left side of the dash panel and is activated by pulling the knob outward. Activating the choke control closes the choke plate on the carburetor and aids in starting the engine. Refer to **Starting The Engine in this section** of the manual for detailed starting instructions.

Brake Pedal



The brake pedal is located on the right front side of the tractor above the drive pedal along the running board. The brake pedal can be used for sudden stops or setting the parking brake.

NOTE: The brake pedal must be fully depressed to activate the safety interlock switch when starting the tractor.

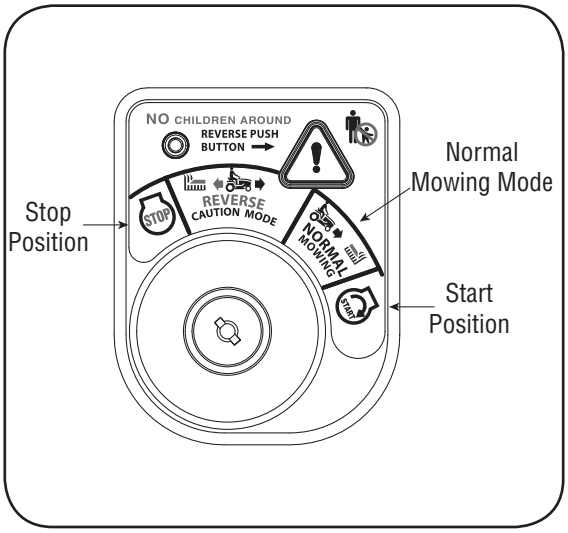


Figure 10

IMPORTANT: Prior to operating the tractor, refer to both **Safety Interlock Switches** and **Starting The Engine** in this section of the manual for detailed instructions regarding the Ignition Switch Module and operating the tractor in **REVERSE CAUTION MODE**.

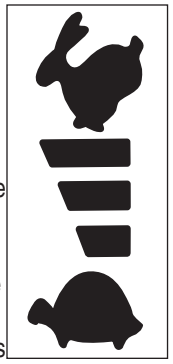
Ignition Switch Module

WARNING: Never leave a running machine unattended. Always disengage PTO, move shift lever into neutral position, set parking brake, stop engine and remove key to prevent unintended starting.

To start the engine, insert the key into the ignition switch and turn clockwise to the **START** position. Release the key into the **NORMAL MOWING MODE** position once the engine has fired.

To stop the engine, turn the ignition key counterclockwise to the OFF position. See Figure 10.

Drive Pedal



The drive pedal is located below the brake pedal on the right front side of the tractor along the running board. Depress the drive pedal with your right foot when the tractor shift lever is in either FORWARD or REVERSE to cause the tractor to move. Ground speed is also controlled with the drive pedal. The further down the pedal is depressed, the faster the tractor will travel. The pedal will return to its original position when it's not depressed.

IMPORTANT: Always set the parking brake when leaving the tractor unattended.

4

Operating Your Lawn Tractor

WARNING

Never leave a running machine unattended. Always disengage PTO, move shift lever into neutral position, set parking brake, stop engine and remove key to prevent unintended starting.

IMPORTANT

Prior to operating the tractor, refer to both **Safety Interlock Switches** and **Starting The Engine** in this section of the manual for detailed instructions regarding the Ignition Switch Module and operating the tractor in **REVERSE CAUTION MODE**.

4

Operating Your Lawn Tractor

NOTE: The PTO (Blade Engage) knob must be in the disengaged (OFF) position when starting the engine, when traveling in reverse and if the operator leaves the seat.

NOTE: The PTO (Blade Engage) lever must be in the disengaged (OFF) position when starting the engine, when traveling in reverse and if the operator leaves the seat.

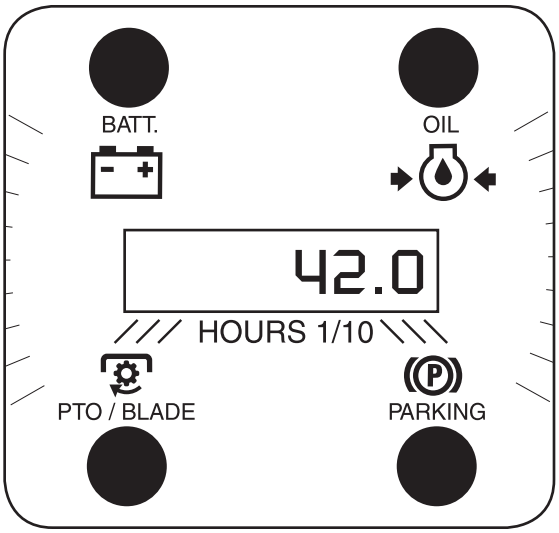


Figure 11

Systems Indicator Monitor (If Equipped)

LCD

Located in the center of the tractor's console, the systems indicator monitor records, and displays on its LCD, hours of tractor operation whenever the ignition key is rotated out of the STOP position.

