



JOHN DEERE

OWNER'S MANUAL

40 Inch Tractor Shovel

ST50578 04/05/22

ENGLISH

LP63767

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.

Warranty information on this John Deere attachment can be found in the warranty statement included in this manual.

Table of Contents

Introduction	2
Product Identification	2
Safety Labels	3
Safety	4
Assembly	4
Installation	11
Operation	16
Specifications	17
Getting Quality Service	18
Warranty	18

Product Identification

Product Compatibility

Compatible with all X300 series and X500 Series Multi-Terrain tractors.

Required Equipment

Rear ballast is required for installation of the 40-inch Tractor Shovel kit:

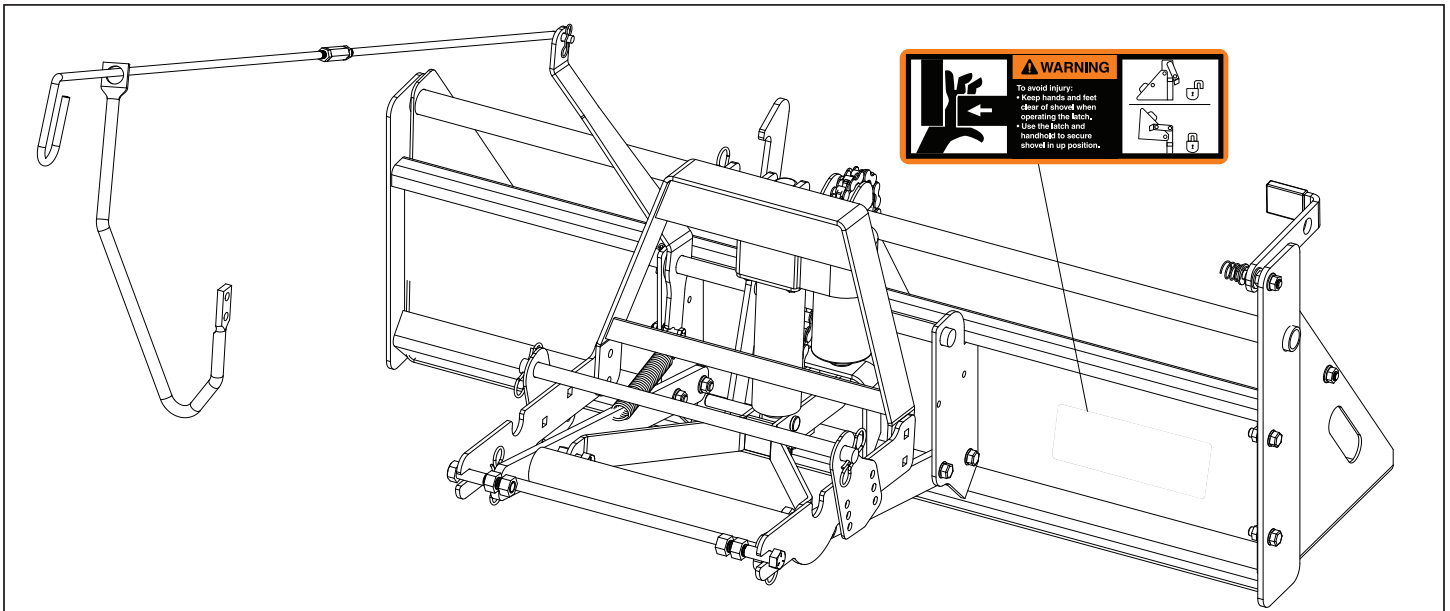
- X300 Series - Two rear weights (84 lbs)
- X500 Series - Four rear weights (168 lbs)

Original instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication.

The right is reserved to make changes at any time without notice.

Safety Labels

Safety Label Locations



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.

Replace missing or damaged safety labels. Use this operator's manual for correct safety label placement. There can be more safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

French or Spanish Safety Labels and Operator's Manual

Operator's manuals and safety labels with content in French or Spanish are available for this machine through authorized John Deere dealers.

Safety Label

- Finger and hands can be pinched or crushed. Keep away from pinch points.
- Locked/Unlocked Shovel Position.



Safety

Read Safety in Machine Operator's Manual

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

Operating Safely

- Read the machine and attachment operator's manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the machine and disengage the controls quickly.
- Do not let children or an untrained person operate machine.
- Make any necessary adjustments before you operate. Never attempt to make any adjustments while the engine is running, unless if recommended in adjustment procedure.
- Take all possible precautions when leaving the machine unattended. Shut off the engine before making any repairs, adjustments, or inspections. Lower the attachment, lock the parking brake, stop the engine, and remove the key.
- Look behind machine before you back up. Back up carefully.
- Do not let anyone, especially children, ride on machine or attachment. Riders are subject to injury such as being struck by foreign objects and being thrown off. Riders may also obstruct the operator's view, resulting in the machine being operated in an unsafe manner.
- Use only attachments and accessories approved by the manufacturer of this product.
- If the machine vibrates abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
- Always refer to the Storage section of the operator's manual for important details if storing this product for a long period of time.
- Keep people and pets out of the work area. Stop machine if anyone enters the area.
- If you hit an object, stop the machine and inspect it. Make repairs before you operate. Keep machine properly maintained and in good working order. Keep all shields and guards in place.

Practice Safe Maintenance

- Only qualified, trained adults should service this machine.
- Understand service procedure before doing work. Keep area clean and dry.
- Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
- Never lubricate, service or adjust the machine or attachment while it is moving. Keep safety devices in place and in working condition. Keep hardware tight.
- Keep hands, feet, clothing, jewelry, and long hair away from any moving parts, to prevent them from getting caught.
- Lower any attachment completely to the ground or to an existing attachment mechanical stop before servicing the attachment. Disengage all power and stop the engine. Lock park brake and remove the key. Let machine cool.
- Disconnect battery or remove spark plug wire (for gasoline engines) before making any repairs.

Safety

Practice Safe Maintenance

- Before servicing machine or attachment, carefully release pressure from any components with stored energy, such as hydraulic components and springs.
- Release hydraulic pressure by lowering attachment or cutting units to the ground or to a mechanical stop and move hydraulic control levers.
- Securely support any machine or attachment elements that must be raised for service work. Use jack stands or lock service latches to support components when needed.
- Never run engine unless park brake is locked.
- Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Replace all worn or damaged safety and instruction decals.
- Check all hardware at frequent intervals to be sure the equipment is in safe working condition.
- Do not modify machine or safety devices. Unauthorized modifications to the machine or attachment may impair its function and safety.

Wear Appropriate Clothing



- Wear close fitting clothing and safety equipment appropriate for the job.
- Certain operating conditions may dictate that the operator and any passenger wear appropriate safety equipment while operating the vehicle. Be prepared for any existing and potential conditions before operating machine.
- Local safety or insurance regulations may require additional safety equipment such as eye protection or a hard hat.
- Always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing open sandals.
- Wear proper clothing and safety equipment while handling chemicals or using the sprayer. Refer to the MSDS for the chemicals being used to be sure the proper personal protection equipment is being used.



Avoid High Pressure Fluids

- Hydraulic hoses and lines can fail due to physical damage, kinks, age, and exposure. Check hoses and lines regularly. Replace damaged hoses and lines.
- Hydraulic fluid connections can loosen due to physical damage and vibration. Check connections regularly. Tighten loose connections.
- Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.
- Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.
- If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.

Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.

Information may be obtained in the United States and Canada only by calling 1-800-822-8262.

