

JOHN DEERE
AG & TURF DIVISION

AutoConnect™ Mid-Mount Mower
54D and 60D

OMLVU26521 H2

OPERATOR'S MANUAL



JOHN DEERE

Original Instruction

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INTRODUCTION

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Introduction

Using Your Operator's Manual

Read this entire operator's manual, especially the safety information, before operating.

This manual is an important part of your machine. Keep all manuals in a convenient location so they can be accessed easily.

Use the safety and operating information in the attachment operator's manual, along with the machine operator's manual, to operate and service the attachment safely and correctly.

If your attachment manual has a section called Preparing the Machine, it means that you will have to do something to your tractor or vehicle before you can install the attachment. The Assembly and Installation sections of this manual provide information to assemble and install the attachment to your tractor or vehicle. Use the Service section to make any needed adjustments and routine service to your attachment.

If you have any questions or concerns with the assembly, installation, or operation of this attachment, see your local John Deere dealer or call the John Deere Customer Contact Center at 1-800-537-8233 for assistance.

Warranty information on this John Deere attachment can be found in the warranty that came with your John Deere tractor or vehicle.

Product Identification

Product Compatibility

The 54D and 60D AutoConnect mowers are designed for use with the 1 Family Compact Utility Tractors.

Before installing the mower, the following equipment must be installed on the machine. See your John Deere dealer.

- Mower Lift Kit (Mechanical or Hydraulic)
- Mower Drive Kit (Standard or AutoConnect™)

Record Identification Numbers

AutoConnect™ Mid-Mount Mower

54D Serial No. (030001 -)

60D Serial No. (030001 -)

If you need to contact an Authorized Service Center for information on servicing, always provide the product model and serial number.

You will need to locate the model and serial number for the mower and record the information in the spaces provided below.

DATE OF PURCHASE:

DEALER NAME:

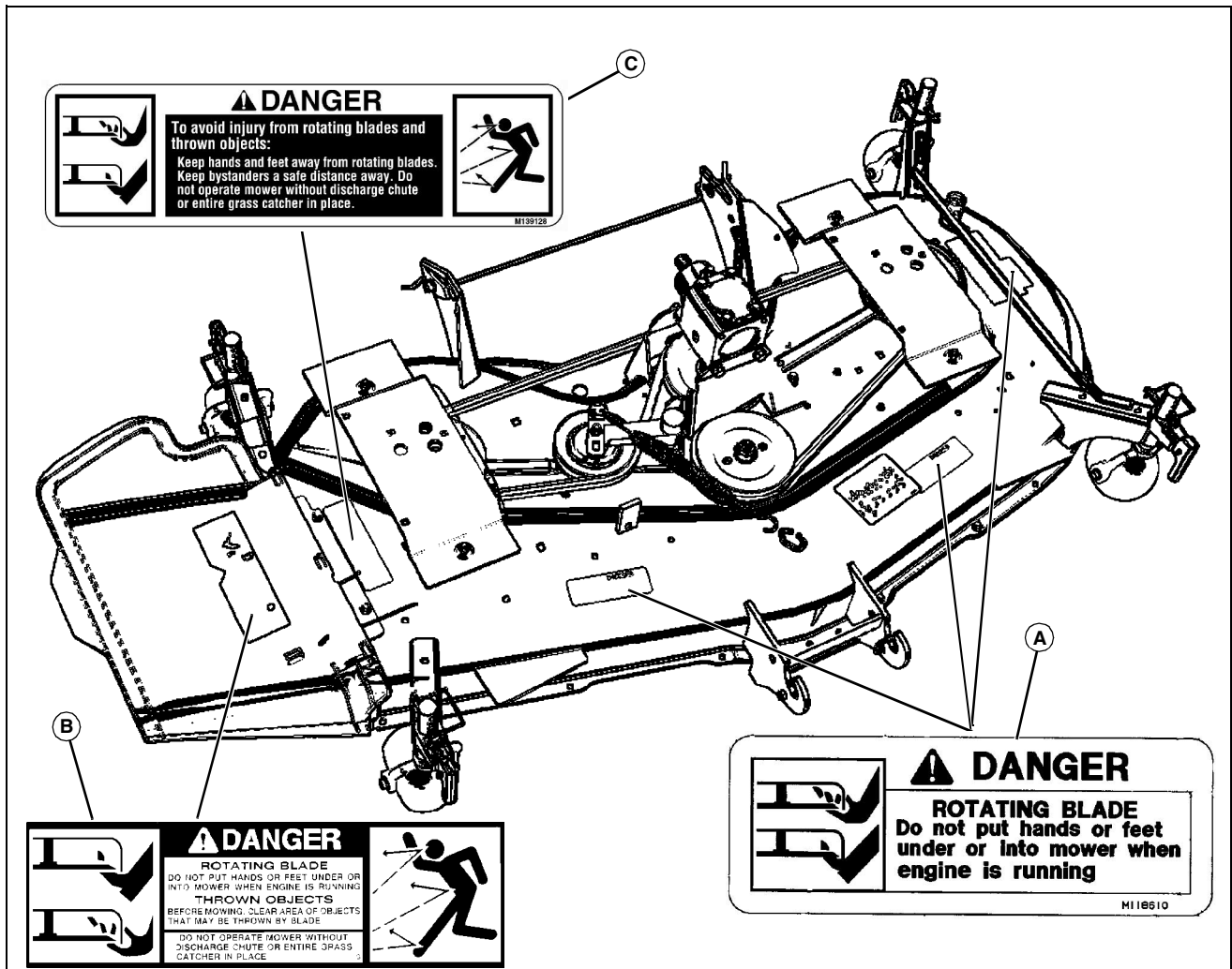
DEALER PHONE:

PRODUCT SERIAL NUMBER:

SAFETY LABELS

Safety Labels

Safety Label Location - 54D AutoConnect Mower



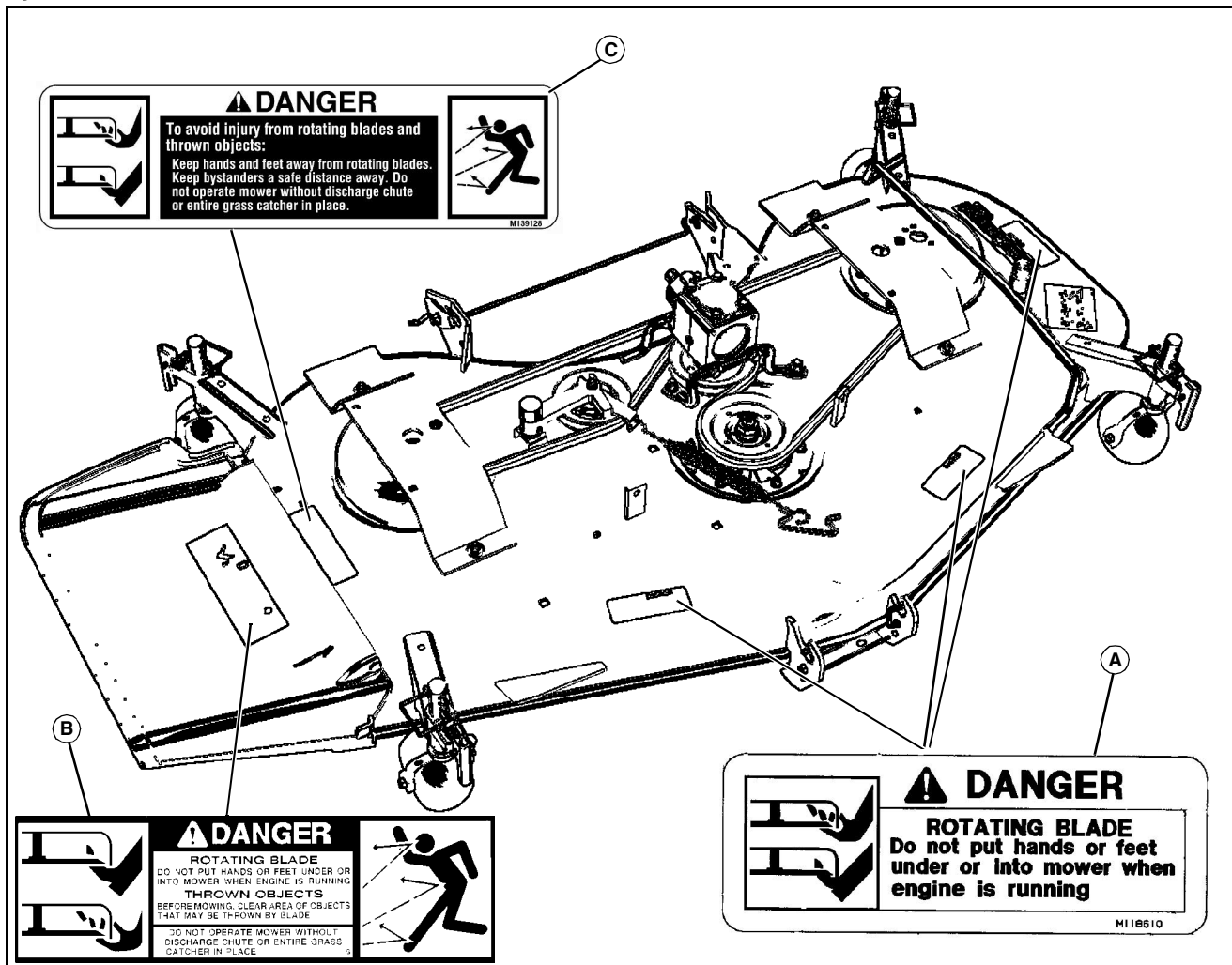
MX47182

Picture Note: Use label number listed in table below to locate complete text of safety label message following this illustration.

- A- Danger - M118610
- B- Danger - M89504
- C- Danger - M139128

SAFETY LABELS

Safety Label Location - 60D AutoConnect Mower



MX47181

Picture Note: Use label number listed in table below to locate complete text of safety label message following this illustration.

A- Danger - M118610

B- Danger - M89504

C- Danger - M139128



Understanding The Machine Safety Labels

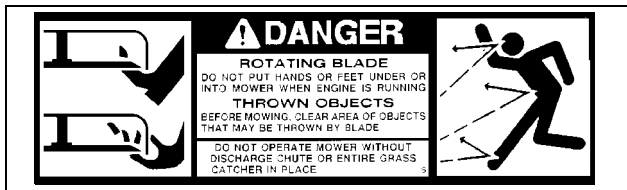
The machine safety labels shown in this section are placed in important areas on your machine to draw attention to potential safety hazards.

On your machine safety labels, the words **DANGER**, **WARNING**, and **CAUTION** are used with this safety-alert symbol. **DANGER** identifies the most serious hazards.

The operator's manual also explains any potential safety hazards whenever necessary in special safety messages that are identified with the word, **CAUTION**, and the safety-alert symbol.

SAFETY

DANGER - M89504



M89504

ROTATING BLADE

- Do not put hands or feet under or into mower when engine is running.

THROWN OBJECTS

- Before mowing, clear area of objects that may be thrown by blade.
- Do not operate mower without discharge chute or entire grass catcher in place.

DANGER M139128



M139128

To avoid injury from rotating blades and thrown objects:

- Keep hands and feet away from rotating blades.
- Keep bystanders a safe distance away. Do not operate mower without discharge chute or entire grass catcher in place.

DANGER - M118610



M118610

ROTATING BLADE

- Do not put hands or feet under or into mower when engine is running.

Safety

Read Safety in Machine Operator's Manual

Read the general safety operating precautions in your machine operator's manual for additional safety information.

Operator Training Required

- Read the operator's manual and other training material. If the operator or mechanic cannot read English, it is the owner's responsibility to explain this material to them. This publication is available in other languages.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- All operators and mechanics should be trained. The owner of the machine is responsible for training the users.
- Never let children or untrained people operate or service the equipment. Local regulations may restrict the age of the operator.
- The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people, or property.
- Operate the machine in an open, unobstructed area under the direction of an experienced operator.

