

Dealer Setup & Adjustment Instructions

ISX3300 Series Zero-Turn Rider 61" / 72" Mower Deck



The safety warnings provided in this guide and in the operator's manual included with the unit contain important information that must be obeyed when assembling, setting-up, operating, servicing, transporting, or storing the unit.

These warnings are highlighted by the safety alert triangle symbol shown above, which signifies that an important safety message is being provided.

You must read, understand, and follow these warnings and instructions, and use safe shop and work practices at all times while working on or around this unit and all other outdoor power equipment.

SETUP PROCEDURES

Instructions in the Setup Procedures section provide the information necessary to fully assemble, test, and prepare the units described above for delivery to your customers. The location of normal lubrication points are also included in this section.

The QUICK SETUP LIST is provided in this booklet to help you identify and check that the items have been performed.

ADJUSTMENT PROCEDURES

Additional information concerning general adjustment procedures are included in this section.

Although all required lubrication and normal adjustments on factory-assembled components are done at the factory, this additional information is provided to assist you in ensuring that each unit is delivered to the customer in proper working order.

These Dealer Setup Instructions cover the following products:

Model:	Description:
5901914	ISX3300BVE37CE
5902036	ISX3300BVE40CE
5901917	3300/61SRDCE
5901932	3300/72SRDCE

Quick Setup List

Setup Procedures	
☐	Uncrate the unit.
☐	Connect the battery cables.
☐	Install the ground speed control levers.
☐	Install the seat.
☐	Install the roll bar on the unit.
☐	Install the roll bar safety decals (export models only).
☐	Check engine oil level.
☐	Check / Fill transmission oil level.
☐	Check tire pressures.
☐	Configure the mower deck.
☐	Check mower blade bolt torque.
☐	Install the mower deck pusher bars (72" Export Mower Decks)
☐	Install the mower deck (72" Export Mower Decks)
☐	Install the mower deck drive belt (72" Export Mower Decks)
☐	Check the deck lift rod timing.
☐	Check and level the mower deck.
☐	Check the mower deck drive belt.
☐	Lubricate all grease and oil points.
☐	Check / Add fuel.
☐	Start the engine
PERFORM THE SAFETY CHECKS	
☐	Check for <u>LOOSE HARDWARE</u> .
☐	Check all <u>OPERATOR CONTROLS</u> .
☐	Perform <u>SAFETY INTERLOCK SYSTEM CHECK</u> .
Register Product	
☐	To register the product: log onto www.thepowerportal.com , select the appropriate brand, click "Sales & Marketing", select the "Product Registration" link, and then select "New Product Registration". Fill out and submit the online product registration form.

Ferris is a registered trademark of Briggs & Stratton.

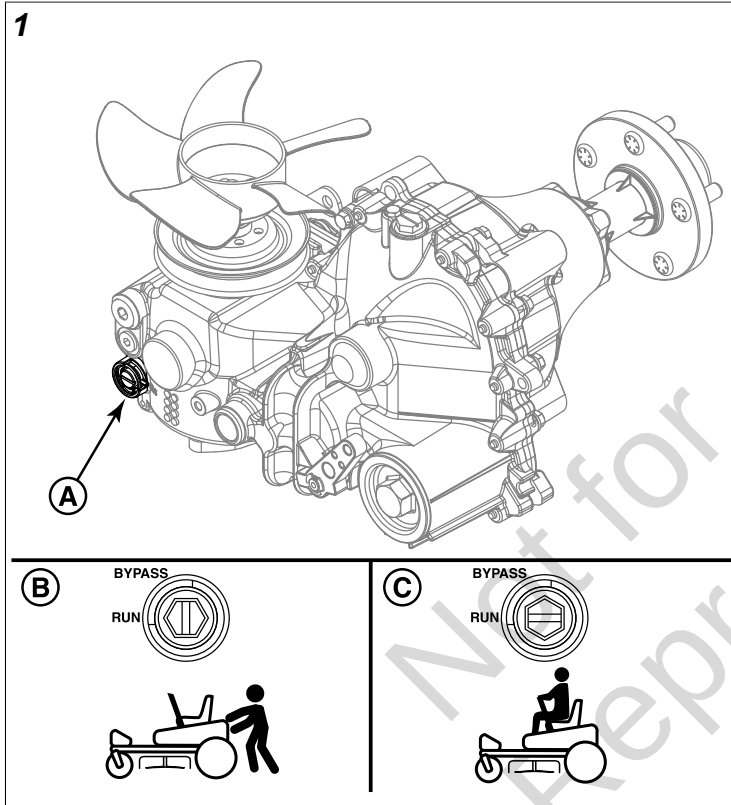
Setup Procedures

The items in this section provide the information necessary to fully assemble, test, and prepare the unit, that these instructions were included with, for delivery to your customer.

The **Quick Setup List** provided on page 2 of this document is to help you identify and check that the items have been performed.

Uncrating

1. Locate the hydraulic actuators (A, Figure 1) on the side of the unit's transmissions. There is one hydraulic actuator on each transmission. The hydraulic actuator opens and closes the transmission bypass valves.



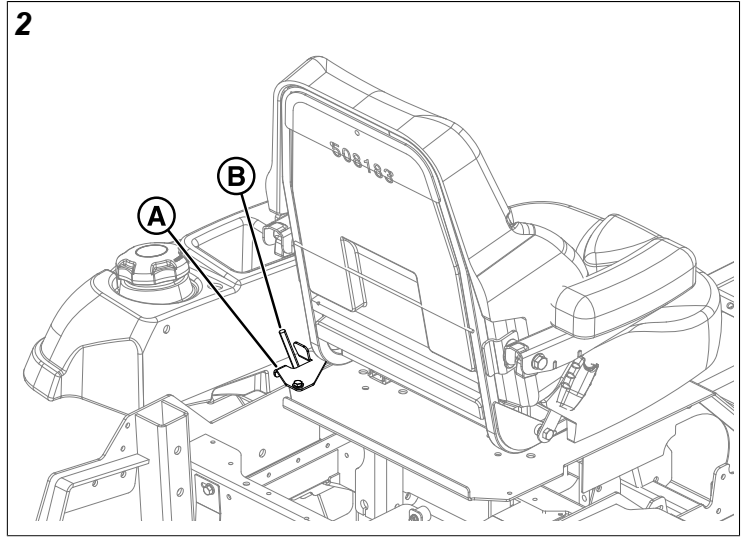
2. To open the transmission bypass valves rotate the hydraulic actuator **clockwise** to the "bypass" position" (marked "bypass" on the transmission) (B).
3. Push the parking brake lever down and forward to release the parking brake.
4. Be sure there are no nails or sharp objects on the bottom skid to puncture the zero-turn rider's tires. Roll the zero-turn rider forward off the bottom skid.
5. After moving the zero-turn rider, close the bypass valves by rotating the hydraulic actuator **counter-clockwise** to the "run" position (marked "run" on the transmission) (C).

Note: Both hydraulic actuators must be in the same position.

Operating the Seat Latch

This model is equipped with a seat latch that is located by the left rear corner of the seat plate. Some models also feature a lockout plate.

1. To raise the seat plate, remove the lockout plate (A, Figure 2), if equipped, from the seat plate, move the seat latch (B) towards the front of the unit and then raise the seat plate.



2. The seat latch is spring loaded. When the seat plate is lowered back into place the seat latch will latch the seat plate in the down position. If equipped, install the lockout plate to the seat plate.

Connect the Battery Cables



WARNING

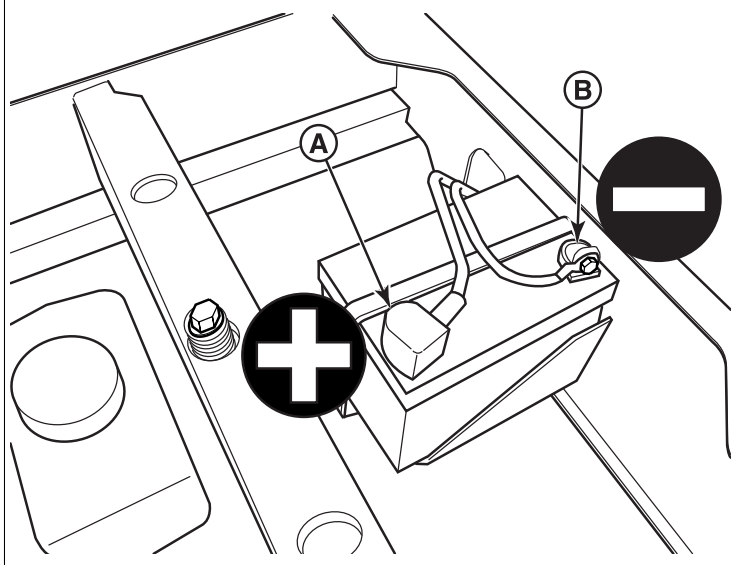


Battery acid can cause severe burns. Wear protective gear when handling the battery. Open flames and sparks can cause battery to explode.

BATTERY SAFETY RULES:

- Battery acid causes severe burns. Avoid contact with skin.
 - Wear eye protection when handling the battery.
 - To avoid an explosion, keep flames and sparks away from the battery, especially while charging.
 - When installing the battery cables, **connect the positive (+) cable first** and negative (-) cable last. If not done in this order, the positive terminal can be shorted to the frame by a tool.
1. Connect the red positive battery cable (A, Figure 3) to the positive battery post.

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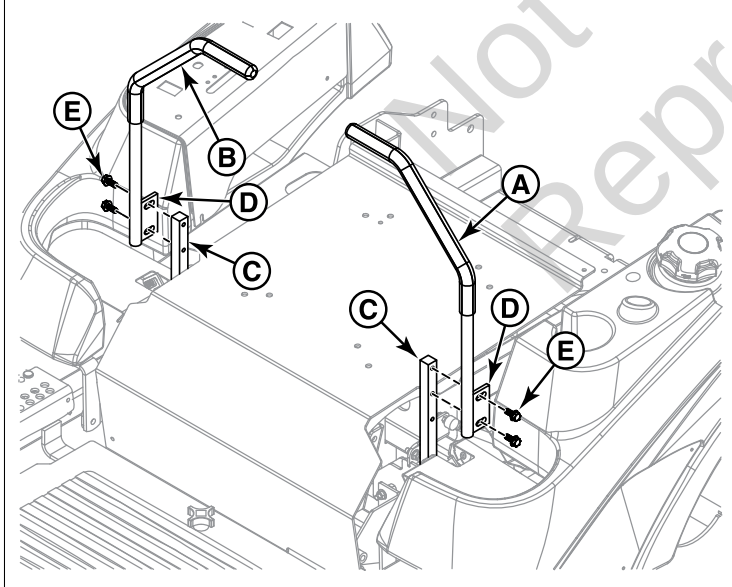
2. Connect the black negative battery cable (B) to the negative battery post.

Install the Ground Speed Control Levers

This procedure is only necessary if the ground speed control levers are not factory-installed on your unit.

There is a LEFT-HAND (A, Figure 4) and a RIGHT-HAND (B) control lever. When assembled to the base (C), the lever base (D) should be pointing toward the rear of the machine as shown in Figure 4.

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1. Remove the ground speed control levers and mounting hardware from the handle bar box.
2. Install the ground speed control levers (A & B) onto the control lever base using the hardware (E) supplied in the box. Prior to tightening the bolts, align the handles with each other.

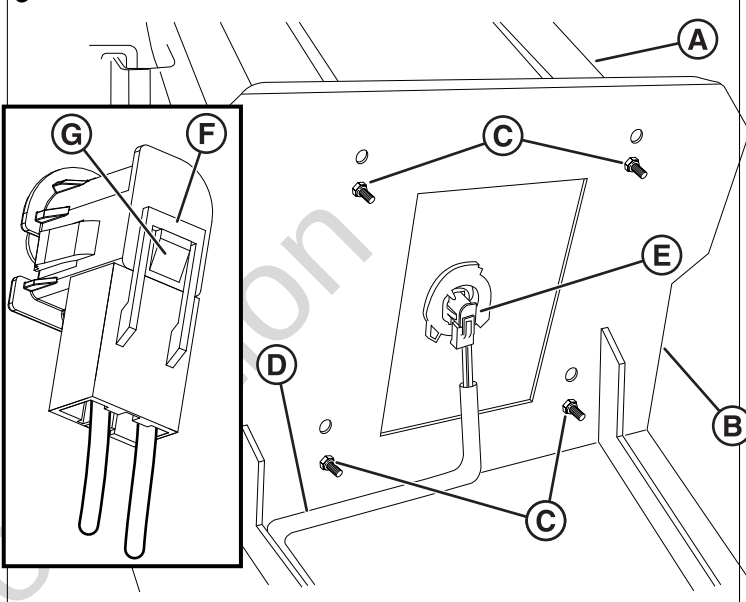
Install the Seat

This procedure is only necessary if the seat is not factory-installed on your unit.

Some models are equipped with two sets of holes in the seat plate that the seat can be installed in. Use the forward set of holes to position the operator closer to the front of the machine and the rear set of holes to position the operator towards the rear of the machine. Determining what holes to use is based on the preferred operating position of the operator.

1. Unpack the seat.
2. Install the seat (A, Figure 5) onto the seat mount plate (B) and secure with the 5/16 nylock flange nuts (C).

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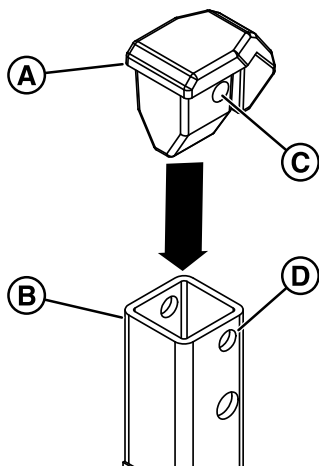
3. Connect the wire harness (D) to the seat switch (E) that is located in the bottom of the seat making sure that the latch (F) is clipped on the switch lock (G).

Install the Roll Bar to the Unit

The roll bar assembly is installed in the roll bar pockets which are part of the main frame of the unit and are located behind the seat and in front of the engine on both sides of the unit.