Safety

Parking Safely

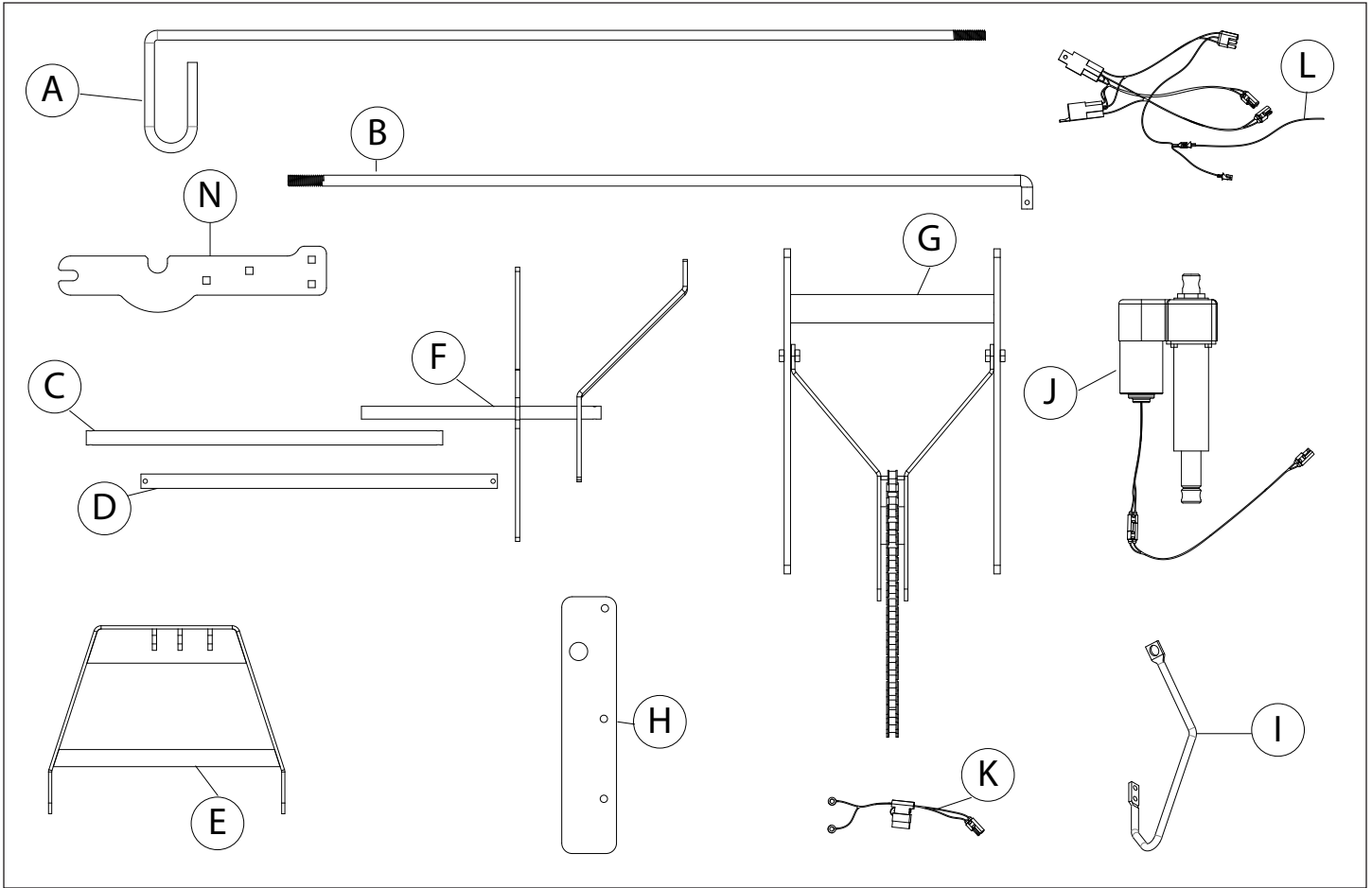
1. Stop machine on a level surface, not on a slope.
2. Disengage mower blades or any other attachments.
3. Lower the park brake.
4. Stop the engine.
5. Remove the key.
6. Wait for the engine and all moving parts to stop before you leave the operator's seat.
7. Close fuel shut-off valve, if your machine is equipped.
8. Disconnect the negative battery cable or remove the spark plug wire (for gasoline engines) before servicing the machine.

Handling Waste Product and Chemicals

- Waste products, such as, used oil, fuel, coolant, brake fluid, and batteries, can harm the environment and people:
- Do not use beverage containers for waste fluids - someone may drink from them.
- See your local Recycling Center or authorized dealer to learn how to recycle or get rid of waste products.
- A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques. The seller of the chemical products used with your machine is responsible for providing the MSDS for that product.

Assembly

Parts in Kit - Controls, Brackets, and Electrical



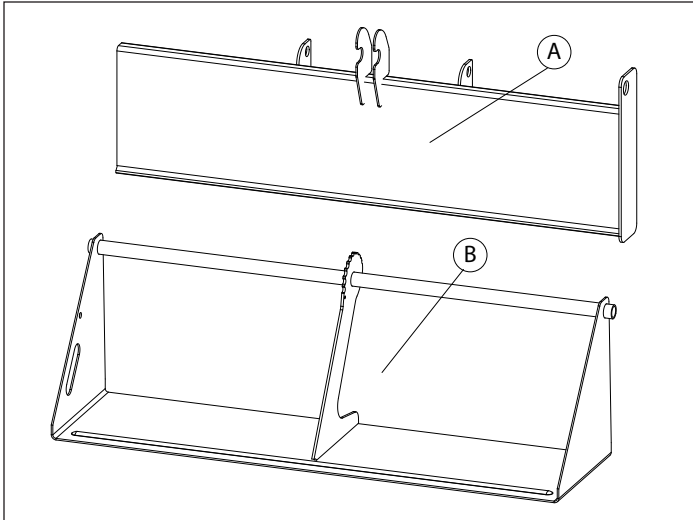
Parts Description	Qty
Control Rod, Upper (A)	1
Control Rod, Lower (B)	1
Mounting Pin, 5/8" (C)	1
Mounting pin, 1/2" (D)	1
Lift Frame (E)	1
Latch, Main (F)	1
Push Frame Assembly (G)	1
End Plate, Right (Width Latch Lever) (H)	1

Parts Description	Qty
Lever Bracket (I)	1
Lift Cylinder (J)	1
Harness, Battery (K)	1
Harness, Relay (L)	1
Lift Mount (N)	2