Preparation

- Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by the manufacturer.
- Wear appropriate clothing including hard hat, safety glasses and hearing protection. Long hair, loose clothing or jewelry may get tangled in moving parts.
- Inspect the area where the equipment is to be used and remove all objects such as rocks, toys and wire which can be thrown by the machine.
- Use extra care when handling gasoline and other fuels. They are flammable and vapors are explosive.
 - a. Use only an approved container.
 - b. Never remove gas cap or add fuel when engine is running. Do not smoke.
 - c. Never refuel or drain the machine indoors.
- Check that the operator's presence controls, safety switches and shields are attached and functioning properly. Do not operate unless they are functioning properly.

Operating Safely

- Never run an engine in an enclosed area where dangerous carbon monoxide fumes can collect.
- Only operate in good light, keeping away from holes and hidden hazards.
- Be sure all drives are in neutral and parking brake is engaged before starting engine. Only start engine from the operator's position. Use seat belts if provided.
- Slow down and use extra care on hillsides. Be sure to travel in the recommended direction on hillsides. For this machine, drive up and down hillsides, not across. Turf conditions can affect the machine's stability. Use caution while operating near drop-offs.
- Slow down and use caution when making turns and when changing directions on slopes.
- Never raise deck with the blades running.

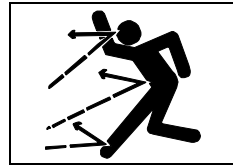
SAFETY

- Never operate with the PTO shield, or other guards, not securely in place. Be sure all interlocks are attached, adjusted properly, and functioning properly.
- Never operate with the discharge deflector raised, removed or altered, unless using a grasscatcher. Do not operate mower without discharge chute or entire grasscatcher in place.
- Do not change the engine governor setting or overspeed the engine. Operating the engine at excessive speed can increase the hazard of personal injury.
- Stop on level ground, lower implements, disengage drives, engage parking brake, and shut off engine before leaving the operator's position for any reason including emptying the grasscatchers or unclogging the chute.
- Stop equipment and inspect blades after striking objects or if an abnormal vibration occurs. Make necessary repairs before resuming operations.
- Keep hands and feet away from the cutting units.
- Look behind and down before backing up to be sure of a clear path.
- Never carry passengers and keep pets and bystanders away.
- Slow down and use caution when making turns and crossing roads and sidewalks. Stop blades if not mowing. Watch for traffic when operating near or crossing roadways.
- Be aware of the mower discharge direction and do not point it at anyone.
- Do not operate the machine while under the influence of alcohol or drugs.
- Use care when loading or unloading the machine into or off of a trailer or truck.
- Use care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.
- Inspect machine before you operate. Be sure hardware is tight. Repair or replace damaged, badly worn, or missing parts. Be sure guards and shields are in good condition and fastened in place. Make any necessary adjustments before you operate.
- Before using, always visually inspect to see that the blades, blade bolts and the mower assembly are not worn and damaged. Replace worn and damaged blades and bolts in sets to preserve balance.
- Keep safety labels visible when installing accessories and attachments.
- Do not wear radio or music headphones. Safe service and operation require your full attention.
- When machine is left unattended, stored, or parked, lower the mower deck unless a positive mechanical lock is used.

Parking Safely

1. Stop machine on a level surface, not on a slope.
2. Disengage PTO and stop attachments.
3. Lower attachments to the ground.
4. Lock park brake.
5. Stop engine.
6. Remove key.
7. Wait for engine and all moving parts to stop before you leave the operator's station.
8. Close fuel shut off valve before servicing the fuel system, if your machine is equipped.
9. Disconnect the battery ground cable before making repairs to electrical

system or doing any welding.

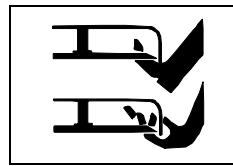


Checking Mowing Area

- Clear mowing area of objects that might be thrown. Keep people and pets out of mowing area.
- Low-hanging branches and similar obstacles can injure the operator or interfere with mowing operation. Before mowing, identify potential obstacles such as low-hanging branches, and trim or remove those obstacles.

• Study mowing area. Set up a safe mowing pattern. Do not mow where traction or stability is doubtful.

• Test drive area with mower lowered but not running. Slow down when you travel over rough ground.



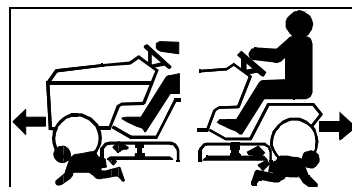
Rotating Blades are Dangerous

HELP PREVENT SERIOUS OR FATAL ACCIDENTS:

- Rotating blades can cut off arms and legs, and throw objects. Failure to observe safety instructions could result in serious injury or

death.

- Keep hands, feet and clothing away from mower deck when engine is running.
- Be alert at all times, drive forward carefully. People, especially children can move quickly into the mowing area before you know it.
- Do not mow in reverse.
- Shut off blades when you are not mowing.
- Park machine safely before leaving the operator station for any reason including emptying the catchers or unplugging the chute.



Protect Children

- Death or serious injury can occur when young children associate having fun with a lawn mowing machine simply because someone has given them a ride on a machine.

- Children are attracted to lawn mowing machines and mowing activities. They don't understand the dangers of rotating blades or the fact that the operator is unaware of their presence.
- Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the machine.
- Tragic accidents with children can occur if the operator is not alert to the presence of children, especially when a child approaches a machine from behind. Before and while backing up, stop mower blades and look down and behind the machine carefully, especially for children.
- Never carry children on a machine or attachment, even with the blades off. Do not tow children in a cart or trailer. They can fall off and be seriously injured or interfere with safe machine operation.
- Never use the machine as a recreational vehicle or to entertain children.
- Never allow children or an untrained person operate the machine. Instruct all operators not to give children a ride on the machine or in an attachment.
- Keep children indoors, out of the mowing area, and in the watchful eye of a responsible adult, other than the operator, when a mower is being

ASSEMBLY

operated.

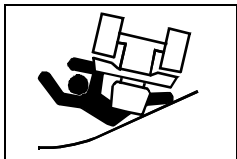
- Stay alert to the presence of children. Never assume that children will remain where you last saw them. Turn the machine off if a child enters the work area.
- Use extreme care when approaching blind corners, shrubs, trees, or other objects that may block your view of a child.



Stay Clear of Rotating Drivelines

Entanglement in rotating driveline can cause serious injury or death.

- Wear close fitting clothing.
- Stop the engine and be sure PTO driveline is stopped before getting near it.



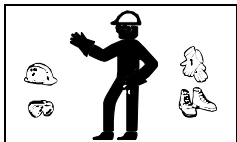
Avoid Tipping

- Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. Operation on all slopes requires extra caution.

- Be aware that mechanical front wheel drive

(MFWD) can improve access to dangerously sloped terrain, thereby increasing the possibility of a tipover.

- Drive up and down a hill - not across.
- Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Do not operate machine on wet grass. Tires may lose traction. Tires may lose traction on slopes even though the brakes are functioning properly.
- Choose a low ground speed so you will not have to stop or shift while on a slope.
- Always keep the machine in gear when going down slopes. Do not shift to neutral and coast downhill.
- Avoid starting, stopping or turning on a slope. If the tires lose traction, disengage the blades and proceed slowly, straight down the slope.
- Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction, which could cause the machine to roll over.
- Do not operate machine near drop-offs, ditches, embankments, or bodies of water. The machine could suddenly roll over if a wheel goes over the edge or the edge caves in. Leave a safety area between the machine and any hazard.
- Danger of tipping is increased greatly with tires in narrow tread setting and driving at high speed.
- Follow the manufacturer's recommendations for wheel weights or counterweights for added stability when operating on slopes or using front or rear mounted attachments. Remove weights when not required.



Wear Appropriate Clothing

- Always wear safety goggles, or safety glasses with side shields, and a hard hat when operating the machine.

- Wear close fitting clothing and safety

equipment appropriate for the job.

- While operating this machine, always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing open sandals.
- Wear a suitable protective device such as earplugs. Loud noise can cause impairment or loss of hearing.



Maintenance and Storage

- Never operate machine in a closed area where dangerous carbon monoxide fumes can collect.

- Disengage drives, lower implement, lock parking brake, stop engine and remove key or disconnect spark plug (for gas engines). Wait for all movement to stop before adjusting, cleaning or repairing.

- Clean grass and debris from cutting units, drives, mufflers, and engine to help prevent fires. Clean up oil or fuel spillage.

- Let engine cool before storing and do not store near flame.

- Shut off fuel while storing or transporting. Do not store fuel near flames or drain indoors.

- Park machine on level ground. Never allow untrained personnel to service machine. Understand service procedure before doing work.

- Use jack stands or lock service latches to support components when required. Securely support any machine elements that must be raised for service work.

- Before servicing machine or attachment, carefully release pressure from any components with stored energy, such as hydraulic components or springs.

- Release hydraulic pressure by lowering attachment or cutting units to the ground or to a mechanical stop and move hydraulic control levers back and forth.

- Disconnect battery or remove spark plug (for gas engines) before making any repairs. Disconnect the negative terminal first and the positive last. Reconnect positive first and negative last.

- Use care when checking blades. Wrap the blades or wear gloves, and use caution when servicing them. Only replace blades. Never straighten or weld them.

- Keep hands, feet, clothing, jewelry and long hair away from moving parts. If possible, do not make adjustments with the engine running.

- Charge batteries in an open well ventilated area, away from spark and flames. Unplug charger before connecting or disconnecting from battery. Wear protective clothing and use insulated tools.

- Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.

- Check grass catcher components and the discharge guard frequently and replace with manufacturer's recommended parts, when necessary. grass catcher components are subject to wear, damage, and deterioration which could expose moving parts or allow objects to be thrown.

- Keep all nuts and bolts tight, especially blade attachment bolts, to be sure the equipment is in safe working condition.

- Check brake operation frequently. Adjust and service as required.

- On multi-bladed machines, take care as rotating one blade can cause other blades to rotate.

Assembly

Parts in Kit

54D Mower Deck

Qty.	Description
1	54D Mower Deck Assembly

ASSEMBLY

Qty.	Description
4	Gage Wheel
4	Spring Pin
1	Gearbox Assembly
4	Bolt, M10x25
1	Discharge Chute Assembly
2	Bolt, Carriage Head, M8x16
2	Locknut, M8
1	Front Draft Link Assembly
1	Spring, Draft Link

60D Mower Deck

Qty.	Description
1	60D Mower Deck Assembly
4	Gage Wheel
4	Spring Pin
1	Gearbox Assembly
4	Bolt, M10x25
1	Discharge Chute
1	Rod, Chute Pivot
1	Spring, Chute Tension
2	Bolt, M8x20
2	Bracket
2	Retainer
2	Locknut, M8
1	Roll Pin
1	Front Draft Link Assembly
1	Spring, Draft Link

Prepare Machine

Before installing the mower, the following equipment must be installed on the machine. See your John Deere dealer.

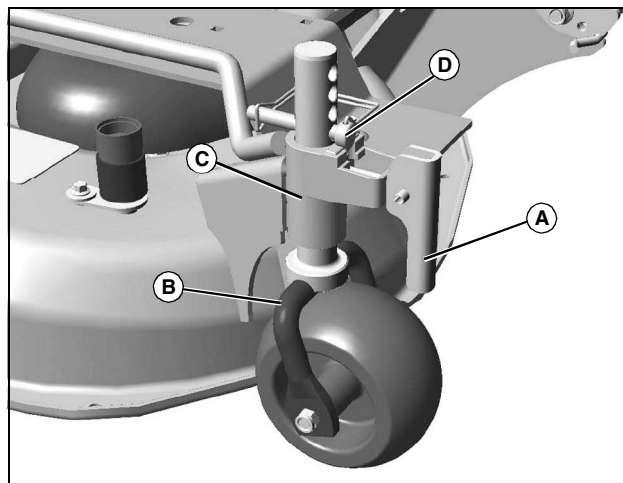
- Mower Lift Kit (Mechanical or Hydraulic)
- Mower Driveshaft Kit (Standard or AutoConnect™)

Install Wheels

CAUTION: Avoid injury! Machine component or attachment is heavy. Use a safe lifting device with correct load capacity rating to lift, install or remove component or attachment.

1. Remove mower from crate using chain hoist or other suitable device.

NOTE: After wheels are installed, it may be necessary to lock wheels by pressing downward on handles (A) until they are perpendicular to ground. However, wheels must be in the unlocked position before installing mower on tractor.