The Indicator Monitor will also remind the operator of maintenance intervals for changing the engine oil. The LCD will alternately flash the recorded hours, "CHG" and "OIL" for five minutes, after every 50 hours of recorded operation elapse. The maintenance interval lasts for two hours (from 50-52, 100-102, 150-152, etc.). The LCD will also flash as described above for five minutes every time the tractor's engine has been started during this maintenance interval. Before the interval expires, change the crankcase oil level as instructed in this Operator's Manual.

Brake

If the Brake light illuminates when attempting to start the tractor's engine, depress the brake pedal.

PTO (Blade Engage)

If the PTO light illuminates when attempting to start the tractor's engine, move PTO lever into the disengaged (OFF) position.

Oil

It is normal for the Oil light to illuminate while the engine is **cranking** during start-up, but if it illuminate's during operation, **while the engine is running**, stop the tractor immediately and check the crankcase oil level as instructed in this Owner's Manual.

Battery

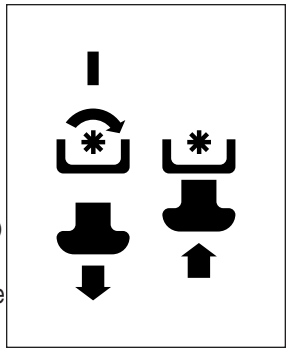
It is normal for the Battery light to illuminate while the engine is **cranking** during start-up, but if it illuminate's during operation, **while the engine is running**, the battery is in need of a charge or the engine's charging system is not generating sufficient amperage. Refer to the **MAINTENANCE** section of this manual for the proper battery charging procedure or have the charging system checked by your service dealer.

Ammeter

The ammeter measures the electrical output of the engine's charging system. Under normal operating conditions, with engine at full throttle, the ammeter should indicate positive charge.

Electric PTO (Blade Engage) Knob (If Equipped)

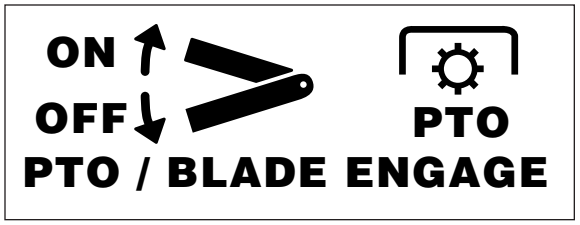
To engage the power to the cutting deck or other (separately available) attachments on models equipped with an electric PTO, pull outward on the PTO (Blade Engage) knob. Push the PTO (Blade Engage) knob inward to disengage the power to the cutting deck.



NOTE: The PTO (Blade Engage) knob **must** be in the disengaged (OFF) position when starting the engine, when traveling in reverse and if the operator leaves the seat.

PTO (Blade Engage) Lever

On models equipped with a manual PTO (Blade Engage), the PTO (Blade Engage) lever is located on the left side of the dashboard next to the steering wheel. Move the PTO (Blade Engage) lever forward to engage the power to the cutting deck or other (separately available) attachments; move the PTO (Blade Engage) lever rearward to disengage the power to the attachments.



NOTE: The PTO (Blade Engage) lever **must** be in the disengaged (OFF) position when starting the engine, when traveling in reverse and if the operator leaves the seat.

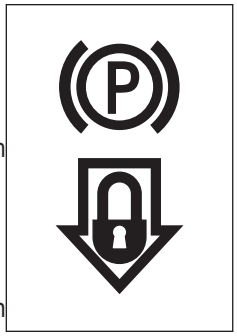
Seat Adjustment Lever (If Equipped)

To adjust the seat forward or backward on units equipped with a quick-adjust seat, slide the seat adjustment lever to the left and reposition the seat to the desired position. Once a comfortable position is found, release the seat adjustment lever to lock the seat in place. Refer to the Adjusting Your Lawn Tractor section of this manual for more detailed instructions on all seat adjustments.

Deck Lift Lever

Found on your tractor's right fender, the deck lift lever is used to change the height of the cutting deck. To use, move the lever to the left, then place in the notch best suited for your application.

