7400 TerrainCut™
Trim and Surrounds Mower

Machine Optimization Document

TC_7400_TCut_L3_EN

John Deere Turf Care

This manual serves as a quick reference for adjustments and controls of the machine for operators who are familiar with the machine and controls.
In no case does it replace the Operation Manual.

To prevent injury to persons or machines, the Operation Manual **must** be read carefully
before the machine is used.

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The 7400 TerrainCut™ Trim and Surrounds Mower has three independent 27 inch (68.6 cm) rotary decks. Height of cut (HOC) range is 1-4 inches (25-102 mm) in 0.25 inch (6.3 mm) increments. The rotary deck motors are hydraulic.

The "Width on Demand" system enables the operator to conveniently change the cutting width while the machine is being operated to improve productivity or maneuverability. Effective cutting widths are either 68 inches (173 cm) or 74 inches (188 cm). The operator uses a toggle switch on the command arm to select width of cut.

The "Reach Trimming" system enables the position of either front rotary deck to be moved outboard for safe trimming around bunkers, water features, or bushes/hedges. Toggle switches on the command arm are used to select the deck and variably move the selected deck up to 15 inches (38 cm) beyond the tire edge.

The 7400 TerrainCut™ Trim and Surrounds Mower is powered by a Yanmar turbocharged Diesel engine. The hydrostatic system drives all three wheels in forward, and only the front two wheels in reverse.

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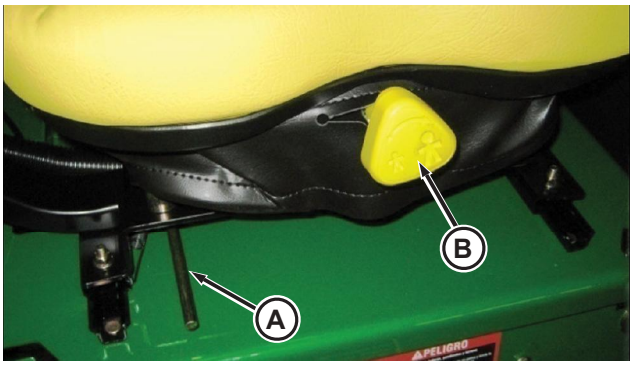
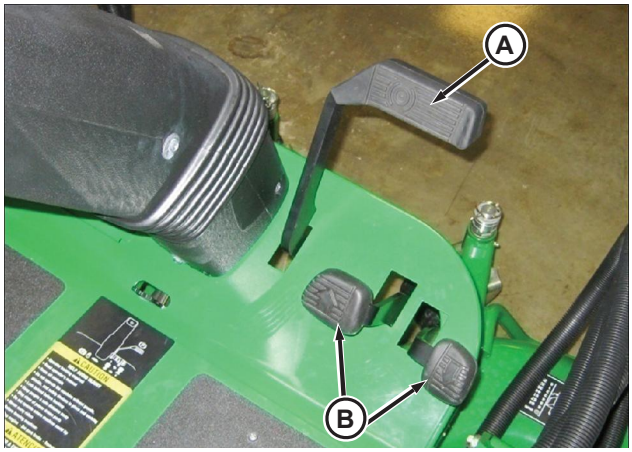
Seat Adjustment

Deluxe seat is standard on 7400 TerrainCut™ Trim and Surrounds Mowers.

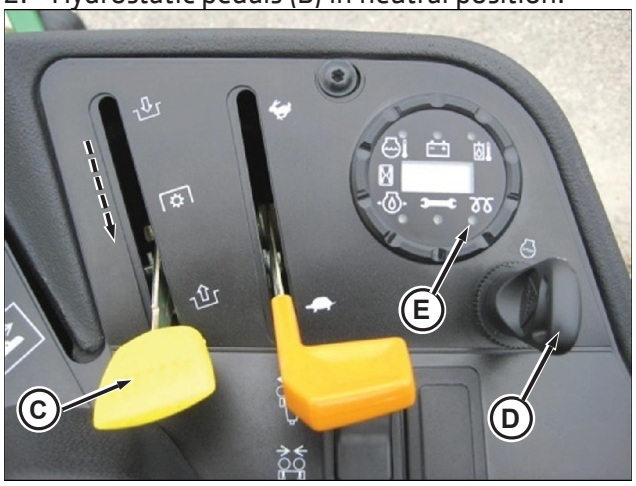


1. Adjust seat fore / aft for operator height.
   - Lever (A) located under seat on right side.
2. Adjust internal spring force for operator weight.
   - Knob (B) located in front of seat.
   - Rotate knob in clockwise direction for heavier operator to improve comfort and prevent seat from bottoming out.