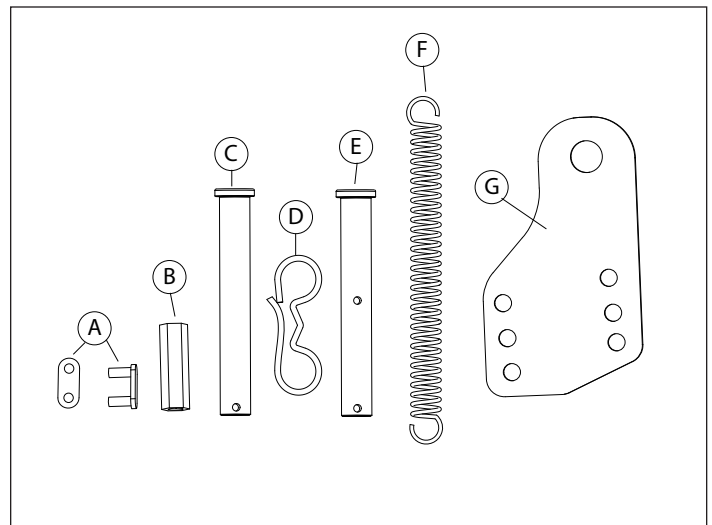
Assembly

Parts in Kit - Main

Parts Description	Qty
Blade Unit (A)	1
Shovel Assembly (B)	1



Parts in Kit - Hardware Bag

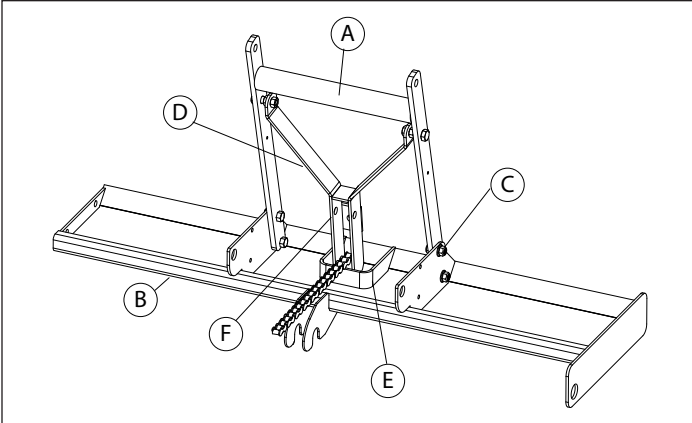


Parts Description	Qty
Link, Chain Connector (A)	1
Connector, Threaded, 5/16" (B)	1
Pin, Drilled 1/2" x 4" (one cross hole) (C)	1
Bow-tie Clip, Large (D)	6
Pin, Drilled, 1/2" x 4" (two cross holes) (E)	1
Spring (F)	1
Bracket, Lift Frame (G)	2
Bolt, Hex Head, 1/4" x 1-1/2"	1
Carriage Bolt, 5/16" x 3/4"	12
Carriage Bolt, 3/8" x 1"	6
Bolt, Hex Head, 3/8" x 1-3/4"	1
Bolt, Hex Head, 1/2" x 2-1/2"	2
Nut, Hex, 5/16"	4
Nut, Flange, 1/4"	2
Nut, Flange, 5/16"	10
Nut, Serrated Flange, 3/8"	8
Nut, Hex, 1/2"	4
Washer, Spacer, 3/4"	3
Lock-washer, 1/2"	2
Cotter Pin	2
Tie Straps	6
Bow-tie Clip, Small	1

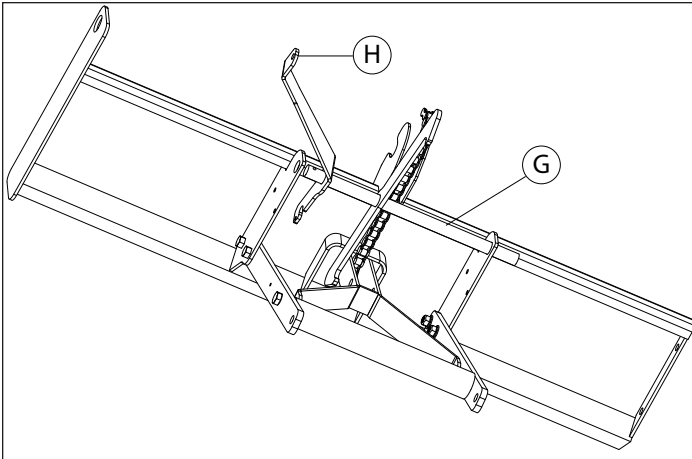
Assembly

Assemble Shovel Components

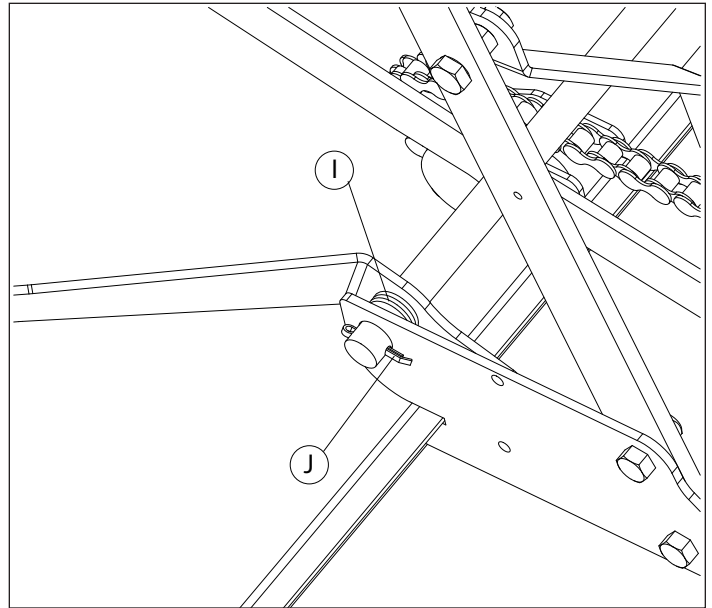
1. Position the blade unit flat on the ground.
2. Assemble the push frame assembly (A) to the blade unit (B) and secure with four 3/8" x 1" carriage bolts installed from the inside, and 3/8" serrated flange nuts (C) at the outside. For proper positioning:
 - a. The push frame attaches to the inside of the blade unit brackets.
 - b. The lift arm (D) of the push frame must be positioned within the pocket weldment (E) of the blade unit.
 - c. The cross holes (F) in the lift arm must be offset toward the top of the blade unit. The chain anchor bolt plate will be to the bottom.



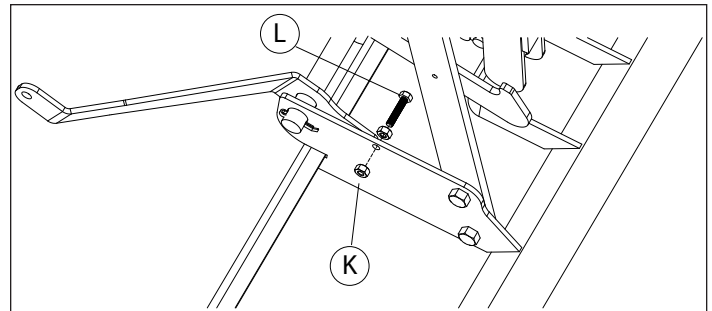
3. Position main latch (G) so that the control arm extension (H) (with mounting hole) is to the top and to the left side. Slide right end of latch shaft into the pivot hole in the right side mounting plate on the blade until the left side stub shaft on the latch clears the left side mounting plate.



4. Install the three 3/4 in. spacer washers (I) onto the stub shaft of the latch, slide the latch into the left side pivot hole fully to the left, and secure with a cotter pin (J).