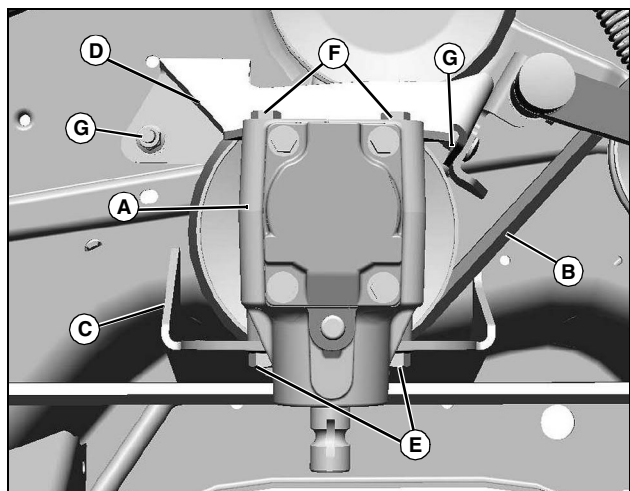
MX47069

2. Install wheels (B) by sliding wheel shaft up through wheel bracket (C).
3. Install spring pin (D) in each wheel shaft.

ASSEMBLY

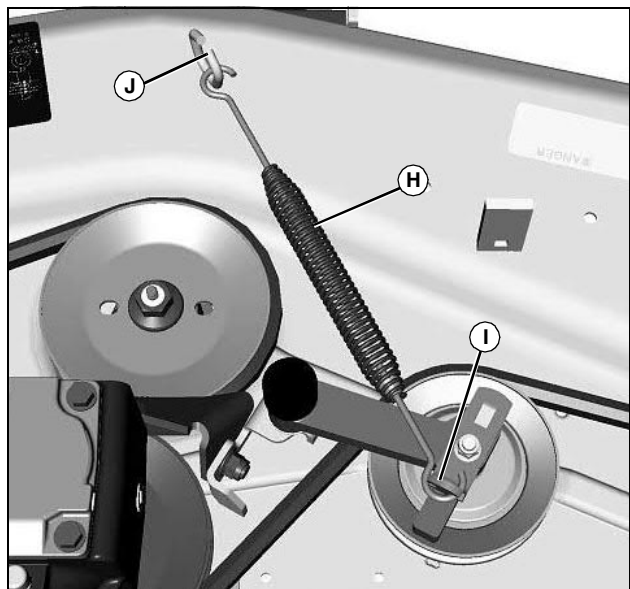
Install Gearbox

Install Gearbox (54D)



MX47078

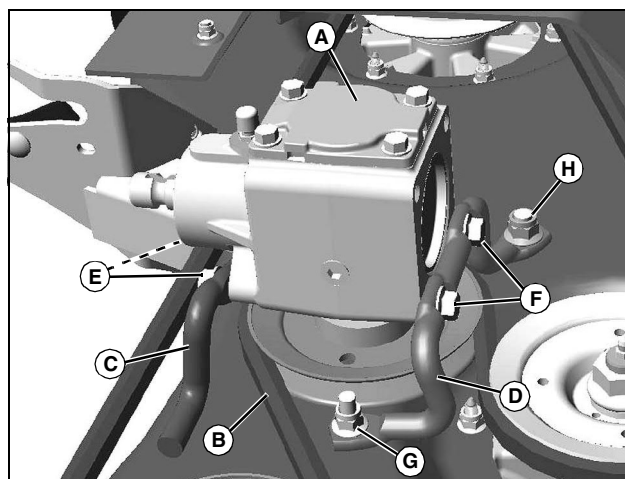
1. Lower gearbox assembly (A) onto mower while routing belt (B) around gearbox pulley and between legs of gearbox brackets (C, D) as shown. Removal of bracket (D) from mower may be required for belt routing.
2. Loosely install two M10x25 bolts (E) through front bracket (C) into gearbox.
3. Loosely install two M10x25 bolts (F) through rear bracket (D) into gearbox.
4. Tighten four M10 gearbox mounting bolts (E, F) to 73 N•m (54 lb-ft).
5. Tighten two rear gearbox mounting bracket nuts (G) to 73 N•m (54 lb-ft).



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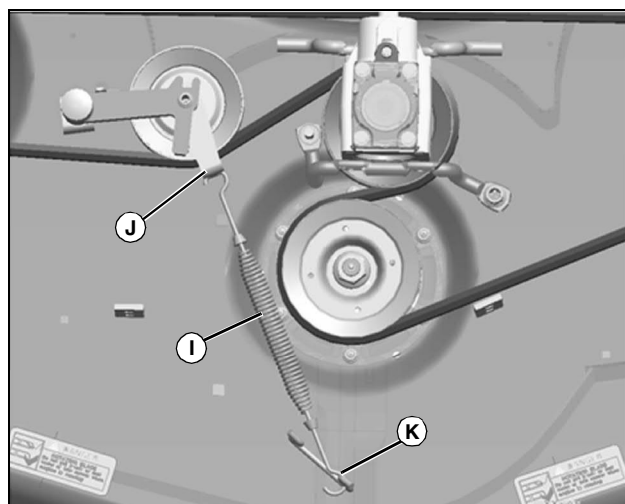
6. Attach spring (H) to tensioner arm (I) and bracket (J) on mower.
7. Check all pulleys for proper belt alignment.

Install Gearbox (60D)



MX47076

1. Lower gearbox assembly (A) onto mower while routing belt (B) around gearbox pulley and between legs of gearbox brackets (C, D) as shown.
2. Loosely install two M10x25 bolts (E) through front bracket (C) into gearbox.
3. Loosely install two M10x25 bolts (F) through rear bracket (D) into gearbox.
4. Tighten four M10 gearbox mounting bolts (E, F) to 73 N•m (54 lb-ft).
5. Tighten rear gearbox mounting bracket nuts:
 - a. Tighten one M10 nut (G) to 73 N•m (54 lb-ft).
 - b. Tighten one M12 nut (H) to 119 N•m (88 lb-ft).



MX47077a

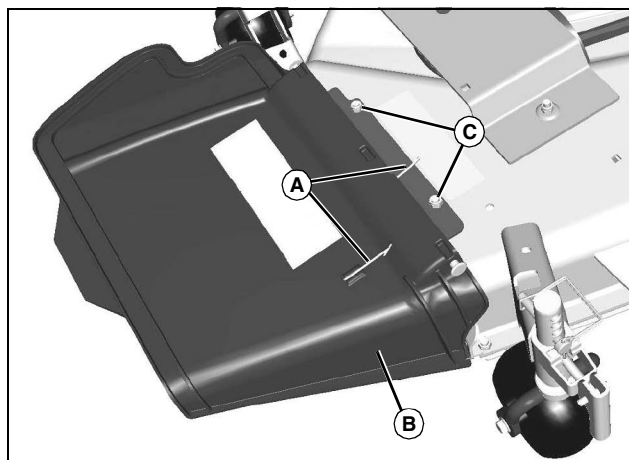
6. Attach spring (I) to tensioner arm (J) and bracket (K) on mower.
7. Check all pulleys for proper belt alignment.

ASSEMBLY

Install Discharge Chute

Install Discharge Chute (54D)

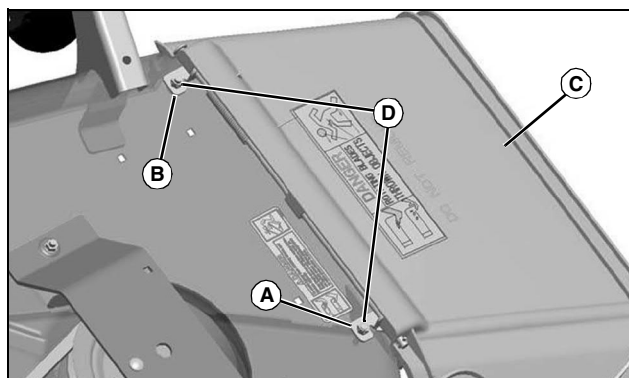
NOTE: Ensure correct placement of spring (A) to provide downward pressure on discharge chute.



MX47068

1. Position the discharge chute assembly (B) on the mower and secure with two M8x16 carriage head bolts and two M8 locknuts (C).

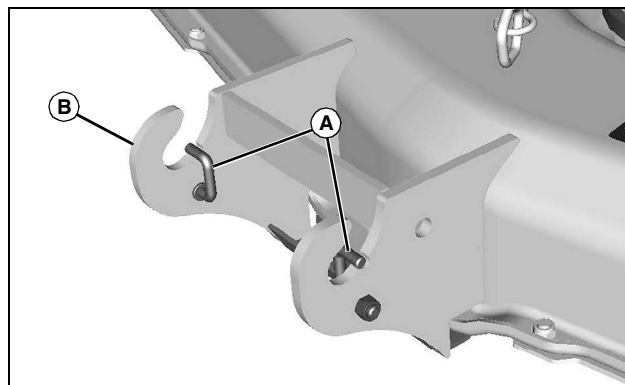
Install Discharge Chute (60D)



MX49646

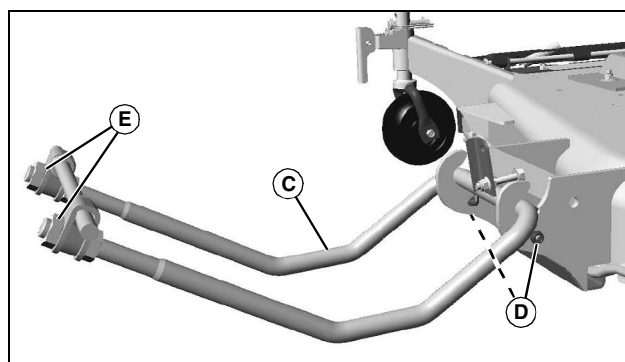
1. Attach rear hinge (A) to deck with nut. Do not tighten.
2. Pre-load spring with one hand and attach front hinge (B) to deck with nut. Do not tighten.
3. Pull chute assembly (C) away from deck as nuts (D) are tightened to help align hinges.

Install Front Draft Link



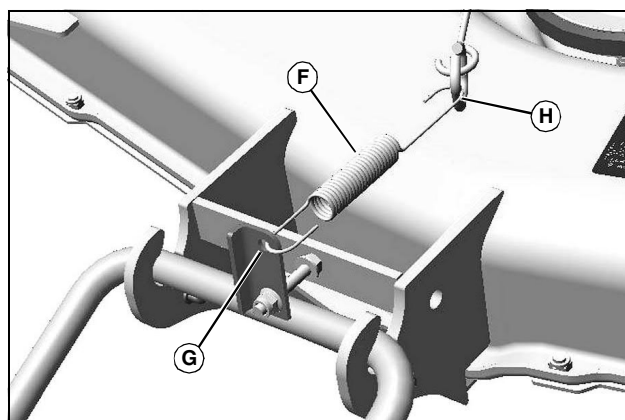
MX47070

1. Remove nut and lock pin (A) from each side of front draft link bracket (B).



MX47071

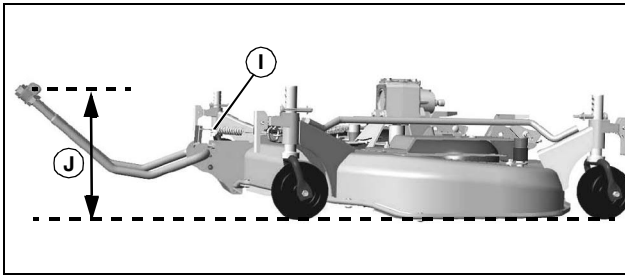
2. Install draft link assembly (C) in bracket and secure with two lock pins and nuts (D).
3. Loosen front nuts (E) on draft link assembly 4-5 turns (Nuts will be tightened when mower is initially installed on machine).



MX47072

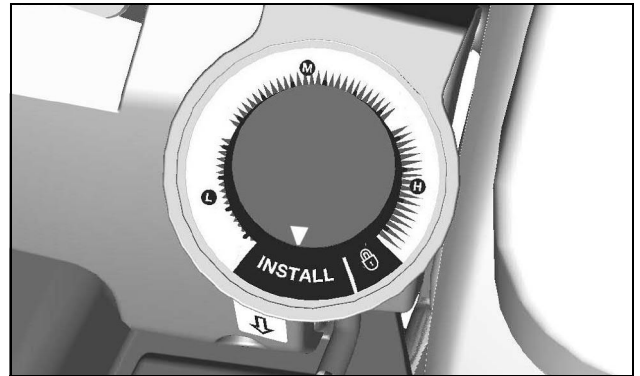
4. Install spring (F) through hole in draft link bracket (G) and ring on mower (H).