Machine Starting Tips



1. Park Brake (A) locked.
2. Hydrostatic pedals (B) in neutral position.



3. Mow/Transport lever (C) in Transport position (lever pulled towards operator).
4. Turn key (D) to run position. Engine air pre-heater LED on instrument cluster (E) will illuminate 3-15 seconds and then go out. Engine can be started afterwards.
5. Run engine half throttle 2-3 minutes for warm-up. Avoid unnecessary idling.

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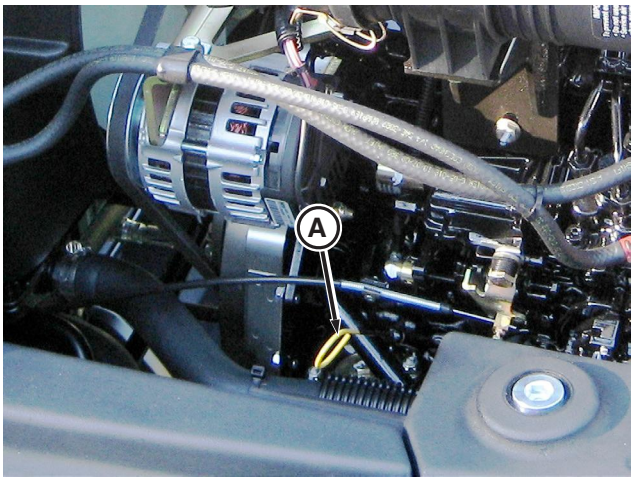
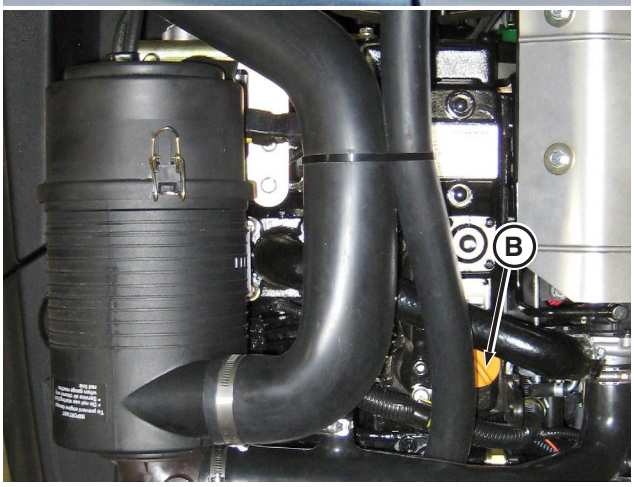
Key Setup and Adjustments – Machine

1. Inspect tires for proper inflation and wear. Adjust pressure as necessary.
   - Inflate tires to 15-20 psi (103-138 kPa)

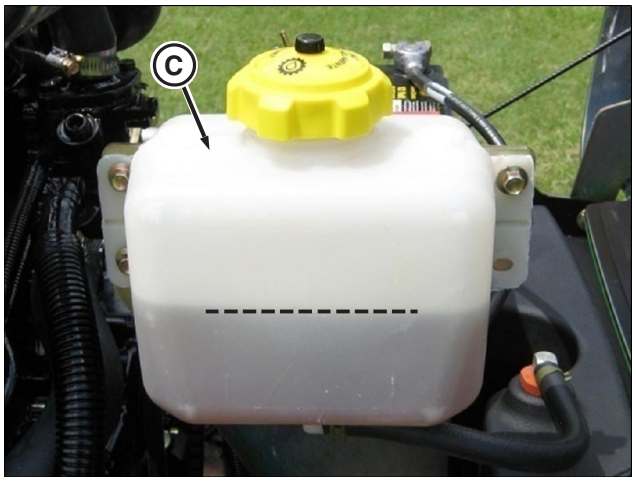
NOTE: Operating tires below recommended pressure can cause premature tire failure.

2. Check engine oil level. Add or remove oil as needed.

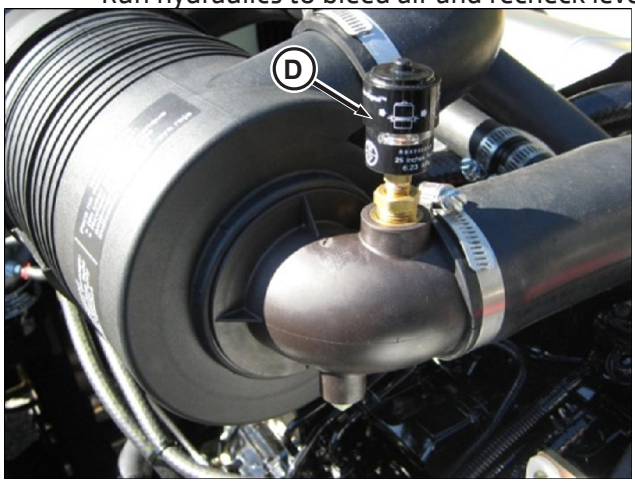




NOTE: Dipstick (A) and oil fill cap (B).