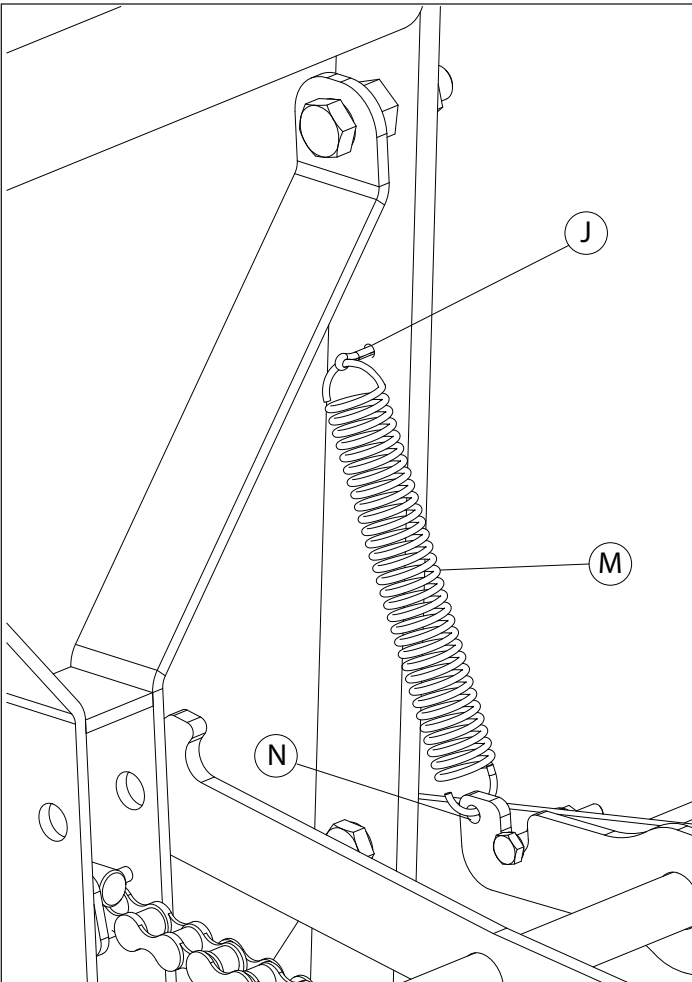


5. Install a 1/4" flange nut (K) fully onto a 1/4" x 1-1/2" hex head bolt (L), with the flange facing away from the bolt head.
6. Insert the 1/4" x 1-1/2" hex bolt and nut through the left side mounting plate on the blade, from the inside, making sure that the latch is between the bolt and the blade. Secure with a 1/4" flange nut (K) at the outside. Tighten hardware.

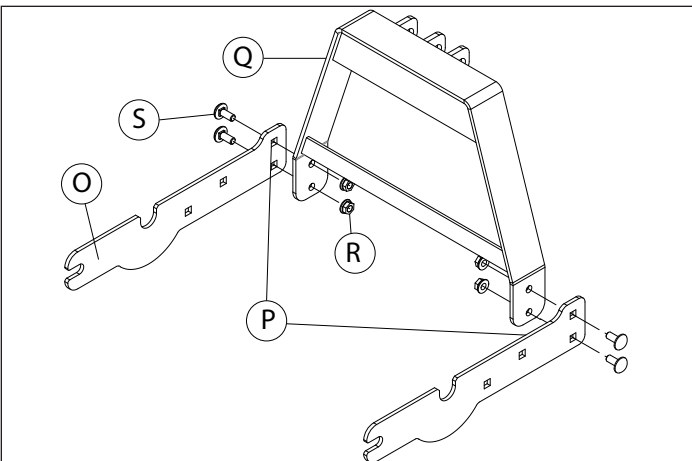


Assembly

7. Install one end of the spring (M) into the anchor hole (N) at the end of the latch lever. Secure the other end of the spring to the inside of the push frame with a cotter pin (J), using an existing hole.

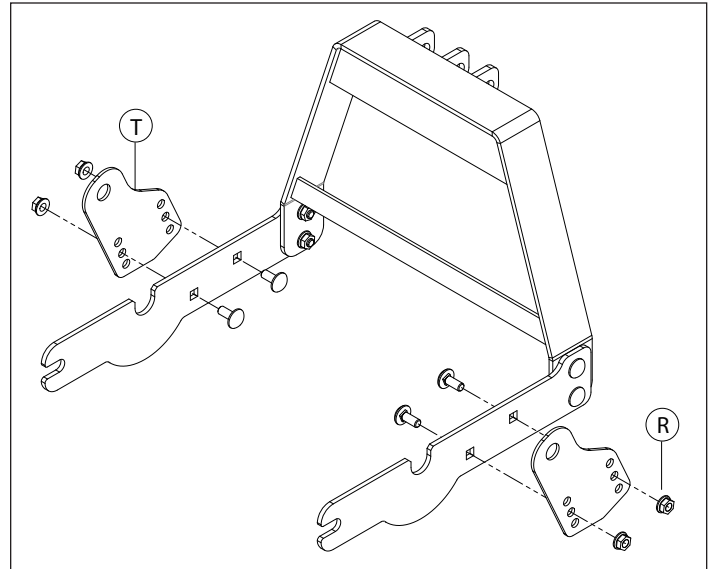


8. Place the lift frame Supports (O) on a bench or flat surface, with the slotted ends to the left, and the offset square mounting holes at the right side (P), toward top. Attach to Lift frame (Q) using four nuts (R) and carriage bolts (S).

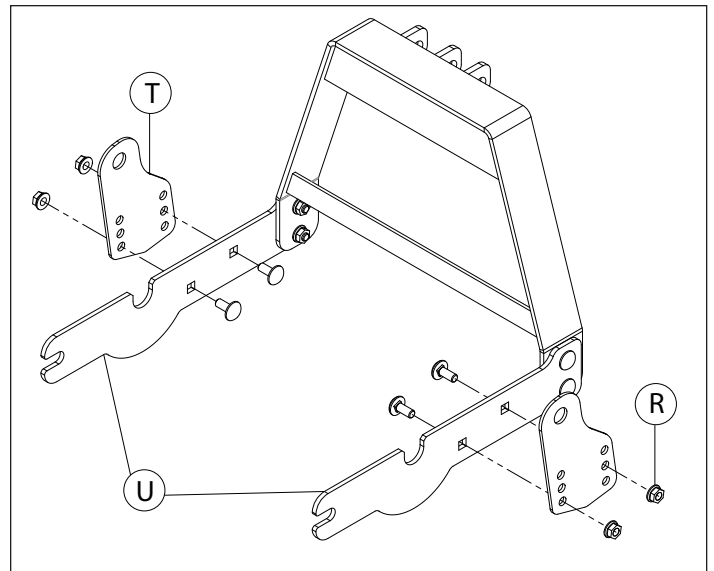


9. Assemble the two lift frame brackets (T) to the lift frame:

- X300 Series - Angle the lift frame brackets (T), and use the middle set of holes in the brackets. Secure each bracket with two 5/16" x 3/4" carriage bolts, installed from the inside, and 5/16" flange nuts (R) at the outside. Do not tighten hardware.



- X500 Series - Angle the lift frame brackets (T) to the lift frame (U), and use the lower hole and middle hole as shown in the image. Secure each bracket with two 5/16" x 3/4" carriage bolts, installed from the inside, and 5/16" flange nuts (R) at the outside. Do not tighten hardware.