INSTALLING

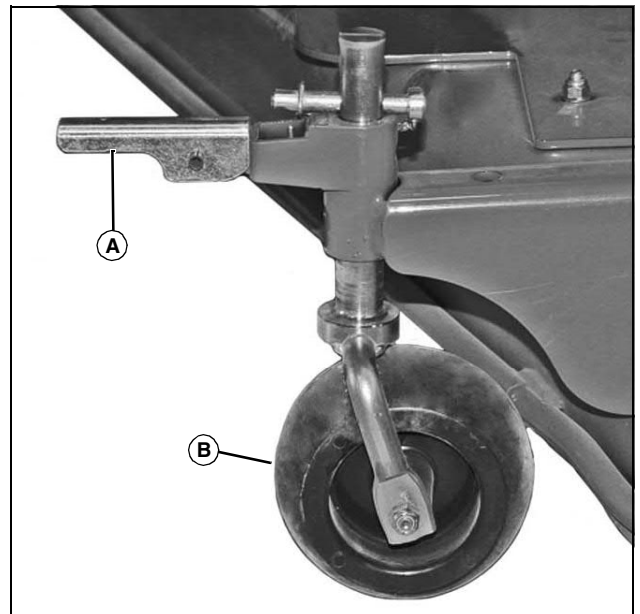


MX47073

5. **INITIAL ADJUSTMENT** - With gauge wheels unlocked and mower resting firmly on a level surface, adjust length of bolt (I) to achieve a 290 mm (11.4 in.) height (J) from the center of the draft link front pins to the level surface. This may have to be slightly lower if attaching with H120 loader installed to clear parking stand. The front draft must always be pushed down during drive over or damage to the front draft will occur. Tighten locknut on bolt securely.



MX47284A



MX27182

Installing

Preparing Machine

Required Equipment

- Mower Lift Kit
- Mower Driveshaft Kit

Machine Setup

1. Park machine safely. (See Parking Safely in SAFETY.)
2. Follow machine operator's manual instructions to check tire pressure.
3. Follow instructions in ASSEMBLY in this manual.

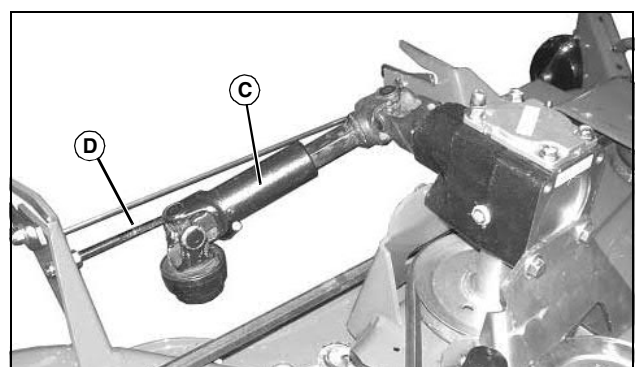
Installing Mower

NOTE: Remove front weights if equipped before installing mower. Replace weights after mower is installed.

1. Set mower height control to the INSTALL position.

2. Raise handle (A) to release lock on each gauge wheel (B). Mower should be resting fully on ground.

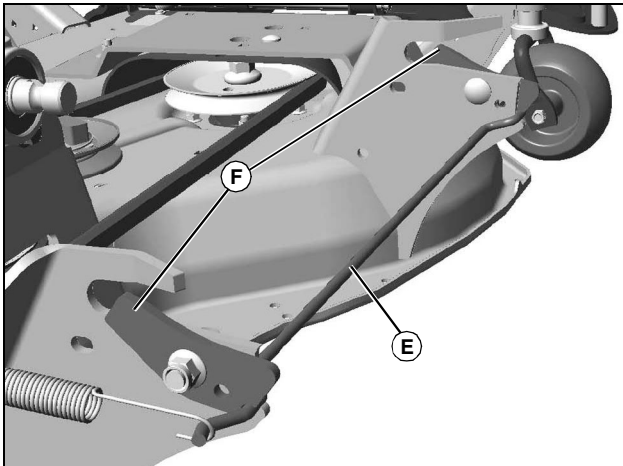
3. Ensure that mower is sitting on firm, level ground. An extremely smooth surface can allow mower to be pushed along by tractor. make sure rear tires are inflated to 20 PSI.



MX47457

4. **Standard Driveshaft Models Only:** Ensure that the driveshaft (C) is positioned in the hanger (D) on the right side of the mower.

INSTALLING

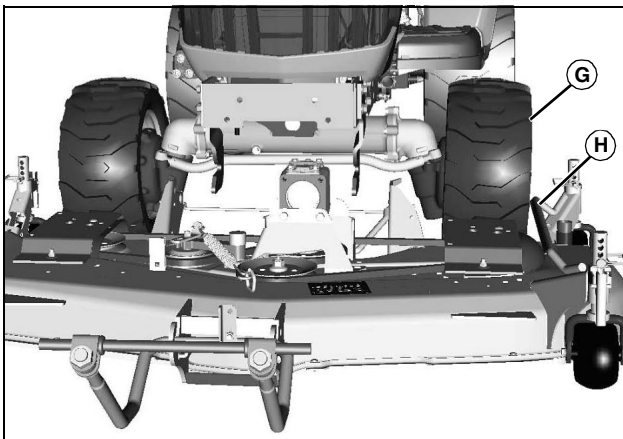


MX47074

5. Ensure that the rear lock assembly (E) is in the locked (F) position. The lock assembly will automatically unlock as the machine engages the mower, and lock after full engagement.

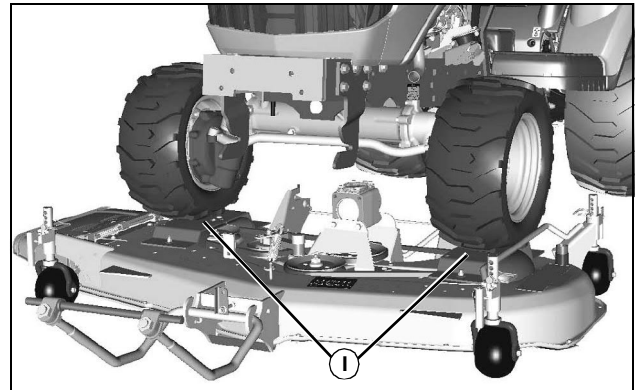
6. Lower mower lift arms using SCV or rockshaft lever control.

7. Shift machine PTO selector to Rear PTO only to allow the mid-PTO and driveshaft to turn freely and engage the mower gearbox with minimal resistance.



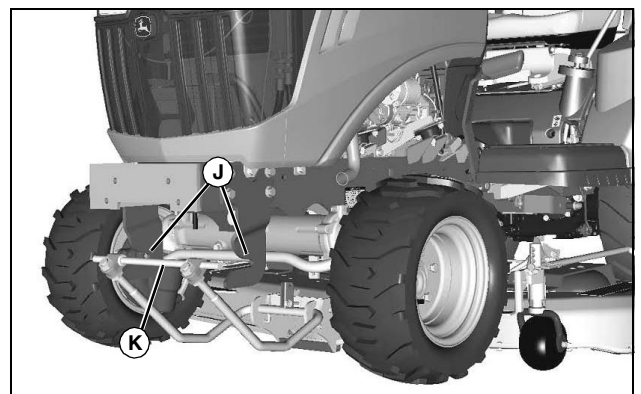
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8. Engage tractor MFWD, and in low range drive machine straight toward rear of mower while aligning outside of left front tire (G) to just contact the guide bar (H) on left side of mower.



MX47079

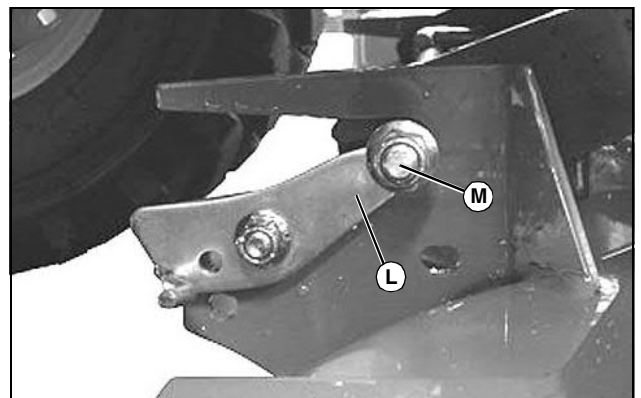
9. Drive tractor slowly, smoothly and straight over top plates (I) on mower.



MX47080

10. Continue driving tractor over front edge of mower until the front draft link pivot pin (J) fully engages the notches in the front support hangers (K) and the mower just begins to move forward. Stop the machine and lock the park brake.

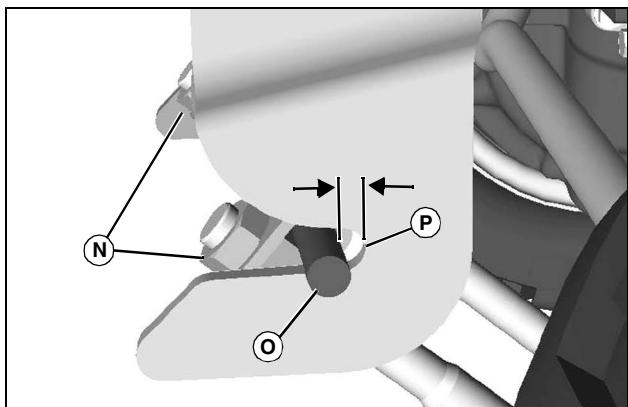
- If the mower pulls forward early or appears to be caught in lift system, stop tractor, reverse slightly and move forward again. If mower still does not properly attach, stop tractor, lock park brake, dismount tractor and determine cause of problem. See TROUBLESHOOTING Section for additional information.



MX47081

11. Dismount tractor and ensure that the rear lock tab (L) on each side of mower is raised and firmly seated against the rear lift arm rod (M).

REMOVING



MX47082

12. **INITIAL INSTALLATION** - Adjust front draft link nuts (N) as required to achieve 2-3mm (.08-.10 in) gap (as shown) between the pivot pin (O) and back of the slots (P) in the front frame hooks.

NOTE: Uneven ground may require a larger gap (P), while level ground a smaller gap. Too much gap will effect front to rear deck leveling. Too little gap will cause lock to function improperly.

13. Start engine and lift mower to highest position.

14. Adjust gage wheels as required for desired mowing height. (See OPERATING - Adjusting Mower Wheels in this manual.)

15. Adjust height-of-cut control to the desired setting, lower mower and stop engine.

Driveshaft Connection - AutoConnect

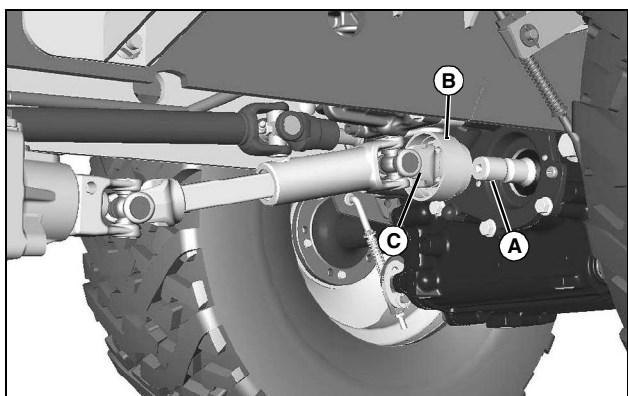
If the machine is equipped with an AutoConnect Kit, the driveshaft is installed on the machine and will automatically connect with the mower gearbox as the mower is installed on the machine.

- Shift machine PTO selector to Mid-PTO to allow for mower operation.

Driveshaft Connection - Standard

If the machine is not equipped with an AutoConnect kit, a standard driveshaft is installed on the mower gearbox and must be directly connected to the machine Mid-PTO shaft.