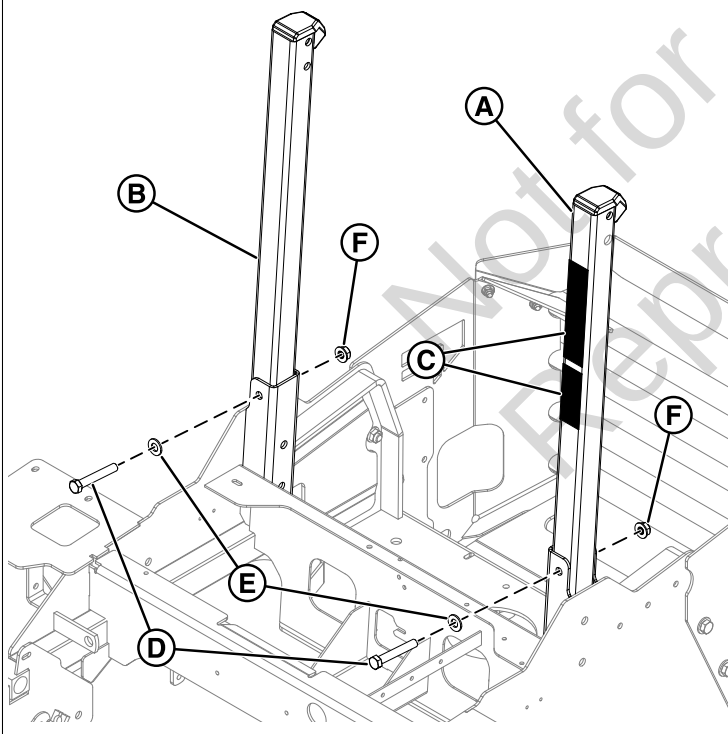
1. Make sure that no fuel lines, cables, parts of the wire harness, obstructions, or foreign objects are in the way of the roll bar pockets.
2. Check to make sure that the pivot blocks (A, Figure 6) are installed into the top of the roll bar posts (B). If not, install them. You might need to use a rubber mallet to pound them into place. The holes (C) in the pivot block will align with the pivot holes (D) in the roll bar post.

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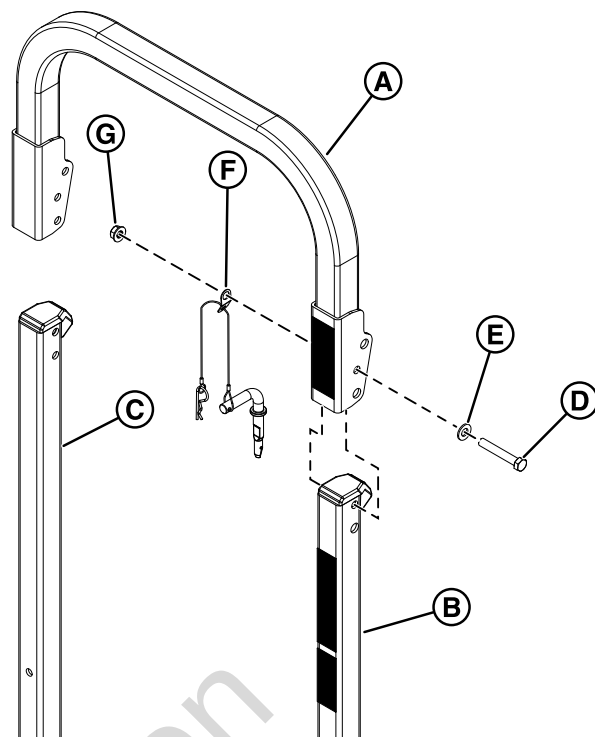
3. There is a left roll bar post (A, Figure 7) and right roll bar post (B). The left roll bar post has safety decals (C). Put the left hand roll bar post into the left roll bar pocket (as determined by the operator's position) so that the safety decals are facing towards the front of the unit. Use a 1/2" X 3-1/4" bolt (D), washer (E), and nut (F) to hold the roll bar post in place. Leave this hardware loose.

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4. Put the right hand roll bar post into the right roll bar pocket. Use a 1/2" X 3-1/4" bolt, washer, and nut to hold the roll bar post in place. Leave this hardware loose.
5. Assemble the top loop (A, Figure 8) to the left upright tube (B) and the right upright tube (C) by loosely installing the 1/2 bolts (D), 1/2 washers (E) through the 1/2" holes in the top loop assembly, the roll bar posts, the retainer pin assemblies (F), and then loosely install the 1/2 hex lock nuts (G).

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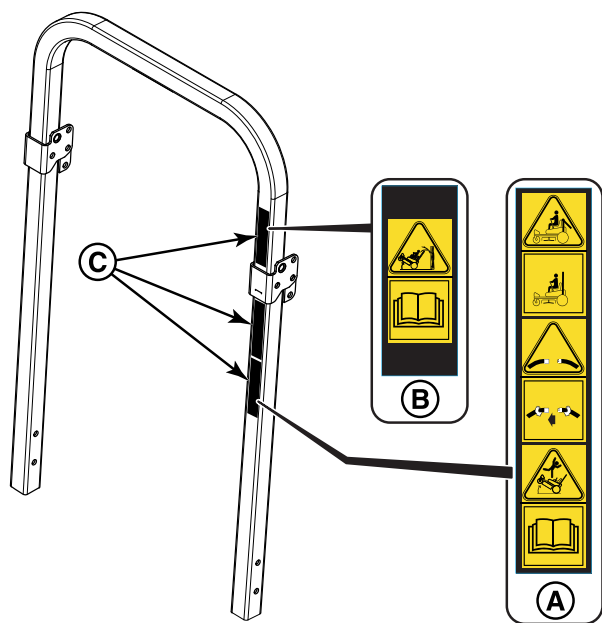


6. Tighten the 1/2" hardware (D, E, & F, Figure 7) that secures the roll bar posts to the frame of the unit to 82 ft-lbs (108 Nm) of torque.
7. Tighten the 1/2" hardware (D, E, & G, Figure 8) that secures the top loop to the roll bar posts to 30 ft-lbs (41 Nm). The top loop should pivot snugly. If it doesn't, loosen or tighten the hardware as needed.
8. Put the retainer pins into the roll bar with their handles pointing up and then rotate the pins 180 degrees so that their handles are pointing down. Install the hair pin clips into the retainer pins.

Install the Roll Bar Safety Decals (Export Models Only)

1. Remove the black and yellow CE safety decals (A, & B, Figure 9) from the publications packet.

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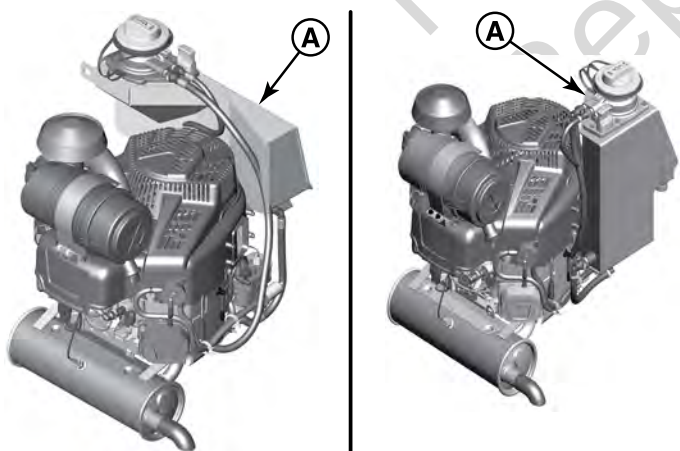


2. Remove the three (3) existing English language decals (C) from the roll bar.
3. Refer to Figure 9 for decal installation locations. The long decal, part number 5100536 (A) is installed below the roll bar pivot of the roll bar. The short decal, part number 5100537 (B), is installed above the roll bar pivot.

Check the Engine Oil Level (Engines with Remote Oil Tank)

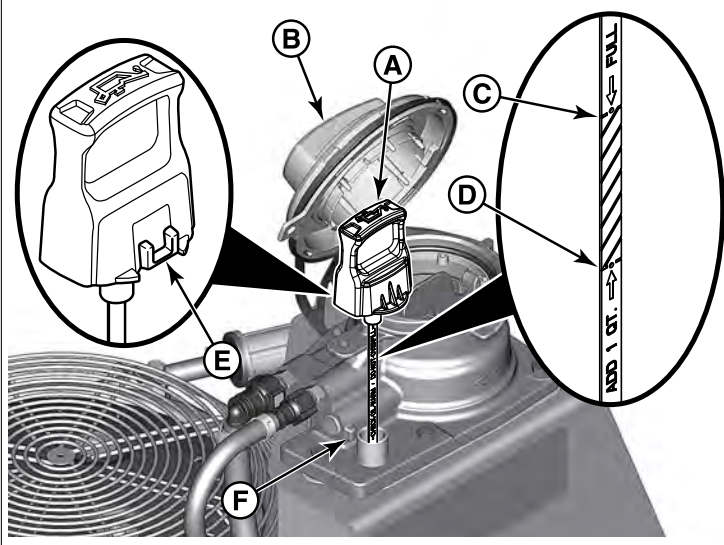
Some models in this series of mower feature a remote oil tank (A, Figure 10) that supplies oil to the engine.

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1. Clean the area around the engine oil dipstick (A, Figure 11) and oil fill cover (B) to remove any debris.

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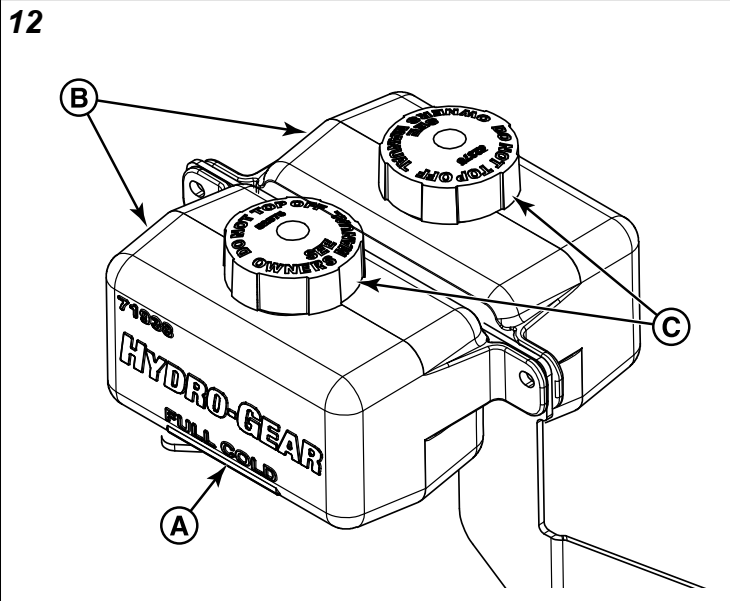
2. Use the dipstick to check the engine oil level. Maximum oil level is the "FULL" line (C) on the dipstick. If the oil level is at the "ADD 1 QT." line (D) or below, more oil must be added.
3. If necessary, open the oil fill cover and slowly add 15W-50 synthetic oil. (See the engine oil operator's manual for other oil recommendations.) The remote oil tank is designed to hold 5 qt (4,73 L) of engine oil.
4. Wipe the engine oil dipstick with a clean cloth and then install it into the tank by pressing down firmly with your hand. The engine oil dipstick has a detent (E) and it must snap into place on the lip (F) of the tank housing so that the dipstick is fully installed into the tank. This action requires moderate force.
5. Close the oil fill cover.
6. If desired, a new self-locking tie can be installed to keep the oil fill cover securely closed.

Check / Fill Transmission Oil Level

This unit is equipped with two transmission oil tanks. One transmission oil tank only supplies oil to one transmission. The level of oil in both transmission tanks must be checked, and if necessary, filled.

Oil Type: SAE 20W-50 motor oil

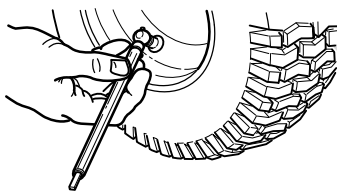
1. Locate the transmission oil tanks (B, Figure 12) by raising the seat plate of the unit.
2. Check the oil level when the unit is cold. The oil should be up to the "FULL COLD" mark (A) on the transmission oil tanks (B). If the oil is below this level, proceed to step #3.



3. Before removing the tank cap (C), make sure that the area around the tank cap and fill neck of the tank is free of dust, dirt, and other debris. Remove the tank caps.
4. Add oil up to the "FULL COLD" mark.
5. Re-install the tank cap.
6. After adding oil to the tanks, it may be necessary to purge air from the hydraulic system. If the unit is not driving properly perform the *Purging the Air from the Hydraulic System* procedure.

Check Tire Pressures

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



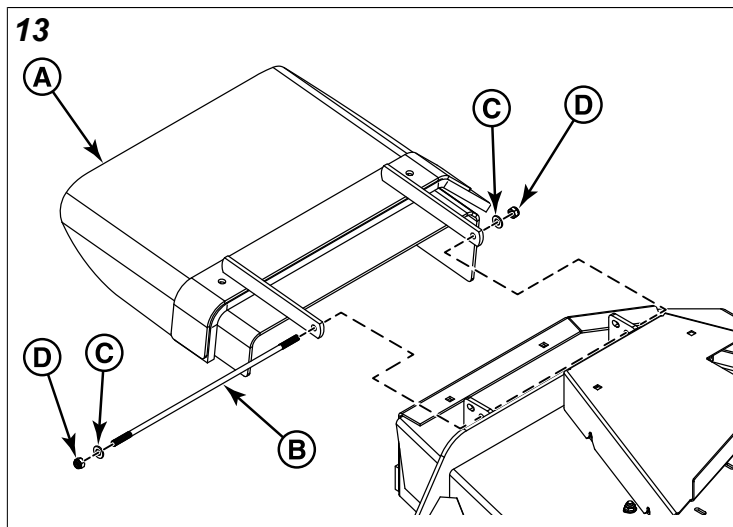
Tire	Pressure
Front	25 psi (1,72 bar)
Rear	15 psi (1,03 bar)

Configuring the Mower Deck

This machine features a mower deck that can be configured to perform three functions: rear discharge, mulching, and side discharge. Prior to operating the machine it must be set up to operate in one of these configurations.