Parking Brake Button

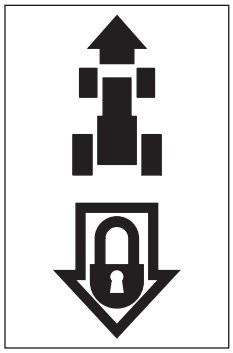


To set the parking brake, fully depress the brake pedal and push the parking brake button in. Hold the button in while taking your foot off the brake pedal. Both the parking button and the brake pedal will then stay depressed. To release the parking brake, depress the brake pedal slightly. The parking brake button will then return to its original position.

NOTE: The parking brake must be set if the operator leaves the seat with the engine running or the engine will automatically shut off.

IMPORTANT: Always set the parking brake when leaving the tractor unattended.

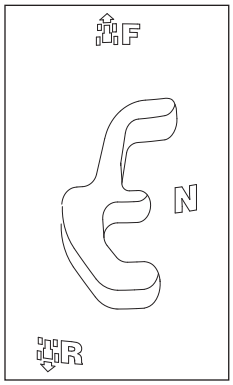
Cruise Control Button



The cruise control button is located on the tractor dash panel to the left of the ignition switch. Push the cruise control button while traveling forward at a desired speed. While holding the button in, release pressure from the drive pedal. This will engage the cruise control and allow the tractor to remain at that speed without applying pressure to the drive pedal. Depress the brake pedal or the drive pedal to deactivate cruise control. Refer to **Setting the Cruise Control** on page 18 this manual for detailed instructions regarding the cruise control feature.

NOTE: Cruise control can NOT be engaged at the tractor's fastest ground speed. If the operator should attempt to do so, the tractor will automatically decelerate to the fastest optimal mowing ground speed.

Shift Lever



The shift lever is located on the left side of the fender and has three positions, FORWARD, NEUTRAL and REVERSE. The brake pedal must be depressed and the tractor must not be in motion when the moving shift lever.

IMPORTANT: Never force the shift lever. Doing so may result in serious damage to the tractor's transmission.

Safety Interlock Switches

This tractor is equipped with a safety interlock system for the protection of the operator. If the interlock system should ever malfunction, do not operate the tractor. Contact an authorized MTD service dealer.

- The safety interlock system prevents the engine from cranking or starting unless the parking brake is engaged, and the PTO (Blade Engage) knob (or lever) is in the disengaged (OFF) position.
- The engine will automatically shut off if the operator leaves the seat before engaging the parking brake.

Models with Manual PTO (Blade Engage)

- The engine will automatically shut off if the operator leaves the tractor's seat with the PTO (Blade Engage) lever in the engaged (ON) position, regardless of whether the parking brake is engaged.
- With the ignition key in the **NORMAL MOWING** position, the engine will automatically shut off if the PTO (Blade Engage) lever is moved into the engaged (ON) position with the shift lever in Reverse.

Models with Electric PTO (Blade Engage)

- The electric PTO (Blade Engage) clutch will automatically shut off if the operator leaves the tractor's seat with the PTO (Blade Engage) knob in the engaged (ON) position, regardless of whether the parking brake is engaged.
- With the ignition key in the NORMAL MOWING position, the electric PTO (Blade Engage) clutch will automatically shut off if the PTO (Blade Engage) knob is moved into the engaged (ON) position with the shift lever in Reverse.

WARNING: Do not operate the tractor if the interlock system is malfunctioning. This system was designed for your safety and protection.

Reverse Caution Mode

WARNING: Use extreme caution while operating the tractor in the REVERSE CAUTION MODE. Always look down and behind before and while backing. Do not operate the tractor when children or others are around. Stop the tractor immediately if someone enters the area.

4

Operating Your Lawn Tractor

WARNING

Do not operate the tractor if the interlock system is malfunctioning. This system was designed for your safety and protection.

Use extreme caution while operating the tractor in the REVERSE CAUTION MODE. Always look down and behind before and while backing. Do not operate the tractor when children or others are around. Stop the tractor immediately if someone enters the area.

4

Operating Your Lawn Tractor

WARNING

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

Do not operate the tractor if the interlock system is malfunctioning. This system was designed for your safety and protection.

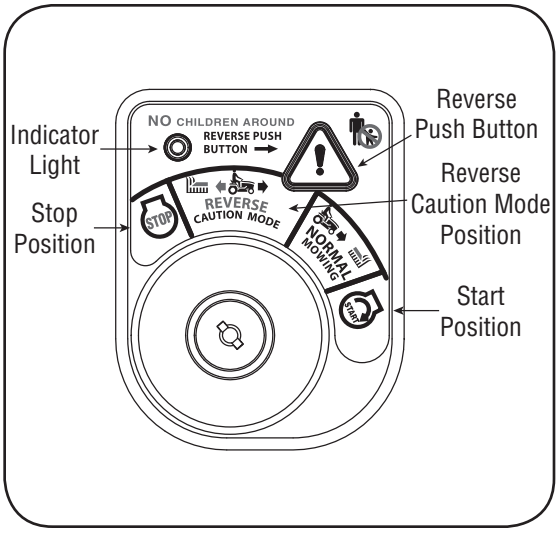


Figure 12

The **REVERSE CAUTION MODE** position of the key switch module allows the tractor to be operated in reverse with the blades (PTO) engaged.