1. To connect a standard driveshaft to the machine:



MX47454

a. Lift the driveline from the mower hanger and position it inline with the machine PTO shaft (A).

b. Pull the driveshaft collar (B) toward the front of the machine.

c. Align the rear driveshaft yoke (C) with the PTO shaft and push the yoke onto the shaft completely. It may be necessary to rotate the driveshaft slightly to initially engage the shaft.

d. Release the collar. Slide the yoke front-to-back to ensure the yoke lock has firmly seated in the PTO shaft detent.

2. Shift the machine PTO selector to Mid-PTO to allow for mower operation.

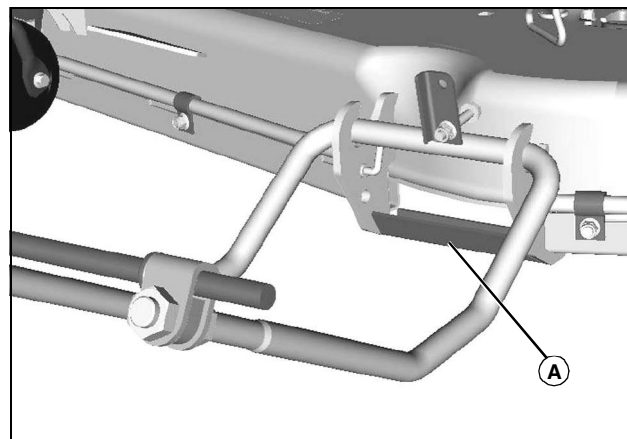
Removing

Removing Mower

NOTE: Remove front weights if equipped before removing mower. Replace weights after mower is removed.

1. Park machine on a firm level surface, not on a slope.

NOTE: If ground conditions are soft, place a piece of plywood under the mower front draft skid (A) before lowering and removal.



MX47290

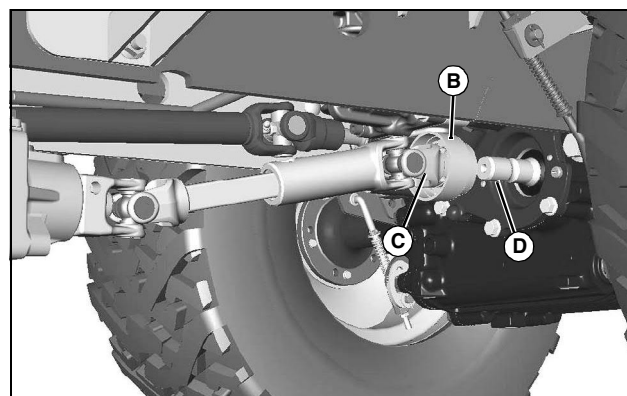
2. Lock park brake.

3. Disengage mower blades.

4. Ensure tractor can be driven rearward to deposit mower and that sufficient room exists to back fully off mower before turning tractor wheels.

5. Release gage wheel locks, and set height of cut control to INSTALL position.

6. Lower mower to ground and stop engine.



MX47454

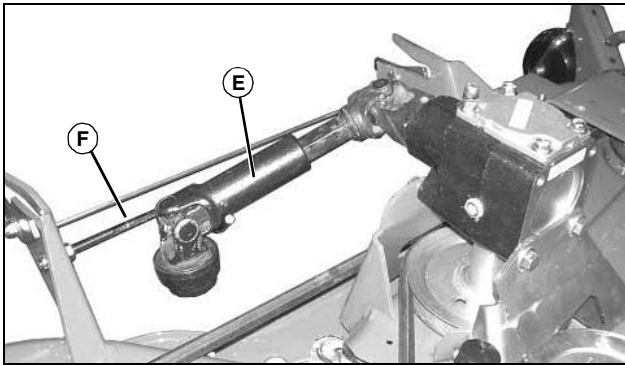
7. **Standard Driveshaft Models Only:** Disconnect the driveshaft as follows:

a. Pull the driveshaft collar (B) toward the front of the machine to release the yoke lock.

b. Pull the rear yoke assembly (C) straight toward the front of the

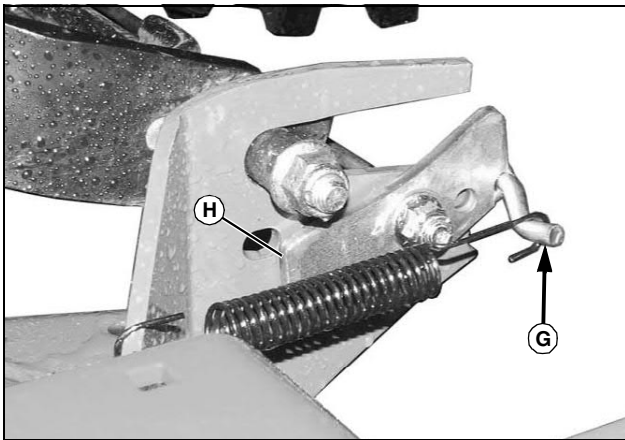
OPERATING

machine until it has cleared the PTO shaft (D).



MX47457

c. Place the rear yoke assembly (E) in the hanger (F) on the right side of the mower.



MX47282

8. Raise the lock lever up (G) to release the left (H) and right rear mower lock.

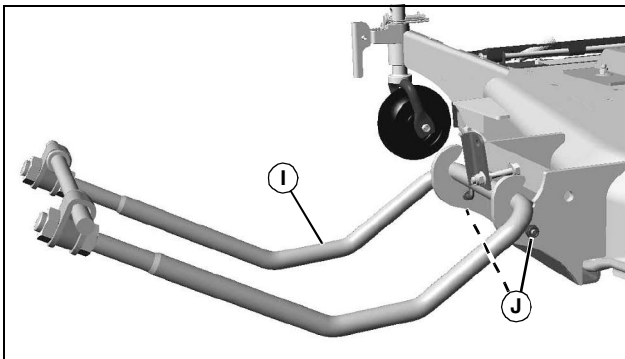
NOTE: If lock sticks, pull mower rearward on machine.

9. Start engine and engage tractor MFWD in low range.

10. Slowly back tractor straight off mower.

11. Raise lift system fully and turn height of cut control to the lock position.

IMPORTANT: Avoid damage! Do not use the front draft link assembly (D) as a handle to move or reposition the mower.



MX47071

12. When removing the mower for storage, the front draft link assembly (I) can be removed. Remove the tension spring (not shown) and two lock pins

(J) and remove the link assembly from the mower.

- Retain all components for later installation.

Storing Mower



CAUTION: Avoid injury! Blades are sharp. Do not store mower deck on machine or removed from machine with blades exposed. Store mower deck laying flat on ground.

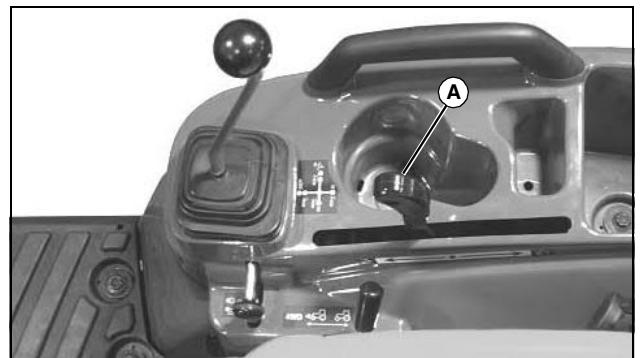
1. Remove mower from machine. (If machine is to be stored with mower on machine, refer to Storing Machine in your machine's operator's manual.)
2. Clean underside of mower with water pressure and scraper.
3. Inspect blades:
 - Have dull blades sharpened and balanced.
 - Replace damaged blades.
4. Clean top of deck and the area around all of the sheaves.
5. Check condition of belt. If necessary, get a new belt. Do not install new belt until you remove mower from storage.
6. Repair or replace any worn or damaged parts.
7. Apply touch-up paint where needed to prevent rust.
8. Lubricate grease points.
9. Release belt tension.
10. Store mower in a clean, dry place.
11. Put a waterproof cover over mower, if you store the mower outside.

Operating

Raising and Lowering Mower

The machine can be equipped with a mechanical or hydraulic mower lift control system. The height-of-cut control is the same for both systems. All controls are described below.

Mechanical Lift System



MX46289

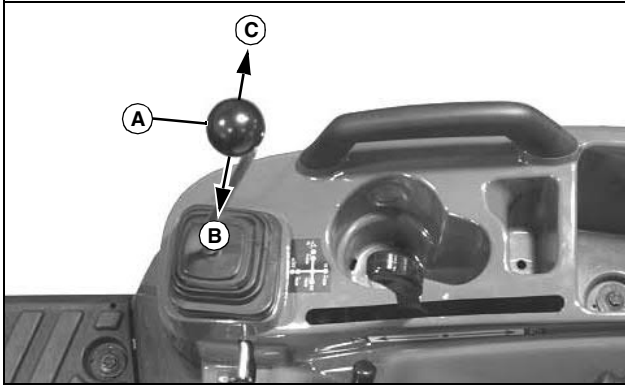
Picture Note: Model 1023E shown.

IMPORTANT: Avoid damage! Avoid Damage when using the mechanical lift system. To prevent unintended operation, do not connect any implement or attachment to the three point hitch when the machine is being used for mowing operations.

OPERATING

A mechanical mower lift kit is connected to the machine rock shaft and operates with the rock shaft control lever (A). See Using 3-Point Hitch - Using Rockshaft Control Lever in the machine Operator's Manual for operating instructions for your specific model.

Hydraulic Mower Lift System



Picture Note: Model 1023E shown.

A hydraulic mower lift system operates independently of the machine rockshaft and is operated by the machine SCV lever (A).

Review Using Hydraulic Dual SCV instructions in the machine operator's manual.

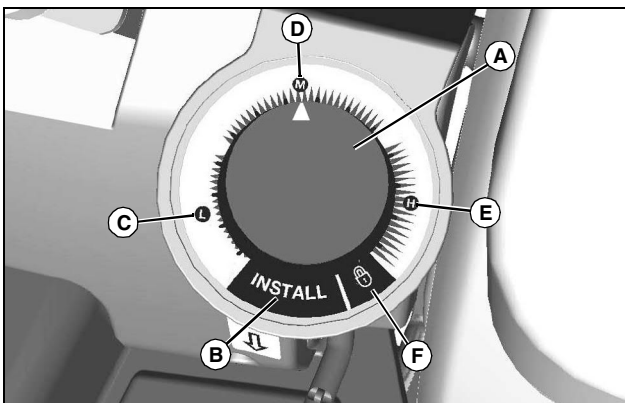
To raise the mower:

- Pull the SCV lever to the left (B) to raise the mower.
- Make any adjustment required to the height-of-cut control.

To lower the mower:

- Push the SCV lever slightly to the right (C) to lower the mower. Do not push the lever fully to the right, to avoid engaging the Regen function of the hydraulic circuit resulting in unintended motion.

Height-of-Cut Adjustment



The mower height-of-cut is adjusted with the control (A) on the left side of the operator.

Raise and hold the mower to its highest position using either type of lift system and adjust the height-of cut control as follows:

- Install (B) - Turn the control to this position to lower the mower lift mechanism whenever removal or installation of the mower is required.
- Height-of-Cut Range (C-E) - Turn the control to any position in this range to select the desired height-of-cut.
- Lock (F) - Raise mower and turn control to this position to lock the mower

into the highest position on the machine.

Adjusting Mower Level (Side-to-Side)



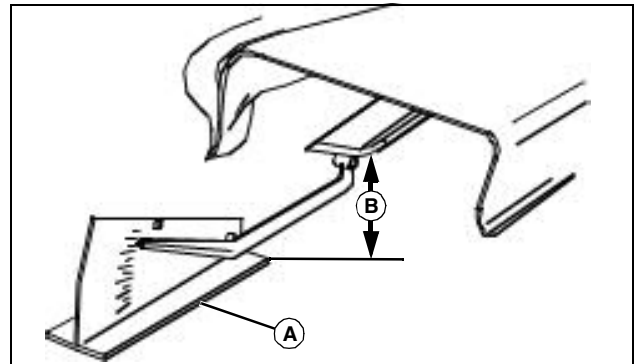
CAUTION: Avoid injury! Rotating blades are dangerous.