Configuring the Mower Deck for Rear Discharge from Factory Setup

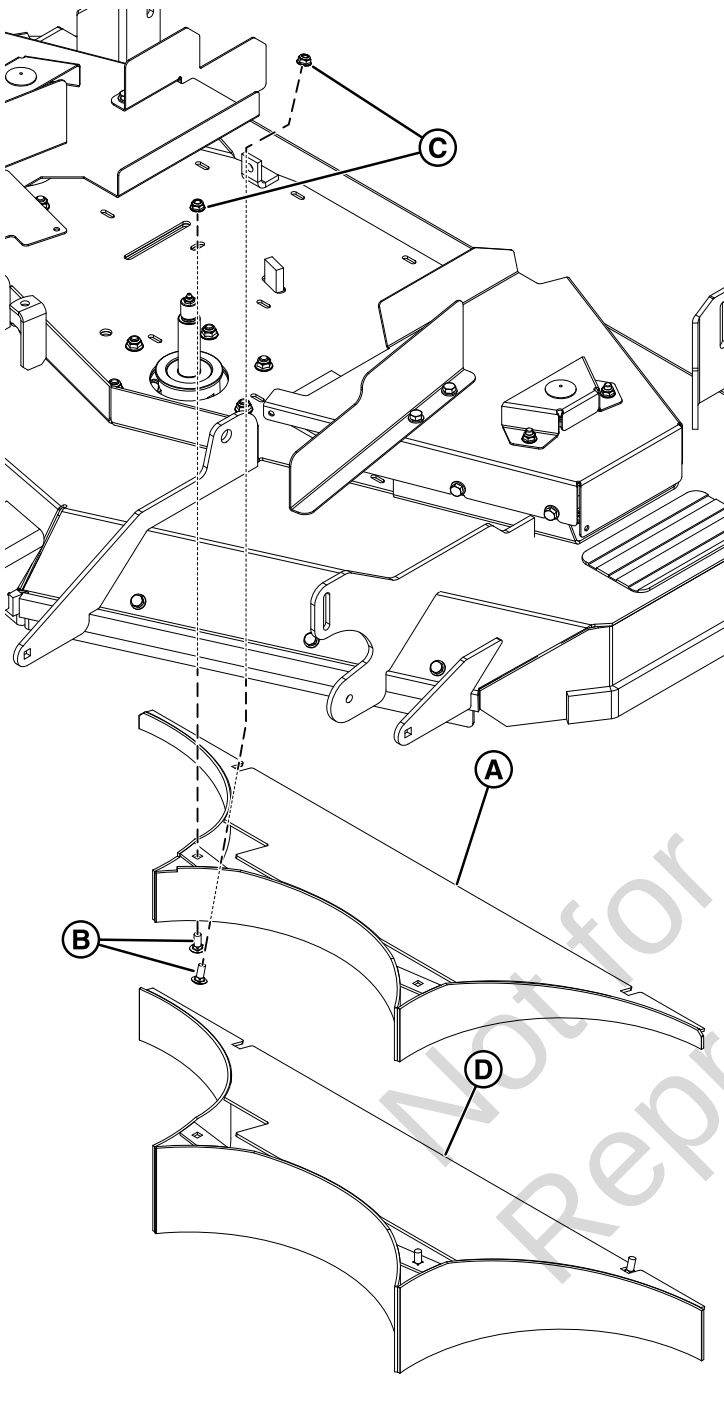
1. Remove the discharge chute (A, Figure 13), chute rod (B), the two (2) washers (C) and nuts (D) from the mower deck.



Configuring the Mower Deck for Mulching from Factory Setup

1. Remove the discharge chute (A, Figure 13), chute rod (B), the two (2) washers (C) and nuts (D) from the mower deck.
2. Remove the short rear baffle (A, Figure 14), the four (4) 5/16 carriage bolts (B) and nuts (C) from the mower deck.

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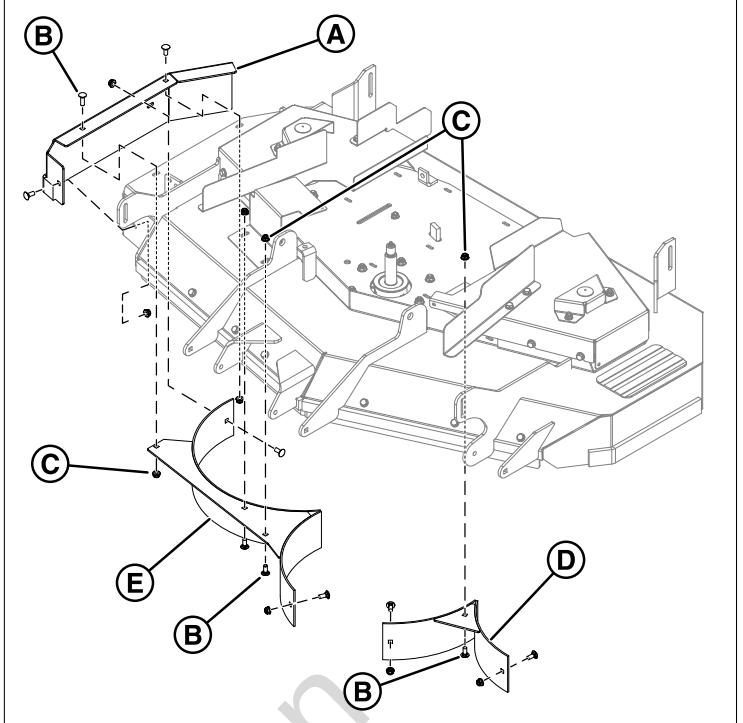


3. Install the tall rear baffle (D) to the mower deck using the four (4) 5/16 carriage bolts and nuts previously removed.

Configuring the Mower Deck for Side Discharge from Factory Setup

1. Remove the short rear baffle (A, Figure 14), the four (4) 5/16 carriage bolts (B) and nuts (C) from the mower deck.
2. Install the tall rear baffle (D) to the mower deck using the four (4) 5/16 carriage bolts and nuts previously removed.
3. Remove the block off plate (A, Figure 15), the four (4) 5/16 carriage bolts (B), and nuts (C) from the mower deck.

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4. Remove the left front baffle (D), the three (3) 5/16 carriage bolts, and nuts from the mower deck.
5. Remove the right front baffle (E), the four (4) 5/16 carriage bolts, and nuts from the mower deck.

Check the Mower Blade Bolt Torque

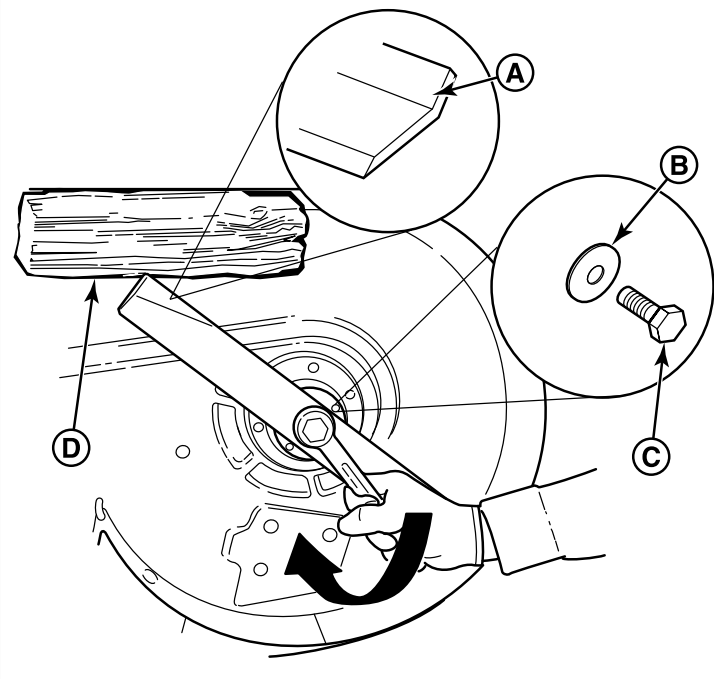


WARNING

Avoid injury! Mower blades are sharp.

- Mower blades are sharp. For your personal safety, do NOT handle mower blades with bare hands.
 - Careless or improper handling of blades may result in serious injury.
 - Blade mounting bolts must each be installed with a flat washer and then securely tightened. Torque blade mounting bolts to 120 ft. lbs. (163 Nm).
1. Lock the mower deck in it's highest cutting position.
 2. Check that the blades are installed with the tabs pointing up (A, Figure 16) towards the deck as showing in Figure 16.

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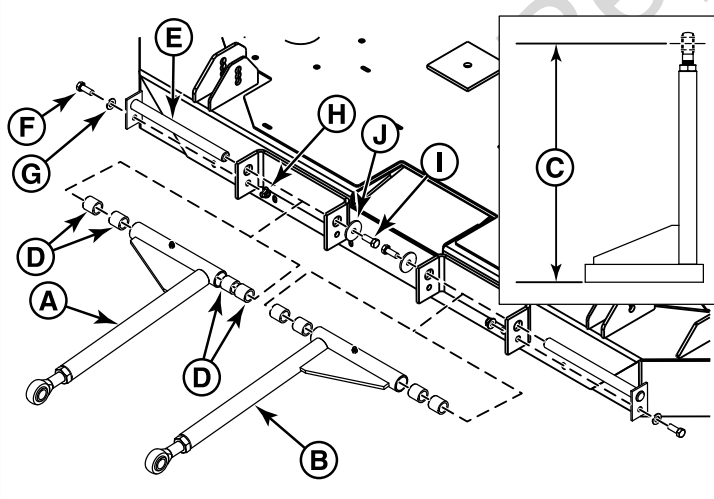


3. Check that a flat washer (B) is installed between each blade and the head of it's mounting bolt (C).
4. Wedge a wooden block (D) between the mower blade and the mower deck housing to keep the mower blade from turning. Torque each mower blade mounting bolt to 120 ft. lbs. (163 Nm).

Install the Pusher Bars (72" Export Models)

There is a left-hand (A, Figure 17) and a right-hand pusher bar (B).

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1. Measure the pusher bar length from the outside of the cross tube to the center of the ball joint (C). The measurement should be 16-9/16" (42.1 cm).
2. If the measurement does not equal 16-9/16" (42.1 cm), loosen the jam nut and turn the ball joint until it the

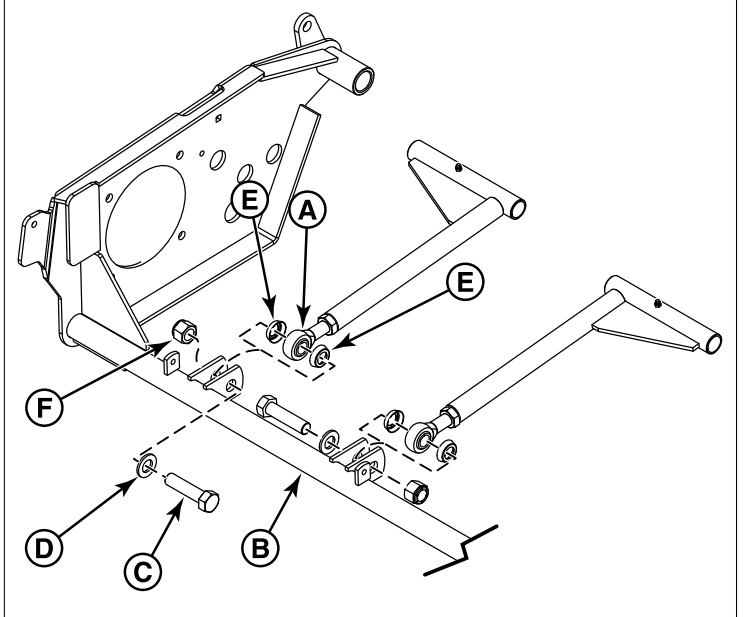
measurement of 16-9/16" (42.1 cm) is achieved. Tighten the jam nut.

3. There are four plastic bushings (D) installed in the cross tube, two on each end. Make sure that all four of the plastic bushings are still installed in the cross tube.
4. Holding the pusher bar in place, insert the mount pin (E) through the mower decks mounting brackets and the pusher bar.
5. Secure the mount pin to the mower deck bracket with the 3/8-16 X 1" bolt (F), 3/8 SAE washers (G), and 3/8 hex nylock flange nut (H) that are provided.
6. Secure the other end of the mount pin in place by installing a 3/8-16 X 1" bolt (I) and .390 X 1.50 X .109 washer (J) into the internal threads of the mount pin.
7. Repeat the process to install the right-hand pusher bar to the mower deck.

Install the Mower Deck (72" Export Models)

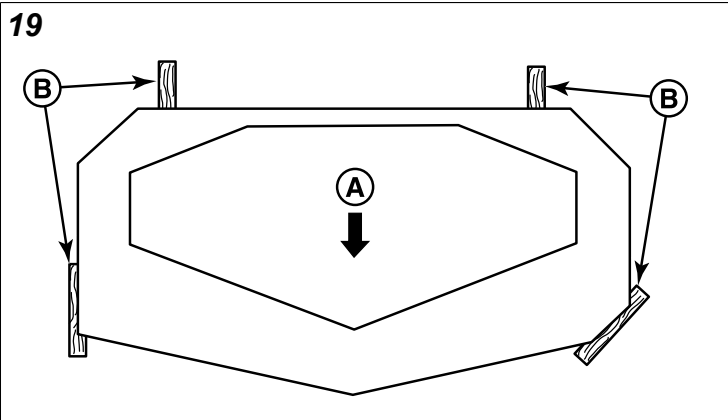
1. Park the zero-turn rider on a flat, level surface. Engage the parking brake, turn the ignition switch to OFF, and remove the key.
2. Lock the deck lift pedal in the TRANSPORT position. Place the deck height adjustment pin in the 4" (10.2 cm) position and lower the deck lift pedal until the arm contacts the pin. Secure in place if necessary.
3. Center the mower deck underneath the zero-turn rider's frame.
4. Fasten the ball joints of the pusher bars (A, Figure 18) to the transmission cradle (B) using the 3/4-16 X 3" bolt (C), 3/4 flat washer (D), 3/4 rod end seal (E), and the 3/4 hex nylon nut (F).