IMPORTANT: Mowing in reverse is not recommended.

To use the **REVERSE CAUTION MODE**:

IMPORTANT: The operator MUST be seated in the tractor seat.

1. Start the engine as previously instructed in this Operator's Manual.
2. Turn the key from the **NORMAL MOWING** (Green) position to the **REVERSE CAUTION MODE** (Yellow) position of the key switch module. See Figure 12.
3. Depress the REVERSE PUSH BUTTON (Orange, Triangular Button) at the top, right corner of the key switch module. The red indicator light at the top, left corner of the key switch module will be **ON** while activated. See Figure 12.
4. Once activated (indicator light **ON**), the tractor can be driven in reverse with the cutting blades (PTO) engaged.
5. Always look down and behind before and while backing to make sure no children are around.
6. After resuming forward motion, return the key to the **NORMAL MOWING** position.

IMPORTANT: The **REVERSE CAUTION MODE** will remain activated until:

a. The key is placed in either the **NORMAL MOWING** position or **STOP** position.
b. The operator leaves the seat (Models with Electric PTO ONLY).
c. The operator engages the parking brake by fully depressing the brake pedal and holding it down while gently pushing the parking brake button inward (Models with Manual PTO ONLY).

WARNING

AVOID SERIOUS INJURY OR DEATH

- GO UP AND DOWN SLOPES, NOT ACROSS.
- AVOID SUDDEN TURNS.
- DO NOT OPERATE THE UNIT WHERE IT COULD SLIP OR TIP.
- IF MACHINE STOPS GOING UPHILL, STOP BLADE(S) AND BACK DOWNHILL SLOWLY.
- DO NOT MOW WHEN CHILDREN OR OTHERS ARE AROUND.
- NEVER CARRY CHILDREN, EVEN WITH BLADES OFF.
- LOOK DOWN AND BEHIND BEFORE AND WHILE BACKING.
- KEEP SAFETY DEVICES (GUARDS, SHIELDS, AND SWITCHES) IN PLACE AND WORKING.
- REMOVE OBJECTS THAT COULD BE THROWN BY THE BLADE(S).
- KNOW LOCATION AND FUNCTION OF ALL CONTROLS.
- BE SURE BLADE(S) AND ENGINE ARE STOPPED BEFORE PLACING HANDS OR FEET NEAR BLADE(S).
- BEFORE LEAVING OPERATOR'S POSITION, DISENGAGE BLADE(S), PLACE THE SHIFT LEVER IN NEUTRAL, ENGAGE BRAKE LOCK, SHUT ENGINE OFF AND REMOVE KEY.

READ OPERATOR'S MANUAL

Engaging the Parking Brake

To engage the parking brake:

1. Fully depress the brake pedal and hold it down with your foot while gently pushing the parking brake button inward.
2. Hold the parking brake button in while removing your foot from the brake pedal.
3. Once engaged, the parking brake button and the brake pedal will lock in the "down" position.

To disengage the parking brake:

1. Slightly depress the brake pedal.

NOTE: The parking brake must be engaged if the operator leaves the seat with the engine running or the engine will automatically shut off.

Setting the Cutting Height

1. Select the height position of the cutting deck by placing the deck lift lever in any of the six different cutting height notches on the right side of the fender.
2. Adjust the deck wheels so that they are between ¼-inch and ½-inch above the ground when the tractor is on a smooth, flat surface such as a driveway.

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

NOTE: The deck wheels are an anti-scalp feature of the deck and are not designed to support the weight of the cutting deck.

Refer to **Leveling the Deck** on page 20 of this manual for more detailed instructions regarding various deck adjustments.

Starting the Engine

WARNING: Do not operate the tractor if the interlock system is malfunctioning. This system was designed for your safety and protection.

NOTE: Refer to the **TRACTOR SET-UP** on page 8 of this manual for Gasoline and Oil fill-up instructions.

1. Insert the tractor key into the ignition switch.
2. Place the PTO (Blade Engage) knob (or lever) in the disengaged (OFF) position.
3. Engage the tractor's parking brake.
4. Activate the choke control.
5. Turn the ignition key clockwise to the START position. After the engine starts, release the key. It will return to the ON position.

IMPORTANT: 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.