Before adjusting or servicing mower:

- Disconnect spark plug wire(s) or battery negative (-) cable to prevent engine from starting accidentally.
- Always wear gloves when handling mower blades or working near blades.

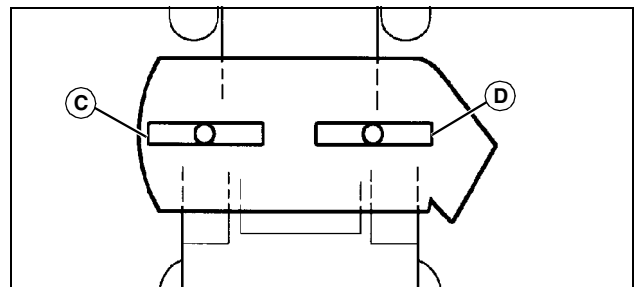
1. Park machine on a level surface, not on a slope.
2. Lock park brake.
3. Disengage mower blades.
4. Raise mower, turn the height-of-cut control to the desired cutting height and lower mower.
5. Stop engine and remove key.
6. Wait for engine and all moving parts to stop before leaving operator's seat.

NOTE: Mower wheels should not contact ground during leveling.



Picture Note: A convenient leveling gauge (A) (AM130907) is available from your dealer.

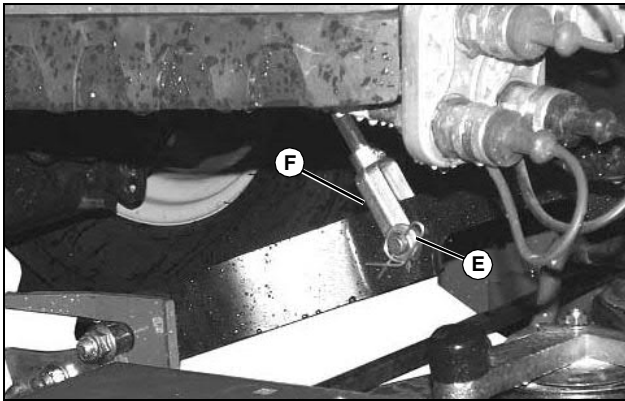
7. Position mower blades as follows and measure from each outside blade tip to the level surface (B).



8. Turn left blade (C) as shown. Hold drive belt and turn right blade (D) as shown. Take blade tip to surface measurement on both blades.

- The difference between both measurements must not be greater than 3 mm (1/8 in.).

OPERATING



MX47283

9. To adjust side-to-side level:

- Remove retaining pins (E) from left and right rear turnbuckles (F).
- Adjust one turnbuckle at a time as required and check blade level.
- When adjustment is complete, install retaining pin(s).

Adjusting Mower Level (Front-to-Rear)



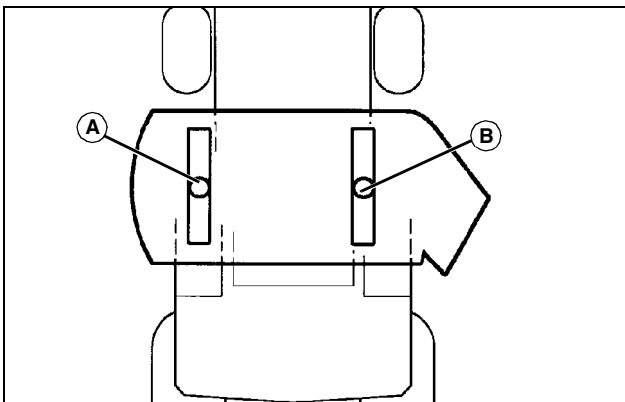
CAUTION: Avoid injury! Rotating blades are dangerous.

Before adjusting or servicing mower:

- Disconnect spark plug wire(s) or battery negative (-) cable to prevent engine from starting accidentally.
- Always wear gloves when handling mower blades or working near blades.

- Park machine on a level surface, not on a slope.
- Lock park brake.
- Disengage mower blades.
- Raise mower, turn the height-of-cut control to the desired cutting height and lower mower.
- Stop engine and remove key.
- Wait for engine and all moving parts to stop before leaving operator's seat.

NOTE: Mower wheels should not contact ground during leveling.



MX4896a

- Turn left blade (A) as shown. Hold drive belt and turn right blade (B) as shown. Take blade tip to surface measurement on both ends of each

blade.

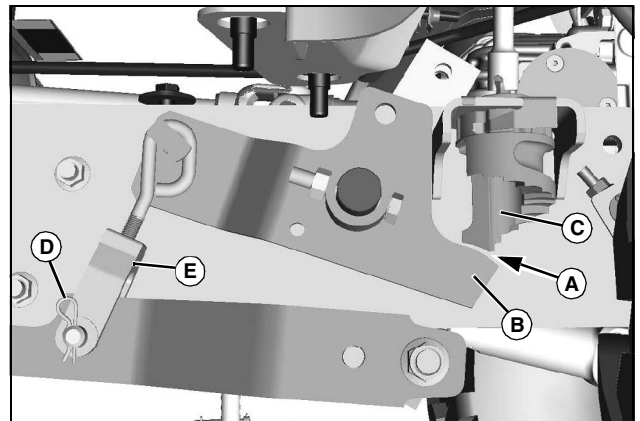
NOTE: Front of mower blades should never be higher than rear of mower blades.

- For best cut quality, the front blade tips must be 3- 6 mm (1/8-1/4 in.) lower than rear blade tips.

- Adjust front draft link yokes as required to obtain desired measurement. Verify that there is still a gap between the front draft link and frame hooks when deck is resting on the ground.

Adjusting Maximum Height-of-Cut

- Level mower (See Adjusting Mower Level; Side-to-Side and Front-to-Rear in this section).
- Raise mower fully.

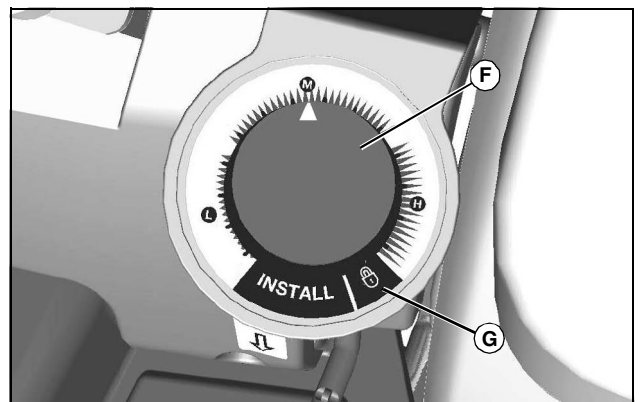


MX47455

- Check the gap (A) between the mower lift link (B) and height stop cam (C) on the machine. This measurement must be minimized to achieve maximum height-of-cut.

- To adjust the height-of-cut linkage:

- Lower the mower fully.
- Remove the spring pin (D) and pivot pin securing both turnbuckles (E) to the lift arms (left side shown).
- Shorten the turnbuckle assemblies an equal number of turns to reduce the gap or lengthen the turnbuckle assemblies equally to increase the gap.
- Install the turnbuckles on the lift arms.



MX47284

- Raise the mower fully and rotate the Height-of-Cut control (F) to the lock position (G).

OPERATING

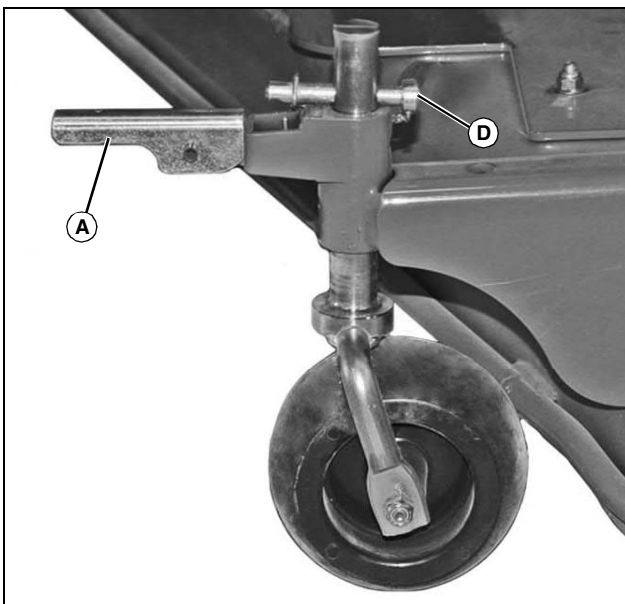
- If the control cannot be rotated to the lock position, the gap (A) was eliminated by shortening the turnbuckles excessively. Repeat the adjustment to slightly lengthen both turnbuckles equally until the Height-of-Cut control can be rotated to the lock position.

Adjusting Mower Wheels

IMPORTANT: Avoid damage! The mower deck can be damaged if mower wheels are adjusted wrong:

- **Wheels must not ride on ground supporting mower weight.**
- **Check wheel adjustment each time cutting height is changed.**

1. Park machine on a level surface, not on a slope.
2. Disengage mower blades.
3. Raise mower, turn the height-of-cut control to the desired cutting height and lower mower.
4. Lock park brake.
5. Stop engine and remove key.
6. Wait for engine and all moving parts to stop before leaving operator's seat.
7. Set gage wheel height:



MX27182

- a. Release gage wheel lock (A).
- b. Adjust wheel assembly to 9.5 mm (3/8-in.) distance between gage wheels and ground.

IMPORTANT: Avoid damage! Ensure that at least one hole remains above lock bracket.

In extreme mowing conditions, retract wheels completely to avoid damage.

- c. Install snap lock pin (B) in hole just above gage wheel bracket.
- d. Repeat for remaining gage wheels.

Engaging Mower

1. Review instructions on using mid-PTO included in your machine

operator's manual.

2. Follow machine operator's manual instructions to engage mid-PTO and mower.

Unplugging Mower



CAUTION: Avoid injury! Do not attempt to unplug attachment with machine running.

- **Rotating blades are dangerous. Shut off the engine and remove the key before getting off the seat to inspect the machine and attachment.**
- **Thrown objects can cause serious injury. Make sure all machine parts are stopped before raising hopper top or removing chutes.**

1. Park machine safely. Wait for all moving parts to stop before getting off to inspect machine.
2. Check under mower deck and discharge chute for debris.
3. Remove debris, and re-check for proper operation.

Transporting Mower on Machine

Raise mower to the highest position and turn the height-of-cut control to the lock position.

Transporting Machine on Trailer



CAUTION: Avoid injury! Use extra care when loading or unloading the machine into a trailer or truck.
Close fuel shut-off valve, if your machine is equipped.

IMPORTANT: Avoid damage! Transporting a machine on a trailer or on a truck bed at high speeds can result in hood or engine cover raising and possibly coming off machine if not secured.

- **Position machine on trailer so hood or engine cover opens from rear of trailer to prevent wind from blowing hood or cover open.**
- **Secure hood or engine cover with existing machine locks or latches.**
- **Secure hood or engine cover with tie down straps if no locks or latches exist.**

NOTE: Use a heavy-duty trailer to transport your machine.

1. Drive or back machine onto trailer so hood or engine cover opens from rear of trailer.
2. Lower any implements to trailer deck.
3. Lock the park brake.
4. Stop the engine.
5. Remove the key.
6. Close the fuel shut-off valve.
7. Fasten machine to trailer with heavy-duty straps, chains, or cables. Both front and rear straps must be directed down and outward from machine. Trailer must have signs and lights as required by law.

SERVICE

Service

Service Intervals

Every 10 Hours

- If operating in dry conditions, clean debris from mower.

Every 25 Hours

- Lubricate spindles
- Lubricate driveshaft
- Inspect mower blades
- Inspect mower belt

Every 100 Hours

- Check gearbox oil level
- Wash mower

Every 500 Hours

- Change gearbox oil

Grease

IMPORTANT: Avoid damage! Use recommended John Deere greases to avoid component failure and premature wear.

The recommended John Deere greases are effective within an average air temperature range of -29 to 135 degrees C (-20 to 275 degrees F).

If operating outside that temperature range, contact your Servicing dealer for a special-use grease.

The following greases are preferred:

- John Deere Multi-Purpose SD Polyurea Grease
- John Deere Multi-Purpose HD Lithium Complex Grease

If not using any of the preferred greases, be sure to use a general all-purpose grease with an NLGI grade No.2 rating.