3. Check hydraulic oil level in overflow tank (C) located under hood, behind engine.
   - Oil level should be approximately 1.0 inch (25 mm) when engine is cold, or about half full when engine is warm.
   - Add hydraulic oil as needed to achieve proper level when engine is cold.
   - Run hydraulics to bleed air and recheck level.



4. Check air filter restriction indicator (D).
   - Push reset button.
   - Run engine at full throttle.
   - Replace primary air filter if red plunger visible in window.

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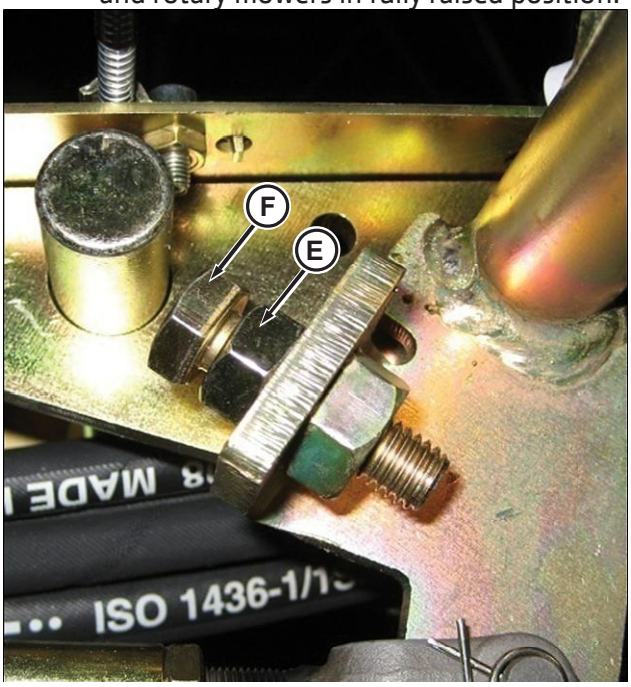
5. Verify travel speed for mowing is set to 4-5 mph (6.4-8 kph). Equivalent speed is 5.9-7.3 feet per second (1.8-2.2 m/s).

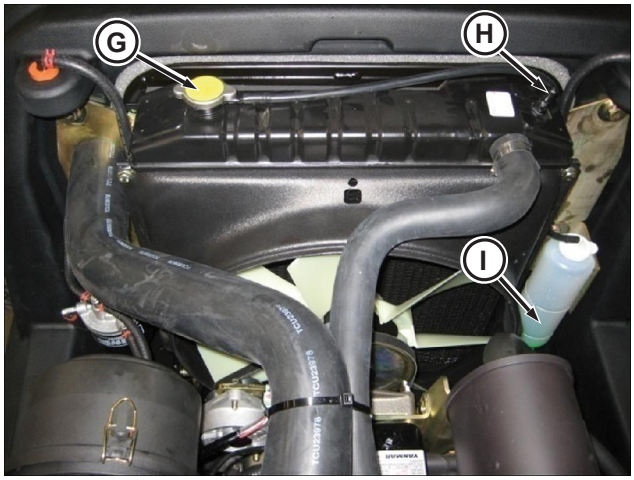
- Measure travel speed at full engine throttle with Mow/Transport lever in Mow position and rotary mowers in fully raised position.



6. Adjust mow stop if necessary to set correct travel speed. Loosen jam nut (E) and adjust position of bolt (F) on bracket. Tighten jam nut afterwards.
   - Lengthening bolt will decrease travel speed.
   - Shortening bolt will increase travel speed.

NOTE: Travel speed set at factory to 4-5 mph (6.4-8 kph). Travel speed can be adjusted to 6 mph (9.7 kph) if mowing open, mostly flat areas. Adjust mow stop as needed to obtain desired travel speed. Travel speed during mowing must not exceed 6 mph (9.7 kph).

CAUTION: Avoid injury. Only remove radiator cap when engine and radiator are cool. Open cap slowly, and carefully remove.