6. After the engine starts, deactivate the choke control and place the throttle control in the FAST position.

NOTE: Do NOT leave the choke control on while operating the tractor. Doing so will result in a "rich" fuel mixture and cause the engine to run poorly.

Stopping the Engine

WARNING: If you strike a foreign object, stop the engine, disconnect the spark plug wire(s) and ground against the engine. Thoroughly inspect the machine for any damage. Repair the damage before restarting and operating

1. If the blades are engaged, place the PTO (Blade Engage) knob (or lever) in the disengaged (OFF) position.
2. Turn the ignition key counterclockwise to the STOP position.
3. Remove the key from the ignition switch to prevent unintended starting.

Driving The Tractor

WARNING: Avoid sudden starts, ex-cessive speed and sudden stops.

WARNING: Do not leave the seat of the tractor without first placing the PTO (Blade Engage) knob (or lever) in the disengaged (OFF) position, depressing the brake pedal and engaging the parking brake. If leaving the tractor unattended, also turn the ignition key off and remove the key.

1. Depress the brake pedal to release the parking brake and let the pedal up.
2. Move the throttle lever into the FAST (rabbit) position.

IMPORTANT: Do NOT use the shift lever to change the direction of travel when the tractor is in motion. Always use the brake pedal to bring the tractor to a complete stop before shifting.

3. To move forward, place the shift lever in the FORWARD position, then slowly depress the drive pedal until the desired speed is achieved.

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Operating Your Lawn Tractor

WARNING

If you strike a foreign object, stop the engine, disconnect the spark plug wire(s) and ground against the engine. Thoroughly inspect the machine for any damage. Repair the damage before restarting and operating.

Avoid sudden starts, ex-cessive speed and sudden stops.

Do not leave the seat of the tractor without first placing the PTO (Blade Engage) knob (or lever) in the disengaged (OFF) position, depressing the brake pedal and engaging the parking brake. If leaving the tractor unattended, also turn the ignition key off and remove the key.

4

Operating Your Lawn Tractor

WARNING

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

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

4. To move in reverse, place the shift lever in the REVERSE position, check that the area behind is clear then slowly depress the drive pedal.

Driving On Slopes

Refer to the SLOPE GAUGE on page 3 to help determine slopes where you may operate the tractor safely.

WARNING: Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). The tractor could overturn and cause serious injury.

- Mow up and down slopes, NEVER across.
- Exercise extreme caution when changing direction on slopes.
- Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Avoid turns when driving on a slope. If a turn must be made, turn down the slope. Turning up a slope greatly increases the chance of a roll over.
- Avoid stopping when driving up a slope. If it is necessary to stop while driving up a slope, start up smoothly and carefully to reduce the possibility of flipping the tractor over backward.

Setting The Cruise Control

1. Place the shift lever in the FORWARD position, then slowly depress the drive pedal until the desired speed is achieved.
2. Lightly depress the cruise control button.
3. While continuing to hold the cruise button in, lift your foot from the drive pedal (you should feel the cruise latch engage).

Once engaged, the cruise control button and the drive pedal will lock in the “down” position, and the tractor will maintain the same forward speed.

NOTE: Cruise control can not be engaged at the tractor’s fastest ground speed. If the operator should attempt to do so, the tractor will automatically decelerate to the fastest optimal mowing ground speed.

Disengage the cruise control using one of the following methods:

1. Depress the brake pedal to disengage the cruise control and stop the tractor.
2. Lightly depress the drive pedal.

To change to the reverse direction when operating with cruise control, depress the brake pedal to disengage the cruise control and bring the tractor to a complete stop. Then place the shift lever in the REVERSE position and depress the drive pedal.

Engaging the Blades

Engaging the PTO (Blade Engage) transfers power to the cutting deck or other (separately available) attachments. To engage the blades, proceed as follows:

1. Move the throttle control lever to the FAST (rabbit) position.

Models with Manual PTO

2. a. Grasp the PTO (Blade Engage) lever and pivot it all the way forward into the engaged (ON) position.

Models with Electric PTO

b. Pull the PTO (Blade Engage) knob outward into the engaged (ON) position.

3. Keep the throttle lever in the FAST (rabbit) position for the most efficient use of the cutting deck or other (separately available) attachments

IMPORTANT: The engine (on models with a manual PTO) or electric PTO clutch (on models with an electric PTO) will automatically shut off if the PTO is engaged with the shift lever in position for reverse travel with the ignition key in the NORMAL MOWING position. Refer to Safety Interlock Switches on page 15.

Using the Deck Lift Lever

To raise the cutting deck, move the deck lift lever to the left, then place it in the notch best suited for your application. Refer to Setting The Cutting Height earlier in this section.