Wet or high speed conditions may require use of a special-use grease. Contact your Servicing dealer for information.

Gear Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

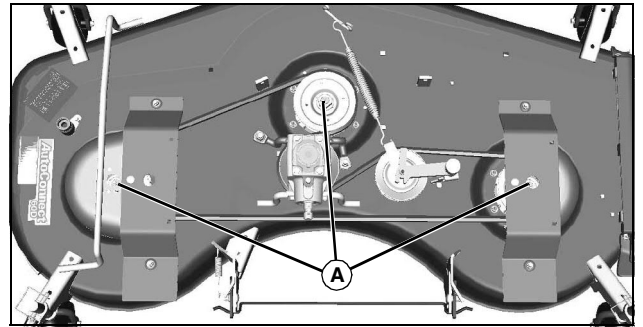
John Deere GL-5 Gear Lubricant is recommended.

Other oils may be used if they meet one or more of the following:

- API Service Classification GL-5.
- Military Specification MIL-L-2105D.
- Military Specification MIL-L-2105C.
- Military Specification MIL-L-2105B.

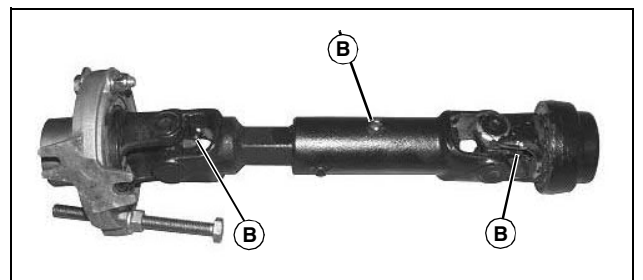
Oils meeting Military Specification MIL-L-10324A may be used as arctic oils.

Lubricating Mower



Picture Note: 60D mower shown.

1. Lubricate three grease fittings (A) on sheaves with recommended grease.



2. Lubricate three grease fittings (B) on mid PTO shaft with recommended lubricant.

Servicing Gearbox

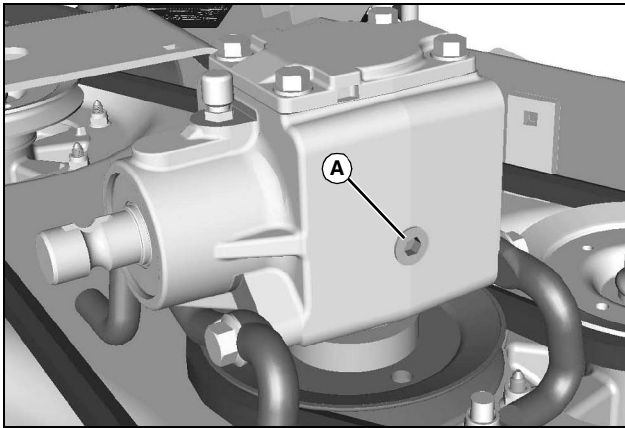
Checking Oil Level

1. Remove plug from one side of gearbox.
2. Oil level should be even with bottom edge of plug hole.
3. If oil is low, add recommended oil.
4. Install plug.

Changing Oil

1. Remove gearbox bracket with gearbox. See Removing Belt in SERVICE.

SERVICE



MX47088

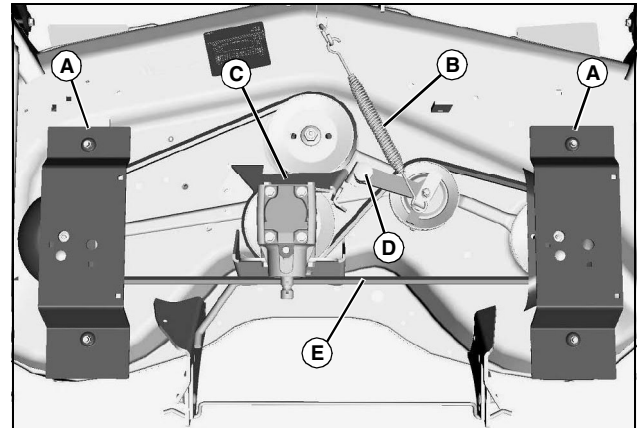
Picture Note: 60D mower shown.

2. Remove plug (A) on side of gearbox.
3. Lift and turn gearbox bracket on side to drain oil from gearbox.
4. Route belt around gearbox sheave as you install gearbox bracket on five bolts. See Installing Belt in SERVICE.
5. Following remaining instructions in Installing Belt in SERVICE to install gearbox and rod.
6. Add recommended oil to bottom edge of plug hole in gearbox.
7. Install plug.

Servicing Mower Belt

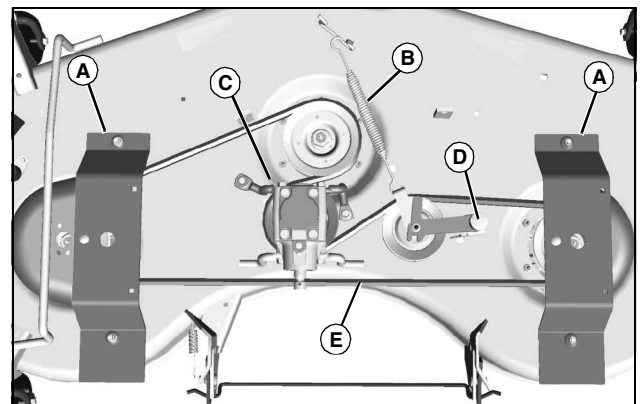
Removing Belt

1. Remove mower from machine.
2. Clean area around and under ramps.



MX47291

Picture Note: 54D mower shown.



MX47292

Picture Note: 60D mower shown.

3. Remove the left and right drive-over ramps (B) with shields.
4. Remove spring (B) to relieve belt tension.
5. Remove the rear gearbox support (C).
6. Remove the dust cap, e-ring, and flat washer (D) retaining the tensioner pulley assembly and remove the pulley assembly.
7. Remove belt (E) from mower.

Installing Belt

1. Install belt (E) around sheaves and route as shown.
2. Install tensioner pulley assembly and secure using a flat washer, e-ring and dust cap (D).
3. Install the rear gearbox support (C) with original hardware.
 - a. Tighten M10 hardware to 73 N•m (54 lb-ft).
 - b. Tighten M12 hardware to 119 N•m (88 lb-ft).
4. Install tensioner spring (B).
5. Install the left and right drive-over ramps (A) with shields.

Servicing Mower Blades



CAUTION: Avoid injury! Blades are sharp. Always wear gloves when handling blades or working near blades.

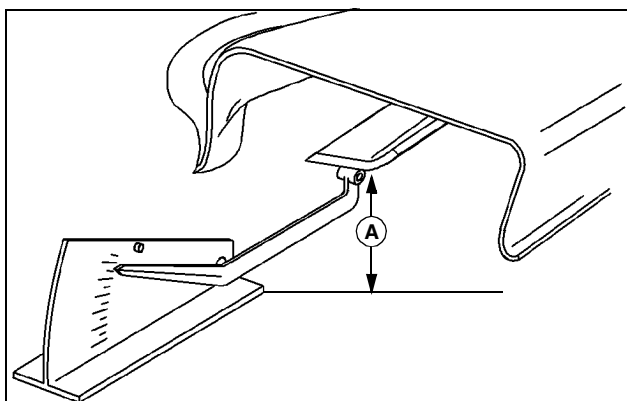
SERVICE

Checking for Bent Mower Blades



CAUTION: Avoid injury! Blades are sharp. Always wear gloves when handling blades or working near blades. Replace blades if defective. Never straighten or weld them.

1. Park machine on a level surface, not on a slope.
2. Disengage mower blades.
3. Fully raise the mower.
4. Lock the park brake.
5. Stop the engine.
6. Remove the key.
7. Wait for engine and all moving parts to stop before you leave the operator's seat.
8. Block the mower.

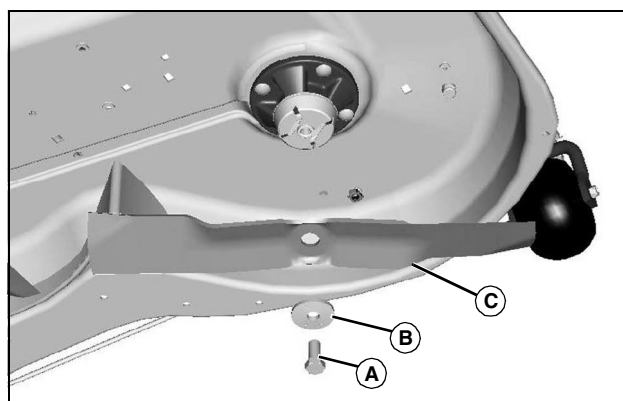


MX11181

9. Measure the distance (A) from blade tip to level surface with a ruler or a leveling gauge available at your John Deere dealer.
10. Rotate blade 180° and measure the distance between other end of blade and surface.
11. Check all blades. Install new blade if difference between measurements is more than 3 mm (1/8 in.).

Removing Mower Blades

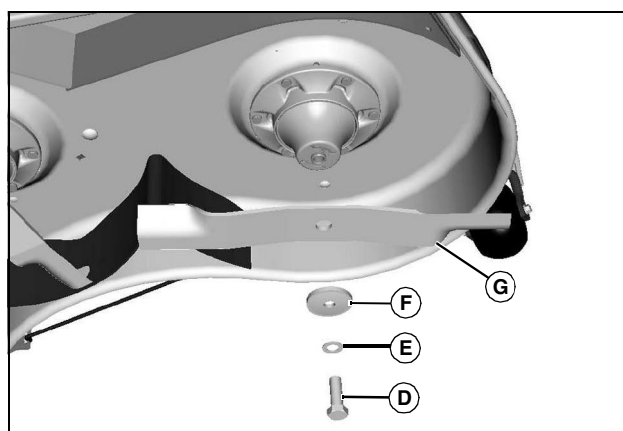
1. Park machine safely. (See Parking Safely in SAFETY.)
2. Remove mower from machine.
3. Use a suitable lifting device to raise mower to gain access to blades.
4. Insert wood block between blade and mower to prevent blade from turning when removing bolt.
5. Remove blade:



MX47288

Picture Note: 54D deck shown.

- 54D - Remove bolt (A), washer (B) and blade (C).



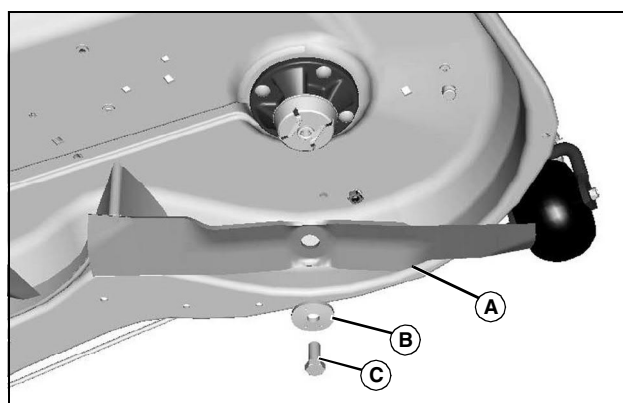
MX47289

Picture Note: 60D deck shown.

- 60D - Remove bolt (D), washer (E), washer (F) and blade (G).

Installing Mower Blades

1. Install blade:

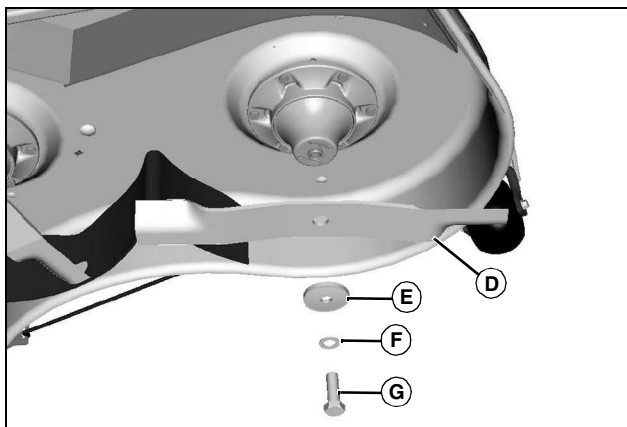


MX47288

Picture Note: 54D deck shown.