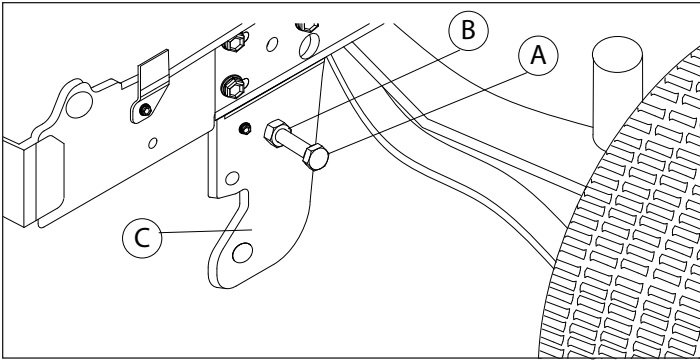


Installation

Preparing the Machine

Install Front Mount Bolts

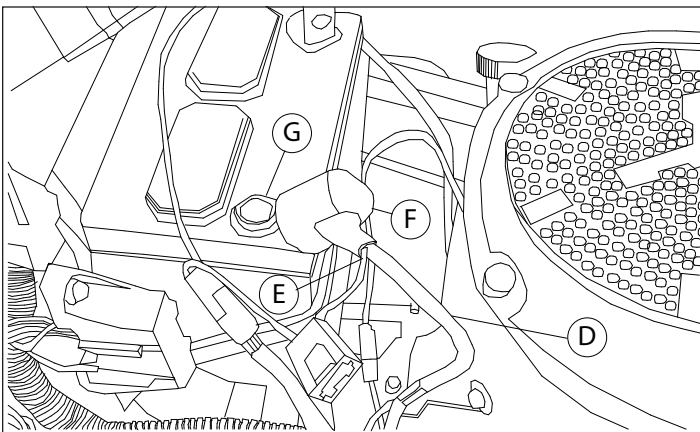
1. Assemble a 1/2" hex nut on each 1/2" x 2 - 1/2" hex head bolt until approximately three full threads are visible before the end of the thread.
2. Install a 1/2" x 2 - 1/2" hex head bolt (A) with assembled nut (B) into the upper rear mounting hole in the front mount bracket (C) at each side of the machine, from the outside. Secure each bolt with a 1/2" Lock-washer and 1/2" hex nut at the inside of each front mount bracket. Tighten hardware.



Install Wiring Components

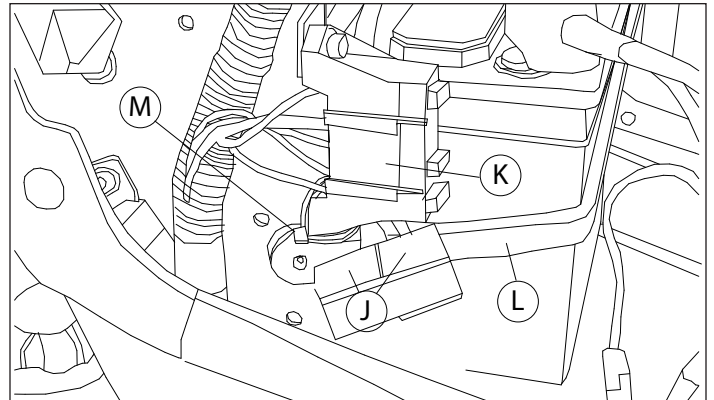
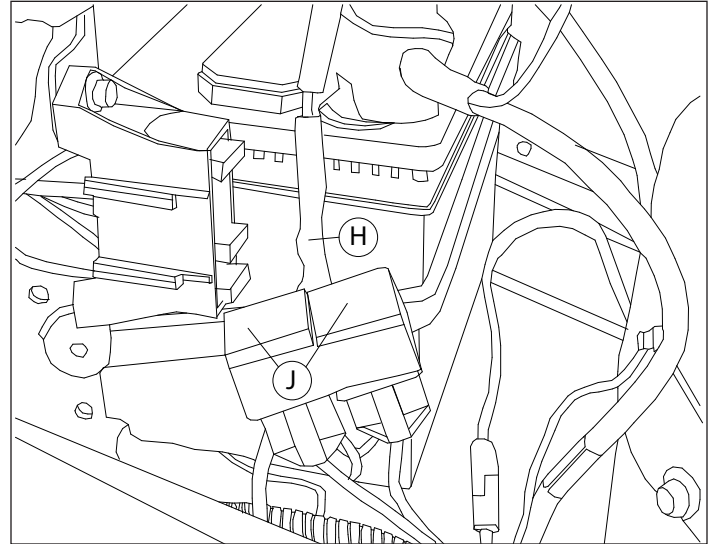
1. Disconnect positive (red) battery cable and temporarily remove the red terminal boot from the cable.

Insert the ring terminals for both the positive battery cable (D) and the red wire (E) from the battery harness through the red terminal boot (F). Secure the red ring terminal of the battery harness to the positive (+) battery terminal (G), using the original hardware, and cover the terminal with the terminal boot. Do not connect any wiring to the negative (-) terminal at this time.



Install Wiring Components

1. Route the relay harness (H) and relay (J) down along the right side of the battery, between the machine fuse block (K) and battery strap (L). Secure the harness to the lower fuse block mount with a tie wrap (M).



2. Route harness (N) forward and out the bottom of the hood to the actuator avoiding the exhaust (O).

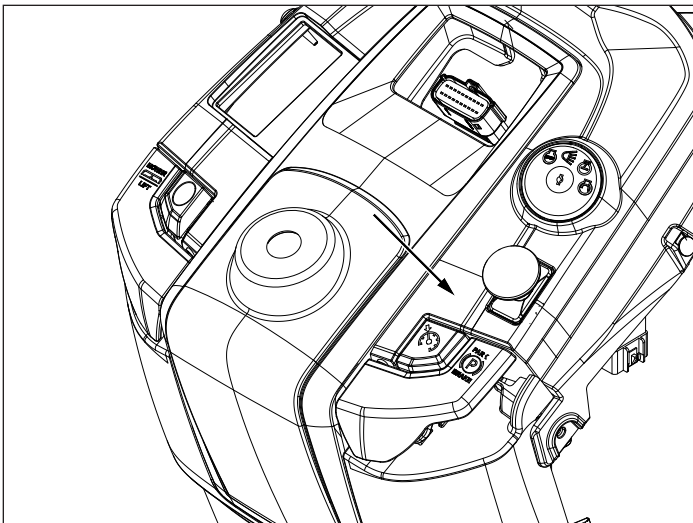


Installation

3. Connect the battery harness to the relay harness. Be sure to align black and red wires on the two connectors to ensure proper operation.
4. Connect the relay harness to the actuator when the shovel is mounted.
5. Locate the brake pedal switch (P) on the left side of tractor frame and unplug the connector.
6. Connect the power wire connector in-line with the brake pedal switch plug. Route and tie wrap the yellow wire (Q) along the tractor harness up to the dash.



7. Plug the yellow wire into the center terminal on the control switch.
8. Locate a spot on the right side of the dash to mount the switch. Check the backside of the dash for proper clearance. Place sticker on the dash in the desired location and drill a 15/32" hole.



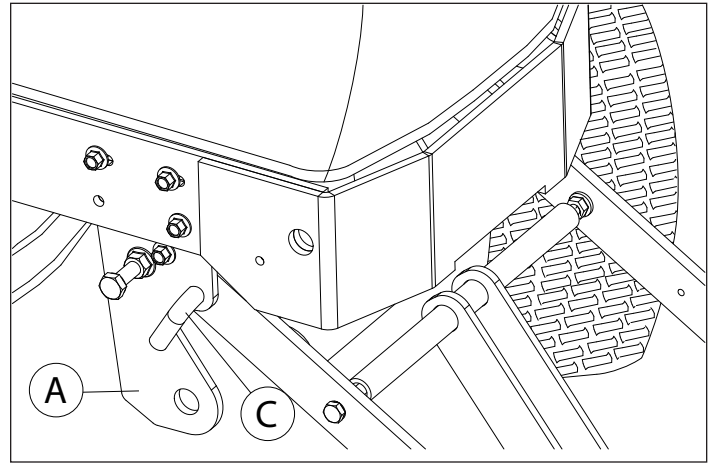
9. Fasten the control switch to the dash with the green wire terminal towards the top of the dash.