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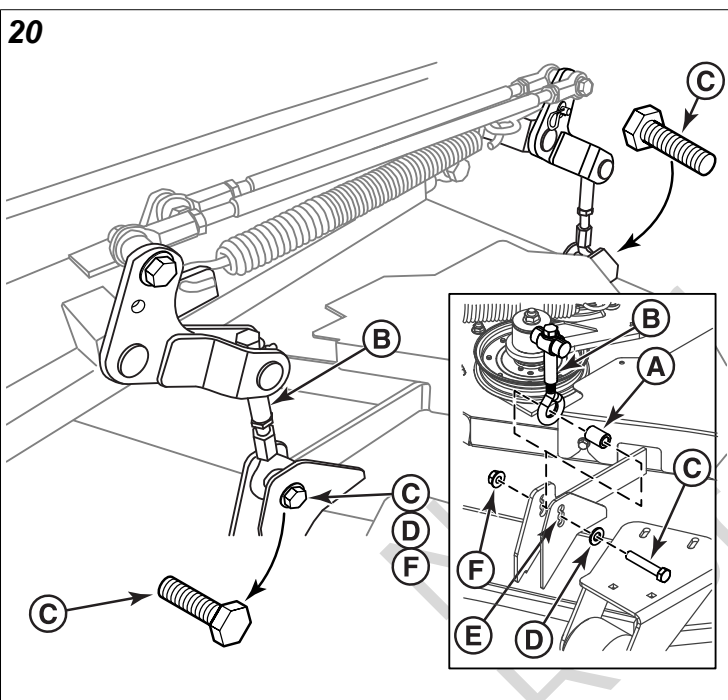


5. Place 2 X 4 blocks (B, Figure 19) underneath each corner of the mower deck with the 3-1/2" sides being vertical.

See Figure 19. The arrow (A) indicates the front of the mower deck.



6. Install the spacer (A, Figure 20) into the eyelit of the deck linkage (B).



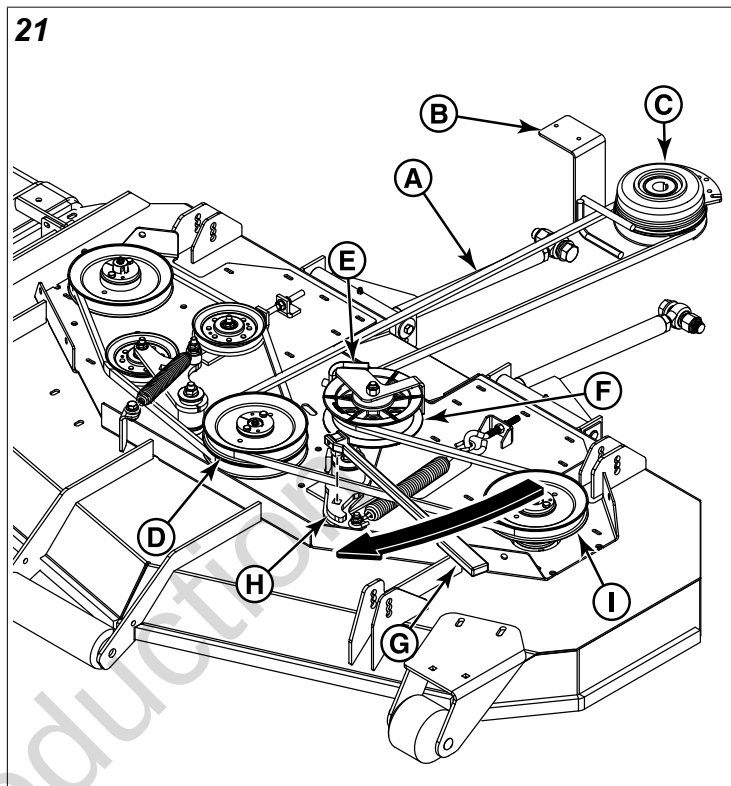
7. Have an assistant use the deck lift pedal to raise or lower the deck linkages as necessary while you install the 1/2 bolt (C) and 1/2 washer (D) through the middle hole (E) of the mower deck connection points and the spacer and secure with the hex nylock flange nut (F).

- The hardware used to secure the **front** of the mower deck to the deck linkages is routed so that the threads of the bolt face towards the **center of the mower deck**.
- The hardware used to secure the **rear** of the mower deck to the deck linkages is routed so that the threads of the bolt face towards the **outside of the mower deck**.

8. Remove the blocking from underneath the mower deck.

Install the Deck Belt (72" Export Models)

1. Lower the mower deck to its lowest cutting position and remove the mower deck guards and the floor pan of the machine.
2. Install the long left hand belt (A, Figure 21) through the PTO clutch pulley belt guide (B) onto the PTO clutch pulley (C) and the center spindle pulley (D).



3. Install the long left hand belt into the belt guide (E) on the adjustable idler pulley (F).
4. Verify that the V-side of the belt runs in the pulley grooves of the center spindle pulley and the PTO clutch pulley. Make sure that the back side of the belt contacts the face of the adjustable idler pulley. Make sure that the belt is correctly routed in the belt guides.



WARNING

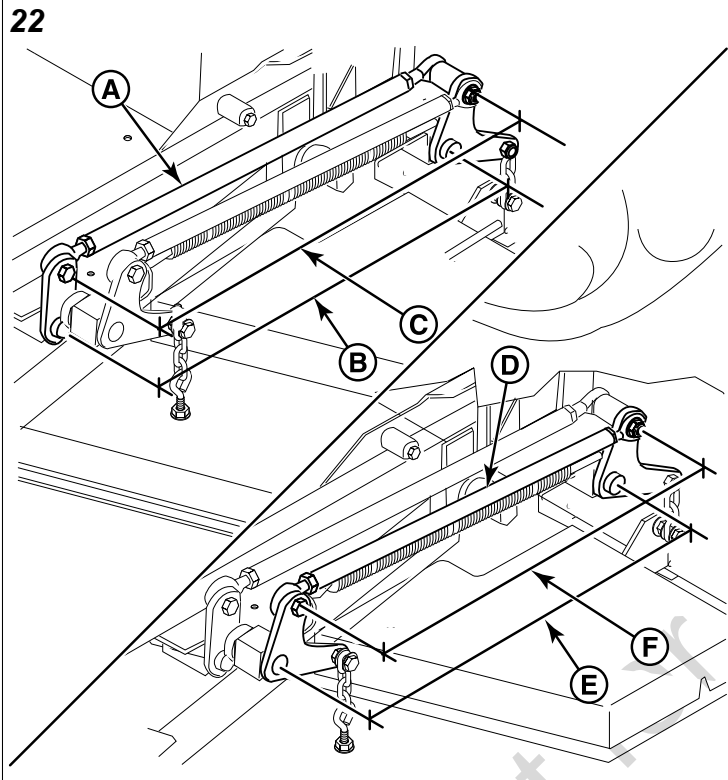
Use extreme caution when rotating the idler arm with the breaker bar, due to the increased tension in the spring as the idler arm is being rotated. Injury may result if the breaker bar is prematurely released while the spring is under tension.

5. Using a 1/2" breaker bar (G) place the square end in the opening in the PTO clutch drive idler arm (H) and rotate the idler arm **clockwise**, which will relieve tension on the belt exerted from the idler arm. Install the long left hand belt onto the left hand spindle pulley (I). Carefully release the tension on the breaker bar.

Deck Lift Rod Timing Adjustment

Checking the Deck Lift Rod Timing

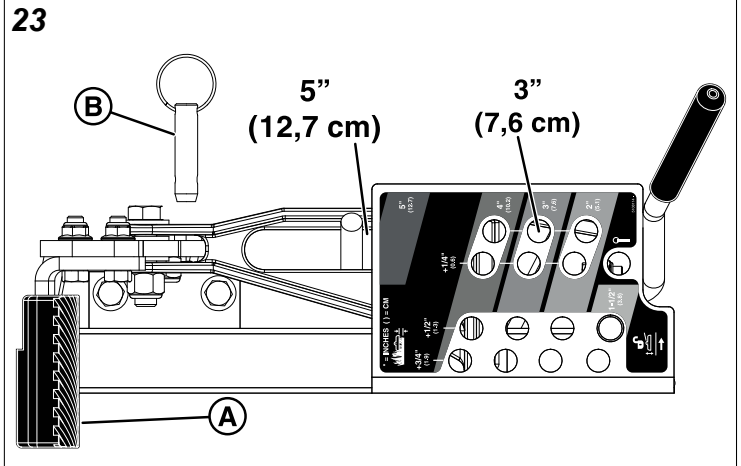
1. Park machine on a flat, level surface. Disengage the PTO, stop the engine, and engage the parking brake. Verify the tires are inflated to the correct pressure.
2. To check the inner lift rod (A, Figure 22) timing, measure and record the distance between the inner lift pivots (B) and the inner rod pivots (C). Repeat for other side of unit.



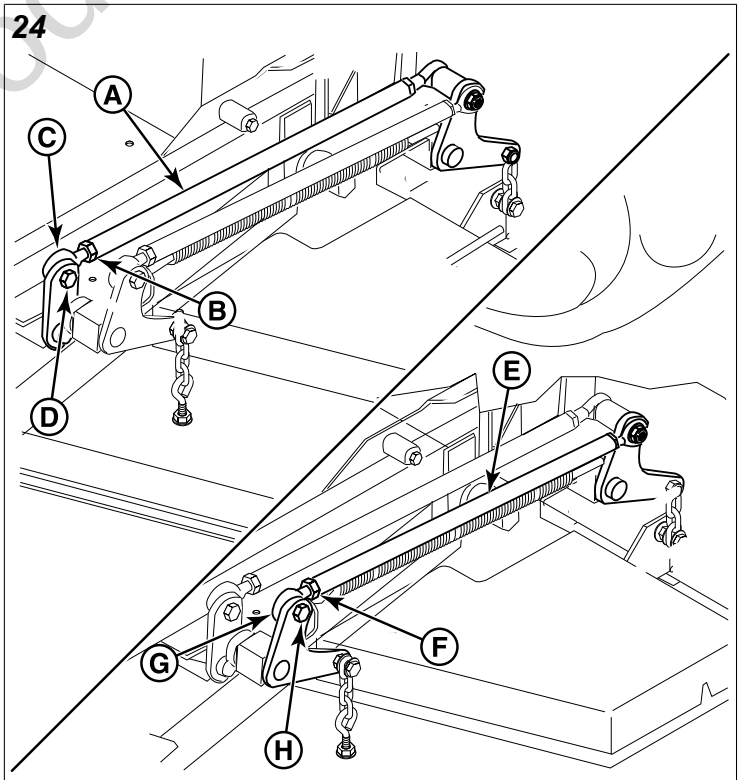
3. To check the outer lift rod (D) timing, measure and record the distance between the outer lift pivots (E) and the outer rod pivots (F). Repeat for other side of unit.
4. If the measurements for the inner rods are equal, and the measurements for the outer rods are equal, no further adjustment is required. If the measurements are NOT equal (greater than 1/8" (3,17 mm) difference), adjustment is required, continue with Adjusting the Deck Lift Rod Timing.

Adjusting the Deck Lift Rod Timing

1. Fully depress the deck lift pedal (A, Figure 23) to lock the cut height in the 5" (12,7 cm) position. Remove the height adjustment pin (B) and lower the mower deck.



2. To ensure that the deck is in the lowest position, push the pedal by hand towards the rear of the unit and install the height adjustment pin in the 3" (7.6 cm) position to hold in place.
3. Block up the mower deck until all hanger chains are slack.
4. To adjust the inner lift rod (A, Figure 24): Loosen the jam nut (B) on the front ball joint (C) then remove the 1/2" hardware (D) fastening the ball joint to the lift pivot arm. Turn the ball joint **clockwise** to shorten the distance between the rod pivots or **counter-clockwise** to lengthen the distance between the rod pivots. Reinstall the ball joint on the lift pivot arm and secure with the 1/2" hardware previously removed. Tighten the jam nut against the lift rod.



5. To adjust the outer lift rod (E): Loosen the jam nut (F) on the front ball joint (G) then remove the 1/2" hardware (H) fastening the ball joint to the lift pivot arm. Turn the ball

joint **clockwise** to shorten the distance between the rod pivots or **counter-clockwise** to lengthen the distance between the rod pivots. Reinstall the ball joint on the lift pivot arm and secure with the 1/2" hardware previously removed. Tighten the jam nut against the lift rod.

6. Remove blocks from under the mower deck.
7. Remove the cutting height adjustment pin from in front of the deck lift pedal arm. Lift mower deck and reinstall adjustment pin in desired mowing height.

Deck Leveling Adjustment

Before adjusting the deck level, the deck lift rod timing must be checked and/or adjusted.

Determining if the Deck Leveling Needs to be Adjusted

1. Park the unit on a flat, level surface. Disengage the PTO, engage the parking brake, turn the ignition switch to OFF, and remove the ignition key.
2. Lock the deck lift pedal in the TRANSPORT position. Place the cutting height adjustment pin in the 4" position and lower the deck lift pedal until the deck lift arm contacts the cutting height adjustment pin.
3. Verify that the tires are inflated to the correct pressure.
4. Verify that the mower blades are flat, and not bent or broken. A bent or broken blade must be replaced.



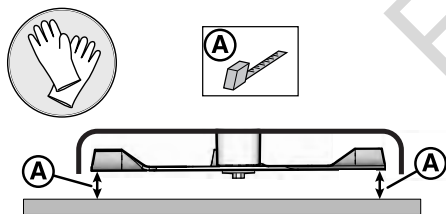
WARNING

Avoid Injury! Mower blades are sharp.

Always wear gloves when handling blades or working near blades.

5. See Figure 25. Position the outside mower blades so they face front-to-back.

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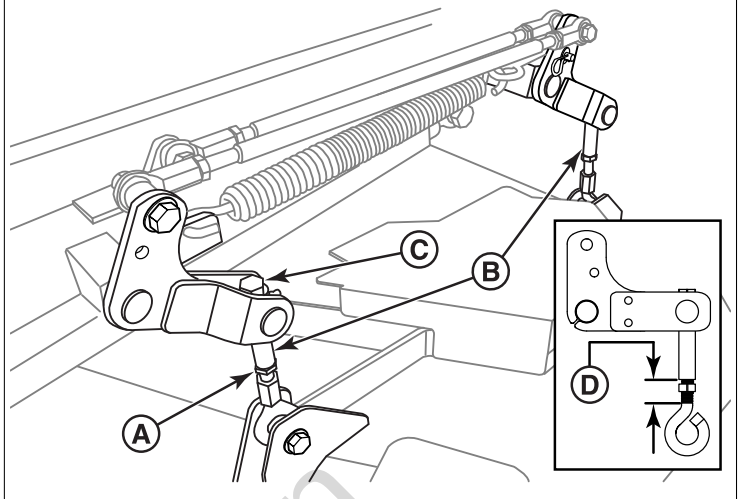
6. Measure the front tip (A, Figure 25) of the blade from the cutting edge to the ground.
7. Measure the rear tip (A) of the blade from the cutting edge to the ground.
8. Repeat the process on the other side of the machine.
 - the front measurements should equal 4" (10,2 cm).
 - the rear measurements should equal 4-1/4" (10,8 cm)

If the measurements do not equal the measurements as listed above, adjust the deck leveling.