Mowing

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

The following information will be helpful when using the cutting deck with your tractor:

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.

- Do not mow at high ground speed, especially if a mulch kit or grass collector is installed.
- For best results it is recommended that the first two laps be cut with the discharge thrown towards the center. After the first two laps, reverse the direction to throw the discharge to the outside for the balance of cutting. This will give a better appearance to the lawn.
- Do not cut the grass too short. Short grass invites weed growth and yellows quickly in dry weather.
- Mowing should always be done with the engine at full throttle.
- Under heavier conditions it may be necessary to go back over the cut area a second time to get a clean cut.
- Do NOT attempt to mow heavy brush and weeds and extremely tall grass. Your tractor is designed to mow lawns, NOT clear brush.
- Keep the blades sharp and replace the blades when worn. Refer to **Cutting Blades** in the Maintaining Your Lawn Tractor section of this manual for proper blade sharpening instructions.

Mulching (If Equipped)

Select models come equipped with a mulch kit which incorporates special blades, already standard on the tractor, in a process of recirculating grass clippings repeatedly beneath the cutting deck. The ultra-fine clippings are then forced back into the lawn where they act as a natural fertilizer.

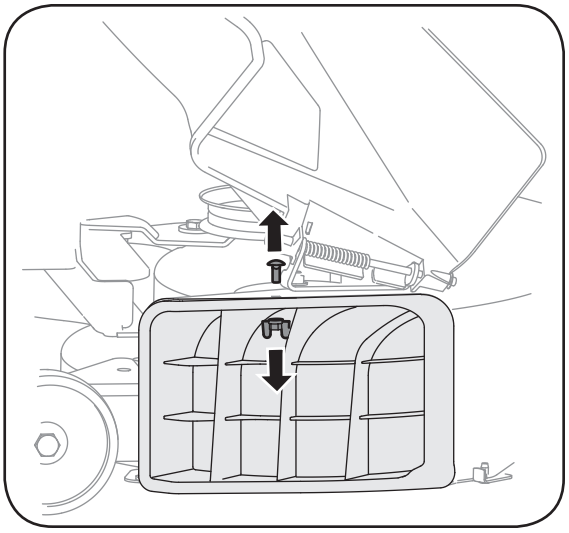

Figure 13

Observe the following points for the best results when mulching:

- Never attempt to mulch if the lawn is damp. Wet grass tends to stick to the underside of the cutting deck preventing proper mulching of the clippings.
- Do NOT attempt to mulch more than 1/3 the total height of the grass or approximately 1-1/2 inches. Doing so will cause the clippings to clump up beneath the deck and not be mulched effectively.
- Maintain a slow ground speed to allow the grass clippings more time to effectively be mulched.
- Always position the throttle control lever in the FAST (rabbit) position and allow it to remain there while mowing. Failing to keep the engine at full throttle places strain on the tractor's engine and does not allow the blades to properly mulch grass.

NOTE: It is not necessary to remove the discharge chute to operate the mower with the mulch kit installed.

To operate the cutting deck without mulching, simply remove the mulch plug by unthreading the plastic wing nut which fastens it to the cutting deck. This will allow the clippings to discharge out the side. See Figure 13.

Headlights

- The lamps are ON whenever the ignition key is moved out of the STOP position.
- The lamps turn OFF when the ignition key is moved to the STOP position.

4

Operating Your Lawn Tractor

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.

6

Maintaining Your Lawn Tractor

WARNING

Be sure to shut the engine off, remove ignition key, disconnect the spark plug wire(s) and ground against the engine to prevent unintended starting before removing the belt(s).

Avoid the possibility of a pinching injury. Do not place your fingers on the idler spring or between the belt and a pulley while removing the belt.

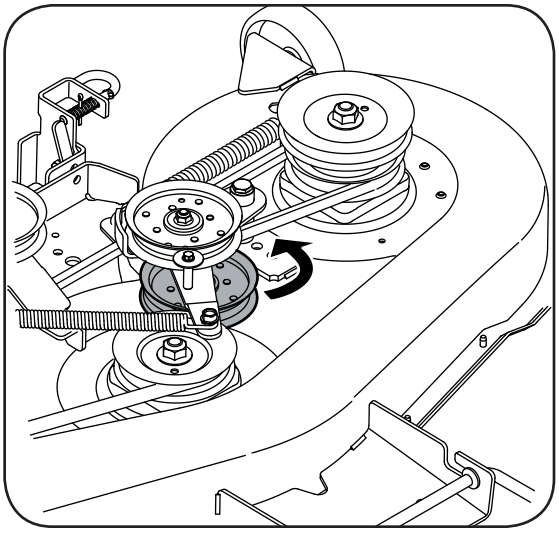

Figure 26

Changing the Deck Belt

WARNING: Be sure to shut the engine off, remove ignition key, disconnect the spark plug wire(s) and ground against the engine to prevent unintended starting before removing the belt(s).