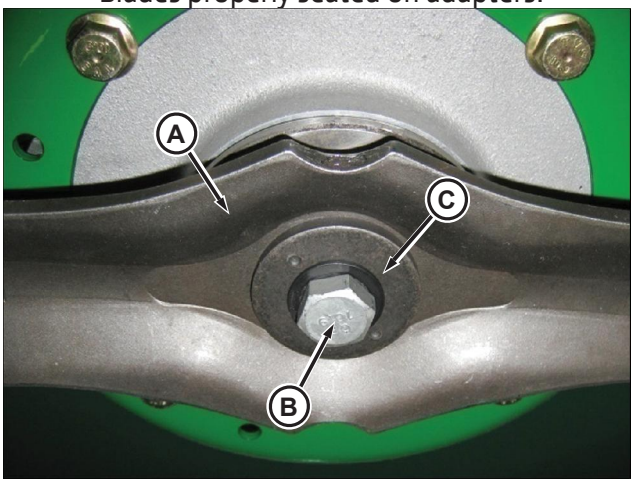
7. Check engine coolant levels inside radiator and overflow bottle.
   - Radiator must always be completely full. Check level under fill cap (G).
   - Coolant in overflow bottle (H) should be approximately 1/3 full when cool.
8. Add coolant as required to achieve proper levels.
   - Open valve (I) at top corner of radiator to allow air to vent from top of radiator as coolant is being added. Close valve when radiator is full.
   - Only use approved coolant (such as John Deere Cool-Gard™ II).
9. Check condition and routing of hose between radiator and overflow bottle. If hose not routed properly, coolant recovery process will not be effective. Correct hose routing as necessary.
   - Hose must be firmly attached to overflow bottle.
   - Hose must not be kinked or pinched.

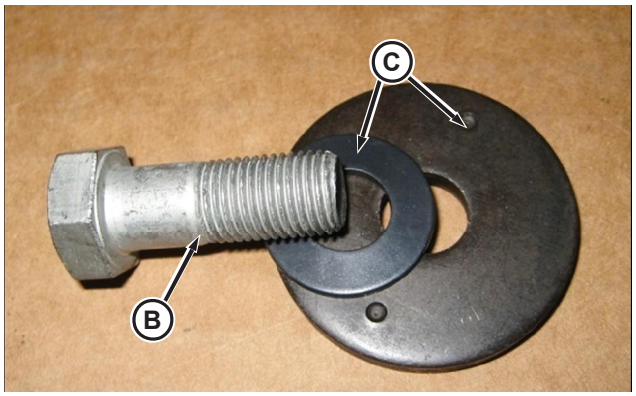
IMPORTANT: After filling a new or flushed radiator, check coolant levels more frequently until level within radiator stabilizes to full. This will ensure that all air has been purged from the cooling system.

Key Setup and Adjustments – Rotary Decks

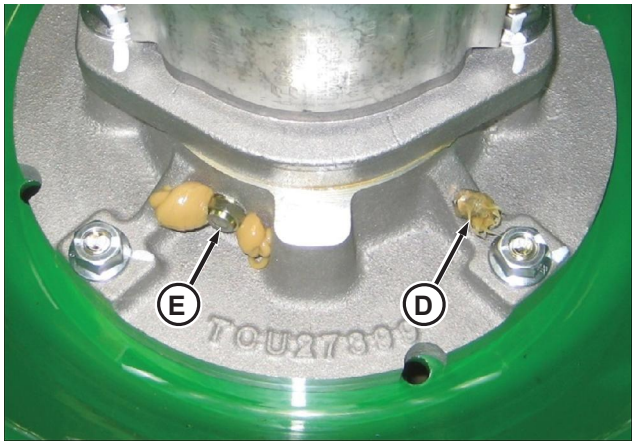
CAUTION: Avoid injury. Wear protective gloves when servicing rotary decks and blades.

1. Verify rotary blades are properly installed.
   - Threads in motor shafts are clean and dry.
   - Blades properly seated on adapters.

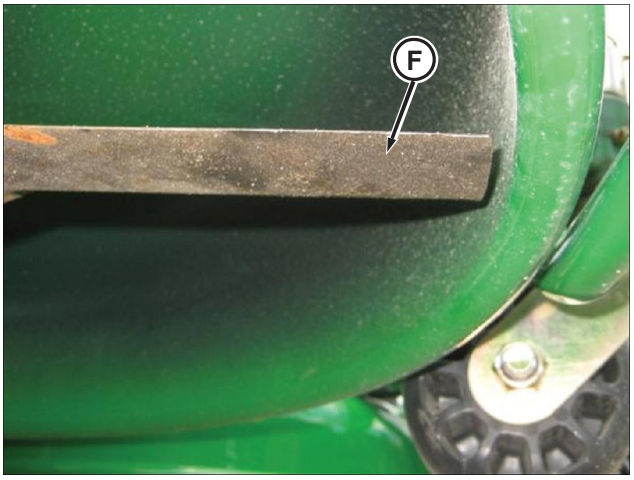




   - Correct blade (A), bolt (B), and washers (C) used. Washers correctly oriented.
   - Blade bolts tightened to 90 lb-ft (122 Nm).
2. Verify blade condition for best cut quality.
   - Cutting edges sharp. No gouges on cutting edges or damage to other areas of blades.
3. Verify rotary deck spindles are properly maintained.