Deck Leveling Procedure

1. Place the deck height adjustment pin in the 4" (10,2 cm) position.
2. Loosen the jam nut (A, Figure 26) on the deck linkages (B).

26



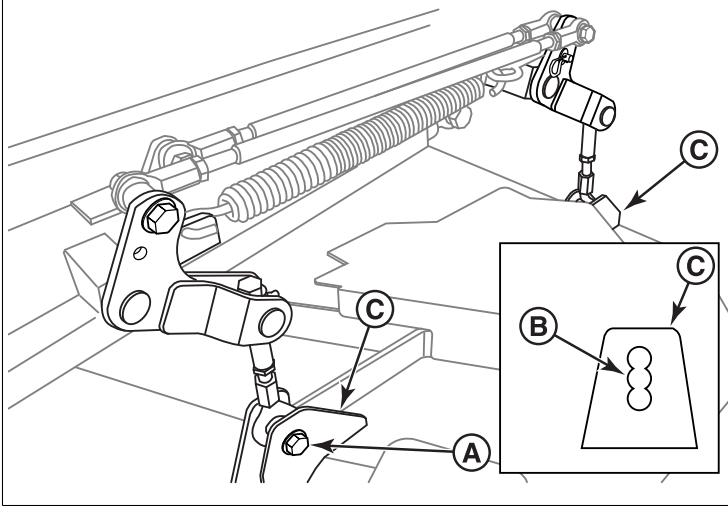
3. Turn the hex adjusters on the deck linkages (C) **clockwise** to raise the mower deck or **counter-clockwise** to lower the mower deck.

Note: If you are lowering the mower deck measure the amount of visible threads (D) on the deck linkages. If the amount of visible threads shown reaches 2" (5,1 cm), do not lower the mower deck by adjusting the deck linkage any further.

4. Re-check the measurements from the tips of the mower blades to the ground. The front measurements should equal 4" (10,2 cm) and the rear measurements should equal 4-1/4" (10,8 cm).
 - if the measurements equal 4" (10,2 cm) in the front and 4-1/4" (10,8 cm) in the rear, tighten the jam nuts on the deck linkages. The adjustment procedure is complete.
 - If the measurements do not equal 4" (10,2 cm) in the front and 4-1/4" (10,8 cm) in the rear, the hole that the deck linkage is mounted in on the mower deck will have to be changed.
5. Place blocking underneath all four corners of the mower deck.
6. Re-position the hardware (A, Figure 27) that secures the deck linkage to the mower deck.
 - If the mower deck was being raised when it was unable to achieve the 4" (10,2 cm) in the front and 4-1/4" (10,8 cm) in the rear measurement, position the hardware in the next lower hole (B) in the mower deck mount (C).
 - If the mower deck was being lowered when it was unable to achieve the 4" (10,2 cm) in the front and 4-1/4" (10,8 cm) in the rear measurement, position

the hardware in the next higher hole in the mower deck mount.

27

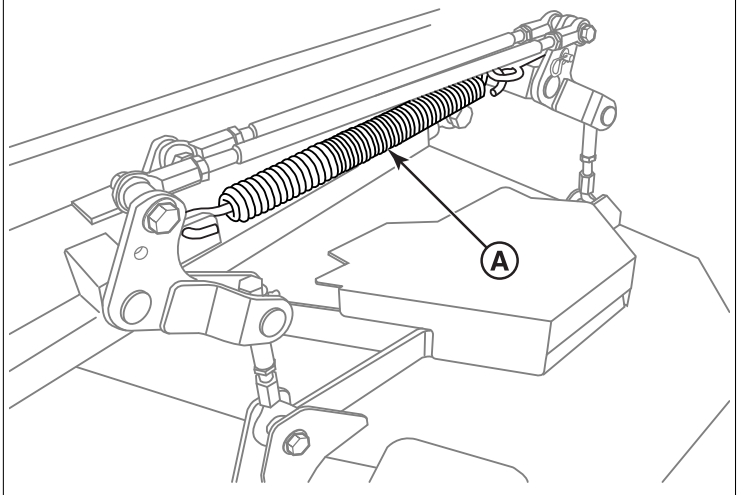


7. Remove the blocking from under the mower deck.
8. Re-check the measurements from the tips of the mower blades to the ground. The front measurements should equal 4" (10,2 cm) and the rear measurements should equal 4-1/4" (10,8 cm).
 - if the measurements equal 4" (10,2 cm) in the front and 4-1/4" (10,8 cm) in the rear, tighten the jam nuts on the deck linkages. The adjustment procedure is complete.
 - If the measurements do not equal 4" (10,2 cm) in the front and 4-1/4" (10,8 cm) in the rear, turn the hex adjusters on the deck linkages until the measurements equal 4" (10,2 cm) in the front and 4-1/4" (10,8 cm) in the rear.
9. Tighten the jam nuts on the deck linkages.

Deck Lift Assist Springs

Some models are equipped with deck lift assist springs (A, Figure 28) that assist the operator in raising the mower deck with the deck lift pedal. The deck lift assist springs are factory set to provide optimal lifting performance.

28



Although it is fastened with a multi-position anchor, this is **not** an adjustment point.

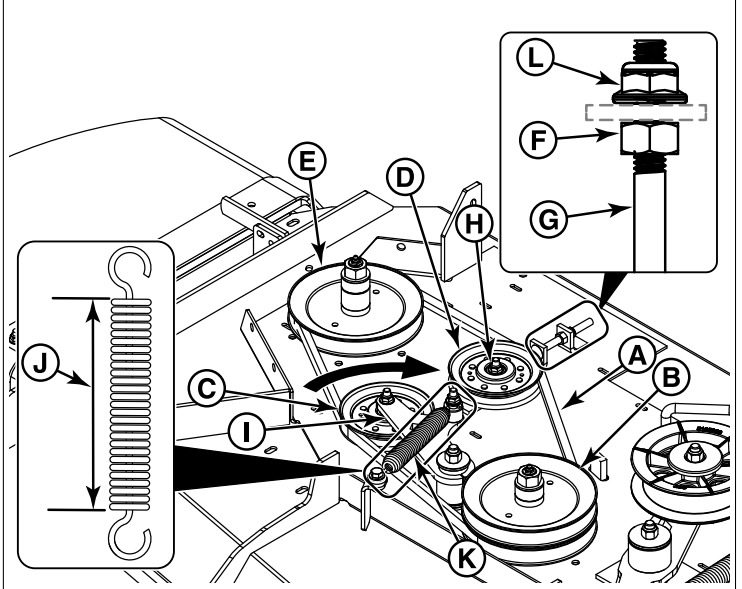
Do NOT attempt to adjust the spring length or lifting performance will be compromised.

Check the Short Right Hand Deck Belt - 61" Decks

NOTICE To avoid damaging belt, do not pry over pulleys.

1. Lower the mower deck to it's lowest cutting position.
2. Remove the mower deck guards and floor pan to gain access to the mower deck belts.
3. Make sure that the V-side of the short right hand belt (A, Figure 29) is in the pulley grooves of the center spindle pulley (B), the front idler pulley (C), the rear idler pulley (D) and the right hand spindle pulley (E).

29



4. If the short right hand belt is not properly seated, loosen the jam nut (F) on the carriage bolt (G) and the 3/8" nut (H) that secure the rear idler pulley (D) to the deck. This

will allow the rear idler pulley to move in it's adjustment slot.

! WARNING

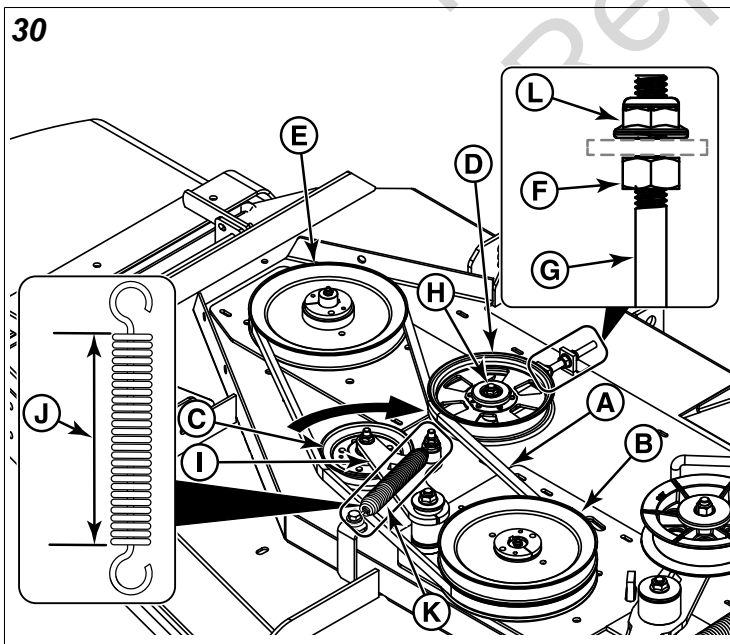
Use extreme caution when rotating the idler arm due to the increased tension in the spring as the idler arm is being rotated. Injury may result if the idler arm is prematurely released while the spring is under tension.

5. Carefully rotate the idler arm (I) **clockwise**, which will relieve the tension on the belt exerted from the idler arm.
6. Re-seat the short right hand belt and carefully release the tension on the idler arm.
7. Set the mower deck to the 3-1/2" (8,9 cm) cutting position.
8. Measure the coil-to-coil length (J) of the idler arm spring (K). The measurement should equal 6-1/8" (15,6 cm) $\pm$ 1/8 (0,32 cm). If not, turn the adjustment nut (L) until the measurement is achieved.
9. Tighten the jam nut and the 3/8" nut that secures the rear back side idler pulley to the deck.

Check the Short Right Hand Deck Belt - 72" Decks

NOTICE To avoid damaging belt, **do not pry over pulleys.**

1. Lower the mower deck to it's lowest cutting position.
2. Remove the mower deck guards and floor pan to gain access to the mower deck belts.
3. Make sure that the V-side of the short right hand belt (A, Figure 30) is in the pulley grooves of the center spindle pulley (B), the front idler pulley (C), the rear idler pulley (D) and the right hand spindle pulley (E).



4. If the short right hand belt is not properly seated, loosen the jam nut (F) on the carriage bolt (G) and the 3/8" nut

(H) that secure the rear idler pulley (D) to the deck. This will allow the rear idler pulley to move in it's adjustment slot.

! WARNING

Use extreme caution when rotating the idler arm due to the increased tension in the spring as the idler arm is being rotated. Injury may result if the idler arm is prematurely released while the spring is under tension.

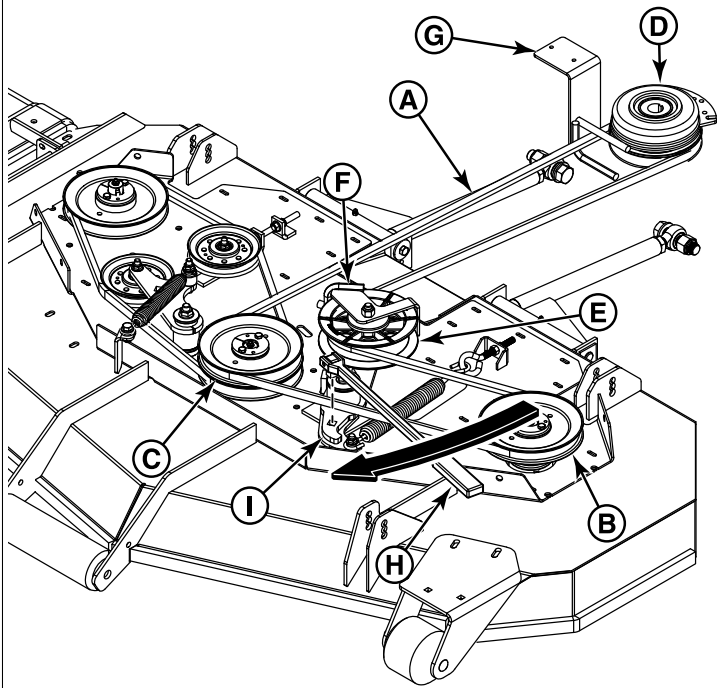
5. Carefully rotate the idler arm (I) **clockwise**, which will relieve the tension on the belt exerted from the idler arm.
6. Re-seat the short right hand belt and carefully release the tension on the idler arm.
7. Set the mower deck to the 3-1/2" (8,9 cm) cutting position.
8. Measure the coil-to-coil length (J) of the idler arm spring (K). The measurement should equal 6-1/8" (15,6 cm) $\pm$ 1/8 (0,32 cm). If not, turn the adjustment nut (L) until the measurement is achieved.
9. Tighten the jam nut and the 3/8" nut that secures the rear back side idler pulley to the deck.

Check the Long Left Hand Deck Belt

NOTICE To avoid damaging belt, **do not pry over pulleys.**

1. Check the routing of the long left hand belt (A, Figure 31). Make sure that the V-side of the belt is in the pulley grooves of the left hand spindle pulley (B), center spindle pulley (C), and the PTO clutch pulley (D). Make sure that the back side of the belt contacts the face of the adjustable idler pulley (E). Make sure that the belt is correctly routed in the belt guides (F & G).