- 54D - Install blade (A) with cutting edge toward the ground, washer (B) and bolt (C).

SERVICE



MX47289

Picture Note: 60D deck shown.

- **60D** - Install blade (D) with cutting edge toward the ground, washer (E), washer (F) and bolt (G).

2. Insert wood block between blade and mower to prevent blade from turning when tightening bolt.

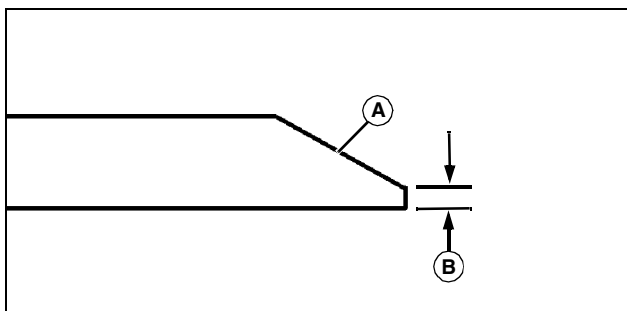
- Tighten 54D bolt (C) to 68 N•m (50 lb-ft).
- Tighten 60D bolt (G) to 122 N•m (90 lb-ft).

Sharpening Blades

CAUTION: Avoid injury! Rotating blades are dangerous.

Before adjusting or servicing mower:

- Disconnect spark plug wire(s) or battery negative (-) cable to prevent engine from starting accidentally.
- Always wear gloves when handling mower blades or working near blades.



MX8333

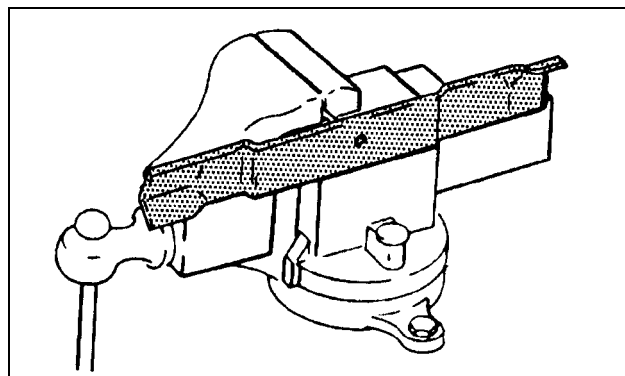
1. Sharpen blade with grinder, hand file or electric blade sharpener.

- Keep original bevel (A) when grinding.
- Blade should have 0.40 mm (1/64 in.) cutting edge (B) or less.

2. Balance blade before installing.

Balancing Blades

1. Clean the blade.



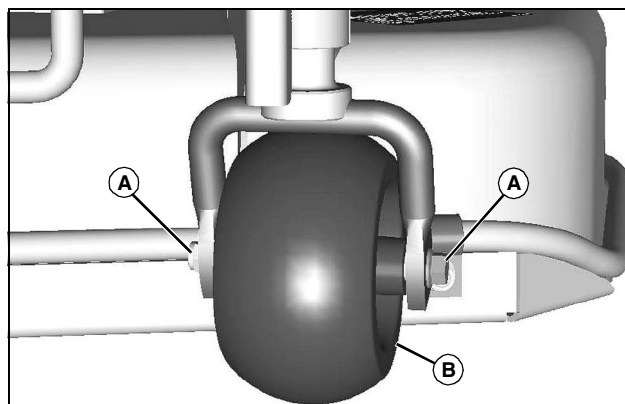
M61524

2. Put blade on a nail in a vice or in a vertical wall stud. Turn blade to horizontal position. If blade is not balanced, heavy end of blade will drop.

3. Grind bevel of heavy end. Do not change blade bevel.

Replacing Wheels

1. Park machine on a level surface, not on a slope.
2. Disengage mower blades.
3. Fully raise mower.
4. Lock park brake.
5. Stop engine.
6. Remove key.
7. Wait for engine and all moving parts to stop before leaving operator's seat.



MX47090

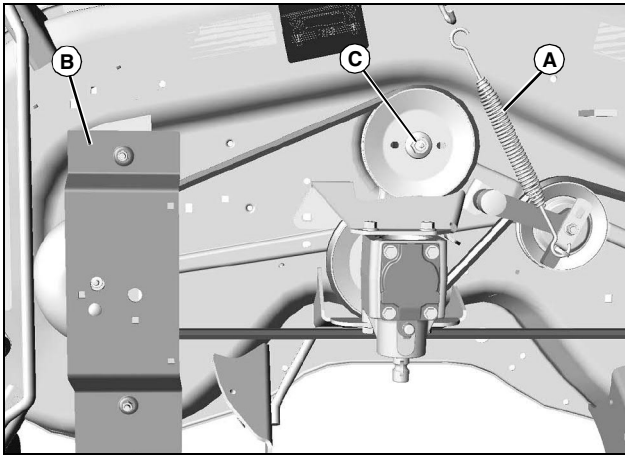
8. Remove wheel hardware (A).

IMPORTANT: Avoid damage! Do not overtighten wheel hardware. Overtightening hardware will cause damage to bushing.

9. Install new wheel (B) with hardware.

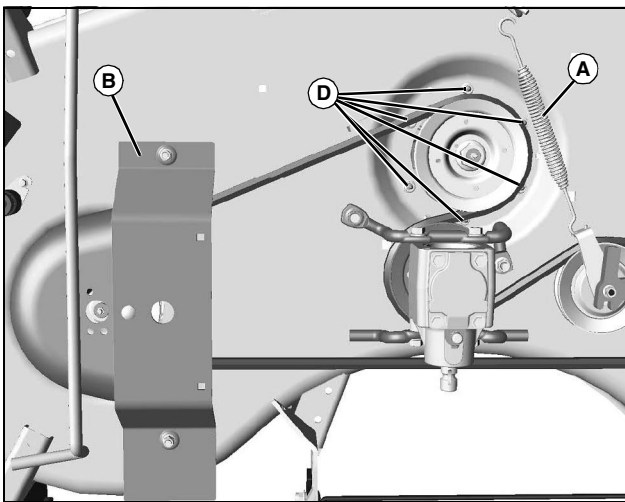
TROUBLESHOOTING

Replacing Sheaves



MX47280

Picture Note: 54D mower shown.



MX47281

Picture Note: 60D mower shown.

1. Remove spring (A) to relieve belt tension.
2. If necessary, remove left or right drive-over ramp (B) with shield.
3. To remove sheave(s):
 - 54D mower: Remove center bolt (C) on sheave(s) to be replaced.
 - 60D mower: Remove six bolts (D) on sheave(s) to be replaced.
4. Replace sheave(s) and secure with original hardware
5. Replace drive-over ramp(s) if removed.

Troubleshooting

Using Troubleshooting Chart

If you are experiencing a problem that is not listed in this chart, see your authorized dealer for service.

When you have checked all the possible causes listed and you are still experiencing the problem, see your authorized dealer.

Mower

Mower Deck Troubleshooting

If	Check
Discharge Chute Plugged	Belt(s) installed incorrectly. Grass too wet. Grass too long. Engine should be at full throttle. Rear of deck too low.
Patches Of Grass Uncut	Travel speed too fast. Engine should be at full throttle. Dull blades. Cutting height set too high.
Belt Slipping	Debris around sheaves. Worn belt. Mower plugged.
Too Much Vibration	Debris on mower deck or around sheaves. Damaged drive belt. Damaged sheaves or sheaves out of alignment. Blades out of balance.
Uneven Cut	Check procedures on Adjusting Mower Level Side-to-Side and Front-to-Rear. Travel speed too fast. Blades are dull. Check tire pressure. Adjust mower wheels.
Mower Stops When REVERSE foot pedal is depressed and Attachment Is Engaged	Normal condition. (See Using Reverse Implement Option in the Operating section of your machine's operator's manual.)
Blades Scalping Grass	Turning speed too fast. Ridges in terrain. Rough or uneven terrain. Low tire pressure. Cutting too low for conditions. Bent blade(s). Adjust mower wheels.
Mower Loads Down Tractor	Turning speed too fast. Ridges in terrain. Rough or uneven terrain. Low tire pressure. Cutting too low for conditions. Bent blade(s). Adjust mower wheels.
Uneven Clipping Distribution	Cutting height set too low for conditions. Mowing too fast. Grass too wet.

SPECIFICATIONS

Connecting Mower Deck Properly

If	Check
Rear draft arms are not fully lowered	Height of cut control should be in INSTALL position, use SCV or rockshaft control lever to raise and lower deck. Mower lift link is not contacting any step on height stop cam. Refer to Adjusting Maximum Height-of-Cut Section for additional information.
Rear latch is not functioning properly	Rear lock assembly should be in locked position prior to driving over mower. Rear lock assembly only stops in the lock and unlock position NOTE: If lock assembly stops or binds in-between positions, lubrication at pivot point may be required. Rear lock assembly and surrounding components are not deformed or bent. Rear lift arm rods are completely lowered on both sides of mower. This function is controlled by the SCV or Rockshaft Control Lever. Refer to Installing Mower Section for additional information.
If mower and ground conditions are not consistent	Ensure mower is parked on level hard surface. If parking on level hard surface is not possible, place a board under front of mower. Gage wheels in unlock position. Mower is centered on the tractor. Driveshaft connection is aligned properly (for AutoConnect driveshaft only). Driveshaft is properly installed in hanger (for standard driveshaft only). If equipped with front weights, remove before installation. Replace weights when complete. Refer to Installing Mower Section for additional information.
Improper front draft arm engagement	At least a 2-3mm (.08-.10 in) gap at front draft link and frame hook. Adjustment to draft link nuts may be required. If locks are not releasing or locking easily, gap at front draft link and frame hook may need to be increased. Front draft link yoke is properly oriented Front draft link is at proper height and not dragging on bottom of frame hook. Refer to Installing Mower Section for additional information.

Mower TypeMulch or Side Discharge
Cutting Blades3
Overall Width 1.74 m (68.5 in.)
Overall Length 1.75 m (69 in.)
Cutting Height* 2.5-10.2 cm (1-4 in.)
Cutting Width1.37 m (54 in.)
Mower Weight89 kg (197 lb)
Blade Bolt Torque 68 N•m (50 lb-ft)
Gearbox Oil Capacity..... 136 ml (4.6 oz)

*May vary depending on tire size.

60D

Mower TypeMulch or Side Discharge
Cutting Blades3
Overall Width 1.85 m (72.8 in.)
Overall Length 1.82 m (71.6 in.)
Cutting Height* 2.5-10.2 cm (1-4 in.)
Cutting Width1.52 m (60 in.)
Mower Weight117 kg (258 lb)
Blade Bolt Torque 122 N•m (90 lb-ft)
Gearbox Oil Capacity..... 136 ml (4.6 oz)

*May vary depending on tire size.

Getting Quality Service

Service Literature

If you would like a copy of the Parts Catalog or Technical Manual for this machine call:

- **U.S. & Canada:** 1-800-522-7448.
- **All Other Regions:** Your John Deere dealer.

Parts

We recommend John Deere quality parts and lubricants, available at your John Deere dealer.

Part numbers may change, use part numbers listed below when you order. If a number changes, your dealer will have the latest number.

When you order parts, your John Deere dealer needs the serial number or product identification number (PIN) for your machine or attachment. These are the numbers that you recorded in the Product Identification section of this manual.

Order Service Parts Online

Visit <http://JDParts.deere.com> for your Internet connection to parts ordering and information.

Specifications

54D

GETTING QUALITY SERVICE

Replacement Parts

54D Deck

Item	Part Number
Blade	M143520
Belt	LVU21853

60D Deck

Item	Part Number
Blade	TCU15881
Belt	LVU21854

John Deere Quality Continues with Quality Service

John Deere provides a process to handle your questions or problems, should they arise, to ensure that product quality continues with your John Deere dealer's parts and service support.

Follow the steps below to get answers to any questions you may have about your product.

1. Refer to the appropriate attachment, machine or equipment operator manuals.
2. Contact your John Deere dealer with unanswered questions.
3. In North America or Canada, call the John Deere Customer Contact Center.
 - Call 1-800-537-8233 and provide product serial number and model number.