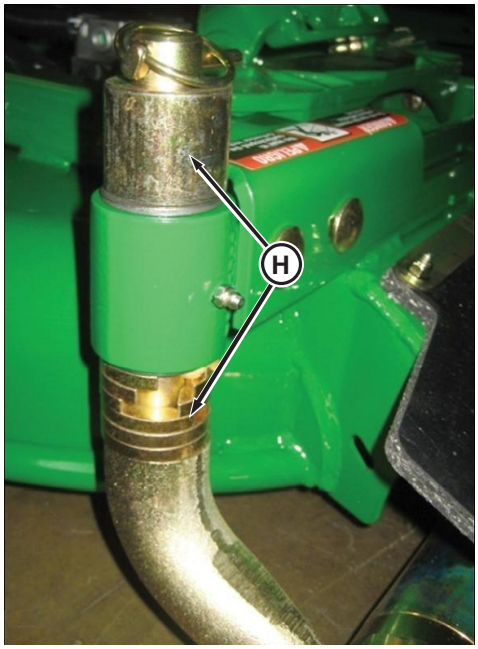


   - Rotary deck spindle has a grease fitting (D) and purge port (E) to enable spindle bearing to be thoroughly lubricated.
   - Continue to add grease to fitting (D) until clean grease is observed purging from port (E).



4. Slight vertical movement (F) of rotary blade at blade tip may be observed.
   - Movement of rotary blade tip in a properly maintained rotary deck spindle is normal.
   - Detectable movement will not cause failure of spindle bearing, and will not affect cut quality.
5. Verify all three rotary decks are set to exact same HOC.

- Utilize HOC guide on decal near front of each rotary deck shell.



- Arrange spacers for caster wheels (H) identical to spacers for rear rollers (I) on all rotary decks.

6. Verify retaining pins on each rotary deck are properly installed and oriented.

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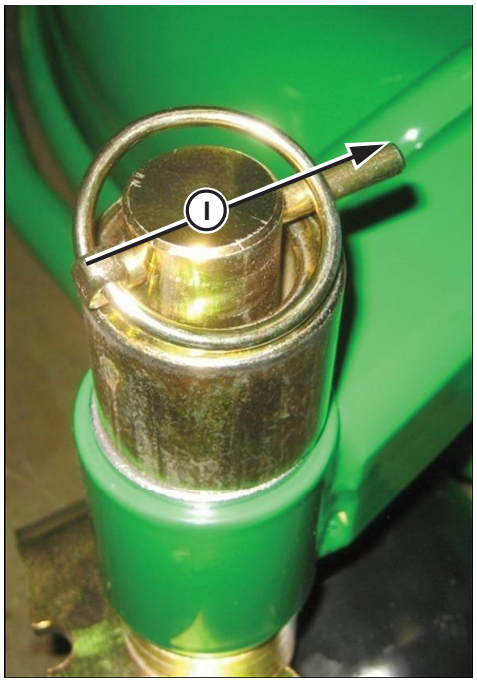
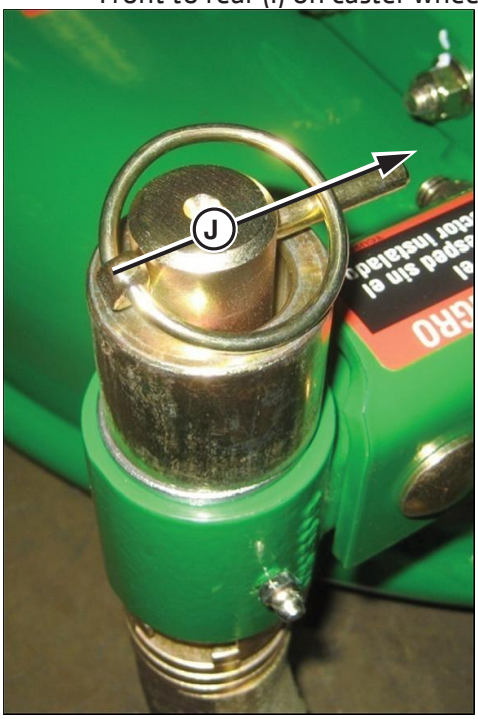


- Front to rear (I) on caster wheels yokes.



- Outside to inside (J) on rear roller supports.