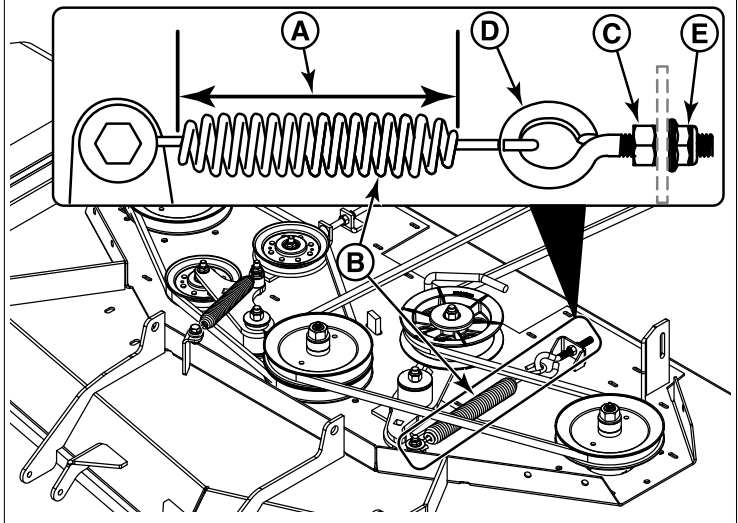
31

**WARNING**

Use extreme caution when rotating the idler arm with the breaker bar, due to the increased tension in the spring as the idler arm is being rotated. Injury may result if the breaker bar is prematurely released while the spring is under tension.

2. If the long left hand belt is not properly seated, use a 1/2" breaker bar (H) and place the square end in the opening in the spindle drive idler arm (I) and rotate the idler arm **clockwise**, which will relieve the tension on the belt exerted from the idler arm.
3. Re-seat the long left hand belt and carefully release the tension on the idler arm.
4. Set the mower deck to the 3-1/2" (8,9 cm) cutting position.
5. Measure the coil-to-coil length (A, Figure 32) of the long left hand belt tensioning spring (B). The measurement should equal 10-1/4" (26 cm) $\pm$ 1/8 (0,32 cm). If not, loosen the jam nut (C) on the eye bolt (D) and then turn the adjustment nut (E) until the measurement is achieved. Tighten the jam nut.

32



6. Re-install the mower deck guards and the floor pan.

Lubrication

Lubricate the unit at the location shown in the following figures as well as the lubrication points listed below.

Grease:

- front caster wheel axles & yokes
- deck lift pivot blocks
- mower deck spindles
- mower deck rear pusher bars
- transmission cradle pivot points

Use grease fittings when present. Disassemble parts to apply grease to moving parts when grease fittings are not installed.

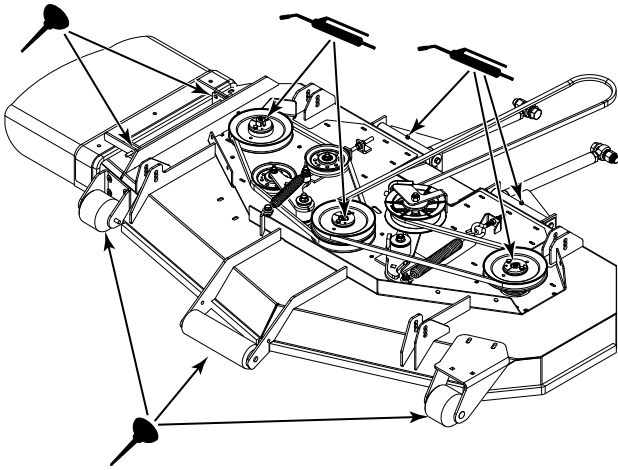
Not all greases are compatible. Grease (p/n 5022285) is a Calcium Sulfonate EP NLGI #2 grease that is recommended and available through your normal parts source. Lithium Complex EP-2 NLGI #2 grease may be used if 5022285 is not available. Using a non-compatible grease could damage or cause premature parts failures.

Oil:

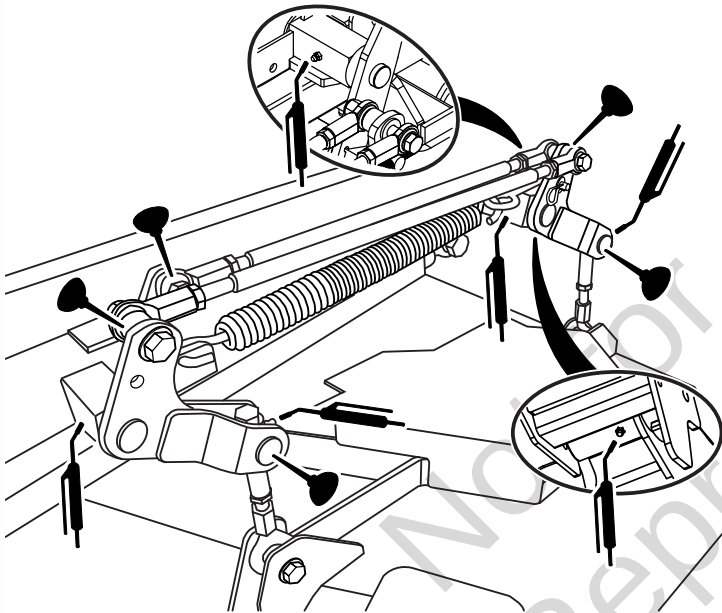
- control handle pivots
- seat plate pivots
- deck lift pivots
- discharge chute hinge

Generally, all moving metal parts should be oiled where contact is made with other parts. Keep oil and grease off belts and pulleys. Remember to wipe fittings and surfaces clean both before and after lubrication.

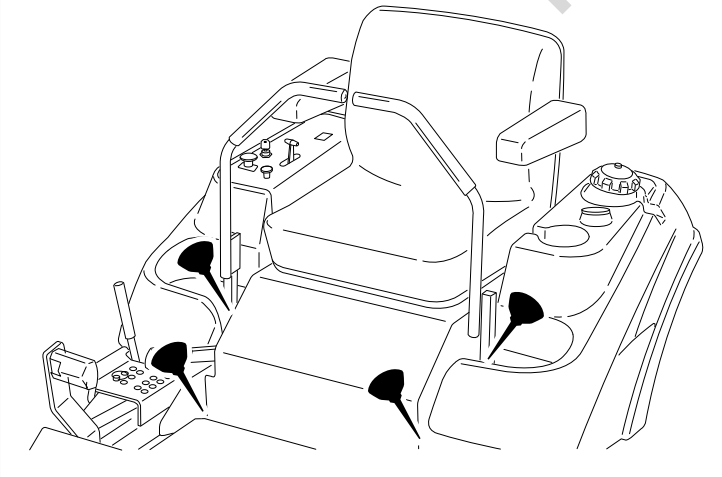
33



34



35

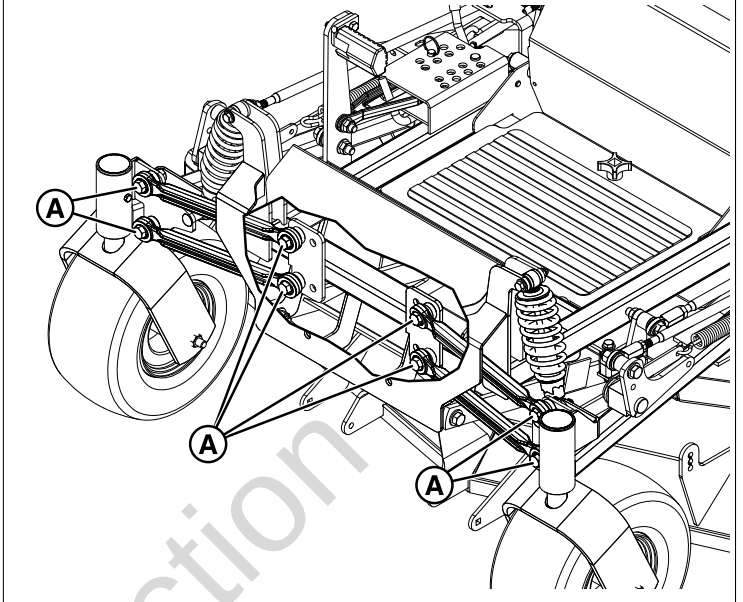


Lubricating the ForeFront Suspension Control Arms

Interval: Every 50 hours.

Lubricate the ends of the four (4) ForeFront™ suspension control arms with a petroleum based chain lube at the areas identified as "A" in Figure 36.

36



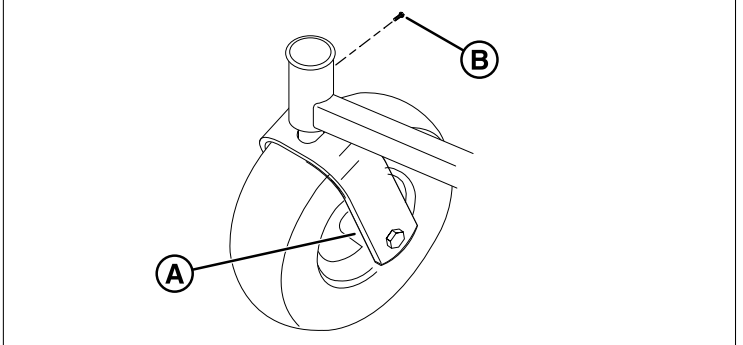
Lubricating the Front Casters

Interval: Front caster wheel axles (A, Figure 37) - Every 25 hours.

Interval: Front caster yoke axles - Yearly.

1. Remove the 1/4-28 bolt (B, Figure 37) screwed into the caster and install a 1/4-28 grease fitting.

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2. Grease the front caster.
3. Remove the 1/4-28 grease fitting and reinstall the 1/4-28 bolt.
4. Repeat the process for the other side of the unit.

Checking / Adding Fuel



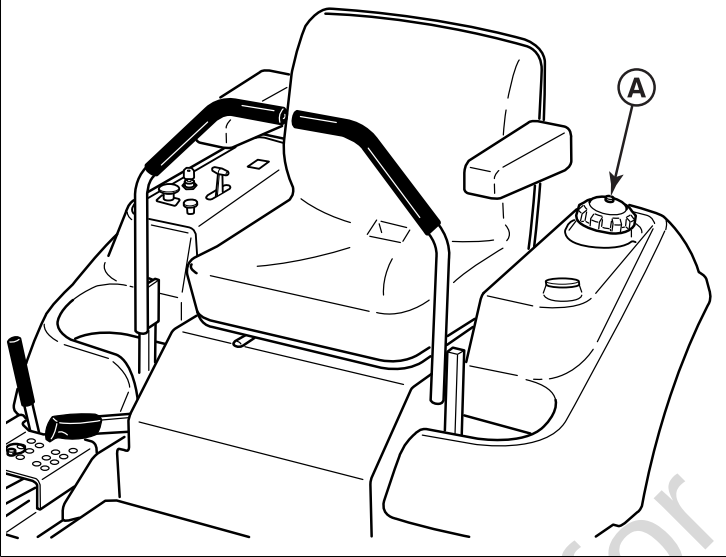
WARNING

Gasoline is highly flammable and must be handled with care. Allow engine to cool for at least 3 minutes before refueling. Do not allow open flame, smoking or matches in the area. Avoid over-filling and wipe up any spills.

To add fuel:

1. Remove the fuel cap (A, Figure 38).

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2. Fill the fuel tank to the bottom of the filler neck. This will allow for fuel expansion.
Note: Do not overfill. Refer to your engine owner's manual for specific fuel recommendations.
3. Install and hand tighten the fuel cap.
4. If your unit is equipped with two fuel tanks, repeat this process to fill the other fuel tank.

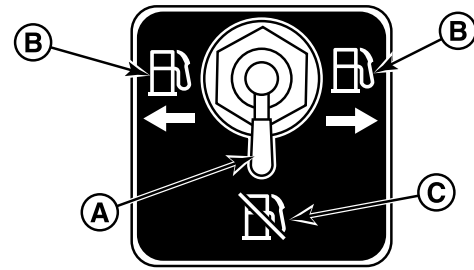
NOTICE

Refer to your engine owner's manual for specific fuel recommendations.

Fuel Selector Valve

Units equipped with two fuel tanks feature a fuel selector valve (A, Figure 39) that features three positions. Two positions allow fuel to be drawn from either the left-hand tank or the right-hand tank (B) and the third position shuts off the fuel flow completely (C). Turning the handle to the desired position determines which tank will be supplying fuel. With the handle pointing LEFT, it will draw fuel from the left-hand tank. With the handle pointing RIGHT, it will draw fuel from the right-hand fuel tank. Prior to starting the engine, make sure that the fuel selector valve is in a position that will allow fuel to be drawn from a fuel tank.

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Starting the Engine - Fuel Injected Models

Note: To prime a dry fuel system: Turn the key switch to the RUN position for one minute. Allow the fuel pump to cycle and prime the system and then turn the key switch to the OFF position.

1. While sitting in the operator's seat, pivot the ground speed control levers out to lock them into the neutral position, engage the parking brake, and press the PTO switch down to disengage the PTO.
2. Position the throttle control midway between the SLOW position and the FAST position.
3. Insert the ignition key into the ignition switch and turn it to the START position. Release the switch as soon as the engine starts. If starter does not turn the engine over, shut the ignition switch off immediately, and consult engine operator's manual.

Warm up the engine by running it for one minute before engaging the PTO switch or driving the unit.

4. After warming the engine always operate the unit at the FAST position when mowing.

In the event of an emergency the engine can be stopped by simply turning the ignition switch to OFF.

Perform the Safety Checks



WARNING

Disengage the PTO, stop the engine, set the parking brake, and wait for moving parts to stop before leaving the operator's position for any reason.

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

Functional Tests

1. Check the unit for loose bolts, screws, nuts, etc.
2. Start the engine and check all the controls for proper operation: ground speed control levers, parking brake, throttle cable, electric PTO clutch, etc.
3. Stop the engine and check for fluid leaks: oil, fuel, and hydraulic oil.
4. If any control fails to operate properly during testing or seems to be out of adjustment, check and re-adjust it

according to the following **Adjustment Procedures** section.

Safety Interlock System

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

Operational SAFETY Checks

Test 1 - Engine SHOULD NOT crank if:

- PTO switch is engaged, OR
- Parking brake is not engaged.

Test 2 - Engine SHOULD crank if:

- PTO switch is not engaged, AND
- Parking brake is engaged.

Test 3 - Engine should SHUT OFF if:

- Operator rises off seat with PTO engaged, OR
- Operator rises off seat with parking brake disengaged.