Install Shovel Components (Initial Installation)

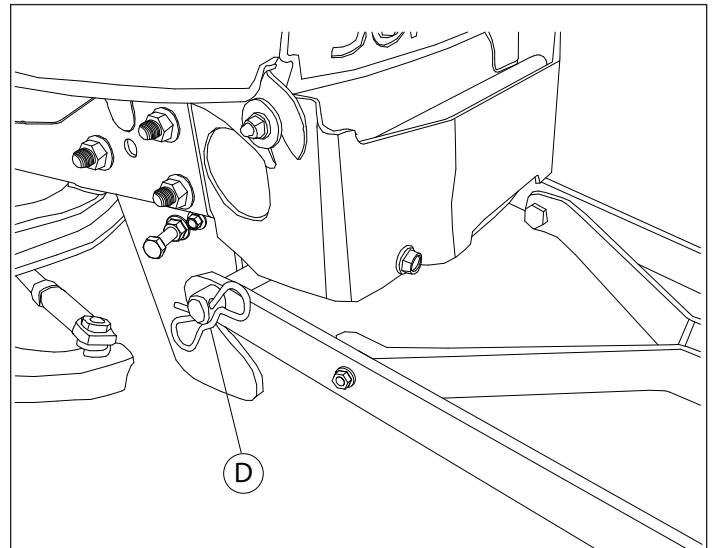
1. Turn steering wheel fully to the right.
2. Slide the assembled blade unit to the front of the machine, with the push frame arms (A) at the outside of the machine front mount brackets.

Note: Only use the upper (smaller) mounting holes at the front of the machine brackets to secure the push frame arms. Do not use the lower (larger) mounting holes to secure this attachment.

3. Align the mounting holes in the push frame arms with the front upper holes in the machine brackets and install the 1/2 in. mounting pin (C) fully through the push frame arms and machine brackets from the right side.

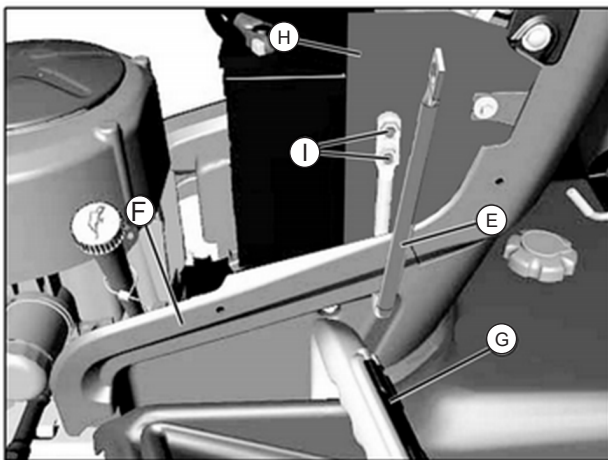


4. Secure the 1/2 in. mounting pin on both sides of the machine with a bow-tie clip (D).



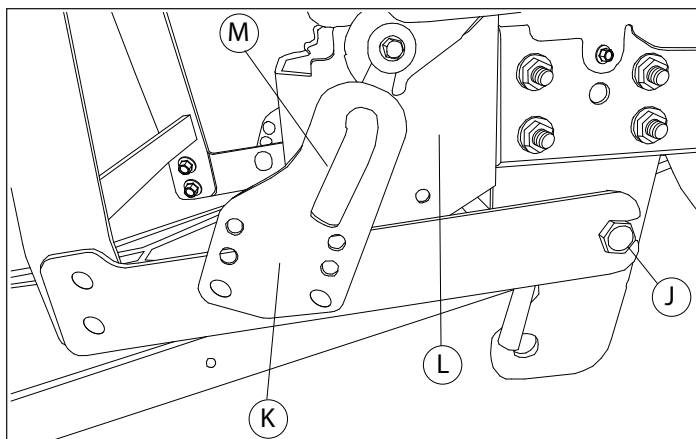
Installation

5. Make sure the key switch is in the off position, then raise hood and connect both the negative battery cable and shovel harness ground lead to the negative (-) battery terminal using original hardware. Route the negative battery wire towards the center of the battery and secure with a cable to prevent the wire from contacting the fan screen.
6. Install end of lever bracket (E) through an existing hole in the removable console panel (F), inside the lift pedal (G) at the left side of the machine.
7. Align the two mounting holes in the lever bracket with two square holes in the left side console support plate (H) Fasten with 5/16 x 3/4 in. carriage bolts (I) and 5/16 in. nuts.

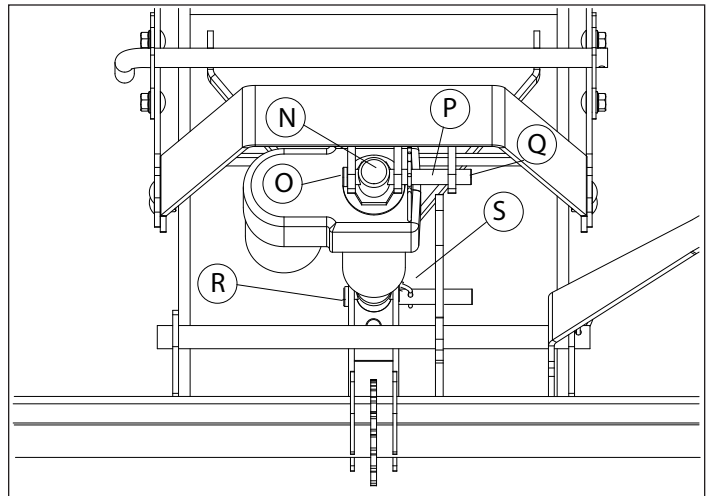


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8. Install the assembled lift frame to the machine:
 - Slide the slotted arms back to engage the 1/2" bolts (J)
 - Pivot the lift frame to align the lift arm brackets (K) with the mounting holes in the front weight bracket (L) and install the 5/8 in mounting pin (M) through the brackets from the right side. Secure both sides of the bracket with a bow-tie clip.
 - Tighten 5/16" hardware securing the lift frame brackets.



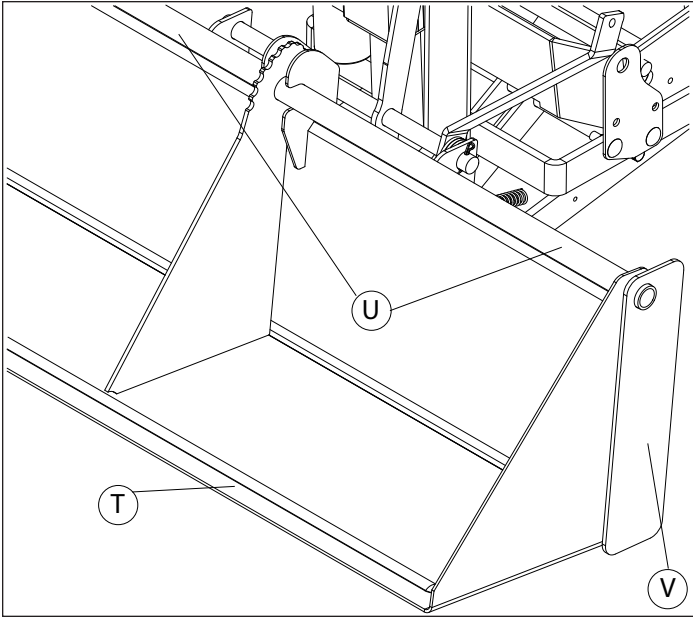
9. Install the lift unit:
 - a. With the lift unit on a workbench, hold the upper unit with the motor, and rotate the lower shaft counterclockwise to almost full length.
 - b. Position the upper mounting shaft (N) of the lift unit between the mounting lugs (O) of the lift unit mount, with the motor to the right side.
 - c. Install the 1/2 x 4 in. drilled pin (P) (with single cross hole) from the right side, and secure at the left side with a bow-tie clip (Q)
 - d. Adjust the length of the lift unit lower shaft as necessary to aid alignment with the lift arm (R) of the push frame.
 - e. Secure the lift unit lower shaft to the lift arm of the push frame by installing the 1/2 x 4 in. drilled pin (S) (with two cross holes) from the right side, and securing at the inner drilled hole with a bow-tie clip (Q). The outer hole on this pin not used.