7. If retaining pins are installed in opposite orientation, tips of retaining pins can be struck while mowing and may cause retaining pins to be ejected. Missing retaining pin will cause front caster wheel yoke to drop from rotary deck when raised for transport.

NOTE: Refer to product Operator's Manual for rotary deck maintenance and blade servicing procedures. Proper maintenance and service will promote reliable operation of rotary decks. Correct lubricant, as well as amount of lubricant, in rotary deck spindles is essential. Greases with NLGI Consistency Number 00 are recommended. Following lubricants are listed in product Operator's Manual:

- John Deere Cotton Picker Spindle Grease
- John Deere Golf and Turf Cutting Unit Grease
- John Deere Cornhead Grease

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Operating Tips - Mowing

Park brake unlocked and operator in seat.

To engage Mow function:

1. Increase engine speed (A) to full throttle.
2. Move Mow/Transport lever (B) from Transport position to Mow position (away from operator).
3. Move Raise/Lower lever (C) to Lower position (away from operator). Rotary blades will begin spinning.

Note: Mow can also be engaged by first lowering decks and then moving Mow/Transport lever to Mow position, however rotary blades will not begin spinning. It will be necessary to push Raise/Lower lever to Lower position, and then rotary blades will begin spinning.

To disengage Mow function:

1. Decrease engine speed.
2. Move Mow/Transport lever to Transport position.
3. Move Raise/Lower lever to Raise position.

Important: Do not attempt to engage or disengage Mow function when hydrostatic pedal fully depressed. Also, mow can be disengaged without decreasing engine speed, however high momentum of spinning rotary blades will cause mow hydraulic circuit to shuttle relief valves to gradually brake blade spin. Noise and vibration in mow hydraulic circuit may accompany relief valve shuttling. This is normal and will not harm hydraulic system.

Operating Tips – Rotary Blade Speed

Rotary blade speed is controller by engine speed. Always set engine speed to maximum throttle when mowing to ensure rotary decks operate at designed blade tip speed for best performance and cut quality

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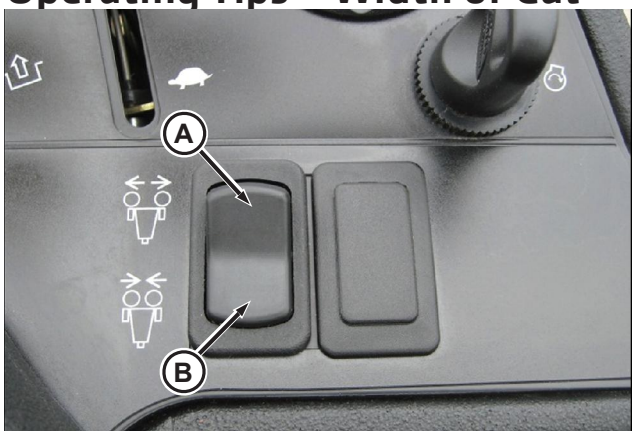
Operating Tips – Width of Cut



1. Use toggle switch on command arm to set front rotary decks to either wide (A) or narrow (B) width of cut.
2. Width of cut can be changed whether rotary decks are in raised or lowered position, and whether Mow is engaged or not.

The following should be considered when choosing width of cut to optimize productivity, and cut quality and performance:

Picture Note: Narrow cut shown.

- Narrow setting recommended for hilly, undulating terrain, side hills, and tight turns requiring more rotary deck overlap to ensure no uncut grass remains. Nominal overlap between front and rear rotary decks is 7 inches (17.7 cm).

Picture Note: Wide cut shown.

- Wide setting recommended on flat, open terrain with long straight runs. Nominal overlap between front and rear rotary decks is 4 inches (10.1 cm).
- Productivity gain of Wide setting over Narrow setting is approximately 9%. For example, gain is 3.74 acres (1.51 hectares) versus 3.43 acres (1.39 hectares) per hour when travel speed is 5 mph (8 kph).

CAUTION: Avoid injury! Machine can leave trail of uncut grass in certain conditions on level ground as well as on slopes. Rear tire may lose traction when machine is traveling across a slope or if travel speed is too high in turns. Consequently, front and rear rotary decks may unlap (lose available overlap). Traction is influenced by slope angle, turf conditions, moisture levels, tire pressure and travel speed. Reduce speed on slopes and when making turns.