Test 4 - Blade Brake Check

Mower blades and mower drive belt should come to a complete stop within seven (7) seconds after electric PTO switch is turned off (or operator rises off seat). If mower drive belt does not stop within seven (7) seconds, see your dealer.

NOTE: Once the engine has stopped, PTO switch must be turned off, parking brake must be engaged, and the ground speed control levers must be locked in the NEUTRAL position after the operator returns to the seat in order to start the engine.



WARNING

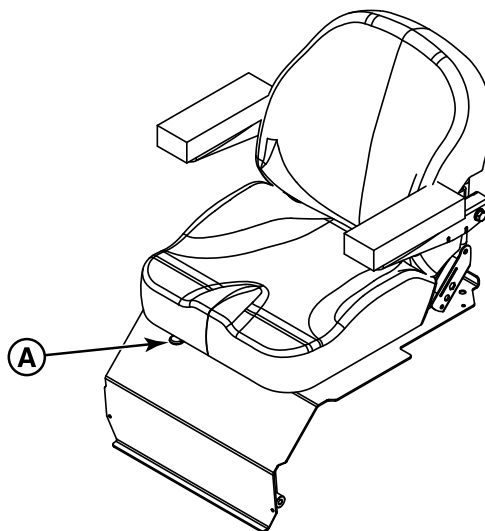
If the unit does not pass a safety test, do not operate it. See your authorized dealer. Under no circumstance should you attempt to defeat the purpose of safety interlock system.

Adjustment Procedures

Seat Adjustment

The seat can be adjusted forward and back. Move the lever (A, Figure 40) towards the left, position the seat as desired, and then release the lever to lock the seat into position.

40



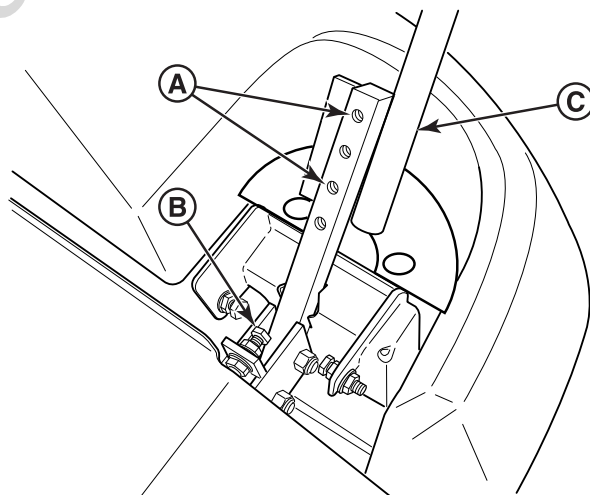
Ground Speed Control Lever Adjustment

The control levers can be adjusted in three ways. The alignment of the control levers, the placement of the levers (how close the ends are to one another) and the height of the levers can be adjusted.

To Adjust the Handle Alignment

Loosen the mount bolts (A, Figure 41) and pivot the lever(s) (C) to align with each other.

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To Adjust the Handle Placement

Loosen the jam nuts and adjust the placement bolt (B) in or out to properly adjust the lever end spacing.

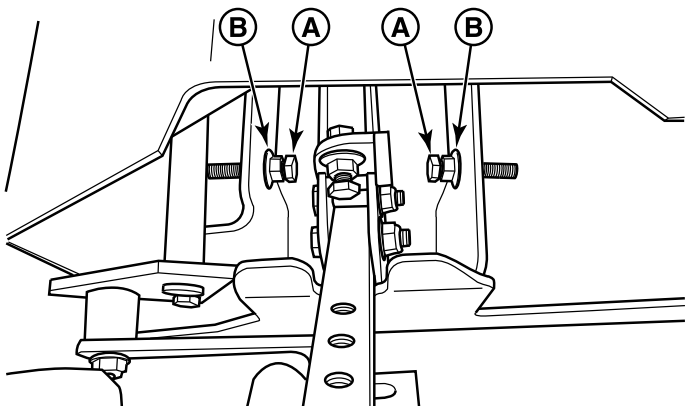
To Adjust the Handle Height

Remove the mounting hardware and reposition the handle either up or down from its original position. You will need to adjust the handle alignment again as described above.

Speed Balancing Adjustment

If the rider veers to the right or left when the ground speed control levers are in the maximum forward position, the top speed of each of these levers can be balanced by turning the adjustment bolt(s) (A, Figure 42). Only adjust the speed of the wheel that is traveling faster.

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To Reduce the Speed of the Faster Wheel

1. Loosen the securing nut (B).
2. Turn the top speed adjustment bolt **counter-clockwise** to reduce the speed.
3. Retighten the securing nut when adjustment is complete.



WARNING

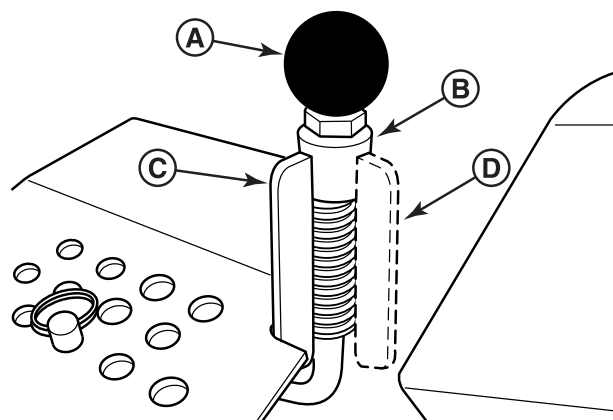
DO NOT adjust the tractor for a faster overall speed forward or reverse than it was designed for.

Deck Lift Lock Lever Lockout Plate Operation

The Deck Lift Lock Lever Lockout Plate (A, Figure 43) can be used to prevent the mower deck from locking the deck in the TRANSPORT position if you raise deck during operation to clear an object.

1. Move the deck lift lock lever (A) away from the operating position, and rotate the deck lift lever lockout plate (B) to the UNLOCK (C) position (facing towards the operating position) and allow the deck lift lever lockout plate to contact the deck height box.

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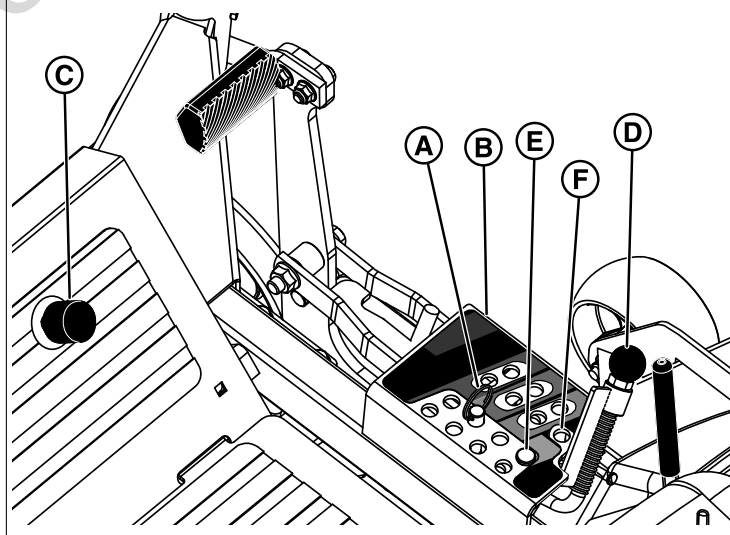
The mower deck can now be raised to the TRANSPORT position without the deck lift lock lever engaging.

2. Move the deck lift lock lever away from the operating position, and rotate the deck lift lever lockout plate (B) to the LOCK (C) position (facing towards the rear of the machine) and allow the deck lift lever to return to its natural position. The mower deck can now be raised to the TRANSPORT position and the deck lift lock lever will lock it in place.

Cutting Height Adjustment

The cutting height adjustment pin (A, Figure 44) controls the mower's cutting height. The cutting height is adjustable between 1-1/2" (3,8 cm) and 5" (12,7 cm) in 1/4" (0,64 cm) increments.

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Note: Make sure that the pin is inserted into the holes in both upper and lower plates of the pin box (B).

To set the cutting height at 1-1/2" (3,37 cm):

1. While sitting in the operator's seat, press the hydraulic deck lift button (C) with your foot until the deck locks into the 5" (12,7 cm) position.

2. Remove the cutting height adjustment pin from the hole that it is installed in.
3. Press the hydraulic deck lift button and then push the lock lever (D) towards the right to release the lock.
4. Release the hydraulic deck lift button and gravity will lower the deck until the deck lift linkage comes to rest against the stationary pin (E) in the 1-1/2" (3,37 cm) cutting height hole.
5. Place the cutting height adjustment pin in the storage hole (F).

To set the cutting height in the range of 1-3/4" (4,40 cm) and 4-3/4" (12,06 cm):

1. While sitting in the operator's seat, press the hydraulic deck lift button with your foot until the deck locks into the 5" (12,7 cm) position.
2. Place the cutting height adjustment pin in the desired cutting height.
3. Press the hydraulic deck lift button and then push the lock lever towards the right to release the lock.
4. Release the hydraulic deck lift button and gravity will lower the deck until the deck lift linkage comes to rest against the cutting height adjustment pin.

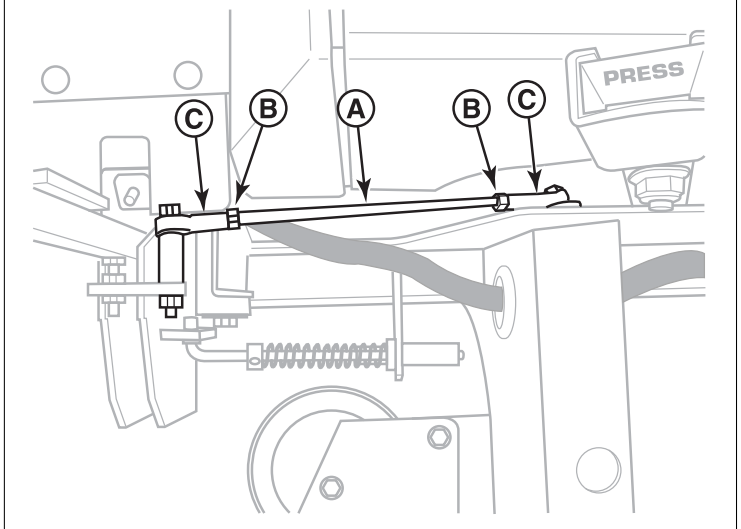
To set the cutting height at 5" (12,7 cm):

1. While sitting in the operator's seat, press the hydraulic deck lift button with your foot until the deck locks into the 5" (12,7 cm) position.
2. Place the cutting height adjustment pin in any open cutting height hole. The lift lock lever holds the mower deck at 5" (12,7 cm) while cutting.

Neutral Adjustment

The neutral system for this mower consists of two neutral linkage rods and a pivot that connects the ground speed control lever to the transmission. The lower rod that connects the transmission to the pivot is factory preset and should not be changed for neutral adjustment purposes. The adjustment is achieved by changing the length of the upper rod (A, Figure 45) that connects the ground speed control lever to the pivot.

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Determining if Adjustment is Necessary: If the tractor "creeps" while the ground speed control levers are locked in the NEUTRAL, then it may be necessary to adjust the linkage rods.

Note: Perform this adjustment on a hard, level surface such as a concrete floor.

1. Disengage the PTO, engage the parking brake and turn off the engine.
2. There are two nuts (B) on the linkage rod. Loosen the nuts from the ball joints (C) and turn the linkage rod to adjust.
 - If the machine creeps forward, turn the rod **clockwise** (while standing at the rear of the machine, facing forward);
 - If the machine creeps backward, turn the rod **counter-clockwise** (while standing at the rear of the machine, facing forward).
3. Lock the jam nut against the ball joints when neutral is achieved.

Note: This adjustment should not be performed while the machine is running. It may take several attempts to achieve neutral, depending on how much the machine creeps.

Return-to-Neutral Adjustment

Prior to performing this procedure the Neutral Adjustment Procedure must be completed.

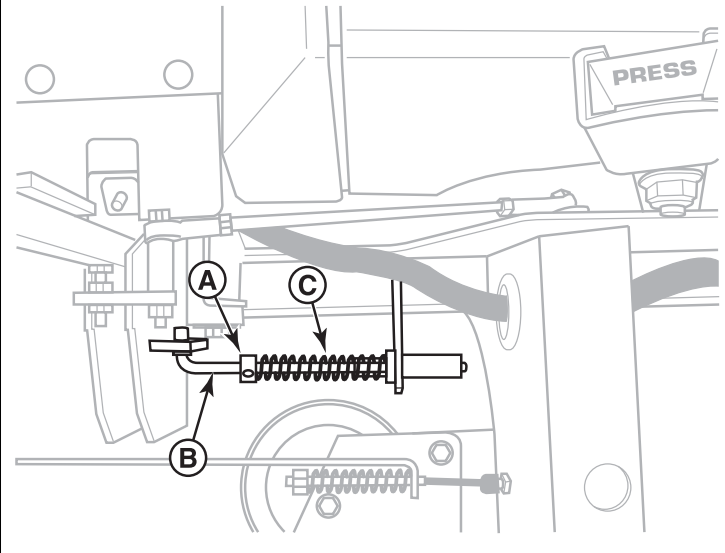


WARNING

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

1. Position the ground speed control levers into the NEUTRAL LOCKOUT position
2. Loosen the set collar (A, Figure 46) on the neutral return rod (B).

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3. Position the set collar along the neutral return rod until it contacts and very lightly compresses the neutral return spring (C).
4. Move the ground speed control levers into the operating position, pull rearward, and release.
5. Move the ground speed control levers out towards the NEUTRAL LOCKOUT position.
 - if the ground speed control lever aligns with the notch in the neutral lock plate, adjustment is complete;
 - if the ground speed control lever stops its return motion past the notch (while standing at the rear of the machine), re-position the set collar so the neutral return spring is less compressed.
 - if the ground speed control lever stops its return motion before the notch (while standing at the rear of the machine), re-position the set collar so that the neutral return spring is more compressed.
6. Repeat the process as necessary until the ground speed control lever aligns with the notch in the neutral lock plate.