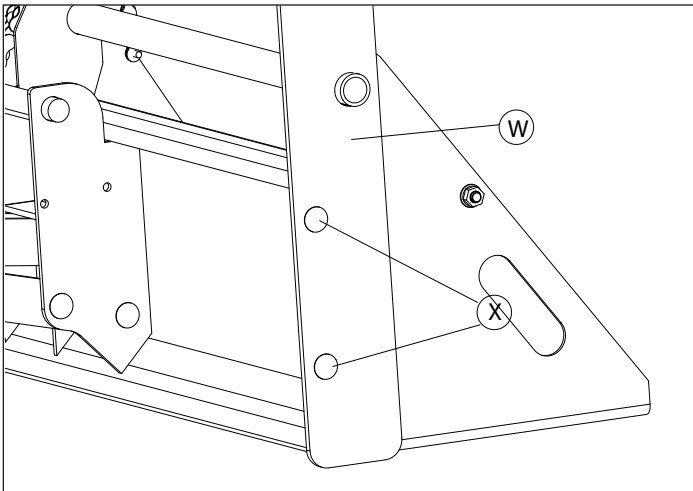
CAUTION: Avoid injury! Fingers and hands can be pinched or crushed. Be aware of potential pinch points and keep hands away.

Installation

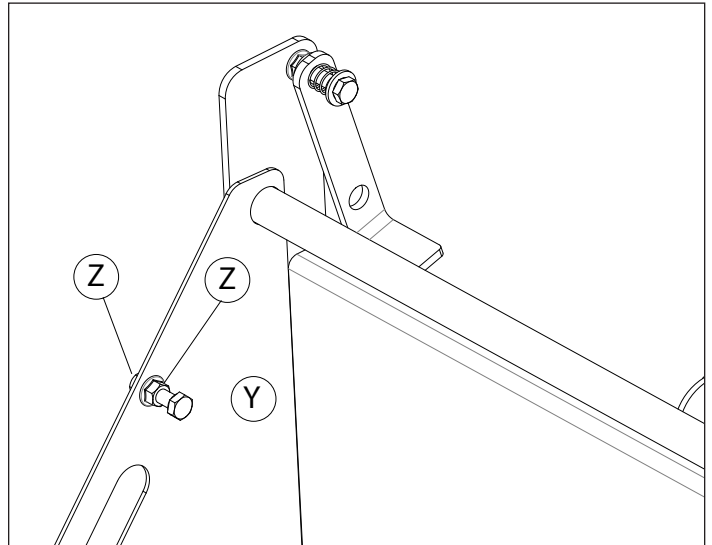
10. Slide the shovel (T) back to the blade unit.
11. Lift and align the left end of the shovel pivot shaft (U) with the upper hole in the left end plate (V) and tilt the pivot shaft back into the two center brackets.



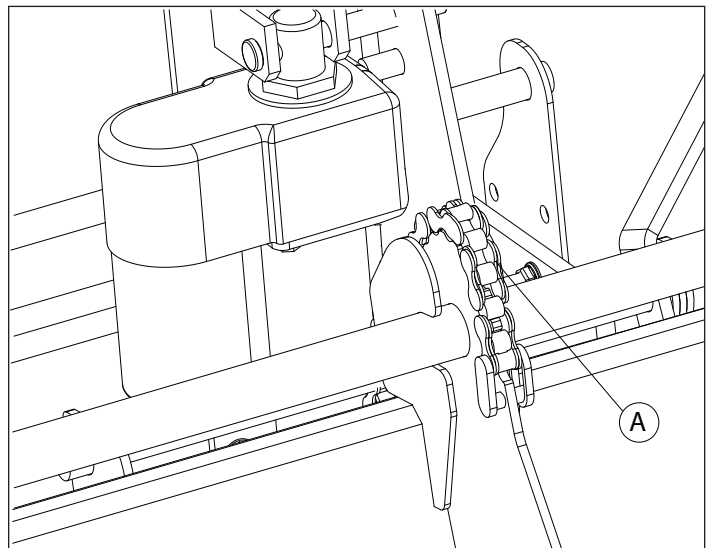
12. Install the right end plate (W) over the shovel pivot shaft and secure to the blade unit with two 3/8" x 1 carriage bolts (X), installed from the outside, and two 3/8" serrated flange nuts at the inside. Tighten hardware.



13. Install a 3/8" x 1-3/4" hex head bolt (Y) and 3/8" serrated flange nut (Z) in the mounting hole at the right side of the shovel, from the inside, with the nut flange facing the shovel. Secure with a 3/8" serrated flange nut (Z) at the outside. Adjust the nuts so that the bolt head is approximately 25mm (1 in.) from the shovel side plate. Tighten hardware.



14. Bring the end of the chain up from the lift arm, around the toothed area on the shovel, Insert one pin from the supplied chain connector link (A) through the last link of the chain, and the other link pin through the hole in the shovel. Secure the connector link. Make sure that the chain engages correctly with the remaining teeth on the shovel.

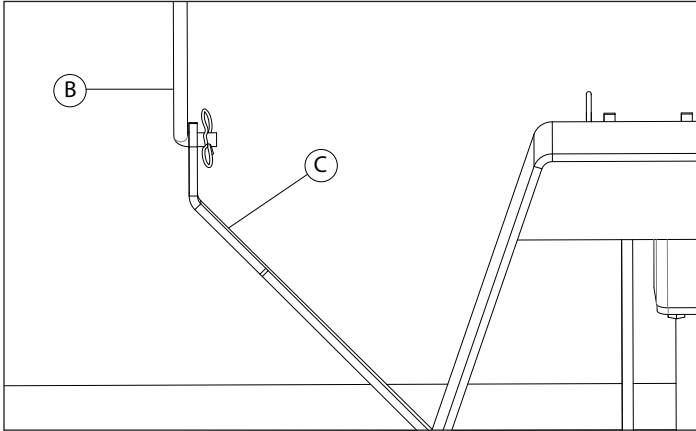


Complete Installation (Initial Installation)

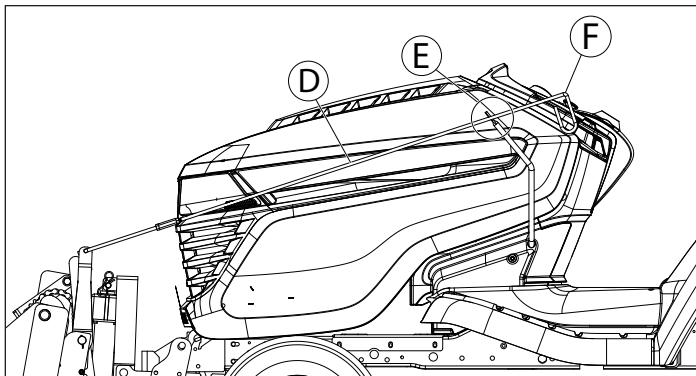
1. Plug the wiring lead connector from the lift unit into the shovel harness connector at the front of the grille.
2. Assemble a 5/16 in. nut fully onto the lower control rod.