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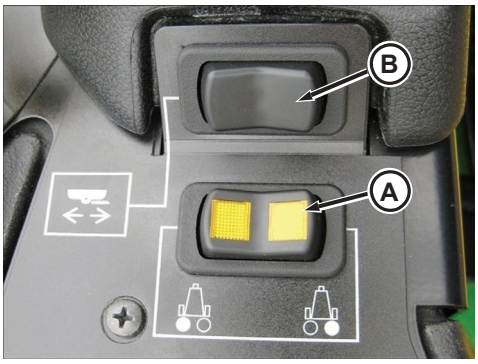
Operating Tips – Reach Trimming

Trimming feature can only be utilized when rotary decks are in lowered position.

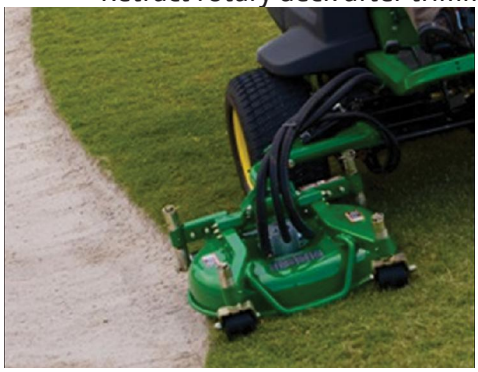


1. Press selector toggle switch (A) left to select front, left rotary deck, or right to select front, right rotary deck. Toggle switch remains locked in selected position.
2. Press and hold toggle switch (B) to move selected rotary deck. Toggle switch will return to center position when let go.
   - Rotary deck will continue to move while toggle switch remains depressed, until outboard limit is reached.
   - Press and hold toggle switch in opposite direction to retract deck position.
3. If selector toggle switch (A) placed in center position, extended rotary deck will fully return to normal cutting width position.

NOTE: If Raise/Lower lever (C) is pulled back to raise position while one rotary deck is extended for trimming, extended rotary deck will first retract to normal cutting width position before rotary decks begin to lift.

Following should be considered when using trimming feature to optimize productivity, and cut quality and performance, as well as ensure overall satisfaction:

- Mow outer areas around bunker (or other areas to be trimmed) first.
- Use trimming feature as last pass against area to be trimmed.
- Retract rotary deck after trimming completed.



NOTE: Extending one front rotary deck for trimming can cause it to unlap from rear deck. In this configuration, trimming around objects prior to mowing will make decks leave a strip of uncut grass. Mow first, then trim to create a neat, finished appearance.

Operating Tips – Safe Operation on Slopes

Operate machine with extreme caution on hills, slopes, and rough terrain to avoid losing traction and minimize rollover risk. Mowing sites should be carefully surveyed to assure slopes are safe for machine operation. Consider moisture and turf conditions. Wet slopes present significantly higher risk even though they may have been mowed successfully before. Look for dips and holes along the slope that could change the angle of vehicle operation.

Determining Safe Slope Angles:

1. Lay straight piece of sturdy lumber 4 ft (1.2 m) long on slope.
2. Measure slope angle with angle indicator or protractor level.

3. Repeat procedure at several points on same slope.

- Never mow or operate machine on slope angles greater than 25°.
- Exceeding the maximum recommended slope angle of 25° increases the risk of rollover accidents that can result in serious injury or death.
- Always consider potential turf conditions and slope angles when determining the risk of loss-of-control and tip-over accidents.
- On slope angles of 15° or less the risk of rollover is low, but as the slope angle increases to the John Deere recommended maximum of 25° the risk increases to a moderate level.

When Operating on Slope

- Carefully review all cautions included in machine Operators Manual.
- Always wear seat belt when operating machine, regardless of slope condition.
- Make sure that tires are properly inflated. Too low or too high tire pressure will cause the tires to lose traction.
- Whenever possible, mow up and down the slope rather than across it.
- Use lower speeds when mowing and operating on slopes.
- Use caution when making turns or changing directions on slopes.
- Decrease speed as the slope angle increases.
- Do not mow near drop-offs, ditches, embankments, or bodies of water. Machine could suddenly roll over if wheel goes over edge or edge caves in. Leave a safe margin between the machine and any hazard.
- Avoid areas where turf is wet or loose.
- Leave cutting units lowered on slopes to maximize stability. Never lift cutting units on steep slopes. Raising cutting units on a slope can cause the machine to become unstable.
- Use caution when operating machine on wet or loose turf. Tires may lose traction. If it begins to rain, discontinue operation on slope.

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Operation Checklist

Vehicle

- ☐ Check tire pressure.
- ☐ Check engine oil and hydraulic oil levels.
- ☐ Check engine coolant levels inside radiator and in recovery tank.
- ☐ Check fuel tank level. Add fuel as required. Capacity is 13.0 gallons (49.2 L).
- ☐ Lubricate all grease fittings on machine and rotary decks. Wipe clean excess grease from fittings.