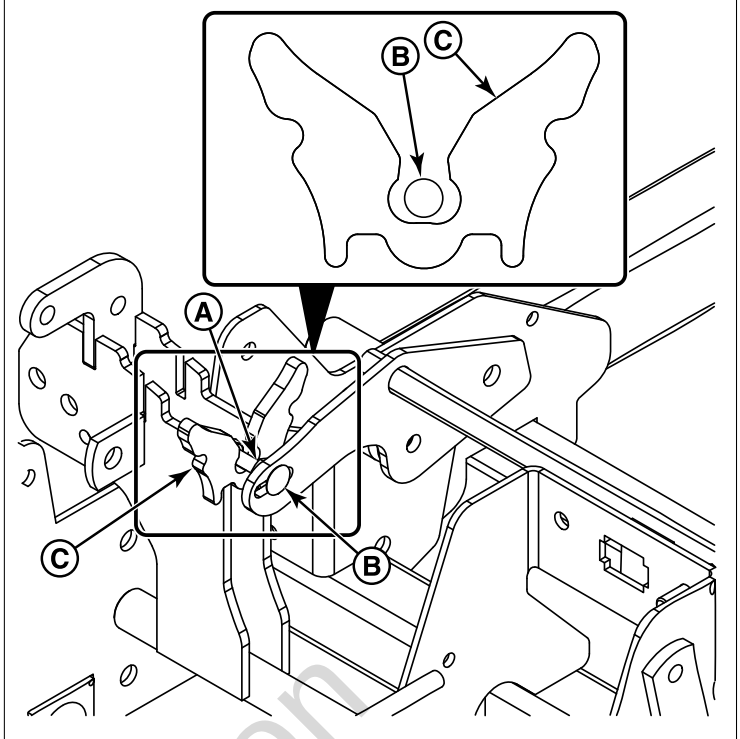
Note: It is important to note that after every adjustment of the neutral return rod, the lever must be pulled rearward and released to properly check the return-to-neutral position.

Neutral Lockout Adjustment

Prior to adjusting the neutral lockout, the neutral and return-to-neutral must be properly adjusted.

1. Park the unit on a flat, level surface such as a concrete floor. Disengage the PTO, engage the parking brake, turn the ignition switch to OFF, and remove the ignition key.
2. Chock the wheels of the unit to prevent movement.
3. Raise the seat to gain access to the neutral lockout components.
4. Loosen the jam nuts (A, Figure 47) on the neutral lockout bolts (B).

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5. Engage the parking brake. The neutral lockout bolts will enter the notches of the neutral lockout plates (C).
6. Position the neutral lockout bolts to the center of the notches of the neutral lockout plates.
7. Re-tighten the jam nuts.

Purging the Air from the Hydraulic System

Due to the effects air has on efficiency in hydraulic drive systems, it is critical that it be purged from the system. These purge procedures should be implemented any time a hydraulic system has been opened to facilitate maintenance or any additional oil has been added to the system.

The resulting symptoms of air in the hydraulic system may be:

- Noisy operation.
- Lack of power or drive after short term operation.
- High operation temperature and excessive expansion of oil.

Before starting, make sure the transaxles/transmissions are at the proper oil levels. If it is not, fill to the specifications outlined in the *Check / Fill Transmission Oil Level* procedure.

Purging Air from the Hydraulic System:

1. Chock the front wheels to prevent the machine from rolling. Raise the rear of the machine so that the vehicle's rear tires do not contact the ground. Position jack stands under the rear bumper of the machine to secure it.
2. Open the transaxle's bypass valves (see *Uncrating* for the location and function of the bypass valves), start the engine, release the parking brake, and slowly move the zero-turn rider's ground speed control levers in both

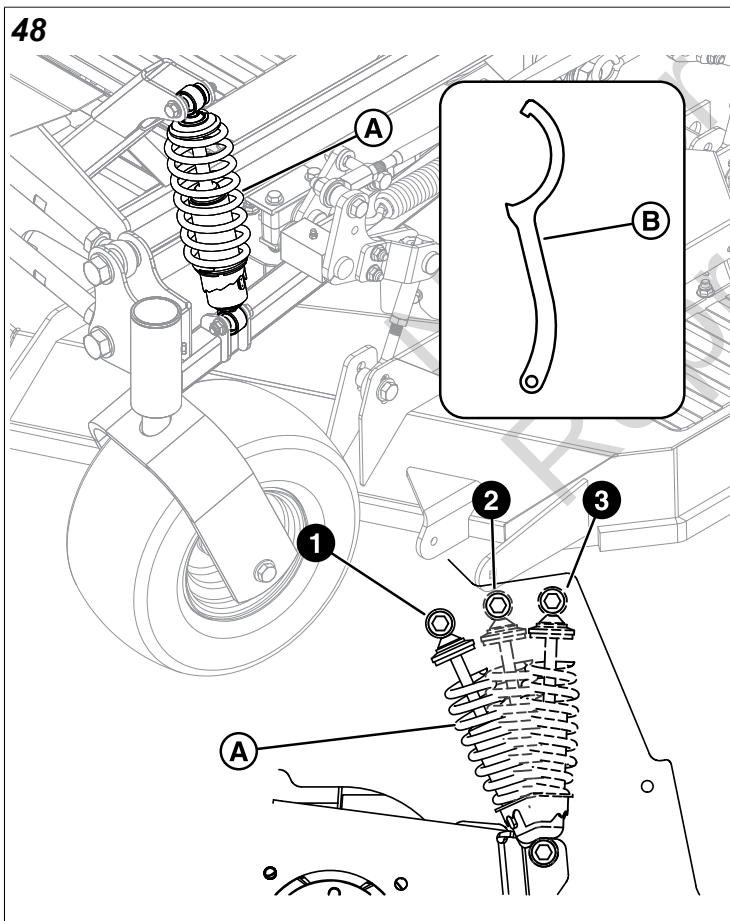
forward and reverse directions (5 to 6 times), as air is purged from the unit, the oil level will drop.

3. Stop the engine and engage the parking brake.
4. Close the transaxle's bypass valves, start the engine, release the parking brake, and slowly move the zero-turn rider's ground speed control levers in both forward and reverse directions (5 to 6 times), as air is purged from the unit, the oil level will drop.
5. Stop the engine. Remove the jack stands from underneath the machine.
6. Repeat the process detailed above but with the unit's drive wheels on the ground. The procedure should be performed in an area free of any objects or bystanders.

It may be necessary to repeat the process detailed above until all the air is completely purged from the system. When the transaxles/transmissions operate at normal noise levels and move smoothly forward and reverse at normal speeds, then the transaxles/transmissions are considered purged.

Suspension Adjustment

The shock assemblies (A, Figure 48) can be adjusted to allow the operator to customize the ride according to the operator's weight and/or operating conditions.



The front shock assemblies can be adjusted by changing the spring's pre-load.

The rear shock assemblies can be adjusted by changing the spring's pre-load and/or upper mounting position.

A spanner wrench (B) was included with the literature packet that came with this unit. The spanner wrench is used to adjust the spring's pre-load.

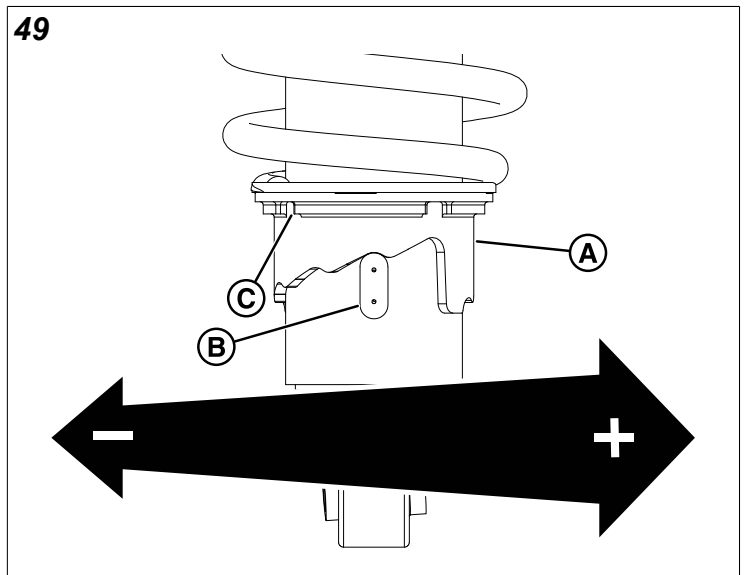
Items to consider before adjusting the suspension:

- Less spring pre-load should be used with light weight operators, which will provide a softer, more cushioned ride.
- More spring pre-load should be used with heavy weight operator's, which will provide a stiffer, more rigid ride.
- There are three positions in which the upper shock mount can be positioned to. If adjusting the spring's pre-load does not achieve the ride requirement, the shock should be moved to the next higher numbered upper shock mounting position to achieve the desired ride requirement.
- Before adjusting the upper shock mount to a higher numbered position you should attempt to achieve the ride height through the spring's pre-load adjustment.
- Shock mounting position #3 should always be used when a rear mounted grass collection system is installed on the unit.

To Adjust the Spring Pre-load:

This procedure details the process for adjusting the spring's pre-load for the rear shocks. **To adjust the spring's pre-load for the front shocks only steps #1 and #5 are required.**

The shock's pre-load adjustment consists of rotating the pre-load adjuster (A, Figure 49) with a spanner wrench so that the adjuster rides either up or down on the shock's fixed point (B) into one of the adjuster's five notch positions. As the adjuster moves up towards the spring, the spring is more compressed which creates more spring load. As the adjuster moves down away from the spring, the spring is less compressed creating less spring pre-load.



1. Park the unit on a flat, level surface such as a concrete floor. Disengage the PTO, engage the parking brake, and turn the ignition switch to OFF to stop the engine.
2. Chock the front wheels to prevent the unit from rolling.

3. Raise the rear of the unit and secure with jack stands.
4. Remove the rear drive tires.

WARNING

Spring loaded components can kick back causing injury. Use two hands when adjusting the shock springs with the spanner wrench. This will prevent the wrench from slipping while pressure is being applied.

5. Using the supplied spanner wrench (B, Figure 48), insert the tip of the wrench into the adjustment notch (C, Figure 49) in the pre-load adjuster (A). While holding the wrench in place with one hand:
 - Turn the pre-load adjuster so that it moves up towards the spring, compressing it, to increase the springs's pre-load;
 - Turn the pre-load adjuster so that it moves down away from the spring, decompressing it, to decrease the spring's pre-load.

Note: If necessary, a replacement spanner wrench can be ordered through your normal parts source.

6. Re-install the rear drive tires. Torque the lug bolts to 85-95 ft.lbs. (115-129 Nm). Remove the jack stands from under the machine.

Note: If a collection system is installed on the unit it is recommended that the rear suspension be adjusted stiffer due to the added weight of the collection system.

To Adjust the Upper Mounting Position (Rear Shocks):

1. Park the unit on a flat, level surface such as a concrete floor. Disengage the PTO, engage the parking brake, and turn the ignition switch to OFF to stop the engine.
2. Chock the front wheels to prevent the machine from rolling. Raise the rear of the machine and secure with jack stands. The jack stands must be under the bumper of the machine.
3. Position the jack underneath the rear cross member of the transmission cradle and slowly raise the rear suspension to relieve the pressure on the upper shock mounting bolts.

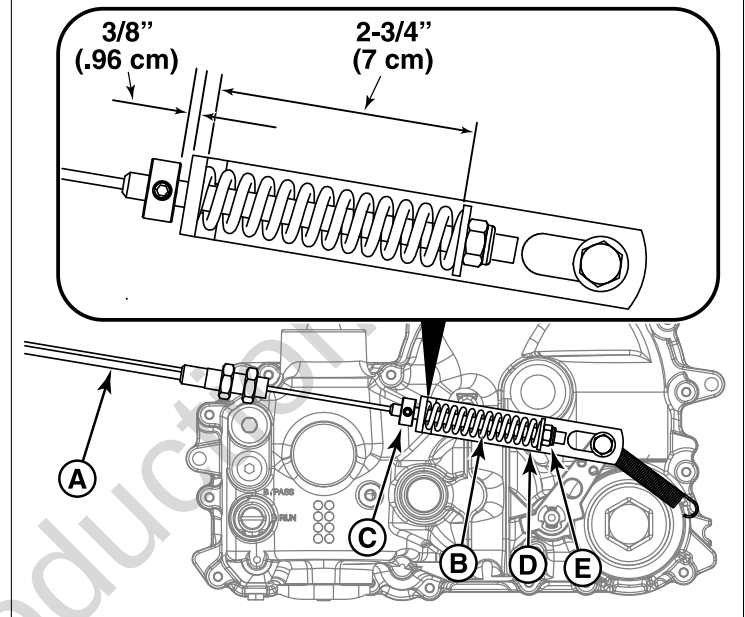
Note: This will require small adjustments to the jack's position. The shock should move freely on the mounting bolt when the pressure is relieved.

4. Remove the upper shock mounting hardware and pivot the shock to the next higher numbered position (see Figure 48). Adjust the jack to align the shock mounts to shocks.
5. Remove the jack from under the transmission cradle.
6. Remove the jack stands from underneath the machine.

Parking Brake Adjustment

The parking brake mechanism consists of two parking brake cables (A, Figure 50) that connect the parking brake lever shaft to the parking brake control arm on the transmissions. There is a parking brake spring on each parking brake cable located below the engine deck by the transmission. The position of the parking brake cable in the rear suspension cradle is factory preset and should not be changed for parking brake adjustment procedures. The adjustment is achieved by changing the compressed spring length of the parking brake springs.

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1. Disengage the PTO, engage the parking brake, stop the engine, and chock the tires.
2. Locate the parking brake springs (B) by the transmissions.
3. With the parking brake engaged measure the compressed spring length. The spring should measure 2-3/4" (7 cm) when compressed.
4. If the spring length does not equal the measurement, the spring length will need to be adjusted.
5. Disengage the parking brake.
6. Loosen the set collar (C) and slide it away from the back of the parking spring bracket (D).

CAUTION

Do not adjust the spring to be shorter than 2-1/2" (6.4 cm) when compressed. This may damage the brake mechanism.

7. Turn the adjustment nut (E) to compress or release the spring.
8. Engage the parking brake and re-measure the spring. Continue this process until the compressed spring length measures 2-3/4" (7 cm).

9. Position the set collar 3/8" (0,96 cm) away from the parking brake bracket and tighten.

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

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