All belts on your tractor are subject to wear and should be replaced if any signs of wear are present.

IMPORTANT: The V-belts found on your tractor are specially designed to engage and disengage safely. A substitute (non-OEM) V-belt can be dangerous by not disengaging completely. For a proper working machine, use factory approved belts.

To change or replace the deck belt on your tractor, proceed as follows:

1. Remove the belt keeper rod(s) from around the engine pulley.
2. Remove the cutting deck as instructed earlier in this section.
3. Remove the belt guards by removing the self-tapping screws that fasten them to the deck.
4. Carefully loosen, but do not remove, the deck idler pulleys.
5. Remove the deck belt from around all pulleys, including the deck idler pulleys and the electric PTO clutch (units with electric PTO).
6. Route the new belt as shown in Figure 27, 28, and 29 and retighten the deck idler pulleys.
7. Reinstall the belt guards removed earlier and remount the deck to the tractor.
8. Route the belt around the engine pulley and reinstall the belt keeper rod(s).

Changing the Lower Deck Belt (46" Decks)

NOTE: Several components must be removed in order to change the tractor's lower deck belt. See an authorized MTD Service Dealer to have your lower drive belt replaced or phone Customer Support as instructed on page 2 for information on ordering a Service Manual.

Changing the Transmission Drive Belt

NOTE: Several components must be removed and special tools (i.e. air/impact wrench) in order to change the tractor's drive belt. See an authorized MTD Service Dealer to have your drive belt replaced or phone Customer Support as instructed on page 2 for information on ordering a Service Manual.