Rotary Mowers

- ☐ Verify rotary deck shells and rotary blades are clean.
- ☐ Verify all rotary blades are sharp and in good condition to ensure best cut quality.
- ☐ Verify rotary blades are installed correctly and blade bolts tightened to 90 lb-ft (122 Nm).
- ☐ Verify all rotary decks are set to same HOC.
- ☐ Verify retaining pins are correctly oriented on front caster wheel yokes and rear roller supports.

Operation

- ☐ Always wear seat belt when operating machine.
- ☐ Read Operator's Manual and become familiar with all controls and operating procedures.
- ☐ Check safety circuits when starting engine and engaging cutting units.
  Perform repairs if engine can be started or mow can be engaged with any safety switch out of position.
- ☐ Check travel speed. Travel speed when mowing must not exceed 6 mph (9.7 kph),
  or should not exceed 5 mph (8 kph) if mowing hilly areas.
- ☐ Verify rear wheel weight installed.
- ☐ Survey areas where mower will be operated. Perform slope measurements prior to
  transporting machine or mowing in hilly areas.

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Consequences of Improper Setup and/or Operation

Symptoms	Possible Causes
Tire sidewalls bubbled or failed	☐ Tires run at too low pressure
Poor cut quality	☐ Rotary blade is dull ☐ Engine speed not set to max throttle when mowing ☐ HOC set too low for turf height and conditions; not following “1/3” rule ☐ HOC not set equally on all rotary decks ☐ Travel speed too fast for turf conditions and amount of grass being removed ☐ Hydraulic oil level is low; pump not supplying sufficient oil volume to rotary deck motors
Turf scuffing	☐ Travel speed too fast in turns or on slopes; tires skidding or slipping
Loss of traction while mowing or traveling across slope	☐ Tires not inflated to correct pressure ☐ Travel speed too fast for turf conditions ☐ Slope angle too steep for turf conditions ☐ Rotary decks in raised position, affecting machine stability
Rotary decks leave uncut grass	☐ Rotary decks not setup correctly ☐ Rotary blade is dull ☐ Rotary blade or blade bolt not installed correctly ☐ HOC set too low for turf height and conditions ☐ Travel speed too fast for turf conditions ☐ Width of cut not ideal for area being mowed; width of cut set to 68 inches (173 cm) will be preferable to 74 inches (188 cm) in areas where more overlap between front and rear rotary decks is needed ☐ Machine losing traction in turns or mowing across a slope, causing front rotary decks to unlap (lose overlap) from rear rotary deck

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Service Intervals

Before Each Use

- ☐ Check engine oil
- ☐ Check hydraulic oil
- ☐ Check coolant
- ☐ Check for leaks
- ☐ Inspect tires and check air pressure
- ☐ Check safety interlock system
- ☐ Check brake system
- ☐ Check air filtration system
- ☐ Check for loose, missing, or damaged parts
- ☐ Check all safety guards and shields
- ☐ Check fuel/water separator
- ☐ Check pedals and/or steering control
- ☐ Check seat belt

After Each Use

- ☐ Check/fill fuel
- ☐ Clean debris from machine
- ☐ Clean debris from cooling system
- ☐ Clean debris from cutting units and attachments
- ☐ Lubricate machine after washing

Storage Tips

Preparing Machine for Long Term Storage

Note: Filling the fuel tank reduces the amount of air in the fuel tank and helps reduce deterioration of fuel.

- ☐ If you have been using "Stabilized Fuel," add stabilized fuel to tank until the tank is full. (See your Operator Manual for specific procedure.)
- ☐ If you have NOT been using "Stabilized Fuel," run engine until it runs out of fuel. (See your Operator Manual for specific procedure.)
- ☐ Service air cleaner.
- ☐ Clean debris from engine air intake screen, oil cooler coils and radiator cooling fins (if equipped).
- ☐ Check engine coolant level and freeze point.
- ☐ Check belts for damage and proper tension.
- ☐ Remove, charge, and store battery in a cool, dry place.
- ☐ Close fuel shut-off (if your machine is equipped).
- ☐ Store machine in a dry, protected place. If outside, put a waterproof cover over it.

Preparing Machine to Resume Operation

- ☐ Check tire pressure.
- ☐ Wipe grease off cutting units.
- ☐ Install cutting units (if removed).
- ☐ Be sure all shields, guards, or deflectors are in place.
- ☐ Check engine oil level.
- ☐ Check hydraulic oil in reservoir.
- ☐ Check all hoses, clamps, and connections.
- ☐ Check, charge and install battery.
- ☐ Lubricate all grease points.
- ☐ Open fuel shut-off, if your machine is equipped.

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