Installation

3. Assemble the threaded connector halfway onto the lower control rod. Do not tighten hardware at this time.
4. Insert the bent end of the lower control rod (B) into the extension arm (C) and secure with a bow-tie clip.



5. Install the threaded end of the upper control rod (D) through the grommet in the mounting hole of the support rod (E) and slide the rod down toward the shovel.
6. Install a 5/16 in. nut fully onto the threaded end of the upper control rod, then thread the upper control rod into the open end of the threaded connector that was installed on the lower control rod.
7. Rotate the upper control rod (D) so that the handle (F) is vertical. While the bent end of the lower control rod is properly oriented then tighten the two 5/16 in. nuts at the threaded connector to lock the position.



CAUTION: Avoid injury! Machine component is heavy and can fall suddenly when released. Hold component securely and lower slowly.

8. Check the stroke for opening and closing the shovel and adjust, if necessary, by turning the 1/2 in. nut at the end of the roller lift chain.

Removing and Installing (After Initial Install)

Removing

1. Unplug the lift actuator.
2. Remove the lower and upper drilled pins to remove the lift actuator.
3. Remove the lift frame mounting pin and remove lift frame from vehicle.
4. Remove bow-tie clip from the lower control rod and remove control rod from vehicle.
5. Remove the mounting pin from the push frame and pull the shovel away from the vehicle.

Installing

Install components in the reverse order of removal.

Operation

Using the Shovel/Blade Functions



CAUTION: Avoid injury! Riders can fall off and be injured or killed. Never carry riders in or on an attachment.

Note: Always lubricate lift chain with oil before and after each use.

The shovel will not operate with the key switch in the off position.



CAUTION: Avoid injury! Attachment can lower rapidly. Attachment is heavy and can crush.

Keep bystanders, especially children, away when lowering attachment.

Support raised attachment with a mechanical stop or lower completely to the ground before servicing.

Raising and Lowering the Shovel/Blade

- To raise the shovel/blade unit - Press the bottom of the rocker switch.
- To lower the shovel/blade unit - Press the top of the rocker switch.

Opening and Closing the Shovel



CAUTION: Avoid injury! Fingers and hands can be pinched or crushed. Be aware of potential pinch points and keep hands away.



CAUTION: Avoid damage!

Do not attempt to use the shovel for pushing or performing work when in the open position.

When blading, ensure that shovel is locked in the open position and clear of any material from the blading operation.

Note: For normal operation, the latch lever should be rotated back so that it hangs behind the blade.

Opening the shovel:


- a. Press the bottom of the toggle switch and fully raise the shovel / blade unit.
- b. Pull back on the control rod handle until it stops. The upper latch will contact the drilled pin at the top of the lift unit.
- c. Press the top of the toggle switch to lower the shovel/ blade unit. As soon as the upper latch locks on the drilled pin, the blade will stop lowering and the shovel will begin to raise. Release the control rod handle and continue to press the top of the toggle switch to fully open the shovel.

Closing the shovel and lowering the shovel / blade unit:


- a. Press the bottom of the toggle switch to lower the shovel to the blade.
- b. Continue pressing the bottom of the toggle switch to raise the lift unit until the latch automatically disengages from the upper drilled pin and the control rod handle snaps forward.
- c. Press on the top of the toggle switch to lower the shovel / blade unit as desired.

Operation

Using Blade

 **CAUTION: Avoid injury! Attachment is heavy and can crush.**

Keep hands and arms from under attachment when in the raised position.

 **IMPORTANT: Avoid damage!**

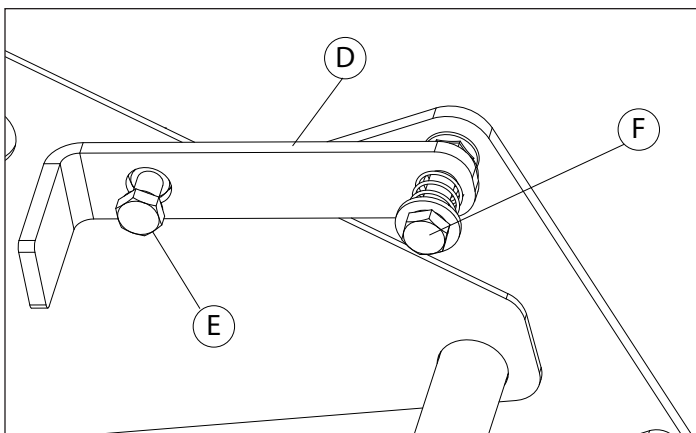
Do not attempt to use the shovel for pushing or performing work when in the open position.

When blading, ensure that shovel is locked in the open position and clear of any material from the blading operation.

Note: The shovel can be lifted manually and locked in the open position prior to blading. When blading is completed, the shovel can be manually lifted, unlocked, and lowered to the normal operating position

Always use the handle at the right side of the shovel when manually raising and lowering the shovel.

1. Follow procedure to open shovel. When shovel is fully open, rotate the latch lever (A) forward over the 3/8" x 1-3/4" hex bolt (B) capturing the bolt in the hole of the latch.



2. Continue pressing the bottom of the toggle switch to raise the lift unit and disengage the latch and control rod, then press the top of the toggle switch to lower the blade.
3. While blading with the shovel locked in the open position, raise and lower the blade with the toggle switch.
4. Return to normal operation by fully raising the blade, unlocking and rotating the latch lever back over the blade, and following normal procedure to close and lower the shovel / blade unit.

Specifications

Shovel Specifications	
Length of Tractor Shovel.....	101.6 cm (40 in.)
Depth of Tractor Shovel.....	289 mm (11-3/8")
Height of Tractor Shovel.....	305 mm (12")
Capacity (Volume).....	.042 m ³ (1.5 cu ft.)
Capacity (Weight - level load).....	68.03 kg (150 lb.)
Lift Height (Depending on machine)..	22.25 cm (8 3/4")
Lift Height at Blade (500 Series).....	11.43 cm (4 1/2")
Electrical Fuse (in wiring harness)....	30A

Warranty

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 quality parts and service support.

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

1. Refer to your attachment and machine operator manuals.
2. In North America or Canada, call Agri-Fab Customer Service at 1-800-448-9282 and provide product serial number (if available) and model number.

Warranty:

Limited Warranty for New John Deere Licensed Products

Agri-Fab's tractor shovels are guaranteed to be free from defects in material and workmanship from the date of purchase for 2 years residential use, 6 months commercial use, provided that the purchaser properly assembles, installs, uses and maintains the products in accordance with this manual.

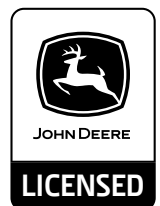
Purchaser's failure to adhere to such requirements will void the warranty. To the extent permitted by applicable law, all other warranties, representations, obligations and conditions, expressed or implied, including but not limited to implied warranties of merchantability, fitness for any particular purpose and non-infringement, are hereby disclaimed and excluded.

Any product which does not meet warranty shall, as purchaser's sole and exclusive remedy, be repaired or replaced by Agri-Fab. This warranty is non transferable.

In addition, our warranty does not cover:

- Labor charges
- Loss or consequential, incidental or special damages of any kind
- Electric actuators are warranted for one year

This product was manufactured by Agri-Fab, Inc. a John Deere Licensee. If you have any questions or concerns with the assembly, installation or operation of this attachment see your local John Deere Dealer or call Agri-Fab Inc. at 1-800-448-9282 for assistance.



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