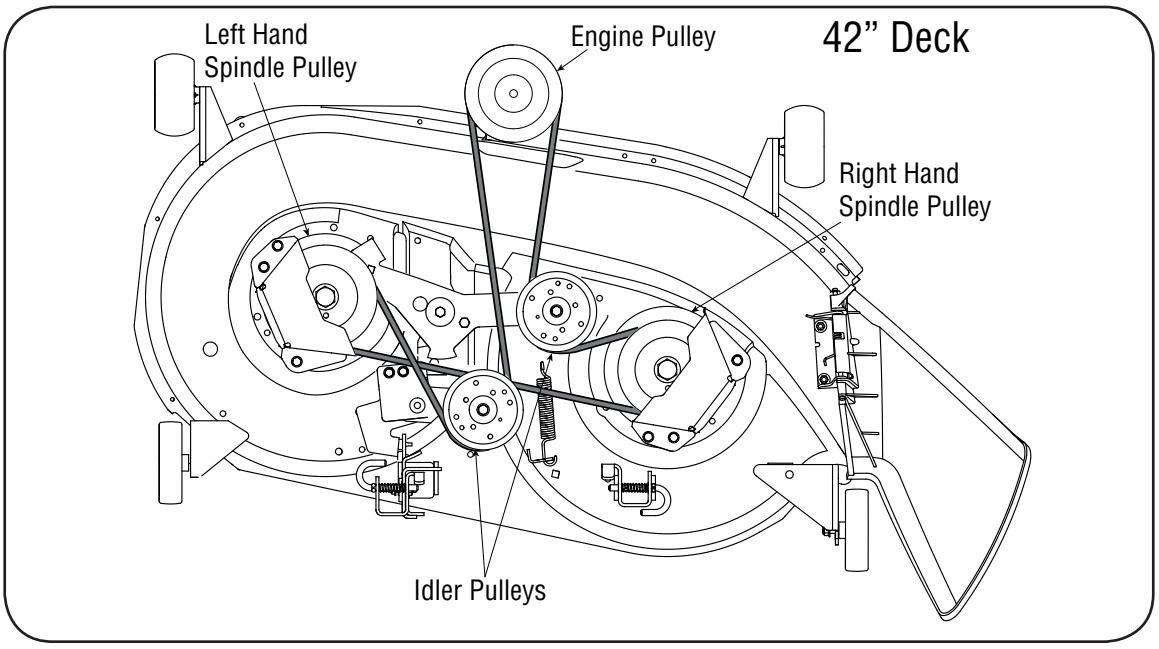

Figure 27

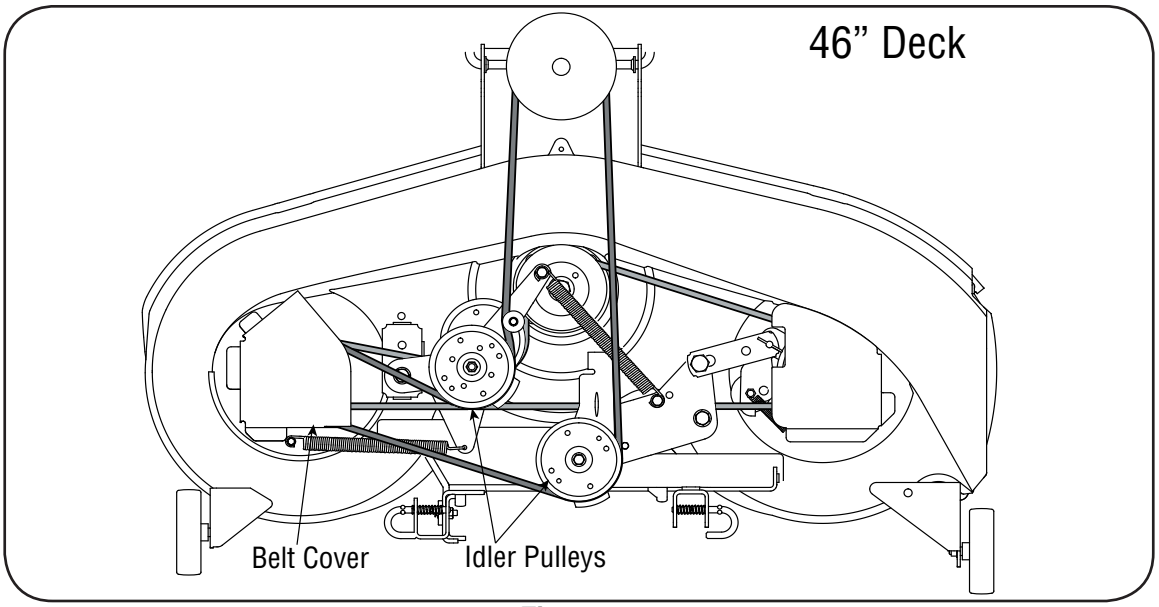

Figure 28

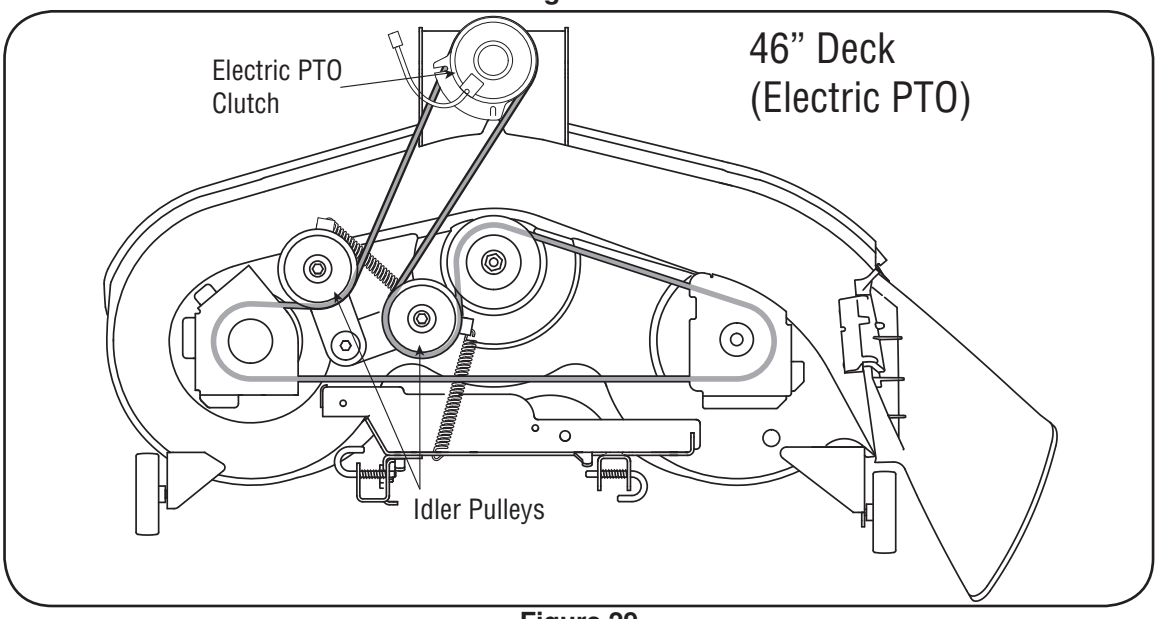

Figure 29